3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-Leptin Receptor
produced in goat, affinity isolated antibody

Catalog Number **L9536**

Product Description

Anti-Leptin Receptor is produced in goat using as immunogen purified recombinant mouse leptin receptor, expressed in NSO cells. The antibody is purified using mouse leptin receptor affinity chromatography.

Anti-Leptin Receptor specifically reacts with mouse leptin receptor by immunoblotting, immunohistochemistry, and flow cyttometry.

Leptin is the adipocyte-specific product of the ob gene. Expression of leptin in fully fed animals reflects adipocyte size and body-fat mass. Leptin signals the status of body energy stores to the brain, where signals emanate to regulate food intake and whole-body energy expenditure. The leptin gene was identified in the leptin-deficient, obese ob/ob mouse by positional cloning techniques. Leptin has been cloned in domestic species including pigs, cattle, and chickens. The receptor for OB has been identified in mouse,[1-3] human,[1] and rat.[4] In mouse, the mature receptor is a 1142 amino acid residue, type I (extracellular N-terminal) transmembrane protein with a predicted molecular weight of 81 kDa. The molecule shows 817 amino acid residues in its extracellular segment, 21 amino acid residues in its transmembrane domain, and 302 amino acid residues in its cytoplasmic tail.[1, 3] Mouse, human and rat OB receptors are all virtually identical in length, with the mouse extracellular and cytoplasmic segments exhibiting 77% and 72% amino acid identity with their human counterparts.[1, 3] The OB receptor is described as being a gp130 analog.[1, 4] The leptin receptor has at least five splice variants; the long form of the receptor is primarily expressed in the hypothalamus and is thought to be the predominant signaling isoform.

Leptin receptors are members of the cytokine family of receptors and signal via janus-activated kinases (JAK)/signal transducers and activators of transcription (STAT) and mitogen-activated protein kinase (MAPK) pathways. Mutations in the leptin or leptin receptor genes results in morbid obesity, infertility, and insulin resistance in rodents and humans. Leptin receptors are expressed in most tissues, and *in vitro* evidence suggests that leptin may have direct effects on some tissues such as adipose tissue, the adrenal cortex, and the pancreatic beta-cell. Leptin is thought to influence whole-body glucose homeostasis and insulin action.

Reagent

Supplied as a lyophilized powder from a 0.2 μm filtered solution in phosphate buffered saline with 5% trehalose.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

To one vial of lyophilized powder, add 0.5 ml of 0.2 μm-filtered PBS to produce a 0.2 mg/ml stock solution of antibody. If aseptic technique is used, no further filtration should be needed for use in cell culture environments.

Storage/Stability

Prior to reconstitution, store at –20 °C. Reconstituted antibody may be stored at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots. Do not store in a frost-free freezer. Avoid repeated freezing and thawing.

Product Profile

Immunoblotting: a working concentration of 0.1-0.2 μg/mL is recommended to detect mouse leptin receptor using ~5 ng/lane under non-reducing and reducing conditions.

Immunohistochemistry: a working concentration of 5-15 μg/mL is recommended using frozen rat tissue (5-15 μm thick sections).

Flow cytometry: a working concentration of 2.5 μg/10^6 cells with an appropriate secondary antibody for indirect immunofluorescence staining of cells.

Note: In order to obtain the best results in various techniques and preparations, we recommend determining optimal working concentrations by titration..

References

1. Tartaglia, L.A., et al., *Cell*, 83, 1263 (1995).
2. Lee, G-W., et al., *Nature*, 379, 632 (1996).
3. Chen, H., et al., *Cell,* 84, 491 (1996).
4. Iida, M., et al., *Biochem. Biophys. Res. Commun*., 222, 19 (1996).

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