

Overview

Synonyms	Obesity protein (OB)
Description	<p>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.</p> <p>Recombinant rat Leptin (rrLeptin) produced in <i>E. coli</i> 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.</p>
Accession No	P50596
Species	Rat
Source	<i>E. coli</i>
Biological Activity	ED ₅₀ < 10 µg/mL, measured by a cell proliferation assay using LoVo cells, corresponding to a specific activity of > 100 units/mg.
Sequence	<p>MVPIHKVQDD TKTLIKTIVT RINDISHTQS VSARQRTGL DFIPGLHPIL SLSKMDQTLA VYQQILTSLP SQNVLQIAHD LENLRDLLHL LAFSKSCSLP QTRGLQKPES LDGVLEASLY STEVVALSRL QGSLQDILQQ LDLSPEC</p>

Properties

Measured Molecular Weight	16.3 kDa, observed by reducing SDS-PAGE.
Purity	> 95% as analyzed by SDS-PAGE and HPLC.
Formulation	Lyophilized after extensive dialysis against 50 mM Tris, pH8.0.
Reconstitution	Reconstituted in ddH ₂ O at 100 µg/mL.
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.
Note	For research use only

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