MicroRNAs: Association with Radioresistant and Potential Uses of Natural Remedies as Green Gene Therapeutic Approaches

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Abstract

Radiotherapy plays an essential primary role in cancer patients. Regardless of its significant advances in treatment options, tumor recurrence and radioresistance in cancer cells still occur in a high percentage of patients. Furthermore, the over expression of miRNAs accompanies the development of radio-resistant cancer cells. Consequently, miRNAs might serve as therapeutic targets for the treatment of radio-resistance in cancer cells. The findings of the current research also signify that the use of a natural anti-miRNA substance could inhibit specific miRNAs, and, concurrently, these natural remedies could exhibit radioprotective activity against the healthy cells during radiotherapy. Therefore, in this review, we have reported the association of miRNAs with radio-resistance and the potential uses of natural remedies as green gene therapeutic approaches, as well as radioprotectors against the adverse effects of irradiation on healthy cells during radiotherapy.

Keywords: Gene therapy, miRNAs, natural remedies, radioprotector, radioresistance, tumor recurrence.

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