Ergothioneine

Protects nervous system | Enhances memory | Protects cardiovascular system | Antioxidant | Food antioxidant

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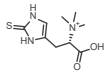
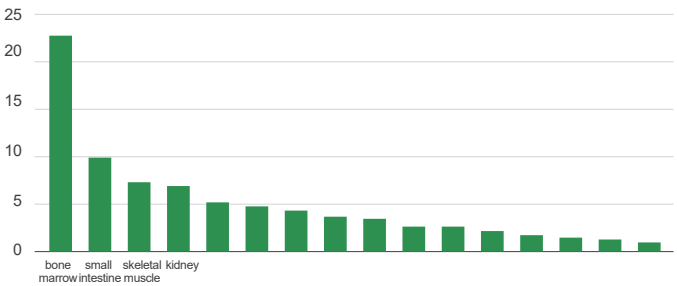
Ergothioneine

CAS	Molecular Weight	Molecular Formula	Appearance	Structure
497-30-3	229.3	$C_9H_{15}N_3O_2S$	White powder	

Product Information

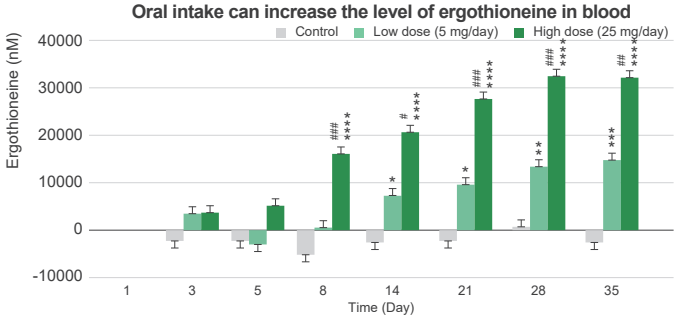
Ergothioneine (EGT) is a natural amino acid derivative found in many plants and animals. Unlike other amino acids, ergothioneine cannot be synthesized by the human body, and thus, it can only be obtained through a balanced diet. Transporting ergothioneine into cells is made possible by a highly specific cationic transporter protein known as slc22a4 (previously known as OCTN1). With its potent antioxidant properties, ergothioneine is an effective ingredient in reducing free radicals and has a significant impact on human physiological activities.

The expression of the slc22a4 gene in different tissues of the human body



The gene slc22a4 encoding the transporter of ergothioneine is widely expressed in in various tissues and organs, suggesting the universal presence of ergothioneine in human body.

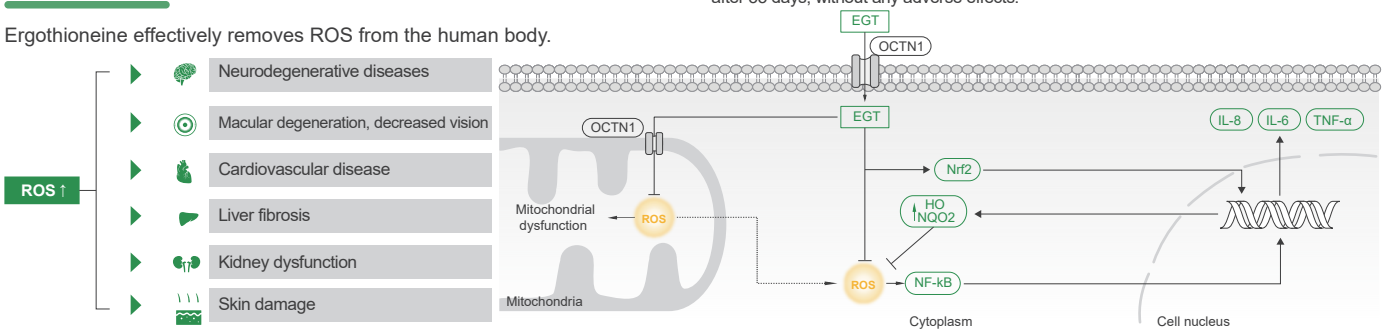
Oral intake can increase the level of ergothioneine in blood



45 healthy volunteers were divided into three groups and were provided with a placebo, a low dose of ergothioneine (5 mg/day), and a high dose of ergothioneine (25 mg/day), respectively. It was found that the level of ergothioneine was significantly increased in blood after 35 days, without any adverse effects.

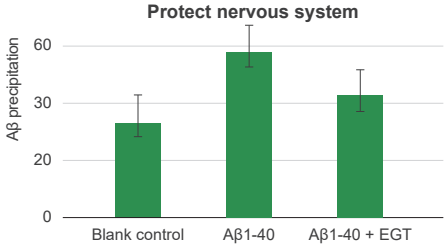
Mechanism

Ergothioneine effectively removes ROS from the human body.



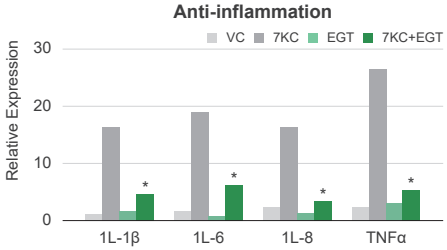
Efficacy

Protect nervous system



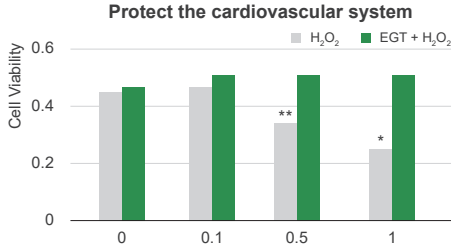
The control group was fed with physiological saline, while the Aβ1-40 group was injected with amyloid protein (Aβ 1-40) (5 μL 400 pmol/mouse) into the hippocampus and then fed with physiological saline. The Aβ1-40 + EGT group was additionally fed with 0.5 mg/kg EGT. After 39 days, and it was found that EGT significantly reduced the number of Aβ deposits in the hippocampus.

Anti-inflammation



In vitro cultured endothelial cells were divided into four groups (control group, 30 μM 7-ketocholesterol (7KC) as the negative control, 1 mM EGT, 7KC + EGT). After 24 hours of culturing, an increase in the expression of IL-1β, IL-6, IL-8 and TNFα in endothelial cells induced by 7KC was observed. Addition of EGT significantly reduced the expression of inflammatory factors.

Protect the cardiovascular system



Arterial endothelial cells were cultured in vitro and treated with varying concentrations of H_2O_2, resulting in a significant decrease in cell viability. However, upon addition of 0.5 mM EGT, a significant increase in cell viability was observed, preventing damage to the endothelial cells.

PMC-DY-YYJK-0005-151-202304-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.

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