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Verperle®



Verperle®

Marine-based Green Caviar uniquely from Pacific Ocean

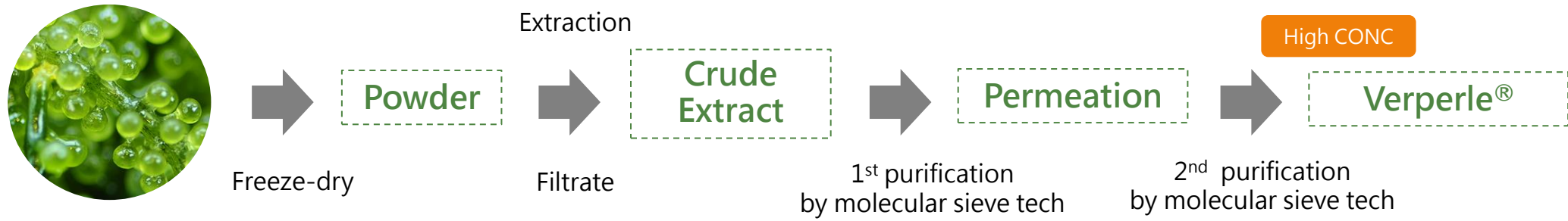
Verperle® extracted from *Caulerpa lentillifera* harvested in deep-ocean water in eastern coast of Taiwan via a pioneered green patented process, Molecular Sieve Technology. Green caviar contains 11 kinds of essential amino acids, microelements, unsaturated fatty acids, polysaccharides and vitamin B complex, etc. Verperle® is proved to powerfully inhibit allergy, reduce inflammatory and stimulate collagen production with no irritation and no sensitization.








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Green Extraction Process



◆ Comparison of Extraction Techniques

Molecular Sieve Tech	V.S	Traditional Extract
High 	Efficiency	Low
High 	Concentration Level of Active	Low
Low 	Temperature	Mostly high
No 	Harmful solvent	Mostly use
Safe to skin 	Irritation	Mostly irritate skin

-  Exclusive patented extraction technology is the first use in extracting natural plant
-  Preserve biological activity with low-temperature extraction process
-  Unique separation technology isolates highly pure active fraction from plant extract
-  Eco-friendly green extraction: Reduce energy consumption and low environmental impact

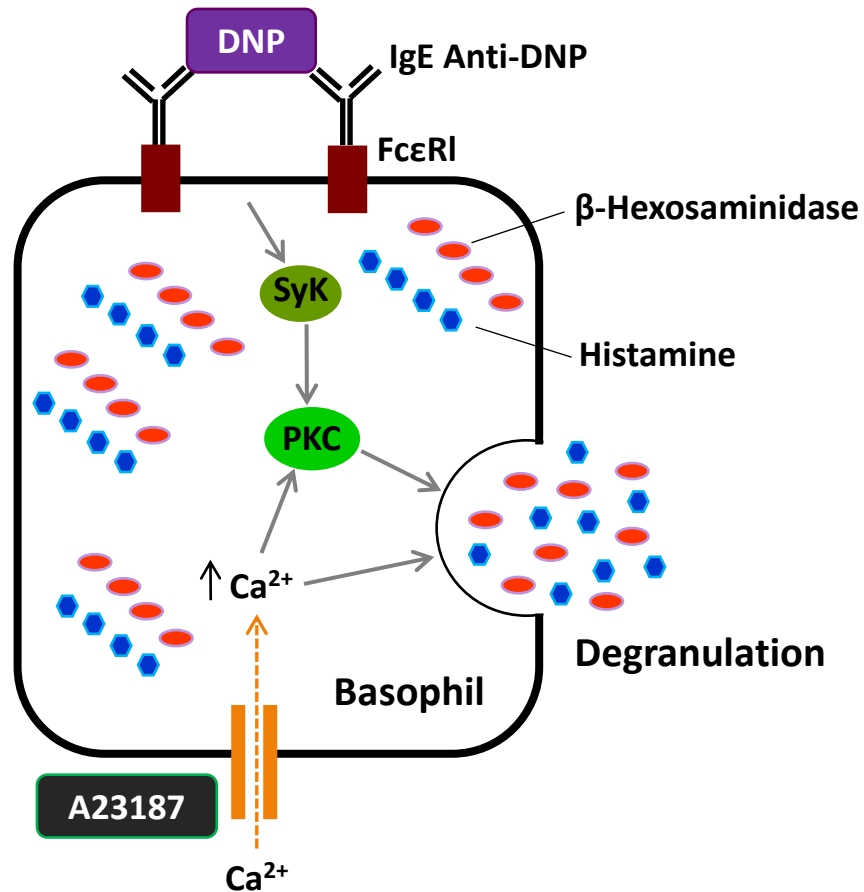
The Advantage of Deep-Sea Cultivation

- Deep sea water is defined as: hidden under 200 meters above the sea surface that cannot be reached by sunlight and is not subject to changes in the atmosphere and environment. It has the characteristics of low temperature, rich with nutrients, high purity, complete maturity, and sustainable regeneration. It is significantly different from general seawater.
- Deep Sea Water is particularly rich in nitrate (NO_3^- , NO_2^- , NH_4^+), This is what deep-sea algae cultivation is superior to general maricultural. Moreover, the temperature of deep seawater is lower than that of general seawater. With its constant cold temperature, blending with general seawater to balance water temperature at $20^\circ\text{C} \sim 25^\circ\text{C}$ suitable for algae growth. Deep-sea algae cultivation will be a great niche based on its abundant nutrients, low temperature and blendability features.

Effects of Deep Sea Water on Skin Diseases

Type of study model	Experimental method [subject (age/weight), treatment dosage, duration of treatment]	Major activity	Mechanism of action
In vivo study	Male NC/Nga mice (6 weeks), 2% concentrated DSW (CDSW) (7958.6 hardness), 10% CDSW (39793 hardness), 200 μ L of test samples, five times per week, six weeks	Reduced severity of symptoms in the skin lesions, such as edema, erythema, dryness, itching, and transepidermal water loss (TEWL). Decreased epidermal thickness and infiltration of inflammatory cells.	Inhibited upregulation of IgE, histamine, and proinflammatory cytokines (TNF- α , IL-1 β , and IL-6) in the serum. Downregulated CD4+/CD8+ ratio in spleen lymphocyte by 10% CDSW. Reduced the expression of IL-4 and IL-10 from Th2 cells in the 10% CDSW-treated group.
Clinical study	33 patients (mean age 26 years, range 1–50 years, 13 male and 20 female subjects), DSW 1000 hardness, 500 ml/day, 6 months	Improved skin symptoms. Balanced certain minerals in the body.	Improved skin symptoms such as inflammation, lichenification, and cracking in skin. Restored essential minerals such as Se and reduced the level of toxic minerals such as mercury and lead.
Clinical study	50 patients with allergic rhinitis (age 22–50 years), DSW 1000 hardness, 500 ml/day, 3 weeks	Improved skin symptoms.	Reduced allergic skin responses and serum levels of total IgE, Japanese cedar pollen-specific IgE, IL-4, IL-6, IL-13, and IL-18.

The Mechanism of Allergic Inflammation

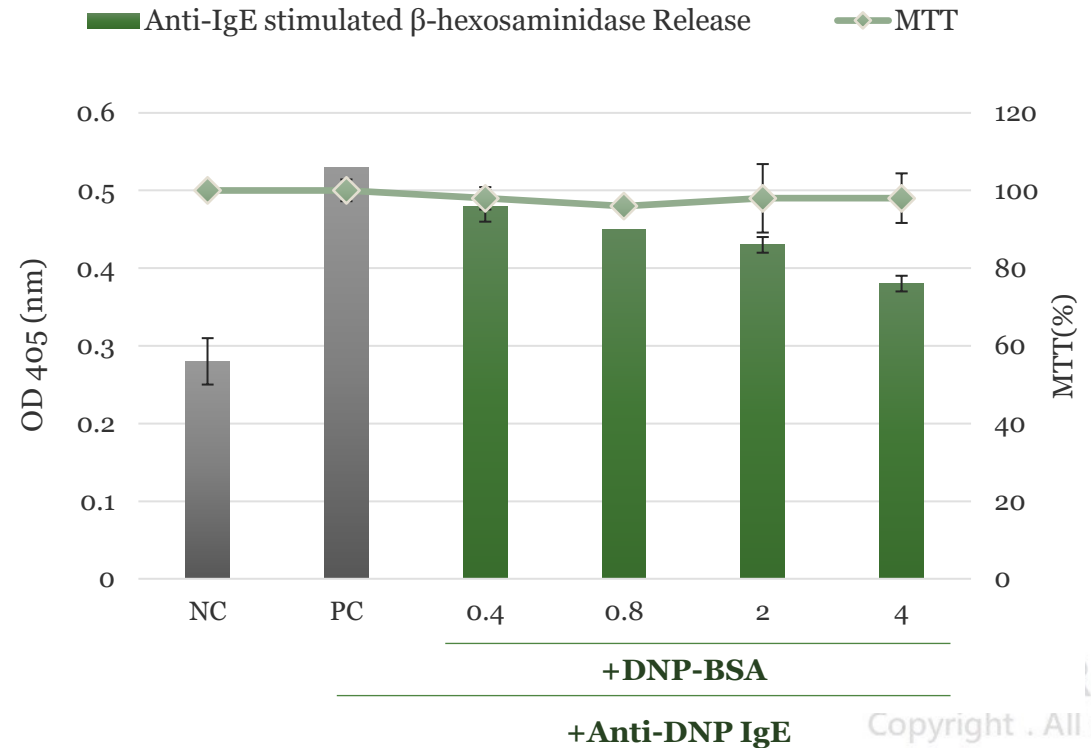
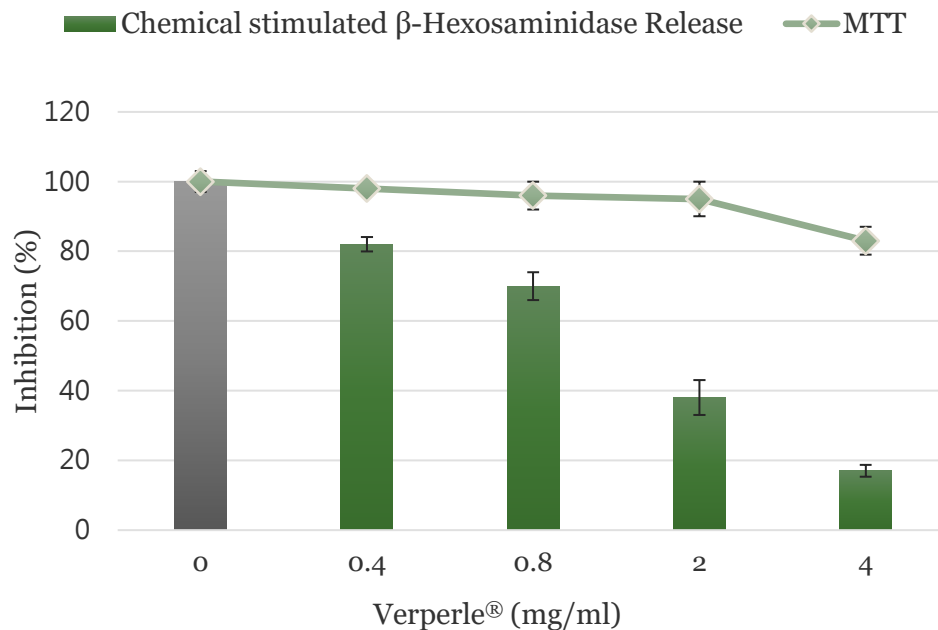


- When the skin first contact with allergen, it activates the immune system in the body and makes IgE bond to mast cells, causing sensitization, but it won't trigger an allergic reaction immediately.
- When exposed to the same allergen again, IgE will cause mast cells to release inflammatory mediators (such as histamine), resulting in degranulation, causing allergic desquamation, redness, swelling, itching, fever, and tingling and other phenomena.
- Since histamine is often released together with β -hexosaminidase, the value of β -hexosaminidase is often used as a biochemical indicator to detect whether an allergy occurs.

Verperle[®] - Cell Degranulation assay (*in vitro*)

Powerful β -hexosaminidase Inhibition Efficacy

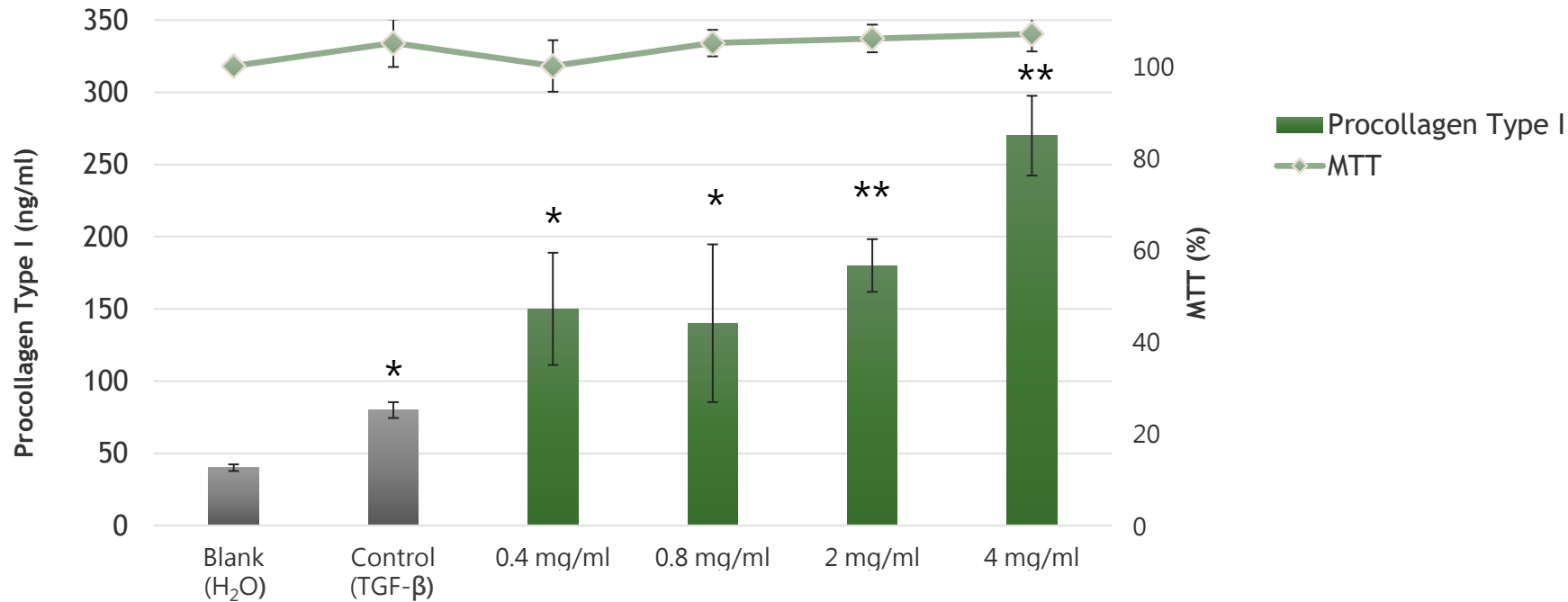
- The result from Cell Degranulation Assay by using the Mast Cell activation test shown, Verperle[®] can inhibit β -hexosaminidase release induced by anti-IgE without cytotoxicity. The higher the concentration, the more obvious the effect of anti-allergic reaction.



Verperle[®] - Anti-aging Effect Evaluation (*in vitro*)

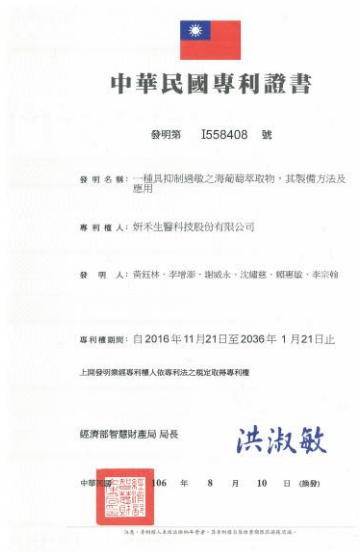
80% Increases Production of Procollagen Type I

- Verperle[®] specifically increases production of procollagen type I without cytotoxicity effect. Compare with blank group, Verperle[®] with 4mg/ml increases collagen production by 80%.



Patent Certificate

- Patent: Allergy-inhibiting sea grape extract, its preparation method and application thereof



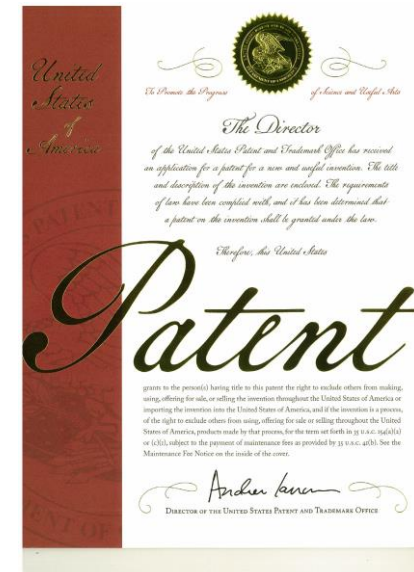
Taiwan
NO. I558408



Japan
NO. 6198082



Korea
NO. 10-1883543



USA
10561692 B2

* Patent pending: China, EU



Verperle®

- Anti-allergy, Anti-aging (*in-vitro test*)
- No skin irritation, no skin sensitization
- No phototoxicity, no photosensitivity
- Passed heavy metals and microbial test
- Patent certificate: Taiwan, Japan, Korea, USA; Patent pending: China, EU
- Assigned an INCI name in 2013
- COSMOS - Natural Certified



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Verperle®

INCI NAME	Caulerpa Lentillifera Extract
Form	Liquid
Appearance	Clear and light yellow
pH Value	6.0~8.0 , at 25°C
Dosge	2%~10%
Storage	Storage at room temperature. Avoid direct light exposure.



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