EUROPEAN RESEARCH EXECUTIVE AGENCY (REA)

REA.A – Marie Skłodowska-Curie Actions & Support to Experts
A.4 – MSCA and citizens, COFUND, Global Postdoctoral Fellowships

GRANT AGREEMENT

Project 101090284 — EC-InterCom

PREAMBLE

This **Agreement** ('the Agreement') is **between** the following parties:

on the one part,

the **European Research Executive Agency (REA)** ('EU executive agency' or 'granting authority'), under the powers delegated by the European Commission ('European Commission'),

and

on the other part,

1. 'the coordinator':

BIOTECHNOLOGICKY USTAV AV CR VVI (IBT), PIC 998451750, established in PRUMYSLOVA 595, VESTEC 252 50, Czechia,

Unless otherwise specified, references to 'beneficiary' or 'beneficiaries' include the coordinator and affiliated entities (if any).

If only one beneficiary signs the grant agreement ('mono-beneficiary grant'), all provisions referring to the 'coordinator' or the 'beneficiaries' will be considered — mutatis mutandis — as referring to the beneficiary.

The parties referred to above have agreed to enter into the Agreement.

By signing the Agreement and the accession forms, the beneficiaries accept the grant and agree to implement the action under their own responsibility and in accordance with the Agreement, with all the obligations and terms and conditions it sets out.

The Agreement is composed of:

Preamble

Terms and Conditions (including Data Sheet)

[1] Template published on Portal Reference Documents.
[2] Template published on Portal Reference Documents.
[3] Template published on Portal Reference Documents.

TERMS AND CONDITIONS

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DATA SHEET

1. General data

Project summary:

Project summary
It sounds simple: A cell cannot divide without nucleotides. Indeed, the disruption of pyrimidine de novo synthesis (PDNS) efficiently blocks proliferation of cancer cells. Yet still today, PDNS-directed anticancer treatment has not entered clinics due to the lack of efficacy. Why? Cancer cells gain pyrimidines via PDNS or from salvage pathways, and PDNS inhibition in cancer cells can likely be bypassed by pyrimidines produced in the tumor environment or gained from the systemic circulation. Can we target this microenvironmental interaction to improve treatment efficacy? A crucial component of tumor environment are blood vessels. Tumors stimulate their growth, angiogenesis, to gain oxygen and nutrients. Metabolism of endothelial cells (ECs), the inner vessel lining, is rewired in tumors, and tumor ECs upregulate PDNS. However, whether and how elevated PDNS in ECs supports tumorigenesis is unknown. I hypothesize that PDNS in ECs affects tumor environment either directly by providing pyrimidines to cancer cells or indirectly by stimulating angiogenesis, making systemic resources more accessible to cancer cells. The central goals of this project are (i) to identify the metabolic communication of ECs with other cell types in tumors, (ii) asses if endothelial PDNS promotes angiogenesis, and (iii) to seek novel metabolic targets in ECs, whose inhibition improves efficacy of PDNS inhibitors in vivo. To reach these goals, I will use an inducible mouse model to selectively disable PDNS in the endothelium. With this unique tool available at my host institute, I will integrate a state-of-the-art multi-omics and my expertise in metabolism to disentangle the network of metabolic communication using a powerful combination of spatially resolved single cell transcriptomics, metabolomics and functional genomics. My innovative approach will open a way for understanding the EC contribution to metabolic balance in tumors with a potential to identify new metabolic anti-cancer strategies.

Keywords:

- Cancer and its biological basis
- DNA synthesis, modification, repair, recombination, degradation
- Metabolism
- Metabolism, biological basis of metabolism related disorders
- Transcriptomics

Project number: 101090284

Project name: Pyrimidine de novo synthesis in tumor endothelium: an overlooked target?

Project acronym: EC-InterCom

Call: HORIZON-WIDERA-2022-TALENTS-02

Topic: HORIZON-WIDERA-2022-TALENTS-02-01

Type of action: HORIZON TMA MSCA Postdoctoral Fellowships - European Fellowships

Granting authority: European Research Executive Agency

Grant managed through EU Funding & Tenders Portal: Yes (eGrants)

Project starting date: fixed date: 1 January 2023

Project end date: 31 December 2024

Project duration: 24 months

Consortium agreement: Yes

2. Participants

List of participants:

N°	Role	Short name	Legal name	Ctry	PIC	Total eligible contrib.	Max grant amount
1	COO	IBT	BIOTECHNOLOGICKY USTAV AV CR VVI	CZ	998451750	166 278.72	166 278.72

N°	Role	Short name	Legal name	Ctry	PIC	Total eligible contrib.	Max grant amount
Total						166 278.72	166 278.72

Coordinator:

– BIOTECHNOLOGICKY USTAV AV CR VVI (IBT)

3. Grant

Maximum grant amount, total estimated eligible costs and contributions and funding rate:

Total eligible contributions (unit, flat-rate and lump sum contributions and financing not linked to costs)	Maximum grant amount (Annex 2)	Maximum grant amount (award decision)
166 278.72	166 278.72	166 278.72

Grant form: Unit

Grant mode: Action grant

Budget categories/activity types:

- A. Contributions for recruited researchers
  - A.1 Living allowance
  - A.2 Mobility allowance
  - A.3 Family allowance
  - A.4 Long-term leave allowance
  - A.5 Special needs allowance

- B. Institutional contributions
  - B.1 Research, training and networking contribution
  - B.2 Management and indirect contribution

Cost eligibility options:

- In-kind contributions eligible costs

Budget flexibility: Yes (flexibility with conditions)

4. Reporting, payments and recoveries

4.1 Continuous reporting (art 21)

Deliverables: see Funding & Tenders Portal Continuous Reporting tool

4.2 Periodic reporting and payments

Reporting and payment schedule (art 21, 22):

Reporting					Payments	
Reporting periods			Type	Deadline	Type	Deadline (time to pay)
RP No	Month from	Month to				
					Initial prefinancing	30 days from entry into force/10 days before starting date – whichever is the latest
1	1	24	Periodic report	60 days after end of reporting period	Final payment	90 days from receiving periodic report

Prefinancing payments and guarantees:

Prefinancing payment	
Type	Amount
Prefinancing 1 (initial)	116 395.10

Reporting and payment modalities (art 21, 22):

Mutual Insurance Mechanism (MIM): Yes

MIM contribution: 5% of the maximum grant amount (8 313.94), retained from the initial prefinancing

Restrictions on distribution of initial prefinancing: The prefinancing may be distributed only if the minimum number of beneficiaries set out in the call condititions (if any) have acceded to the Agreement and only to beneficiaries that have acceded.

Interim payment ceiling (if any): 90% of the maximum grant amount

No-profit rule: n/a

Late payment interest: ECB + 3.5%

Bank account for payments:

CZ0201000000431218610287

Conversion into euros: n/a

Reporting language: Language of the Agreement

4.3 Certificates (art 24): n/a

4.4 Recoveries (art 22)

First-line liability for recoveries:

Beneficiary termination: Beneficiary concerned

Final payment: Each beneficiary for their own debt

After final payment: Beneficiary concerned

Joint and several liability for enforced recoveries (in case of non-payment):

Individual financial responsibility: Each beneficiary is liable only for its own debts (and those of its affiliated entities, if any)

5. Consequences of non-compliance, applicable law & dispute settlement forum

Suspension and termination:

Additional suspension grounds (art 31)

Additional termination grounds (art 32)

Applicable law (art 43):

Standard applicable law regime: EU law + law of Belgium

Dispute settlement forum (art 43):

Standard dispute settlement forum:

EU beneficiaries: EU General Court + EU Court of Justice (on appeal)

Non-EU beneficiaries: Courts of Brussels, Belgium (unless an international agreement provides for the enforceability of EU court judgements)

6. Other

Specific rules (Annex 5): Yes

Standard time-limits after project end:

Confidentiality (for X years after final payment): 5

Record-keeping (for X years after final payment): 5 (or 3 for grants of not more than EUR 60 000)

Reviews (up to X years after final payment): 2

Audits (up to X years after final payment): 2

Extension of findings from other grants to this grant (no later than X years after final payment): 2

Impact evaluation (up to X years after final payment): 5 (or 3 for grants of not more than EUR 60 000)

CHAPTER 1 GENERAL

ARTICLE 1 — SUBJECT OF THE AGREEMENT

This Agreement sets out the rights and obligations and terms and conditions applicable to the grant awarded for the implementation of the action set out in Chapter 2.

ARTICLE 2 — DEFINITIONS

For the purpose of this Agreement, the following definitions apply:

Actions — The project which is being funded in the context of this Agreement.

Grant — The grant awarded in the context of this Agreement.

EU grants — Grants awarded by EU institutions, bodies, offices or agencies (including EU executive agencies, EU regulatory agencies, EDA, joint undertakings, etc.).

Participants — Entities participating in the action as beneficiaries, affiliated entities, associated partners, third parties giving in-kind contributions, subcontractors or recipients of financial support to third parties.

Beneficiaries (BEN) — The signatories of this Agreement (either directly or through an accession form).

Affiliated entities (AE) — Entities affiliated to a beneficiary within the meaning of Article 187 of EU Financial Regulation 2018/1046[4] which participate in the action with similar rights and obligations as the beneficiaries (obligation to implement action tasks and right to charge costs and claim contributions).

Associated partners (AP) — Entities which participate in the action, but without the right to charge costs or claim contributions.

Purchases — Contracts for goods, works or services needed to carry out the action (e.g. equipment, consumables and supplies) but which are not part of the action tasks (see Annex 1).

Subcontracting — Contracts for goods, works or services that are part of the action tasks (see Annex 1).

In-kind contributions — In-kind contributions within the meaning of Article 2(36) of EU Financial

[4] For the definition, see Article 187 Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union, amending Regulations (EU) No 1296/2013, (EU) No 1301/2013, (EU) No 1303/2013, (EU) No 1304/2013, (EU) No 1309/2013, (EU) No 1316/2013, (EU) No 223/2014, (EU) No 283/2014, and Decision No 541/2014/EU and repealing Regulation (EU, Euratom) No 966/2012 ('EU Financial Regulation') (OJ L 193, 30.7.2018, p. 1): "**affiliated entities** [are]:
(a) entities that form a sole beneficiary [(i.e. where an entity is formed of several entities that satisfy the criteria for being awarded a grant, including where the entity is specifically established for the purpose of implementing an action to be financed by a grant)];
(b) entities that satisfy the eligibility criteria and that do not fall within one of the situations referred to in Article 136(1) and 141(1) and that have a link with the beneficiary, in particular a legal or capital link, which is neither limited to the action nor established for the sole purpose of its implementation".

Regulation 2018/1046, i.e. non-financial resources made available free of charge by third parties to a beneficiary.

Fraud — Fraud within the meaning of Article 3 of EU Directive 2017/1371[5] and Article 1 of the Convention on the protection of the European Communities' financial interests, drawn up by the Council Act of 26 July 1995[6], as well as any other wrongful or criminal deception intended to result in financial or personal gain.

Irregularities — Any type of breach (regulatory or contractual) which could impact the EU financial interests, including irregularities within the meaning of Article 1(2) of EU Regulation 2988/95[7].

Grave professional misconduct — Any type of unacceptable or improper behaviour in exercising one's profession, especially by employees, including grave professional misconduct within the meaning of Article 136(1)(c) of EU Financial Regulation 2018/1046.

Applicable EU, international and national law — Any legal acts or other (binding or non-binding) rules and guidance in the area concerned.

Portal — EU Funding & Tenders Portal; electronic portal and exchange system managed by the European Commission and used by itself and other EU institutions, bodies, offices or agencies for the management of their funding programmes (grants, procurements, prizes, etc.).

CHAPTER 2 ACTION

ARTICLE 3 — ACTION

The grant is awarded for the action **101090284 — EC-InterCom** ('action'), as described in Annex 1.

ARTICLE 4 — DURATION AND STARTING DATE

The duration and the starting date of the action are set out in the Data Sheet (see Point 1).

CHAPTER 3 GRANT

ARTICLE 5 — GRANT

5.1 Form of grant

The grant is an action grant[8] which takes the form of a unit grant.

[5] Directive (EU) 2017/1371 of the European Parliament and of the Council of 5 July 2017 on the fight against fraud to the Union's financial interests by means of criminal law (OJ L 198, 28.7.2017, p. 29).
[6] OJ C 316, 27.11.1995, p. 48.
[7] Council Regulation (EC, Euratom) No 2988/95 of 18 December 1995 on the protection of the European Communities financial interests (OJ L 312, 23.12.1995, p. 1).
[8] For the definition, see Article 180(2)(a) EU Financial Regulation 2018/1046: '**action grant**' means an EU grant to finance "an action intended to help achieve a Union policy objective".

5.2 Maximum grant amount

The maximum grant amount is set out in the Data Sheet (see Point 3) and in the estimated budget (Annex 2).

5.3 Funding rate

Not applicable

5.4 Estimated budget, budget categories and forms of funding

The estimated budget for the action is set out in Annex 2.

It contains the estimated eligible contributions for the action (unit contributions), broken down by participant and budget category.

Annex 2 also shows the types of contributions (forms of funding)[9] to be used for each budget category.

The details on the calculation of the unit contributions will be explained in Annex 2a.

5.5 Budget flexibility

The budget breakdown may be adjusted — without an amendment (see Article 39) — by transfers of units between participants, as long as this does not imply any substantive or important change to the description of the action in Annex 1. Transfers between budget categories are not allowed.

ARTICLE 6 — ELIGIBLE AND INELIGIBLE CONTRIBUTIONS

6.1 General eligibility conditions

The **general eligibility conditions** for the unit contributions are the following:

(a) the units must:

- be actually used or produced by the beneficiary in the period set out in Article 4 (with the exception of units relating to the submission of the final periodic report, which may be used or produced afterwards; see Article 21)
- be necessary for the implementation of the action and

(b) the number of units must be identifiable and verifiable, in particular supported by records and documentation (see Article 20).

6.2 Specific eligibility conditions for each budget category

For each budget category, the **specific eligibility conditions** are as follows:

A. Contributions for recruited researchers

Contributions for recruited researchers (A.1 Living allowance, A.2 Mobility allowance, A.3 Family

[9] See Article 125 EU Financial Regulation 2018/1046.

allowance, A.4 Long-term leave allowance and A.5 Special needs allowance) are eligible, if they fulfil the general eligibility conditions and are calculated as unit contributions in accordance with the method set out in Annex 2a, and if:

for A.1 Living allowance and A.2 Mobility allowance:

(a) the number of units declared:

(i) corresponds to the number of months spent by the recruited researchers on the research training activities and

(ii) does not exceed the maximum number of months (per researcher) set out in the call conditions

(b) the recruited researchers comply with the following conditions:

(i) be — at the date of the call deadline — a post-doctoral researcher (i.e. in possession of a doctoral degree[10])

(ii) be recruited by the beneficiaries under an employment contract (or other direct contract with equivalent benefits, including social security coverage) or — if not otherwise possible under national law — under a fixed amount fellowship agreement with minimum social security coverage, including during periods of secondment

(iii) be employed full-time, unless the granting authority has approved a part-time employment for professional, personal or family reasons, and

(iv) be working exclusively for the action, unless part-time for professional reasons has been approved

(c) the contributions have been fully incurred for the benefit of the recruited researchers

This condition is met if:

{{**total remuneration costs** (salaries, social security contributions, taxes and other costs included in the remuneration under the employment contract or other direct contract) or **total fixed-amount fellowship costs** for the researcher during the action

plus

total mobility costs (household, relocation and travel expenses and, if they must be paid under national law, taxes, duties and social security contributions) for the researcher during the action}

divided by

the number of actual units}.

is equal to or higher than the following amount:

{amount per unit contribution set out in Annex 2 as living allowance

plus

amount per unit contribution set out in Annex 2 as mobility allowance}.

[10] As defined in the call conditions.

for A.3 Family allowance:

(a) the recruited researchers have a family.

'Family' means persons linked to the researcher by marriage (or a relationship with equivalent status to a marriage recognised by the legislation of the country where this relationship was formalised) or dependent children who are actually being maintained by the researcher.

(b) the number of units declared:

(i) corresponds to the number of months spent by the recruited researchers with a family on the research training activities and

(ii) does not exceed the maximum number of months (per researcher) set out in the call conditions.

(c) the contributions have been fully incurred for the benefit of the recruited researchers

This condition is met if they have been fully used for the recruited researchers for whom they are claimed.

for A.4 Long-term leave[11] allowance:

(a) the general and specific eligibility conditions for the living and mobility allowances were fulfilled before the long-term leave and

(b) the number of units declared corresponds to the number of months paid by the beneficiary.

for A.5 Special needs allowance:

(a) they are used for recruited researchers with disabilities whose long-term physical, mental, intellectual or sensory impairments are certified by a competent national authority and of such nature that their participation in the action would not be possible without the special needs items or services

(b) the special needs items or services are not already covered from another source (such as social security or health insurance)

(c) the number of units declared corresponds to the number of special needs units that were needed for implementing the action.

B. Institutional contributions

Institutional contributions (B.1 Research, training and networking contribution and B.2 Management and indirect contribution) are eligible, if they are calculated as unit contributions in accordance with the method set out in Annex 2a, and if the living and mobility allowances are eligible.

6.3 Ineligible contributions

'Ineligible contributions' are:

[11] Long-term leave includes maternity, paternity, parental, sick or special leave of more than 30 days.

(a) units that do not comply with the conditions set out above (see Article 6.1 and 6.2)

(b) units implemented during grant agreement suspension (see Article 31) and

(c) units for activities already funded under other EU grants (or grants awarded by an EU Member State, non-EU country or other body implementing the EU budget), except for the following case:

(i) Synergy actions: not applicable

(d) other:

(i) country restrictions for eligible costs: not applicable.

6.4 Consequences of non-compliance

If a beneficiary declares unit contributions that are ineligible, they will be rejected (see Article 27).

This may also lead to other measures described in Chapter 5.

CHAPTER 4 GRANT IMPLEMENTATION

SECTION 1 CONSORTIUM: BENEFICIARIES, AFFILIATED ENTITIES AND OTHER PARTICIPANTS

ARTICLE 7 — BENEFICIARIES

The beneficiaries, as signatories of the Agreement, are fully responsible towards the granting authority for implementing it and for complying with all its obligations.

They must implement the Agreement to their best abilities, in good faith and in accordance with all the obligations and terms and conditions it sets out.

They must have the appropriate resources to implement the action and implement the action under their own responsibility and in accordance with Article 11. If they rely on affiliated entities or other participants (see Articles 8 and 9), they retain sole responsibility towards the granting authority and the other beneficiaries.

They are jointly responsible for the *technical* implementation of the action. If one of the beneficiaries fails to implement their part of the action, the other beneficiaries must ensure that this part is implemented by someone else (without being entitled to an increase of the maximum grant amount and subject to an amendment; see Article 39). The *financial* responsibility of each beneficiary in case of recoveries is governed by Article 22.

The beneficiaries (and their action) must remain eligible under the EU programme funding the grant for the entire duration of the action. Unit contributions will be eligible only as long as the beneficiary and the action are eligible.

The **internal roles and responsibilities** of the beneficiaries are divided as follows:

(a) Each beneficiary must:

(i) keep information stored in the Portal Participant Register up to date (see Article 19)

(ii) inform the granting authority (and the other beneficiaries) immediately of any events or circumstances likely to affect significantly or delay the implementation of the action (see Article 19)

(iii) submit to the coordinator in good time:

- the prefinancing guarantees (if required; see Article 23)
- the financial statements and certificates on the financial statements (CFS) (if required; see Articles 21 and 24.2 and Data Sheet, Point 4.3)
- the contribution to the deliverables and technical reports (see Article 21)
- any other documents or information required by the granting authority under the Agreement

(iv) submit via the Portal data and information related to the participation of their affiliated entities.

(b) The coordinator must:

(i) monitor that the action is implemented properly (see Article 11)

(ii) act as the intermediary for all communications between the consortium and the granting authority, unless the Agreement or granting authority specifies otherwise, and in particular:

- submit the prefinancing guarantees to the granting authority (if any)
- request and review any documents or information required and verify their quality and completeness before passing them on to the granting authority
- submit the deliverables and reports to the granting authority
- inform the granting authority about the payments made to the other beneficiaries (report on the distribution of payments; if required, see Articles 22 and 32)

(iii) distribute the payments received from the granting authority to the other beneficiaries without unjustified delay (see Article 22).

The coordinator may not delegate or subcontract the above-mentioned tasks to any other beneficiary or third party (including affiliated entities).

However, coordinators which are public bodies may delegate the tasks set out in Point (b)(ii) last indent and (iii) above to entities with ‘authorisation to administer’ which they have created or which are controlled by or affiliated to them. In this case, the coordinator retains sole responsibility for the payments and for compliance with the obligations under the Agreement.

Moreover, coordinators which are 'sole beneficiaries'[12] (or similar, such as European research infrastructure consortia (ERICs)) may delegate the tasks set out in Point (b)(i) to (iii) above to one of their members. The coordinator retains sole responsibility for compliance with the obligations under the Agreement.

The beneficiaries must have **internal arrangements** regarding their operation and co-ordination, to ensure that the action is implemented properly.

If required by the granting authority (see Data Sheet, Point 1), these arrangements must be set out in a written **consortium agreement** between the beneficiaries, covering for instance:

- the internal organisation of the consortium
- the management of access to the Portal
- different distribution keys for the payments and financial responsibilities in case of recoveries (if any)
- additional rules on rights and obligations related to background and results (see Article 16)
- settlement of internal disputes
- liability, indemnification and confidentiality arrangements between the beneficiaries.

The internal arrangements must not contain any provision contrary to this Agreement.

ARTICLE 8 — AFFILIATED ENTITIES

Not applicable

ARTICLE 9 — OTHER PARTICIPANTS INVOLVED IN THE ACTION

9.1 Associated partners

Not applicable

9.2 Third parties giving in-kind contributions to the action

Other third parties may give in-kind contributions to the action (i.e. personnel, equipment, other goods, works and services, etc. which are free-of-charge) if necessary for the implementation.

Third parties giving in-kind contributions do not implement any action tasks. They may not charge contributions to the action (no unit contributions) and their costs are considered entirely covered by the unit contributions paid to the beneficiaries.

The third parties and their in-kind contributions should be set out in Annex 1.

9.3 Subcontractors

[12] For the definition, see Article 187(2) EU Financial Regulation 2018/1046: "Where several entities satisfy the criteria for being awarded a grant and together form one entity, that entity may be treated as the **sole beneficiary**, including where it is specifically established for the purpose of implementing the action financed by the grant."

Subcontractors may participate in the action, if necessary for the implementation.

Subcontractors must implement their action tasks in accordance with Article 11. The beneficiaries' costs for subcontracting are considered entirely covered by the unit contributions (irrespective of the actual subcontracting costs incurred, if any).

The beneficiaries must ensure that their contractual obligations under Articles 11 (proper implementation), 12 (conflict of interest), 13 (confidentiality and security), 14 (ethics), 17.2 (visibility), 18 (specific rules for carrying out action), 19 (information) and 20 (record-keeping) also apply to the subcontractors.

The beneficiaries must ensure that the bodies mentioned in Article 25 (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.) can exercise their rights also towards the subcontractors.

9.4 Recipients of financial support to third parties

If the action includes providing financial support to third parties (e.g. grants, prizes or similar forms of support), the beneficiaries must ensure that their contractual obligations under Articles 12 (conflict of interest), 13 (confidentiality and security), 14 (ethics), 17.2 (visibility), 18 (specific rules for carrying out action), 19 (information) and 20 (record-keeping)also apply to the third parties receiving the support (recipients).

The beneficiaries must also ensure that the bodies mentioned in Article 25 (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.) can exercise their rights also towards the recipients.

ARTICLE 10 — PARTICIPANTS WITH SPECIAL STATUS

10.1 Non-EU participants

Participants which are established in a non-EU country (if any) undertake to comply with their obligations under the Agreement and:

- to respect general principles (including fundamental rights, values and ethical principles, environmental and labour standards, rules on classified information, intellectual property rights, visibility of funding and protection of personal data)

- for the submission of certificates under Article 24: to use qualified external auditors which are independent and comply with comparable standards as those set out in EU Directive 2006/43/EC[13]

- for the controls under Article 25: to allow for checks, reviews, audits and investigations (including on-the-spot checks, visits and inspections) by the bodies mentioned in that Article (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.).

Special rules on dispute settlement apply (see Data Sheet, Point 5).

10.2 Participants which are international organisations

[13] Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts or similar national regulations (OJ L 157, 9.6.2006, p. 87).

Participants which are international organisations (IOs; if any) undertake to comply with their obligations under the Agreement and:

- to respect general principles (including fundamental rights, values and ethical principles, environmental and labour standards, rules on classified information, intellectual property rights, visibility of funding and protection of personal data)

- for the submission of certificates under Article 24: to use either independent public officers or external auditors which comply with comparable standards as those set out in EU Directive 2006/43/EC

- for the controls under Article 25: to allow for the checks, reviews, audits and investigations by the bodies mentioned in that Article, taking into account the specific agreements concluded by them and the EU (if any).

For such participants, nothing in the Agreement will be interpreted as a waiver of their privileges or immunities, as accorded by their constituent documents or international law.

Special rules on applicable law and dispute settlement apply (see Article 43 and Data Sheet, Point 5).

10.3 Pillar-assessed participants

Pillar-assessed participants (if any) may rely on their own systems, rules and procedures, in so far as they have been positively assessed and do not call into question the decision awarding the grant or breach the principle of equal treatment of applicants or beneficiaries.

'Pillar-assessment' means a review by the European Commission on the systems, rules and procedures which participants use for managing EU grants (in particular internal control system, accounting system, external audits, financing of third parties, rules on recovery and exclusion, information on recipients and protection of personal data; see Article 154 EU Financial Regulation 2018/1046).

Participants with a positive pillar assessment may rely on their own systems, rules and procedures, in particular for:

- record-keeping (Article 20): may be done in accordance with internal standards, rules and procedures

- currency conversion for financial statements (Article 21): may be done in accordance with usual accounting practices

- guarantees (Article 23): for public law bodies, prefinancing guarantees are not needed

- certificates (Article 24):

    - certificates on the financial statements (CFS): may be provided by their regular internal or external auditors and in accordance with their internal financial regulations and procedures

    - certificates on usual accounting practices (CoMUC): are not needed if those practices are covered by an ex-ante assessment

and use the following specific rules, for:

- recoveries (Article 22): in case of financial support to third parties, there will be no recovery if the participant has done everything possible to retrieve the undue amounts from the third party receiving the support (including legal proceedings) and non-recovery is not due to an error or negligence on its part

- checks, reviews, audits and investigations by the EU (Article 25): will be conducted taking into account the rules and procedures specifically agreed between them and the framework agreement (if any)

- impact evaluation (Article 26): will be conducted in accordance with the participant's internal rules and procedures and the framework agreement (if any)

- grant agreement suspension (Article 31): certain costs incurred during grant suspension are eligible (notably, minimum costs necessary for a possible resumption of the action and costs relating to contracts which were entered into before the pre-information letter was received and which could not reasonably be suspended, reallocated or terminated on legal grounds)

- grant agreement termination (Article 32): the final grant amount and final payment will be calculated taking into account also costs relating to contracts due for execution only after termination takes effect, if the contract was entered into before the pre-information letter was received and could not reasonably be terminated on legal grounds

- liability for damages (Article 33.2): the granting authority must be compensated for damage it sustains as a result of the implementation of the action or because the action was not implemented in full compliance with the Agreement only if the damage is due to an infringement of the participant's internal rules and procedures or due to a violation of third parties' rights by the participant or one of its employees or individual for whom the employees are responsible.

Participants whose pillar assessment covers procurement and granting procedures may also do purchases, subcontracting and financial support to third parties (Article 6.2) in accordance with their internal rules and procedures for purchases, subcontracting and financial support.

Participants whose pillar assessment covers data protection rules may rely on their internal standards, rules and procedures for data protection (Article 15).

The participants may however not rely on provisions which would breach the principle of equal treatment of applicants or beneficiaries or call into question the decision awarding the grant, such as in particular:

- eligibility (Article 6)

- consortium roles and set-up (Articles 7-9)

- security and ethics (Articles 13, 14)

- IPR (including background and results, access rights and rights of use), communication, dissemination and visibility (Articles 16 and 17)

- information obligation (Article 19)

- payment, reporting and amendments (Articles 21, 22 and 39)

- rejections, reductions, suspensions and terminations (Articles 27, 28, 29-32)

If the pillar assessment was subject to remedial measures, reliance on the internal systems, rules and procedures is subject to compliance with those remedial measures.

Participants whose assessment has not yet been updated to cover (the new rules on) data protection may rely on their internal systems, rules and procedures, provided that they ensure that personal data is:

- processed lawfully, fairly and in a transparent manner in relation to the data subject
- collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes
- adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed
- accurate and, where necessary, kept up to date
- kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data is processed and
- processed in a manner that ensures appropriate security of the personal data.

Participants must inform the coordinator without delay of any changes to the systems, rules and procedures that were part of the pillar assessment. The coordinator must immediately inform the granting authority.

Pillar-assessed participants that have also concluded a framework agreement with the EU, may moreover — under the same conditions as those above (i.e. not call into question the decision awarding the grant or breach the principle of equal treatment of applicants or beneficiaries) — rely on the provisions set out in that framework agreement.

SECTION 2 RULES FOR CARRYING OUT THE ACTION

ARTICLE 11 — PROPER IMPLEMENTATION OF THE ACTION

11.1 Obligation to properly implement the action

The beneficiaries must implement the action as described in Annex 1 and in compliance with the provisions of the Agreement, the call conditions and all legal obligations under applicable EU, international and national law.

11.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

ARTICLE 12 — CONFLICT OF INTERESTS

12.1 Conflict of interests

The beneficiaries must take all measures to prevent any situation where the impartial and objective implementation of the Agreement could be compromised for reasons involving family, emotional life, political or national affinity, economic interest or any other direct or indirect interest (‘conflict of interests’).

They must formally notify the granting authority without delay of any situation constituting or likely to lead to a conflict of interests and immediately take all the necessary steps to rectify this situation.

The granting authority may verify that the measures taken are appropriate and may require additional measures to be taken by a specified deadline.

12.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28) and the grant or the beneficiary may be terminated (see Article 32).

Such breaches may also lead to other measures described in Chapter 5.

ARTICLE 13 — CONFIDENTIALITY AND SECURITY

13.1 Sensitive information

The parties must keep confidential any data, documents or other material (in any form) that is identified as sensitive in writing (‘sensitive information’) — during the implementation of the action and for at least until the time-limit set out in the Data Sheet (see Point 6).

If a beneficiary requests, the granting authority may agree to keep such information confidential for a longer period.

Unless otherwise agreed between the parties, they may use sensitive information only to implement the Agreement.

The beneficiaries may disclose sensitive information to their personnel or other participants involved in the action only if they:

(a) need to know it in order to implement the Agreement and

(b) are bound by an obligation of confidentiality.

The granting authority may disclose sensitive information to its staff and to other EU institutions and bodies.

It may moreover disclose sensitive information to third parties, if:

(a) this is necessary to implement the Agreement or safeguard the EU financial interests and

(b) the recipients of the information are bound by an obligation of confidentiality.

The confidentiality obligations no longer apply if:

(a) the disclosing party agrees to release the other party

(b) the information becomes publicly available, without breaching any confidentiality obligation

(c) the disclosure of the sensitive information is required by EU, international or national law.

Specific confidentiality rules (if any) are set out in Annex 5.

13.2 Classified information

The parties must handle classified information in accordance with the applicable EU, international or national law on classified information (in particular, Decision 2015/444[14] and its implementing rules).

Deliverables which contain classified information must be submitted according to special procedures agreed with the granting authority.

Action tasks involving classified information may be subcontracted only after explicit approval (in writing) from the granting authority.

Classified information may not be disclosed to any third party (including participants involved in the action implementation) without prior explicit written approval from the granting authority.

Specific security rules (if any) are set out in Annex 5.

13.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

ARTICLE 14 — ETHICS AND VALUES

14.1 Ethics

The action must be carried out in line with the highest ethical standards and the applicable EU, international and national law on ethical principles.

Specific ethics rules (if any) are set out in Annex 5.

14.2 Values

The beneficiaries must commit to and ensure the respect of basic EU values (such as respect for human dignity, freedom, democracy, equality, the rule of law and human rights, including the rights of minorities).

Specific rules on values (if any) are set out in Annex 5.

14.3 Consequences of non-compliance

[14] Commission Decision 2015/444/EC, Euratom of 13 March 2015 on the security rules for protecting EU classified information (OJ L 72, 17.3.2015, p. 53).

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

ARTICLE 15 — DATA PROTECTION

15.1 Data processing by the granting authority

Any personal data under the Agreement will be processed under the responsibility of the data controller of the granting authority in accordance with and for the purposes set out in the Portal Privacy Statement.

For grants where the granting authority is the European Commission, an EU regulatory or executive agency, joint undertaking or other EU body, the processing will be subject to Regulation 2018/1725[15].

15.2 Data processing by the beneficiaries

The beneficiaries must process personal data under the Agreement in compliance with the applicable EU, international and national law on data protection (in particular, Regulation 2016/679[16]).

They must ensure that personal data is:

- processed lawfully, fairly and in a transparent manner in relation to the data subjects
- collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes
- adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed
- accurate and, where necessary, kept up to date
- kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data is processed and
- processed in a manner that ensures appropriate security of the data.

The beneficiaries may grant their personnel access to personal data only if it is strictly necessary for implementing, managing and monitoring the Agreement. The beneficiaries must ensure that the personnel is under a confidentiality obligation.

The beneficiaries must inform the persons whose data are transferred to the granting authority and provide them with the Portal Privacy Statement.

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[15] Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC (OJ L 295, 21.11.2018, p. 39).

[16] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (‘GDPR’) (OJ L 119, 4.5.2016, p. 1).

15.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

ARTICLE 16 — INTELLECTUAL PROPERTY RIGHTS (IPR) — BACKGROUND AND RESULTS —ACCESS RIGHTS AND RIGHTS OF USE

16.1 Background and access rights to background

The beneficiaries must give each other and the other participants access to the background identified as needed for implementing the action, subject to any specific rules in Annex 5.

'Background' means any data, know-how or information — whatever its form or nature (tangible or intangible), including any rights such as intellectual property rights — that is:

(a) held by the beneficiaries before they acceded to the Agreement and

(b) needed to implement the action or exploit the results.

If background is subject to rights of a third party, the beneficiary concerned must ensure that it is able to comply with its obligations under the Agreement.

16.2 Ownership of results

The granting authority does not obtain ownership of the results produced under the action.

'Results' means any tangible or intangible effect of the action, such as data, know-how or information, whatever its form or nature, whether or not it can be protected, as well as any rights attached to it, including intellectual property rights.

16.3 Rights of use of the granting authority on materials, documents and information received for policy, information, communication, dissemination and publicity purposes

The granting authority has the right to use non-sensitive information relating to the action and materials and documents received from the beneficiaries (notably summaries for publication, deliverables, as well as any other material, such as pictures or audio-visual material, in paper or electronic form) for policy, information, communication, dissemination and publicity purposes — during the action or afterwards.

The right to use the beneficiaries' materials, documents and information is granted in the form of a royalty-free, non-exclusive and irrevocable licence, which includes the following rights:

(a) **use for its own purposes** (in particular, making them available to persons working for the granting authority or any other EU service (including institutions, bodies, offices, agencies, etc.) or EU Member State institution or body; copying or reproducing them in whole or in part, in unlimited numbers; and communication through press information services)

(b) **distribution to the public** (in particular, publication as hard copies and in electronic or digital format, publication on the internet, as a downloadable or non-downloadable file, broadcasting

by any channel, public display or presentation, communicating through press information services, or inclusion in widely accessible databases or indexes)

(c) **editing or redrafting** (including shortening, summarising, inserting other elements (e.g. meta-data, legends, other graphic, visual, audio or text elements), extracting parts (e.g. audio or video files), dividing into parts, use in a compilation)

(d) **translation**

(e) **storage** in paper, electronic or other form

(f) **archiving**, in line with applicable document-management rules

(g) the right to authorise **third parties** to act on its behalf or sub-license to third parties the modes of use set out in Points (b), (c), (d) and (f), if needed for the information, communication and publicity activity of the granting authority

(h) **processing**, analysing, aggregating the materials, documents and information received and **producing derivative works**.

The rights of use are granted for the whole duration of the industrial or intellectual property rights concerned.

If materials or documents are subject to moral rights or third party rights (including intellectual property rights or rights of natural persons on their image and voice), the beneficiaries must ensure that they comply with their obligations under this Agreement (in particular, by obtaining the necessary licences and authorisations from the rights holders concerned).

Where applicable, the granting authority will insert the following information:

"© – [year] – [name of the copyright owner]. All rights reserved. Licensed to the [name of granting authority] under conditions."

16.4 Specific rules on IPR, results and background

Specific rules regarding intellectual property rights, results and background (if any) are set out in Annex 5.

16.5 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such a breach may also lead to other measures described in Chapter 5.

ARTICLE 17 — COMMUNICATION, DISSEMINATION AND VISIBILITY

17.1 Communication — Dissemination — Promoting the action

Unless otherwise agreed with the granting authority, the beneficiaries must promote the action and its results by providing targeted information to multiple audiences (including the media and the public), in accordance with Annex 1 and in a strategic, coherent and effective manner.

Before engaging in a communication or dissemination activity expected to have a major media impact, the beneficiaries must inform the granting authority.

17.2 Visibility — European flag and funding statement

Unless otherwise agreed with the granting authority, communication activities of the beneficiaries related to the action (including media relations, conferences, seminars, information material, such as brochures, leaflets, posters, presentations, etc., in electronic form, via traditional or social media, etc.), dissemination activities and any infrastructure, equipment, vehicles, supplies or major result funded by the grant must acknowledge EU support and display the European flag (emblem) and funding statement (translated into local languages, where appropriate):

The emblem must remain distinct and separate and cannot be modified by adding other visual marks, brands or text.

Apart from the emblem, no other visual identity or logo may be used to highlight the EU support.

When displayed in association with other logos (e.g. of beneficiaries or sponsors), the emblem must be displayed at least as prominently and visibly as the other logos.

For the purposes of their obligations under this Article, the beneficiaries may use the emblem without first obtaining approval from the granting authority. This does not, however, give them the right to exclusive use. Moreover, they may not appropriate the emblem or any similar trademark or logo, either by registration or by any other means.

17.3 Quality of information — Disclaimer

Any communication or dissemination activity related to the action must use factually accurate information.

Moreover, it must indicate the following disclaimer (translated into local languages where appropriate):

> "Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or [name of the granting authority]. Neither the European Union nor the granting authority can be held responsible for them."

17.4 Specific communication, dissemination and visibility rules

Specific communication, dissemination and visibility rules (if any) are set out in Annex 5.

17.5 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

ARTICLE 18 — SPECIFIC RULES FOR CARRYING OUT THE ACTION

18.1 Specific rules for carrying out the action

Specific rules for implementing the action (if any) are set out in Annex 5.

18.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such a breach may also lead to other measures described in Chapter 5.

SECTION 3 GRANT ADMINISTRATION

ARTICLE 19 — GENERAL INFORMATION OBLIGATIONS

19.1 Information requests

The beneficiaries must provide — during the action or afterwards and in accordance with Article 7 — any information requested in order to verify eligibility of the unit contributions declared, proper implementation of the action and compliance with the other obligations under the Agreement.

The information provided must be accurate, precise and complete and in the format requested, including electronic format.

19.2 Participant Register data updates

The beneficiaries must keep — at all times, during the action or afterwards — their information stored in the Portal Participant Register up to date, in particular, their name, address, legal representatives, legal form and organisation type.

19.3 Information about events and circumstances which impact the action

The beneficiaries must immediately inform the granting authority (and the other beneficiaries) of any of the following:

(a) **events** which are likely to affect or delay the implementation of the action or affect the EU's financial interests, in particular:

(i) changes in their legal, financial, technical, organisational or ownership situation (including changes linked to one of the exclusion grounds listed in the declaration of honour signed before grant signature)

(ii) linked action information: not applicable

(b) **circumstances** affecting:

(i) the decision to award the grant or

(ii) compliance with requirements under the Agreement.

19.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

ARTICLE 20 — RECORD-KEEPING

20.1 Keeping records and supporting documents

The beneficiaries must — at least until the time-limit set out in the Data Sheet (see Point 6) — keep records and other supporting documents to prove the proper implementation of the action in line with the accepted standards in the respective field (if any).

In addition, the beneficiaries must — for the same period — keep adequate records and supporting documents to prove the number of units declared; beneficiaries do not need to keep specific records on the actual costs incurred.

The records and supporting documents must be made available upon request (see Article 19) or in the context of checks, reviews, audits or investigations (see Article 25).

If there are on-going checks, reviews, audits, investigations, litigation or other pursuits of claims under the Agreement (including the extension of findings; see Article 25), the beneficiaries must keep these records and other supporting documentation until the end of these procedures.

The beneficiaries must keep the original documents. Digital and digitalised documents are considered originals if they are authorised by the applicable national law. The granting authority may accept non-original documents if they offer a comparable level of assurance.

20.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, unit contributions insufficiently

substantiated will be ineligible (see Article 6) and will be rejected (see Article 27), and the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

ARTICLE 21 — REPORTING

21.1 Continuous reporting

The beneficiaries must continuously report on the progress of the action (e.g. **deliverables, milestones, outputs/outcomes, critical risks, indicators,** etc; if any), in the Portal Continuous Reporting tool and in accordance with the timing and conditions it sets out (as agreed with the granting authority).

Standardised deliverables (e.g. progress reports not linked to payments, reports on cumulative expenditure, special reports, etc; if any) must be submitted using the templates published on the Portal.

21.2 Periodic reporting: Technical reports and financial statements

In addition, the beneficiaries must provide reports to request payments, in accordance with the schedule and modalities set out in the Data Sheet (see Point 4.2):

- for additional prefinancings (if any): an **additional prefinancing report**
- for interim payments (if any) and the final payment: a **periodic report**.

The prefinancing and periodic reports include a technical and financial part.

The technical part includes an overview of the action implementation. It must be prepared using the template available in the Portal Periodic Reporting tool.

The financial part of the additional prefinancing report includes a statement on the use of the previous prefinancing payment.

The financial part of the periodic report includes:

- the financial statements (individual and consolidated; for all beneficiaries/affiliated entities)
- the explanation on the use of resources (or detailed cost reporting table, if required)
- the certificates on the financial statements (CFS): not applicable.

The **financial statements** must detail the contributions for the units implemented in the reporting period.

Unit contributions which are not declared in a financial statement will not be taken into account by the granting authority.

By signing the financial statements (directly in the Portal Periodic Reporting tool), the beneficiaries confirm that:

- the information provided is complete, reliable and true

- the unit contributions declared are eligible (see Article 6)

- the contributions can be substantiated by adequate records and supporting documents (see Article 20) that will be produced upon request (see Article 19) or in the context of checks, reviews, audits and investigations (see Article 25)

Beneficiaries will have to submit also the financial statements of their affiliated entities (if any). In case of recoveries (see Article 22), beneficiaries will be held responsible also for the financial statements of their affiliated entities.

21.3 Currency for financial statements and conversion into euros

The financial statements must be drafted in euro.

21.4 Reporting language

The reporting must be in the language of the Agreement, unless otherwise agreed with the granting authority (see Data Sheet, Point 4.2).

21.5 Consequences of non-compliance

If a report submitted does not comply with this Article, the granting authority may suspend the payment deadline (see Article 29) and apply other measures described in Chapter 5.

If the coordinator breaches its reporting obligations, the granting authority may terminate the grant or the coordinator's participation (see Article 32) or apply other measures described in Chapter 5.

ARTICLE 22 — PAYMENTS AND RECOVERIES — CALCULATION OF AMOUNTS DUE

22.1 Payments and payment arrangements

Payments will be made in accordance with the schedule and modalities set out in the Data Sheet (see Point 4.2).

They will be made in euro to the bank account indicated by the coordinator (see Data Sheet, Point 4.2) and must be distributed without unjustified delay (restrictions may apply to distribution of the initial prefinancing payment; see Data Sheet, Point 4.2).

Payments to this bank account will discharge the granting authority from its payment obligation.

The cost of payment transfers will be borne as follows:

- the granting authority bears the cost of transfers charged by its bank

- the beneficiary bears the cost of transfers charged by its bank

- the party causing a repetition of a transfer bears all costs of the repeated transfer.

Payments by the granting authority will be considered to have been carried out on the date when they are debited to its account.

22.2 Recoveries

Recoveries will be made, if — at beneficiary termination, final payment or afterwards — it turns out that the granting authority has paid too much and needs to recover the amounts undue.

Each beneficiary's financial responsibility in case of recovery is in principle limited to their own debt and undue amounts of their affiliated entities.

In case of enforced recoveries (see Article 22.4), affiliated entities will be held liable for repaying debts of their beneficiaries, if required by the granting authority (see Data Sheet, Point 4.4).

22.3 Amounts due

22.3.1 Prefinancing payments

The aim of the prefinancing is to provide the beneficiaries with a float.

It remains the property of the EU until the final payment.

For **initial prefinancings** (if any), the amount due, schedule and modalities are set out in the Data Sheet (see Point 4.2).

For **additional prefinancings** (if any), the amount due, schedule and modalities are also set out in the Data Sheet (see Point 4.2). However, if the statement on the use of the previous prefinancing payment shows that less than 70% was used, the amount set out in the Data Sheet will be reduced by the difference between the 70% threshold and the amount used.

The contribution to the Mutual Insurance Mechanism will be retained from the prefinancing payments (at the rate and in accordance with the modalities set out in the Data Sheet, see Point 4.2) and transferred to the Mechanism.

Prefinancing payments (or parts of them) may be offset (without the beneficiaries' consent) against amounts owed by a beneficiary to the granting authority — up to the amount due to that beneficiary.

For grants where the granting authority is the European Commission or an EU executive agency, offsetting may also be done against amounts owed to other Commission services or executive agencies.

Payments will not be made if the payment deadline or payments are suspended (see Articles 29 and 30).

22.3.2 Amount due at beneficiary termination — Recovery

At beneficiary termination there will be no payment, but the grant must be provisionally closed for the beneficiary which leaves the consortium (and the affiliated entities which had to end their participation together with the beneficiary, if any).

Payments (if any) will be made with the next interim or final payment.

The **amount due** will be calculated in the following step:

Step 1 — Calculation of the total accepted EU contribution

Step 1 — Calculation of the total accepted EU contribution

The granting authority will first calculate the 'accepted EU contribution' for the beneficiary for all reporting periods, by calculating the unit contributions for the accepted units.

After that, the granting authority will take into account grant reductions (if any). The resulting amount is the 'total accepted EU contribution' for the beneficiary.

The **balance** is then calculated by deducting the payments received (if any; see report on the distribution of payments in Article 32), from the total accepted EU contribution:

{total accepted EU contribution for the beneficiary

minus

{prefinancing and interim payments received (if any)}}.

If the balance is **positive**, the amount will be included in the next interim or final payment to the consortium.

If the balance is **negative**, it will be **recovered** in accordance with the following procedure:

The granting authority will send a **pre-information letter** to the beneficiary concerned:

- formally notifying the intention to recover, the amount due, the amount to be recovered and the reasons why and
- requesting observations within 30 days of receiving notification.

If no observations are submitted (or the granting authority decides to pursue recovery despite the observations it has received), it will confirm the amount to be recovered and ask this amount to be paid to the coordinator (**confirmation letter**).

If payment is not made to the coordinator by the date specified in the confirmation letter, the granting authority may call on the Mutual Insurance Mechanism to intervene, if continuation of the action is guaranteed and the conditions set out in the rules governing the Mechanism are met.

In this case, it will send a **beneficiary recovery letter**, together with a **debit note** with the terms and date for payment.

The debit note for the beneficiary will include the amount calculated for the affiliated entities which also had to end their participation (if any).

If payment is not made by the date specified in the debit note, the granting authority will **enforce recovery** in accordance with Article 22.4.

The amounts will later on also be taken into account for the next interim or final payment.

22.3.3 Interim payments

Interim payments reimburse the eligible contributions claimed for the units implemented during the reporting periods (if any).

Interim payments (if any) will be made in accordance with the schedule and modalities set out the Data Sheet (see Point 4.2).

Payment is subject to the approval of the periodic report. Its approval does not imply recognition of compliance, authenticity, completeness or correctness of its content.

The **interim payment** will be calculated by the granting authority in the following steps:

Step 1 — Calculation of the total accepted EU contribution

Step 2 — Limit to the interim payment ceiling

Step 1 — Calculation of the total accepted EU contribution

The granting authority will first calculate the 'accepted EU contribution' for the action for the reporting period, by calculating the unit contributions for the accepted units.

After that, the granting authority will take into account grant reductions from beneficiary termination (if any). The resulting amount is the 'total accepted EU contribution'.

Step 2 — Limit to the interim payment ceiling

The resulting amount is then capped to ensure that the total amount of prefinancing and interim payments (if any) does not exceed the interim payment ceiling set out in the Data Sheet (see Point 4.2).

Interim payments (or parts of them) may be offset (without the beneficiaries' consent) against amounts owed by a beneficiary to the granting authority — up to the amount due to that beneficiary.

For grants where the granting authority is the European Commission or an EU executive agency, offsetting may also be done against amounts owed to other Commission services or executive agencies.

Payments will not be made if the payment deadline or payments are suspended (see Articles 29 and 30).

22.3.4 Final payment — Final grant amount — Revenues and Profit — Recovery

The final payment (payment of the balance) reimburses the eligible contributions claimed for the remaining units implemented (if any).

The final payment will be made in accordance with the schedule and modalities set out in the Data Sheet (see Point 4.2).

Payment is subject to the approval of the final periodic report. Its approval does not imply recognition of compliance, authenticity, completeness or correctness of its content.

The **final grant amount for the action** will be calculated in the following steps:

Step 1 — Calculation of the total accepted EU contribution

Step 2 — Limit to the maximum grant amount

Step 3 — Reduction due to the no-profit rule

Step 1 — Calculation of the total accepted EU contribution

The granting authority will first calculate the 'accepted EU contribution' for the action for all reporting periods, by calculating the unit contributions for the accepted units.

After that, the granting authority will take into account grant reductions (if any). The resulting amount is the 'total accepted EU contribution'.

Step 2 — Limit to the maximum grant amount

If the resulting amount is higher than the maximum grant amount set out in Article 5.2, it will be limited to the latter.

Step 3 — Reduction due to the no-profit rule

Not applicable

The **balance** (final payment) is then calculated by deducting the total amount of prefinancing and interim payments already made (if any), from the final grant amount:

{final grant amount

minus

{prefinancing and interim payments made (if any)}}.

If the balance is **positive**, it will be **paid** to the coordinator.

The amount retained for the Mutual Insurance Mechanism (see above) will be released and **paid** to the coordinator (in accordance with the rules governing the Mechanism).

The final payment (or part of it) may be offset (without the beneficiaries' consent) against amounts owed by a beneficiary to the granting authority — up to the amount due to that beneficiary.

For grants where the granting authority is the European Commission or an EU executive agency, offsetting may also be done against amounts owed to other Commission services or executive agencies.

Payments will not be made if the payment deadline or payments are suspended (see Articles 29 and 30).

If — despite the release of the Mutual Insurance Mechanism contribution — the balance is **negative**, it will be **recovered** in accordance with the following procedure:

The granting authority will send a **pre-information letter** to the coordinator:

- formally notifying the intention to recover, the final grant amount, the amount to be recovered and the reasons why
- requesting a report on the distribution of payments to the beneficiaries within 30 days of receiving notification and
- requesting observations within 30 days of receiving notification.

If no observations are submitted (or the granting authority decides to pursue recovery despite the observations it has received) and the coordinator has submitted the report on the distribution of payments, it will calculate the **share of the debt per beneficiary**, by:

(a) identifying the beneficiaries for which the amount calculated as follows is negative:

{{{total accepted EU contribution for the beneficiary

divided by

total accepted EU contribution for the action}

multiplied by

final grant amount for the action},

minus

{prefinancing and interim payments received by the beneficiary (if any)}}

and

(b) dividing the debt:

{{amount calculated according to point (a) for the beneficiary concerned

divided by

the sum of the amounts calculated according to point (a) for all the beneficiaries identified according to point (a)}

multiplied by

the amount to be recovered}.

and confirm the amount to be recovered from each beneficiary concerned (**confirmation letter**), together with **debit notes** with the terms and date for payment.

The debit notes for beneficiaries will include the amounts calculated for their affiliated entities (if any).

If the coordinator has not submitted the report on the distribution of payments, the granting authority will **recover** the full amount from the coordinator (**confirmation letter** and **debit note** with the terms and date for payment).

If payment is not made by the date specified in the debit note, the granting authority will **enforce recovery** in accordance with Article 22.4.

22.3.5 Audit implementation after final payment — Revised final grant amount — Recovery

If — after the final payment (in particular, after checks, reviews, audits or investigations; see Article 25) — the granting authority rejects unit contributions (see Article 27) or reduces the grant (see Article 28), it will calculate the **revised final grant amount** for the beneficiary concerned.

The **beneficiary revised final grant amount** will be calculated in the following step:

Step 1 — Calculation of the revised total accepted EU contribution

Step 1 — Calculation of the revised total accepted EU contribution

The granting authority will first calculate the 'revised accepted EU contribution' for the beneficiary, by calculating the 'revised accepted contributions'.

After that, it will take into account grant reductions (if any). The resulting 'revised total accepted EU contribution' is the beneficiary revised final grant amount.

If the revised final grant amount is lower than the beneficiary's final grant amount (i.e. its share in the final grant amount for the action), it will be **recovered** in accordance with the following procedure:

The **beneficiary final grant amount** (i.e. share in the final grant amount for the action) is calculated as follows:

{{total accepted EU contribution for the beneficiary

divided by

total accepted EU contribution for the action}

multiplied by

final grant amount for the action}.

The granting authority will send a **pre-information letter** to the beneficiary concerned:

- formally notifying the intention to recover, the amount to be recovered and the reasons why and
- requesting observations within 30 days of receiving notification.

If no observations are submitted (or the granting authority decides to pursue recovery despite the observations it has received), it will confirm the amount to be recovered (**confirmation letter**), together with a **debit note** with the terms and the date for payment.

Recoveries against affiliated entities (if any) will be handled through their beneficiaries.

If payment is not made by the date specified in the debit note, the granting authority will **enforce recovery** in accordance with Article 22.4.

22.4 Enforced recovery

If payment is not made by the date specified in the debit note, the amount due will be recovered:

(a) by offsetting the amount — without the coordinator or beneficiary's consent — against any amounts owed to the coordinator or beneficiary by the granting authority.

In exceptional circumstances, to safeguard the EU financial interests, the amount may be offset before the payment date specified in the debit note.

For grants where the granting authority is the European Commission or an EU executive agency, debts may also be offset against amounts owed by other Commission services or executive agencies.

(b) financial guarantee(s): not applicable

(c) joint and several liability of beneficiaries: not applicable

(d) by holding affiliated entities jointly and severally liable (if any, see Data Sheet, Point 4.4)

(e) by taking legal action (see Article 43) or, provided that the granting authority is the European Commission or an EU executive agency, by adopting an enforceable decision under Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 100(2) of EU Financial Regulation 2018/1046.

If the Mutual Insurance Mechanism was called on by the granting authority to intervene, recovery will be continued in the name of the Mutual Insurance Mechanism. If two debit notes were sent, the second one (in the name of the Mutual Insurance Mechanism) will be considered to replace the first one (in the name of the granting authority). Where the MIM intervened, offsetting, enforceable decisions or any other of the above-mentioned forms of enforced recovery may be used mutatis mutandis.

The amount to be recovered will be increased by **late-payment interest** at the rate set out in Article 22.5, from the day following the payment date in the debit note, up to and including the date the full payment is received.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2015/2366[17] applies.

For grants where the granting authority is an EU executive agency, enforced recovery by offsetting or enforceable decision will be done by the services of the European Commission (see also Article 43).

22.5 Consequences of non-compliance

22.5.1 If the granting authority does not pay within the payment deadlines (see above), the beneficiaries are entitled to **late-payment interest** at the rate applied by the European Central Bank (ECB) for its main refinancing operations in euros ('reference rate'), plus the rate specified in the Data Sheet (Point 4.2). The reference rate is the rate in force on the first day of the month in which the payment deadline expires, as published in the C series of the *Official Journal of the European Union*.

If the late-payment interest is lower than or equal to EUR 200, it will be paid to the coordinator only on request submitted within two months of receiving the late payment.

Late-payment interest is not due if all beneficiaries are EU Member States (including regional and local government authorities or other public bodies acting on behalf of a Member State for the purpose of this Agreement).

If payments or the payment deadline are suspended (see Articles 29 and 30), payment will not be considered as late.

Late-payment interest covers the period running from the day following the due date for payment (see above), up to and including the date of payment.

[17] Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC (OJ L 337, 23.12.2015, p. 35).

Late-payment interest is not considered for the purposes of calculating the final grant amount.

22.5.2 If the coordinator breaches any of its obligations under this Article, the grant may be reduced (see Article 29) and the grant or the coordinator may be terminated (see Article 32).

Such breaches may also lead to other measures described in Chapter 5.

ARTICLE 23 — GUARANTEES

Not applicable

ARTICLE 24 — CERTIFICATES

Not applicable

ARTICLE 25 — CHECKS, REVIEWS, AUDITS AND INVESTIGATIONS — EXTENSION OF FINDINGS

25.1 Granting authority checks, reviews and audits

25.1.1 Internal checks

The granting authority may — during the action or afterwards — check the proper implementation of the action and compliance with the obligations under the Agreement, including assessing unit contributions, deliverables and reports.

25.1.2 Project reviews

The granting authority may carry out reviews on the proper implementation of the action and compliance with the obligations under the Agreement (general project reviews or specific issues reviews).

Such project reviews may be started during the implementation of the action and until the time-limit set out in the Data Sheet (see Point 6). They will be formally notified to the coordinator or beneficiary concerned and will be considered to start on the date of the notification.

If needed, the granting authority may be assisted by independent, outside experts. If it uses outside experts, the coordinator or beneficiary concerned will be informed and have the right to object on grounds of commercial confidentiality or conflict of interest.

The coordinator or beneficiary concerned must cooperate diligently and provide — within the deadline requested — any information and data in addition to deliverables and reports already submitted (including information on the use of resources). The granting authority may request beneficiaries to provide such information to it directly. Sensitive information and documents will be treated in accordance with Article 13.

The coordinator or beneficiary concerned may be requested to participate in meetings, including with the outside experts.

For **on-the-spot visits**, the beneficiary concerned must allow access to sites and premises (including to the outside experts) and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

On the basis of the review findings, a **project review report** will be drawn up.

The granting authority will formally notify the project review report to the coordinator or beneficiary concerned, which has 30 days from receiving notification to make observations.

Project reviews (including project review reports) will be in the language of the Agreement.

25.1.3 Audits

The granting authority may carry out audits on the proper implementation of the action and compliance with the obligations under the Agreement.

Such audits may be started during the implementation of the action and until the time-limit set out in the Data Sheet (see Point 6). They will be formally notified to the beneficiary concerned and will be considered to start on the date of the notification.

The granting authority may use its own audit service, delegate audits to a centralised service or use external audit firms. If it uses an external firm, the beneficiary concerned will be informed and have the right to object on grounds of commercial confidentiality or conflict of interest.

The beneficiary concerned must cooperate diligently and provide — within the deadline requested — any information (including complete accounts, individual salary statements or other personal data) to verify compliance with the Agreement. Sensitive information and documents will be treated in accordance with Article 13.

For **on-the-spot** visits, the beneficiary concerned must allow access to sites and premises (including for the external audit firm) and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

On the basis of the audit findings, a **draft audit report** will be drawn up.

The auditors will formally notify the draft audit report to the beneficiary concerned, which has 30 days from receiving notification to make observations (contradictory audit procedure).

The **final audit report** will take into account observations by the beneficiary concerned and will be formally notified to them.

Audits (including audit reports) will be in the language of the Agreement.

25.2 European Commission checks, reviews and audits in grants of other granting authorities

Where the granting authority is not the European Commission, the latter has the same rights of checks, reviews and audits as the granting authority.

25.3 Access to records for assessing simplified forms of funding

The beneficiaries must give the European Commission access to their statutory records for the periodic assessment of simplified forms of funding which are used in EU programmes.

25.4 OLAF, EPPO and ECA audits and investigations

The following bodies may also carry out checks, reviews, audits and investigations — during the action or afterwards:

- the European Anti-Fraud Office (OLAF) under Regulations No 883/2013[18] and No 2185/96[19]
- the European Public Prosecutor's Office (EPPO) under Regulation 2017/1939
- the European Court of Auditors (ECA) under Article 287 of the Treaty on the Functioning of the EU (TFEU) and Article 257 of EU Financial Regulation 2018/1046.

If requested by these bodies, the beneficiary concerned must provide full, accurate and complete information in the format requested (including complete accounts, individual salary statements or other personal data, including in electronic format) and allow access to sites and premises for on-the-spot visits or inspections — as provided for under these Regulations.

To this end, the beneficiary concerned must keep all relevant information relating to the action, at least until the time-limit set out in the Data Sheet (Point 6) and, in any case, until any ongoing checks, reviews, audits, investigations, litigation or other pursuits of claims have been concluded.

25.5 Consequences of checks, reviews, audits and investigations — Extension of results of reviews, audits or investigations

25.5.1 Consequences of checks, reviews, audits and investigations in this grant

Findings in checks, reviews, audits or investigations carried out in the context of this grant may lead to rejections (see Article 27), grant reduction (see Article 28) or other measures described in Chapter 5.

Rejections or grant reductions after the final payment will lead to a revised final grant amount (see Article 22).

Findings in checks, reviews, audits or investigations during the action implementation may lead to a request for amendment (see Article 39), to change the description of the action set out in Annex 1.

Checks, reviews, audits or investigations that find systemic or recurrent errors, irregularities, fraud or breach of obligations in any EU grant may also lead to consequences in other EU grants awarded under similar conditions ('extension to other grants').

Moreover, findings arising from an OLAF or EPPO investigation may lead to criminal prosecution under national law.

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[18] Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council of 11 September 2013 concerning investigations conducted by the European Anti-Fraud Office (OLAF) and repealing Regulation (EC) No 1073/1999 of the European Parliament and of the Council and Council Regulation (Euratom) No 1074/1999 (OJ L 248, 18/09/2013, p. 1).

[19] Council Regulation (Euratom, EC) No 2185/1996 of 11 November 1996 concerning on-the-spot checks and inspections carried out by the Commission in order to protect the European Communities' financial interests against fraud and other irregularities (OJ L 292, 15/11/1996, p. 2).

25.5.2 Extension from other grants

Results of checks, reviews, audits or investigations in other grants may be extended to this grant, if:

(a) the beneficiary concerned is found, in other EU grants awarded under similar conditions, to have committed systemic or recurrent errors, irregularities, fraud or breach of obligations that have a material impact on this grant and

(b) those findings are formally notified to the beneficiary concerned — together with the list of grants affected by the findings — within the time-limit for audits set out in the Data Sheet (see Point 6).

The granting authority will formally notify the beneficiary concerned of the intention to extend the findings and the list of grants affected.

If the extension concerns **rejections of unit contributions**: the notification will include:

(a) an invitation to submit observations on the list of grants affected by the findings

(b) the request to submit revised financial statements for all grants affected

(c) the correction rate for extrapolation, established on the basis of the systemic or recurrent errors, to calculate the amounts to be rejected, if the beneficiary concerned:

(i) considers that the submission of revised financial statements is not possible or practicable or

(ii) does not submit revised financial statements.

If the extension concerns **grant reductions**: the notification will include:

(a) an invitation to submit observations on the list of grants affected by the findings and

(b) the **correction rate for extrapolation**, established on the basis of the systemic or recurrent errors and the principle of proportionality.

The beneficiary concerned has **60 days** from receiving notification to submit observations, revised financial statements or to propose a duly substantiated **alternative correction method/rate**.

On the basis of this, the granting authority will analyse the impact and decide on the implementation (i.e. start rejection or grant reduction procedures, either on the basis of the revised financial statements or the announced/alternative method/rate or a mix of those; see Articles 27 and 28).

25.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, unit contributions insufficiently substantiated will be ineligible (see Article 6) and will be rejected (see Article 27), and the grant may be reduced (see Article 28).

Such breaches may also lead to other measures described in Chapter 5.

ARTICLE 26 — IMPACT EVALUATIONS

26.1 Impact evaluation

The granting authority may carry out impact evaluations of the action, measured against the objectives and indicators of the EU programme funding the grant.

Such evaluations may be started during implementation of the action and until the time-limit set out in the Data Sheet (see Point 6). They will be formally notified to the coordinator or beneficiaries and will be considered to start on the date of the notification.

If needed, the granting authority may be assisted by independent outside experts.

The coordinator or beneficiaries must provide any information relevant to evaluate the impact of the action, including information in electronic format.

26.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the granting authority may apply the measures described in Chapter 5.

CHAPTER 5 CONSEQUENCES OF NON-COMPLIANCE

SECTION 1 REJECTIONS AND GRANT REDUCTION

ARTICLE 27 — REJECTION OF CONTRIBUTIONS

27.1 Conditions

The granting authority will — at beneficiary termination, interim payment, final payment or afterwards — reject any unit contributions which are ineligible (see Article 6), in particular following checks, reviews, audits or investigations (see Article 25).

The rejection may also be based on the extension of findings from other grants to this grant (see Article 25).

Ineligible unit contributions will be rejected.

27.2 Procedure

If the rejection does not lead to a recovery, the granting authority will formally notify the coordinator or beneficiary concerned of the rejection, the amounts and the reasons why. The coordinator or beneficiary concerned may — within 30 days of receiving notification — submit observations if it disagrees with the rejection (payment review procedure).

If the rejection leads to a recovery, the granting authority will follow the contradictory procedure with pre-information letter set out in Article 22.

27.3 Effects

If the granting authority rejects unit contributions, it will deduct them from the contributions declared and then calculate the amount due (and, if needed, make a recovery; see Article 22).

ARTICLE 28 — GRANT REDUCTION

28.1 Conditions

The granting authority may — at beneficiary termination, final payment or afterwards — reduce the grant for a beneficiary, if:

(a) the beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed:

(i) substantial errors, irregularities or fraud or

(ii) serious breach of obligations under this Agreement or during its award (including improper implementation of the action, non-compliance with the call conditions, submission of false information, failure to provide required information, breach of ethics or security rules (if applicable), etc.), or

(b) the beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed — in other EU grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (see Article 25).

The amount of the reduction will be calculated for each beneficiary concerned and proportionate to the seriousness and the duration of the errors, irregularities or fraud or breach of obligations, by applying an individual reduction rate to their accepted EU contribution.

28.2 Procedure

If the grant reduction does not lead to a recovery, the granting authority will formally notify the coordinator or beneficiary concerned of the reduction, the amount to be reduced and the reasons why. The coordinator or beneficiary concerned may — within 30 days of receiving notification — submit observations if it disagrees with the reduction (payment review procedure).

If the grant reduction leads to a recovery, the granting authority will follow the contradictory procedure with pre-information letter set out in Article 22.

28.3 Effects

If the granting authority reduces the grant, it will deduct the reduction and then calculate the amount due (and, if needed, make a recovery; see Article 22).

SECTION 2 SUSPENSION AND TERMINATION

ARTICLE 29 — PAYMENT DEADLINE SUSPENSION

29.1 Conditions

The granting authority may — at any moment — suspend the payment deadline if a payment cannot be processed because:

(a) the required report (see Article 21) has not been submitted or is not complete or additional information is needed

(b) there are doubts about the amount to be paid (e.g. ongoing audit extension procedure, queries about eligibility, need for a grant reduction, etc.) and additional checks, reviews, audits or investigations are necessary, or

(c) there are other issues affecting the EU financial interests.

29.2 Procedure

The granting authority will formally notify the coordinator of the suspension and the reasons why.

The suspension will **take effect** the day the notification is sent.

If the conditions for suspending the payment deadline are no longer met, the suspension will be **lifted** — and the remaining time to pay (see Data Sheet, Point 4.2) will resume.

If the suspension exceeds two months, the coordinator may request the granting authority to confirm if the suspension will continue.

If the payment deadline has been suspended due to the non-compliance of the report and the revised report is not submitted (or was submitted but is also rejected), the granting authority may also terminate the grant or the participation of the coordinator (see Article 32).

ARTICLE 30 — PAYMENT SUSPENSION

30.1 Conditions

The granting authority may — at any moment — suspend payments, in whole or in part for one or more beneficiaries, if:

(a) a beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed or is suspected of having committed:

(i) substantial errors, irregularities or fraud or

(ii) serious breach of obligations under this Agreement or during its award (including improper implementation of the action, non-compliance with the call conditions, submission of false information, failure to provide required information, breach of ethics or security rules (if applicable), etc.), or

(b) a beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed — in other EU grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant.

If payments are suspended for one or more beneficiaries, the granting authority will make partial payment(s) for the part(s) not suspended. If suspension concerns the final payment, the payment (or recovery) of the remaining amount after suspension is lifted will be considered to be the payment that closes the action.

30.2 Procedure

Before suspending payments, the granting authority will send a **pre-information letter** to the beneficiary concerned:

- formally notifying the intention to suspend payments and the reasons why and
- requesting observations within 30 days of receiving notification.

If the granting authority does not receive observations or decides to pursue the procedure despite the observations it has received, it will confirm the suspension (**confirmation letter**). Otherwise, it will formally notify that the procedure is discontinued.

At the end of the suspension procedure, the granting authority will also inform the coordinator.

The suspension will **take effect** the day after the confirmation notification is sent.

If the conditions for resuming payments are met, the suspension will be **lifted**. The granting authority will formally notify the beneficiary concerned (and the coordinator) and set the suspension end date.

During the suspension, no prefinancing will be paid to the beneficiaries concerned. For interim payments, the periodic reports for all reporting periods except the last one (see Article 21) must not contain any financial statements from the beneficiary concerned (or its affiliated entities). The coordinator must include them in the next periodic report after the suspension is lifted or — if suspension is not lifted before the end of the action — in the last periodic report.

ARTICLE 31 — GRANT AGREEMENT SUSPENSION

31.1 Consortium-requested GA suspension

31.1.1 Conditions and procedure

The beneficiaries may request the suspension of the grant or any part of it, if exceptional circumstances — in particular *force majeure* (see Article 35) — make implementation impossible or excessively difficult.

The coordinator must submit a request for **amendment** (see Article 39), with:

- the reasons why
- the date the suspension takes effect; this date may be before the date of the submission of the amendment request and
- the expected date of resumption.

The suspension will **take effect** on the day specified in the amendment.

Once circumstances allow for implementation to resume, the coordinator must immediately request another **amendment** of the Agreement to set the suspension end date, the resumption date (one day after suspension end date), extend the duration and make other changes necessary to adapt the action to the new situation (see Article 39) — unless the grant has been terminated (see Article 32). The

suspension will be **lifted** with effect from the suspension end date set out in the amendment. This date may be before the date of the submission of the amendment request.

During the suspension, no prefinancing will be paid. Moreover, no units may be implemented. Ongoing units must be interrupted and no new units may be started. Unit contributions for activities implemented during grant suspension are not eligible (see Article 6.3).

31.2 EU-initiated GA suspension

31.2.1 Conditions

The granting authority may suspend the grant or any part of it, if:

(a) a beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed or is suspected of having committed:

  (i) substantial errors, irregularities or fraud or

  (ii) serious breach of obligations under this Agreement or during its award (including improper implementation of the action, non-compliance with the call conditions, submission of false information, failure to provide required information, breach of ethics or security rules (if applicable), etc.), or

(b) a beneficiary (or a person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed — in other EU grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant

(c) other:

  (i) linked action issues: not applicable

  (ii) the action has lost its scientific or technological relevance

31.2.2 Procedure

Before suspending the grant, the granting authority will send a **pre-information letter** to the coordinator:

- formally notifying the intention to suspend the grant and the reasons why and
- requesting observations within 30 days of receiving notification.

If the granting authority does not receive observations or decides to pursue the procedure despite the observations it has received, it will confirm the suspension (**confirmation letter**). Otherwise, it will formally notify that the procedure is discontinued.

The suspension will **take effect** the day after the confirmation notification is sent (or on a later date specified in the notification).

Once the conditions for resuming implementation of the action are met, the granting authority will formally notify the coordinator a **lifting of suspension letter**, in which it will set the suspension

end date and invite the coordinator to request an amendment of the Agreement to set the resumption date (one day after suspension end date), extend the duration and make other changes necessary to adapt the action to the new situation (see Article 39) — unless the grant has been terminated (see Article 32). The suspension will be **lifted** with effect from the suspension end date set out in the lifting of suspension letter. This date may be before the date on which the letter is sent.

During the suspension, no prefinancing will be paid. Moreover, no units may be implemented Ongoing units must be interrupted and no new units may be started. Unit contributions for activities implemented during suspension are not eligible (see Article 6.3).

The beneficiaries may not claim damages due to suspension by the granting authority (see Article 33).

Grant suspension does not affect the granting authority's right to terminate the grant or a beneficiary (see Article 32) or reduce the grant (see Article 28).

ARTICLE 32 — GRANT AGREEMENT OR BENEFICIARY TERMINATION

32.1 Consortium-requested GA termination

32.1.1 Conditions and procedure

The beneficiaries may request the termination of the grant.

The coordinator must submit a request for **amendment** (see Article 39), with:

- the reasons why
- the date the consortium ends work on the action ('end of work date') and
- the date the termination takes effect ('termination date'); this date must be after the date of the submission of the amendment request.

The termination will **take effect** on the termination date specified in the amendment.

If no reasons are given or if the granting authority considers the reasons do not justify termination, it may consider the grant terminated improperly.

32.1.2 Effects

The coordinator must — within 60 days from when termination takes effect — submit a **periodic report** (for the open reporting period until termination).

The granting authority will calculate the final grant amount and final payment on the basis of the report submitted and taking into account the unit contributions for activities implemented before the end of work date (see Article 22).

If the granting authority does not receive the report within the deadline, only unit contributions which are included in an approved periodic report will be taken into account (no contributions if no periodic report was ever approved).

Improper termination may lead to a grant reduction (see Article 28).

After termination, the beneficiaries' obligations (in particular Articles 13 (confidentiality and

security), 16 (IPR), 17 (communication, dissemination and visibility), 21 (reporting), 25 (checks, reviews, audits and investigations), 26 (impact evaluation), 27 (rejections), 28 (grant reduction) and 42 (assignment of claims)) continue to apply.

32.2 Consortium-requested beneficiary termination

32.2.1 Conditions and procedure

The coordinator may request the termination of the participation of one or more beneficiaries, on request of the beneficiary concerned or on behalf of the other beneficiaries.

The coordinator must submit a request for **amendment** (see Article 39), with:

- the reasons why
- the opinion of the beneficiary concerned (or proof that this opinion has been requested in writing)
- the date the beneficiary ends work on the action ('end of work date')
- the date the termination takes effect ('termination date'); this date must be after the date of the submission of the amendment request.

If the termination concerns the coordinator and is done without its agreement, the amendment request must be submitted by another beneficiary (acting on behalf of the consortium).

The termination will **take effect** on the termination date specified in the amendment.

If no information is given or if the granting authority considers that the reasons do not justify termination, it may consider the beneficiary to have been terminated improperly.

32.2.2 Effects

The coordinator must — within 60 days from when termination takes effect — submit:

(i) a **report on the distribution of payments** to the beneficiary concerned

(ii) a **termination report** from the beneficiary concerned, for the open reporting period until termination, containing an overview of the progress of the work, the financial statement and the explanation on the use of resources

(iii) a second **request for amendment** (see Article 39) with other amendments needed (e.g. reallocation of the tasks and the estimated budget of the terminated beneficiary; addition of a new beneficiary to replace the terminated beneficiary; change of coordinator, etc.).

The granting authority will calculate the amount due to the beneficiary on the basis of the report submitted and taking into account the unit contributions for activities implemented before the end of work date (see Article 22).

The information in the termination report must also be included in the periodic report for the next reporting period (see Article 21).

If the granting authority does not receive the termination report within the deadline, only unit

contributions which are included in an approved periodic report will be taken into account (no contributions if no periodic report was ever approved).

If the granting authority does not receive the report on the distribution of payments within the deadline, it will consider that:

- the coordinator did not distribute any payment to the beneficiary concerned and that
- the beneficiary concerned must not repay any amount to the coordinator.

If the second request for amendment is accepted by the granting authority, the Agreement is **amended** to introduce the necessary changes (see Article 39).

If the second request for amendment is rejected by the granting authority (because it calls into question the decision awarding the grant or breaches the principle of equal treatment of applicants), the grant may be terminated (see Article 32).

Improper termination may lead to a reduction of the grant (see Article 31) or grant termination (see Article 32).

After termination, the concerned beneficiary's obligations (in particular Articles 13 (confidentiality and security), 16 (IPR), 17 (communication, dissemination and visibility), 21 (reporting), 25 (checks, reviews, audits and investigations), 26 (impact evaluation), 27 (rejections), 28 (grant reduction) and 42 (assignment of claims)) continue to apply.

32.3 EU-initiated GA or beneficiary termination

32.3.1 Conditions

The granting authority may terminate the grant or the participation of one or more beneficiaries, if:

(a) one or more beneficiaries do not accede to the Agreement (see Article 40)

(b) a change to the action or the legal, financial, technical, organisational or ownership situation of a beneficiary is likely to substantially affect the implementation of the action or calls into question the decision to award the grant (including changes linked to one of the exclusion grounds listed in the declaration of honour)

(c) following termination of one or more beneficiaries, the necessary changes to the Agreement (and their impact on the action) would call into question the decision awarding the grant or breach the principle of equal treatment of applicants

(d) implementation of the action has become impossible or the changes necessary for its continuation would call into question the decision awarding the grant or breach the principle of equal treatment of applicants

(e) a beneficiary (or person with unlimited liability for its debts) is subject to bankruptcy proceedings or similar (including insolvency, winding-up, administration by a liquidator or court, arrangement with creditors, suspension of business activities, etc.)

(f) a beneficiary (or person with unlimited liability for its debts) is in breach of social security or tax obligations

(g) a beneficiary (or person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has been found guilty of grave professional misconduct

(h) a beneficiary (or person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed fraud, corruption, or is involved in a criminal organisation, money laundering, terrorism-related crimes (including terrorism financing), child labour or human trafficking

(i) a beneficiary (or person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) was created under a different jurisdiction with the intent to circumvent fiscal, social or other legal obligations in the country of origin (or created another entity with this purpose)

(j) a beneficiary (or person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed:

  (i) substantial errors, irregularities or fraud or

  (ii) serious breach of obligations under this Agreement or during its award (including improper implementation of the action, non-compliance with the call conditions, submission of false information, failure to provide required information, breach of ethics or security rules (if applicable), etc.)

(k) a beneficiary (or person having powers of representation, decision-making or control, or person essential for the award/implementation of the grant) has committed — in other EU grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (extension of findings from other grants to this grant; see Article 25)

(l) despite a specific request by the granting authority, a beneficiary does not request — through the coordinator — an amendment to the Agreement to end the participation of one of its affiliated entities or associated partners that is in one of the situations under points (d), (f), (e), (g), (h), (i) or (j) and to reallocate its tasks, or

(m) other:

  (i) linked action issues: not applicable

  (ii) the action has lost its scientific or technological relevance

32.3.2 Procedure

Before terminating the grant or participation of one or more beneficiaries, the granting authority will send **a pre-information letter** to the coordinator or beneficiary concerned:

- formally notifying the intention to terminate and the reasons why and
- requesting observations within 30 days of receiving notification.

If the granting authority does not receive observations or decides to pursue the procedure despite

the observations it has received, it will confirm the termination and the date it will take effect (**confirmation letter**). Otherwise, it will formally notify that the procedure is discontinued.

For beneficiary terminations, the granting authority will — at the end of the procedure — also inform the coordinator.

The termination will **take effect** the day after the confirmation notification is sent (or on a later date specified in the notification; 'termination date').

32.3.3 Effects

(a) for **GA termination**:

The coordinator must — within 60 days from when termination takes effect — submit a **periodic report** (for the last open reporting period until termination).

The granting authority will calculate the final grant amount and final payment on the basis of the report submitted (see Article 22). Only units implemented until termination will be accepted.

If the grant is terminated for breach of the obligation to submit reports, the coordinator may not submit any report after termination.

If the granting authority does not receive the report within the deadline, only unit contributions which are included in an approved periodic report will be taken into account (no contributions if no periodic report was ever approved).

Termination does not affect the granting authority's right to reduce the grant (see Article 28) or to impose administrative sanctions (see Article 34).

The beneficiaries may not claim damages due to termination by the granting authority (see Article 33).

After termination, the beneficiaries' obligations (in particular Articles 13 (confidentiality and security), 16 (IPR), 17 (communication, dissemination and visibility), 21 (reporting), 25 (checks, reviews, audits and investigations), 26 (impact evaluation), 27 (rejections), 28 (grant reduction) and 42 (assignment of claims)) continue to apply.

(b) for **beneficiary termination**:

The coordinator must — within 60 days from when termination takes effect — submit:

(i) a **report on the distribution of payments** to the beneficiary concerned

(ii) a **termination report** from the beneficiary concerned, for the open reporting period until termination, containing an overview of the progress of the work, the financial statement, and the explanation on the use of resources

(iii) a **request for amendment** (see Article 39) with any amendments needed (e.g. reallocation of the tasks and the estimated budget of the terminated beneficiary; addition of a new beneficiary to replace the terminated beneficiary; change of coordinator, etc.).

The granting authority will calculate the amount due to the beneficiary on the basis of the report submitted (see Article 22). Only units implemented until termination will be accepted.

The information in the termination report must also be included in the periodic report for the next reporting period (see Article 21).

If the granting authority does not receive the termination report within the deadline, only unit contributions included in an approved periodic report will be taken into account (no contributions if no periodic report was ever approved).

If the granting authority does not receive the report on the distribution of payments within the deadline, it will consider that:

- the coordinator did not distribute any payment to the beneficiary concerned and that
- the beneficiary concerned must not repay any amount to the coordinator.

If the request for amendment is accepted by the granting authority, the Agreement is **amended** to introduce the necessary changes (see Article 39).

If the request for amendment is rejected by the granting authority (because it calls into question the decision awarding the grant or breaches the principle of equal treatment of applicants), the grant may be terminated (see Article 32).

After termination, the concerned beneficiary's obligations (in particular Articles 13 (confidentiality and security), 16 (IPR), 17 (communication, dissemination and visibility), 21 (reporting), 25 (checks, reviews, audits and investigations), 26 (impact evaluation), 27 (rejections), 28 (grant reduction) and 42 (assignment of claims)) continue to apply.

SECTION 3 OTHER CONSEQUENCES: DAMAGES AND ADMINISTRATIVE SANCTIONS

ARTICLE 33 — DAMAGES

33.1 Liability of the granting authority

The granting authority cannot be held liable for any damage caused to the beneficiaries or to third parties as a consequence of the implementation of the Agreement, including for gross negligence.

The granting authority cannot be held liable for any damage caused by any of the beneficiaries or other participants involved in the action, as a consequence of the implementation of the Agreement.

33.2 Liability of the beneficiaries

The beneficiaries must compensate the granting authority for any damage it sustains as a result of the implementation of the action or because the action was not implemented in full compliance with the Agreement, provided that it was caused by gross negligence or wilful act.

The liability does not extend to indirect or consequential losses or similar damage (such as loss of

profit, loss of revenue or loss of contracts), provided such damage was not caused by wilful act or by a breach of confidentiality.

ARTICLE 34 — ADMINISTRATIVE SANCTIONS AND OTHER MEASURES

Nothing in this Agreement may be construed as preventing the adoption of administrative sanctions (i.e. exclusion from EU award procedures and/or financial penalties) or other public law measures, in addition or as an alternative to the contractual measures provided under this Agreement (see, for instance, Articles 135 to 145 EU Financial Regulation 2018/1046 and Articles 4 and 7 of Regulation 2988/95[20]).

SECTION 4 FORCE MAJEURE

ARTICLE 35 — FORCE MAJEURE

A party prevented by force majeure from fulfilling its obligations under the Agreement cannot be considered in breach of them.

'Force majeure' means any situation or event that:

- prevents either party from fulfilling their obligations under the Agreement,
- was unforeseeable, exceptional situation and beyond the parties' control,
- was not due to error or negligence on their part (or on the part of other participants involved in the action), and
- proves to be inevitable in spite of exercising all due diligence.

Any situation constituting force majeure must be formally notified to the other party without delay, stating the nature, likely duration and foreseeable effects.

The parties must immediately take all the necessary steps to limit any damage due to force majeure and do their best to resume implementation of the action as soon as possible.

CHAPTER 6 FINAL PROVISIONS

ARTICLE 36 — COMMUNICATION BETWEEN THE PARTIES

36.1 Forms and means of communication — Electronic management

EU grants are managed fully electronically through the EU Funding & Tenders Portal ('Portal').

All communications must be made electronically through the Portal, in accordance with the Portal Terms and Conditions and using the forms and templates provided there (except if explicitly instructed otherwise by the granting authority).

[20] Council Regulation (EC, Euratom) No 2988/95 of 18 December 1995 on the protection of the European Communities financial interests (OJ L 312, 23.12.1995, p. 1).

Communications must be made in writing and clearly identify the grant agreement (project number and acronym).

Communications must be made by persons authorised according to the Portal Terms and Conditions. For naming the authorised persons, each beneficiary must have designated — before the signature of this Agreement — a 'legal entity appointed representative (LEAR)'. The role and tasks of the LEAR are stipulated in their appointment letter (see Portal Terms and Conditions).

If the electronic exchange system is temporarily unavailable, instructions will be given on the Portal.

36.2 Date of communication

The sending date for communications made through the Portal will be the date and time of sending, as indicated by the time logs.

The receiving date for communications made through the Portal will be the date and time the communication is accessed, as indicated by the time logs. Formal notifications that have not been accessed within 10 days after sending, will be considered to have been accessed (see Portal Terms and Conditions).

If a communication is exceptionally made on paper (by e-mail or postal service), general principles apply (i.e. date of sending/receipt). Formal notifications by registered post with proof of delivery will be considered to have been received either on the delivery date registered by the postal service or the deadline for collection at the post office.

If the electronic exchange system is temporarily unavailable, the sending party cannot be considered in breach of its obligation to send a communication within a specified deadline.

36.3 Addresses for communication

The Portal can be accessed via the Europa website.

The address for paper communications to the granting authority (if exceptionally allowed) is the official mailing address indicated on its website.

For beneficiaries, it is the legal address specified in the Portal Participant Register.

ARTICLE 37 — INTERPRETATION OF THE AGREEMENT

The provisions in the Data Sheet take precedence over the rest of the Terms and Conditions of the Agreement.

Annex 5 takes precedence over the Terms and Conditions; the Terms and Conditions take precedence over the Annexes other than Annex 5.

Annex 2 takes precedence over Annex 1.

ARTICLE 38 — CALCULATION OF PERIODS AND DEADLINES

In accordance with Regulation No 1182/71[21], periods expressed in days, months or years are calculated from the moment the triggering event occurs.

The day during which that event occurs is not considered as falling within the period.

'Days' means calendar days, not working days.

ARTICLE 39 — AMENDMENTS

39.1 Conditions

The Agreement may be amended, unless the amendment entails changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

Amendments may be requested by any of the parties.

39.2 Procedure

The party requesting an amendment must submit a request for amendment signed directly in the Portal Amendment tool.

The coordinator submits and receives requests for amendment on behalf of the beneficiaries (see Annex 3). If a change of coordinator is requested without its agreement, the submission must be done by another beneficiary (acting on behalf of the other beneficiaries).

The request for amendment must include:

- the reasons why
- the appropriate supporting documents and
- for a change of coordinator without its agreement: the opinion of the coordinator (or proof that this opinion has been requested in writing).

The granting authority may request additional information.

If the party receiving the request agrees, it must sign the amendment in the tool within 45 days of receiving notification (or any additional information the granting authority has requested). If it does not agree, it must formally notify its disagreement within the same deadline. The deadline may be extended, if necessary for the assessment of the request. If no notification is received within the deadline, the request is considered to have been rejected.

An amendment **enters into force** on the day of the signature of the receiving party.

An amendment **takes effect** on the date of entry into force or other date specified in the amendment.

ARTICLE 40 — ACCESSION AND ADDITION OF NEW BENEFICIARIES

[21] Regulation (EEC, Euratom) No 1182/71 of the Council of 3 June 1971 determining the rules applicable to periods, dates and time-limits (OJ L 124, 8/6/1971, p. 1).

40.1 Accession of the beneficiaries mentioned in the Preamble

The beneficiaries which are not coordinator must accede to the grant by signing the accession form (see Annex 3) directly in the Portal Grant Preparation tool, within 30 days after the entry into force of the Agreement (see Article 44).

They will assume the rights and obligations under the Agreement with effect from the date of its entry into force (see Article 44).

If a beneficiary does not accede to the grant within the above deadline, the coordinator must — within 30 days — request an amendment (see Article 39) to terminate the beneficiary and make any changes necessary to ensure proper implementation of the action. This does not affect the granting authority's right to terminate the grant (see Article 32).

40.2 Addition of new beneficiaries

In justified cases, the beneficiaries may request the addition of a new beneficiary.

For this purpose, the coordinator must submit a request for amendment in accordance with Article 39. It must include an accession form (see Annex 3) signed by the new beneficiary directly in the Portal Amendment tool.

New beneficiaries will assume the rights and obligations under the Agreement with effect from the date of their accession specified in the accession form (see Annex 3).

Additions are also possible in mono-beneficiary grants.

ARTICLE 41 — TRANSFER OF THE AGREEMENT

In justified cases, the beneficiary of a mono-beneficiary grant may request the transfer of the grant to a new beneficiary, provided that this would not call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

The beneficiary must submit a request for **amendment** (see Article 39), with

- the reasons why
- the accession form (see Annex 3) signed by the new beneficiary directly in the Portal Amendment tool and
- additional supporting documents (if required by the granting authority).

The new beneficiary will assume the rights and obligations under the Agreement with effect from the date of accession specified in the accession form (see Annex 3).

ARTICLE 42 — ASSIGNMENTS OF CLAIMS FOR PAYMENT AGAINST THE GRANTING AUTHORITY

The beneficiaries may not assign any of their claims for payment against the granting authority to any third party, except if expressly approved in writing by the granting authority on the basis of a reasoned, written request by the coordinator (on behalf of the beneficiary concerned).

If the granting authority has not accepted the assignment or if the terms of it are not observed, the assignment will have no effect on it.

In no circumstances will an assignment release the beneficiaries from their obligations towards the granting authority.

ARTICLE 43 — APPLICABLE LAW AND SETTLEMENT OF DISPUTES

43.1 Applicable law

The Agreement is governed by the applicable EU law, supplemented if necessary by the law of Belgium.

Special rules may apply for beneficiaries which are international organisations (if any; see Data Sheet, Point 5).

43.2 Dispute settlement

If a dispute concerns the interpretation, application or validity of the Agreement, the parties must bring action before the EU General Court — or, on appeal, the EU Court of Justice — under Article 272 of the Treaty on the Functioning of the EU (TFEU).

For non-EU beneficiaries (if any), such disputes must be brought before the courts of Brussels, Belgium — unless an international agreement provides for the enforceability of EU court judgements.

For beneficiaries with arbitration as special dispute settlement forum (if any; see Data Sheet, Point 5), the dispute will — in the absence of an amicable settlement — be settled in accordance with the Rules for Arbitration published on the Portal.

If a dispute concerns administrative sanctions, offsetting or an enforceable decision under Article 299 TFEU (see Articles 22 and 34), the beneficiaries must bring action before the General Court — or, on appeal, the Court of Justice — under Article 263 TFEU.

For grants where the granting authority is an EU executive agency (see Preamble), actions against offsetting and enforceable decisions must be brought against the European Commission (not against the granting authority; see also Article 22).

ARTICLE 44 — ENTRY INTO FORCE

The Agreement will enter into force on the day of signature by the granting authority or the coordinator, depending on which is later.

SIGNATURES

For the coordinator

Bohdan Schneider with ECAS id n003uz8z signed in the Participant Portal on 14/06/2022 at 07:19:20 (transaction id SigId-142178-yT6dl2RCFoMTLKK1nzSeu5Wgyvk4BzP6CzzvqxIk0znK9aSjNE1a2h702xpWgograDjQAWzydCOxmfWONTDYJYWW-yntOf97TTHq9QCab4GzIaj-Ve3zdcU2sHs1l5ncxzRLfPIuydS928gZlpxXENzzftXKRHQYmaXjLMekfjdZCcrsDYM9mTSCZRzgFLizYlzhui4m). Timestamp by third party at 2022.06.14 08:19:27 CEST

For the granting authority

Signed by Fredrik OLSSON HECTOR with ECAS id olssofr as an authorised representative on 14-06-2022 16:48:46 (transaction id SigId-153068-2cqhhjuckZ0zJMwdipKf9Do9yoDFJQ4jo3BWmMON1cs1CjdrjlRgFkGaHBjk2CaFkIZyzxdmi2rDISdpCap2gH-yntOf97TTHq9QCab4GzIaj-6Wx5S187LqiNjKHtH9BXh44zxe9pof87lWBdBOYA1qhAD1AJOm78IWZpVF8W8HzG9dqVfkgunndDb8kQlvp4tS) 2022.06.14 16:49:07 CEST

ANNEX 1

Horizon Europe (HORIZON)

Description of the action (DoA)

Part A

Part B

DESCRIPTION OF THE ACTION (PART A)

COVER PAGE

Part A of the Description of the Action (DoA) must be completed directly on the Portal Grant Preparation screens.

PROJECT *Grant Preparation (General Information screen) — Enter the info.*	
Project number:	101090284
Project name:	Pyrimidine de novo synthesis in tumor endothelium: an overlooked target?
Project acronym:	EC-InterCom
Call:	HORIZON-WIDERA-2022-TALENTS-02
Topic:	HORIZON-WIDERA-2022-TALENTS-02-01
Type of action:	HORIZON-TMA-MSCA-PF-EF
Service:	REA/A/04
Project starting date:	fixed date: 1 January 2023
Project duration:	24 months

TABLE OF CONTENTS

Associated with document Ref. Ares(2022)4226372 - 08/06/2022

PROJECT SUMMARY

Project summary

Grant Preparation (General Information screen) — Provide an overall description of your project (including context and overall objectives, planned activities and main achievements, and expected results and impacts (on target groups, change procedures, capacities, innovation etc)). This summary should give readers a clear idea of what your project is about.

Use the project summary from your proposal.

It sounds simple: A cell cannot divide without nucleotides. Indeed, the disruption of pyrimidine de novo synthesis (PDNS) efficiently blocks proliferation of cancer cells. Yet still today, PDNS-directed anticancer treatment has not entered clinics due to the lack of efficacy. Why? Cancer cells gain pyrimidines via PDNS or from salvage pathways, and PDNS inhibition in cancer cells can likely be bypassed by pyrimidines produced in the tumor environment or gained from the systemic circulation. Can we target this microenvironmental interaction to improve treatment efficacy? A crucial component of tumor environment are blood vessels. Tumors stimulate their growth, angiogenesis, to gain oxygen and nutrients. Metabolism of endothelial cells (ECs), the inner vessel lining, is rewired in tumors, and tumor ECs upregulate PDNS. However, whether and how elevated PDNS in ECs supports tumorigenesis is unknown. I hypothesize that PDNS in ECs affects tumor environment either directly by providing pyrimidines to cancer cells or indirectly by stimulating angiogenesis, making systemic resources more accessible to cancer cells. The central goals of this project are (i) to identify the metabolic communication of ECs with other cell types in tumors, (ii) asses if endothelial PDNS promotes angiogenesis, and (iii) to seek novel metabolic targets in ECs, whose inhibition improves efficacy of PDNS inhibitors in vivo. To reach these goals, I will use an inducible mouse model to selectively disable PDNS in the endothelium. With this unique tool available at my host institute, I will integrate a state-of-the-art multi-omics and my expertise in metabolism to disentangle the network of metabolic communication using a powerful combination of spatially resolved single cell transcriptomics, metabolomics and functional genomics. My innovative approach will open a way for understanding the EC contribution to metabolic balance in tumors with a potential to identify new metabolic anti-cancer strategies.

LIST OF PARTICIPANTS

PARTICIPANTS

Grant Preparation (Beneficiaries screen) — Enter the info.

Number	Role	Short name	Legal name	Country	PIC
1	COO	IBT	BIOTECHNOLOGICKY USTAV AV CR VVI	CZ	998451750

LIST OF WORK PACKAGES

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverable No(s)
WP1	Research Data Management	1 - IBT	1.00	1	24	D1.2, D1.1, D1.3

Work package WP1 – Research Data Management

Work Package Number	WP1	Lead Beneficiary	1. IBT
Work Package Name	Research Data Management		
Start Month	1	End Month	24

Objectives
Research Data Management

Description
Management of research data

STAFF EFFORT

Staff effort per participant

Grant Preparation (Work packages - Effort screen) — Enter the info.

Participant	WP1	Total Person-Months
1 - IBT	1.00	1.00
Total Person-Months	1.00	1.00

LIST OF DELIVERABLES

Deliverables

Grant Preparation (Deliverables screen) — Enter the info.

The labels used mean:

Public — fully open (⚠ automatically posted online)
Sensitive — limited under the conditions of the Grant Agreement
EU classified —RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EU-CONFIDENTIAL, SECRET-UE/EU-SECRET under Decision 2015/444

Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D1.1	Data Management Plan	WP1	1 - IBT	DMP — Data Management Plan	PU - Public	6
D1.2	Career Development Plan	WP1	1 - IBT	R — Document, report	SEN - Sensitive	6
D1.3	Communication, Dissemination & Outreach Plan	WP1	1 - IBT	R — Document, report	PU - Public	23

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Deliverable – Data Management Plan

Deliverable Number	D1.1	**Lead Beneficiary**	1. IBT
Deliverable Name	Data Management Plan		
Type	DMP — Data Management Plan	**Dissemination Level**	PU - Public
Due Date (month)	6	**Work Package No**	WP1

Description
The Data Management Plan describes the data management life cycle for all data sets that will be collected, processed or generated by the action. It is a document describing what data will be collected, processed or generated and following what methodology and standards, whether and how this data will be shared and/or made open, and how it will be curated and preserved.

Deliverable – Career Development Plan

Deliverable Number	D1.2	**Lead Beneficiary**	1. IBT
Deliverable Name	Career Development Plan		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	6	**Work Package No**	WP1

Description
A Career Development Plan will be established jointly by the supervisor(s) and the researcher. In addition to research objectives, this plan will comprise the researcher's training and career needs, including training on transferable skills, teaching, planning for publications and participation in conferences and events aiming at opening science and research to citizens. The Plan can be updated when needed.

Deliverable – Communication, Dissemination & Outreach Plan

Deliverable Number	D1.3	**Lead Beneficiary**	1. IBT
Deliverable Name	Communication, Dissemination & Outreach Plan		
Type	R — Document, report	**Dissemination Level**	PU - Public
Due Date (month)	23	**Work Package No**	WP1

Description
The plan describes the planned measures to maximize the impact of the project, including the dissemination and exploitation measures that are planned, and the target group(s) addressed. Regarding communication measures and public engagement strategy, the aim is to inform and reach out to society and show the activities performed, and the use and the benefits the project will have for citizens.

LIST OF MILESTONES

(None)

LIST OF CRITICAL RISKS

(None)

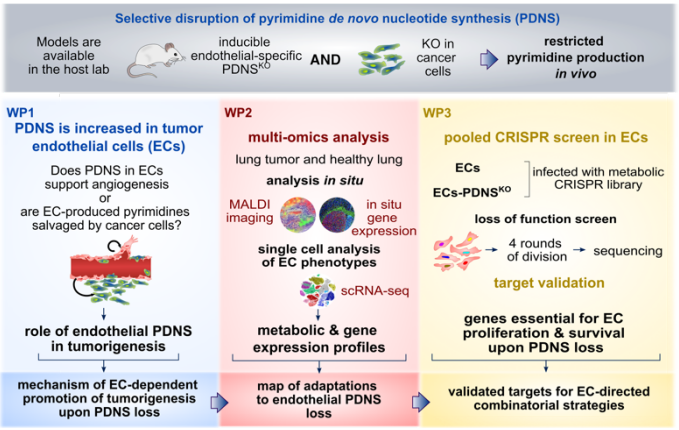
1 EXCELLENCE – PYRIMIDINE *DE NOVO* SYNTHESIS IN TUMOR ENDOTHELIUM: AN OVERLOOKED TARGET?

1.1 QUALITY AND PERTINENCE OF PROJECT'S RESEARCH AND INNOVATION OBJECTIVES

RATIONALE & HIGHLIGHTS

1. Endothelial cells (ECs) form new blood vessels in a process called angiogenesis that is upregulated in tumors to supply cancer cells with oxygen and nutrients. Altered metabolism in tumor ECs has recently been recognized as a driving force of pathological angiogenesis[1].
2. Cancer cells depend on the availability of pyrimidines for rapid proliferation. Pyrimidines are either (i) synthesized *de novo* or (ii) gained externally in salvage pathways. Defective pyrimidine *de novo* synthesis (PDNS) in cancer cells limits tumorigenicity[2]. ECs in human and murine lung tumors upregulate PDNS, suggesting that EC-derived pyrimidines may support tumor growth. In the lung, ECs form ~ 30% of the stroma. → Could ECs serve as a relevant source of metabolites, or do they merely form a "tube" that brings blood?
3. It is unclear whether EC-generated pyrimidines enable proliferation of cancer cells *in vivo* (i) by direct metabolic crosstalk from ECs to cancer cells, or (ii) by supporting EC proliferation needed for angiogenesis.
4. Inhibition of PDNS in cancer cells has been tested as a promising anti-cancer strategy[3], but systemic anti-PDNS treatment will also suppress PDNS in ECs. → Does suppression of PDNS in ECs contribute to the effectiveness of PDNS inhibitors, and could novel EC-directed combinatorial therapies improve treatment efficacy?
5. **HYPOTHESIS:** I hypothesize that the increased PDNS in tumor ECs provides nucleotide building blocks that stimulate tumor growth either (i) directly by metabolic cross talk with cancer cells or (ii) indirectly by promoting formation of new vessels that deliver pyrimidines from distant sites. Hence, PDNS in ECs is a therapeutic vulnerability exploitable for cancer therapy.
6. **APPROACH:** I will test this hypothesis by selectively disrupting PDNS in ECs and in cancer cells *in vivo* in the context of lung cancer to (i) examine angiogenesis, (ii) map the tumor metabolic landscape, and (iii) characterize adaptations to PDNS disruption. Finally, (iv) I will search for genes essential for EC proliferation & survival upon disabled PDNS, which represent possible targets for new combinatorial EC-directed strategies.
7. **METHODOLOGY:** PDNS in ECs and cancer cells will be selectively shut down *in vivo* by (inducible) disruption of dihydroorotate dehydrogenase (**DHODH**) and angiogenesis will be examined. **Single cell and spatial transcriptomics** and **metabolomics *in situ*** will be used to disentangle the cancer cell – EC crosstalk in response to targeted PDNS disruption. Pooled **CRISPR screen** will identify essential genes in ECs with disabled PDNS.
8. **OUTCOME:** My objectives are to identify how PDNS in ECs contributes to tumorigenesis in lung cancer and if it could be targeted for therapy.

GRAPHICAL ABSTRACT: Pyrimidine de novo synthesis (PDNS) is upregulated in tumor endothelial cells (ECs), but its role in tumor progression is unknown. The proposed research is designed to uncover how PDNS in ECs supports tumorigenesis and if it can be pharmacologically targeted. Using a mouse model of inducible endothelial-specific PDNS deficiency (ECKO mice) in combination with orthotopic lung tumors derived from WT or PDNS-deficient cancer cells (relying fully on pyrimidine salvage), I will conduct functional assays to elucidate if PDNS in ECs promotes tumorigenesis directly or by supporting angiogenesis (WP1). I will perform single cell and spatial transcriptomics and metabolomics to map adaptations to the selective loss of endothelial PDNS in vivo (WP2) and use a pooled CRISPR screen in ECs to identify genes synthetically lethal at the background of deficient PDNS (WP3). I will then select and validate targets for combinatorial treatments with PDNS inhibitors for new EC-specific interventions.



BACKGROUND & STATE OF THE ART

ENDOTHELIAL CELLS & TUMOR MICROENVIRONMENT: ECs, forming the inner lining of blood vessels, are not uniform. During angiogenesis, ECs transition between phenotypic

[1] [redacted]

states with distinct transcriptional signatures[4]. Quiescent ECs switch to migrating 'tip' cells that produce sprouts, while proliferating ECs elongate the sprouts. Blood vessels, albeit structurally aberrant, are a crucial component of tumor stroma and tumors stimulate angiogenesis to obtain oxygen and nutrients (**Figure 1**). EC metabolism is rewired in tumors[5], featuring prominent upregulation of PDNS among other pathways of central carbon metabolism[6]. Could the metabolic state of ECs that form the interface between tissues and circulation, influence (tumor) microenvironment? → I will investigate the contribution of endothelial PDNS to the pyrimidine balance in (tumor) tissue, focusing on the lung, where ECs form 30% of the stroma.

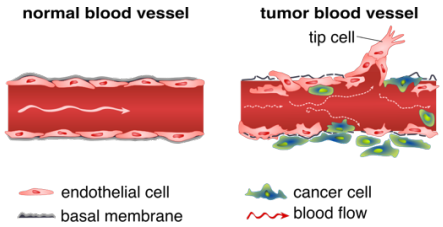


FIGURE 1. BLOOD VESSELS. Compared to normal organs, in tumors blood vessels show excessive angiogenesis and are structurally and functionally aberrant. Tumor ECs have distinct transcriptomics profile and show different composition of EC phenotypes, such as higher fraction of tip ECs than normal ECs.

PYRIMIDINE *DE NOVO* SYNTHESIS & SALVAGE PATHWAYS: Pyrimidine levels in mammalian cells are maintained by a coordinated action of the PDNS and salvage pathways, through synthesis, recycling, or acquisition from the microenvironment (**Figure 2**). PDNS is initiated from glutamine and aspartate by the enzyme CAD (**Figure 2**), and proceeds via **DHODH** and Uridine 5'-monophosphate synthase (UMPS), which generates uridine monophosphate (UMP), the final product convertible to all other pyrimidines. PDNS depends on mitochondrial electron transport chain (ETC) activity for aspartate production and to propel DHODH. The importance of PDNS in proliferating (cancer) cells is well established[7], and it may have a similar role in ECs. → I will investigate how PDNS in ECs supports tumor growth.

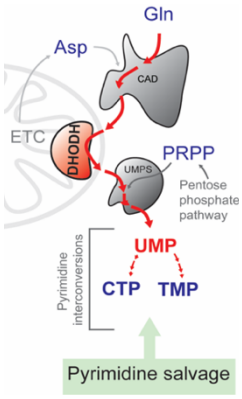


FIGURE 2. PYRIMIDINE METABOLISM. PDNS generates UMP that is converted into other pyrimidine nucleotides (via CTP and TMP). Elimination of DHODH selectively disables PDNS. PRPP, phosphoribosyl pyrophosphate.

PYRIMIDINE METABOLISM – AN OVERLOOKED TARGET IN ECs? Being essential for cancer cell proliferation, PDNS is a promising target of cancer therapy and DHODH is the most druggable enzyme in PDNS (leflunomide, brequinar, BAY 2402234). PDNS inhibitors never passed clinical testing in cancer due to the lack of responses (improved-design trials ongoing, e.g., brequinar in relapsed AML (NCT03760666)). Intriguingly, PDNS in ECs might be a target of DHODH inhibitors contributing to their anti-cancer effects. Could effective (combinatorial) suppression of pyrimidine metabolism of ECs improve effectiveness of existing anti-PDNS therapy and expand its therapeutic window? → To find novel concepts for therapy, I need to gain fundamental insight into the endothelial PDNS in tumorigenesis.

PRELIMINARY DATA

Deficient PDNS due to DHODH^{KO} in HKP1 lung carcinoma cells delays growth of orthotopic tumors in C57Bl6 mice (Figure 3A), demonstrating that pyrimidines are essential for lung tumors. MALDI imaging shows that DHODH substrate dihydroorotate is increased and DHODH product orotate is decreased *in situ* (Figure 3A), confirming that in HKP1

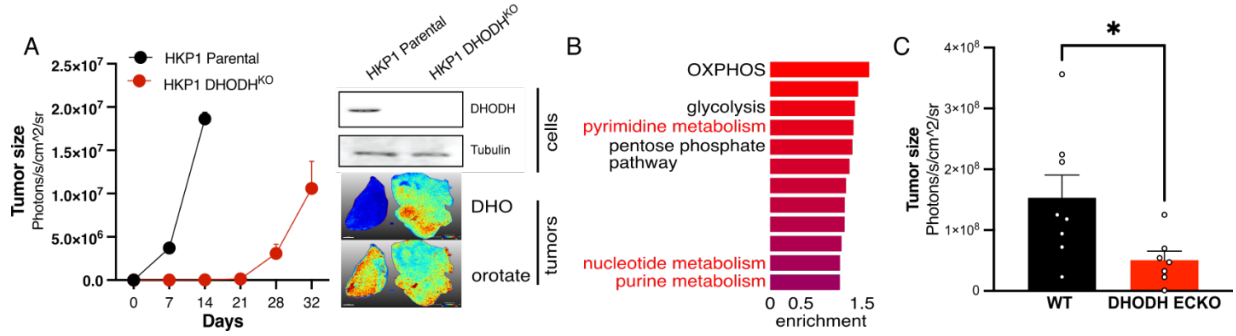


FIGURE 3. (**A**) PDNS deficient HKP1 lung cancer cells (CRISPR/Cas9-generated DHODH^{KO} – western blot) form orthotopic tumors with a delay. MALDI-imaging in s.c. tumors from HKP1 parental and DHODH^{KO} cells is shown on lower right (blue, low signal; red, high signal). (**B**) Pathways upregulated in tumor ECs compared to normal ECs. (**C**) EC-specific DHODH deficiency reduces lung tumor growth.

[4] [redacted]

DHODH^{KO}-derived tumors the enzyme is non-functional. ECs in lung tumors upregulate PDNS (Figure 3B). Mice with an inducible EC-specific deletion of DHODH show reduced growth of orthotopic lung tumors derived from control HKP1 cells (Figure 3C) → PDNS is upregulated in tumor ECs and supports tumor growth.

SCIENTIFIC RESEARCH OBJECTIVES

HYPOTHESIS: I hypothesize that the increased PDNS in tumor ECs provides nucleotide building blocks that stimulate tumor growth either (i) directly by metabolic cross talk with cancer cells or (ii) indirectly by enabling EC proliferation which promotes formation of new vessels that deliver pyrimidines from distant sites. This might be particularly relevant in lung cancer, where ECs are abundant stromal cell type, and where EC-driven PDNS, increased in tumors, might represent a therapeutic vulnerability→ I will test this hypothesis using single cell spatially resolved multi-omics analysis of tumor tissue in orthotopic mouse lung tumors models of EC-specific and cancer cell-specific PDNS deficiency. I will use unbiased functional genomics to understand ECs' adaptations to PDNS deficiency and to identify targets for therapy. This project is embedded in host lab's interest in metabolic crosstalk in tumors.

AIMS: 1. Define the mechanism of endothelial PDNS-mediated stimulation of tumorigenesis (WP1, Month 1-11).

2. Characterize the molecular response to endothelial PDNS blockade *in vivo* (WP2, Month 5-17).

3. Identify metabolic dependencies of ECs upon PDNS blockade, validate and prioritize EC-specific targets for translation (WP3, Month 8-24).

ORIGINALITY, NOVELTY, AND IMPACT

(**i**) First comprehensive examination of ECs as a potential source of pyrimidines for tumorigenesis. (**ii**) First systematic survey of adaptations to the loss of PDNS in ECs in a mouse model of lung cancer with a single cell resolution for identification of targetable vulnerabilities. (**iii**) First CRISPR screen of genes that affect EC proliferation & survival at the background of PDNS blockade. (**iv**) Identification of synthetically lethal combinations allowing to design and test completely new therapeutic strategies that target metabolic crosstalk between ECs and cancer cells.

1.2 SOUNDNESS OF PROPOSED METHODOLOGY

I will benefit from the expertise, tools and methodology established in the host lab, and from experience of my supervisors [redacted] and senior staff scientists (see below). I discuss the specific risks and feasibility for each Work Package (WP).

RESEARCH METHODOLOGY AND WORK PLAN

MODELS OF PDNS LOSS IN ECS AND IN CANCER CELLS.

I will use inducible EC-specific mouse model of DHODH deficiency (DHODH^{ECKO} mice) in combination with orthotopic lung tumors derived from syngeneic cancer cells, WT and PDNS-deficient (DHODH^{KO} cancer cells). The latter model, where tumors fully rely on pyrimidine salvage, will reveal possible metabolic signaling from cancer cells to ECs. Both **DHODH^{ECKO} mice and DHODH^{KO} cancer cells were produced and are available in the host lab**. **MOUSE MODEL OF INDUCIBLE ENDOTHELIAL DHODH DEFICIENCY:** I will maintain the colony by crossing *Cdh5*^{CreERT2}Dhodh$^{flox/flox}$ and Dhodh$^{flox/flox}$ animals (C57Bl/6 background) to obtain Cre^{+} and Cre^{-} littermates. Endothelial deficiency (**DHODH^{ECKO}** mice) will be induced by tamoxifen (2 mg/20 g mouse in corn oil, daily, 5 doses, intraperitoneally, i.p.) in 6-8-week-old animals. Experiments will start 2 weeks post-induction in **gender-balanced cohorts**. **CELLULAR MODELS OF DHODH DEFICIENCY: Cancer cells**: I will use luciferase-transduced HKP1 mouse lung cancer cells (a gift from Prof. V. Mittal, Weill Cornell, USA), derived from Kras$^{G12D/+}$; p53$^{-/-}$ C57Bl/6 mice, that form orthotopic lung tumors with histology resembling human lung adenocarcinoma[8]. DHODH was ablated using CRISPR/Cas9[9] (Figure 3A). I will reconstitute DHODH^{KO} cells by lentiviral transduction of DHODH cDNA to confirm specificity by phenotype rescue. **ECs**: Human umbilical vein endothelial cells (**HUVEC**, Lonza) will be used as an EC model, DHODH will be silenced by lentiviral delivery of shRNA (Merck). **CHARACTERIZATION OF DHODH DEFICIENT MODELS: Mice:** DHODH ablation will be verified by immunostaining for DHODH and CD31 to label ECs. Cre-mediated recombination in the DHODH locus (by PCR) and deletion of the DHODH protein (by western blot, WB) will be confirmed in isolated ECs. To isolate ECs, lungs will be digested with collagenases I and IV, followed by magnetic associated sorting (CD45^{-} and CD31^{+} selection) and FACS sorting for the CD31^{+} ECs[10]. **Cells:**

[8] [redacted]

WB will confirm absence of DHODH protein, and uridine auxotrophy will verify PDNS defect. DHO, orotate, UMP and pyrimidine levels will be examined by targeted metabolomics, disruption of the PDNS pathway by metabolic flux analysis into UMP using LC-MS. **TUMOR MODEL:** To induce orthotopic lung tumors, HKP1 cells (1.50 x 10^5 cells in 100 µl PBS) will be injected via tail vein. Tumor kinetics will be followed by luciferase imaging. For specific applications, HKP1 cells (1.0 x 10^6) will be applied subcutaneously (s.c.) to obtain more easily accessible tumors. **RISK AND FEASIBILITY:** Animal and cellular models are available at the host lab, minimizing the risks and allowing to perform a complex project within the 2-years' time. The viability of DHODH^{ECKO} mice after induction was tested, mice survived without signs of distress for >2 months after induction (the observation timeframe). *CDH5*^{CreERT2} is a validated and verified endothelial Cre driver, ensuring reliable deletion of DHODH in ECs[11]. I have extensive experience with mouse tumor models, CRISPR-based cellular models, metabolomics sample preparation and data analysis[12]. Orthotopic tumor model is established. Advanced mouse expertise is available at the host lab and the CCP. Lentiviral vector containing DHODH cDNA is available from collaborators (J. Rohlena). Metabolomics (steady state) will be done at BIOCEV core. Flux analysis will be done at the Metabolomics core at VIB-CCB, Belgium (B. Ghesquiere).

WP1: UNCOVER THE ROLE OF ENDOTHELIAL PDNS IN TUMORIGENESIS: ANGIOGENESIS VERSUS METABOLIC CROSSTALK

Increased PDNS in tumor ECs (*cf.* **Figure 3B**) could support tumor growth indirectly via angiogenesis or directly by providing metabolites for cancer cells. Conversely, cancer cells with defective PDNS could compensate their intrinsic defect by stimulating angiogenesis or pyrimidine production from ECs. In WP1 I will untangle these scenarios.

TASK 1.1 ENDOTHELIAL PDNS IN ANGIOGENESIS: Endothelial PDNS could support angiogenesis by enabling EC proliferation. I will disrupt PDNS in ECs and asses angiogenic properties and EC function *in vivo* (DHODH^{ECKO} mice), and *in vitro* (HUVECs). ***IN VIVO***: **Physiological angiogenesis:** will be examined in neonatal mouse retinas, an established model of physiological angiogenesis, at postnatal day 5 as described[13], after the administration of tamoxifen (3 doses of 10 mg/kg daily). **Pathological angiogenesis:** (i) Injury-stimulated angiogenesis will be examined 7 days after cornea cauterization in 8-week-old mice by quantifying blood vessel area (CD31) in whole mounts after 7 days[14]. (ii) Tumor angiogenesis will be examined in orthotopic HKP1 tumors (15 days after the inoculation) in paraffin lung/tumor sections by immunohistochemistry using anti-CD31 and anti-Ki-67 staining to quantify proliferating ECs. S.c. HKP1-derived tumors will be used to quantify tumor blood flow using the Power Doppler function of an ultrasound imager (Vevo 3100, VisualSonics). ***IN VITRO:*** I will examine proliferation, angiogenesis-linked migration (scratch assay) and sprouting efficacy (spheroid sprouting assay)[15], using control and DHODH-silenced HUVEC cultures. **TASK 1.2 ECS IN PYRIMIDINE METABOLIC CROSSTALK:** To examine if PDNS, increased in lung tumor ECs (Figure 3B), promotes pyrimidine secretion from ECs, I will isolate ECs from normal lungs and lung tumors of control and DHODH^{ECKO} mice. Isolated ECs will be cultured in dialyzed FBS, and I will measure intracellular and secreted metabolites, focusing on pyrimidines and their derivatives with LC-MS. Similar experiments will be done with parental and DHODH^{KO} HUVECs to evaluate the effect of PDNS disruption on their secretory profile. Based on these results, I will supplement parental and DHODH^{KO} HKP1 cells with EC-conditioned media or with the top EC-secreted pyrimidine metabolites (3-5 most abundant secreted metabolites) to determine the effect on cancer cell proliferation & survival. Should ECs directly provide pyrimidines (or precursors) to cancer cells, parental, but not DHODH^{KO} EC-conditioned media, will rescue a growth defect of DHODH^{KO} cancer cells. **TASK 1.3 DOES PDNS DEFICIENCY IN TUMORS STIMULATE THE NEED FOR EXTERNAL PYRIMIDINE SUPPLY?** To decipher if PDNS-deficient cancer cells stimulate angiogenesis and/or PDNS in ECs, I will (i) quantify vascularization in tissue sections of orthotopic HKP1 and HKP1-DHODH^{KO} tumors (in control mice) stained with CD31 and (ii) use ultrasound to determine blood flow in corresponding s.c. tumors. Tumor ECs will be isolated, and I will analyze the excreted metabolites by LC-MS. To assess the effect of cancer cell secreted metabolites on angiogenic properties, I will cultivate HUVECs in conditioned media from HKP1 and HKP1-DHODH^{KO} cells. **OUTCOME:** Mechanism of endothelial PDNS-mediated promotion of tumorigenesis, informing molecular analysis in WP2-3. **RISK AND FEASIBILITY:** The host lab has extensive expertise with angiogenic models. I am experienced in metabolic profiling of murine tumors and cell cultures. All required instrumentation is available at the IBT/BIOCEV cores. In case of difficulties with isolation of high-quality ECs from lung tumors, I will consult

[11] Kilani, B., et al. (2019). *Journal of Thrombosis and Haemostasis* 17, 827-840
[12] Hyroššová, P., et al. (2021). *Cancer Metab* 9, 1, Soukupova, J., et al. (2017). *Sci Rep* 7, 12486
[13] Pitulescu, M. E., et al. (2010). *Nat Protoc* 5, 1518-1534
[14] Rohlenova, K., et al. (2020). *Cell Metab* 31, 862-877 e814
[15] ibid.

a collaborator J. Kalucka (Aarhus University, DK), an expert in murine EC isolation[16]. To measure metabolites in lung-isolated ECs, I will first optimize the required cell numbers, and continue as previously[17], with adaptation to the small-sized murine ECs. If the metabolite detection was insufficient (not expected), I will focus on the HUVEC-based metabolomics experiments.

WP2: CHARACTERIZE THE MOLECULAR RESPONSE TO ENDOTHELIAL PDNS BLOCKADE *IN VIVO*

WP1 will resolve how endothelial PDNS supports tumorigenesis but cannot map the molecular responses and intercellular interactions of tumor ECs following PDNS disruption *in vivo*. In WP2 I will perform transcriptomics and metabolomics analysis *in situ* to examine how PDNS deficiency affects ECs and neighboring cancer cells. I will collect ECs for scRNA-seq to disentangle effects on EC phenotypes (e.g., tip cells, stalk cells) and gene expression.

TASK 2.1 TISSUE SAMPLES FOR SPATIAL OMICS AND SCRNA-SEQ: I will collect samples from HKP1 and HKP1-DHODH^{KO} orthotopic tumors in control and DHODH^{ECKO} animals. Control animals injected with HKP1 cells will be sacrificed on day 15. ECKO mice and control mice injected with HKP1-DHODH^{KO} cells will be sacrificed when the tumors reach approximately the size of HKP1 tumors (expected 1-4 weeks delay). I will collect following samples: (i) lung tumors from control mice injected with HKP1 and (ii) HKP1-DHODH^{KO} cells, and (iii) lung tumors from DHODH^{ECKO} mice injected with HKP1, and (iv) healthy lungs from control and (v) DHODH^{ECKO} mice. **TASK 2.2 SPATIAL TRANSCRIPTOMICS** will be done using Visium Spatial Gene Expression kit (10X Genomics). Fresh-frozen cryo-sections (10 μm) will be collected, stained by H&E for annotation of the tumor and healthy lung tissue, imaged and processed for spatial transcriptomics. After fixation and permeabilization, mRNA is released, binds to a capture spot (5,000 spots per area) and is reverse transcribed to cDNA, which is then collected for standard sequencing. For each section collected for the analysis of gene expression, a consecutive section will be collected for MALDI-imaging (see below). Data processing will be done in Space Ranger, count matrix will be analyzed in Seurat. Sequencing data will be aligned on the H&E image and visualized in Loupe browser. Deconvolution of spatial transcriptomics data to estimate cell type proportion per spot will be done in Stereoscope[18] (using scRNA-seq sample with a full suspension). **TASK 2.3 METABOLOMICS ANALYSIS *IN SITU*** will be done using MALDI-imaging. State-of-the-art imaging mass spectrometers (MALDI-TOF/TOF and 15T solariX XR FT-ICR) are available in BIOCEV. Cryo-sections are placed onto a conductive glass, sprayed with matrix that allows the extraction of analyte in a spatial context. Data analysis will be done in a SCiLS software (Bruker). Detected metabolites are annotated and their patterns superimposed onto the H&E image. I will use a co-staining with CD31 for a detailed analysis of metabolite gradients produced by vessels, and combine the staining with metabolic probes (e.g., pimonidazole to highlight hypoxic areas). **TASK 2.4 SCRNA-SEQ LIBRARY PREPARATION & SEQUENCING:** Single cell suspensions of ECs will be prepared as above[19], from a pool of 6 mice to prevent technical bias. Single cell libraries (10,000 cells/sample) will be prepared with 10X Genomics Chromium 3' kit (v3.1) and sequenced to 25k reads/cell at HiSeq4000 (Illumina). Cell Ranger will be used for data processing and alignment to a reference genome. Cells with too few reads (low RNA quality) or excessive mitochondrial reads (apoptotic cells) and genes with (near) zero counts will be filtered out. Secondary analysis will be done in BIOMEX, a free multi-omics data mining software co-developed by K. Rohlenova[20]. (i) I will perform library size normalization and regress out technical biases. (ii) Dimensionality reduction will be performed on all samples together and I will use uniform manifold approximation and projection (UMAP) for visualization. (iii) Graph-based clustering (*Seurat*[21]) will be used to group cells according to their gene expression profile. Marker genes and gene sets (e.g., metabolic pathways) for each cluster will be identified by pair-wise differential analysis between each cluster and all other clusters. (iv) Using the marker genes and publicly available scRNA-seq datasets, I will annotate a cell type and a putative biological role to each cluster. **ALL TASKS:** Transcriptional signatures will be validated on protein level by immunohistochemistry. **OUTCOME:** (i) Direct comparison of (spatially resolved) gene expression and metabolic profiles of ECs, tumor and stromal cells from control and KO backgrounds, raised in control and ECKO mice. (ii) Understanding how DHODH^{ECKO} affects ECs phenotypes in tumor and healthy tissue. (iii) Target genes and pathways differentially expressed in tumor ECs of DHODH^{ECKO} and control mice for an integration with the outcome of CRISPR-screen (WP3). **RISK AND FEASIBILITY:** All required instrumentation is available. The growth kinetics of

16 [redacted]

tumors generated from HKP1-DHODH^{KO} cells or in ECKO mice have been tested (Figure 3C). The host lab has extensive experience with single cell transcriptomics sample preparation & data analysis[22], and optimized MALDI-imaging. Hence, little risks relate to this WP. For spatial transcriptomics, I will first optimize tissue permeabilization, as that is the crucial step in the procedure. I will be trained (in using BIOMEX for data analysis (a module for spatial transcriptomics data is being developed by Unicle start-up company in collaboration with the host lab). I will collaborate with experts in omics cores (for metabolomics *in situ* measurements.

WP3: IDENTIFY METABOLIC DEPENDENCIES OF ECS UPON PDNS BLOCKADE USING FUNCTIONAL GENOMICS AND VALIDATE TARGETS

Integrated gene expression and metabolic patterns (WP2) will reveal how the ECs adapt to PDNS loss *in vivo*. To identify genes that are functionally important for EC proliferation & survival in the context of disabled PDNS, I will perform a high throughput loss of function CRISPR screen employing metabolism focused sgRNA library[23].

TASK 3.1 POOLED CRISPR SCREEN will be performed in parental and DHODH^{KO} HUVECs. The sgRNA library targeting 2981 metabolic genes (30290 sgRNAs, 10/gene + 500 controls in LentiCrispr plasmid, Addgene) will be amplified in electrocompetent ENDURA E. coli (Lucigen) and packaged into lentiviral particles. HUVECs will be infected with lentiviruses carrying the pooled library in 3 replicate experiments, aiming at the multiplicity of infection 0.3 (~1 gRNA/cell). Transduced cells will be selected by puromycin in medium supplemented with uridine/pyruvate, glucose, and non-essential amino acids to compensate for proliferation defect due to metabolic knockout[24]. Cells will then be cultured in medium without uridine for 4 passages to ensure that they underwent several rounds of division and collected for bulk DNA sequencing (Illumina). **TASK 3.2 SGRNA LIBRARY DYNAMICS:** After normalizing reads across samples, data will be analyzed using CRISPRAnalyzeR pipeline (MAGeCK), to identify essential gene candidates. The comparison of the sgRNA repertoire in parental and DHODH^{KO} cells will identify genes synthetically lethal with the PDNS blockade. **TASK 3.3 VALIDATION:** I will validate the hits by individual gene silencing. Protein expression will be assessed by immunohistochemistry in orthotopic lung tumors and in human lung tumor sections to assess translational potential. **TASK 3.4 COMBINATORIAL STRATEGIES:** Available inhibitors for validated EC-targets present in human tumors will be combined with DHODH inhibitor brequinar to assess synergy in suppression of orthotopic lung tumor growth. Targets for which no/suboptimal inhibitors are available will be further pursued as outlined in the 'perspectives'. **OUTCOME:** (i) sgRNAs depleted/enriched in HUVECs as synthetically lethal combinations with PDNS inhibition, (ii) candidate genes and validated targets for translation. **RISK AND FEASIBILITY:** A potential risk is performing the CRISPR screen in primary HUVECs. I will check that HUVECs after 4 passages and upon transduction have normal EC behavior and angiogenic capacity with standard assays (spheroid sprouting, scratch assay). The host lab routinely uses the lentiviral delivery in HUVECs with no decline in proliferation capacity for up to 4 passages. The insight generated in WP3 will be integrated with transcriptomics results (WP2) to provide additional context into functional importance of marker genes. I have experience with CRISPR and gene editing[25]. I will collaborate with experts in CRISPR mutagenesis and library preparations ((

OVERALL OUTCOME: Delineation of basic biology and translational potential of PDNS in ECs during tumorigenesis. Identification of gene candidates for combinatorial strategies targeting pyrimidine metabolic crosstalk in lung tumors.

PERSPECTIVES: (i) Validated EC- targets will be pursued further with methods of protein-engineering available at the IBT (B. Schneider) (ii) Selective small molecule inhibitors for candidate genes can be developed and optimized by targeted evolution and (iii) new compounds can be synthesized by a Service Technology lab (IBT), which has experience with development of compounds that passed pre-clinical and phase I clinical testing. Hence, with the support of MSCA, this project will optimally use the **MULTI-DISCIPLINARY** environment at the host institute to maximize its benefits for society.

I will adhere to the principles of **OPEN SCIENCE**: In line with the Horizon Europe guidelines, a **Data Management Plan** will be prepared according to the FAIR data management principles. I will utilize electronic platforms to facilitate a rapid data reuse by the community. The transcriptomics data generated in *EC-InterCom* will be shared via the dedicated public repositories (ArrayExpress, GEO), and we will develop a dedicated webtool for data exploration by the non-

[22]

bioinformaticians[26]. I will take advantage of Prof. Schneider's insight about the ELIXIR, European bioinformatics initiative to get involved in a recently established single cell omics community of ELIXIR (K. Rohlenova is a member). Research results will be published in an open access format, and we will publish **pre-prints** to get a timely peer-review by the community. I will communicate the results of *EC-InterCom* to a broad audience via Twitter account to allow also public to ask questions and discuss my research, potentially opening the room for unexpected (overlooked) scientific questions and directions. I have considered the **GENDER ASPECTS** of this research: I will use gender-balanced cohorts of animals for experiments and assess potential gender-dependent effects during the optimalization of models.

1.3 QUALITY OF THE SUPERVISION, TRAINING AND OF THE TWO-WAY TRANSFER OF KNOWLEDGE

In my research, I want to investigate -using multi-omics- the metabolic communication between endothelium and cancer cells with a focus on nucleotide biosynthesis, which I believe has a strong potential for discovery of new biology and treatment concepts.

TRANSFER OF KNOWLEDGE/TRAINING FOR THE RESEARCHER'S DEVELOPMENT

IBT invests in supporting junior scientists on their path to independence. I will get an opportunity to lead a mini team by supervising a PhD student and a technician. This way I will develop my scientific as well as 'soft' skills – **an essential combination required in research and beyond**. To succeed, I need to acquire proficiency in (i) leadership & research management skills, (ii) state-of-the-art methodology (single cell and spatial omics) & data analysis, and (iii) designing and conducting complex project. **TRAINING THROUGH RESEARCH:** At the IBT/BIOCEV I will be embedded in a dynamic environment, with ample access to diverse expertise (mouse transgenesis, advanced microscopy, omics) in core facilities, led by well-trained personnel devoted to teaching and supporting me. All required expertise is operational: (i) IBT has a (spatial) scRNA-seq facility with personnel for sample preparation and data processing. (ii) DHODH^{ECKO} mouse is available. (iii) The host lab has established the expertise for investigation of metabolic crosstalk. By gaining expertise in EC biology, I will broaden my research focus from cancer cells to this important stromal cell type. (iv) I will use [redacted] bioinformatic expertise to get familiar with big data analysis. [redacted] is a leader in the field of protein engineering, which ideally complements my project for follow up optimization of targets. This will allow me to select targets with the "end in mind" (e.g., with specific structural properties), thus maximizing the chances for successful translation. **PROJECT MANAGEMENT & SUPERVISION:** In my transition from a junior postdoc to a self-responsible, intellectually independent scientist, I need to learn to formulate clear research questions, manage timelines and work distribution in a team. By supervising a small team, I will optimally train these skills, while being closely mentored. **NETWORK & INTERNATIONAL VISIBILITY:** With the help of my supervisors and their international collaborations (with Weizmann Institute, VIB, clinical oncologists) I will develop my own net of contacts throughout Europe. In addition, IBT has recently established a scientific advisory board, consisting of recognized experts in their fields, with whom I will have the opportunity to consult. → Training at the IBT will arm me with a highly transferable mix of 'soft' and scientific skills that I will use to maximize my contribution to life-improving research. The support from MSCA will be instrumental in this process, it will help me to mature scientifically, embedded in a top-class research environment. **TRAINING:** I will attend trainings at BIOCEV (advanced microscopy), and at other European institutions, e.g., (i) data acquisition/analysis (Introduction to multi-omics data integration and visualization, EMBL); (ii) leadership (Self-leadership for scientists, EMBO), (iii) research management (Project management for scientists, EMBO). See Gantt chart.

TRANSFER OF KNOWLEDGE/TRAINING BY THE RESEARCHER TO THE HOST

During my PhD and postdoc in the lab of Dr. [redacted] I gained expertise in metabolism of cancer cells. I mastered a wide range of techniques and acquired skills that I will implement in *EC-InterCom* and will be beneficial for the host lab and institution. The most relevant of these skills are expertise in metabolism of glucose, metabolomics measurements, and immunohistochemistry. This opens collaborations across IBT/BIOCEV. (i) My experience with immunohistochemistry will be beneficial for [redacted] group, who want to validate the effects of protein engineered cytokine inhibitors in mouse models. (ii) Expertise in **gluconeogenesis** is needed in Rohlenova lab, who want to analyze glucose metabolism in murine models of metabolic deficiency and provides synergy with groups working on other aspects of cancer metabolism ([redacted] I will strive to enrich IBT environment with **experience and contacts from** University of Barcelona. I will engage in a postdoc/PhD association at IBT and

[26] [redacted]

explore the rich network of [redacted] to actively **scout for collaborations** with postdoc associations across Europe, e.g., by organizing workshops and presentations of our research. This will facilitate cross-fertilization of ideas and enrich our network, aspects so important for young researchers like myself. I will also actively seek collaborations with industrial researchers in biomedical/pharma companies. By organizing company visits and lectures for postdocs and PhD students I aim to raise the awareness that fundamental biomedical research should closely communicate with pharma to maximize its benefit for society.

QUALIFICATION AND EXPERIENCE OF THE SUPERVISORS

I will benefit of two close mentors/supervisors at the host institution: (i) [redacted] is a director of IBT and a head of the Laboratory of Biomolecular recognition at IBT. He is Chair of a program „Structural biology and protein engineering“ of the BIOCEV center, and teaches 2 semester courses: “Structural bioinformatics” (Charles University) and “X-ray crystallography” (South Bohemian University). His scientific output comprises >90 publications, with >4,700 citations (ResearcherID D-2565-2009). He has contributed to structural biology and bioinformatics by studies of structure and dynamics of nucleic [redacted] substantially invested into service to the scientific community. Most importantly, he participated on designing and building of the Nucleic Acid Database and on the development of Protein Data Bank (PDB). Schneider lab is a **multidisciplinary team** integrating 10 researchers with backgrounds in structural bioinformatics, computational biology, and protein engineering, currently striving to broaden their expertise to validation experiments using assays in *in vitro* (cellular) and *in vivo* (mouse) models. The lab has long-standing international collaborations at the Weizmann Institute of Science ([redacted] Universite Paris Diderot ([redacted] and at Rutgers University (the PDB Head, [redacted] has a successful history of mentoring and supporting junior scientists. He mentored >10 PhD students and postdocs, including **alumni who became successful group leaders**. [redacted] will navigate my leadership & research management skills and provide inter-disciplinary feedback. ([redacted] is a head of the junior Laboratory of Cellular Metabolism at the IBT that comprises a young international team of 6 researchers focused on metabolic crosstalk in healthy and tumor tissues. [redacted] integrates metabolic research with single cell- and spatially resolved omics and tailored mouse models. Her scientific output comprises 24 publications, with >750 citations (ResearcherID G-9498-2014). Recently, she made a major contribution to the understanding of EC heterogeneity in pathological angiogenesis. For this work she received the 2020 Werner Risau prize for outstanding achievements in vascular biology from the German Society for Cell Biology. The lab is part of an informal consortium of junior PIs and clinicians across Europe (clinical [redacted] Innsbruck (AU), [redacted] Göttingen (DE); [redacted] Lille (FR); [redacted] Aarhus (DK); [redacted] - [redacted] and has international collaborations at the VIB, KU Leuven, BE ([redacted]), and with a start-up company for advanced data analysis ([redacted], Unicle, BE). She successfully mentored 5 PhD student and undergrads and invests significantly in promoting the career of junior colleagues. [redacted] will guide the core research part of my project, and as a young female PI, she will support me on my own way forward in science.

1.4 QUALITY AND APPROPRIATENESS OF THE RESEARCHER'S PROFESSIONAL EXPERIENCE, COMPETENCES AND SKILLS

After finishing my master's in microbiology, I wanted to gain a broader perspective on medicine. I thus pursued another master in Biomedicine at University of Barcelona. Later, as a PhD student, I joined the group of [redacted] an expert in metabolic diseases, with a project focused on a gluconeogenic enzyme phosphoenolpyruvate carboxykinase and its role in flexibility of cancer metabolism. [redacted] lab was new to the field of cancer metabolism, and I had the opportunity to actively participate in this transition, which strongly enriched my project planning skills and critical thinking. I was encouraged to bring my own ideas and experimental designs to the table, tasting both the creative freedom but also responsibility. During my postdoc, I introduced a new direction to the lab once again by focusing on nutrient-induced entosis in cancer. In this project I needed to build metabolomics expertise, for which I undertook an internship in the lab of [redacted] (UT Southwestern, USA). This foreign experience helped me to grow not only professionally but also personally. In addition to research training, I had an excellent opportunity to develop teaching skills at the University of Barcelona. I planned, prepared, and taught practical and theoretical classes of biophysics and biomedicine at the Faculty of Medicine. I also directly supervised students in the laboratory and helped manage their research projects. Therefore, during my career I have already demonstrated maturity, excellence, and flexibility. This fellowship is a perfect opportunity to build on these foundations and grow towards a full independence. To succeed, I need outstanding publications, team-leading skills, and a strong network, competences I will cultivate with the guidance of [redacted] at the IBT, who offer me their full support.

2 IMPACT

2.1 CREDIBILITY OF THE MEASURES TO ENHANCE THE CAREER PERSPECTIVES AND EMPLOYABILITY OF THE RESEARCHER AND CONTRIBUTION TO HER SKILLS DEVELOPMENT

At this stage of my career, my ambition is to acquire skills required to become a successful group leader. Hence, I want to get out of my comfort zone, widen my horizons beyond 'bulk' approaches and master state-of-the-art techniques like single cell multi-omics. Combination of my expertise in metabolism and techniques of single cell omics promises high-quality research with great potential for fundamental discoveries in my future independent projects. Single cell technologies have been successfully established at IBT and I will be mentored by one of the experts, [redacted] Her expertise and complex approach in research will give me opportunity to enrich my skills and gain a comprehensive understanding of metabolism at single cell level. The opportunity to work with Prof. Schneider as a supervisor guarantees my progress in bioinformatics and big data analysis, an integral part of modern biology. To achieve my goal and kick-start my career, I would greatly benefit from the support of MSCA. A multidisciplinary environment at the host lab and the institute ensures the much-needed diversity that is critical to develop my own highly competitive research niche.

2.2 SUITABILITY AND QUALITY OF THE MEASURES TO MAXIMIZE EXPECTED OUTCOMES AND IMPACTS, AS SET OUT IN THE DISSEMINATION AND EXPLOITATION PLAN, INCLUDING COMMUNICATION ACTIVITIES

DISSEMINATION: (i) Results of *EC-InterCom* will be published in **highly recognized journals** (e.g., Cell Metabolism) in a gold **open-access format**. (ii) I will regularly present the results at (inter)national **scientific conferences**, such as Tumor metabolism, Keystone, Canada or Cancer metabolism, EACR, Spain, where I will engage in discussion with distinguished leaders in the field. (iii) I will actively disseminate my results at **local forums**, during institutional seminars at IBT (1-2 times/year) and group meetings with [redacted] labs. (iv) IBT and BIOCEV regularly invite **recognized scientists** with whom I can discuss my project. Getting feedback from researchers outside of my field is important for designing research with significant scientific impact and an outreach to a broad audience. (v) I will also **visit collaborators** to exchange ideas and search for synergy in our research. (vi) Finally, I will be active in the MSCA holders/alumni community in Czechia, participate in information days and promote the fellowship to future applicants. **EXPLOITATION:** This research aims to identify targets that can be exploited for clinical translation as a combinatorial anti-cancer therapy. **MANAGEMENT OF INTELLECTUAL PROPERTY:** A Tech Transfer office at IBT will provide guidance and assist in management of intellectual property, such as identification and protection of results, filing of patents and tackling of confidentiality issues. **OUTREACH:** To maximize the **societal impact of my research** I aim to reach a **diverse audience**. I will acquire experience in communication activities at the host institute: (i) IBT/BIOCEV actively communicate their science to the society and have well-established policy of public relations. For example, students and their teachers and parents **visit the labs** in the program of "Open house". During these events, I will organize a 'tour' through the lab and in an exciting and accessible way explain how the basic scientific results are accomplished and how can that lead to improving people's lives. I will explain the importance of support by the EU and MSCA for career development of junior researchers. (ii) Internet: To increase the visibility and disseminate our results online we regularly update the IBT and BIOCEV **websites** and **social networks** (Twitter: @BIOCEV_science; @IBT_CAS; Facebook: @biocevczechrepublic). (iii) Media: Public is informed about major scientific progress via regular press releases. (iv) Personally, I will contribute to the **popular science magazines** ('Vesmir' – in Czech, 'Quark' – in Slovak) and share results, impact, and perspectives of my project via social networks (e.g., Twitter: @ECInterCom, LinkedIn).

2.3 THE IMPORTANCE OF THE PROJECT'S CONTRIBUTION TO THE EXPECTED SCIENTIFIC, SOCIETAL AND ECONOMIC IMPACTS

This project aims to uncover -using an innovative multi-omics approach- the understudied basic principles of metabolic interaction between cancer cells and ECs in lung tumors. Metabolic crosstalk between cancer and stromal cells may significantly modify therapy responses, and effective therapeutic targeting of specific subsets of stromal cells (such as ECs) thus represents an unmet medical need. Results of *EC-InterCom* promise (i) to yield new insight in **basic biology** of nucleotide metabolism in tumor ECs, and (ii) to guide new concepts for targeting tumor ECs / angiogenesis, which can ultimately lead to **new anti-cancer strategies**. Given the burden that lung cancer poses on society, this research is timely and of high importance. To maximize its value for scientific community and society, I will make the data generated in *EC-InterCom* publicly available for re-use and interpretation by the community.

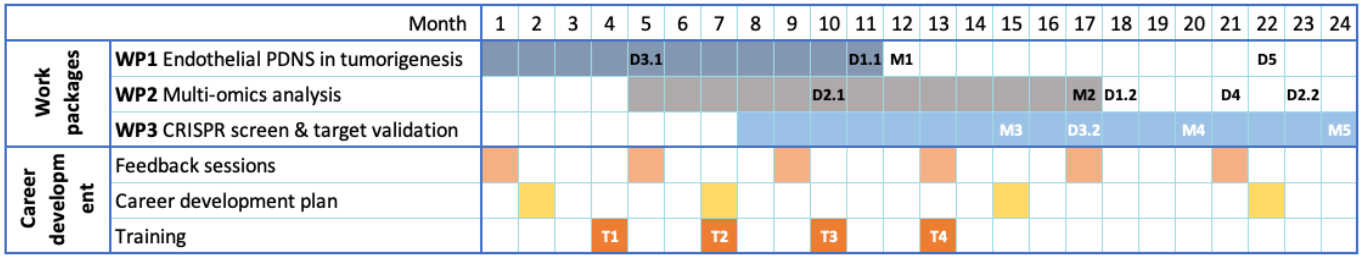
3 QUALITY AND EFFICIENCY OF THE IMPLEMENTATION

3.1 QUALITY AND EFFECTIVENESS OF THE WORK PLAN, ASSESSMENT OF RISKS AND APPROPRIATENESS OF THE EFFORT ASSIGNED TO WORK PACKAGES

The work packages, risks and feasibility are described on page 4-6. Gantt chart is below.

TASK ALLOCATION: I will take care of scRNA-seq and spatial omics experiments (with core facilities). A PhD student will focus on CRISPR screen and target validation. Together we will perform the mechanistic experiments in WP1. A technician will help with routine cell culture and mouse genotyping. **RISK MANAGEMENT**: (i) Optimal permeabilization of lung/tumor sections needs to be achieved for successful spatial transcriptomics.→ I will use the test slides provided by 10x Genomics. (ii) Metabolomics measurement of tumor-isolated ECs will need to be optimized for low input.→ I will benefit of a protocol already successfully used by [redacted] (iii) Transfection with CRISPR library might change the EC behavior of primary HUVECs.→ I will test the angiogenic properties and optimize the transfection and culture conditions if needed. Although the Aims may seem challenging, I will benefit of the available models and the expertise, infrastructure and resources at the host institute and within a network of collaborators. **PROJECT MANAGEMENT:** To successfully meet my Objectives, I will manage *EC-InterCom* on daily basis and discuss the progress and planning with [redacted] (weekly). By supervising a PhD student, I will learn to plan and coordinate my project. **STANDARD OPERATING PROCEDURES** (SOPs) are available. **FINANCIAL MANAGEMENT:** IBT, responsible for the financial management, is fully experienced with administration of H2020 and Horizon Europe. The SOPs, obligations, and project management are reviewed by the Researcher, Supervisors, HR, and Research Manager at the start of fellowship.

DELIVERABLES: **D1.1-2** International conference (oral/poster presentation), **D2.1-2** IBT Open house (outreach), **D3.1-2** Seminars at IBT, **D4** Database of omics data, **D5** Submission of a manuscript to journal and pre-print. **MILESTONES:** **M1** Mechanism of endothelial PDNS in tumorigenesis **M2** Metabolic & gene expression profiles, **M3** Targets from CRISPR screen, **M4** Target validation, **M5** Validation of combinatorial treatments. **TRAINING:** **T1-4** Multi-omics data integration and visualization (EMBL), Self-leadership (EMBO), Project management (EMBO), Advanced microscopy (BIOCEV).



3.2 QUALITY AND CAPACITY OF THE HOST INSTITUTION, INCLUDING HOSTING ARRANGEMENTS

IBT, based in a center of excellence BIOCEV, represents a unique environment for innovative research. (i) I will have access to top-quality core facilities with experienced staff. Expertise in single cell- and spatially resolved omics with unique animal models and advanced data analysis will be the most relevant. (ii) IBT is an endorser of the European charter for researchers and strives to integrate international junior researchers. For administrative and logistic issues, I will get help from the HR office. A number of foreign PhDs, postdocs and junior PIs provides extensive networking opportunities. (iii) I will manage a mini team, a PhD student, and a technician, and collaborate with scientists in surrounding labs. **SUPERVISION AND STIMULATING MY POSTDOCTORAL CAREER:** [redacted] will guide my leadership and research management skills. I will closely collaborate with [redacted] a leader of a research team focused on metabolic crosstalk in tumors. With *EC-InterCom*, I will follow-up on and extend this research to the unique area of EC biology. Together with my mentors, I will prepare a **career development plan**, get regular feedback, and troubleshoot during formal (weekly) and informal meetings. I thus have a unique opportunity to learn being independent, with the support of researchers with a complementary skill set: from [redacted] a successful, seasoned PI, I will learn the 'soft' skills and get an inter-disciplinary insight into target identification, and I will gain insight into EC biology, single cell omics and the know-how for starting a research group from a young PI, [redacted] I will also consult researchers outside my field of expertise at the IBT/BIOCEV seminars. MSCA will be crucial for the next step in my career by providing a bridge to intellectual and financial independence and by increasing the level of personal responsibility. Together, with *EC-InterCom* I have an opportunity to make a leap forward and gain a set of highly transferable skills that will accelerate my further career in research and beyond.

[redacted]

01/10/2007 – 26/05/2010 **Undergraduate researcher**

Dr. Július Šubík**,** Comenius University, Bratislava, Slovakia

- Phenotypic and genotypic analysis of clinical isolates *Candida glabrata*

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Research interest and activity:

After finishing my master's in microbiology, I realized I was attracted to more medically oriented research, hence I pursued a second master in biomedicine. I next accepted the opportunity to carry on my scientific training as a Ph.D. student in the group of [redacted] working on the less-known, mitochondrial isoform of the gluconeogenic enzyme phosphoenolpyruvate carboxykinase (PEPCK-M). In my Ph.D. work, I described mechanisms for metabolic flexibility of cancer cells that are dependent on PEPCK-M activity. We aimed to understand the basic biology of PEPCK-M that would open a therapeutic window in combination therapy with glycolytic inhibitors. I performed key experiments during a 3-month internship in the laboratory of [redacted] at UT Southwestern in Dallas (Texas, USA), where I learned mass spectrometry based targeted metabolomics. Thanks to my expertise in metabolism, I also participated in several collaborations, which culminated in a first-author paper and several co-authors (in *Cerebral Cortex, EMBO Mol Med, Scientific Reports*). Unfortunately, in 2015, when I was finalizing the experimental part of my Ph.D. project, a competing laboratory published very similar results ahead of us. Because of this setback, I had to refocus my project, delaying somewhat publication of these results, which came out only this year (in *Cancer & Metabolism*).

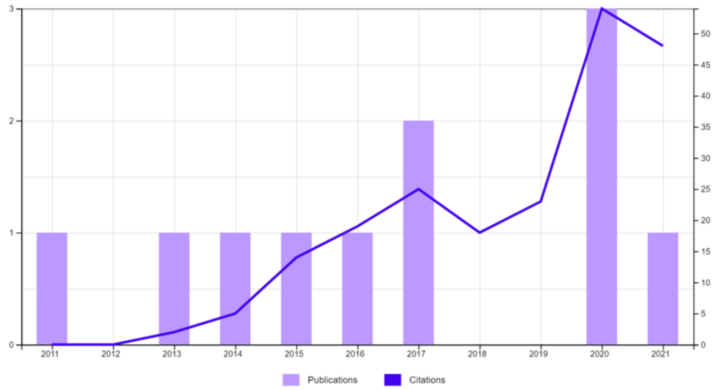
After earning my Ph.D., I was offered a postdoctoral position with a teaching post in the same institute. My motivation to accept this offer was not only to be able to complete the project described above, but also to further extend my teaching skills as assistant professor with a role in preparing and teaching practical and theoretical classes in biophysics and biomedicine. During this period, I independently developed a new project focused on the mechanisms of nutrient-induced entosis in cancer cells that is ready to be sent for publication to *Cell death and Disease*.

Nowadays, research requires a broader view on issues related to disease, and multidisciplinary approach is a must. Therefore, at this stage of my career, I aim to leave my comfort zone to enrich my research skill set with challenging new approaches. I was always fascinated by the flexibility and heterogeneity of cancer metabolism which arms cancer cells with the ability to resist therapy, particularly in the context of tumor microenvironment. This represents an unmet medical need that is waiting to be resolved. To be able to conduct outstanding research in this area I need to master single cell- and spatially resolved multi-omics techniques and the related data analysis. The Institute of Biotechnology, with groups of [redacted] is one of the top places to do so. I am excited to further my knowledge in bioinformatics and big data processing and I am sure that IBT/BIOCEV experts will help me to excel in this field.

After finishing my postdoctoral training, I aspire to become independent scientist and lead my own group. I aim to work on my leadership skills and gain relevant experience by attending advanced courses and by benefiting from the dynamic, multi-disciplinary work environment and from counselling by leaders at BIOCEV, among others [redacted] inspiring scientist and a great example for women that are aspiring to become PI, as I do.

Publications

Graph from Web of Science representing number of publications per year (violet) and citations per year (blue).



Total number of records: 10

Total number of citations: 208

h-index: 6

- [redacted]
- [redacted] **Tumors defective in homologous recombination rely on oxidative metabolism: relevance to treatments with PARP inhibitors**. *EMBO Mol Med* 12(6):e11217, IF = 12.1, 5 citations.
- [redacted] **Pharmacology and preclinical validation of a novel anticancer compound targeting PEPCK-M**. *Biomed Pharmacother* 121: 109601, IF = 6.529, 5 citations.
- [redacted] **Phosphoenolpyruvate from Glycolysis and PEPCK Regulate Cancer Cell Fate by Altering Cytosolic Ca2** (2019) *Cells* 9(1): 18, IF = 6.6, 12 citations.
- [redacted] **Role of the Transforming Growth Factor-β in regulating hepatocellular carcinoma oxidative metabolism**. *Sci Rep* 7: 12486, IF = 4.379, 28 citations.
- [redacted] **PEPCK-C reexpression in the liver counters neonatal hypoglycemia in Pck1 del/del mice, unmasking role in non-gluconeogenic tissues**. *J Physiol Biochem* 73: 89-98, IF = 4.158, 7 citations.
- [redacted] **Neuronal Progenitor Maintenance Requires Lactate Metabolism and PEPCK-M-Directed Cataplerosis**. *Cereb Cortex* 26: 1046-58, IF = 5.043, 19 citations.

***First-shared author**

- [redacted] **Mitochondrial phosphoenolpyruvate carboxykinase (PEPCK-M) is a pro-survival, endoplasmic reticulum (ER) stress response gene involved in tumor cell adaptation to nutrient availability**. *J Biol Chem* 289: 22090-102, IF = 5.157, 99 citations.
- [redacted] **The effect of the composition of PLA films and lactate release on glial and neuronal maturation and the maintenance of the neuronal progenitor niche.** *Biomaterials* 34: 2221-33, IF = 12.48, 27 citations.
- [redacted] **Oxidative stress response and virulence factors in Candida glabrata clinical isolates.** *Folia Microbiol* 56: 116-121, IF = 1.73, 6 citations.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

5 CAPACITY OF THE PARTICIPATING ORGANIZATIONS

5.1 OVERVIEW OF PARTICIPATING ORGANISATIONS

Organisation role	PIC	Legal Entity Short Name	Academic organisation (Y/N)	Country	Name of Supervisor
BENEFICIARY: Institute of Biotechnology, Czech Academy of Sciences	998451750	IBT	Y	Czech Republic	[redacted]

5.2 Capacity of the Participating Organisations

Beneficiary: Institute of Biotechnology (IBT), Czech Academy of Sciences, Czech Republic	
General description	The **Institute of Biotechnology** (**IBT**, ibt.cas.cz) is a top-class multi-disciplinary research center in the Czech Republic with expertise in cancer and developmental biology, metabolism, gene expression, structural biology & protein engineering, and computational biology. The institute aims to combine basic biological insight with protein engineering and structural [redacted] bioinformatics, biophysics, and protein engineering. The main objective is to understand mechanisms of biomolecule interactions, focusing on cytokines, their receptors, and on nucleic acids. The lab uses biochemical, biophysical, and structural methods, targeted evolution, and computer design. It has a unique know-how in description and analysis of nucleic acid structure, developing tools to build, annotate, and validate their structural models. This research yielded well-received publications in journals like Nucleic Acid Research and Acta Crystalographica Section D. [redacted] is a junior group leader of the Laboratory of Cellular Metabolism at IBT (started in 2020 under the aegis of B. Schneider, as an MSCA fellow), a young international team of 6 researchers, whose focus is to uncover the intercellular metabolic crosstalk in healthy tissues and in tumors. The lab applies methods of spatial and single cell multi-omics and develops tailored mouse models.
Role and profile of key persons (supervisors)	[redacted] Czech Science Foundation, and from operational programs of the Ministry of Education, Youth and Sports. He reviews for international journals (e.g., Nucleic Acids Research) and grant organizations. He is active in the European ELIXIR community on structural bioinformatics, a member of the Commission of Biomolecules of the International Union of Crystallographers, till the end of 2019 member of the Executive board of the Czech society for structural biology. [redacted] Her scientific output comprises 24 publications in the field of cancer metabolism and endothelial biology, with >750 citations (ResearcherID G-9498-2014). Recently, she made a major contribution to the understanding of endothelial cell phenotypes/heterogeneity in pathological angiogenesis, leading to first author publications in top journals such as Cancer Cell and Cell Metabolism. For this work she received the Werner Risau prize from the German Society for Cell Biology (2020), awarded for outstanding achievements in the field of vascular biology. [redacted] co-developed tools for omics data analysis: EndoDB, a database of transcriptomics data and BIOMEX, a software to analyze multi-omics experiments. Both tools are now freely available to the community. She also contributed to a single cell atlas of mouse endothelium (in Cell). She serves as a reviewer for international journals (e.g., Nature Communication, Circulation Research) and is a member of a newly established ELIXIR community on single cell omics.
Key research facilities, Infrastructure and Equipment	**IBT forms part of EU-founded center of excellence, BIOCEV** (biocev.eu). The BIOCEV center is built and operated jointly by the Czech Academy of Sciences and Charles University and brings together 500 scientists and students in >50 research groups at 25000 m^2 of modern laboratories. The IBT runs 3 core facilities (gene core, chemical synthesis, Center for molecular structure), has access to large computer clusters and recently invested in setting up single cell and spatial transcriptomics. In addition, IBT has full access to cores operated by BIOCEV partners: a state-of-the-art animal clinic (Czech Centre for Phenogenomics, CCP), flow cytometry and omics core facilities, including imaging mass specs. Hence, IBT operates and/or has access to all infrastructures in the BIOCEV center that contain **all necessary equipment** for the proposed research. We do not request any money for new equipment.
Previous and current involvement in EU-founded research and training actions/programs	**Research** in [redacted] lab has been successfully funded by national and international grants, e.g., Czech Science Foundation (GA CR), an extension to the NSF grant for building and maintenance of the Nucleic Acid Database, [redacted] of the 5 research programs of BIOCEV, a research center co-funded by EU, and a director of IBT, the only BIOCEV partner with the seat at the center. He actively participated in planning, building, and running the research center BIOCEV. -He is a coordinator of 7-year research project between IBT and Extreme Light Infrastructure Beamlines (ELI-BL); another EU funded infrastructure, and one of the initiators, co-founder, and a member of the Executive and Steering Commissions of the ELIXIR community 3D-Bioinfo focused on integrating, sharing, and archiving of structural data. [redacted] 2nd round of ERC Stg (scheduled for October this year). She is a member of ELIXIR single-cell omics community. **Training:** [redacted] has successfully mentored >10 (inter-)national PhD students & postdocs and guided junior researchers on their path to independence. [redacted] has successfully mentored 5 PhD students and undergrads

6 ADDITIONAL ETHICS INFORMATION

IMPLEMENTATION OF THE PRINCIPLE OF 3 RS

The 3R principles: replacement, refinement, and reduction, will be followed whenever possible.

REFINEMENT

All experiments will be performed under conditions avoiding or reducing pain and suffering and using appropriate anesthesia and analgesia whenever required and possible, according to the legal and ethical criteria demanded by law. All procedures and handling are performed by qualified personnel, which has received accredited training to minimize any possible discomfort and stress to the animals. Animals are provided with appropriate housing that allows the expression of species-specific behaviors, such as nesting opportunities. For mice genotyping we adhere to the FELASA guidelines for the refinement of methods for genotyping genetically modified rodents: A report of the Federation of European Laboratory Animal Science Associations Working Group.

REPLACEMENT

To limit the number of animals used in the *in vivo* validation, replacement by non-animal methods will be applied as much as possible by using *in vitro* functional testing in cancer cells. scRNA-seq/spatial data generated in an *in vivo* system will be used for selection of candidates relevant *in vivo*. These candidates will be thoroughly characterized *in vitro* using cell culture, drastically reducing the number of animals needed for further functional validation *in vivo* (these would be necessary if the initial experiment was performed *in vitro*, giving rise to hits that are irrelevant *in vivo*). Only the most promising genes validated by *in vitro* analyses will then be tested in the preclinical mouse models *in vivo*.

However, complete replacement of mouse experiments is not possible. First, currently there are no alternative systems that would reliably model the complexity of intercellular metabolic crosstalk within an organism. Second, an *in vivo* validation of new combinatorial treatment strategies in mouse models is an essential step for a potential translation into (pre-)clinical testing. Overall, the mouse experimentation remains crucial.

REDUCTION

Before initiating experiments, the minimum number of animals per group needed to achieve statistically significant data will be calculated using a power calculation. The required number of animals for each experiment will also be specified in the Ethical document and evaluated during the approval process. Importantly, as mentioned above, before initiating follow up *in vivo* experiments identified candidate genes are thoroughly validated *in vitro* using functional essays. This will allow us to prioritize only the most promising candidates to be tested in the mouse model, thereby significantly reducing the total number of animals needed.

GUARANTEE OF ANIMAL WELL-BEING AND SAFETY PROVISIONS

Animals are maintained in individually ventilated cages in a room with controlled temperature (22±2 °C) and humidity under a 12 h light/12 h dark cycle on a standard diet and drink ad libitum. Animals are closely followed-up by the animal caretakers and the experimenters, with regular inspection by a veterinarian, as per the standard health and animal welfare procedures of the animal facility. All animal experiments and procedures are approved by the Animal Ethics Committee of the Czech Academy of Sciences and are performed according to Czech guidelines for the Care and Use of Animals in Research and Teaching.

All procedures will be performed in a dedicated animal lab at the Czech Centre for Phenogenomics. Only qualified personnel with accreditation are allowed to perform handling of animals. Cornea cauterization will be performed under general (20% Zoletil 100, 25 mg/kg, and Xylazine/Rometar, 10 mg/kg, intramuscular in maximal volume 100 µl) and local (Oxybuprokaine/Benoxi oph gtt, 4 mg/ml) anesthesia. Mice will be allowed to recover overnight in their cage on a heating pad, and frequently monitored (several times during the first hours after procedure, and daily thereafter). Thereafter, mice will be administered analgesics (Rimadyl, 5-10 mg/kg, volume max. 100 µl intramascular) and local anestesia (Oxybuprokaine) every 8-12 hours. Mice are monitored more frequently in case they show any signs of discomfort or pain. Experiments will be discontinued, and mice will be euthanized, if mice show difficulty moving easily, in case they lost >20% of their weight or in case of signs of severe distress. Experiments with tumors will be terminated before tumors accede 5% of the animal weight.

ANIMAL MODELS AND NUMBER OF ANIMALS

INDUCIBLE ENDOTHELIAL-SPECIFIC KNOCK-OUT MICE

For the EC-specific tamoxifen-inducible knockout model, Dhodh$^{flox/flox}$ mice were crossed with *Cdh5*$^{Cre-ERT2}$ animals to obtain *Cdh5*^{CreERT2} Dhodh$^{flox/flox}$ mice. The colony will be kept by crossing *Cdh5*^{CreERT2}Dhodh$^{flox/flox}$ mice with Dhodh$^{flox/flox}$ animals to get both Cre^{+} and Cre^{-} littermates. Gender balanced cohorts will be used in experiments.

SYNGENEIC LUNG TUMOR BEARING MICE

6 mice per group will be used for single cell RNA-seq experiment to account for potential technical bias and to capture the biological variability of the model. We will profile following samples: I will collect following samples: (i) lung tumors from control mice injected with HKP1 and (ii) HKP1-DHODH^{KO} cells, and (iii) lung tumors from DHODH^{ECKO} mice injected with HKP1, and (iv) healthy lungs from control and (v) DHODH^{ECKO} mice.

Additional animals will be used for *in vivo* validation of synthetic lethality of selected combinations of targets. Promising combinations of targets will be selected from our integrated analysis. Up to three target combinations will be selected for further validation *in vivo*, using syngeneic tumor mouse models.

To reach effect size of 2 in a two-sided t-test (with alpha = 0,05) for a difference in means between two groups assuming equal variance and equal group size. Effect size = difference between means divided by common standard deviation. This equals 6 mice per group required for 80% power. In addition, considering the technical difficulties of the orthotopic cancer cell injection, we need 20% more mice to get enough mice for experiment.

Hence, in total we will need 8 mice per group.

DESCRIPTION OF THE PLANNED INTERVENTIONS/MANIPULATIONS ON THE LIVING ANIMAL

1. **Taking substances or tissues**
   a. Tail biopsies will be taken from weaned pups for genotyping.
   b. Eyes will be collected from pups after decapitation for ex vivo studies or histopathological analysis.
   c. Lungs with orthotopic tumors or subcutaneously injected tumors will be collected for ex vivo studies from sacrificed animals.
   d. Endothelial cells will be isolated from murine lungs (collected from sacrificed animals)
2. **Administration of substances to non-anaesthetized animals**
   a. Intraperitoneal injections of tamoxifen in 6-8-week-old mice will be performed once daily for 5 consecutive days, 2 mg tamoxifen/20g mouse, in 200 µL of corn oil.
   b. Intraperitoneal injections of tamoxifen in pups will be performed from P1 to P3, once daily for 3 consecutive days, 10 mg tamoxifen/kg in 15 µL of corn oil.
   c. For cornea cauterization experiments, anesthetics (20% Zoletil 100, 25 mg/kg, and Xylazine/Rometar, 10 mg/kg, maximal volume 100 µl) and analgesics (Rimadyl, 5-10 mg/kg, maximal volume 100 µl) will be applied intramuscularly (leg). Local anesthesia (Oxybuprokaine/Benoxi oph gtt, 4 mg/ml) will be applied into the eye. Rimadyl and Oxybuprokaine will be applied after the cauterization procedure every 8-12 hours.
3. **Xenografting of cancer cells**
   a. Orthotopic lung tumors: HKP1 cancer cells will be injected via tail vein (1.50 x 10^5 cells in 100 µl PBS) into 8-12-week-old animals. The animals will be monitored daily and sacrificed 15 days after cancer cell injection for control animals, DHODH-deficient models will be sacrificed when the tumors reach the size of control tumors. However, animals will be sacrificed any time earlier in case of visible signs of discomfort.
   b. Subcutaneous tumors: HKP1 cancer cells will be injected subcutaneously (1x10^6 cells in 100 µl PBS). Experiment will be terminated before the tumor size reaches 5% of the animal weight, approximately 1000 mm^3. However, animals will be sacrificed any time earlier in case of visible signs of discomfort.
4. **Clinical investigation of animals**
   a. Monitoring of body weight and general health will be performed daily.

b. Mice implanted with orthotopic lung tumors will be monitored daily, and tumor volume will be measured 2-3-times per week by luminescent imaging in anesthesia (Isoflurane).
c. Mice implanted with s.c. tumors will be monitored daily, and tumor volume will be measured 2-3-times per week using calipers.
d. Mice after cornea cauterization will be monitored daily and analgesics/local anesthetics will be applied every 8-12 hours.

7 ADDITIONAL INFORMATION ON SECURITY SCREENING

Not applicable.

LIST OF ATTACHMENTS

1. **Certification of BIOCEV/CCP animal facility to the use of experimental animals (animal experiments, 31255/2019-MZE-18134, and breeding, 31257/2019-MZE-18134)**
   a. Page 12 – 26, 31255/2019-MZE-18134
   b. Page 27 – 48, 31257/2019-MZE-18134
2. **Certification of the Institute of Biotechnology to work with genetically modified organisms (cell lines, 91866/ENV/15, and mice, MZP/2019/750/287)**
   a. Page 49, 91866/ENV/15
   b. Page 50, MZP/2019/750/287
3. **Personal permit of the applicant to perform and supervise the work with experimental animals**
   a. Page 51

   The Spanish permit will be legalized by the authorities in Czechia upon arrival.

Ministerstvo zemědělství

Odbor environmentální a ekologického zemědělství

Spisová značka: 17OZ9715/2019-18134
Č.j.: 31257/2019-MZE-18134

31257/2019-MZE-18134/1
000314895544

Vyřizuje: JUDr. Jana Traplová
Telefon: 221812346
E-mail: Jana.Traplova@mze.cz
ID DS: yphaax8

Adresa: Těšnov 65/17, Nové Město, 110 00 Praha 1

V Praze dne: 13. 6. 2019

R O Z H O D N U T Í

Ministerstvo zemědělství, odbor environmentální a ekologického zemědělství, oddělení ochrany zvířat (dále jen „Ministerstvo zemědělství“), které je příslušným orgánem ochrany zvířat k rozhodování o udělení, změně, pozastavení nebo odnětí oprávnění k chovu pokusných zvířat a k dodávce pokusných zvířat podle § 20 odst. 1 písm. g) zákona č. 246/1992 Sb., na ochranu zvířat proti týrání, ve znění pozdějších předpisů (dále jen „zákon na ochranu zvířat“), v řízení zahájeném na základě žádosti podané Ústavem molekulární genetiky AV ČR, v. v. i., zastoupeným ve správním řízení MVDr. Janem Honetschlägerem, MBA, podle ustanovení § 44 odst. 1 zákona č. 500/2004 Sb., správního řádu, v platném znění, na základě ustanovení § 20 odst. 1 písm. g) zákona na ochranu zvířat ve věci žádosti o udělení oprávnění k chovu pokusných zvířat a k dodávce pokusných zvířat rozhodlo takto:

U d ě l u j e s e o p r á v n ě n í
k c h o v u p o k u s n ý c h z v í ř a t
a k d o d á v c e p o k u s n ý c h z v í ř a t

podle § 15b, § 20 odst. 1 písm. g) zákona na ochranu zvířat **Ústavu molekulární genetiky AV ČR, v. v. i., se sídlem Vídeňská 1083, 142 20 Praha 4 – Krč, IČO 68378050** (dále jen „žadatel“)

- **v zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál Krč, Vídeňská 1083, 142 20 Praha 4**

Budova Fb

1. PP: chov myší v místnostech č. 1.07, 1.08, 1.09, 1.10, 1.11, 1.12, 1.13, 1.29, 1.30
2. PP: chov myší v místnostech č. 2.04, 2.09, 2.10, 2.11, 2.12, 2.13, 2.37

související provozní prostory v místnostech č.: 0.01 zádveří, 0.02 kancelář, 0.03 úklid, 0.04 sklad, 0.05 sklad, 0.06 sklad, 0.12 inaktivace, 0.13 autokláv, 0.16 UV komora, 0.17 šatna, 0.18 šatna, 0.19 příjem manipulace, 0.20 sklad kadaverů, 0.21 úklid, 0.22 filtr, 0.23 kancelář 1, 0.24 denní místnost zaměstnanců, 0.25 WC, sprcha, 0.26 autokláv, 0.27 inaktivace, 0.29 laboratoř 3, 0.29a neutralizace, 0.30 filtr, 0.31 filtr, 0.32 přenosy, 0.34 chodba, 0.40 garáž, 0.41 dílna, 0.42 sklad, 0.43 kontejnery, 0.44 kontejnery, 0.S1 schodiště, 0.S2 schodiště, 0.V1 výtah, 0.V2 výtah, 1.01 chodba, 1.02 stroj. UT, 1.03 úklid, 1.04 rozvodna silnoproud, 1.05 sklad, 1.06 manipulace, 1.14 laboratoř 1, 1.15 sklad, 1.17 umývárna, 1.18 špinavé hobliny, 1.19 strojovna chlazení, 1.20 manipulace, 1.21 sklad, 1.22 kompresor, 1.23 sprcha, 1.24 filtr, 1.25 šatna, 1.25a umyvadlo, 1.25b WC, 1.26 šatna, 1.27 filtr, 1.28 sklad, 1.33 odběry, 1.34 šatna, 1.36 chodba, 1.40 strojovna VZT, 1.42 VZT, 1.S1 schodiště, 1.S2 schodiště, 1.V1 výtah, 1.V2 výtah, 2.01 chodba, 2.02 sklad, 2.03 sklad, 2.05 úklid, 2.05b přečerpávací šachta, 2.06 rozvodna slaboproud, 2.07 sklad, 2.08 manipulace, 2.14 sklad, 2.15 sklad, 2.16 autokláv - čistá strana, 2.17 sterilizační místnost, 2.18 autokláv – nečistá strana, 2.19 umývárna čistá strana, 2.20 špinavé hobliny, 2.21 manipulace, 2.22 sklad podestýlky, 2.23 strojovna chlazení, 2.24 úklid, 2.25 chlazený sklad krmiva, 2.26 chodba, 2.28 sklad, 2.29 WC, 2.30 šatna, 2.31 přečerpání, 2.32 filtr, 2.33 chodba, 2.34 sprcha muži, 2.35 sprcha ženy, 2.36 transgenní jednotka, 2.40 strojovna VZT, 2.41 strojovna výtahu, 2.S1 schodiště, 2.S2 schodiště, 2.V1 výtah, 2.V2 výtah

Budova V

chov myší v místnostech č.: 1, 3

související provozní prostory v místnostech č.: 4 chodba, 5 sklad, 6 šatna muži, 7 šatna ženy, 8 UV filtr, 9 sklad úklid, 10 sklad, 12 umývárna, 13 filtr – vstup, 14 sklad, 15 umývárna, 16 zádveří, 18 sklad, 19 vestibul, 20 úklid, 21 zádveří, 22 denní místnost, 23 předsíň WC, 24 sklad, 25 sprcha, 26 WC, 27 autokláv

Budova Ch

chov myší v místnostech č. 21, 22

související provozní prostory v místnostech č.: 1 zádveří, 2 chodba, 3 filtr, 3a sprcha, 4 chodba, 8 sklad, 10 umývárna infekční, 11 umývárna čistá, 15 sklad, 18 manipulace vstup, 23 filtr, 27 šatna, 27a WC, 28 zádveří, 29 chodba, 33 umývárna hlodavci, 34 sklad, 36 příjem, 37 filtr, 38 sklad krmiva, 39 šatna, 40 sprcha, 41 WC, 42 úklid, 44 dekontaminace, 47 sklad plyny

Budova F

chov a dodávka a využití ryb dle § 15a odst. 4 zákona na ochranu zvířat v místnosti č.: 01.166, 01.169, 01.173, 01.188, chov a laboratoř 01.167, 2.95, 3.84, 3.96

- **v zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál BIOCEV, Průmyslová 595, 252 50 Vestec**

Budova SO 002

2. PP - alternativní chov myš a potkan v místnostech č.: 0217, 0218, 0219, 0220,
chov myš v místnostech č.: 0230, 0231,0232, 0241

související provozní prostory a laboratoře v místnostech č.: 101 schodiště 1, 102 chodba, 102a chodba, 103 sklad krmiv, 104 sklad podestýlky, 105 technická místnost, 105a rozvodna slaboproud, 106 čistý výtah v2.3, 107 čistý výtah v2.2, 108a wc ženy, 108b wc muži,

109 schodiště 2, 110 vstup, 111 chodba, 112 kancelář, 112a kancelář, 118 výtah v2.1, 119 nečistý výtah v2.4, 120 nečistý výtah v2.5, 121 schodiště 4, 123 schodiště 3, 124 mycí linka, 124a technická místnost, 125 chodba, 0101 schodiště 1, 0102 chodba, 0103 schodiště 2, 0104 výtah v2.1, 0105 chodba, 0105a chodba, 0106 sklad, 0110 šatna - ženy, 0111 wc ženy, 0111a umývárna ženy, 0112 wc muži, 0112a umývárna muži, 0112b předsíň wc muži, 0113 šatna - muži, 0114 schodiště 4, 0115 nečistý výtah v2.5, 0115a strojovna výtahů, 0116 nečistý výtah v2.4, 0117 schodiště 3, 0118 technické zabezpečení budovy, 0119a filtr, 0119b umývárna, 0119c filtr - sprcha, 0119d filtr - chodba, 0119e filtr - wc, 0119f filtr - chodba, 0120 rozvodna 1, 0120a rozvodna 2, 0121 čistý výtah v2.3, 0121a strojovna výtahů, 0122 čistý výtah v2.2, 0123 chodba, 0124 skladovací místnost, 0201 schodiště 1, 0201a technická místnost, 0202 chodba, 0203 chodba, 0204 sprcha, 0205 wc, 0206 příprava, 0206a úklid, 0213 schodiště 3, 0214 chodba, 0214a sklad, 0214b sklad, 0215 chodba, 0221 chodba, 0221a úklid, 0222 vstup pro osoby, 0222a vstup pro osoby - sprcha, 0222b vstup pro osoby, 0223 vstup pro osoby, 0223a vstup pro osoby - sprcha, 0223b vstup pro osoby, 0224 vstup pro osoby, 0224a vstup pro osoby - sprcha, 0224b vstup pro osoby, 0225 vstup pro osoby, 0225a vstup pro osoby - sprcha, 0225b vstup pro osoby, 0226 chodba, 0227 příprava, 0233 nečistý výtah v2.4, 0234 nečistý výtah v2.5, 0235 chodba, 0236 čistý výtah v2.3, 0237 čistý výtah v2.2, 0238 chodba, 0239 wc, 0240 wc, 0240a úklid, 0245 schodiště 4, 0246 chodba, 0247 chodba, 0248 propust, 0249 vstup pro osoby, 0254 chodba, 0255 příprava, 0255a úklid, 0260 chodba, 0261 vstup pro osoby, 0261a vstup pro osoby - sprcha, 0261b vstup pro osoby, 0263 skladovací místnost, 0264 skladovací místnost, 0264a technická místnost, 0265 schodiště 2, 0266 výtah v2.1

- **v zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál Koleč 24, 273 29 Koleč, okres Kladno**

Budova č. 405

související provozní prostory v místnostech č.: 1.01 kafilérní místnost, 1.07 vchod ke klíčírně obilí, 1.08 klíčírna obilí, 1.09 pitevna drůbeže

Budova č. 413

chov kura v místnostech č.: 1.05, 1.06, 1.08, 1.09, 1.10, 1.11

související provozní prostory v místnostech č.: 1.01 zádveří, 1.02 sklad, 1.03 přípravna, umývárna, 1.04 rozvaděč, 1.07 chodba

Budova č. 415

související provozní prostory v místnostech č.: 1.06 kancelář, 1.07 umývárna, 1.08 předsíň, 1.09 zádveří, 1.10, 1.11 - líhně

Budova č. 420

související provozní prostory v místnostech č.: 1.01 předsíň, 1.02 kancelář skladu, 1.03 dezinfekce vajec, 1.04 technický sklad, 1.05 chladnice sklad vajec, 1.07 sklad krmiva, 1.09 sklad podestýlky

a to **na dobu 5 let** ode dne právní moci tohoto rozhodnutí,

k chovu a dodávce těchto druhů pokusných zvířat:

Maximální denní stavy zvířat – **souhrn za chovné a dodavatelské zařízení**		
druhy pokusných zvířat	o maximální tělesné hmotnosti	v maximálním denním stavu
Myš laboratorní	do 20 g	123687 ks
	nad 30 g	77262 ks
Potkan laboratorní	do 200 g	3220 ks
	nad 600 g	805 ks
Kur domácí	do 200 g	1796 ks
	od 200 do 300 g	1496 ks
	od 300 do 600 g	1080 ks
	od 600 do 1200 g	288 ks
Mihule mořská		160 ks
Medaka japonská		3650 ks
Danio pruhované		34650 ks

Maximální denní stavy zvířat – **areál Krč**		
druhy pokusných zvířat	o maximální tělesné hmotnosti	v maximálním denním stavu
Myš laboratorní	do 20 g	64552 ks
	nad 30 g	40405 ks
Mihule mořská		160 ks
Medaka japonská		3650 ks
Danio pruhované		34650 ks

Maximální denní stavy zvířat – **areál BIOCEV, Vestec**		
druhy pokusných zvířat	o maximální tělesné hmotnosti	v maximálním denním stavu
Myš laboratorní	do 20 g	59135 ks
	nad 30 g	36857 ks
Potkan laboratorní	do 200 g	3220 ks
	nad 600 g	805 ks

Maximální denní stavy zvířat – **areál Koleč**		
druhy pokusných zvířat	o maximální tělesné hmotnosti	v maximálním denním stavu
Kur domácí	do 200 g	1796 ks
	od 200 do 300 g	1496 ks
	od 300 do 600 g	1080 ks
	od 600 do 1200 g	288 ks

V případě současného ustájení zvířat o různých hmotnostních kategoriích bude celkový počet zvířat snížen v souladu s vyhláškou. Myši mohou být umístěny i v chovných nádobách původně určených pro potkany.

Konkrétně se jedná v jednotlivých zařízeních a místnostech o druhy, maximální denní stavy a hmotnostní kategorie zvířat uvedené v příloze tohoto rozhodnutí.

Osobou odpovědnou za péči o pokusná zvířata ve výše uvedeném zařízení je MVDr. Jan Honetschläger, MBA, narozen 20. 4. 1982, Kaplice, trvale bytem Na Sekyře 313, 251 01 Tehov, číslo osvědčení o odborné způsobilosti podle § 15d odst. 3 zákona na ochranu zvířat CZ 01084.

Určeným veterinárním lékařem ve výše uvedeném zařízení je MVDr. Jan Honetschläger, MBA, narozen 20. 4. 1982, Kaplice, trvale bytem Na Sekyře 313, 251 01 Tehov, číslo osvědčení o odborné způsobilosti podle § 15d odst. 3 zákona na ochranu zvířat CZ 01084.

Statutárním orgánem, který je odpovědný za dodržování zákona na ochranu zvířat, je RNDr. Petr Dráber, DrSc., narozen 18. 3. 1951 v Píšti.

O D Ů V O D N Ě N Í

Žádost o udělení oprávnění k chovu pokusných zvířat nebo k dodávce pokusných zvířat podle § 15b zákona na ochranu zvířat a podle § 2 odst. 2 vyhlášky č. 419/2012 Sb., o ochraně pokusných zvířat (dále jen „vyhláška“), byla Ministerstvu zemědělství doručena dne 11. 4. 2019. Tímto dnem bylo zahájeno správní řízení.

Ministerstvo zemědělství písemně pověřilo k posouzení výše uvedeného zařízení chovatele pokusných zvířat a dodavatele pokusných zvířat v souladu s § 15c odst. 5 zákona na ochranu zvířat posuzovatele Doc. MVDr. Pavla Nováka, CSc. a Doc. RNDr. Pavla Rödla, CSc. Posuzovatelé posoudili zařízení žadatele fyzickou kontrolou na místě, včetně stanovené dokumentace, o zjištěných skutečnostech zpracovali písemný posudek, který dne 23. 5. 2019 předložili v souladu s § 15c odst. 6 písm. a) bodem 2 zákona na ochranu zvířat Ministerstvu zemědělství, v posudku doporučili udělení oprávnění k chovu pokusných zvířat a dodávce pokusných zvířat na dobu 5 let. Posuzovatelé nezjistili závady a nedostatky v předložené dokumentaci ani v technickém vybavení zařízení.

Ministerstvo zemědělství při rozhodování postupovalo v souladu s § 15a odst. 4 zákona na ochranu zvířat, který stanoví: „Zařízení určená k chovu a dodávce pokusných zvířat musí být oddělena od zařízení určených k používání pokusných zvířat, to neplatí v případě chovu, dodávky a využití ryb a pokusů, při nichž je prováděn u pokusných zvířat pouze odběr krve.“

K posouzení prostorové kapacity zařízení a technického vybavení prostor, ve kterých jsou pokusná zvířata chována, posuzovatelé v posudku uvedli:
„Prostorová kapacita posuzovaného zařízení chovatele a dodavatele pokusných zvířat a technické vybavení prostor odpovídá ustanovení zákona č. 246/1992 Sb., na ochranu zvířat proti týrání, a vyhlášky č. 419/2012 Sb., o ochraně pokusných zvířat, ve znění pozdějších předpisů. Tato vybavení vyhovují nárokům na podmínky chovných prostor pro ustájení a vybavení pro zajištění dodávky výše uvedených druhů zvířat včetně jejich fyziologických potřeb podle tělesné hmotnosti a požadavků na velikosti ustájovacích prostor včetně technického vybavení zázemí (sklady krmiv, podestýlky, vybavení pro přemisťování zvířat, technické, servisní a sociální místnosti,…).
V místnostech, kde je uvedeno více druhů zvířat, se počítá s alternativním využitím daného druhu zvířat, případně se současným využitím kapacity místnosti danými druhy zvířat. To je umožněno využitím IVC chovných nádob a technologie, která odpovídá požadavkům na chov uvedených druhů zvířat.

Součet maximálního denního stavu myší a potkanů v jednotlivých místnostech je větší než maximální denní stav v celém zařízení, neboť myši a potkani nebudou nikdy umístěni zároveň ve všech místnostech, které jsou pro jejich umístění schvalovány.“

Maximální denní stavy zvířat jsou závislé na tom, o jakou hmotnostní kategorii zvířat se jedná. Vyhláška č. 419/2012 Sb., o ochraně pokusných zvířat, v příloze č. 7 stanoví různé rozměry pro klece a kotce v závislosti na konečné tělesné hmotnosti zvířat. V rozhodnutí jsou u jednotlivých druhů zvířat uvedeny maximální počty pokusných zvířat v nejmenší a největší hmotnostní kategorii. V rozhodnutí nejsou uvedeny počty zvířat ve všech hmotnostních kategoriích, tyto počty jsou uvedeny v příslušných dokumentech chovatele a dodavatele pokusných zvířat. Žadatel může chovat nebo dodávat pokusná zvířata nejen v nejmenší a největší hmotnostní kategorii, ale také hmotnostní kategorie zvířat, které se nacházejí v daném rozmezí. Počet zvířat chovaných v zařízení nebo dodávaných ale nikdy nesmí překročit počet zvířat schválený pro nejmenší hmotnostní kategorii. V případě chovu nebo dodávky pokusných zvířat různých hmotnostních kategorií musí být počet chovaných nebo dodávaných zvířat snížen tak, aby odpovídal požadavkům upraveným ve vyhlášce o ochraně pokusných zvířat a v tomto rozhodnutí.

Na základě předložené žádosti, zpracovaného posudku a na základě vyhodnocení spisového materiálu Ministerstvo zemědělství rozhodlo o udělení oprávnění k chovu pokusných zvířat a k dodávce pokusných zvířat žadateli na dobu 5 let, a to vzhledem ke splnění stanovených podmínek chovu pokusných zvířat, které jsou v souladu se zákonem na ochranu zvířat a vyhláškou.

V souladu s ustanovením § 15b odst. 3 zákona na ochranu zvířat bylo žadateli uděleno oprávnění k chovu pokusných zvířat a k dodávce pokusných zvířat na dobu 5 let, neboť se jedná o další udělení oprávnění.

Žadatel byl vyzván k úhradě správního poplatku podle položky 75 sazebníku poplatků – přílohy k zákonu č. 634/2004 Sb., o správních poplatcích, ve výši 5.000 Kč. Tato částka byla uhrazena bankovním převodem ve stanovené lhůtě.

Z výše uvedených důvodů bylo rozhodnuto tak, jak je uvedeno ve výrokové části tohoto rozhodnutí.

Podle § 15b odst. 6 a 7 zákona na ochranu zvířat je chovatel pokusných zvířat a dodavatel pokusných zvířat povinen bez zbytečného odkladu ohlásit ministerstvu změnu údajů uvedených v rozhodnutí o udělení oprávnění. V případě jakékoli významné změny struktury nebo funkce zařízení, která by mohla nepříznivě ovlivnit životní podmínky pokusných zvířat, v případě změny místa, kde jsou prováděny činnosti s pokusnými zvířaty, rozšíření druhů činností nebo zvýšení počtu chovaných nebo dodávaných druhů pokusných zvířat musí chovatel pokusných zvířat nebo dodavatel pokusných zvířat podat novou žádost. Provést změny uvedené v předchozí větě je možné až po nabytí právní moci rozhodnutí o udělení oprávnění chovatele pokusných zvířat nebo dodavatele pokusných zvířat.

Tímto rozhodnutím se nahrazuje rozhodnutí Ministerstva zemědělství sp. zn. 17OZ6828/2014-17214, č. j. 40090/2014-MZE-17214, ze dne 29. 5. 2014, o udělení oprávnění k chovu pokusných zvířat a k dodávce pokusných zvířat Ústavu molekulární genetiky AV ČR, v. v. i., se sídlem Vídeňská 1083, 142 20 Praha 4 – Krč, IČ 68378050. Toto rozhodnutí se vztahovalo na zařízení Koleč, 273 29, okres Kladno. Rozhodnutí Ministerstva zemědělství ze dne 29. 5. 2014 nabylo právní moci dne 17. 6. 2014 a je platné do 17. 6. 2019. Toto rozhodnutí nezaniká uplynutím doby v něm stanovené, protože žadatel podal žádost o vydání dalšího rozhodnutí, které má na předchozí rozhodnutí navazovat minimálně 60 dnů přede dnem uplynutí platnosti vydaného rozhodnutí (§ 20 odst. 4 zákona na ochranu zvířat). Rozhodnutí ze dne 29. 5. 2014 zaniká právní mocí tohoto rozhodnutí.

Žadateli bylo ve vztahu k zařízení pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál Krč, Vídeňská 1083, 142 20 Praha 4, a k zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál BIOCEV, Průmyslová 595, 252 50 Vestec, uděleno oprávnění k chovu pokusných zvířat a k dodávce pokusných zvířat sp. zn. 17OZ30962/2015-17214, č. j. 66865/2015-MZE-17214, ze dne 18. 12. 2015. Toto rozhodnutí nabylo právní moci dnem 8. 1. 2016 a je platné do 8. 1. 2021. Po zhruba třech letech platnosti uvedeného rozhodnutí požádal žadatel o jeho odnětí a o udělení nového oprávnění. Odnětí rozhodnutí o udělení oprávnění k chovu pokusných zvířat a k dodávce pokusných zvířat vydaného pod sp. zn. 17OZ30962/2015-17214, č. j. 66865/2015-MZE-17214, ze dne 18. 12. 2015, se provádí samostatným rozhodnutím sp. zn. 17OZ30962/2015-17214, č. j. 21119/2019-MZE-18134. Žadatel výslovně požádal o sjednocení stávajících rozhodnutí pod jedno a o odnětí dosavadního rozhodnutí.

P O U Č E N Í Ú Č A S T N Í K Ů

Proti tomuto rozhodnutí lze podle § 152 odst. 1 zákona č. 500/2004 Sb., správního řádu, v platném znění, do 15 dnů ode dne oznámení rozhodnutí podat rozklad k ministru zemědělství, a to podáním učiněným u Ministerstva zemědělství – odboru environmentálního a ekologického zemědělství.

Ing. Jitka Götzová
ředitel odboru

Otisk úředního razítka

Rozdělovník

1. Účastník řízení – žadatel (datovou schránkou) – Ústav molekulární genetiky AV ČR, v. v. i., se sídlem Vídeňská 1083, 142 20 Praha 4 – Krč, zastoupený MVDr. Janem Honetschlägerem, MBA, Ústav molekulární genetiky AV ČR, v. v. i., Vídeňská 1083, 142 20 Praha 4 – Krč

Orgány ochrany zvířat dle § 15b odst. 5 zákona na ochranu zvířat, kterým se zasílá rozhodnutí o udělení oprávnění na vědomí:
2. Městská veterinární správa v Praze SVS, Ústřední pracoviště, Na Kozačce 3, 120 00 Praha 2
3. Krajská veterinární správa SVS pro Středočeský kraj, Ústřední pracoviště, Černoleská 1929, 256 38 Benešov

Vypraveno dne

Příloha rozhodnutí o udělení oprávnění k chovu pokusných zvířat a k dodávce pokusných zvířat sp. zn. 17OZ9715/2019-18134, č. j. 31257/2019-MZE-18134

- **zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál Krč, Vídeňská 1083, 142 20 Praha 4**

Budova Fb

Místnost č. 1.07

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2560 ks nebo	320 ks
	nad 30 g	1600 ks	320 ks

Místnost č. 1.08

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2800 ks nebo	350 ks
	nad 30 g	1750 ks	350 ks

Místnost č. 1.09

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	3000 ks nebo	375 ks
	nad 30 g	1875 ks	375 ks

Místnost č. 1.10

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2720 ks nebo	340 ks
	nad 30 g	1700 ks	340 ks

Místnost č. 1.11

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2560 ks nebo	320 ks
	nad 30 g	1600 ks	320 ks

Místnost č. 1.12

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2840 ks nebo	355 ks
	nad 30 g	1775 ks	355 ks

Místnost č. 1.13

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	3040 ks nebo	380 ks
	nad 30 g	1900 ks	380 ks

Místnost č. 1.29

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	3280 ks nebo	410 ks
	nad 30 g	2050 ks	410 ks

Místnost č. 1.30

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	1440 ks nebo	180 ks
	nad 30 g	900 ks	180 ks

Místnost č. 2.04

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2520 ks nebo	315 ks
	nad 30 g	1575 ks	315 ks

Místnost č. 2.09

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	3024 ks nebo	378 ks
	nad 30 g	1890 ks	378 ks

Místnost č. 2.10

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	3024 ks nebo	378 ks
	nad 30 g	1890 ks	378 ks

Místnost č. 2.11

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	3024 ks nebo	378 ks
	nad 30 g	1890 ks	378 ks

Místnost č. 2.12

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2336 ks nebo	352 ks
	nad 30 g	1520 ks	352 ks

Místnost č. 2.13

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2048 ks nebo	256 ks
	nad 30 g	1280 ks	256 ks

Místnost č. 2.37

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	1512 ks nebo	189 ks
	nad 30 g	945 ks	189 ks

Budova V

Místnost č. 1

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	8000 ks nebo	1000 ks
	nad 30 g	5000 ks	1000 ks

Místnost č. 3

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	11680 ks nebo	1460 ks
	nad 30 g	7300 ks	1460 ks

Budova CH

Místnost č. 21

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	1664 ks nebo	208 ks
	nad 30 g	1040 ks	208 ks

Místnost č. 22

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	1480 ks nebo	185 ks
	nad 30 g	925 ks	185 ks

Budova F - *místnosti určené pro chov, dodávky a využití ryb a mihule*

Kapacita používaných chovných nádob pro ryby dle věku

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	0 - 5 dnů po oplození	100 ks na Petriho misku
	5 - 30 dnů po oplození	30 ks na akvárium min. o objemu 1 litr
	30 dnů a více po oplození	30 ks na akvárium min. o objemu 3,5 litru
Medaka japonská	10 dnů a více po oplození	25 ks na akvárium
Mihule mořská	larva	20 ks na akvárium

Karanténa 01.166
Recirkulační systém
Akvárium o objemu 3,5 litru – 50 ks nebo akvárium o objemu 8 litrů – 25 ks
Akvárium samostatné o objemu 1 litr – 30 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	10 dnů a více po oplození	1 500 ks

Inkubátor

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	0 - 30 dnů po oplození	1 250 ks

Inkubátor 01.167

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	0 - 30 dnů po oplození	1 250 ks

Rybí chov 01.169

Recirkulační systém

Akvárium o objemu 3,5 litru – 600 ks nebo akvárium o objemu 8 litrů – 300 ks
Akvárium o objemu 1,1 litr – 180 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	5 - 30 dnů po oplození	5 400 ks
	30 dnů a více po oplození	18 000 ks

Rybí chov 01.173

Akvárium o objemu 3,5 litru – 50 ks nebo akvárium o objemu 8 litrů – 25 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	10 dnů a více po oplození	1 500 ks

Rybí chov II 01.188

Akvárium o objemu 3,5 litru – 50 ks nebo akvárium o objemu 8 litrů – 25 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	10 dnů a více po oplození	1 500 ks

Chov a laboratoř ryby 2.95

Akvárium o objemu 3,5 litru – 50 ks nebo akvárium o objemu 8 litrů – 25 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	4 dnů a více po oplození	1 500 ks

Akvárium o objemu 2 litry – 96 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Medaka japonská	10 dnů a více po oplození	2 400 ks

Inkubátor

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Medaka japonská	0 - 30 dnů po oplození	1 250 ks

Chov a laboratoř ryby 3.84

Akvárium samostatné o objemu 8 litrů – 30 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	10 dnů a více po oplození	1 500 ks

Inkubátor

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	0 - 30 dnů po oplození	1 250 ks

Místnost 3.96

2 x inkubátor, akvárium o objemu 10 – 15 litrů – 8 ks

druh zvířat	stádium	stav (počet) - v maximálním denním stavu
Mihule mořská	larva	160 ks

- **zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál BIOCEV, Průmyslová 595, 252 50 Vestec**

Budova SO.002

Místnost 0217 primárně potkani

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	4095 ks nebo	273 ks
	nad 30 g	2457 ks a nebo	273 ks
Potkan laboratorní	do 200 g	1092 ks nebo	273 ks
	nad 600 g	273 ks	273 ks

Místnost 0218 u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	4480 ks + 2520 ks nebo	560 ks
	nad 30 g	2800 ks + 1512 ks a nebo	560 ks
Potkan laboratorní	do 200 g	672 ks nebo	168 ks
	nad 600 g	168 ks	168 ks

Místnost 0219 u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	4480 ks + 2730 ks nebo	560 ks
	nad 30 g	2800 ks + 1638 ks a nebo	560 ks
Potkan laboratorní	do 200 g	728 ks nebo	182 ks
	nad 600 g	182 ks	182 ks

Místnost 0220 u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	5120 ks + 2730 ks nebo	640 ks
	nad 30 g	3200 ks + 1638 ks a nebo	640 ks
Potkan laboratorní	do 200 g	728 ks nebo	182 ks
	nad 600 g	182 ks	182 ks

Místnost 0230

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	3840 ks nebo	480 ks
	nad 30 g	2400 ks	480 ks

Místnost 0231

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	7680 ks nebo	960 ks
	nad 30 g	4800 ks	960 ks

Místnost 0232

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	7680 ks nebo	960 ks
	nad 30 g	4800 ks	960 ks

Místnost 0241

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	21760 ks nebo	2720 ks
	nad 30 g	13600 ks	2720 ks

- **zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál Koleč 24, 273 29 Koleč, okres Kladno**

<u>Budova 413</u>

Místnost 1.05

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí	1036 nebo	864 nebo	504	-	-	-

Místnost 1.06

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí	-	-	504 nebo	288	-	-

Místnost 1.08

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí	144 nebo	120 nebo	72	-	-	-

Místnost 1.09

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí	193 nebo	160	-	-	-	-

Místnost 1.10

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí	193 nebo	160	-	-	-	-

Místnost 1.11

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí	230 nebo	192	-	-	-	-

Toto rozhodnutí nabylo právní moci dne: 02.07.2019

Vyznačení doložky právní moci provedl dne 03.07.2019: Kruml Jiří

Ministerstvo zemědělství

Odbor environmentální a ekologického zemědělství

Spisová značka: 16OZ9707/2019-18134
Č.j.: 31255/2019-MZE-18134

31255/2019-MZE-18134/1
000314877861

Vyřizuje: JUDr. Jana Traplová
Telefon: 221812346
E-mail: Jana.Traplova@mze.cz
ID DS: yphaax8

Adresa: Těšnov 65/17, Nové Město, 110 00 Praha 1

V Praze dne: 13. 6. 2019

R O Z H O D N U T Í

Ministerstvo zemědělství, odbor environmentální a ekologického zemědělství, oddělení ochrany zvířat (dále jen „Ministerstvo zemědělství“), které je příslušným orgánem ochrany zvířat k rozhodování o udělení, změně, pozastavení nebo odnětí oprávnění k používání pokusných zvířat podle § 20 odst. 1 písm. g) zákona č. 246/1992 Sb., na ochranu zvířat proti týrání, ve znění pozdějších předpisů (dále jen „zákon na ochranu zvířat“), v řízení zahájeném na základě žádosti podané Ústavem molekulární genetiky AV ČR, v. v. i., zastoupeným ve správním řízení MVDr. Janem Honetschlägerem, MBA, podle ustanovení § 44 odst. 1 zákona č. 500/2004 Sb., správního řádu, v platném znění, na základě ustanovení § 20 odst. 1 písm. g) zákona na ochranu zvířat ve věci žádosti o udělení oprávnění k používání pokusných zvířat rozhodlo takto:

U d ě l u j e s e o p r á v n ě n í
k p o u ž í v á n í p o k u s n ý c h z v í ř a t

podle § 15b, § 20 odst. 1 písm. g) zákona na ochranu zvířat **Ústavu molekulární genetiky AV ČR, v. v. i., se sídlem Vídeňská 1083, 142 20 Praha 4 – Krč, IČO 68378050** (dále jen „žadatel“)

- **v zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál Krč, Vídeňská 1083, 142 20 Praha 4**

Budova Fb

1. NP: umístění myší v místnostech č.: 0.07, 0.14, 0.15, 0.28, 0.33
1. PP: umístění myší v místnostech č.: 1.31, 1.32
2. PP: umístění myší v místnostech č.: 2.38, 2.39

související provozní prostory v místnostech č.: 0.01 zádveří, 0.02 kancelář, 0.03 úklid, 0.04 sklad, 0.05 sklad, 0.06 sklad, 0.12 inaktivace, 0.13 autokláv, 0.16 UV komora, 0.17 šatna, 0.18 šatna, 0.19 příjem manipulace, 0.20 sklad kadaverů, 0.21 úklid, 0.22 filtr, 0.23 kancelář 1, 0.24 denní místnost zaměstnanců, 0.25 WC, sprcha, 0.26 autokláv, 0.27 inaktivace, 0.29 laboratoř 3, 0.29a neutralizace, 0.30 filtr, 0.31 filtr, 0.32 přenosy, 0.34 chodba, 0.40 garáž, 0.41 dílna, 0.42 sklad, 0.43 kontejnery, 0.44 kontejnery, 0.S1 schodiště, 0.S2 schodiště, 0.V1 výtah, 0.V2 výtah, 1.01 chodba, 1.02 stroj. UT, 1.03 úklid, 1.04 rozvodna silnoproud, 1.05 sklad, 1.06 manipulace, 1.14 laboratoř 1, 1.15 sklad, 1.17 umývárna, 1.18 špinavé hobliny, 1.19 strojovna chlazení, 1.20 manipulace, 1.21 sklad, 1.22 kompresor, 1.23 sprcha, 1.24 filtr, 1.25 šatna, 1.25a umyvadlo, 1.25b WC, 1.26 šatna, 1.27 filtr, 1.28 sklad, 1.33 odběry, 1.34 šatna, 1.36 chodba, 1.40 strojovna VZT, 1.42 VZT, 1.S1 schodiště, 1.S2 schodiště, 1.V1 výtah, 1.V2 výtah, 2.01 chodba, 2.02 sklad, 2.03 sklad, 2.05 úklid, 2.05b přečerpávací šachta, 2.06 rozvodna slaboproud, 2.07 sklad, 2.08 manipulace, 2.14 sklad, 2.15 sklad, 2.16 autokláv - čistá strana, 2.17 sterilizační místnost, 2.18 autokláv – nečistá strana, 2.19 umývárna čistá strana, 2.20 špinavé hobliny, 2.21 manipulace, 2.22 sklad podestýlky, 2.23 strojovna chlazení, 2.24 úklid, 2.25 chlazený sklad krmiva, 2.26 chodba, 2.28 sklad, 2.29 WC, 2.30 šatna, 2.31 přečerpání, 2.32 filtr, 2.33 chodba, 2.34 sprcha muži, 2.35 sprcha ženy, 2.36 transgenní jednotka, 2.40 strojovna VZT, 2.41 strojovna výtahu, 2.S1 schodiště, 2.S2 schodiště, 2.V1 výtah, 2.V2 výtah

Budova V

umístění myší v místnosti č. 2,
alternativní umístění myší, potkanů, křečků, pískomilů, křečíků v místnosti č. 11

související provozní prostory v místnostech č.: 4 chodba, 5 sklad, 6 šatna muži, 7 šatna ženy, 8 UV filtr, 9 sklad úklid, 10 sklad, 12 umývárna, 13 filtr – vstup, 14 sklad, 15 umývárna, 16 zádveří, 18 sklad, 19 vestibul, 20 úklid, 21 zádveří, 22 denní místnost, 23 předsíň WC, 24 sklad, 25 sprcha, 26 WC, 27 autokláv

Budova Ch

umístění myší v místnostech č. 20, 31, 32,
alternativní umístění myší a potkanů v místnosti č. 35,
umístění kura v místnostech č.:
5 infekční kuřata 1,
6 infekční kuřata 2,
7 infekční kuřata 4,
9 infekční kuřata 3,
16 infekční líheň,
19 infekční kuřata

související provozní prostory v místnostech č.: 1 zádveří, 2 chodba, 3 filtr, 3a sprcha, 4 chodba, 8 sklad, 10 umývárna infekční, 11 umývárna čistá, 12 laboratoř, 13 laboratoř, 14 laboratoř, 15 sklad, 18 manipulace vstup, 23 filtr, 24 laboratoř, 25 RTG, 26 laboratoř, 27 šatna, 27a WC, 28 zádveří, 29 chodba, 30 laboratoř, 33 umývárna hlodavci, 34 sklad, 36 příjem, 37 filtr, 38 sklad krmiva, 39 šatna, 40 sprcha, 41 WC, 42 úklid, 44 dekontaminace, 47 sklad plyny

Budova F

chov a dodávka a využití ryb dle § 15a odst. 4 zákona na ochranu zvířat v místnosti č.: 01.166, 01.169, 01.173, 01.188, chov a laboratoř 01.167, 2.95, 3.84, 3.96

související provozní prostory a laboratoře v místnostech č.: 01.168 laboratoř, sklad chovných nádob, 01.155 seminární místnost, 0.117 seminární místnost, 01.188.1 chodba, 0.195 seminární místnost, 1.102 seminární místnost, 1.12 laboratoř, 1.04 laboratoř, 1.02 laboratoř, 1.52 laboratoř, 1.58 laboratoř, 1.61 laboratoř, 1.65 laboratoř, 1.66 laboratoř, 1.7 laboratoř, 1.28 laboratoř, 1.23 laboratoř, 1.16 laboratoř, 2.102 seminární místnost, 2.51 laboratoř, 2.53 laboratoř, 2.59 laboratoř, 2.61 laboratoř, 2.65 laboratoř, 2.68 laboratoř, 2.74 laboratoř, 2.23 laboratoř, 2.21 laboratoř, 2.16 laboratoř, 2.12 laboratoř, 2.04 laboratoř, 2.02 laboratoř, 3.102 seminární místnost, 3.63 laboratoř, 3.70 laboratoř, 3.71 laboratoř, 3.78 laboratoř, 3.25 laboratoř, 3.24 laboratoř, 3.21 laboratoř, 3.17 laboratoř, 3.13 laboratoř, 3.07 laboratoř, 3.02 laboratoř, 3.52 laboratoř, 3.56 laboratoř

- **v zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál BIOCEV, Průmyslová 595, 252 50 Vestec**

Budova SO 001

umístění žab v místnosti č. G1.083

související provozní prostory a laboratoře v místnostech č.: A2.004 laboratoř, A2.005 laboratoř, A2.020 laboratoř, B2.008 laboratoř, B2.021 laboratoř, B2.023 laboratoř, C1.002 laboratoř, C1.003 Přípravna, C1.004 box buněčných kultur, C1.005 Neurony, C1.006 Buňky, C1.007 Laboratoř cévních a tkáňových náhrad, C1.009 Laboratoř cévních a tkáňových náhrad, C1.011 Laboratoř neurofyziologie, C1.012 Pracovna, C1.013 Laboratoř neurofyziologie, C1.014 Pracovna, C1.015 Laboratoř neurofyziologie, C1.016 Pracovna, C1.017 Laboratoř kvasinky, C1.018 Pracovna, C1.019 Laboratoř molekul. biologie, C1.020 Pracovna, C1.021 Molekul. biologie, C1.022 laboratoř, C1.023 laboratoř, C1.024 Laboratoř neurofyziologie, C1.025 Laboratoř cévních a tkáňových náhrad, C1.026 chladová místnost, C1.027 laboratoř, C1.028 Příruční zvěřinec, E1.002 Laboratoř, E1.003 Pracovna, E1.005 Laboratoř, E1.006 Operační sál, E1.008 Histologie laboratoř, E1.010 Kultury 1, E1.012 Přípravna, E1.013 Kultury 2, E1.014 laboratoř, G1.002 Sklady, G1.005 Pracovna, G1.006 Pracovna, G1.008 Pracovna, G1.011 Laboratoř biologie, G1.012 Pracovna, G1.013 Pracovna, G1.014 Laboratoř biochemie, G1.015 Pracovna, G1.016 Pracovna, G1.017 Laboratoř, G1.018 Pracovna, G1.019 Pracovna, G1.020 Pracovna, G1.021 Laboratoř biofyzika, G1.022 Pracovna, G1.023 Pracovna, G1.025 TK, G1.026 TK, G1.027 Laboratoř, G1.028 TK, G1.029 TK, G1.030 Chladová místnost, G1.031 TK, G1.033 Přístroje, G1.034 Laboratoř, G1.037 Bioinformatika, G1.039 Bioinformatika, G1.041 Pracovna, G1.042 Laboratoř, G1.043 Laboratoř, G1.045 Pracovna, G1.046 Laboratoř gen. exprese, G1.048 Pracovna, G1.049 Laboratoř, G1.050 Laboratoř, G1.053 Chladová místnost purifikace, G1.055 Laboratoř, G1.057 Laboratoř, G1.059 Pracovna, G1.060 Laboratoř, G1.062 Laboratoř, G1.064 Pracovna, G1.065 Laboratoř biofyzika, G1.068 Laboratoř, G1.069 Pracovna, G1.070 Laboratoř, G1.071 Laboratoř, G1.074 Sdílená pracovna, G1.075 Laboratoř, G1.076 Sdílená pracovna, G1.079 Chladová místnost, G1.081 Laboratoř, G1.082 Temná komora, G1.083 Laboratoř, H1.003 Laboratoř, H1.004 Filtr, H1.005 Tkáňové kultury, H1.006 Laboratoř, H1.008 Laboratoř, H1.017 laboratoř, H1.018 laboratoř, H1.020 Chladová místnost, H1.024 Tkáňové boxy, H1.025 Tkáňové boxy, H1.026 Tkáňový virobox, H1.027 Laboratoř, H1.028 Pracovna, H1.029 Pracovna, H1.030 Laboratoř, H1.031 Pracovna, H1.033 Tkáňové kultury, I1.002 Laboratoř, I1.003 Pracovna, I1.004 Laboratoř robotika, I1.005 Pracovna, I1.006 Pracovna, I1.008 Sklad, I1.009 Sklad, I1.011 Přípravna, automatická storage, I1.016 Hostovská laboratoř, I1.017 Řízení experimentů, I1.020 Difrakce, I1.022 Laboratoř, J1.002 Laboratoř, J1.003 Laboratoř, J1.005 Pracovna, J1.008 Pracovna, J1.010 Sklad, J1.011 Laboratoř , J1.013 Laboratoř, J1.015 Eukaryotická exprese, U1.032 Seminární místnost, U1.037 Seminární místnost II., U1.038 Seminární místnost I., D2.002 Laboratoř, D2.003 Laboratoř, D2.004 Přípravna,

D2.005 Tkáňové kultury, D2.006 Fyzikální laboratoř, D2.008 Temná komora, D2.009 Pracovna, D2.040 Pracovna, D2.011 Pracovna, D2.012 Pracovna,
F2.002 Laboratoř, F2.003 Laboratoř, F2.004 Laboratoř, F2.006 Čisté prostory, F2.008 Pracovna, F2.009 Pracovna, F2.010 Pracovna, U2.016 Seminární místnost (videokonference), U2.020 Seminární místnost (ozvučení), U2.023 Sklad, U2.029 Sklad, T01.002 Sklad, T01.020 Autokláv, T01.021 Sklad, T01.024 Autokláv, T01.025 Sklad, T01.038 Sklad, U01.007 Sklad, U01.009 Sklad, T2.005 sklad odpadů, kadaverů

<u>Budova SO 002</u>

2. NP - alternativní umístění myší a potkanů v místnostech č.: 210, 211, 212, 213, 218, 219, 220, 221, 222, 223
1. PP - alternativní umístění myší, potkanů, křečků, křečíků, pískomilů v místnosti č. 0119
2. PP - alternativní umístění myší a potkanů v místnostech č.: 0208, 0216, 0250, 0252, 0258; umístění myší v místnostech č.: 0243, 0262

související provozní prostory a laboratoře v místnostech č.: 101 schodiště 1, 102 chodba, 102a chodba, 103 sklad krmiv, 104 sklad podestýlky, 105 technická místnost, 105a rozvodna slaboproud, 106 čistý výtah v2.3, 107 čistý výtah v2.2, 108 laboratoř, 108a wc ženy, 108b wc muži, 109 schodiště 2, 110 vstup, 111 chodba, 112 kancelář, 112a kancelář, 113 laboratoř, 114 laboratoř, 115 laboratoř, 116 histologicko-imunologická laboratoř, 117 histologicko-imunologická laboratoř, 118 výtah v2.1, 119 nečistý výtah v2.4, 120 nečistý výtah v2.5, 121 schodiště 4, 123 schodiště 3, 124 mycí linka, 124a technická místnost, 125 chodba, 0101 schodiště 1, 0102 chodba, 0102a montážní šachta, 0103 schodiště 2, 0104 výtah v2.1, 0105 chodba, 0105a chodba, 0106 sklad, 0107 kryosklad, 0108 fluorescenční zobrazení, 0109 laboratoř, 0109a laboratoř, 0109b laboratoř, 0109c sklad, 0110 šatna - ženy, 0111 wc ženy, 0111a umývárna ženy, 0112 wc muži, 0112a umývárna muži, 0112b předsíň wc muži, 0113 šatna - muži, 0114 schodiště 4, 0115 nečistý výtah v2.5, 0115a strojovna výtahů, 0116 nečistý výtah v2.4, 0117 schodiště 3, 0118 technické zabezpečení budovy, 0119a filtr, 0119b umývárna, 0119c filtr - sprcha, 0119d filtr - chodba, 0119e filtr - wc, 0119f filtr - chodba, 0120 rozvodna 1, 0120a rozvodna 2, 0121 čistý výtah v2.3, 0121a strojovna výtahů, 0122 čistý výtah v2.2, 0123 chodba, 0124 skladovací místnost, 0125 laboratoř, 201 schodiště 1, 202 chodba, 203 vstup pro osoby, 204 wc, 205 úklid, 206 laboratoř - chodba, 206a laboratoř, 206b laboratoř, 206c laboratoř, 206d laboratoř, 206e laboratoř, 206f laboratoř, 207 laboratoř, 208 laboratoř, 209 schodiště 3, 214 příprava, 215 chodba, 216a úklid, 224 přístrojová místnost, 225 vstup pro osoby, 226a chodba, 226b wc - předsíň, 226c wc, 226e převlékací box, 226f převlékací box, 227 laboratoř, 228 laboratoř, 229 laboratoř, 230 přístrojová místnost, 232 chodba, 233 čistý výtah v2.3, 234 čistý výtah v2.2, 235 chodba, 236 denní místnost, 236a kuchyň, 237 nečistý výtah v2.4, 238 nečistý výtah v2.5, 240 schodiště 2, 240a chodba, 240b chodba, 241 výtah v2.1, 242 kancelář, 243 kancelář, 244 kancelář, 245 kancelář, 246 kancelář, 247 sekretariát, 248 pracovna vedoucího, 249 seminární místnost, 250 wc - muži, 250a wc - imobilní, 251 wc - ženy, 253 laboratoř, 254 laboratoř, 255 laboratoř, 256 schodiště 4, 257 chodba, 258 tkáňová kultura, 259 přístrojová místnost, 259a předsíň, 260 tkáňová kultura, 261 tkáňová kultura, 262 tkáňová kultura, 263 laboratoř, 264 chodba, 265 mikroinjekce, 266 kancelář, 267 kryolaboratoř, 268 laboratoř, 269 kancelář, 270 kancelář, 272 chodba, 272a chodba, 0201 schodiště 1, 0201a technická místnost, 0202 chodba, 0203 chodba, 0204 sprcha, 0205 wc, 0206 příprava, 0206a úklid, 0207 operativní laboratoř, 0209 experimentální laboratoř, 0210 laboratoř, 0211 laboratoř, 0212 laboratoř, 0213 schodiště 3, 0214 chodba, 0214a sklad, 0214b sklad, 0215 chodba, 0221 chodba, 0221a úklid, 0222 vstup pro osoby, 0222a vstup pro osoby - sprcha, 0222b vstup pro osoby, 0223 vstup pro osoby, 0223a vstup pro osoby - sprcha, 0223b vstup pro osoby, 0224 vstup pro osoby, 0224a vstup pro osoby - sprcha, 0224b vstup pro osoby, 0225 vstup pro osoby, 0225a vstup pro osoby - sprcha, 0225b vstup pro osoby, 0226 chodba, 0227 příprava, 0229 operační místnost, 0233 nečistý výtah v2.4, 0234 nečistý výtah v2.5, 0235 chodba, 0236 čistý výtah v2.3, 0237 čistý výtah

v2.2, 0238 chodba, 0239 wc, 0240 wc, 0240a úklid, 0245 schodiště 4, 0246 chodba, 0247 chodba, 0248 propust, 0249 vstup pro osoby, 0254 chodba, 0255 příprava, 0255a úklid, 0256 laboratoř, 0257 laboratoř, 0260 chodba, 0261 vstup pro osoby, 0261a vstup pro osoby - sprcha, 0261b vstup pro osoby, 0263 skladovací místnost, 0264 skladovací místnost, 0264a technická místnost, 0265 schodiště 2, 0266 výtah v2.1

- **v zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál Koleč 24, 273 29 Koleč, okres Kladno**

Budova č. 401

umístění kura v místnostech č.: 1.02 sklad vajec, 1.24 umístění kura, 1.26a líheň, 1.29 box kuřat, 1.30 umístění kura, 1.31 umístění kura

související provozní prostory a laboratoře v místnostech č.: 1.01 chodba, 1.03 sklad, 1.25 umývárna, 1.26b sprcha, 1.32 umývárna, 1.04 sklad, 1.05 sklad, 1.06 laboratoř, 1.07 sterilizace, 1.08 laboratoř, 1.09 kancelář, 1.10 laboratoř, 1.11 sklad, 1.12 archiv, 1.13 kancelář, 1.27 umývárna skla, 1.28 boční vstupní chodba, 1.33 chodba, 1.14 denní místnost zaměstnanců, 1.15 šatna ženy, 1.16 sprcha ženy, 1.17 WC ženy, 1.18 zádveří, 1.19 vstupní chodba, 1.20 sekretariát, 1.21 WC muži, 1.22 sprcha muži, 1.23 sklad špinavého prádla

Budova č. 405

související provozní prostory v místnostech č.: 1.01 kafilérní místnost, 1.07 vchod ke klíčírně obilí, 1.08 klíčírna obilí, 1.09 pitevna drůbeže

Budova č. 408

umístění kura v místnosti č. 1.02

související provozní prostory v místnostech č.: 1.01 přípravna, umývárna, 1.03 sklad

Budova č. 409

umístění kura v místnosti č. 1.04

související provozní prostory v místnostech č.: 1.01 přípravna, umývárna, 1.02 sklad, 1.03 sklad

Budova č. 420

související provozní prostory v místnostech č.: 1.01 předsíň, 1.02 kancelář skladu, 1.03 dezinfekce vajec, 1.04 technický sklad, 1.05 chlazený sklad vajec, 1.07 sklad krmiva, 1.09 sklad podestýlky

a to **na dobu 5 let** ode dne právní moci tohoto rozhodnutí,

pro tyto účely:
- základní výzkum [§ 18 odst. 1 písm. a) zákona na ochranu zvířat],
- translační nebo aplikovaný výzkum s cílem
  1. zabránit a předejít onemocnění, špatnému zdravotnímu stavu nebo jiným anomáliím nebo jejich následkům u lidí, zvířat nebo rostlin a diagnostikovat je nebo léčit,

2. posoudit, zjistit, regulovat nebo upravit fyziologické předpoklady lidí, zvířat nebo rostlin, nebo

[§ 18 odst. 1 písm. b) bod 1, 2 zákona na ochranu zvířat],

- pro jakýkoli z cílů uvedených v písmeni b) při vývoji, výrobě nebo zkoušení kvality, účinnosti a nezávadnosti léčiv, potravin, krmiv a jiných látek nebo výrobků, tedy cíl
  1. zabránit a předejít onemocnění, špatnému zdravotnímu stavu nebo jiným anomáliím nebo jejich následkům u lidí, zvířat nebo rostlin a diagnostikovat je nebo léčit,
  2. posoudit, zjistit, regulovat nebo upravit fyziologické předpoklady lidí, zvířat nebo rostlin, nebo
  3. zlepšit životní podmínky a podmínky produkce zvířat chovaných k zemědělským účelům,

  [§ 18 odst. 1 písm. c) zákona na ochranu zvířat ve spojení s § 18 odst. 1 písm. b) bod 1, 2 a 3 zákona na ochranu zvířat],
- ochrana přírodního prostředí v zájmu zdraví nebo dobrých životních podmínek lidí nebo zvířat [§ 18 odst. 1 písm. d) zákona na ochranu zvířat],
- vyšší vzdělávání nebo odborná příprava za účelem získání, udržení nebo zlepšení odborných znalostí [§ 18 odst. 1 písm. f) zákona na ochranu zvířat],

Maximální denní stavy zvířat – **souhrn za uživatelské zařízení**		
při použití druhu zvířat	o maximální tělesné hmotnosti	v maximálním denním stavu
Myš laboratorní	do 20 g	90759 ks
	nad 30 g	56271 ks
Potkan laboratorní	do 200 g	7036 ks
	nad 600 g	1765 ks
Křeček zlatý	do 60 g	1596 ks
	nad 100 g	798 ks
Křečík čínský	do 40 g	1596 ks
	nad 40 g	798 ks
Pískomil mongolský	do 40 g	1596 ks
	nad 40 g	798 ks
Drápatka vodní	do 6 cm	468 ks
	nad 12 cm	72 ks
Kur domácí	vejce	2258 ks
	do 200 g	2714 ks
	od 200 do 300 g	2279 ks
	od 300 do 600 g	1084 ks
	od 600 do 1200 g	888 ks
	od 1200 do 1800 g	868 ks
	od 1800 do 2400 g	828 ks
Mihule mořská		160 ks
Medaka japonská		3650 ks
Danio pruhované		34650 ks

Maximální denní stavy zvířat – **areál Krč**		
při použití druhu zvířat	o maximální tělesné hmotnosti	v maximálním denním stavu
Myš laboratorní	do 20 g	34098 ks
	nad 30 g	21243 ks
Potkan laboratorní	do 200 g	728 ks
	nad 600 g	182 ks
Křeček zlatý	do 60 g	420 ks
	nad 100 g	210 ks
Křečík čínský	do 40 g	420 ks
	nad 40 g	210 ks
Pískomil mongolský	do 40 g	420 ks
	nad 40 g	210 ks
Kur domácí	vejce	972 ks
	do 200 g	1206 ks
	od 200 do 300 g	1024 ks
	od 300 do 600 g	580 ks
Mihule mořská		160 ks
Medaka japonská		3650 ks
Danio pruhované		34650 ks

Maximální denní stavy zvířat – **areál BIOCEV, Vestec**		
při použití druhu zvířat	o maximální tělesné hmotnosti	v maximálním denním stavu
Myš laboratorní	do 20 g	56661 ks
	nad 30 g	35028 ks
Potkan laboratorní	do 200 g	6308 ks
	nad 600 g	1583 ks
Křeček zlatý	do 60 g	1176 ks
	nad 100 g	588 ks
Křečík čínský	do 40 g	1176 ks
	nad 40 g	588 ks
Pískomil mongolský	do 40 g	1176 ks
	nad 40 g	588 ks
Drápatka vodní	do 6 cm	468 ks
	nad 12 cm	72 ks

Maximální denní stavy zvířat – **areál Koleč**		
při použití druhu zvířat	o maximální tělesné hmotnosti	v maximálním denním stavu
Kur domácí	vejce	1286 ks
	do 200 g	1508 ks
	od 200 do 300 g	1255 ks
	od 300 do 600 g	504 ks
	od 600 do 1200 g	888 ks
	od 1200 do 1800 g	868 ks
	od 1800 do 2400 g	828 ks

V případě současného ustájení zvířat o různých hmotnostních kategoriích bude celkový počet zvířat snížen v souladu s vyhláškou. Myši mohou být umístěny i v chovných nádobách původně určených pro potkany.

Konkrétně se jedná v jednotlivých zařízeních a místnostech o druhy, maximální denní stavy a hmotnostní kategorie zvířat uvedené v příloze tohoto rozhodnutí.

Osobou odpovědnou za péči o pokusná zvířata ve výše uvedeném zařízení je MVDr. Jan Honetschläger, MBA, narozen 20. 4. 1982, Kaplice, trvale bytem Na Sekyře 313, 251 01 Tehov, číslo osvědčení o odborné způsobilosti podle § 15d odst. 3 zákona na ochranu zvířat CZ 01084.

Určeným veterinárním lékařem ve výše uvedeném zařízení je MVDr. Jan Honetschläger, MBA, narozen 20. 4. 1982, Kaplice, trvale bytem Na Sekyře 313, 251 01 Tehov, číslo osvědčení o odborné způsobilosti podle § 15d odst. 3 zákona na ochranu zvířat CZ 01084.

Statutárním orgánem, který je odpovědný za dodržování zákona na ochranu zvířat, je RNDr. Petr Dráber, DrSc., narozen 18. 3. 1951 v Píšti.

O D Ů V O D N Ě N Í

Žádost o udělení oprávnění k používání pokusných zvířat podle § 15b odst. 1 zákona na ochranu zvířat a podle § 2 odst. 1 vyhlášky č. 419/2012 Sb., o ochraně pokusných zvířat (dále jen „vyhláška“), byla Ministerstvu zemědělství doručena dne 11. 4. 2019. Tímto dnem bylo zahájeno správní řízení.

Ministerstvo zemědělství písemně pověřilo k posouzení výše uvedeného zařízení uživatele pokusných zvířat v souladu s § 15c odst. 5 zákona na ochranu zvířat posuzovatele Doc. MVDr. Pavla Nováka, CSc. a Doc. RNDr. Pavla Rödla, CSc. Posuzovatelé posoudili zařízení uživatele pokusných zvířat fyzickou kontrolou na místě, včetně stanovené dokumentace, o zjištěných skutečnostech zpracovali písemný posudek, který dne 23. 5. 2019 předložili v souladu s § 15c odst. 6 písm. a) bodem 2 zákona na ochranu zvířat Ministerstvu zemědělství, v posudku doporučili udělení oprávnění k používání pokusných zvířat na dobu 5 let. Posuzovatelé nezjistili závady a nedostatky v předložené dokumentaci ani v technickém vybavení zařízení.

Ministerstvo zemědělství při rozhodování postupovalo v souladu s § 15a odst. 4 zákona na ochranu zvířat. Toto ustanovení uvádí: „Zařízení určená k chovu a dodávce pokusných zvířat musí být oddělena od zařízení určených k používání pokusných zvířat, to neplatí v případě chovu, dodávky a využití ryb a pokusů, při nichž je prováděn u pokusných zvířat pouze odběr krve.“ Žadatel využil možnosti upravené v zákoně na ochranu zvířat a provádí užívání, chov a dodávku ryb v jedné místnosti. Jednotlivé nádrže určené pro používání pokusných zvířat a pro chov a dodávku pokusných zvířat musí být označeny.

Na základě žádosti žadatele se uděluje oprávnění k používání pokusných zvířat také pro vejce kura domácího. Žadatel v žádosti uvedl: „Do žádosti jsou zařazena i vajíčka, protože předpokládáme vědecké projekty, kde bude docházet k aplikaci látek do vajíček, z nichž vylíhnutá kuřata může postihnout bolest, utrpení, strach nebo trvalé poškození.“

K posouzení prostorové kapacity zařízení a technického vybavení prostor, ve kterých jsou pokusná zvířata chována a používána, posuzovatelé v posudku uvedli:
„Prostorová kapacita posuzovaného zařízení uživatele pokusných zvířat a technické vybavení prostor odpovídá ustanovení zákona č. 246/1992 Sb. na ochranu zvířat proti týrání a vyhlášky č. 419/2012 Sb., o ochraně pokusných zvířat ve znění pozdějších předpisů. Tato vybavení vyhovují nárokům na podmínky chovných prostor pro ustájení a vybavení pro zajištění dodávky výše uvedených druhů zvířat včetně jejich fyziologických potřeb podle tělesné hmotnosti a požadavků na velikosti ustájovacích prostor včetně technického vybavení zázemí (sklady krmiv, podestýlky, vybavení pro přemisťování zvířat, technické, servisní a sociální místnosti,…).
V místnostech, kde je uvedeno více druhů zvířat, se počítá s alternativním využitím daného druhu zvířat, případně se současným využitím kapacity místnosti danými druhy zvířat. To je umožněno využitím IVC chovných nádob a technologie, která odpovídá požadavkům na chov uvedených druhů zvířat.
Součet maximálního denního stavu myší a potkanů v jednotlivých místnostech je větší než maximální denní stav v celém zařízení, neboť myši a potkani nebudou nikdy umístěni zároveň ve všech místnostech, které jsou pro jejich umístění schvalovány.“

Maximální denní stavy zvířat jsou závislé na tom, o jakou hmotnostní kategorii zvířat se jedná. Vyhláška č. 419/2012 Sb., o ochraně pokusných zvířat, v příloze č. 7 stanoví různé rozměry pro klece a kotce v závislosti na konečné tělesné hmotnosti zvířat. V rozhodnutí jsou u jednotlivých druhů zvířat uvedeny maximální počty pokusných zvířat v nejmenší a největší hmotnostní kategorii. V rozhodnutí nejsou uvedeny počty zvířat ve všech hmotnostních kategoriích, tyto počty jsou uvedeny v příslušných dokumentech uživatele pokusných zvířat. Žadatel může používat pokusná zvířata nejen v nejmenší a největší hmotnostní kategorii, ale také hmotnostní kategorie zvířat, které se nacházejí v daném rozmezí. Počet zvířat užívaných v zařízení ale nikdy nesmí překročit počet zvířat schválený pro nejmenší hmotnostní kategorii. V případě používání pokusných zvířat různých hmotnostních kategorií musí být počet používaných zvířat snížen tak, aby odpovídal požadavkům upraveným ve vyhlášce o ochraně pokusných zvířat a v tomto rozhodnutí.

Na základě předložené žádosti, zpracovaného posudku a na základě vyhodnocení spisového materiálu Ministerstvo zemědělství rozhodlo o udělení oprávnění k používání pokusných zvířat žadateli na dobu 5 let, a to vzhledem ke splnění stanovených podmínek chovu a použití pokusných zvířat, které jsou v souladu se zákonem na ochranu zvířat a vyhláškou.

V souladu s ustanovením § 15b odst. 3 zákona na ochranu zvířat bylo žadateli uděleno oprávnění k používání pokusných zvířat na dobu 5 let, neboť se jedná o další udělení oprávnění.

Žadatel byl vyzván k úhradě správního poplatku podle položky 74 písm. c) sazebníku poplatků – přílohy k zákonu č. 634/2004 Sb., o správních poplatcích, ve výši 10.000 Kč. Tato částka byla uhrazena bankovním převodem ve stanovené lhůtě.

Z výše uvedených důvodů bylo rozhodnuto tak, jak je uvedeno ve výrokové části tohoto rozhodnutí.

V souladu s § 17f odst. 1 zákona na ochranu zvířat myši laboratorní (*Mus musculus*), potkani laboratorní (*Rattus norvegicus*), morčata domácí (*Cavia porcellus*), křečci zlatí (*Mesocricetus auratus*), křečíci čínští (*Cricetulus griseus*), pískomilové mongolští (*Meriones unguiculatus*), drápatky vodní (*Xenopus laevis*), nebo danio pruhované (*Danio rerio*) smějí být používáni k pokusům pouze tehdy, byli-li pro použití k pokusům chováni. V rámci pokusu

je tedy možné používat uvedené druhy zvířat pocházející z chovného zařízení, kterému bylo uděleno oprávnění k chovu pokusných zvířat.

Podle § 15b odst. 6 a 7 zákona na ochranu zvířat je uživatel pokusných zvířat povinen bez zbytečného odkladu ohlásit ministerstvu změnu údajů uvedených v rozhodnutí o udělení oprávnění. V případě jakékoli významné změny struktury nebo funkce zařízení, která by mohla nepříznivě ovlivnit životní podmínky pokusných zvířat, v případě změny místa, kde jsou prováděny činnosti s pokusnými zvířaty, rozšíření druhů činností nebo zvýšení počtu užívaných druhů pokusných zvířat musí uživatel pokusných zvířat podat novou žádost. Provést změny uvedené v předchozí větě je možné až po nabytí právní moci rozhodnutí o udělení oprávnění uživatele pokusných zvířat.

Tímto rozhodnutím se nahrazuje rozhodnutí Ministerstva zemědělství sp. zn. 16OZ6829/2014-17214, č. j. 40091/2014-MZE-17214, ze dne 29. 5. 2014, o udělení oprávnění k používání pokusných zvířat Ústavu molekulární genetiky AV ČR, v. v. i., se sídlem Vídeňská 1083, 142 20 Praha 4 – Krč, IČ 68378050. Toto rozhodnutí se vztahovalo na zařízení Koleč, 273 29, okres Kladno. Rozhodnutí ze dne 29. 5. 2014 nabylo právní moci dne 17. 6. 2014 a je platné do 17. 6. 2019. Toto rozhodnutí nezaniká uplynutím doby v něm stanovené, protože žadatel podal žádost o vydání dalšího rozhodnutí, které má na předchozí rozhodnutí navazovat minimálně 60 dnů přede dnem uplynutí platnosti vydaného rozhodnutí (§ 20 odst. 4 zákona na ochranu zvířat). Rozhodnutí ze dne 29. 5. 2014 zaniká právní mocí tohoto rozhodnutí.

Žadateli bylo ve vztahu k zařízení pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál Krč, Vídeňská 1083, 142 20 Praha 4, a k zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál BIOCEV, Průmyslová 595, 252 50 Vestec, uděleno oprávnění k používání pokusných zvířat sp. zn. 16OZ30963/2015-17214, č. j. 66866/2015-MZE-17214, ze dne 18. 12. 2015. Toto rozhodnutí nabylo právní moci dnem 8. 1. 2016 a je platné do 8. 1. 2021. Po zhruba třech letech platnosti uvedeného rozhodnutí požádal žadatel o jeho odnětí a o udělení nového oprávnění. Odnětí rozhodnutí o udělení oprávnění k používání pokusných zvířat vydaného pod sp. zn. 16OZ30963/2015-17214, č. j. 66866/2015-MZE-17214, ze dne 18. 12. 2015, se provádí samostatným rozhodnutím sp. zn. 16OZ30963/2015-17214, č. j. 21127/2019-MZE-18134. Žadatel výslovně požádal o sjednocení stávajících rozhodnutí pod jedno a o odnětí dosavadního rozhodnutí.

Státním orgánem příslušným ke schvalování projektů pokusů výše uvedeného žadatele je v souladu s § 23 odst. 2 písm. c) zákona na ochranu zvířat Akademie věd České republiky, neboť se jedná o pokusy prováděné veřejnou výzkumnou institucí Akademie věd České republiky.

P O U Č E N Í Ú Č A S T N Í K Ů

Proti tomuto rozhodnutí lze podle § 152 odst. 1 zákona č. 500/2004 Sb., správního řádu, v platném znění, do 15 dnů ode dne oznámení rozhodnutí podat rozklad k ministru zemědělství, a to podáním učiněným u Ministerstva zemědělství – odboru environmentálního a ekologického zemědělství.

Ing. Jitka Götzová
ředitel odboru

Otisk úředního razítka

Rozdělovník

1. Účastník řízení – žadatel (datovou schránkou) – Ústav molekulární genetiky AV ČR, v. v. i., se sídlem Vídeňská 1083, 142 20 Praha 4 – Krč, zastoupený MVDr. Janem Honetschlägerem, MBA, Ústav molekulární genetiky AV ČR, v. v. i., Vídeňská 1083, 142 20 Praha 4 – Krč

Orgány ochrany zvířat dle § 15b odst. 5 zákona na ochranu zvířat, kterým se zasílá rozhodnutí o udělení oprávnění na vědomí:
2. Akademie věd České republiky, Rezortní odborná komise AV ČR pro schvalování projektů pokusů na zvířatech, doručovací adresa: Rezortní odborná komise AV ČR pro schvalování projektů pokusů na zvířatech, Ústav molekulární genetiky AV ČR, v. v. i., MVDr. Jan Honetschläger, MBA, Vídeňská 1083, 142 20 Praha 4
3. Městská veterinární správa v Praze SVS, Ústřední pracoviště, Na Kozačce 3, 120 00 Praha 2
4. Krajská veterinární správa SVS pro Středočeský kraj, Ústřední pracoviště, Černoleská 1929, 256 38 Benešov

Vypraveno dne

Příloha rozhodnutí o udělení oprávnění k používání pokusných zvířat sp. zn. 16OZ9707/2019-18134, č. j. 31255/2019-MZE-18134

- **zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál Krč, Vídeňská 1083, 142 20 Praha 4**

Budova Fb

Místnost č. 0.07

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	1464 ks nebo	183 ks
	nad 30 g	915 ks	183 ks

Místnost č. 0.14

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	3280 ks nebo	410 ks
	nad 30 g	2050 ks	410 ks

Místnost č. 0.15

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2760 ks nebo	345 ks
	nad 30 g	1725 ks	345 ks

Místnost č. 0.28

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	888 ks nebo	111 ks
	nad 30 g	555 ks	111 ks

Místnost č. 0.33

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	1704 ks nebo	213 ks
	nad 30 g	1065 ks	213 ks

Místnost č. 1.31

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2600 ks nebo	325 ks
	nad 30 g	1625 ks	325 ks

Místnost č. 1.32

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	3240 ks nebo	405 ks
	nad 30 g	2025 ks	405 ks

Místnost č. 2.38

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2688 ks nebo	336 ks
	nad 30 g	1680 ks	336 ks

Místnost č. 2.39

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2560 ks nebo	320 ks
	nad 30 g	1600 ks	320 ks

Budova V

Místnost č. 2

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	5440 ks nebo	680 ks
	nad 30 g	3400 ks	680 ks

Místnost č. 11 – u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	640 + 1050 ks nebo	80 + 70 ks
	nad 30 g	400 + 630 ks a nebo	80 + 70 ks
Křeček zlatý	do 60 g	420 ks nebo	70 ks
	nad 100 g	210 ks a nebo	70 ks
Potkan laboratorní	do 200 g	280 ks nebo	70 ks
	nad 600 g	70 ks a nebo	70 ks
Pískomil mongolský	do 40 g	420 ks nebo	70 ks
	nad 40 g	210 ks a nebo	70 ks
Křečík čínský	do 40 g	420 ks nebo	70 ks
	nad 40 g	210 ks	70 ks

Budova CH

Místnost č. 20

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	640 ks nebo	80 ks
	nad 30 g	400 ks	80 ks

Místnost č. 31

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	1784 ks nebo	223 ks
	nad 30 g	1115 ks	223 ks

Místnost č. 32

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	1680 ks nebo	210 ks
	nad 30 g	1050 ks	210 ks

Místnost č. 35

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Potkan laboratorní	do 200 g	448 ks nebo	112 ks
	nad 600 g	112 ks a nebo	112 ks
Myš laboratorní	do 20 g	1680 ks nebo	112 ks
	nad 30 g	1008 ks	112 ks

Místnost č. 5

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu
Kur domácí	do 200 g	324 ks nebo
	od 200 g do 300 g	268 ks nebo
	od 300 g do 600 g	160 ks

Místnost č. 6

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu
Kur domácí	do 200 g	252 ks nebo
	od 200 g do 300 g	216 ks nebo
	od 300 g do 600 g	120 ks

Místnost č. 7

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu
Kur domácí	do 200 g	252 ks nebo
	od 200 g do 300 g	216 ks nebo
	od 300 g do 600 g	120 ks

Místnost č. 9

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu
Kur domácí	do 200 g	189 ks nebo
	od 200 g do 300 g	162 ks nebo
	od 300 g do 600 g	90 ks

Místnost č. 16

Líhně	Počet ks vajec
1x Grumbach	120
3x Grumbach	180
2x Bioska	672

Místnost č. 19

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu
Kur domácí	do 200 g	189 ks nebo
	od 200 g do 300 g	162 ks nebo
	od 300 g do 600 g	90 ks

Budova F - místnosti určené pro chov, dodávky a využití ryb a mihule

Kapacita používaných chovných nádob pro ryby dle věku

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	0 - 5 dnů po oplození	100 ks na Petriho misku
	5 - 30 dnů po oplození	30 ks na akvárium min. o objemu 1 litr
	30 dnů a více po oplození	30 ks na akvárium min. o objemu 3,5 litru
Medaka japonská	10 dnů a více po oplození	25 ks na akvárium
Mihule mořská	larva	20 ks na akvárium

Karanténa 01.166
Recirkulační systém
Akvárium o objemu 3,5 litru – 50 ks nebo akvárium o objemu 8 litrů – 25 ks
Akvárium samostatné o objemu 1 litr – 30 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	10 dnů a více po oplození	1 500 ks

Inkubátor

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	0 - 30 dnů po oplození	1 250 ks

Inkubátor 01.167

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	0 - 30 dnů po oplození	1 250 ks

Rybí chov 01.169
Recirkulační systém
Akvárium o objemu 3,5 litru – 600 ks nebo akvárium o objemu 8 litrů – 300 ks
Akvárium o objemu 1,1 litr – 180 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	5 - 30 dnů po oplození	5 400 ks
	30 dnů a více po oplození	18 000 ks

Rybí chov 01.173
Akvárium o objemu 3,5 litru – 50 ks nebo akvárium o objemu 8 litrů – 25 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	10 dnů a více po oplození	1 500 ks

Rybí chov II 01.188
Akvárium o objemu 3,5 litru – 50 ks nebo akvárium o objemu 8 litrů – 25 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	10 dnů a více po oplození	1 500 ks

Chov a laboratoř ryby 2.95
Akvárium o objemu 3,5 litru – 50 ks nebo akvárium o objemu 8 litrů – 25 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	4 dnů a více po oplození	1 500 ks

Akvárium o objemu 2 litry – 96 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Medaka japonská	10 dnů a více po oplození	2 400 ks

Inkubátor

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Medaka japonská	0 - 30 dnů po oplození	1 250 ks

Chov a laboratoř ryby 3.84
Akvárium samostatné o objemu 8 litrů – 30 ks

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	10 dnů a více po oplození	1 500 ks

Inkubátor

druh zvířat	stáří	stav (počet) - v maximálním denním stavu
Dánio pruhované	0 - 30 dnů po oplození	1 250 ks

Místnost 3.96
2 x Inkubátor
Akvárium o objemu 10 – 15 litrů – 8 ks

druh zvířat	stádium	stav (počet) - v maximálním denním stavu
Mihule mořská	larva	160 ks

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<u>Budova SO.001</u>

Místnost G1.083

druh zvířat	Délka těla	stav (počet) - v max. denním stavu	počet chovných nádob
Drápatka vodní	nižší než 6 cm	468 ks nebo	12 ks
	nad 12 cm	72 ks	12 ks

Budova SO.002

Místnost 210 u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	960 ks + 1260 nebo	120 ks
	nad 30 g	600 ks + 756 a nebo	120 ks
Potkan laboratorní	do 200 g	336 ks nebo	84 ks
	nad 600 g	84 ks	84 ks

Místnost 211 primárně pro myši

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2240 ks nebo	280 ks
	nad 30 g	1400 ks nebo	280 ks
Potkan laboratorní	do 200 g	336 ks nebo	84 ks
	nad 600 g	84 ks	84 ks

Místnost 212 u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	560 ks + 1260 ks nebo	70 ks + 84 ks
	nad 30 g	350 ks + 756 ks a nebo	70 ks + 84 ks
Potkan laboratorní	do 200 g	336 ks nebo	84 ks
	nad 600 g	84 ks	84 ks

Místnost 213 primárně pro myši

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2240 ks nebo	280 ks
	nad 30 g	1400 ks nebo	280 ks
Potkan laboratorní	do 200 g	336 ks nebo	84 ks
	nad 600 g	84 ks	84 ks

Místnost 218 primárně pro myši

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2240 ks nebo	280 ks nebo
	nad 30 g	1400 ks	280 ks
Potkan laboratorní	do 200 g	336 ks nebo	84 ks
	nad 600 g	84 ks	84 ks

Místnost 219 u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	1120 ks + 1680 ks nebo	140 ks + 112 ks
	nad 30 g	700 ks + 1008 ks a nebo	140 ks + 112 ks
Potkan laboratorní	do 200 g	448 ks nebo	112 ks
	nad 600 g	112 ks	112 ks

Místnost 220 primárně pro myši

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	16 ks nebo	16
	nad 30 g	16 ks a nebo	16
Potkan laboratorní	do 200 g	8 ks nebo	8
	nad 600 g	8 ks	8

Místnost 221 u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	2080 ks + 1260 nebo	260 ks + 84 ks
	nad 30 g	1300 ks + 756 a nebo	260 ks + 84 ks
Potkan laboratorní	do 200 g	336 ks nebo	84 ks
	nad 600 g	84 ks	84 ks

Místnost 222 primárně pro myši

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	1120 ks nebo	140 ks
	nad 30 g	700 ks nebo	140 ks
Potkan laboratorní	do 200 g	336 ks nebo	84 ks
	nad 600 g	84 ks	84 ks

Místnost 223 primárně pro myši

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	120 ks nebo	15 ks
	nad 30 g	75 ks nebo	15 ks
Potkan laboratorní	do 200 g	448 ks nebo	112 ks
	nad 600 g	112 ks	112 ks

Místnost 0119 u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	3840 ks + 2940 ks nebo	480 + 196 ks
	nad 30 g	2400 ks + 1764 ks a nebo	480 + 196 ks
Potkan laboratorní	do 200 g	784 ks nebo	196 ks
	nad 600 g	196 ks a nebo	196 ks
Pískomil mongolský	do 40 g	1176 ks nebo	196 ks
	nad 40 g	588 ks a nebo	196 ks
Křeček zlatý	do 60 g	1176 ks nebo	196 ks
	nad 100 g	588 ks a nebo	196 ks
Křečík čínský	do 40 g	1176 ks nebo	196 ks
	nad 40 g	588 ks	196 ks

Místnost 0208 u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	6400 ks + 1680 ks nebo	800 ks + 112 ks
	nad 30 g	4000 ks + 1008 ks a nebo	800 ks + 112 ks
Potkan laboratorní	do 200 g	448 ks nebo	112 ks
	nad 600 g	112 ks	112 ks

Místnost 0216 u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	6400 ks + 5040 ks nebo	800 ks + 336 ks
	nad 30 g	4000 ks + 3024 ks a nebo	800 ks + 336 ks
Potkan laboratorní	do 200 g	1344 ks nebo	336 ks
	nad 600 g	336 ks	336 ks

Místnost 0250 primárně pro myši

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	6400 ks nebo	800 ks
	nad 30 g	4000 ks nebo	800 ks
Potkan laboratorní	do 200 g	952 ks nebo	238 ks
	nad 600 g	238 ks	238 ks

Místnost 0252 primárně pro myši

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	6400 ks nebo	800 ks
	nad 30 g	4000 ks nebo	800 ks
Potkan laboratorní	do 200 g	1176 ks nebo	294 ks
	nad 600 g	294 ks	294 ks

Místnost 0258 u myší lze využít dva typy chovných nádob

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	3200 ks + 1680 ks nebo	400 ks + 112 ks
	nad 30 g	2000 ks + 1008 ks a nebo	400 ks + 112 ks
Potkan laboratorní	do 200 g	448 ks nebo	112 ks
	nad 600 g	112 ks	112 ks

Místnost 0243

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	7680 ks nebo	960 ks
	nad 30 g	4800 ks	960 ks

Místnost 0262

druh zvířat	o maximální tělesné hmotnosti	stav (počet) - v max. denním stavu	počet chovných nádob
Myš laboratorní	do 20 g	1920 ks nebo	240 ks
	nad 30 g	1200 ks	240 ks

- **zařízení – pracoviště Ústavu molekulární genetiky AV ČR, v. v. i., areál Koleč 24, 273 29 Koleč, okres Kladno**

Budova 401

Místnost 1.02

	Počet ks vajec
Kur domácí - vejce	390

Místnost 1.24

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí – kohout	288 nebo	240 nebo	144	-	-	-
kur domácí - slepice	288 nebo	240 nebo	144 nebo	40 nebo	30 nebo	20

Místnost 1.26a

	Počet ks vajec
Kur domácí - vejce	896

Místnost 1.29

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí	500 nebo	415	-	-	-	-

Místnost 1.30

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí	288 nebo	240 nebo	144 nebo	40 nebo	30	-

Místnost 1.31

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí	144 nebo	120 nebo	72	-	-	-

Budova 408

Místnost 1.02

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí – kohout	-	-	-	64 nebo	64 nebo	64
kur domácí - slepice	-	-	-	240 nebo	240 nebo	240

Budova 409

Místnost 1.04

Tělesná hmotnost	do 200 g	200 – 300 g	300 – 600 g	600 – 1200 g	1200 – 1800 g	1800 – 2400 g
kur domácí – kohout	-	-	-	144 nebo	144 nebo	144
kur domácí - slepice	-	-	-	360 nebo	360 nebo	360

Toto rozhodnutí nabylo právní moci dne: 02.07.2019

Vyznačení doložky právní moci provedl dne 03.07.2019: Kruml Jiří

Ministerstvo životního prostředí

ODESÍLATEL:

Ing. Karel Bláha, CSc.
ředitel odboru environmentálních rizik
a ekologických škod
Ministerstvo životního prostředí
Vršovická 65
100 10 Praha 10

ADRESÁT:

Vážená paní
doc. RNDr. Jana Pěknicová, CSc.
ředitelka ústavu
Biotechnologický ústav AV ČR, v.v.i.
Vídeňská 1083
142 20 Praha 4 Krč

V Praze dne	25. ledna 2016
Č.j.:	5321/ENV/16
K č.j.:	91866/ENV/15
Vaše č.j.:	S15BTU0235
Vyřizuje:	Ing. Routa
Tel.:	267 122 554

Věc: Potvrzení o oprávnění k nakládání s GMO

Ministerstvo životního prostředí potvrzuje dle §16 odst. 2 a odst. 3 zákona č. 78/2004 Sb., o nakládání s geneticky modifikovanými organismy a genetickými produkty, v platném znění, na základě podaného oznámení (MŽP č.j. 91866/ENV/15, ze dne 23. prosince 2015), oprávnění Biotechnologického ústavu AV ČR, v.v.i., se sídlem Vídeňská 1083, 142 20 Praha 4 – Krč, IČ: 866 52 036, nakládat na novém pracovišti BIOCEV, Průmyslová 595, 25242 Vestec, s geneticky modifikovanými organismy uvedenými ve výše citovaném oznámení, v režimu uzavřeného nakládání, v první a druhé kategorii rizika.

Ing. Karel Bláha, CSc.

„otisk razítka“

Příloha/y: 0

Ministerstvo životního prostředí

Odbor environmentálních rizik a ekologických škod
Vršovická 65
100 10 Praha 10

Praha dne 25. ledna 2019
Č. j.: MZP/2019/750/365
Sp. zn.: ZN/MZP/2019/750/40
Vaše č. j.:
Vyřizuje: Ing. Václav Routa
Tel.: 267 122 554
E-mail: routa@mzp.cz

Vážená paní
doc. RNDr. Jana Pěknicová, CSc.
ředitelka BTÚ AV ČR, v.v.i.
Biotechnologický ústav AV ČR, v.v.i.
Průmyslová 595
Vestec
252 42 Jesenice u Prahy

Potvrzení o přijetí hodnocení rizika I.kategorie uzavřeného nakládání s GMO

Ministerstvo životního prostředí obdrželo hodnocení rizika I.kategorie pro uzavřené nakládání s GMO Biotechnologického ústavu AV ČR, v.v.i., se sídlem Průmyslová 595, Vestec, 252 42 Jesenice u Prahy, IČ: 866 52 036, týkající se nakládání s kmeny geneticky modifikované laboratorní myši s vkládanými fluorescenčními a reportérovými geny, transkripčními faktory, geny metabolismu, signálních kaskád, údržby RNA/DNA atd. či vyjímanými transkripčními faktory, geny metabolismu, signálních kaskád, údržby RNA/DNA atd.. Toto hodnocení rizika bylo na MŽP zaregistrováno dne 22. ledna 2019 pod č.j. MZP/2019/750/287.

Nakládání s GMO uvedenými v hodnocení rizika může být zahájeno dnem doručení hodnocení rizika na MŽP (§16 odst. 2 zákona č. 78/2004 Sb., o nakládání s geneticky modifikovanými organismy a genetickými produkty, ve znění pozdějších předpisů).
S pozdravem

Karel Bláha, CSc.
ředitel odboru environmentálních rizik
a ekologických škod a zástupce
náměstkyně pro řízení sekce technické
ochrany životního prosředí
podepsáno elektronicky

Příloha 0

Ministerstvo životního prostředí
Vršovická 1442/65, 100 10 Praha 10

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Generalitat de Catalunya
Departament d'Agricultura, Ramaderia,
Pesca, Alimentació i Medi Natural
Direcció General del Medi Natural i Biodiversitat

IGNASI RODRÍGUEZ I GALINDO
Subdirector General de Boscos
i Gestió de la Biodiversitat

C E R T I F I C O

Que el/la Sr/a

[redacted]

Amb DNI/ NIE/ Passaport

BI8798031

ha acreditat davant del Departament de Medi Ambient i Habitatge reunir els requisits necessaris per exercir les tasques de **personal investigador** d'acord amb el que estableix el Decret 214/1997, de 30 de juliol, pel qual es regula la utilització d'animals per a experimentació i per a altres finalitats científiques.

I perquè així consti, signo el present certificat.

Barcelona, 4 d'abril de 2011

[redacted]

Generalitat de Catalunya
Departament d'Agricultura, Ramaderia,
Pesca, Alimentació i Medi Natural
Direcció General del Medi Natural
i Biodiversitat

[redacted]

[redacted]

Doctor Roux, 80
08017 Barcelona
Telèfon: 93.567 42 00
Fax: 93.280 33 20

1a Edició 2010/2011

ANNEX 2

ESTIMATED BUDGET FOR THE ACTION

	Estimated EU contribution								
	Estimated eligible unit contributions (per budget category)								
	A. Contributions for recruited researchers					B. Institutional contributions		Total	Maximum grant amount[1]
	A.1 Living allowance	A.2 Mobility allowance	A.3 Family allowance	A.4 Long-term leave allowance	A.5 Special needs allowance	B.1 Research, training and networking contribution	B.2 Management and indirect contribution		
Forms of funding	Unit contribution[2]	Unit contribution[2]	Unit contribution[2]	Unit contribution[2]	Unit contribution[2]	Unit contribution[2]	Unit contribution[2]	h = a + b + c + d + e + f + g	i
	a	b	c	d	e	f	g		
1 - IBT	96 438.72	14 400.00	15 840.00	0.00	0.00	24 000.00	15 600.00	166 278.72	166 278.72

[1] The 'maximum grant amount' is the maximum grant amount fixed in the grant agreement (on the basis of the sum of the beneficiaries' estimated units).
[2] See Annex 2a 'Additional information on the estimated budget' for the details (units, amount per unit).

ANNEX 2a

ADDITIONAL INFORMATION ON UNIT COSTS AND CONTRIBUTIONS

HE MSCA Doctoral Networks/Post-doctoral Fellowships and HE ERA Fellowships[1]

Contributions for recruited researchers — Living allowance

Type: unit contributions

Units: months spent by the researcher(s) on the research training activities (person-months)

Amount per unit*: see Annex 2

* Amount calculated as follows:
{the monthly living allowance for researchers in MSCA-PF/MSCA-DN and ERA Fellowship actions
multiplied by
country-specific correction coefficient of *[OPTION by default:* the country in which the researcher is recruited*][OPTION for PF-Global Fellowships:* the country where the associated partner hosting the researcher during the outgoing phase is located and the country in which the researcher is recruited (for the return phase and placements)*]*}

The monthly living allowance and the country-specific correction coefficients are set out in the Horizon Europe Work Programme (MSCA Work Programme part) in force at the time of the call:

- for the monthly living allowance:
  - PF and ERA Fellowships: EUR 5 080
  - DN: EUR 3 400
- for the country-specific correction coefficients: see Work Programme (available on the Funding & Tenders Portal Reference Documents page).

Contributions for recruited researchers — Mobility allowance

Type: unit contributions

Units: months spent by the researcher(s) on the research training activities (person-months)

Amount per unit[2]: see Annex 2

Contributions for recruited researchers — Family allowance

Type: unit contributions

Units: months spent by the researcher(s) on the research training activities (person-months)

Amount per unit[3]: see Annex 2

Contributions for recruited researchers — Long-term leave allowance

Type: unit contributions

Units: months spent by the researcher(s) on long-term leave (person-months)

---

1 Decision of 16 March 2021 authorising the use of lump sum contributions and unit contributions for Marie Skłodowska-Curie actions under the Horizon Europe Programme.

2 Same amount for all beneficiaries.
Amount for the mobility allowance set out in the Horizon Europe Work Programme (MSCA Work Programme part) in force at the time of the call (available on the Funding & Tenders Portal Reference Documents page).

3 Same amount for all beneficiaries.
Average based on the amount for the family allowance set out in the Horizon Europe Work Programme (MSCA Work Programme part) in force at the time of the call (75% of the number of units with family, 25% without).

Amount per unit*: see Annex 2

*Amount calculated as follows:
{long-term leave allowance (i.e. the sum of the applicable living allowance and mobility allowance)
multiplied by
percentage of long-term leave allowance incurred by the beneficiary (i.e. costs incurred by the beneficiary divided by the long-term leave allowance)
multiplied by
number of months}

Contributions for recruited researchers — Special needs allowance

Type: unit contributions

Units: number of special needs units (per recruited researcher) that were needed for implementing the action (person-months)

Amount per unit*: see Annex 2

*Amount calculated as follows:
{requested special needs unit
multiplied by
(1/number of months)}

The pre-defined special needs units are: EUR 3 000, EUR 4 500, EUR 6 000, EUR 9 500, EUR 13 000, EUR 18 500, EUR 27 500, EUR 35 500, EUR 47 500 and EUR 60 000.

Institutional contributions — Research, training and networking contribution

Type: unit contributions

Units: months spent by the researcher(s) on the research training activities (person-months)

Amount per unit[4]: see Annex 2

Institutional contributions — Management and indirect contribution

Type: unit contributions

Units: months spent by the researcher(s) on the research training activities (person-months)

Amount per unit[5]: see Annex 2

HE MSCA Staff Exchanges[6]

Contributions for seconded staff — Top-up allowance

Type: unit contributions

Units: months spent by the seconded staff member(s) on the research and innovation activities (person-months)

Amount per unit[7]: see Annex 2

---

4 Same amount for all beneficiaries.
Amount for research, training and networking contribution set out in the Horizon Europe Work Programme (MSCA Work Programme part) in force at the time of the call (available on the Funding & Tenders Portal Reference Documents page).

5 Same amount for all beneficiaries.
Amount for management and indirect contribution set out in the Horizon Europe Work Programme (MSCA Work Programme part) in force at the time of the call (available on the Funding & Tenders Portal Reference Documents page).

6 Decision of 16 March 2021 authorising the use of lump sum contributions and unit contributions for Marie Skłodowska-Curie actions under the Horizon Europe Programme.

7 Same amount for all beneficiaries.
Amount for the top-up allowance set out in the Horizon Europe Work Programme (MSCA Work Programme part) in force at the time of the call (available on the Funding & Tenders Portal Reference Documents page).

Contributions for seconded staff — Special needs allowance

Type: unit contributions

Units: number of special needs units (per seconded staff member) that were needed for implementing the action (person-months)

Amount per unit*: see Annex 2

*Amount calculated as follows:
{requested special needs unit
multiplied by
(1/number of months)}

The pre-defined special needs units are: EUR 3 000, EUR 4 500, EUR 6 000, EUR 9 500, EUR 13 000, EUR 18 500, EUR 27 500, EUR 35 500, EUR 47 500 and EUR 60 000.

Institutional contributions — Research, training and networking contribution

Type: unit contributions

Units: months spent by the seconded staff member(s) on the research and innovation activities (person-months)

Amount per unit[8]: see Annex 2

Institutional contributions — Management and indirect contribution

Type: unit contributions

Units: months spent by the seconded staff member(s) on the research and innovation activities (person-months)

Amount per unit[9]: see Annex 2

HE MSCA COFUND[10]

COFUND contributions — COFUND allowance

Type: unit contributions

Units: months spent by the researchers on the research training activities (person-months)

Amount per unit[11]: see Annex 2

COFUND contributions — Long-term leave allowance

Type: unit contributions

Units: months spent by the researcher(s) on long-term leave ('person-months')

Amount per unit*: see Annex 2

*Amount calculated as follows:
{long-term leave allowance (i.e. the applicable COFUND allowance)

---

8 Same amount for all beneficiaries.
Amount for research, training and networking contribution set out in the Horizon Europe Work Programme (MSCA Work Programme part) in force at the time of the call (available on the Funding & Tenders Portal Reference Documents page).

9 Same amount for all beneficiaries.
Amount for management and indirect contribution set out in the Horizon Europe Work Programme (MSCA Work Programme part) in force at the time of the call (available on the Funding & Tenders Portal Reference Documents page).

10 Decision of 16 March 2021 authorising the use of lump sum contributions and unit contributions for Marie Skłodowska-Curie actions under the Horizon Europe Programme.

11 Same amount for all beneficiaries.
Amount for the COFUND allowance set out in the Horizon Europe Work Programme (MSCA Work Programme part) in force at the time of the call (available on the Funding & Tenders Portal Reference Documents page).

multiplied by
percentage of long-term leave allowance incurred by the beneficiary (i.e. costs incurred by the beneficiary divided by the long-term leave allowance)
multiplied by
number of months}

COFUND contributions — Special needs allowance

Type: unit contributions

Units: number of special needs units (per recruited researcher) that were needed for implementing the action ('person-months')

Amount per unit*: see Annex 2

*Amount calculated as follows:
{requested special needs unit
multiplied by
(1/number of months)}

The pre-defined special needs units are: EUR 3 000, EUR 4 500, EUR 6 000, EUR 9 500, EUR 13 000, EUR 18 500, EUR 27 500, EUR 35 500, EUR 47 500 and EUR 60 000.

FINANCIAL STATEMENT FOR [PARTICIPANT NAME] FOR REPORTING PERIOD [NUMBER]

	EU contribution								
	Eligible unit contributions (per budget category)								**Requested EU contribution**
	[OPTION for all MSCA ToA except COFUND: **A. . Contributions for** *[* **recruited researchers***]* *[* **seconded staff members***]][OPTION for COFUND:* **A. COFUND contributions***]*					*[OPTION for all MSCA ToA except COFUND:* **B. Institutional contributions***]*		**Total**	
	[OPTION for DN and PF : A.1 Living allowance*]* *[OPTION for SE:* A.1 Top - up allowance*]* *[OPTION for COFUND:* A.1 COFUND allowance*]*	*[OPTION for DN and PF:* A.2 Mobility allowance*]*	*[OPTION for DN and PF:* A.3 Family allowance*]*	*[OPTION for all MSCA ToA except SE:* A.4 Long-term leave allowance*]*	A.5 Special needs allowance	*[* B.1 Research, training and networking contribution*]*	*[* B.2 Management and indirect contribution*]*		
Forms of funding	Unit contribution[1]	*[* Unit contribution[1] *]*	*[* Unit contribution[1] *]*	*[* Unit contribution[1] *]*	Unit contribution[1]	*[* Unit contribution[1] *]*	*[* Unit contribution[1] *]*	h = a *[* + b *][* + c*]* *[* + d*]* + e *[* + f*]* *[* + g*]*	i
	a	*[* b*]*	*[* c*]*	*[* d*]*	e	*[* f*]*	*[* g*]*		
XX – [short name beneficiary/affiliated entity]									

The beneficiary/affiliated entity hereby confirms that:

The information provided is complete, reliable and true.

The unit contributions declared are eligible (see Article 6).

The contributions can be substantiated by adequate records and supporting documentation that will be produced upon request or in the context of checks, reviews, audits and investigations (see Articles 19, 20 and 25).

[1] See Annex 2a 'Additional information on the estimated budget' for the details (units, amount per unit).

ANNEX 5

SPECIFIC RULES

CONFIDENTIALITY AND SECURITY (— ARTICLE 13)

Sensitive information with security recommendation

Sensitive information with a security recommendation must comply with the additional requirements imposed by the granting authority.

Before starting the action tasks concerned, the beneficiaries must have obtained all approvals or other mandatory documents needed for implementing the task. The documents must be kept on file and be submitted upon request by the coordinator to the granting authority. If they are not in English, they must be submitted together with an English summary.

For requirements restricting disclosure or dissemination, the information must be handled in accordance with the recommendation and may be disclosed or disseminated only after written approval from the granting authority.

EU classified information

If EU classified information is used or generated by the action, it must be treated in accordance with the security classification guide (SCG) and security aspect letter (SAL) set out in Annex 1 and Decision 2015/444[1] and its implementing rules — until it is declassified.

Deliverables which contain EU classified information must be submitted according to special procedures agreed with the granting authority.

Action tasks involving EU classified information may be subcontracted only with prior explicit written approval from the granting authority and only to entities established in an EU Member State or in a non-EU country with a security of information agreement with the EU (or an administrative arrangement with the Commission).

EU classified information may not be disclosed to any third party (including participants involved in the action implementation) without prior explicit written approval from the granting authority.

ETHICS (— ARTICLE 14)

Ethics and research integrity

The beneficiaries must carry out the action in compliance with:

- ethical principles (including the highest standards of research integrity)

[1] Commission Decision 2015/444/EC, Euratom of 13 March 2015 on the security rules for protecting EU classified information (OJ L 72, 17.3.2015, p. 53).

and

- applicable EU, international and national law, including the EU Charter of Fundamental Rights and the European Convention for the Protection of Human Rights and Fundamental Freedoms and its Supplementary Protocols.

No funding can be granted, within or outside the EU, for activities that are prohibited in all Member States. No funding can be granted in a Member State for an activity which is forbidden in that Member State.

The beneficiaries must pay particular attention to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of persons, the right to non-discrimination, the need to ensure protection of the environment and high levels of human health protection.

The beneficiaries must ensure that the activities under the action have an exclusive focus on civil applications.

The beneficiaries must ensure that the activities under the action do not:

- aim at human cloning for reproductive purposes
- intend to modify the genetic heritage of human beings which could make such modifications heritable (with the exception of research relating to cancer treatment of the gonads, which may be financed)
- intend to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer, or
- lead to the destruction of human embryos (for example, for obtaining stem cells).

Activities involving research on human embryos or human embryonic stem cells may be carried out only if:

- they are set out in Annex 1 or
- the coordinator has obtained explicit approval (in writing) from the granting authority.

In addition, the beneficiaries must respect the fundamental principle of research integrity — as set out in the European Code of Conduct for Research Integrity[2].

This implies compliance with the following principles:

- reliability in ensuring the quality of research reflected in the design, the methodology, the analysis and the use of resources
- honesty in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair and unbiased way

[2] European Code of Conduct for Research Integrity of ALLEA (All European Academies).

- respect for colleagues, research participants, society, ecosystems, cultural heritage and the environment

- accountability for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider impacts

and means that beneficiaries must ensure that persons carrying out research tasks follow the good research practices including ensuring, where possible, openness, reproducibility and traceability and refrain from the research integrity violations described in the Code.

Activities raising ethical issues must comply with the additional requirements formulated by the ethics panels (including after checks, reviews or audits; see Article 25).

Before starting an action task raising ethical issues, the beneficiaries must have obtained all approvals or other mandatory documents needed for implementing the task, notably from any (national or local) ethics committee or other bodies such as data protection authorities.

The documents must be kept on file and be submitted upon request by the coordinator to the granting authority. If they are not in English, they must be submitted together with an English summary, which shows that the documents cover the action tasks in question and includes the conclusions of the committee or authority concerned (if any).

VALUES (— ARTICLE 14)

Gender mainstreaming

The beneficiaries must take all measures to promote equal opportunities between men and women in the implementation of the action and, where applicable, in line with the gender equality plan. They must aim, to the extent possible, for a gender balance at all levels of personnel assigned to the action, including at supervisory and managerial level.

INTELLECTUAL PROPERTY RIGHTS (IPR) — BACKGROUND AND RESULTS — ACCESS RIGHTS AND RIGHTS OF USE (— ARTICLE 16)

Definitions

Access rights — Rights to use results or background.

Dissemination — The public disclosure of the results by appropriate means, other than resulting from protecting or exploiting the results, including by scientific publications in any medium.

Exploit(ation) — The use of results in further research and innovation activities other than those covered by the action concerned, including among other things, commercial exploitation such as developing, creating, manufacturing and marketing a product or process, creating and providing a service, or in standardisation activities.

Fair and reasonable conditions — Appropriate conditions, including possible financial terms or royalty-free conditions, taking into account the specific circumstances of the request for access, for example the actual or potential value of the results or background to which access is requested and/or the scope, duration or other characteristics of the exploitation envisaged.

FAIR principles — ‘findability’, ‘accessibility’, ‘interoperability’ and ‘reusability’.

Open access — Online access to research outputs provided free of charge to the end-user.

Open science — An approach to the scientific process based on open cooperative work, tools and diffusing knowledge.

Research data management — The process within the research lifecycle that includes the organisation, storage, preservation, security, quality assurance, allocation of persistent identifiers (PIDs) and rules and procedures for sharing of data including licensing.

Research outputs — Results to which access can be given in the form of scientific publications, data or other engineered results and processes such as software, algorithms, protocols, models, workflows and electronic notebooks.

Scope of the obligations

For this section, references to ‘beneficiary’ or ‘beneficiaries’ do not include affiliated entities (if any).

Agreement on background

The beneficiaries must identify in a written agreement the background as needed for implementing the action or for exploiting its results.

Where the call conditions restrict control due to strategic interests reasons, background that is subject to control or other restrictions by a country (or entity from a country) which is not one of the eligible countries or target countries set out in the call conditions and that impact the exploitation of the results (i.e. would make the exploitation of the results subject to control or restrictions) must not be used and must be explicitly excluded from it in the agreement on background — unless otherwise agreed with the granting authority.

Ownership of results

Results are owned by the beneficiaries that generate them.

However, two or more beneficiaries own results jointly if:

- they have jointly generated them and
- it is not possible to:
    - establish the respective contribution of each beneficiary, or
    - separate them for the purpose of applying for, obtaining or maintaining their protection.

The joint owners must agree — in writing — on the allocation and terms of exercise of their joint ownership (‘**joint ownership agreement**’), to ensure compliance with their obligations under this Agreement.

Unless otherwise agreed in the joint ownership agreement or consortium agreement, each joint owner may grant non-exclusive licences to third parties to exploit the jointly-owned results (without any right to sub-license), if the other joint owners are given:

- at least 45 days advance notice and
- fair and reasonable compensation.

The joint owners may agree — in writing — to apply another regime than joint ownership.

If third parties (including employees and other personnel) may claim rights to the results, the beneficiary concerned must ensure that those rights can be exercised in a manner compatible with its obligations under the Agreement.

The beneficiaries must indicate the owner(s) of the results (results ownership list) in the final periodic report.

Protection of results

Beneficiaries which have received funding under the grant must adequately protect their results — for an appropriate period and with appropriate territorial coverage — if protection is possible and justified, taking into account all relevant considerations, including the prospects for commercial exploitation, the legitimate interests of the other beneficiaries and any other legitimate interests.

Exploitation of results

Beneficiaries which have received funding under the grant must — up to four years after the end of the action (see Data Sheet, Point 1) — use their best efforts to exploit their results directly or to have them exploited indirectly by another entity, in particular through transfer or licensing.

If, despite a beneficiary's best efforts, the results are not exploited within one year after the end of the action, the beneficiaries must (unless otherwise agreed in writing with the granting authority) use the Horizon Results Platform to find interested parties to exploit the results.

If results are incorporated in a standard, the beneficiaries must (unless otherwise agreed with the granting authority or unless it is impossible) ask the standardisation body to include the funding statement (see Article 17) in (information related to) the standard.

Additional exploitation obligations

Where the call conditions impose additional exploitation obligations (including obligations linked to the restriction of participation or control due to strategic assets, interests, autonomy or security reasons), the beneficiaries must comply with them — up to four years after the end of the action (see Data Sheet, Point 1).

Where the call conditions impose additional exploitation obligations in case of a public emergency, the beneficiaries must (if requested by the granting authority) grant for a limited period of time specified in the request, non-exclusive licences — under fair and reasonable conditions — to their results to legal entities that need the results to address the public emergency and commit to rapidly and broadly exploit the resulting products and services at

fair and reasonable conditions. This provision applies up to four years after the end of the action (see Data Sheet, Point 1).

Additional information obligation relating to standards

Where the call conditions impose additional information obligations relating to possible standardisation, the beneficiaries must — up to four years after the end of the action (see Data Sheet, Point 1) — inform the granting authority, if the results could reasonably be expected to contribute to European or international standards.

Transfer and licensing of results

Transfer of ownership

The beneficiaries may transfer ownership of their results, provided this does not affect compliance with their obligations under the Agreement.

The beneficiaries must ensure that their obligations under the Agreement regarding their results are passed on to the new owner and that this new owner has the obligation to pass them on in any subsequent transfer.

Moreover, they must inform the other beneficiaries with access rights of the transfer at least 45 days in advance (or less if agreed in writing), unless agreed otherwise in writing for specifically identified third parties including affiliated entities or unless impossible under the applicable law. This notification must include sufficient information on the new owner to enable the beneficiaries concerned to assess the effects on their access rights. The beneficiaries may object within 30 days of receiving notification (or less if agreed in writing), if they can show that the transfer would adversely affect their access rights. In this case, the transfer may not take place until agreement has been reached between the beneficiaries concerned.

Granting licences

The beneficiaries may grant licences to their results (or otherwise give the right to exploit them), including on an exclusive basis, provided this does not affect compliance with their obligations.

Exclusive licences for results may be granted only if all the other beneficiaries concerned have waived their access rights.

Granting authority right to object to transfers or licensing — Horizon Europe actions

Where the call conditions in Horizon Europe actions provide for the right to object to transfers or licensing, the granting authority may — up to four years after the end of the action (see Data Sheet, Point 1) — object to a transfer of ownership or the exclusive licensing of results, if:

- the beneficiaries which generated the results have received funding under the grant
- it is to a legal entity established in a non-EU country not associated with Horizon Europe, and

- the granting authority considers that the transfer or licence is not in line with EU interests.

Beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority before the intended transfer or licensing takes place and:

- identify the specific results concerned
- describe in detail the new owner or licensee and the planned or potential exploitation of the results, and
- include a reasoned assessment of the likely impact of the transfer or licence on EU interests, in particular regarding competitiveness as well as consistency with ethical principles and security considerations.

The granting authority may request additional information.

If the granting authority decides to object to a transfer or exclusive licence, it must formally notify the beneficiary concerned within 60 days of receiving notification (or any additional information it has requested).

No transfer or licensing may take place in the following cases:

- pending the granting authority decision, within the period set out above
- if the granting authority objects
- until the conditions are complied with, if the granting authority objection comes with conditions.

A beneficiary may formally notify a request to waive the right to object regarding intended transfers or grants to a specifically identified third party, if measures safeguarding EU interests are in place. If the granting authority agrees, it will formally notify the beneficiary concerned within 60 days of receiving notification (or any additional information requested).

Limitations to transfers and licensing due to strategic assets, interests, autonomy or security reasons of the EU and its Member States

Where the call conditions restrict participation or control due to strategic assets, interests, autonomy or security reasons, the beneficiaries may not transfer ownership of their results or grant licences to third parties which are established in countries which are not eligible countries or target countries set out in the call conditions (or, if applicable, are controlled by such countries or entities from such countries) — unless they have requested and received prior approval by the granting authority.

The request must:

- identify the specific results concerned
- describe in detail the new owner and the planned or potential exploitation of the results, and
- include a reasoned assessment of the likely impact of the transfer or license on the strategic assets, interests, autonomy or security of the EU and its Member States.

The granting authority may request additional information.

Access rights to results and background

Exercise of access rights — Waiving of access rights — No sub-licensing

Requests to exercise access rights and the waiver of access rights must be in writing.

Unless agreed otherwise in writing with the beneficiary granting access, access rights do not include the right to sub-license.

If a beneficiary is no longer involved in the action, this does not affect its obligations to grant access.

If a beneficiary defaults on its obligations, the beneficiaries may agree that that beneficiary no longer has access rights.

Access rights for implementing the action

The beneficiaries must grant each other access — on a royalty-free basis — to background needed to implement their own tasks under the action, unless the beneficiary that holds the background has — before acceding to the Agreement —:

- informed the other beneficiaries that access to its background is subject to restrictions, or
- agreed with the other beneficiaries that access would not be on a royalty-free basis.

The beneficiaries must grant each other access — on a royalty-free basis — to results needed for implementing their own tasks under the action.

Access rights for exploiting the results

The beneficiaries must grant each other access — under fair and reasonable conditions — to results needed for exploiting their results.

The beneficiaries must grant each other access — under fair and reasonable conditions — to background needed for exploiting their results, unless the beneficiary that holds the background has — before acceding to the Agreement — informed the other beneficiaries that access to its background is subject to restrictions.

Requests for access must be made — unless agreed otherwise in writing — up to one year after the end of the action (see Data Sheet, Point 1).

Access rights for entities under the same control

Unless agreed otherwise in writing by the beneficiaries, access to results and, subject to the restrictions referred to above (if any), background must also be granted — under fair and reasonable conditions — to entities that:

- are established in an EU Member State or Horizon Europe associated country
- are under the direct or indirect control of another beneficiary, or under the same direct or indirect control as that beneficiary, or directly or indirectly controlling that beneficiary and

- need the access to exploit the results of that beneficiary.

Unless agreed otherwise in writing, such requests for access must be made by the entity directly to the beneficiary concerned.

Requests for access must be made — unless agreed otherwise in writing — up to one year after the end of the action (see Data Sheet, Point 1).

Access rights for the granting authority, EU institutions, bodies, offices or agencies and national authorities to results for policy purposes — Horizon Europe actions

In Horizon Europe actions, the beneficiaries which have received funding under the grant must grant access to their results — on a royalty-free basis — to the granting authority, EU institutions, bodies, offices or agencies for developing, implementing and monitoring EU policies or programmes. Such access rights do not extend to beneficiaries' background.

Such access rights are limited to non-commercial and non-competitive use.

For actions under the cluster 'Civil Security for Society', such access rights also extend to national authorities of EU Member States for developing, implementing and monitoring their policies or programmes in this area. In this case, access is subject to a bilateral agreement to define specific conditions ensuring that:

- the access rights will be used only for the intended purpose and

- appropriate confidentiality obligations are in place.

Moreover, the requesting national authority or EU institution, body, office or agency (including the granting authority) must inform all other national authorities of such a request.

Additional access rights

Where the call conditions impose additional access rights, the beneficiaries must comply with them.

COMMUNICATION, DISSEMINATION, OPEN SCIENCE AND VISIBILITY (— ARTICLE 17)

Dissemination

Dissemination of results

The beneficiaries must disseminate their results as soon as feasible, in a publicly available format, subject to any restrictions due to the protection of intellectual property, security rules or legitimate interests.

A beneficiary that intends to disseminate its results must give at least 15 days advance notice to the other beneficiaries (unless agreed otherwise), together with sufficient information on the results it will disseminate.

Any other beneficiary may object within (unless agreed otherwise) 15 days of receiving notification, if it can show that its legitimate interests in relation to the results or background would be significantly harmed. In such cases, the results may not be disseminated unless appropriate steps are taken to safeguard those interests.

Additional dissemination obligations

Where the call conditions impose additional dissemination obligations, the beneficiaries must also comply with those.

Open Science

Open science: open access to scientific publications

The beneficiaries must ensure open access to peer-reviewed scientific publications relating to their results. In particular, they must ensure that:

- at the latest at the time of publication, a machine-readable electronic copy of the published version or the final peer-reviewed manuscript accepted for publication, is deposited in a trusted repository for scientific publications

- immediate open access is provided to the deposited publication via the repository, under the latest available version of the Creative Commons Attribution International Public Licence (CC BY) or a licence with equivalent rights; for monographs and other long-text formats, the licence may exclude commercial uses and derivative works (e.g. CC BY-NC, CC BY-ND) and

- information is given via the repository about any research output or any other tools and instruments needed to validate the conclusions of the scientific publication.

Beneficiaries (or authors) must retain sufficient intellectual property rights to comply with the open access requirements.

Metadata of deposited publications must be open under a Creative Common Public Domain Dedication (CC 0) or equivalent, in line with the FAIR principles (in particular machine-actionable) and provide information at least about the following: publication (author(s), title, date of publication, publication venue); Horizon Europe or Euratom funding; grant project name, acronym and number; licensing terms; persistent identifiers for the publication, the authors involved in the action and, if possible, for their organisations and the grant. Where applicable, the metadata must include persistent identifiers for any research output or any other tools and instruments needed to validate the conclusions of the publication.

Open science: research data management

The beneficiaries must manage the digital research data generated in the action ('data') responsibly, in line with the FAIR principles and by taking all of the following actions:

- establish a data management plan ('DMP') (and regularly update it)

- as soon as possible and within the deadlines set out in the DMP, deposit the data in a trusted repository; if required in the call conditions, this repository must be federated in the EOSC in compliance with EOSC requirements

- as soon as possible and within the deadlines set out in the DMP, ensure open access — via the repository — to the deposited data, under the latest available version of the Creative Commons Attribution International Public License (CC BY) or Creative Commons Public Domain Dedication (CC 0) or a licence with equivalent rights,

following the principle 'as open as possible as closed as necessary', unless providing open access would in particular:

- be against the beneficiary's legitimate interests, including regarding commercial exploitation, or
- be contrary to any other constraints, in particular the EU competitive interests or the beneficiary's obligations under this Agreement; if open access is not provided (to some or all data), this must be justified in the DMP

- provide information via the repository about any research output or any other tools and instruments needed to re-use or validate the data.

Metadata of deposited data must be open under a Creative Common Public Domain Dedication (CC 0) or equivalent (to the extent legitimate interests or constraints are safeguarded), in line with the FAIR principles (in particular machine-actionable) and provide information at least about the following: datasets (description, date of deposit, author(s), venue and embargo); Horizon Europe or Euratom funding; grant project name, acronym and number; licensing terms; persistent identifiers for the dataset, the authors involved in the action, and, if possible, for their organisations and the grant. Where applicable, the metadata must include persistent identifiers for related publications and other research outputs.

Open science: additional practices

Where the call conditions impose additional obligations regarding open science practices, the beneficiaries must also comply with those.

Where the call conditions impose additional obligations regarding the validation of scientific publications, the beneficiaries must provide (digital or physical) access to data or other results needed for validation of the conclusions of scientific publications, to the extent that their legitimate interests or constraints are safeguarded (and unless they already provided the (open) access at publication).

Where the call conditions impose additional open science obligations in case of a public emergency, the beneficiaries must (if requested by the granting authority) immediately deposit any research output in a repository and provide open access to it under a CC BY licence, a Public Domain Dedication (CC 0) or equivalent. As an exception, if the access would be against the beneficiaries' legitimate interests, the beneficiaries must grant non-exclusive licenses — under fair and reasonable conditions — to legal entities that need the research output to address the public emergency and commit to rapidly and broadly exploit the resulting products and services at fair and reasonable conditions. This provision applies up to four years after the end of the action (see Data Sheet, Point 1).

Plan for the exploitation and dissemination of results including communication activities

Unless excluded by the call conditions, the beneficiaries must provide and regularly update a plan for the exploitation and dissemination of results including communication activities.

SPECIFIC RULES FOR CARRYING OUT THE ACTION (— ARTICLE 18)

Implementation in case of restrictions due to strategic assets, interests, autonomy or security of the EU and its Member States

Where the call conditions restrict participation or control due to strategic assets, interests, autonomy or security, the beneficiaries must ensure that none of the entities that participate as affiliated entities, associated partners, subcontractors or recipients of financial support to third parties are established in countries which are not eligible countries or target countries set out in the call conditions (or, if applicable, are controlled by such countries or entities from such countries) — unless otherwise agreed with the granting authority.

The beneficiaries must moreover ensure that any cooperation with entities established in countries which are not eligible countries or target countries set out in the call conditions (or, if applicable, are controlled by such countries or entities from such countries) does not affect the strategic assets, interests, autonomy or security of the EU and its Member States.

Specific rules for MSCA actions

When implementing MSCA Doctoral Networks (DN), Postdoctoral Fellowships (PF) and COFUND actions, the beneficiaries must respect the following conditions:

- take all measures to implement the principles set out in the Commission Recommendation on the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers[3] and ensure that the researchers and all participants involved in the action are aware of them

- ensure that the researchers enjoy at the place of the implementation at least the same standards and working conditions as those applicable to local researchers holding a similar position

- ensure that the employment contract, other direct contract or fixed-amount-fellowship agreement (see Article 6) specifies:

    - the name of the supervisor(s) for the research training activities

    - the starting date and duration of the research training activities

    - the monthly support for the researcher under this Agreement (in euro and, if relevant, in the currency in which the remuneration is paid)

    - the obligation of the researcher to work exclusively for the action, unless part-time for professional reasons is allowed and has been approved (and for MSCA-DN and MSCA-PF: not to receive, for activities carried out in the frame of the action, other incomes than those received from the beneficiary or other entities mentioned in Annex 1)

    - the working pattern of the researcher

    - the arrangements related to the intellectual property rights (during implementation of the action and afterwards), in particular full access — on

[3] Commission Recommendation 2005/251/EC of 11 March 2005 on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers (OJ L 75, 22.3.2005, p. 67).

a royalty-free basis — for the researcher to background and results needed for their activities under the action

- the obligation of the researcher to inform as soon as possible about events or circumstances likely to affect the implementation of the action or the compliance with requirements under the Agreement (see Article 19)
- the obligation of the researcher to maintain confidentiality (see Article 13)
- the obligation of the researcher to ensure the visibility of EU funding in communications or publications and in applications for the protection of results (see Articles 17)
- where set out in the call conditions, the obligation of the researcher to carry out a mandatory return period of 12 months

- assist the researchers in the administrative procedures related to the recruitment
- inform the researchers about:
  - the description, conditions, location and timetable for the implementation of the research training activities
  - the rights and obligations toward the researchers under this Agreement
  - the obligation of the researchers to complete and submit — at the end of the research training activities — the evaluation questionnaire and — two years later — follow-up questionnaire provided by the granting authority
- ensure full access — on a royalty-free basis — for the researchers to background and results needed for their activities under the action
- ensure that the researchers do not have to bear any costs for the implementation of the action as described in Annex 1
- provide training and the necessary means for implementing the action (or ensure that such training and means are provided by other participants in the action)
- ensure that the researchers are adequately supervised and receive appropriate career guidance
- ensure that personalised career development plans are established, support their implementation and update in view of the needs of the researchers
- ensure an appropriate exposure to the non-academic sector (if applicable)
- respect the maximum limit for secondments set out in the call conditions
- respect the conditions for the outgoing and return phases set out in the call conditions (if any)
- ensure that the researchers are informed that they are 'Marie Skłodowska-Curie fellows'
- for MSCA-DN and MSCA-COFUND:

- advertise and publish vacancies internationally, including on the web-sites requested by the granting authority, indicating the gross salary (not including employer's social contributions) to be offered to the researcher
- recruit the researchers, following an open, transparent, merit-based, impartial and equitable recruitment procedure (for postdoctoral programmes in MSCA-COFUND: with regular selection rounds and international peer review), on the basis of:
  - their scientific skills and the relevance of their research experience
  - the impact of the proposed training on the researcher's career
  - a fair gender representation (by promoting genuine equal access opportunities throughout the recruitment process)

  The selection committees must bring together diverse expertise, have an adequate gender balance and include members from different countries and with relevant experience to assess the candidates.
- ensure that no conflict of interest exists in or arises from the recruitment

- for MSCA-DN and MSCA-PF:
  - ensure that the researchers do not receive, for activities carried out in the frame of the action, other incomes than those received from the beneficiaries (or other entities mentioned in Annex 1)
  - host the researchers at their premises (or at the premises of other participants in the action)
- for MSCA-COFUND where doctoral or post-doctoral programmes are implemented as financial support to third parties through implementing partners:
  - ensure that the implementing partners comply with the same standards and procedures for implementing the research training activities, including the recruitment and working conditions for researchers, the specific rules for MSCA-COFUND actions and the specific rules on ethics and research integrity set out in Annex 5
  - implement effective monitoring and oversight arrangements towards the implementing partners, covering all aspects relating to the action
  - ensure effective and reliable reporting by the implementing partners, covering the activities implemented, information on indicators, as well as the legality and regularity of the expenditure claimed
  - ensure that the implementing partners provide that the bodies mentioned in Article 25 (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.) can exercise their rights also towards the final recipients.

When implementing Horizon Europe MSCA Staff Exchanges (MSCA-SE), the beneficiaries must respect the following conditions:

- take all measures to implement the principles set out in the Commission Recommendation on the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers[4] and ensure that the seconded staff and all participants involved in the action are aware of them
- ensure that the seconded staff enjoys at the place of the implementation at least the same standards and working conditions as those applicable to local staff holding a similar position
- assist the seconded staff with the administrative procedures related to their secondment
- inform the seconded staff about:
  - the description, conditions, location and timetable for the implementation of the secondment
  - the rights and obligations of the beneficiary toward the seconded staff under this Agreement
  - the obligation of the seconded staff to complete and submit — at the end of the secondment — the evaluation questionnaire and — two years later — the follow-up questionnaire provided by the granting authority
  - the arrangements related to the intellectual property rights between the beneficiary and the seconded staff (during the secondment and afterwards), in particular full access — on a royalty-free basis — for the staff to background and results needed for their activities under the action
  - the obligation of the seconded staff to maintain confidentiality (see Article 13)
  - the obligation of the seconded staff to ensure the visibility of EU funding in communications or publications and in applications for the protection of results (see Article 17)
- ensure that the seconded staff do not have to bear any costs for the implementation of the action as described in Annex 1
- provide training and the necessary means for implementing the action (or ensure that such training and means are provided by other participants in the action)
- ensure that the seconded staff are adequately mentored
- ensure that the rights and obligations of the seconded staff remain unchanged during the secondment
- ensure full access — on a royalty-free basis — for the staff to background and results needed for their activities under the action

[4] Commission Recommendation 2005/251/EC of 11 March 2005 on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers (OJ L 75, 22.3.2005, p. 67).

- if appropriate, ensure that seconded staff are reintegrated after the secondment
- ensure that the seconded staff are covered by an adequate medical insurance scheme
- ensure that the seconded staff have the relevant expertise for the action
- use the top-up allowance (see Article 6) to contribute to the subsistence, accommodation and travel of the seconded staff.

Specific rules for ERA Fellowship actions

When implementing ERA Fellowships, the beneficiaries must respect the following conditions:

- take all measures to implement the principles set out in the Commission Recommendation on the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers[5] and ensure that the researchers and all participants involved in the action are aware of them
- ensure that the researchers enjoy at the place of the implementation at least the same standards and working conditions as those applicable to local researchers holding a similar position
- ensure that the employment contract, other direct contract or fixed-amount-fellowship agreement (see Article 6) specifies:
    - the name of the supervisor(s) for the research training activities
    - the starting date and duration of the research training activities
    - the monthly support for the researcher under this Agreement (in euro and, if relevant, in the currency in which the remuneration is paid)
    - the obligation of the researcher to work exclusively for the action, unless part-time for professional reasons is allowed and has been approved (and not to receive, for activities carried out in the frame of the action, other incomes than those received from the beneficiary or other entities mentioned in Annex 1)
    - the working pattern of the researcher
    - the arrangements related to the intellectual property rights (during implementation of the action and afterwards), in particular full access — on a royalty-free basis — for the researcher to background and results needed for their activities under the action

[5] Commission Recommendation 2005/251/EC of 11 March 2005 on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers (OJ L 75, 22.3.2005, p. 67).

  - the obligation of the researcher to inform as soon as possible about events or circumstances likely to affect the implementation of the action or the compliance with requirements under the Agreement (see Article 19)
  - the obligation of the researcher to maintain confidentiality (see Article 13)
  - the obligation of the researcher to ensure the visibility of EU funding in communications or publications and in applications for the protection of results (see Articles 17)
  - where set out in the call conditions, the obligation of the researcher to carry out a mandatory return period of 12 months
- assist the researchers in the administrative procedures related to the recruitment
- inform the researchers about:
  - the description, conditions, location and timetable for the implementation of the research training activities
  - the rights and obligations toward the researchers under this Agreement
  - the obligation of the researchers to complete and submit — at the end of the research training activities — the evaluation questionnaire and — two years later — follow-up questionnaire provided by the granting authority
- ensure full access — on a royalty-free basis — for the researchers to background and results needed for their activities under the action
- ensure that the researchers do not have to bear any costs for the implementation of the action as described in Annex 1
- provide training and the necessary means for implementing the action (or ensure that such training and means are provided by other participants in the action)
- ensure that the researchers are adequately supervised and receive appropriate career guidance
- ensure that personalised career development plans are established, support their implementation and update in view of the needs of the researchers
- ensure an appropriate exposure to the non-academic sector (if applicable)
- respect the maximum limit for secondments set out in the call conditions
- respect the conditions for the outgoing and return phases set out in the call conditions (if any)
- ensure that the researchers are informed that they are ‘ERA fellows’
- ensure that the researchers do not receive, for activities carried out in the frame of the action, other incomes than those received from the beneficiaries (or other entities mentioned in Annex 1)

- host the researchers at their premises (or at the premises of other participants in the action)

8. 6. 2022

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