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Leptin-A Tilapia

Leptin-A Tilapia Recombinant
GRF0222

Product Overview

Name	Leptin-A Tilapia
Description	
Leptin-A Tilapia Recombinant	
Accession (Primary)	S5YZ30

Introduction

Leptin is a protein hormone. It is mainly produced in adipose cells that regulate energy homeostasis by restraining hunger. Leptin ties to nuclear receptors in the hypothalamus (arcuate nucleus). Similar to insulin resistance in type II diabetes, in obesity there is a decrease in the sensitivity towards leptin, ending in a failure to identify satiety, even in high levels of energy stores or leptin itself. Full-length cDNA encoding 2 leptin sequences (tLepA and tLepB) and 1 leptin receptor sequence (tLepR) exists in tilapia (Oreochromis niloticus). The full-length cDNA of tLepR is 3423 bp, encoding a protein of 1140 amino acid which contained all functionally important domains conserved among vertebrate leptin receptors. The cDNAs of tLepA and tLepB are 486 bp and 459 bp in length, encoding proteins of 161 aa and 152 aa, respectively. The three-dimensional structures of tLepA and tLepB demonstrates strong conservation of tertiary structure with that of human leptin comprised of 4 helixes.

Source

Escherichia Coli.

Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation

Lyophilized from a concentrated (1mg/ml) solution containing NaHCO3 at 1:2 salt: protein ratio.

Stability

Lyophilized Leptin-A Tilapia although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution Leptin-A Tilapia 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.

Purity

Greater than 95.0% as determined by: (a) Gel filtration analysis. (b) Analysis by SDS-PAGE.

Amino acid sequence

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The first six N-terminal amino acids of recombinant Tilapia leptin A are Ala-Pro-Leu-Pro-Val-Glu.

Biological Activity

Tilapia leptins were found to be biologically active in promoting proliferation of BAF/3 cells stably transfected with the long form of human leptin receptor, but their activity was lower than that of mammalian leptin. Furthermore, the Tilapia leptins were biologically active in promoting STAT-LUC activation in COS7 cells transfected with Tilapia leptin receptor but not in cells transfected with human leptin receptor. Tilapia Leptin A was more active than Tilapia Leptin B.

Solubility

It is recommended to reconstitute the lyophilized Leptin-A Tilapia in sterile water or 0.4% NaHCO 3 adjusted to pH 8-9, not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Protein content

Protein quantitation was carried out by UV spectroscopy at 280 nm using the absorbency value of 1.33 for 1 mg/ml Leptin-A Tilapia as the extinction coefficient for a 0.1% (1mg/ml) solution at pH 8.0. This value is calculated by the DNAman computer analysis program of protein sequences.

Precautions

Leptin-A Tilapia is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (S5YZ30)