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

Humanin

Humanin
HRM0057

Product Overview

Name	Humanin

Description

Humanin

Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation

The protein was lyophilized with no additives.

Stability

Lyophilized Humanin although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution Humanin 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-Met-Ala-Pro-Arg-Gly-Phe-Ser-Cys-Leu-Leu-Leu-Leu-Thr-Ser-Glu-Ile-Asp-Leu-Pro-Val-Lys-Arg-Arg-Ala-OH.

Solubility

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

Background

Humanin, a small peptide derived from the mitochondrial genome, has emerged as a remarkable molecule with diverse cellular protective functions. This research paper aims to provide a comprehensive analysis of Humanin, exploring its biochemical properties, mechanisms of action, and potential therapeutic applications in various disease contexts. Humanin, initially discovered for its role in neuroprotection, has since garnered interest for its broad spectrum of cytoprotective effects. Derived from the mitochondrial 16S ribosomal RNA, this small peptide plays a critical role in safeguarding cells from various stressors (Harvey, 2008). This paper delves into the complexities of Humanin, uncovering its multifaceted nature and potential clinical applications. Humanin is a 24-amino acid peptide with a unique secondary structure that contributes to its cellular protective functions. It localizes to both the cytoplasm and mitochondria, where it interacts with various proteins involved in apoptotic and oxidative stress pathways (Hoang et al.,

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2019). Additionally, Humanin can undergo post-translational modifications, further diversifying its actions. Humanin exerts its protective effects through multiple mechanisms. It interacts with the pro-apoptotic protein Bax, inhibiting its translocation to the mitochondria and preventing the release of cytochrome c (Hashimoto et al., 2001). Humanin also modulates the activities of caspases, key mediators of cell death pathways, thereby promoting cell survival in stressful conditions (Nakagawa et al., 2002). Beyond its initial recognition as a neuroprotective agent, Humanin has demonstrated cytoprotective effects in various cell types, including cardiomyocytes, neurons, and endothelial cells (Chai et al., 2019). It attenuates oxidative stress, reduces mitochondrial dysfunction, and promotes cell viability, thereby safeguarding cells from a multitude of insults. The multifaceted protective functions of Humanin offer promising therapeutic potential in various disease contexts. Research has shown its efficacy in mitigating neurodegenerative disorders, cardiovascular diseases, and age-related pathologies (Muzumdar et al., 2009). Furthermore, Humanin's ability to attenuate inflammation and promote tissue repair opens new avenues for therapeutic interventions.

Precautions

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

Background

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