

PRODUCT INFORMATION



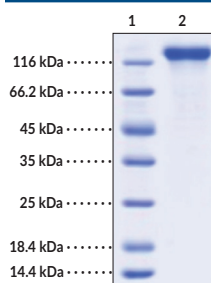
Leptin Receptor/CD295 Extracellular Domain (human, recombinant) Item No. 44186

Overview and Properties

Synonyms:	Leptin Receptor, LEP-R, Obesity Receptor, OB-R
Source:	Active recombinant human C-terminal His-tagged leptin receptor extracellular domain expressed in HEK293 cells
Amino Acids:	22-839
Uniprot No.:	P48357
Molecular Weight:	95 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU/μg, determined by the LAL endotoxin assay
Bioactivity:	See figures for details

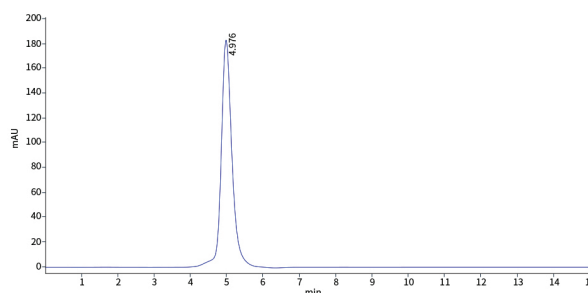
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: Leptin Receptor/CD295 Extracellular Domain

SDS-PAGE Analysis of Leptin Receptor/CD295 Extracellular Domain.
This protein has a calculated molecular weight of 95 kDa.



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Leptin receptor, also known as CD295, is a leptin-binding transmembrane receptor with roles in the regulation of food intake, energy homeostasis, and lipid metabolism.^{1,2} It is composed of a multi-domain extracellular region comprising an N-terminal domain, a cytokine receptor homology (CRH1) domain, an immunoglobulin-like (Ig-like) domain, a CRH2 domain that binds leptin, and a fibronectin type III (FNIII) domain, a transmembrane domain, and an intracellular signaling domain.¹ The leptin receptor is encoded by *LEPR* in humans and undergoes alternative splicing to form six isoforms, all of which are expressed in a tissue-dependent manner, contain identical extracellular regions, and have variable intracellular domains.¹⁻³ Leptin receptor deficiency is induced by mutations in *LEPR* and is associated with hypothyroidism, hypogonadotropic hypogonadism, growth hormone deficiency, and extreme early-onset obesity.⁴ Cayman's Leptin Receptor/CD295 Extracellular Domain (human, recombinant) protein can be used for binding assay and Western blot (WB) applications. This protein consists of 829 amino acids, has a calculated molecular weight of 95 kDa, and a predicted N-terminus of Phe22 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is approximately 130-140 kDa due to glycosylation.

References

1. Berger, C. and Klöting, N. Leptin receptor compound heterozygosity in humans and animal models. *Int. J. Mol. Sci.* **22(9)**, 4475 (2021).
2. Tartaglia, L.A. The leptin receptor. *J. Biol. Chem.* **272(10)**, 6093-6096 (1997).
3. Münzberg, H., Björnholm, M., Bates, S.H., *et al.* Leptin receptor action and mechanisms of leptin resistance. *Cell Mol. Life Sci.* **62(6)**, 642-652 (2005).
4. Kleinendorst, L., Abawi, O., van der Kamp, H.J., *et al.* Leptin receptor deficiency: A systematic literature review and prevalence estimation based on population genetics. *Eur. J. Endocrinol.* **182(1)**, 47-56 (2020).

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