

**Leptin Rat Recombinant  
GROWTH FACTOR**

**Catalog Number:** PRP-327  
**Quantity:** 200 micrograms, 1 milligram, 5 milligrams  
**Format:** Sterile-filtered lyophilized powder  
**Host:** *E. coli*

**Background:**

Leptin is a 16-kDa peptide hormone secreted from white adipocytes and implicated in the regulation of food intake and energy balance. Leptin provides the key afferent signal from fat cells in the feedback system that controls body fat stores.

**Specificity and Preparation:**

Leptin Rat Recombinant produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 147 amino acids and having a molecular mass of 16 kDa. The sequence of the first five N-terminal amino acids was determined and was found to be Ala-Val-Pro-Ile-His. The protein was lyophilized from a concentrated (1 mg/ml) solution with 0.0045M NaHCO<sub>3</sub>. It is purified by proprietary chromatographic techniques. Biological activity is evidenced by inducing proliferation of BAF/3 cells stably transfected with the long form of human leptin receptor. Protein quantitation was determined by UV spectroscopy at 280 nm and analysis by RP-HPLC using a calibrated solution of Leptin Rat as a reference standard. It has been determined that Leptin Rat is more than 95% pure by analysis with SEC-HPLC and SDS-PAGE.

**Usage and Storage:**

It is recommended to reconstitute the lyophilized Leptin in sterile 18MΩ-cm H<sub>2</sub>O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions. Although stable at room temperature for 3 weeks, lyophilized Leptin should be stored desiccated below -18°C. Upon reconstitution Leptin should be stored at 4°C between 2-7 days and for future use below -18°C. For long-term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid repeated freeze-thaw cycles. Gently spin down material before use; 5-10 seconds in a microfuge should be adequate.

**References:**

1. Amantea D, Tassorelli C, Russo R, Petrelli F, Morrone LA, Bagetta G, Corasaniti MT. (2011) Neuroprotection by leptin in a rat model of permanent cerebral ischemia: effects on STAT3 phosphorylation in discrete cells of the brain. *Cell Death Dis* 2:e238.
2. Roa J, Garcia-Galiano D, Varela L, Sanchez-Garrido MA, Pineda R, Castellano JM, Ruiz-Pino F, Romero M, Aguilar E, Lopez M, Gaytan F, Dieguez C, Pinilla L, Tena-Sempere M. (2009) The mammalian target of rapamycin as novel central regulator of puberty onset via modulation of hypothalamic Kiss1 system. *Endocrinology* 150(11):5016-5026.
3. Roa J, Vigo E, Garcia-Galiano D, Castellano JM, Navarro VM, Pineda R, Dieguez C, Aguilar E, Pinilla L, Tena-Sempere M. (2008) Desensitization of gonadotropin responses to kisspeptin in the female rat: analyses of LH and FSH secretion at different developmental and metabolic states. *Am J Physiol Endocrinol Metab* 294(6):E1088-96.
4. Castellano JM, Navarro VM, Fernandez-Fernandez R, Roa J, Vigo E, Pineda R, Dieguez C, Aguilar E, Pinilla L, Tena-Sempere M. (2006) Expression of hypothalamic KiSS-1 system and rescue of defective gonadotropic responses by kisspeptin in streptozotocin-induced diabetic male rats. *Diabetes* 55(9):2602-2610.

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