

## Leptin Protein, Mouse

Cat. No.:	HY-P70704
Synonyms:	Leptin; Obese Protein; Obesity Factor; LEP; OB; OBS
Species:	Mouse
Source:	E. coli
Accession:	Q544U0 (V22-C167)
Gene ID:	16846
Molecular Weight:	13-15 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	<p>1. Measured in a cell proliferation assay using MCF-7 Human breast cancer cells. The ED<sub>50</sub> for this effect is 1.286ng/mL, corresponding to a specific activity is 7.77×10<sup>5</sup> units/mg.</p> <p>2. Measured in a cell proliferation assay using BaF3 mouse proB cells transfected with human Leptin R. The ED<sub>50</sub> for this effect is 0.3931 ng/mL, corresponding to a specific activity is 2.544×10<sup>6</sup> units/mg.</p>
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM PB, 300 mM NaCl, pH 7.5.
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 <sub>2</sub> 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	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 <sup>[1]</sup> . Recessive
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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<sup>[2]</sup>.

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## REFERENCES

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[1]. Jéquier E, et al. Leptin signaling, adiposity, and energy balance. *Ann N Y Acad Sci.* 2002 Jun;967:379-88.

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

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

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