ProductInformation

LEPTIN RECEPTOR/Fc CHIMERA
MOUSE RECOMBINANT
Expressed in NSO cells

Product No. **L4912**

Description

Leptin receptor (OB-R, B219) is a member of the type I cytokine family with significant amino acid sequence identity with gp130, G-CSF receptor and the LIF receptor. Human and mouse OB-R comprises a long form (OB-R_L) with a large cytoplasmic domain capable of signal transduction, and several receptor isoforms with short cytoplasmic domains (OB-R_S) that lack signal transduction capabilities. The extracellular domains of the short and long forms are identical. OB-R_L transcripts are predominantly expressed in the regions of the hypothalamus and were previously thought to be important in body weight regulation. Expression of OB-R_S transcripts is found in multiple tissues, including choroid plexus, lung, kidney and primitive hematopoietic cell populations. The mouse diabetes (db) and rat fatty (fa) genes encode OB-R. Rodents homozygous for the db or fa mutations have been known to exhibit an obesity phenotype.

Mouse OB-R long form encodes a 1162 amino acid residue precursor protein with a 22 amino acid signal peptide, a 817 amino acid residue extracellular domain, a 21 amino acid residue transmembrane domain and a 302 amino acid cytoplasmic domain. The extracellular domain of OB-R contains two hemopoietin receptor domains, a fibronectin type III domain and the WSXWS domain. Recombinant soluble OB-R binds leptin with high affinity and is a potent leptin antagonist.

Performance Characteristics

The biological activity of Leptin Receptor/Fc Chimera is measured by its ability to neutralize the activity of recombinant mouse leptin on leptin-dependent rat OB-R transfected murine BAF3 cells.

Product Information

A DNA sequence encoding the extracellular domain of mouse leptin receptor amino acid residues 1-839) was fused to the Fc region of mouse IgG1 (with IIEGR added at the N-terminus and 6 histidine residues added at the C-terminus). The chimeric protein was expressed in mouse NSO cells
Molecular Weight: The disulfide-linked homodimeric protein containing two 1062 amino acids residue subunits, has a predicted monomeric mass of 120 kDa. As a result of glycosylation, recombinant mouse leptin receptor/Fc chimera monomer migrates as a 150-170 kDa protein in SDS-PAGE.
Purity: >97% as determined by SDS-PAGE
ED_{50}: 0.004-0.015 µg/ml in the presence of 1 ng/ml recombinant mouse leptin.
Package Size: 100 µg
Formulation: Lyophilized from a 0.2 µm-filtered solution of 20 mM Tris, pH 8.0 containing 5 mg bovine serum albumin.
Sterility: 0.2 µm-filtered, aseptic fill
Endotoxin: ≤0.1 ng/µg Leptin Receptor/Fc Chimera

Reconstitution and Use

To prepare a stock solution of no less than 10 µg/ml, reconstitute the contents of the vial by adding ≤ 1 ml of 0.2 µm-filtered PBS containing at least 0.1% human or bovine serum albumin.

Storage

Prior to reconstitution, product can be stored at –20°C for longer than 6 months. After reconstitution, store at 2-8°C for 1 month. For extended storage, freeze in working aliquots at –70°C or –20°C. Repeated freezing and thawing is not recommended.

References

1. Tartaglia, L.A., et al., Identification and expression cloning of a leptin receptor, OB-R. Cell, **83**, 1263-1271 (1995).
2. Cioffi, J.A., et al., Novel B219/OB receptor isoforms: possible role of leptin in hematopoiesis and reproduction. Nature Medicine, **2**, 585-589 (1996).
3. Tartaglia, L.A., The leptin receptor. J. Biol. Chem., **272**, 6093-6096 (1997).

lpg 3/00

Sigma brand products are sold through Sigma-Aldrich, Inc.
Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.