

Exclusively Distributed By:



Integrity Ingredients Corporation

"Your Innovation Partner"

www.integrityingredientscorp.com • info@integrityingredientscorp.com
(310) 782-0282

AntiOxd-Ex

AntiOxd-Ex is a potent antioxidant and can alleviate symptoms of skin aging by protecting cells from oxidative damages.

 **READLINE**

AntiOxd-Ex

Ergothioneine

INCI Name

Ergothioneine

CAS

497-30-3

Molecular Formula

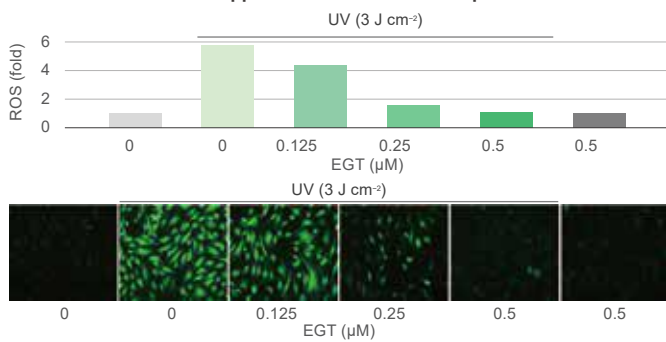
C₉H₁₅N₃O₂S

Product Information

AntiOxd-Ex (ergothioneine) is a thiol-containing histidine betaine derivative produced by a variety of microbes, especially fungi. Ergothioneine cannot be synthesized by mammals, but dietary ergothioneine can be readily absorbed by cells by means of a specific transporter encoded by the *SLC22A4* gene. Ergothioneine is known for its potent capability of scavenging reactive oxygen species (ROS) such as superoxide (O₂⁻), hydroxyl radicals (•OH), peroxynitrite (ONOO⁻), and singlet oxygen (¹O₂) and thus can protect skin from oxidative stresses and UV-induced damages. UV-induced ROS is the main cause to skin-aging related symptoms such as wrinkles, sagging, and pigmentation. AntiOxd-Ex can accumulate in epidermal keratinocytes and fibroblasts and is therefore used as an antioxidant in a variety of skincare products with antiaging benefits.

Efficacy

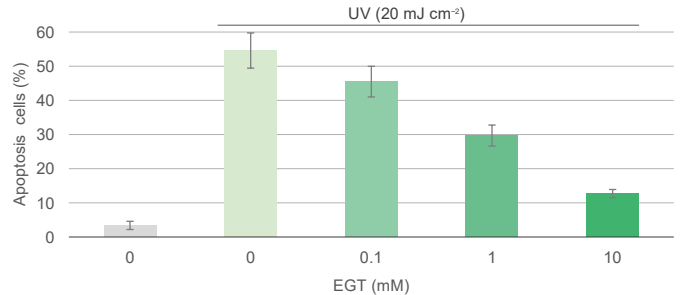
EGT suppressed UV-induced ROS production



Human skin fibroblasts were pretreated with ergothioneine (EGT), and UV (320–365 nm, 3 J cm⁻²) -induced ROS was measured and imaged by a fluoregenic reagent. Ergothioneine can protect the skin from UV-induced damage by eliminating the levels of ROS, suppressing the inflammatory and apoptotic responses.

Reference: Y. Hseu et al., *Oxid. Med. Cell. Longev.*, 2020, 2576823

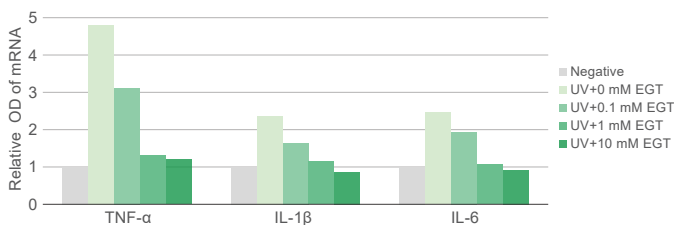
EGT suppressed UV-induced cell apoptosis



Human epidermal keratinocytes were pretreated with ergothioneine followed by UV irradiation (280–320 nm, 20 mJ cm⁻²). Apoptosis was analyzed with Annexin V/PI staining by FACS. The number of apoptotic cells was significantly decreased in a dose-dependent manner in keratinocytes pretreated with ergothioneine. Thus ergothioneine can inhibit keratinocyte apoptosis following UV irradiation.

Reference: H. J. Ko et al., *Experimental Cell Res*, 2021, 400, 112516

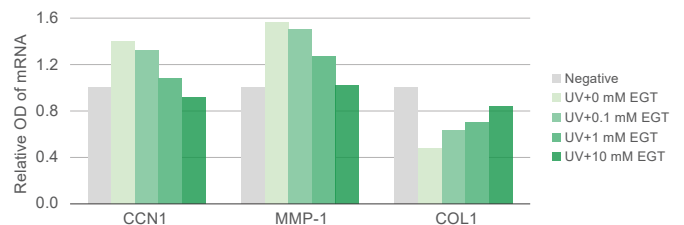
EGT suppressed UV-induced inflammation



Human epidermal keratinocytes were pretreated with ergothioneine followed by UV irradiation (280–320 nm, 20 mJ cm⁻²). The mRNA levels of pro-inflammatory cytokines (TNF-α, IL-1β, and IL-6) were examined by reverse transcription-polymerase chain reaction. Ergothioneine can reduce the levels of inflammation induced by UV.

Reference: H. J. Ko et al., *Experimental Cell Res*, 2021, 400, 112516

EGT maintained collagen homeostasis after UV irradiation



Human skin fibroblasts were pretreated with ergothioneine followed by UV irradiation (280–320 nm, 20 mJ cm⁻²). Ergothioneine can down-regulate the expression of cysteine-rich protein 61 (CCN1) and matrix metalloproteinase 1 (MMP-1) while increase the expression of collagen 1 (COL1). Ergothioneine can maintain the collagen homeostasis after UV irradiation and thus protect the skin from photoaging.

Reference: H. J. Ko et al., *Experimental Cell Res*, 2021, 400, 112516

Safety

Ergothioneine has been approved as a novel food supplement by European Food Safety Authority and is generally recognized as safe to humans.

Formulation Guidelines

- Recommended level of use: 10–1000 ppm
- Ergothioneine is highly water soluble (>0.20 g/mL at 25 °C)
- Ergothioneine can form complexes with metal ions such as Cu²⁺ and such ingredients should be avoided in formulation

PMC-DY-HW-0005-095-202305-v1.0-EN

ABOUT US

READLINE is a bio-tech company focusing on developing and manufacturing active ingredients for cosmetics, nutritional supplements and pharmaceuticals in a green and sustainable manner. We are driven by a shared value to enable customer success with high quality green active ingredients, from making to using, from health to beauty.

Copyright © 2023 by Shenzhen Readline Biotech. Co. Ltd. All rights reserved.

This product information and all further technical advice are based on our present knowledge and experience. We reserve the right to make any changes according to technological progress or further developments. No warranty or guarantee of product properties in the legal sense is intended or implied. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified and tested by qualified experts in the sole responsibility of a customer. This product information is not intended to provide legal or regulatory advice about product uses or claims in any jurisdiction and should not be relied upon for such guidance.

CONTACT US

www.szreadline.com
 +86 755 2665 9310
 sales@szreadline.com

