9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

Elamipretide

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HRM0025

Product Overview

Name	Elamipretide

Description

Elamipretide

Synonyms

SS-31, MTP-131, Bendavia.

Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation

The protein was lyophilized with no additives.

Stability

Lyophilized Elamipretide although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution Elamipretide 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 97.0% as determined by analysis by RP-HPLC.

Amino acid sequence

H-D-Arg-(2',6'-dimethyl-Tyr)-Lys-Phe-NH2.

Solubility

It is recommended to reconstitute the lyophilized Elamipretide in sterile 18MΩ-cm H 2 O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Background

Elamipretide (also known as SS-31) is a novel mitochondrial-targeted peptide with immense promise as a therapeutic agent in mitochondrial dysfunction-related disorders. This research paper aims to provide a comprehensive analysis of Elamipretide, delving into its biochemical properties, mechanisms of action, and potential applications in various disease conditions. Elamipretide, a mitochondria-targeting tetrapeptide, has garnered attention for its unique ability to protect mitochondria from oxidative stress and attenuate mitochondrial dysfunction (Siegel et al., 2013). This paper endeavors to explore Elamipretide's biochemical basis and its potential as a therapeutic agent in various diseases linked to mitochondrial impairment. Elamipretide selectively accumulates within the inner mitochondrial

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membrane, where it exerts its cytoprotective effects. By reducing reactive oxygen species (ROS) production and enhancing electron transport chain efficiency, Elamipretide plays a crucial role in mitochondrial homeostasis (Kloner et al., 2015). The mitochondrial protective actions of Elamipretide arise from its interaction with cardiolipin, a phospholipid predominantly localized in the inner mitochondrial membrane. By binding to cardiolipin, Elamipretide stabilizes mitochondrial cristae, improves membrane integrity, and enhances oxidative phosphorylation (Minkler et al., 2015). Elamipretide's potential applications extend to a myriad of disease conditions characterized by mitochondrial dysfunction. In preclinical studies, Elamipretide has shown promise in mitigating tissue damage following ischemia-reperfusion injury, preserving cardiac function after myocardial infarction, and ameliorating neurodegenerative processes (Birk et al., 2017; Cho et al., 2015). As the research on Elamipretide progresses, further investigation is warranted to better understand its pharmacokinetics, long-term safety, and potential off-target effects. Clinical trials exploring its therapeutic efficacy in human diseases offer exciting prospects for the future. Elamipretide, a mitochondria-targeting peptide, emerges as a promising candidate in combating mitochondrial dysfunction-related disorders. Its unique ability to stabilize mitochondrial membranes and enhance cellular bioenergetics positions Elamipretide as a novel therapeutic option for a diverse range of diseases.

Precautions

Elamipretide is for research use only and not for use in diagnostic or therapeutic procedures.

Background

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