

Leptin Protein, Rat, Recombinant

General Information

Synonyms:	LEPD;OB;LEP;OBS;Obesity protein;leptin
Protein Construction:	Val22-Cys167
Species:	Rat
Expression Host:	E. coli
Accession:	P50596
Molecular Weight:	~16.3 kDa (Reducing conditions)

QC Testing

Biological Activity:	ED 50 < 10.0 µg/ml, measured by a cell proliferation assay using LoVo cells, corresponding to a specific activity of > 100.0 units/mg.
Purity:	> 95% as determined by SDS-PAGE; > 95% as determined by HPLC
Endotoxin:	< 0.2 EU/µg of protein as determined by the LAL method.
Formulation:	Lyophilized after extensive dialysis against 50 mM Tris, pH 8.0.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in sterile deionized water. The product concentration should not be less than 100 µg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

Stability & Storage:

Upon receiving, this product remains stable for up to 6 months at lower than -70°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Leptin is a cytokine belonging to the Interleukin 6 family, and has a four-helix bundle structure. Leptin is encoded by the ob gene, and produced and secreted by white adipose tissue. The receptors of Leptin are Type I cytokine receptors, which exist in two different forms: a short form expressed in multiple tissues, and a long form expressed exclusively in the central nervous system (CNS). Upon binding to Leptin, the receptors activate the JAK/STAT3 pathway and PI3K, and stimulate transcriptional programs that regulate feeding behavior, metabolic rate, endocrine axes, and glucose fluxes. The deficiency of Leptin in human and mouse causes morbid obesity, diabetes, and neuroendocrine anomalies. Leptin also has effects on reproduction and immunity. In summary,

Leptin is a pivotal cytokine controlling energy balance, and as such has profound effects on human health.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481