Contribution ID : **116** Type : **Poster**

Microbeam radiation therapy in a heart beat

Thursday, 25 November 2021 18:11 (1)

Non-small-cell lung carcinomas are highly radioresistant and so, of potential interest for treatment with Microbeam Radiation Therapy. In the thoracic cavity, the therapeutic dose is limited largely by the heart; one of the most important organs of risk.
We developed an ex vivo protocol to study the acute response of the cardiac impulse conduction system to microbeam radiotherapy with high peak doses, combining physiology measurements in the Langendorff model of the isolated beating heart with world-leading real-time small volume dosimetry.
The study was performed in Hutch 2B of the Imaging and Medical Beam Line (IMBL) of the Australian Synchrotron.
The acute physiological response of the heart was measured for 60 minutes post-irradiation.
With no arrhythmia or ventricle pressure drop, results place the upper limit for normal functioning of the heart between 400 – 4,000 Gy

Level of Expertise

Student

Presenter Gender

Man

Pronouns

He/Him

Which facility did you use for your research

Australian Synchrotron

Students Only - Are you interested in AINSE student funding

Yes

Do you wish to take part in the Student Poster Slam

Yes

Condition of submission

Yes

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Session Classification : Poster Session

Track Classification : Physics, Surface & Condensed Matter