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Cergutuzumab Amunaleukin

National Cancer Institute

Source

National Cancer Institute. *Cergutuzumab Amunaleukin*. NCI Thesaurus. Code C141459.

A recombinant fusion protein comprised of cergutuzumab, a genetically engineered human immunoglobulin G1 kappa (IgG1k) monoclonal antibody directed against carcinoembryonic antigen (CEA, CEACAM5, CD66e), linked to amunaleukin, an engineered, mutated variant form of interleukin-2 (IL-2v), with potential immunostimulating and antineoplastic activities. Upon administration of cergutuzumab amunaleukin, the cergutuzumab moiety recognizes and binds to CEA, thereby specifically targeting IL-2v to CEA-expressing tumor tissue. Subsequently, the IL-2v moiety stimulates a local immune response, which activates both natural killer (NK) cells and cytotoxic T-cells, and eventually leads to tumor cell killing. CEA is a cell surface protein that is expressed on a wide variety of cancer cells. The mutations found in IL-2v inhibit its binding to IL-2 receptor-alpha (CD25, IL2Ra), which prevents the activation of regulatory T-cells (Tregs); however, IL-2v is able to bind to and induce signaling through IL-2Rbetagamma, which allows the preferential expansion of NK cells and CD8-positive T-cells. The Fc domain of cergutuzumab is modified to prevent Fc-gamma binding and downstream effector functions.