

SIYOMICRO-ERGO

Ergothioneine(EGT) : Cell Guard

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Introduction of EGT

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What is EGT

Ergothionine (EGT) is a rare natural amino acid. It is a natural antioxidant, which can protect cells in human body and is an important active substance in the body.

02

Physical and Chemical properties

[Appearance] White crystal

[Molecular weight] 229.3

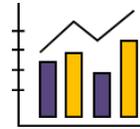
[CAS] 497-30-3

[Storage] Cool and dry place, long-term preservation recommended - 20 °C

[Recommended addition] 0.02-0.20% in the water phase

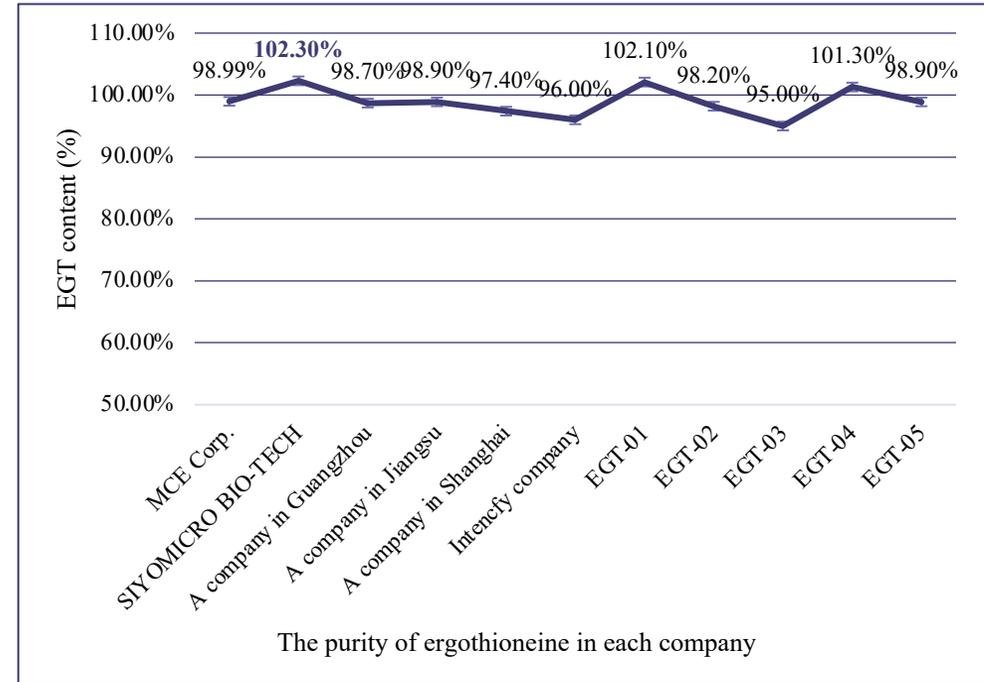
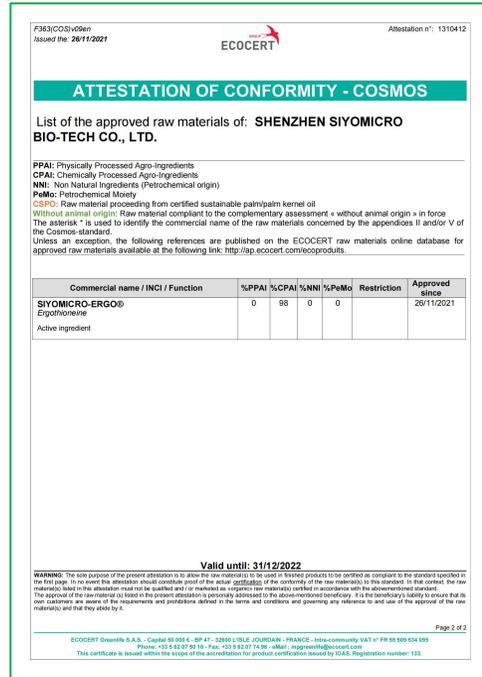
Sources of EGT

EGT can not be synthesized by human body, it can only be taken from diet.



In 1909, it was isolated from *Claviceps purpurea*, a fungus parasitic on rye; Then it was found that Actinobacteria, methyl bacillus, some fungi and cyanobacteria could synthesize EGT, but the content of EGT in large fungus mushroom was the highest, reaching 7 mg / g (dw); EGT can't be synthesized by plants and animals. Plants get EGT through root absorption or symbiosis with fungi, while animals get EGT from food.

Characteristics of EGT



COSMOS Certification

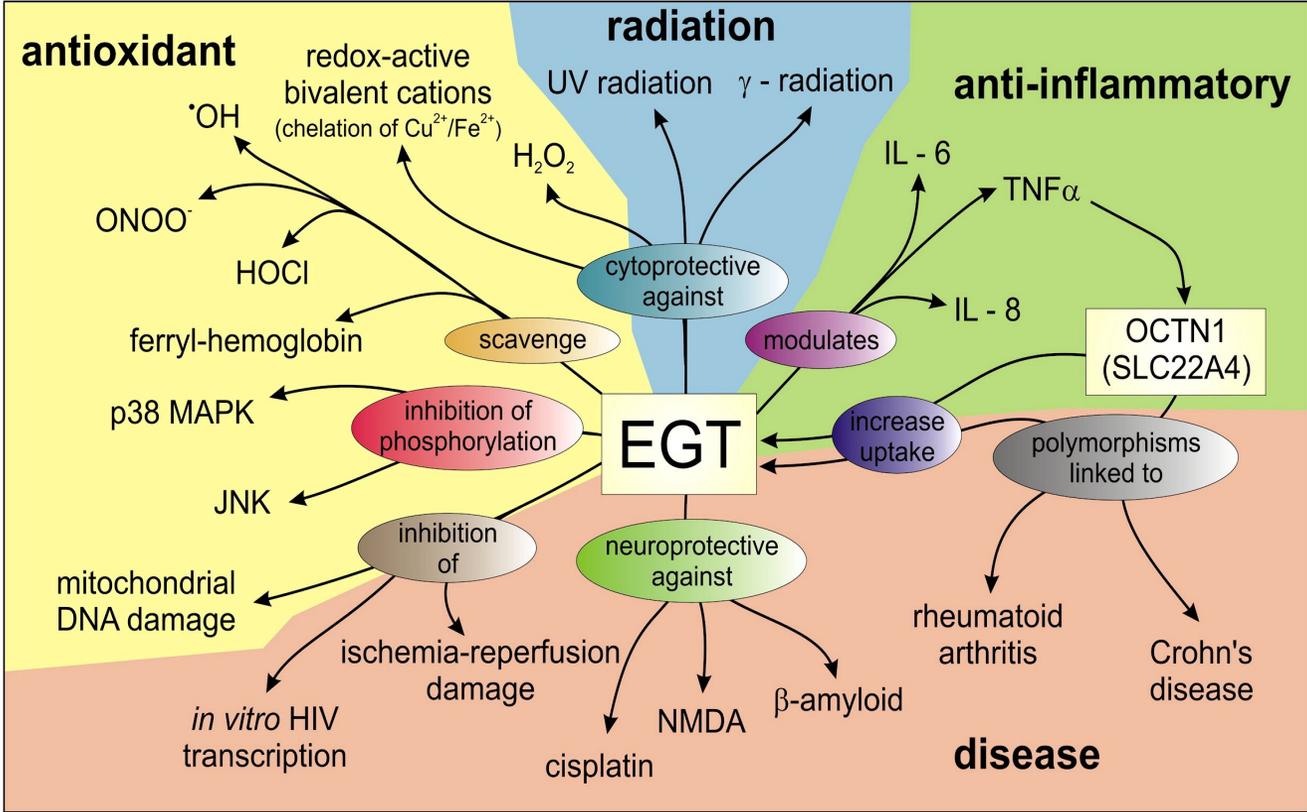
Highest purity in the market

Safe and Reliable

The raw material has been listed in the "China Existing Cosmetic Raw Material Catalog" (IECIC). On July 13, 2017, the European Commission authorized the introduction of L-ergothioneine as a new food ingredient.

Efficacy of EGT

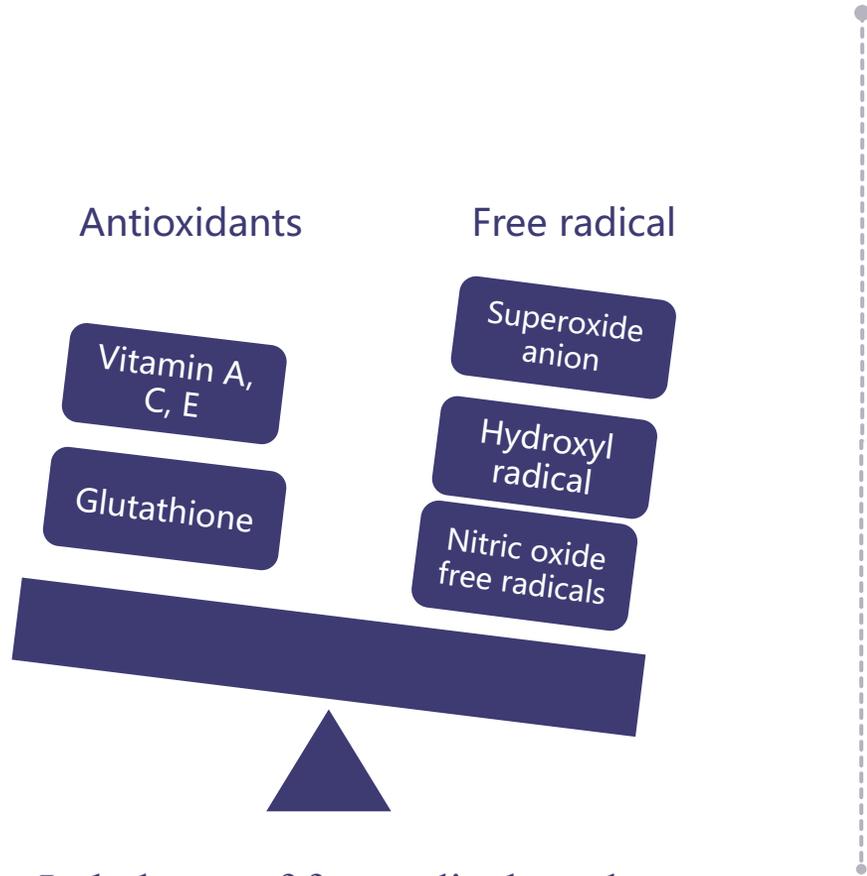
- ✓ Strong antioxidant capacity, can effectively eliminate a variety of free radicals
- ✓ Accelerating lipid oxidation
- ✓ Protect mitochondria from damage
- ✓ Resistance to ozone damage to cells
- ✓ Protect DNA from UV-A damage
- ✓ Inhibit the expression of TNF α and MMP-1 to prevent photoaging
- ✓ Anti aging and prevention of various diseases
- ✓ Cell protection



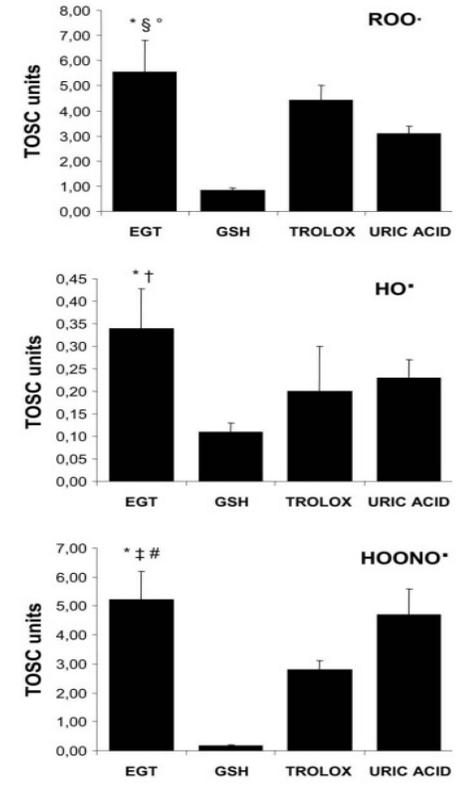
Long term oxidative stress response= aging



EGT has strong antioxidant capacity and can effectively scavenge a variety of free radicals.



Imbalance of free radicals and antioxidant capacity in the body

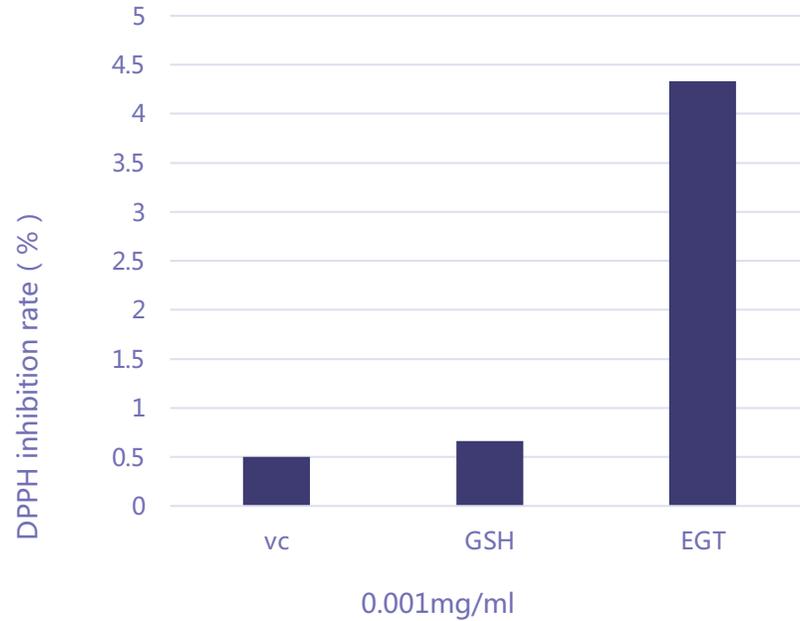


EGT: Ergothioneine
 GSH: Glutathione

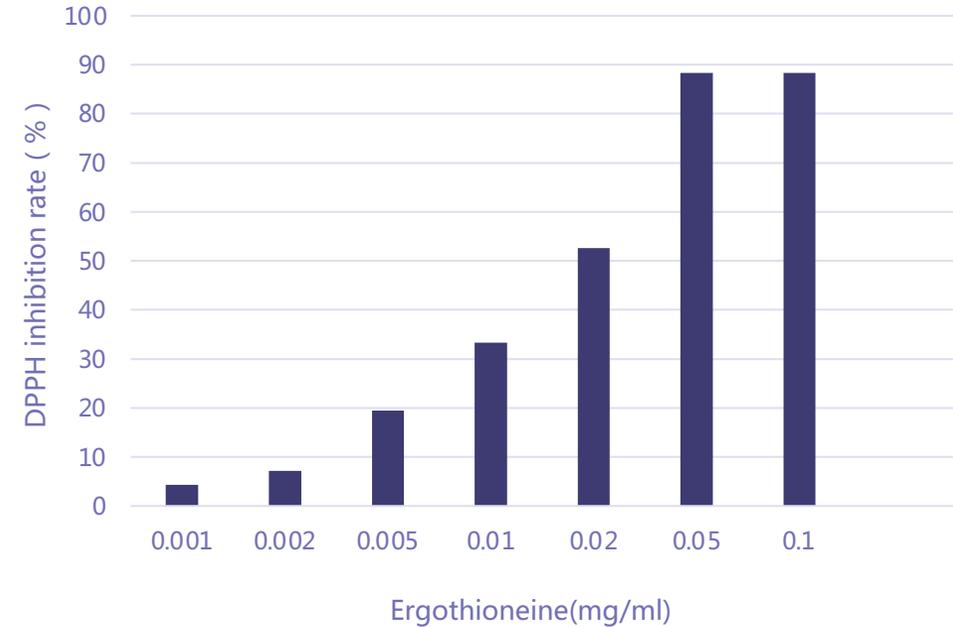
Comparison of the performance of several classic antioxidant substances

Compared with other antioxidants, EGT showed the strongest antioxidant capacity.

Antioxidant in vitro



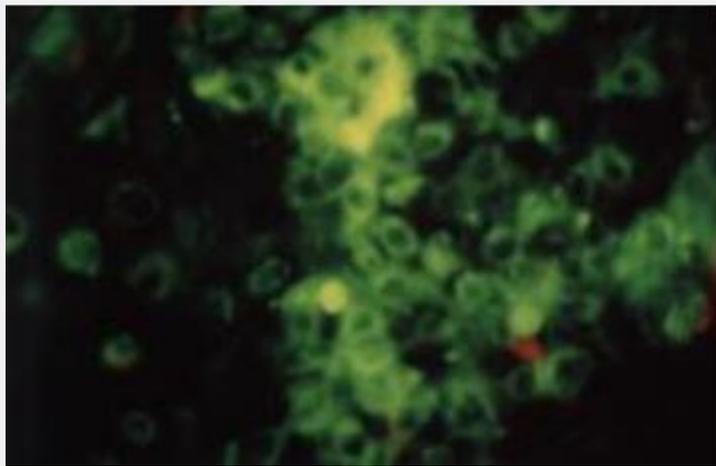
EGT is superior to VC and Glutathione(GSH) in scavenging DPPH free radical.



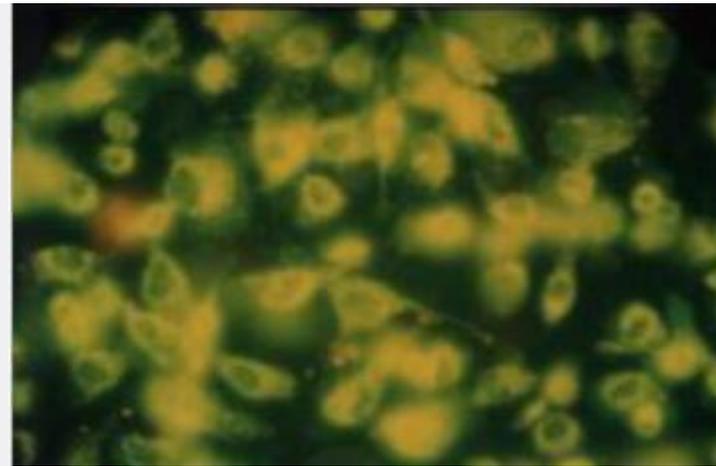
EGT takes effect at trace concentration. The DPPH inhibition rate of EGT increased with the increase of concentration.

PROTECTS THE MITOCHONDRIA

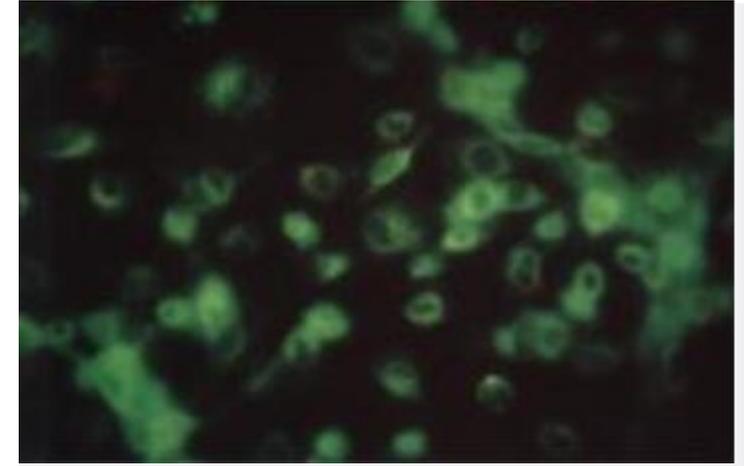
The main energy source of human cells is ATP, which is synthesized in large quantities with the utilization of fatty acids in mitochondria, and the generation of energy inevitably leads to the production of free radicals. Now medicine has proved that a large number of runaway free radicals are the main reason of human aging and various diseases (including cancer).



Keratinocytes stained with mitochondrial dye JC-1 are green.



Cells treated with alloxan, killing mitochondria with oxygen radicals, turn the cells yellow.



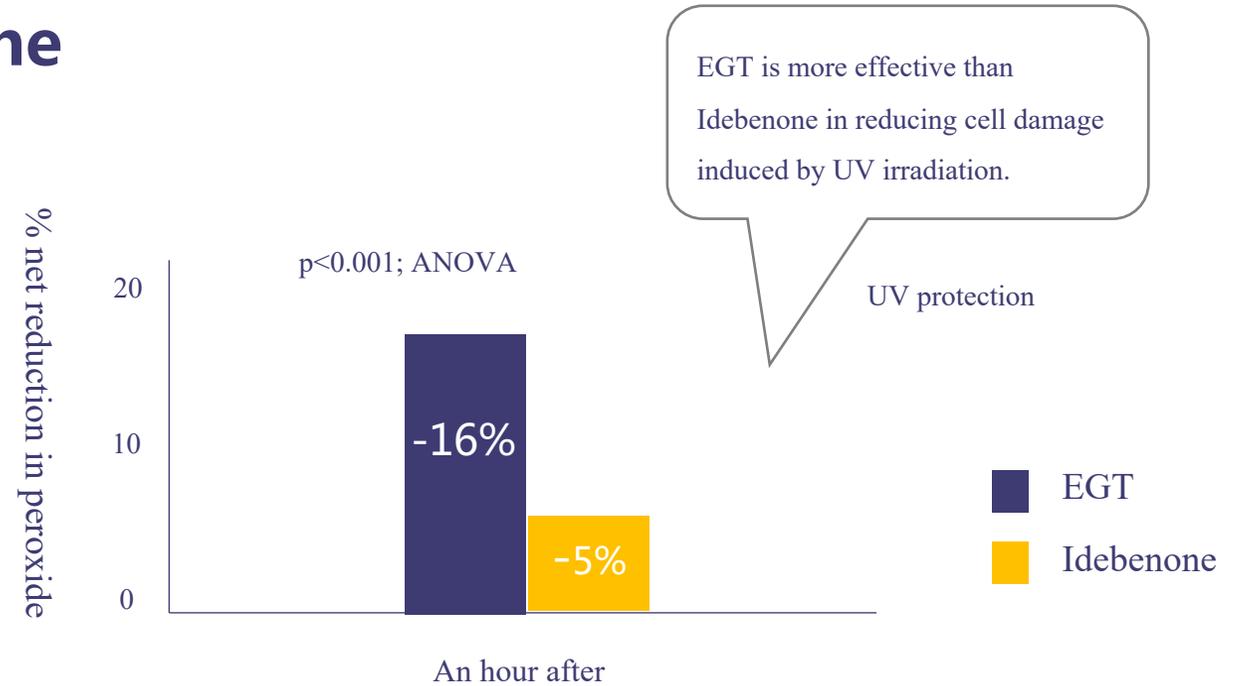
Cells treated with EGT and alloxan are protected and remain green.

EGT is stronger than Idebenone in scavenging peroxides and protecting cells.

Fibroblasts treated with Idebenone had a 5% reduction in peroxides after an hour of radiation.

EGT-treated fibroblasts showed a 16% reduction in peroxides after 1 hour of radiation.

Therefore, The antioxidant capacity of EGT is stronger than Idebenone



The chart shows the superiority of EGT over Idebenone for UV protection

Experimental conditions: simulated ultraviolet (100 KJ/ M2) treatment of fibroblasts; 10 μM EGT or idebenone

Anti-inflammatory

EGT has a significant anti-inflammatory effect.

Testing time: August 17, 2021

Testee: Zebrafish inflammatory embryo model

Test principle: The inflammatory response in humans and zebrafish occurs through the rapid accumulation of inflammatory cells.

The anti-inflammatory effect can be achieved by effectively inhibiting the aggregation of inflammatory cells.

Sample	Test	Concentration in Formula	Result	Efficacy
	Inhibition rate of inflammatory cells	0.05%	36% (p=0.00066)	Significant
		0.025%	47% (p=0.000026)	Significant
		0.005%	40% (p=0.0002)	Significant

Whitening

Testing time: August 17, 2021

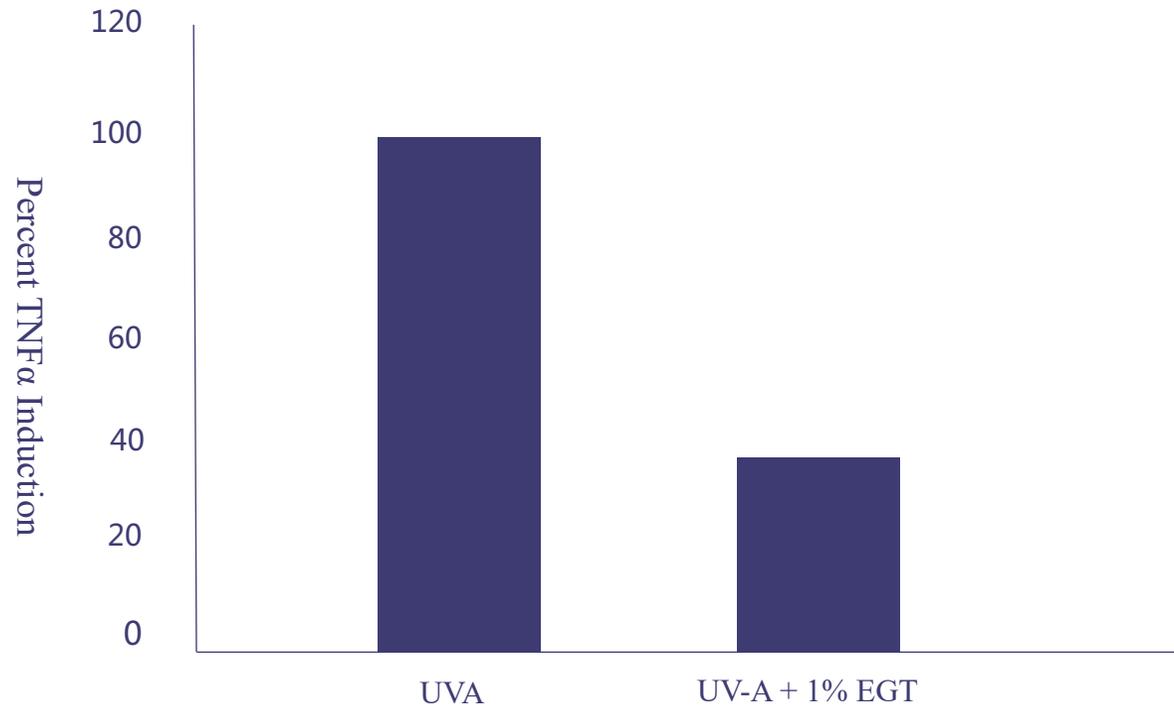
Testee: Zebrafish inflammatory embryo model

Test principle: Quantifying the inhibition rate of zebrafish embryo melanin under the same test conditions can effectively evaluate whether the sample has whitening effect. It has been proved to be highly consistent with clinical whitening test results.

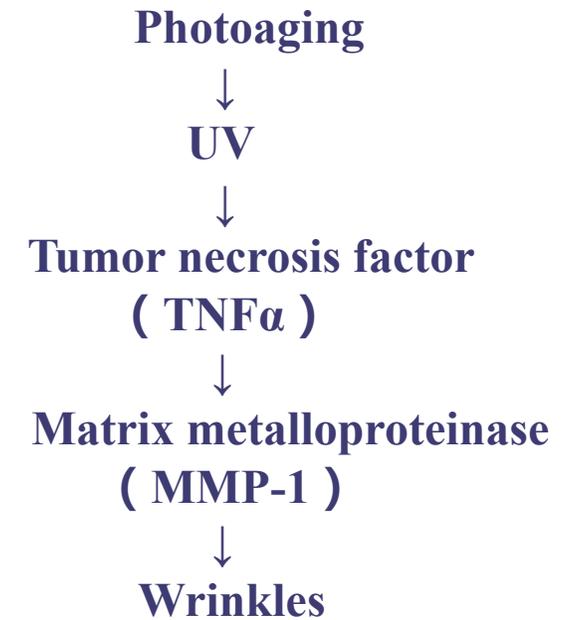
Concentration in Formula	Glutathione		Ergothioneine	
	Melanin inhibition rate	Efficacy assessment	Melanin inhibition rate	Efficacy assessment
0.05%	-3% (P=0.44)	non-significant	5% (P=0.032)	Significant
0.025%	4% (P=0.093)	non-significant	8% (P=0.00083)	Significant
0.005%	3% (P=0.23)	non-significant	9% (P=0.016)	Significant

Ergothioneine has a whitening effect, and the effect is more significant than that of Glutathione.

EGT reduces the expression of stress signaling genes.

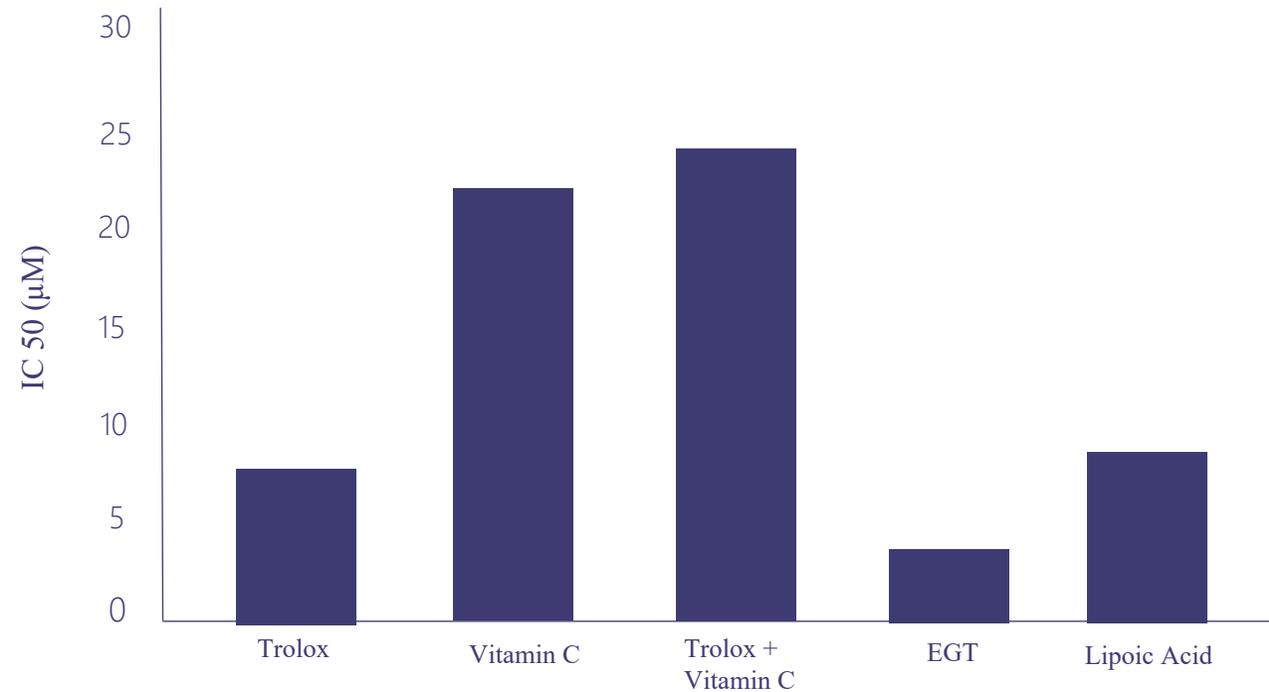


EGT reduces the release of the stress signal TNF- α .



Neutralize ozone

EGT is a “Shield” against ozone, helps eliminate the damage of ozone to the skin.



Amount in µM required to neutralize 50% of ozone (0.8 ppm)

EGT Application !



Estee Lauder Multi-effect Cream
Remove wrinkles and increase
elasticity



PROYA Rejuvenating Eye Cream
Reduce fine lines and dark circles



Clinique Skin Refresher Lotion
Moisturizing and soothing



Sesderma Body Lotion
Desalt melanin, Brighten skin color



Olityna Essence
Moisturize, Skin brightening



Lakelab Essence
Anti-oxidant, brighten skin tone

THANK YOU