

GSI – SEMINAR

Im KBW Hörsaal

Darmstadt, Planckstraße 1

Donnerstag, den 02.11.2017, 14:00 Uhr

Dr. Sebastian Zahnreich

University Medical Centre Johannes Gutenberg University Mainz
Department of Radiation Oncology and Radiotherapy

„Radiation biomarkers: Suitable biodosimeters and predictors of intrinsic radiation sensitivity and second cancer risks?“

Biomarkers of radiation exposure, in particular indicators of DNA damage and repair, are frequently utilized as biological dosimeters or predictors of intrinsic radiation sensitivity and radiation-related second cancer risks. Today, different modalities of modern external-beam radiation therapy are inevitably associated with varying exposure of the patients' normal tissue outside the treatment volume. Such out-of-field doses are low but distributed over large proportions of the body and have been associated with late adverse effects of radiation, such as cardiac toxicity or second malignancies. We applied conventional cytogenetics and the gamma-H2AX foci assay in peripheral leukocytes to monitor and compare the radiation burden of cancer patients after the treatment with various radiation techniques as risk estimators for adverse radiation effects and to reconstruct the administered doses for biodosimetry purposes. Using these biomarker approaches, we currently study their potential to predict an intrinsic radiation sensitivity and cancer proneness in primary skin fibroblasts obtained from a matched case-control-study of childhood cancer survivors with primary and secondary malignancies and from Fanconi anemia patients.

Einladender: Dr. Michael Scholz

GSI Helmholtzzentrum für Schwerionenforschung GmbH