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# Interferon Beta-secreting Mesenchymal Stem Cells

National Cancer Institute

## Source

National Cancer Institute. *Interferon Beta-secreting Mesenchymal Stem Cells*. NCI Thesaurus. Code C123724.

Human autologous mesenchymal stem cells (MSCs) harvested from the bone marrow of healthy individuals and transduced with a retroviral vector encoding the human cytokine interferon beta (IFN $\beta$ ), with potential immunomodulating and antineoplastic activities. Upon administration of IFN $\beta$ -secreting MSCs, the cells are attracted and specifically migrate to tumor sites and become part of the tumor microenvironment. Since the MSCs express IFN $\beta$ , these cells selectively deliver high levels of IFN $\beta$  to the tumor site. In turn, IFN $\beta$  binds to IFN-specific cell surface receptors and modulates the transcription and translation of certain genes whose protein products are involved in tumor cell proliferation. This decreases tumor cell growth.