

Leptin

Recombinant Human Leptin (OB)

Catalog#	Quantity	Lot#
LP1001-2000	2 mg	0701

Source: Recombinant human protein expressed in *E. coli*.
Formulation: Lyophilized powder lyophilized from a volatile buffer (50 mM NH₄HCO₃, pH 8.0).
Preservative: None.
MW: 16 kDa on reduced SDS gel
Purity: >97% on SDS-PAGE.
Source: Recombinant mature protein expressed in *E. coli* (amino acid residues).
Sterility: 0.2 µm membrane-filtered and packaged aseptically.
ED50: 0.4 - 2 ng/ml
Endotoxin: ≤0.1 EU/µg, as determined by Limulus Amebocyte Lysate (LAL) assay (Sigma).
QC Tests: SDS-PAGE, Native PAGE

Reconstitution and Use:

Reconstitute the contents of the vial using sterile buffer (pH8.0 or above) to a concentration no less than 100 µg/ml and aliquot for future use. (*If the initial rehydration is too dilute, activity may be lost due to the non-specific adsorption to the container*). The solution can then be further diluted to a working stock solution. If the product is going to be used for applications requiring absolute asepsis, it's best to filter-sterilize the solution using a sterile and non-pyrogenic 0.2 µm membrane before use.

Storage and Stability:

Upon receiving, store the product at -20°C. After reconstitution, store the working aliquots at 2-8 °C for no more than 3 months. For extended storage, aliquot the rehydrated solution (≥100 µg/ml) and freeze at -70 °C or -20 °C. Avoid repeated freezing and thawing. More dilute solutions stored at -20 °C will lose activity faster.

About Rat Leptin:

Leptin is a 16 kDa, 146 amino acid residue non-glycosylated protein hormone involved in regulating body weight, metabolism and reproductive function. It is encoded by the obese (*ob*) gene and expressed predominantly by adipocytes consistent with the fact that body weight is sensed mainly as the total mass of fat in the body. Leptin is also secreted by cells in the epithelium of the stomach and in the placenta in smaller amounts. Leptin receptors (OB-R) are highly expressed in areas of the hypothalamus that are known to be important in regulating body weight, as well as in T lymphocytes and vascular endothelial cells. They have sequence homology to gp130 and the G-CSF receptors.

Human leptin shares approximately 84% sequence identity with the mouse protein. Human leptin cDNA encodes a 167 amino acid residue protein with a 21 amino acid residue signal sequence that is cleaved to yield the 146 amino acid residue mature protein.

References:

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3. Considine RV, Sinha MK, Heiman ML etc: Serum immunoreactive-leptin concentrations in normal-weight and obese humans. *New Eng J Med* 334:292, 1996.
4. Friedman JM, Halaas JL: Leptin and the regulation of body weight in mammals. *Nature* 395:763, 1998.
5. Halaas JL, Gajiwala KS, Maffei M, etc: Weight-reducing effects of the plasma protein encoded by the obese gene. *Science* 269:543, 1995.
6. Montague CT, Faroozi IS, Whitehead JP, etc: Congenital leptin deficiency is associated with severe early-onset obesity in humans. *Nature* 387:903, 1997.
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8. Pelleymounter MA, Cullen MJ, Baker MB, etc: Effects of the obese gene product on body weight regulation in *ob/ob* mice. *Science* 269:540, 1995.
9. Zhang Y, Proenca R, Maffei M, etc: Positional cloning of the mouse obese gene and its human homologue. *Nature* 372:425, 1994.

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