

## STUDY OF VITAMIN C AND DESMETHYLMISONIDAZOLE ON THE RADIATION EFFECTS OF CHO CELLS

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**Purpose:** The goal of this research is to study the influence of vitamin C (ascorbic acid, AA) and desmethylmisonidazole (DMM) on the radiobiological effects of CHO cells and then as a basis of radiotherapy for head and neck cancer patients.

**Materials and Methods:** This study was designed to investigate the influence of AA and DMM on radiobiological effects of CHO cells. Combination of AA (with different concentration) and DMM (with constant concentration) was also used to evaluate their radiobiological effects. In the same way, the radiobiological effects of combined DMM (with different concentration) and AA (with constant concentration) was also evaluated.

**Results:** The results showed that there are radioprotective effects of AA and radiosensitizing effects of DMM on CHO cells. However, the radiosensitizing effect is significantly greater than radioprotective effect when both drugs were combined used. In addition, the higher concentrations of AA were, the greater it protected CHO cells from radiation under constant concentrations of DMM. On the contrary, the higher concentration of DMM was, the greater it sensitized CHO cells to radiation under constant concentrations of AA.

**Conclusion:** The effect of combined AA (0.025 mg/ml) and DMM (0.5-10 mM) on CHO cells is radiosensitization. When DMM is absent, the radioprotective effect of AA is expressed.

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Key words: Vitamin C, Desmethylmisonidazole, CHO cells, Survival fraction