



Product Information

ANTI-HUMAN LEPTIN RECEPTOR

Developed in Goat, Affinity Isolated Antibody

Product Number **L 9411**

Product Description

Anti-Human Leptin Receptor is developed in goat using a recombinant human leptin receptor, expressed in NSO cells as immunogen. The antibody is purified using human leptin receptor affinity chromatography.

Anti-Human Leptin Receptor specifically reacts with human leptin receptor by immunoblotting and ELISA. By ELISA, the antibody shows < 35% cross-reactivity with recombinant mouse leptin receptor.

Anti-Human Leptin Receptor may be used for the detection of human leptin receptor by immunoblotting and ELISA.

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. Recently, leptin has been cloned in domestic species including pigs, cattle, and chickens. The receptor for OB has been identified in mouse,^{1,3} human¹ and rat.⁴ In mouse, the mature receptor is a 1142 aa residue, type I (extracellular N-terminal) transmembrane protein with a predicted molecular weight of 81 kDa. The molecule shows 817 aa residues in its extracellular segment, 21 aa residues in its transmembrane domain, and 302 aa 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% aa 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.

Reagents

The product is supplied lyophilized from a 0.2 μ m filtered solution in phosphate buffered saline. Endotoxin level is < 10 ng per mg antibody as determined by the LAL method.

Preparation Instructions

To one vial of lyophilized powder, add 1 ml of 0.2 μ m-filtered PBS to produce a 0.1 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 product may be stored at 2-8 °C. for at least one month. For prolonged storage, freeze in working aliquots at -20 °C. Avoid repeated freezing and thawing.

Product Profile

For indirect immunoblotting, a working concentration of 0.1 – 0.2 μ g/ml is determined for human leptin receptor using 20 ng/lane under non-reducing and reducing conditions.

For indirect ELISA, a working concentration of 0.5 – 1 μ g/ml is determined to detect a limit of 0.3 ng/well of human leptin receptor.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

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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