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Human Leptin protein

Cat #: PRP100730 Size: 100μg/1mg

Product Information

	Product Name: Human Leptin protein		
REF	**Catalog Number:** PRP100730	LOT	**Lot Number:** Refer to product label
	Purity: > 98 % as determined by SDS-PAGE		
	Storage: Store at -20°C		**Preparation method:** E. coli
	Shipping: The product is shipped at ambient temperature.		

Background: Leptin is one of the most important hormones secreted by adipocytes, as an adipokine that modulates multiple functions including energy homeostasis, thermoregulation, bone metabolism, endocrine and pro-inflammatory immune responses. The circulating leptin levels serve as a gauge of energy stores, thereby directing the regulation of energy homeostasis, neuroendocrine function, and metabolism. Recent studies suggest that leptin is physiologically more important as an indicator of energy deficiency, rather than energy excess, and may mediate adaptation by driving increased food intake and directing neuroendocrine function to converse energy, such as inducing hypothalamic hypogonadism to prevent fertilization. One of these functions is the connection between nutritional status and immune competence. The adipocyte-derived hormone Leptin has been shown to regulate the immune response, innate and adaptive response, both in normal and pathological conditions. Thus, Leptin is a mediator of the inflammatory response. Leptin has a dual effect on bone, acting by two independent mechanisms. As a signal molecule with growth factor characteristics, leptin is able to stimulate osteoblastic cells and to inhibit osteoclast formation and activity, thus promoting osteogenesis. However, as a molecule which stimulates sympathetic neurons in the hypothalamus, leptin indirectly inhibits bone formation. This inhibitory effect of leptin mediated by activation of sympathetic nervous system can be abrogated by application of blood pressure-reducing beta-blockers, which also inhibit receptors of hypothalamic adrenergic neurons. Leptin appears to regulate a number of features defining Alzheimer's disease (AD) at the molecular and physiological level. Leptin can stimulate mitogenic and angiogenic processes in peripheral organs. Because leptin levels are elevated in obese individuals and excess body weight has been shown to increase breast cancer risk in postmenopausal women. Furthermore, a recent report clearly shows that targeting leptin signaling may reduce mammary carcinogenesis.

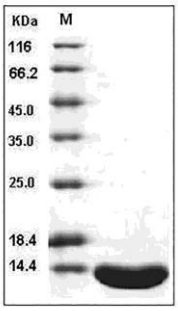
Sequence: Amino acid sequence derived from mature form of human Leptin (NP_000221.1) (Val 22-Cys 167) was expressed, with an additional Met.

Protein length: The recombinant human leptin consists of 147 amino acids and predicts a molecular mass of 16 kDa. The apparent molecular mass of rhLEP is approximately 13 kDa in SDS-PAGE under reducing conditions.

Formulation: Lyophilized from sterile PBS, pH 7.4.

Storage Instructions: Lyophilized Human Leptin protein product should be stored desiccated below -18°C. Upon reconstitution, the protein 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). Please prevent freeze-thaw cycles.

Usage notes: Always centrifuge tubes before opening. It is recommended to reconstitute the lyophilized Human Leptin protein in sterile ddH_2O not less than 100μg/ml, which can then be further diluted to other aqueous solutions.

	Fig. SDS-PAGE analysis of Human Leptin protein.

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