

Leptin, triple mutant (L39A, D40A, F41A)

Obesity Factor

rat, recombinant, *E. coli*

Cat. No.	Amount
PR-487	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 solution containing 0.003 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 triple 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.

Molecular Weight

16 kDa

Purity

≥ 95% by SDS-PAGE

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 Rat Leptin, one polypeptide chain containing 146 amino acids and additional Ala at the N-terminus and having a molecular mass of ~ 16 kDa, was mutated, resulting in a L39A/D40A/F41A mutant. Leptin mutant was purified by proprietary chromatographic techniques.

Amino acid sequence

The sequence of the first five N-terminal amino acids was determined and was found to be
Ala-Val-Pro-Ile-Gln

Selected References:

- Theriault *et al.* (2001) Clinical evaluation of a new non-isotopic leptin immunoassay. *Clin. Lab. Sci.* **14**:6.
Thomas (2004) Leptin and fragility fracture: evidence for a protective effect in humans. *Am. J. Med.* **117**:966.
Schett *et al.* (2004) Serum leptin level and the risk of nontraumatic fracture. *Am. J. Med.* **117**:952.
Iwamoto *et al.* (2004) The leptin receptor in human osteoblasts and the direct effect of leptin on bone metabolism. *Gynecol. Endocrinol.* **19**:97.
Mami *et al.* (2005) Plasma leptin, insulin, and neuropeptide Y concentrations in infants. *Arch. Dis. Child. Fetal. Neonatal. Ed.* **90**:F86.