Special Issue

Proton and Light Ion Therapy for Cancer

Message from the Guest Editor

Proton and light ion beam therapy is undergoing an enormous development. Novel beam delivery technologies are being explored, which may substantially improve therapy. Among them are rotational delivery, delivery at ultra-high dose rates (FLASH), spatial fractionation (mini-beam or grid therapy), and treatment in an upright patient position. In parallel, image guidance for particle therapy is entering the next level, facilitating adaptive concepts. Beyond cone-beam CT, CT, and optical surface guidance, MRI guidance is also being explored. The in vivo monitoring of secondary radiation may support therapy adaption. More recently, novel ion beams have been used clinically, like helium and oxygen, which sparked the idea of multi-ion therapy. All these technical developments go hand-in-hand with radiobiological investigations, but also to question well-known concepts, like the fixed RBE for proton therapy. For a more widespread application of proton and light ion therapy, however, clinical studies and comparative trials are needed, trying to create evidence for the efficacy of particle beam therapy and potentially demonstrate superiority compared to conventional concepts.

Guest Editor

Prof. Dr. Oliver Jäkel

German Cancer Research Center, Heidelberg Ion Beam Therapy Center, Heidelberg Institute of Radiation Oncology (HIRO), 69120 Heidelberg, Germany

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Cancers
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
cancers@mdpi.com

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Message from the Editor-in-Chief

Cancers is an international online journal addressing both clinical and basic science issues related to cancer research. The journal is publishing in Open Access format, which will certainly evolve to ensure that the journal takes full advantage of the rapidly changing world of information and knowledge dissemination. It publishes high-quality clinical, translational, and basic science research on cancer prevention, initiation, progression, and treatment, as well as other related topics, particularly to capture the most seminal studies in the rapidly growing area of immunology, immunotherapy, and tumor microenvironment.

Editor-in-Chief

Prof. Dr. Samuel C. Mok
Department of Gynecologic Oncology and Reproductive Medicine, The University of Texas MD Anderson Cancer Center, Houston, TX 77030, USA

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