Abstract

The present invention provides a device, a system and a method for cancer therapy based on proton boron nuclear fusion reaction and simultaneous prompt gamma-ray imaging. The invention is based on the use of an incoming energetic proton beam interacting with a mixture of ^{11}B and ^{10}B isotopes to achieve simultaneity of the clinical irradiation and imaging, as well as to enhance the biological dose released into the cancer cells. The device is specifically adapted to performing such treatment.