

Leptin, Rat

Cat. No.: Z03158-1

Size: 1.0 mg

Synonyms: Obesity protein (OB)

Description:

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.

Recombinant rat Leptin (rrLeptin) produced in *E. coli* is a single non-glycosylated polypeptide chain containing 147 amino acids. A fully biologically active molecule, rrLeptin has a molecular mass of 16.3 kDa analyzed by reducing SDS-PAGE and is obtained by proprietary chromatographic techniques at GenScript.

Amino Acid Sequence:

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00001 MVPIHKVQDD TKTLIKTIVT RINDISHTQS VSARQRVTGL
00041 DFIPGLHPIL SLSKMDQTLA VYQQILTSLP SQNVLQIAHD
00081 LENLRDLLHL LAFSKSCSLP QTRGLQKPES LDGVLEASLY
00121 STEVVALSRL QGSLQDILQQ LDLSPEC
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Source: *E. coli*

Species: Rat

Biological Activity: ED₅₀ < 10 µg/mL, measured by a cell proliferation assay using LoVo cells, corresponding to a specific activity of > 100 units/mg.

Molecular Weight: 16.3 kDa, observed by reducing SDS-PAGE.

Formulation: Lyophilized after extensive dialysis against 50 mM Tris, pH8.0.

Reconstitution: Reconstituted in ddH₂O at 100 µg/mL.

Purity: > 95% as analyzed by SDS-PAGE and HPLC.

Endotoxin Level: < 0.2 EU/µg, determined by LAL method.

Storage: Lyophilized recombinant rat Leptin (rrLeptin) remains stable up to 6 months at lower than -70°C from date of receipt. Upon reconstitution, rrLeptin remains stable up to 2 weeks at 4°C or up to 3 months at -20°C.