Datasheet

Cat. No. P1263

Recombinant Human Tumor Necrosis Factor-alpha/TNFSF2, Variant

Information

Gene ID	7124
Accession #	P01375
Alternate Names	Tumor Necrosis Factor, TNFSF2, Cachectin, Differentiation-inducing factor (DIF), Necrosin, Cytotoxin
Source	Escherichia coli.
M.Wt	Approximately 16.9 kDa, a single non-glycosylated polypeptide chain containing 151 amino acids. Compared with the wild-type, rHuTNF-α Variant has an amino acid sequence (a.a.) deletion from a.a. 1-7, and the following a.a. substitutes Arg8, Lys9, Arg10 and Phe157 which is proven to have more activity and with less inflammatory side effect in vivo.
AA Sequence	MRKRKPVAHV VANPQAEGQL QWLNRRANAL LANGVELRDN QLVVPSEGLY LIYSQVLFKG QGCPSTHVLL THTISRIAVS YQTKVNLLSA IKSPCQRETP EGAEAKPWYE PIYLGGVFQL EKGDRLSAEI NRPDYLDFAE SGQVYFGIIA F
Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles - 12 months from date of receipt, -20 to -70 °C as supplied - 1 month, 2 to 8 °C under sterile conditions after reconstitution - 3 months, -20 to -70 °C under sterile conditions after reconstitution
Formulation	Lyophilized from a 0.2 μm filtered concentrated solution in PBS, pH 7.0.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.
Biological Activity	Fully biologically active when compared to standard. The ED as determined by a cytotoxicity assay using murine L929 cells is less than 0.01 ng/ml, corresponding to a specific activity of > 1.0 × 10 IU/mg in the presence of actinomycin D.
Shipping Condition	Gel pack.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Components and Storage

Components	10μg	100μg	500μg
Recombinant Human Tumor Necrosis Factor-alpha/TNFSF2, Variant	10μg	100μg	500μg

Use a manual defrost freezer and avoid repeated freeze-thaw cycles
- 12 months from date of receipt, -20 to -70 °C as supplied
- 1 month, 2 to 8 °C under sterile conditions after reconstitution
- 3 months, -20 to -70 °C under sterile conditions after reconstitution

Quality Control

Purity	> 98 % by SDS-PAGE and HPLC analyses.
Endotoxin	Less than 1 EU/μg of rHu TNF-α/TNFSF2, Variant as determined by LAL method.

Description

The clinical use of the potent antitumor activity of TNF-α has been limited by the proinflammatory side effects including fever, dose-limiting hypotension, hepatotoxicity, intravascular thrombosis, and hemorrhage. Designing clinically applicable TNF-α mutants with low systemic toxicity has been an intense pharmacological interest. Human TNF-α, which binds to the murine TNF-R55 but not to the murine TNF-R75, exhibits retained antitumor activity and reduced systemic toxicity in mice compared with murine TNF-α, which binds to both murine TNF receptors. Based on these results, many TNF-α mutants that selectively bind to TNF-R55 have been designed. These mutants displayed cytotoxic activities on tumor cell lines in vitro, and exhibited lower systemic toxicity in vivo.

Reference

1. Davenport C, Kenny H, Ashley DT, et al. 2012. Eur J Clin Invest, 42: 1173-9
2. Cavalcanti YV, Brelaz MC, Neves JK, et al. 2012. Pulm Med, 2012: 745483
3. Sheng WS, Hu S, Ni HT, et al. 2005. J Leukoc Biol, 78: 1233-41
4. Berthold-Losleben MandHimmerich H. 2008. Curr Neuropharmacol, 6: 193-202.

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