

Leptin Protein, Human (His)

Cat. No.:	HY-P7232A
Synonyms:	rHuLeptin; Obesity protein; OB
Species:	Human
Source:	E. coli
Accession:	P41159 (V22-C167)
Gene ID:	3952
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 S K Q K V T G L D</p> <p>F I P G L H P I L T L S K M D Q T L A V Y Q Q I L T S M P S R N V I Q I S N D L</p> <p>E N L R D L L H V L A F S K S C H L P W A S G L E T L D S L G G V L E A S G Y S</p> <p>T E V V A L S R L Q G S L Q D M L W Q L D L S P G C</p>
Biological Activity	Fully biologically active determined by the dose dependent proliferation of MCF7 cells. The ED ₅₀ for this effect is 14.64 ng/mL, corresponding to a specific activity is 6.83×10 ⁴ units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from after extensive dialysis against 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	<p>Leptin, a pivotal regulator of energy balance and body weight, exerts central and peripheral effects upon binding to its receptor, LEPR, distributed across various tissues. In the hypothalamus, Leptin acts as an appetite-regulating factor, decreasing food intake and increasing energy consumption by modulating anorexigenic and orexigenic neuropeptides. Additionally, it influences bone mass, hypothalamo-pituitary-adrenal hormone secretion, and reproductive function. In peripheral tissues, Leptin enhances basal metabolism, regulates pancreatic beta-cell function and insulin secretion, and</p>
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exhibits pro-angiogenic effects on endothelial cells, impacting both innate and adaptive immunity. Within the hypothalamic arcuate nucleus, Leptin activates POMC neurons, releasing anorexigenic peptides upon depolarization, and inhibits NPY neurons upon hyperpolarization, reducing the release of orexigenic peptides. Beyond its role in satiety, Leptin modulates nutrient absorption in the intestine by inhibiting glucose absorption through PKC activation and subsequent signaling pathways. Leptin also acts as a growth factor, influencing cell cycle regulation and gene expression. Moreover, it plays a role in apoptosis, angiogenesis, and immune responses, exhibiting pro-inflammatory effects and promoting T helper-1 cell immune responses in adaptive immunity. Leptin's multifaceted functions highlight its intricate involvement in maintaining energy homeostasis and coordinating various physiological processes.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA