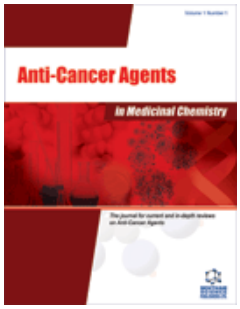

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Back (/node/578)

Alternative Splicing, DNA Damage and Modulating Drugs in Radiation Therapy for Cancer

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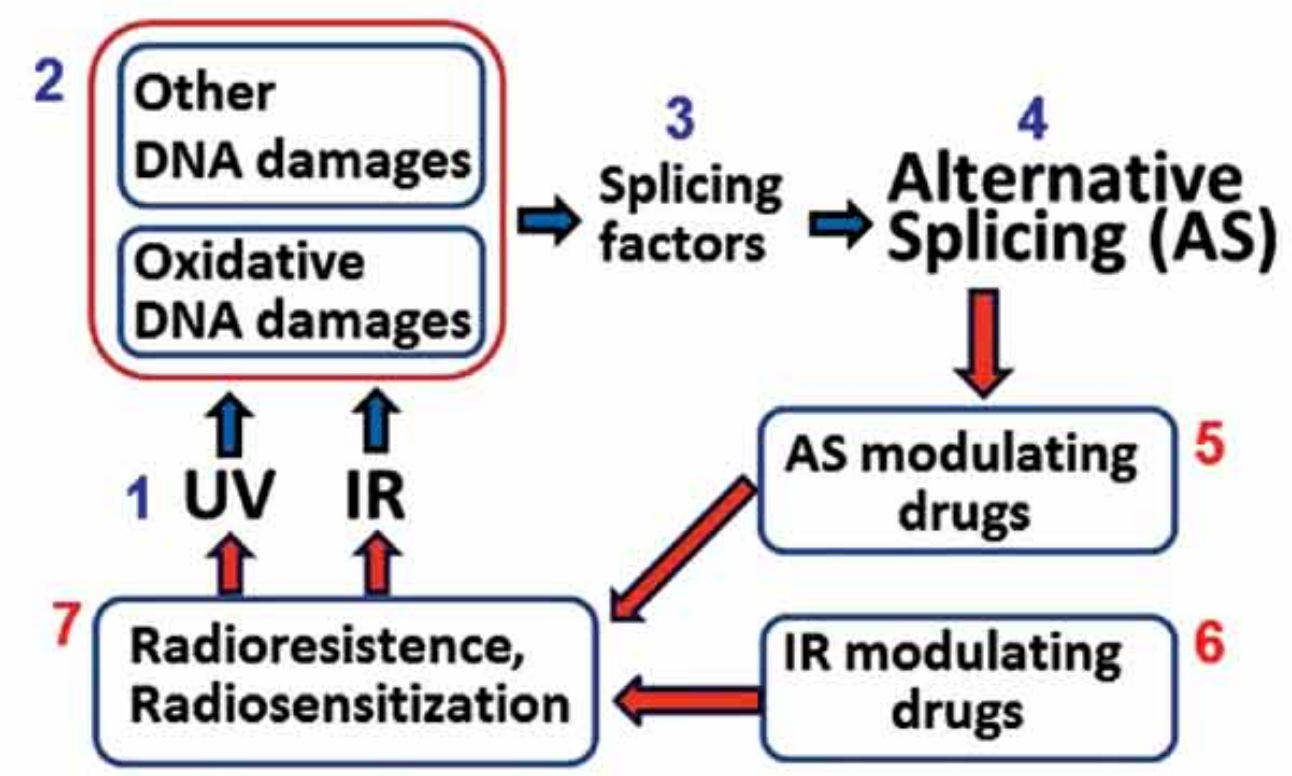
Graphical Abstract:



Abstract:

Radiotherapy effectively destroys cancer cells in many sites of the body, but several limitations remain. This study investigated alternative splicing, which is a common mechanism of increased diversity in mRNAs and proteins. The relationships of alternative splicing to DNA damage and radiation such as UV and ionizing radiation were analyzed. The DNA damage responses of many genes involved in alternative splicing were compared between non-radiation and radiation treatments. Drugs that affect radioresistence or radiosensitization by modulating the effects of alternative splicing and radiation were also reviewed.

Keywords: Alternative splicing, DNA damage, radiation.

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