

Product Data Sheet

Product Name: Anakinra
Cat. No.: GC39339

Chemical Properties

Cas. No. 143090-92-0
SMILES [Anakinra]
Formula $C_{759}H_{1186}N_{208}O_{232}S_{10}$ M.Wt 17257.6
Solubility Soluble in DMSO Storage Store at 4°C, do not freeze
General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.
Structure

Protocol

Animal experiment [1]:

Animal models Immunodeficient mice
Preparation Method The simultaneous administration of Etanercept (at a dosage of 5 mg/kg, via intraperitoneal injection) coupled with daily Anakinra (at a dosage of 100 mg/kg, also via intraperitoneal injection for a period of 7 days).
Dosage form 100 mg/kg, daily for 7 days, intraperitoneal injection
Applications The simultaneous administration of Etanercept coupled with daily Anakinra significantly enhanced the engraftment of marginal mass human islets in immunodeficient mice.

References:

[1] McCall M, et al. Anakinra potentiates the protective effects of etanercept in transplantation of marginal mass human islets in immunodeficient mice. *Am J Transplant.* 2012 Feb;12(2):322-9.

Background

Anakinra (AMG-719, Raleukin) is a recombinant, non glycosylated human interleukin-1 receptor antagonist (IL-1Ra). It is produced using DNA recombination technology in the *Escherichia coli* expression system and amino acid sequence is MRPSGRKSSKMQAFRIWVDVNQKTFYLRNNQLVAGYLQGPVNVNLEEKIDVVPPIEPHALFLGIHGGKMCLSCVKSGDETRELQLEAVNITDLSENRKQDKRFASFIRSDSGPT. Anakinra represents the inaugural biological therapy designed to neutralize the inflammatory actions of IL-1^{[1][2]}. Anakinra has been proven effective for the treatment of various inflammatory and autoimmune diseases, including Still's disease^[3].

Anakinra was administered at a dose of 100 mg/kg via intraperitoneal injection, and the same route was used to administer Etanercept at a dose of 5 mg/kg daily for seven consecutive days, which significantly facilitated the successful implantation of marginal quality human islet cells in mice with impaired immune systems^[2]. Anakinra enhances tumor growth inhibition in mice receiving peptide vaccination and treated with beta-(1-3),(1-6)-D-glucan by blocking the IL-1 receptor and reducing IL-1-induced IL-6 production^[4].

References:

[1] Cvetkovic RS, et al. Anakinra. *BioDrugs.* 2002;16(4):303-11; discussion 313-4.
[2] McCall M, et al. Anakinra potentiates the protective effects of etanercept in transplantation of marginal mass human islets in immunodeficient mice. *Am J Transplant.* 2012 Feb;12(2):322-9.
[3] Vastert Sebastiaan J, et al. Anakinra in children and adults with Still's disease. *Rheumatology (Oxford)* 2019 Nov 1;58(Suppl 6):vi9-vi22. PMID:31769856. DOI:10.1093/rheumatology/kez350.

Caution: Product has not been fully validated for medical applications. For research use only.

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[4] Harnack U, et al. IL-1 receptor antagonist anakinra enhances tumour growth inhibition in mice receiving peptide vaccination and beta-(1-3),(1-6)-D-glucan. *Anticancer Res.* 2010 Oct;30(10):3959-65.

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