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Hydrogen Peroxide-hyaluronic Acid Tumor Injectable Formulation

National Cancer Institute

Source

National Cancer Institute. *Hydrogen Peroxide-hyaluronic Acid Tumor Injectable Formulation*. NCI Thesaurus. Code C129385.

A gel-based formulation composed of a very dilute solution of hydrogen peroxide (H₂O₂) combined with hyaluronic acid (HA), with potential radiosensitizing activity. Upon intratumoral injection and slow-release (SR) of H₂O₂ from the gel, H₂O₂ releases oxygen and inactivates anti-oxidative enzymes, thereby increasing the oxygen concentration in the tumor environment, which increases the efficacy of radiotherapeutic treatment. HA increases viscosity of the formulation and allows for the SR of H₂O₂; as compared to the injection of H₂O₂ alone, the addition of HA decreases diffusion of H₂O₂ to surrounding areas and enhances intratumoral H₂O₂ concentration over an increased period of time. Hypoxic tumors show a decreased response to radiotherapy; thus, increasing oxygen content increases tumor response to radiotherapy.