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JUSTIFICATION OF 75Se AND 169Y AS SOURCES FOR KILOVOLTAGE X-RAY THERAPY WITH RADIOSENSITIZERS

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Kilovoltage x-rays have been used for the treatment of cancer alongside MV x-rays for decades. For treatments of deep-seated tumors, a number of challenges for kV therapy compared to MV therapy exist, such as the increased treatment time, dose calculation complexity, potential differences in radiobiology between kV and MV beams. Due to the increased probability of photo-electric interactions, kV x-ray beams have the potential to increase radiation dose to a target loaded with x-ray contrast agents of high atomic number (Z).
Current research is aimed at the study of the effects of X-ray radiation on brain tumors in presence contrast agents, as well as the physical mechanisms. So justification of 75Se and 169Y as sources for kilovoltage X-ray therapy with radiosensitizers are presented.

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