Instructions

INCI name: Ectoin

Appearance: White or off-white crystals or powder

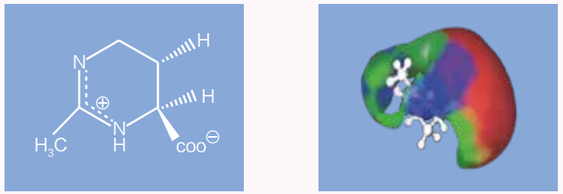
Recommended dosage: 0.1%-2%

Usage: Can be added directly to aqueous phase

Application: Skin care products, hair care products and color cosmetics. It brings functions of anti-stress, repairing, anti-inflammation, soothing, moisturizing and anti-aging.

Introduction

Bioecto™ is a highly pure Ectoine developed through a professional fermentation platform technology, with a high stability and safety profile. Ectoine is an amino acid derivative and belongs to the group of extremolytes. Tests prove that Bioecto™ has remarkable protective and repairing effects, helping the skin resist against external pressure. Bioecto™ can be widely used in personal care products such as repair, anti-pollution, sun care, anti-aging products and color cosmetic products.

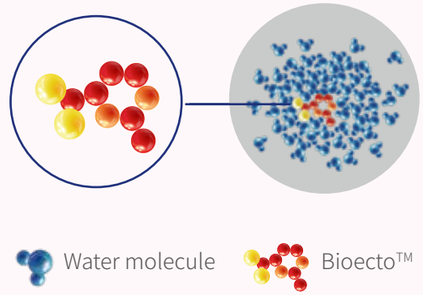


The molecular formula and electron distribution diagram of Ectoine

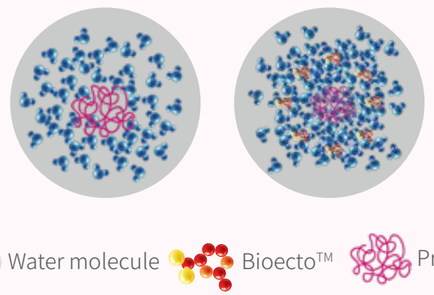
Action mechanism

Bioecto™ is easy to form hydrogen bonds with water molecules because of its great electronegativity. So Bioecto™ enhances the association of water molecules, makes water molecules orientate around them forming protection shells around cell membranes, DNAs, enzymes, proteins and other biomolecules, which is called "Kosmotropic effect".

Bioecto™ promotes the association of water molecules



Protection shell around protein

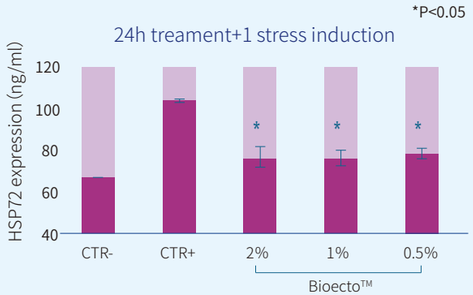


Protection & Anti-stress

1 Improves cells anti-stress ability and resists external pressure

Human skin cells produce heat-shock proteins (HSPs) when exposed to external stress like sun-radiation or other physical and chemical stress factors. When the cells were stimulated by heat, the expression of HSPs increased rapidly and gradually recovers to the normal level. The higher the final expression of HSPs, the more intense the stimulation was.

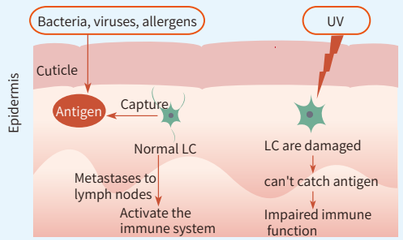
*P<0.05



The experimental results showed that the heat tolerance of cells was improved after the treatment with Bioecto™. Compared with the positive control group (CTR+), the HSP72 expression was significantly reduced.

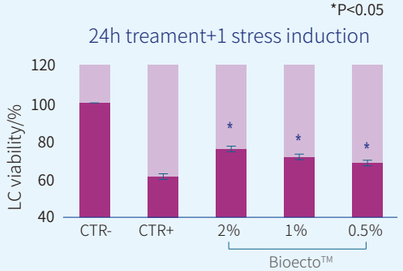
2 Protects Langerhans cell and enhances skin immunity function

Skin immune system activation mechanism



In normal skin, Langerhans cell (LC) can capture antigens and selectively induce the activation and proliferation of skin resident regulatory T cells to maintain normal skin immune tolerance. UV irradiation can reduce the number and density of LC and their ability to present antigens, resulting in a weakened skin immune function.

*P<0.05

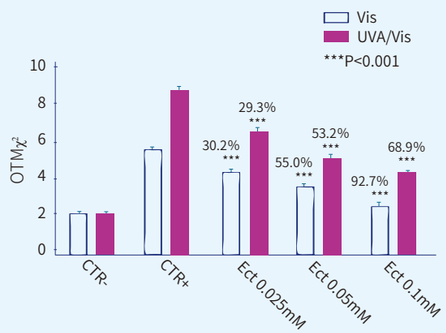


The tests showed that UV irradiation damaged Langerhans cells and reduced their activity. After the treatment with Bioecto™, the damage was significantly reduced. Compared to the positive control group, 1% Bioecto™ increased cell activity by 10.5% after 6 hours.

3 Prevents damage from UV and visible light

UV or visible light radiation can damage the DNA in skin cells to varying degrees, causing cancer in severe cases.

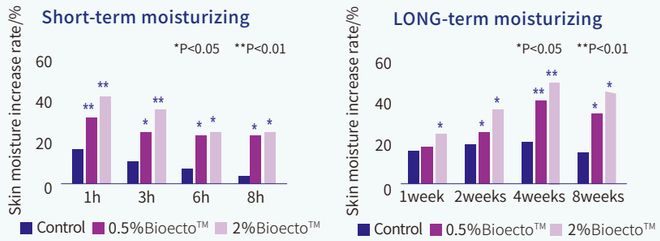
All the tested concentrations showed a highly significant level of photoprotection against UVA/visible light and visible light with a dose-response relationship. At 0.1 mM, the photoprotection levels of visible and UVA/visible irradiations correspond to 92.7% and 68.9%.



OTM: Olive tail moment, evaluation index of cell DNA damage degree

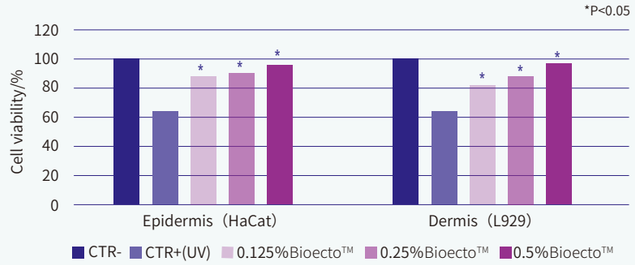
Repair & Anti-aging

1 Highly hydrophilic with long-term moisturizing ability



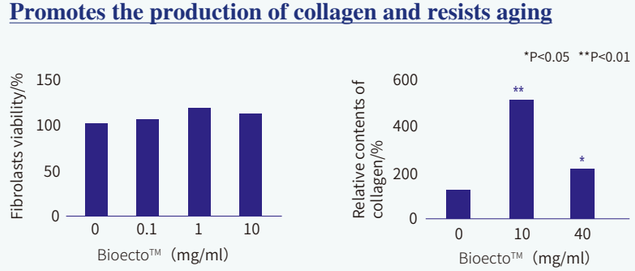
The test results showed that Bioecto™ can significantly increase the skin moisture content and has long-term moisturizing effects. After 1 hour of use 2% Bioecto™ cream, the skin moisture increased by 43.7%. After 4 weeks of continuous use 2% Bioecto™ cream, the skin moisture increased by 50.5%.

2 Repairs UV damage to skin cells



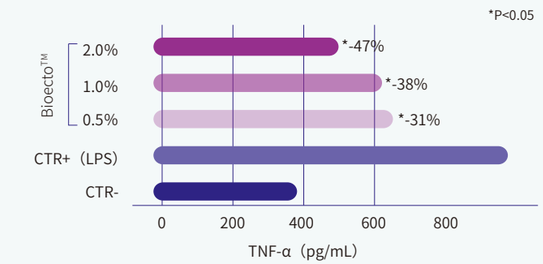
The test results showed that Bioecto™ had significant repair effect on cell damage caused by UV radiation, and the repair effect increased with the increase of concentration.

3 Promotes the production of collagen and resists aging



The test showed that a low concentration of Bioecto™ can significantly improve the activity of fibroblasts, stimulate the proliferation of fibroblasts, and promote the synthesis of collagen. 10m/gml Bioecto™ can increase the synthesis of collagen by almost five times.

4 Inhibits the release of inflammatory factor



The test showed that, Bioecto™ in the range of 0.5%-2.0% concentration had a good inhibiting effect on TNF-α, the inhibit rate of 0.5% Bioecto™ could reach to 31%.

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BLOOMAGE

Bioecto™ Ectoine

Natural, found in extremophiles
Multi-functional amino acid derivate
Protection & Anti-stress
Repair & Anti-aging

Prevents damage from UV and visible light

Protects Langerhans cell to enhance skin immunity function

Improves cells anti-stress ability

Resists external pressure

Repairs skin cells damaged by UV
Inhibits the release of inflammatory factors
Promotes the synthesis of collagen, anti-aging
Keeps skin hydration constantly

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