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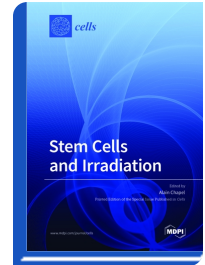
## **Stem Cells and Irradiation**

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The main difficulty of radiotherapy is to destroy cancer cells without depletion of healthy tissue. Stem cells and cancers are tightly interrelated. On one hand, radiosensitivity/radioresistance of cancer stem cells affects the radiocurability of tumors. On the other hand, radiosensitivity is responsible for the stem cell depletion of organs at risk exposed to irradiation. Efficient solide cancer destruction is limited by the preservation of organ homeostasis. For this reason, targeted irradiation is an effective cancer therapy, but damage inflicted to normal tissues surrounding the tumor may cause severe complications. The consequences of stem cell depletion of healthy tissue irradiated are acute and chronic radiation diseases.

Research on the radiosensitivity of cancer stem cells and adult stem cells associated with tissue regeneration medicine will bring forth the solution for optimal radiocurability associated with long-term patients' quality of life.



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