

Human Leptin Receptor / LEPR / CD295 Protein (His & Fc Tag)

Catalog Number: 10322-H03H



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

CD295; LEP-R; LEPRD; OB-R; OBR

Protein Construction:

A DNA sequence encoding the extracellular domain (Met 1-Asp 839) of human leptin receptor precursor (NP_002294.2) was expressed with the C-terminal fused polyhistidine-tagged Fc region of human IgG1.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 90 % as determined by SDS-PAGE

Bio Activity:

Measured by its binding ability in a functional ELISA . Immobilized human Leptin at 1.25 µg/ml (100 µl/well) can bind human Leptin receptor with a linear range of 0.032-4.0 µg/ml .

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Phe 22

Molecular Mass:

The recombinant human LEPR/Fc is a disulfide-linked homodimeric protein. The reduced monomer consists of 1065 amino acids and has a predicted molecular mass of 121.4 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of rh LEPR/Fc monomer is approximately 155-165 kDa due to glycosylation.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

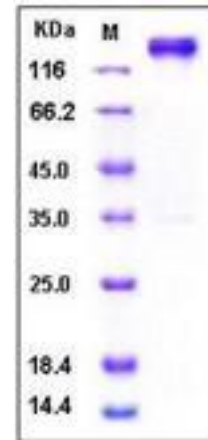
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Leptin Receptor or CD295 belongs to the gp130 family of cytokine receptors that are known to stimulate gene transcription via activation of cytosolic STAT proteins. This protein is a receptor for leptin (an adipocyte-specific hormone that regulates body weight), and is involved in the regulation of fat metabolism, as well as in a novel hematopoietic pathway that is required for normal lymphopoiesis. Leptin Receptor/CD295 is a transmembrane catalytic receptors found on NPY/AgRP and alpha-MSH/CART neurons in hypothalamic nuclei. Leptin receptors (Ob-Rs) are coded for by one human gene that produces six different isoforms; Ob-Ra - Ob-Rf. Ob-Rs exist as constitutive dimers at physiological expression levels. Only the Ob-Rb isoform can transduce intracellular signals and does so through activation of the JAK2/STAT3, PI 3-K and MAPK signaling cascades. Activation of Ob-Rs mediates transcriptional regulation of the hypothalamic melanocortin pathway and downregulates endocannabinoid expression. Leptin acts via leptin receptors. Leptin resistance has been proposed as a pathophysiological mechanism of obesity. In obese individuals, Ob-Ra (which is involved in active transport of leptin across the blood-brain barrier) expression is downregulated and the individual may be unresponsive to leptin signals. Ob-R antagonists are of great interest in the development of pharmacological treatments for obesity. Mutations in Leptin Receptor/CD295 have been associated with obesity and pituitary dysfunction.

References

- 1.Heshka JT, *et al.* (2001) A role for dietary fat in leptin receptor, OB-Rb, function. *Life Sci.* 69 (9): 987-1003.
- 2.Chen H, *et al.* (1996) Evidence that the diabetes gene encodes the leptin receptor: identification of a mutation in the leptin receptor gene in db/db mice. *Cell.* 84 (3): 491-5.
- 3.Bjrbæk C, *et al.* (1998) Divergent signaling capacities of the long and short isoforms of the leptin receptor. *J Biol Chem.* 272 (51): 32686-95.

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