



ocean actives

Palmocrude 'P

The Natural Red Algae Extract



Palmocrude 'P – the Natural Red Algae Extract.

Palmocrude 'P, an aqueous extract of the red alga *Palmaria palmata*, offers remineralizing, revitalizing and cytoprotective properties of cosmetics and hair care products. In addition to the ubiquitous sea minerals and trace elements the extract contains the valuable ingredients and skin-care substances of red algae - including algae characteristic sugars and antioxidants - in bioavailable form. The mycosporine-like amino acids (MAA), complement the natural UV protection with antioxidant effects of polyphenols and, thus, provide synergistic interaction for long-term cell protection. Additionally, the extract promotes the formation of cell matrix proteins.

Active Ingredients

Various ingredients of seaweed extracts protect the skin and have a positive effect on certain properties of the skin:

- UV protection by special phenols (phlorotannins), carotenoids, the enzyme photolyase and mycosporine-like amino acids (MAA)
- basic skin protection by radical scavengers such as tocopherols, polyphenols, -carotene (vitamin A) and other carotenoids that stimulate the immune system
- hydrating and moisturizing the skin by (sulfated) polysaccharides and mucopolysaccharides (glycosaminoglycans)
- skin smoothing and regeneration through essential and non-proteino-genic amino acids and highly unsaturated fatty acids
- stimulation of cell matrix protein synthesis

The combination of antioxidants and UV protecting amino acids enhance the overall effect synergistically.

Mycosporine-like Amino Acids

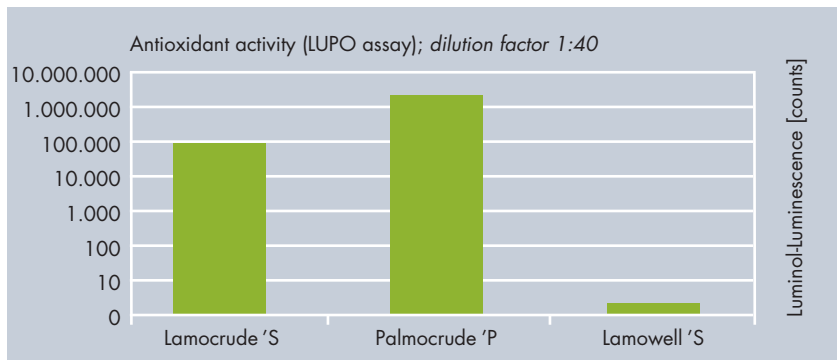
Various algae, but also other marine organisms, contain the so-called mycosporin-like amino acids (MAA) with UV-absorbing properties which act as a “natural sunscreen”. The red alga *Palmaria palmata* contains the MAAs porphyra-334 and palythine in relatively high concentrations.

Palythine with its absorption maximum at 320 nm acts as a classical UV-B absorber. MAAs also stimulate the supply of oxygen to the skin while protecting against oxygen radicals.

Certification

Palmocrude 'P exclusively contains nature-identical preservatives and is certified according to NATRUE guidelines for natural cosmetics. It is therefore suitable for use in natural cosmetic products.





Antioxidant Activity

The three algae extracts of oceanBASIS were studied with novel measurement methods on the antioxidant properties. The analysis using LUPO assay (luminol converting peroxidase) showed an extremely high level of peroxidase activity in the red algae extract Palmocrude 'P. Peroxidases are enzymes that detoxify certain oxygen radicals (peroxides) and protect the skin from oxidative stress. This test is different to other antioxidant tests (TEAC, ORAC) because only the enzymatic capacity is measured. The red algae extract shows an approximately 30-fold higher potential than a comparable brown seaweed extract.

Effect on Skin Cells

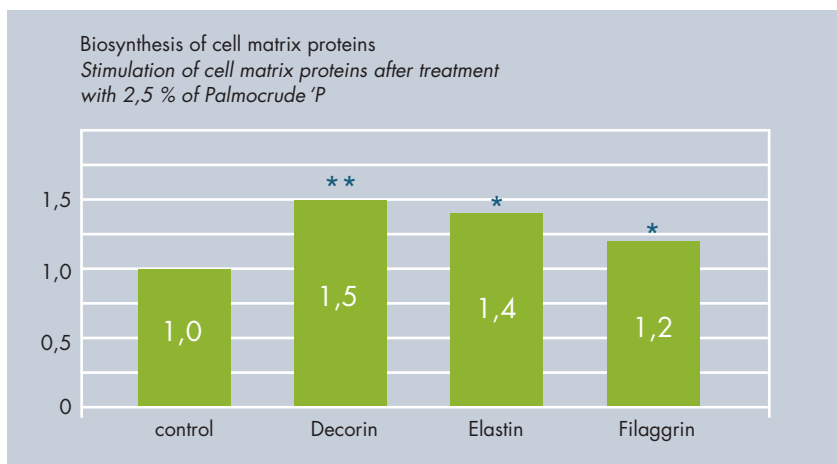
In-vitro tests with human skin cells show a significant stimulation of the cell matrix proteins decorine, elastine, and filaggrin after treatment with 2.5% Palmocrude 'P. The strength of the effect is comparable to that of hydrocortisone and dexamethasone, but without the undesirable side effects.

Characteristics:

INCI Description	PALMARIA PALMATA EXTRACT
INCI Function	skin protecting
USP	<ul style="list-style-type: none"> - natural UV filter - antioxidant properties - NATRUE certified
Core Statements	<ul style="list-style-type: none"> - antioxidant peroxydases - stimulates generation of cell matrix proteins - UV protecting amino acids - algae from sustainable sources
CAS No.	223751-74-4
EINECS No.	—
Organism	<i>Palmaria palmata</i> (alga)
Condition	liquid
Color	pink to red, clear
Odor	characteristic, seaweed-like
pH Value	5,0–5,8
Iodide	< 50 mg/l
CFU	< 100 cfu/g
Recommended Concentration	1–5%
Preservation	benzoate, sorbate, ascorbic acid
Solubility	unlimited soluble in water
Storage Information	12 months at max. +20°C (+68°F)

Advantage/Effect:

- protects against UV stress
- protects against free radicals
- stimulates the formation of cell matrix proteins
- regenerates sustainably



Palmocrude 'P – the natural red algae extract with cell-protecting amino acids and antioxidant peroxidases.



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Position:

sea. The sea is source of our inspiration and our products. It keeps immense treasures of substances that we want to make accessible to people without damaging this sensitive habitat.

science. The research and development of marine resources for health and well-being is our priority. We do research on natural and environmentally friendly products.

solutions. Solutions to the problems of our time, return to the values of nature and protection of ocean habitats are central to our efforts.

Business Segments:

ocean actives: NATRUE-certified extracts from marine organisms for cosmetics and hair care products, cultivation of brown algae *Laminaria saccharina* in the first certified organic offshore seaweed farm in Germany

ocean biotech: Research and development of marine drugs for medical applications

ocean cosmetics: Certified natural cosmetics, toiletries and algae based drinks



Literature

Yuan YV, Carrington MF, Walsh NA (2005), **Extracts from dulse (*Palmaria palmata*) are effective antioxidants and inhibitors of cell proliferation in vitro.** *Food Chem Toxicol.* 2005 Jul;43(7):1073-81. | Prasher SO, Beaugeard M, Hawari J, Bera P, Patel RM, Kim SH (2004), **Biosorption of heavy metals by red algae (*Palmaria palmata*),** *Environ Technol.* 2004 Oct;25(10):1097-106. | Schmid D, Schürch C, Züllig F, Nissen HP, Prieur H (2003), **Mycosporine-like amino acids: Natural UV-screening compounds from red algae to protect the skin against photoaging,** *SÖFW-Journal*, 129. Jahrgang 7-2003