Leptin Protein, Human

Cat. No.:	HY-P7232
Synonyms:	rHuLeptin; Obesity protein; OB
Species:	Human
Source:	E. coli
Accession:	P41159 (V22-C167)
Gene ID:	3952
Molecular Weight:	13-16 kDa

PROPERTIES

AA Sequence	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 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 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 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
Biological Activity	1.Fully biologically active when compared to standard. The ED_{50} as determined by a chemotaxis bioassay using human Leptin R transfected BaF3 murine proB cells is less than 2.0 ng/mL, corresponding to a specific activity of > 5.0×10^5 IU/mg. 2.Immobilized Mouse LEPR (C-10His) at 10 μg/mL (100 μL/well) can bind Leptin, Human. The ED_{50} is 17.15 ng/mL.
Appearance	Lyophilized powder
Formulation	Lyophilized after extensive dialysis against PBS, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. 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	A sensor (leptin production by adipose cells) monitors the size of the adipose tissue mass. Hypothalamic centers receive and integrate the intensity of the leptin signal through leptin receptors (LRb). Effector systems, including the sympathetic nervous system, control the two main determinants of energy balance-energy intake and energy expenditure[1]. Recessive mutations in the leptingene are associated with massive obesity in mice and humans, establishing a genetic basis for

obesity. Leptin circulates in blood and acts on the brain to regulate food intake and energy expenditure. When fat mass falls, plasma leptin levels fall, stimulating appetite and suppressing energy expenditure until fat mass is restored. When fat mass increases, leptin levels increase, suppressing appetite until weight is lost. This system maintains homeostatic control of adipose tissue mass[2].

REFERENCES

[1]. A sensor (leptin production by adipose cells) monitors the size of the adipose tissue mass. Hypothalamic centers receive and integrate the intensity of the leptin signal through leptin receptors (LRb). Effector systems, including the sympathetic nervous system, control the two main determinants of energy balance-energy intake and energy expenditure[1]. Recessive mutations in the leptingene are associated with massive obesity in mice and humans, establishing a genetic basis for obesity. Leptin circulates in blood and acts on the brain to regulate food intake and energy expenditure. When fat mass falls, plasma leptin levels fall, stimulating appetite and suppressing energy expenditure until fat mass is restored. When fat mass increases, leptin levels increase, suppressing appetite until weight is lost. This system maintains homeostatic control of adipose tissue mass[2].

[2]. Friedman JM, et al. Leptin and the regulation of body weigh. Keio J Med. 2011;60(1):1-9.

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