Product Data Sheet

Human Cell Expressed Leptin^{HCX} — Catalogue 9501C

Source	A DNA sequence encoding the human Leptin protein sequence (containing the signal peptide sequence, and the mature Leptin sequence) was expressed in modified human 293 cells.
Molecular Mass	Under reducing conditions Symansis Leptin^{HCX} migrates as a band at approximately 15-16 kDa in SDS-PAGE. This compares with unmodified Leptin that has a predicted monomeric molecular mass of 16 kDa.
pI	Symansis Leptin^{HCX} separates into a number of isoforms with a pI between 5.0 and 7.5 in 2D PAGE due to post-translational modifications, in particular glycosylation. This compares with the unmodified Leptin that has a predicted pI of 5.7.
Purity	>95%, as determined by SDS-PAGE and visualized by silver stain.
Formulation	When reconstituted in 0.5 ml sterile phosphate-buffered saline, the solution will contain 1% human serum albumin (HSA) and 10% trehalose.
Reconstitution	It is recommended that 0.5 ml of sterile phosphate-buffered saline be added to the vial.
Storage	Lyophilized products should be stored at 2 to 8°C. Following reconstitution short-term storage at 4°C is recommended, and longer-term storage of aliquots at -18 to -20°C. Repeated freeze thawing is not recommended.
Activity	The ED_{50} of Leptin^{HCX} is typically 0.25-0.35 ng/ml as measured in a cytotoxicity assay using the human K562 cell line.
Background Information	Leptin, also known as obesity factor and obese protein, is a member of the adipocytokine family that are cytokines expressed from adipose tissues. Other members of the adipocytokine family include TNF alpha, IL-6 and resistin. The general function of these molecules is regulation of food intake energy homeostasis, hematopoiesis, inflammation and immunity. Leptin has thermogenic actions and regulates enzymes of fatty acid oxidation. Leptin is also involved in sympathetic nerve activity, can upregulate endothelin-1 production and is able to potentiate platelet aggregation. Leptin is involved in the regulation of mononuclear phagocytes via the activation of the JAK/STAT signalling pathway, which leads to stimulation of phagocytosis, production of oxygen and nitrogen reactive species, and also to an increase in secretion of pro-inflammatory cytokines. Leptin also synergises with FGF-2 (FGF-basic) and VEGF in stimulating angiogenesis. Human Leptin is synthesized as a 167 amino acid precursor protein that includes a 21 amino acid signal sequence that is cleaved upon secretion from the cell. Mature Leptin is 146 amino acids in length (approximately 16kDa) and has a four-helix bundle structure. For a recent review please see Kelesidis T and Mantzoros CS (2006) Pediatr Endocrinol Rev 3:239-248
Theoretical Sequence	VPIQKVQDDTKTLIKTIVTRINDISHTQSVSSKQKVTGLDFIPGLHPILTLSKMDQTLAVYQQILTSMPSRNVI QISNDLENLRDLLHVLAFSKSCHLPWASGLETLDSLGGVLEASGYSTEVVALSRLQGSLQDMLWQLDLSP GC

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