

Abstract Submitted
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Radiobiology Using Laser Driven Protons¹ K. KAKOLEE, D. DORIA, S. KAR, S. LITT, M. ZEPF, M. BORGHESI, Queen's University Belfast, U.K, F. FIORINI, D. KIRBY, S. GREEN, Birmingham University, U.K, K. KIRKBY, C. JEYNES, M. MERCHANT, University of Surrey, U.K — The advantage of using ion beams in radiotherapy is easily understood in terms of the Bragg peak effect if compared to widely used x-ray irradiation systems. There is therefore a large literature about cell irradiation using ions from conventional accelerators. Employing the TARANIS Terawatt laser at Queen's University, the effect of proton irradiation of biological cells, on timescales orders of magnitude shorter than with conventional accelerators, has been investigated. The laser driven MeV proton beam has been energy dispersed by using a magnetic system prior to the irradiation, allowing simultaneous irradiation of a number of cell spots with different doses on a ns timescale. Consistent lethal effects on V-79 cancer cells have been observed.

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