

Leptin Protein, Mouse (His)

Cat. No.:	HY-P70704A
Synonyms:	Leptin; Obese Protein; Obesity Factor; LEP; OB; OBS
Species:	Mouse
Source:	E. coli
Accession:	Q544U0 (V22-C167)
Gene ID:	16846
Molecular Weight:	Approximately 17 kDa

PROPERTIES

AA Sequence	<p>V P I Q K V Q D D T K T L I K T I V T R I N D I S H T Q S V S A K Q R V T G L D</p> <p>F I P G L H P I L S L S K M D Q T L A V Y Q Q V L T S L P S Q N V L Q I A N D L</p> <p>E N L R D L L H L L A F S K S C S L P Q T S G L Q K P E S L D G V L E A S L Y S</p> <p>T E V V A L S R L Q G S L Q D I L Q Q L D V S P E C</p>
Biological Activity	Fully biologically active determined by the dose dependent proliferation of MCF-7 cells. The ED ₅₀ for this effect is 1.680 ng/mL, corresponding to a specific activity is 5.95×10 ⁵ units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 50 mM Tris-HCL, 300 mM NaCl, 200 mM arginine, pH 8.0.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	Leptin, a key regulator in the orchestration of energy balance and body weight, exerts comprehensive effects once released into circulation by binding to its receptor, LEPR, present in diverse tissues. In the hypothalamus, it acts as an appetite-regulating factor, inducing a decrease in food intake and an increase in energy consumption through the modulation of anorexigenic and orexigenic neuropeptides. Leptin further extends its influence beyond appetite control, regulating bone mass, hypothalamo-pituitary-adrenal hormones, and impacting reproductive function. In peripheral tissues, it enhances
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basal metabolism, influences pancreatic beta-cell function, and exhibits pro-angiogenic properties. Within the arcuate nucleus of the hypothalamus, leptin activates POMC neurons and inhibits NPY neurons, orchestrating the release of anorexigenic and orexigenic peptides, respectively. Additionally, leptin plays a modulatory role in nutrient absorption, reducing glucose uptake in the intestine. It functions as a growth factor, activating various signaling pathways to regulate gene expression involved in cell cycle control, apoptosis, and angiogenesis. In innate immunity, leptin modulates neutrophil activity, enhances macrophage function, and promotes a pro-inflammatory response. In adaptive immunity, it influences T-cell responses, promoting T helper-1 cell immune responses and regulating CD4(+)CD25(-) T-cell proliferation through MTOR signaling pathway activation.

Caution: Product has not been fully validated for medical applications. For research use only.

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