

Product Information

DcR1 (Decoy Receptor 1, TRAIL-R3, LIT, TRID)/Fc Chimera Human, Recombinant Expressed in mouse NSO cells

Product Number **D 9688**

Product Description

Recombinant human DcR1 (TRAIL-R3, LIT, TRID) is a chimeric protein¹ expressed in mouse NSO cells. The extracellular domain of human DcR1 is fused to the carboxy-terminal 6X histidine-tagged Fc portion of human IgG₁ by a peptide linker. Mature recombinant human DcR1 is a disulfide-linked homodimeric protein. The reduced DcR1 monomer has a molecular mass of approximately 48 kDa. Due to glycosylation, recombinant human DcR1 migrates as an approximately 75-90 kDa protein in SDS-PAGE under reducing conditions.

Apoptosis or programmed cell death is induced in cells by a group of death domain-containing receptors including TNFR1, Fas, DR3, DR4, and DR5. Binding of ligand to these receptors sends signals that activate members of the caspase family of proteases. The signals ultimately cause the degradation of chromosomal DNA by activating DNase.

DR4, DR5, DcR1 and DcR2 are closely related members of the TNF family of TRAIL (TNF-related apoptosis-induced ligand) receptors. These proteins share homologies in both their extracellular ligand binding domains and their intracellular effector domains (death domains). DcR1 is a glycosyl-phosphatidylinositol-linked membrane protein, which binds TRAIL (APO2 ligand). It acts as a decoy receptor and binds TRAIL to its extracellular TRAIL-binding domain. It does not have an intracellular death domain and, therefore, does not induce apoptosis.^{2, 3, 4} Expression of DcR1 protects cells from TRAIL-mediated apoptosis.³ DcR1 is found in most human tissue. Another decoy TRAIL receptor, DcR2, has also been identified.⁵ Like DcR2 it lacks the death domain and inhibits TRAIL signaling.

Reagents

DcR1 is supplied as approximately 100 µg of protein lyophilized from a 0.2 µm filtered solution in phosphate buffered saline containing 5 mg bovine serum albumin.

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 50 µg/ml.

Storage/Stability

Store at -20°C. Upon reconstitution, store at 2°-8°C for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended.

Product Profile

DcR1 is measured by its ability to inhibit apoptosis of mouse L929 cells treated with 20 ng/ml TRAIL or 12 ng/ml cross-linked recombinant human TRAIL. The ED₅₀ for this effect is generally 2.5-7 ng/ml. ED₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Purity: >95% as determined by SDS-PAGE, visualized by silver stain.

Endotoxin: <0.1 ng/µg of DcR1, determined by the LAL method.

References

1. Sheridan, J.P., et al., Control of TRAIL-induced apoptosis by a family of signaling and decoy receptors. *Science*, **277**, 818-821 (1997).
2. Golstein, P., Cell death: TRAIL and its receptors. *Curr. Biol.*, **7**, 750-753 (1997).
3. Griffith, T.S. and Lynch, D.H., TRAIL: a molecule with multiple receptors and control mechanisms. *Curr. Opin. Immunol.*, **10**, 559-563 (1998).
4. Pan G, et al., An antagonist decoy receptor and a death domain-containing receptor for TRAIL. *Science* **277**, 815-818 (1997).
5. Degli-Esposti, M.A., et al., The novel receptor TRAIL-R4 induces NF-kappaB and protects against TRAIL-mediated apoptosis, yet retains an incomplete death domain. *Immunity*, **7**, 813-820 (1997).

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