

Leptin, quadruple mutant (L39A, D40A, F41A, I42A)

Obesity Factor

human, recombinant, *E. coli*

Cat. No.	Amount
PR-485	100 µg

For *in vitro* use only
Quality guaranteed for 12 months
Store at -20°C

Avoid freeze / thaw cycles

Form

Lyophilized. Leptin is lyophilized from a 1 mg/ml solution containing 0.0045 mM NaHCO₃.

Solubility

It is recommended to reconstitute the lyophilized Leptin mutant in sterile 0.4% NaHCO₃ adjusted to pH 8-9, not less than 100 µg/ml, which can then be further diluted to other aqueous solutions. At low concentrations addition of a carrier protein (0.1% HSA or BSA) is suggested.

Activity

This Leptin quadruple mutant is capable of inhibiting leptin-induced proliferation of BAF/3 cells stably transfected with the long form of human leptin receptor. It also inhibits various leptin effects in several *in vitro* bioassays.

Endotoxin

Less than 0.1 ng/µg (IEU/µg) of Leptin.

Molecular Weight

16 kDa

Purity

≥ 95% by SDS-PAGE and RP-HPLC

Description

Leptin inhibits food intake and stimulates energy expenditure. Leptin also has thermogenic actions and regulates enzymes of fatty acid oxidation. Severe hereditary obesity in rodents and humans is caused by defects in leptin production. In addition to its critical role in the physiologic regulation of body weight leptin has a variety of other physiologic and pathologic functions resembling those of cytokines. These functions include the regulation of hematopoiesis, angiogenesis, wound healing, inflammation, and immune responses.

Recombinant Human Leptin, one polypeptide chain containing 146 amino and additional Ala at the N-terminus and having a molecular mass of ~16 kDa, was mutated, resulting in a L39A/D40A/F41A/I42A mutant.

Leptin mutant was purified by proprietary chromatographic techniques.

Selected References:

- LaMarca *et al.* (2004) Recombinant human leptin in women with hypothalamic amenorrhea. *N. Engl. J. Med.* **351**:2343.
Welt *et al.* (2004) Recombinant human leptin in women with hypothalamic amenorrhea. *N. Engl. J. Med.* **351**:987.
Cochran *et al.* (2004) Efficacy of recombinant methionyl human leptin therapy for the extreme insulin resistance of the Rabson-Mendenhall syndrome. *J. Clin. Endocrinol. Metab.* **89**:1548.
Zeyl *et al.* (2004) Interactions between temperature and human leptin physiology in vivo and in vitro. *Eur. J. Appl. Physiol.* **92**:571.
Lagarde *et al.* (2003) Development of radioimmunoassay for the measurement of human leptin in serum. *Nucl. Med. Rev. Cent. East. Eur.* **6**:105.
Wang *et al.* (2003) Mice body weight gain is prevented after naked human leptin cDNA transfer into skeletal muscle by electroporation. *J. Gene Med.* **5**:966.