a "sensitizer" refers to a substance or agent that increases the sensitivity or responsiveness of cells or tissues to a particular treatment or stimulus. Sensitizers are commonly used in various medical contexts, including cancer treatment, photodynamic therapy, and radiation therapy.

Cancer Treatment: In cancer therapy, sensitizers are often used in conjunction with other treatments, such as chemotherapy or radiation therapy, to enhance the effectiveness of these treatments. For example, sensitizing agents may be administered before chemotherapy to make cancer cells more susceptible to the cytotoxic effects of the chemotherapy drugs.

Photodynamic Therapy (PDT): Sensitizers are also used in photodynamic therapy, a treatment modality that involves the use of light-sensitive compounds (photosensitizers) and light to selectively destroy cancer cells. These sensitizers accumulate in cancerous tissues and become activated when exposed to specific wavelengths of light, leading to the production of reactive oxygen species that cause cell death.

Radiation Therapy: In radiation therapy, sensitizers can enhance the sensitivity of tumor cells to ionizing radiation, thereby increasing the efficacy of radiation treatment. These agents may be administered systemically or applied directly to the tumor site to enhance the tumor's response to radiation.

Overall, sensitizers play a crucial role in enhancing the effectiveness of various medical treatments by increasing the sensitivity of target tissues to therapeutic interventions. They are an important component of multimodality treatment approaches aimed at improving patient outcomes in various medical conditions, particularly cancer.

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