

# Human Leptin Receptor / LEPR / CD295 Protein (His Tag)

Catalog Number: 10322-H08H



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 (NP\_002294.2) was expressed, fused with a C-terminal polyhistidine tag.

**Source:** Human

**Expression Host:** HEK293 Cells

## QC Testing

**Purity:** > 95 % as determined by SDS-PAGE

### Bio Activity:

**Measured by its binding ability in a functional ELISA . Immobilized human Leptin at 5 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 consists of 829 amino acids and has a predicted molecular mass of 95 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of rh LEPR is approximately 130-140 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:

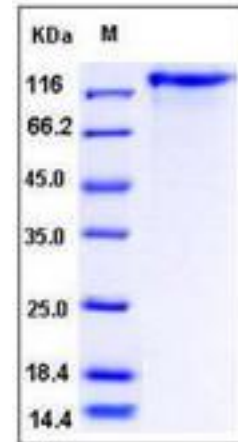
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**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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**For US Customer:** Fax: 267-657-0217 ● Tel: 215-583-7898

**Global Customer:** Fax :+86-10-5862-8288 ● Tel:+86-400-890-9989 ● <http://www.sinobiological.com>