

Product Data Sheet

Product Name: Certolizumab pegol

Cat. No.: GC65487

Chemical Properties

Cas. No. 428863-50-7

Formula M.Wt

Solubility Storage Store at 2-8°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

Certolizumab

Protocol

Cell experiment [1]:

Cell lines Human dermal microvascular endothelial cells (HMVECs)

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

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Preparation Method	HMVECs was stimulated with TNF- α (25ng/ml) for 24 hours in the presence or absence of varying concentrations of certolizumab pegol or Ms-Ig. The cell culture supernatant was collected and the level of HMVEC chemokines was detected by elisa.
Reaction Conditions	0-10 μ g/mL, 24h
Applications	Certolizumab pegol inhibits TNF- α -induced increases in angiogenic chemokines in a dose-dependent manner.

Animal experiment [2]:

Animal models	Rat model of acute edematous pancreatitis
Preparation Method	Healthy Wistar Albino male rats (n = 36) were randomly divided into 4 groups (9 rats in each group): group 1, control group; group 2, Certolizumab pegol group; group 3, cerulein group; and group 4, cerulein + Certolizumab pegol group.
Dosage form	10 μ g, single dose, i.p.
Applications	Certolizumab pegol reduced the severity of acute pancreatitis, and serum amylase, lipase and lactate dehydrogenase levels were significantly reduced in the certolizumab pegol-treated group.

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References:

- [1] Shu Q, Amin MA, Ruth JH, Campbell PL, Koch AE. Suppression of endothelial cell activity by inhibition of TNF α . Arthritis Res Ther. 2012 Apr 25;14(2):R88.
- [2] Kosekli M A, Sungurtekin U, Cobankara V, et al. Effects of certolizumab on cerulein-induced acute pancreatitis in rats[J]. Pancreas, 2016, 45(8): 1120-1125.

Background

Certolizumab pegol (Certolizumab) is a recombinant, polyethylene glycolylated, antigen-binding fragment of a humanized monoclonal antibody that selectively targets and neutralizes tumour necrosis factor- α (TNF- α). Certolizumab pegol can be used for rheumatoid arthritis and Crohn disease research^[1-2].

Certolizumab pegol neutralizes soluble TNF- α with an IC₅₀ of 3ng/mL. Preincubation of human monocytes with certolizumab pegol at concentrations of 1 μ g/mL and above completely inhibited lipopolysaccharide(LPS)-induced IL-1 β production, and certolizumab pegol did not induce apoptosis of activated human monocytes or peripheral blood lymphocytes (PBLs), nor did it cause changes in the integrity of polymorphonuclear granules (PMNs)^[2]. In addition, certolizumab pegol can directly induce non-apoptotic cell death in transmembrane TNF- α -expressing cells^[4].

Certolizumab pegol (10 μ g, single dose) reduced the severity of acute pancreatitis, and serum amylase, lipase, and lactate dehydrogenase levels were significantly reduced in the certolizumab pegol-treated group^[3]. Compared with the control group (non-inflamed tissue), certolizumab pegol (2mg/kg) can effectively penetrate into the inflamed arthritic paws of mice and improve arthritis in mice^[5].

References:

- [1] Deeks ED. Certolizumab pegol: a review of its use in the management of rheumatoid arthritis. Drugs. 2013 Jan;73(1):75-97.
- [2] Nesbitt A, et al. Mechanism of action of certolizumab pegol (CDP870): in vitro comparison with other anti-tumor necrosis factor alpha agents. Inflamm Bowel Dis. 2007 Nov;13(11):1323-32.
- [3] Kosekli M A, Sungurtekin U, Cobankara V, et al. Effects of certolizumab on cerulein-induced acute pancreatitis in rats[J]. Pancreas, 2016, 45(8): 1120-1125.

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[4] Ueda N, Tsukamoto H, Mitoma H, et al. The cytotoxic effects of certolizumab pegol and golimumab mediated by transmembrane tumor necrosis factor α [J]. Inflammatory bowel diseases, 2013, 19(6): 1224-1231.

[5] Palframan R, Airey M, Moore A, et al. Use of biofluorescence imaging to compare the distribution of certolizumab pegol, adalimumab, and infliximab in the inflamed paws of mice with collagen-induced arthritis[J]. Journal of immunological methods, 2009, 348(1-2): 36-41.

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