

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

Obesity Factor

ovine (sheep), recombinant, *E. coli*

Cat. No.	Amount
PR-489	100 μ g

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 concentrated 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 μ g/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.

Endotoxin

Less than 0.1 ng/ μ g (IEU/ μ g) 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 Ovine 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 mutant.

Leptin mutant was purified by proprietary chromatographic techniques.

Selected References:

- Laborde *et al.* (2004) Overexpression of ovine leptin in *Pichia pastoris*: physiological yeast response to leptin production and characterization of the recombinant hormone. *Yeast*. **21**:249.
- Howe *et al.* (2002) The late gestation increase in circulating ACTH and cortisol in the fetal sheep is suppressed by intracerebroventricular infusion of recombinant ovine leptin. *J. Endocrinol.* **174**:259.
- Amstalden *et al.* (2002) Central infusion of recombinant ovine leptin normalizes plasma insulin and stimulates a novel hypersecretion of luteinizing hormone after short-term fasting in mature beef cows. *Biol. Reprod.* **66**:1555.
- Morrison *et al.* (2002) Effect of intravenous infusion of recombinant ovine leptin on feed intake and serum concentrations of GH, LH, insulin, IGF-1, cortisol, and thyroxine in growing prepubertal ewe lambs. *Domest. Anim. Endocrinol.* **22**:103.
- Newby *et al.* (2001) Effects of recombinant ovine leptin on *in vitro* lipolysis and lipogenesis in subcutaneous adipose tissue from lactating and nonlactating sheep. *J. Anim. Sci.* **79**:445.
- Kauter *et al.* (2000) Adrenaline, insulin and glucagon do not have acute effects on plasma leptin levels in sheep: development and characterisation of an ovine leptin ELISA. *J. Endocrinol.* **166**:127.