Superagonist Interleukin-15:Interleukin-15 Receptor alphaSu/Fc Fusion Complex ALT-803

National Cancer Institute

Source

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A fusion protein complex composed of a mutated form of the cytokine interleukin (IL)-15 (IL-15N72D) and a soluble, dimeric IL-15 receptor alpha (IL-15Ra) Fc fusion protein (IL-15Ra-Fc) (IL-15N72D/IL-15Ra-Fc), with potential antineoplastic activity. Upon administration, superagonist interleukin-15:interleukin-15 receptor alphaSu/Fc fusion complex ALT-803 binds to the IL-2/IL-15 receptor beta-common gamma chain (IL-2Rbetagamma) receptor on natural killer (NK) and CD8+ T lymphocytes, which activates and increases the levels of NK cells and memory CD8+(CD44high) T-cells. The memory T-cells enhance the secretion of the cytokine interferon-gamma (IFN-g), which further potentiates the immune response against tumor cells. This may increase tumor cell killing and decrease tumor cell proliferation. IL-15 regulates CD8+ T and NK cell development, activation and proliferation. By coupling IL-15 to IL15Ra-Fc, this agent has a prolonged drug half-life and shows an increased ability to bind IL-2Rbetagamma, which enhances its immune stimulatory activity as compared to IL-15 alone.