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ProductInformation

DcR2 (Decoy Receptor 2, TRAIL-R4, TRUNDD)/Fc Chimera
Human, Recombinant
Expressed in mouse NSO cells

Product Number **D9813**

Product Description

Recombinant human DcR2 (TRAIL-R4, TRUNDD) is a chimeric protein expressed in mouse NSO cells. The extracellular domain of human DcR2[1, 2] is fused to the carboxy-terminal 6X histidine-tagged Fc portion of human IgG_1 by a polypeptide linker. Mature recombinant human DcR2 is a disulfide-linked homodimeric protein. The reduced DcR2 monomer has a molecular mass of approximately 44.2 kDa. Due to glycosylation, recombinant human DcR2 migrates as an approximately 70-80 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). DcR2 share 58-70% identity to the other TRAIL receptors.[2] It is a type I membrane protein that has a unique characteristic in which its cytoplasmic domain contains a truncated death domain. DcR2 is a receptor for TRAIL (APO2 ligand). DR4 and DR5 bind TRAIL. This binding induces apoptosis.[3] DcR2 is a decoy receptor that binds TRAIL to its extracellular TRAIL-binding domain. It does not have an intracellular death domain and, therefore, does not induce apoptosis.[1, 2,4,5] Over-expression of DcR2 protects cells bearing DR4 and/or DR5 from TRAIL-mediated apoptosis.[2] DcR2 is found in most human tissue. Another decoy TRAIL receptor, DcR1, has also been identified.[6] Like DcR2 it lacks the death domain and inhibits TRAIL signaling.

Reagents

DcR2 is supplied as approximately 100 µg of protein lyophilized from a 0.2 µm filtered solution in phosphate buffered saline.

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

DcR2 is measured by its ability to neutralize apoptosis of mouse L929 cells treated with 50 ng/ml TRAIL. The ED_{50} for this effect is generally 30-60 ng/ml. In the presence of 12 ng/ml cross-linked recombinant human TRAIL, the ED_{50} is usually 2-5 ng/ml. ED_{50} 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 DcR2, determined by the LAL method.

References

1. Pan G, et al., TRUNDD, a new member of the TRAIL receptor family that antagonizes TRAIL signaling. FEBS Lett., **424**, 41-45 (1998).
2. Degli-Esposti MA, et al., The novel receptor TRAIL-R4 induces NF-κB and protects against TRAIL-mediated apoptosis, yet retains an incomplete death domain. Immunity, **7**, 813-820 (1997).
3. Pan G, et al., The receptor for the cytotoxic ligand TRAIL. Science, **276**, 111-113 (1997).

4. Marsters SA, et al., A novel receptor for Apo2L/TRAIL contains a truncated death domain. Curr. Biol., **7**, 1003-1006 (1997).
5. Pan G, et al., An antagonist decoy receptor and a death domain-containing receptor for TRAIL. Science **277**, 815-818 (1997).
6. Sheridan, J.P., et al., Control of TRAIL-induced apoptosis by a family of signaling and decoy receptors. Science, **277,** 818-821 (1997).

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