ARG70341
Human Leptin Receptor recombinant protein (Fc-His-tagged, C-ter)

Package: 100 µg
Store at: -20°C

Summary

Product Description	HEK293 expressed, Fc-His-tagged (C-ter) Human Leptin Receptor recombinant protein.
Tested Reactivity	Hu
Tested Application	Binding, SDS-PAGE
Target Name	Leptin Receptor
Species	Human
A.A. Sequence	Thr20 - Asp839 of Human Leptin Receptor (NP_002294.2) with an Fc - 6X His tag at the C - terminus.
Expression System	HEK293
Alternate Names	LEPRD; CD antigen CD295; CD295; Leptin receptor; LEP-R; HuB219; OB-R; OBR; OB receptor

Application Instructions

Application Note	Binding activity test: Measured by its binding ability in a functional ELISA. Immobilized Recombinant Human Leptin protein at 2µg/ml (100 µl/well) can bind Recombinant Human Leptin R/CD295 protein, the EC50 of Leptin R/CD295 is 261.45 ng/ml.

Properties

Form	Powder
Purification Note	0.22 µm filter sterilized. Endotoxin level is 95% (by SDS-PAGE)
Buffer	50 mM MES (pH 6.5), 100 mM NaCl and 1 mM DTT.
Reconstitution	Reconstitute to a concentration of 0.1 - 0.5 mg/ml in sterile distilled water.
Storage instruction	For long term, lyophilized protein should be stored at -20°C or -80°C. After reconstitution, aliquot and store at -20°C for up to one month, at 2-8°C for up to one week. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Gene Symbol	LEPR
Gene Full Name	leptin receptor
Background	The protein encoded by this gene 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. Mutations in this gene have been associated with obesity and pituitary dysfunction. Alternatively spliced transcript variants encoding different isoforms have been described for this gene. It is noteworthy that this gene and LEPROT gene (GeneID:54741) share the same promoter and the first 2 exons, however, encode distinct proteins (PMID:9207021). [provided by RefSeq, Nov 2010]

Function	Receptor for hormone LEP/leptin (Probable) (PubMed:22405007). On ligand binding, mediates LEP central and peripheral effects through the activation of different signaling pathways such as JAK2/STAT3 and MAPK cascade/FOS. In the hypothalamus, LEP acts as an appetite-regulating factor that induces a decrease in food intake and an increase in energy consumption by inducing anorexinogenic factors and suppressing orexigenic neuropeptides, also regulates bone mass and secretion of hypothalamo-pituitary-adrenal hormones (By similarity) (PubMed:9537324). In the periphery, increases basal metabolism, influences reproductive function, regulates pancreatic beta-cell function and insulin secretion, is pro-angiogenic and affects innate and adaptive immunity (PubMed:25060689, PubMed:12504075, PubMed:8805376). Control of energy homeostasis and melanocortin production (stimulation of POMC and full repression of AgRP transcription) is mediated by STAT3 signaling, whereas distinct signals regulate NPY and the control of fertility, growth and glucose homeostasis. Involved in the regulation of counter-regulatory response to hypoglycemia by inhibiting neurons of the parabrachial nucleus. Has a specific effect on T lymphocyte responses, differentially regulating the proliferation of naive and memory T -ells. Leptin increases Th1 and suppresses Th2 cytokine production (By similarity). [Isoform A]: May transport LEP across the blood-brain barrier. Binds LEP and mediates LEP endocytosis. Does not induce phosphorylation of and activate STAT3. [Isoform E]: Antagonizes Isoform A and isoform B-mediated LEP binding and endocytosis. [UniProt]
Calculated Mw	132 kDa
PTM	On ligand binding, phosphorylated on two conserved C-terminal tyrosine residues (isoform B only) by JAK2. Tyr-986 is required for complete binding and activation of PTPN11, ERK/FOS activation,for interaction with SOCS3 and SOCS3 mediated inhibition of leptin signaling. Phosphorylation on Tyr-1141 is required for STAT3 binding/activation. Phosphorylation of Tyr-1079 has a more accessory role. [UniProt]
Cellular Localization	Cell membrane; Single-pass type I membrane protein. Basolateral cell membrane. Isoform E: Secreted. [UniProt]

Images

Human Leptin Receptor recombinant protein (ECD) (Fc-His-tagged, C-ter)

ARG70341 Human Leptin Receptor recombinant protein (ECD) (Fc-His-tagged, C-ter) SDS-PAGE image

SDS-PAGE analysis of ARG70341 Human Leptin Receptor recombinant protein (ECD) (Fc-His-tagged, C-ter).