

# ADVANCED COSMETIC ACTIVE AGENTS

*based on the power of algae*



*“God created seaweed ... The seaweeds made the world “*

John B. KEANE, Irish writer



Unique range of 34 innovative active ingredients with efficient assays for specific cosmetic activities



in majority approved by ECOCERT GREENLIFE, conform to the COSMOS STANDARD and compliant with the Chinese regulation













and/or







China compliant  
List 2015





Trade names	Characteristics and benefits	Use levels
<b>SKIN AGEING – ANTI WRINKLING</b> to reduce the appearance of fine lines & wrinkles and improve firmness		
<p><b>ACTISEANE®</b></p> 	<p style="text-align: center; background-color: #d9e1f2;"><b>Unique synergistic combination of algal growth substances</b></p> <p><u>Description</u> <i>Mixture of two calibrated extracts obtained from brown seaweeds selected for their resources in several plant growth substances e.g. auxins, gibberellins, cytokines, abscisic acid and betaines. Phytohormones are not similar to flavonoid plant estrogens.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Boosts skin metabolism for epidermal restructuring, dermal reinforcement and increased mitochondrial activity.</li> <li>➤ Protects against UVB known to induce the formation of sun burn cells and accelerate premature extrinsic aging.</li> <li>➤ Inhibits elastase, the enzyme which breaks down elastin in the skin.</li> <li>➤ Inhibits hyaluronidase, thereby helps reduce skin dryness.</li> <li>➤ Modulates cytokine balance:                         <ul style="list-style-type: none"> <li>➔ IL-6 stimulation that strengthens wound healing</li> <li>➔ IL-1<math>\alpha</math> inhibition that soothes inflammation.</li> </ul> </li> </ul> <p><u>Benefits</u> Ideal ingredient for care products intended for overstretched, tired or mature skin characterized by decreased thickness, dryness and signs of photoaging.</p> <p><b>INCI names:</b> water (and) <i>Ascophyllum nodosum</i> extract (and) <i>Halopteris scoparia</i> extract.</p>	<p><b>PATENTED</b></p> <p>1% - 4%</p>   
<p><b>FIRM'ACT®</b></p> 	<p style="text-align: center; background-color: #d9e1f2;"><b>Targets adaptive defensive stress response through hormesis based-prevention</b></p> <p><u>Description</u> <i>Complex of two brown seaweeds calibrated extracts with a specific extract of Saccharomyces cerevisiae supplemented with selenium in culture. Himanthalia elongata provides minerals and anti-oxidant properties. Fucus vesiculosus brings polyphenols and fucoïdan, so it supports anti-ageing effects and comforts the anti-oxidant properties of Himanthalia elongata.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Targets adaptive defensive stress response through hormesis-based prevention to reinforce cell detoxification and protect from harmful environments, thereby maximizes cellular adaptation for a better skin preparation against aggressor's damage.</li> <li>➤ Strengthens the dermal structure to boost the extracellular matrix maintenance:                         <ul style="list-style-type: none"> <li>➔ stimulation of fibroblast proliferation</li> <li>➔ stimulation Type I collagen synthesis</li> <li>➔ stimulation hyaluronic acid synthesis.</li> </ul> </li> </ul> <p><b>Clinical studies &amp; Consumer evaluation</b></p> <ul style="list-style-type: none"> <li>➤ Increases skin antioxidant capacity and protects skin against UV-induced.</li> <li>➤ Delays facial skin sagging and increases skin firmness &amp; elasticity.</li> </ul> <p><u>Benefits</u> Effective agent capable to elicit efficient stress response for healthy and younger looking face.</p> <p><b>INCI names:</b> water (and) <i>Himanthalia elongata</i> extract (and) <i>Fucus vesiculosus</i> extract (and) <i>Saccharomyces cerevisiae</i> extract.</p>	<p>3% - 5%</p> 





<p><b>DERMOCEA®</b></p> 	<p style="text-align: center;"><b>Innovative association of two red alga for a plumper and firmer skin</b></p> <p><b>Description</b> <i>Combination of sucrose with two calibrated red seaweeds extracts from Meristotheca dakarensis, endemic species from Senegal and Jania rubens from the Mediterranean.</i></p> <p><b>Substantiated efficacy</b></p> <ul style="list-style-type: none"> <li>➤ Acts on several levels synergistically, both the epidermis and the dermis.</li> <li>➤ Restructures the epidermis to reinforce skin integrity: <ul style="list-style-type: none"> <li>→ stimulation of keratin K 14 expression.</li> </ul> </li> <li>➤ Reduces saggy skins to enhance skin moisture, restore skin volume and increase skin firmness of the dermal tissues through: <ul style="list-style-type: none"> <li>→ activation of the synthesis of GAGs, collagens I &amp; III</li> <li>→ inhibition of MMP-1 activity</li> <li>→ inhibition of hyaluronidase activity.</li> </ul> </li> </ul> <p><b>Benefits</b> Innovative marine approach for the prevention and treatment of the major signs of ageing.</p> <p><b>INCI names :</b> water (and) sucrose (and) <i>Meristotheca dakarensis</i> extract (and) <i>Jania rubens</i> extract.</p>	<p>0.5% - 2%</p>  
<p><b>OKINACEA®</b></p> 	<p style="text-align: center;"><b>The anti-ageing power behind Green caviar / Sea grape a delicacy in Okinawa, the Japanese Island of centenarians</b></p> <p><b>Description</b> <i>Calibrated active agent obtained from Green Caviar, also known Sea grape, associated with hydrolyzed rice proteins.</i></p> <p><b>Substantiated efficacy</b></p> <ul style="list-style-type: none"> <li>➤ Reinforces the stability of the dermal epidermal junction (DEJ), thereby guarantees efficient functionality and integrity between the epidermis and the dermis: <ul style="list-style-type: none"> <li>→ activation of Type IV collagen and laminin-V synthesis.</li> </ul> </li> <li>➤ Ameliorates skin firmness to reinforce the dermal structure: <ul style="list-style-type: none"> <li>→ increase of GAGs and Type I collagen synthesis.</li> </ul> </li> </ul> <p><b>Clinical studies</b></p> <ul style="list-style-type: none"> <li>➤ Reduces skin roughness - anti-wrinkle activity.</li> </ul> <p><b>Benefits</b> All the power of Green caviar for limiting the ageing process.</p> <p><b>INCI names :</b> water (and) <i>Caulerpa lentillifera</i> extract (and) Hydrolyzed Rice Bran protein.</p>	<p>1% - 5%</p>  
<p><b>TONIKELP®</b></p> 	<p style="text-align: center;"><b>Age-defying strategy</b></p> <p><b>Description</b> <i>Association of a calibrated extract prepared from the Giant Kelp <i>Macrocystis pyrifera</i> with an hydrolyzed yeast extract to offer a rich composition in essential nutrients e.g. amino acids and minerals.</i></p> <p><b>Substantiated efficacy</b></p> <ul style="list-style-type: none"> <li>➤ Saves your skin from premature ageing via over-expressing key genes coding for: <ul style="list-style-type: none"> <li>→ mitochondrial SOD2 ⇒ stimulation of detoxification</li> <li>→ HAS-2 enzyme ⇒ production of hyaluronic acid</li> <li>→ GADD45A ⇒ control of DNA repair</li> <li>→ FGF7 ⇒ action for epidermal renewal &amp; wound healing</li> <li>→ Type III collagen synthesis ⇒ maintenance of skin elasticity</li> <li>→ syndecan 4 synthesis ⇒ stabilization of cell-extracellular matrix adhesion.</li> </ul> </li> </ul> <p><b>Consumer evaluation</b></p> <ul style="list-style-type: none"> <li>➤ Backs up skin feeling and healthy younger appearance.</li> </ul> <p><b>Benefits</b> Perfect solution for minimizing the appearance of skin ageing.</p> <p><b>INCI names :</b> water (and) <i>Macrocystis pyrifera</i> extract (and) Hydrolyzed yeast extract.</p>	<p>1% - 5%</p>   

**EYE CONTOUR CARE**  
with clever triple action on fine lines, eye puffiness and dark circles







<p><b>PHYCO'DERM®</b></p> 	<p align="center"><b>Takes care of the delicate area around the eyes</b></p> <p><u>Description</u> <i>Combination in a glycerin excipient of two extracts prepared from the brown seaweed <i>Undaria pinnatifida</i> rich in fucoïdan and the red seaweed <i>Corallina officinalis</i> rich in minerals.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Stimulates the major defense systems to increase resistance against stressors:             <ul style="list-style-type: none"> <li>➔ protection against microbial infections &amp; associated inflammation</li> <li>➔ prevention against oxidative stress</li> <li>➔ regulation of cellular redox state &amp; reinforcement of detoxification.</li> </ul> </li> <li>➤ Improves dermis properties to reverse skin ageing:             <ul style="list-style-type: none"> <li>➔ stimulation of fibroblast proliferation and Type I collagen synthesis</li> <li>➔ up-regulation of genes involved in cell adhesion and hyaluronan synthesis</li> <li>➔ down-regulation of MMP 1 - MMP 14 - MMP 11 genes.</li> </ul> </li> </ul> <p><u>Clinical studies</u></p> <ul style="list-style-type: none"> <li>➤ Attenuates fine lines and wrinkles of crow's feet.</li> <li>➤ Minimizes the appearance of dark circles under the eyes.</li> <li>➤ Reduces the volume of under-eye bags to alleviate puffiness.</li> </ul> <p><u>Benefits</u> Powerful marine pathway to fight against the visible global fatigue of eye contour.</p> <p><b>INCI names :</b> water (and) glycerin (and) <i>Undaria pinnatifida</i> extract (and) <i>Corallina officinalis</i> extract.</p>	<p align="center">3% - 5%</p>   
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**SKIN HYDRATION**  
to maintain skin hydration & water balance






<p><b>MIRUAL®</b></p> 	<p align="center"><b>Marine moisturizer &amp; cell protector</b></p> <p><u>Description</u> <i>Calibrated agent obtained from <i>Codium fragile</i>, a green macroalga used in traditional Asian medicine.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Nourishes the skin and helps to reconstitute the NMF.</li> <li>➤ Invigorates cell metabolism.</li> <li>➤ Adapts its behaviour to free radical protection.</li> </ul> <p><u>Clinical studies</u></p> <ul style="list-style-type: none"> <li>➤ Improves skin hydration.</li> </ul> <p><u>Benefits</u> Ideal marine solution with dual-action: hydration and antioxidant protection for skin youthfulness maintenance.</p> <p><b>INCI names :</b> water (and) <i>Codium fragile</i> extract.</p>	<p align="center">1.25% - 10%</p>   
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<p><b>SEA MOIST COMPLEX®</b></p> 	<p align="center"><b>Fights back against dry skin to replenish depleted moisture</b></p> <p><u>Description</u> <i>Combination of the red alga <i>Kappaphycus alvarezii</i> with sea water in a glycerin excipient.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Synergistic action with glycerin to provide the suitable level of moisture:             <ul style="list-style-type: none"> <li>➔ reinforcement of the hydration properties of glycerin.</li> </ul> </li> <li>➤ Ameliorates the epidermal biosynthetic functions of dry skin.</li> </ul> <p><u>Clinical studies</u></p> <ul style="list-style-type: none"> <li>➤ Improves hydration in dry skin.</li> </ul> <p><u>Benefits</u> Potent moisturizer to maintain the skin hydration state all day long.</p> <p><b>INCI names :</b> glycerin (and) water (and) <i>Kappaphycus alvarezii</i> extract (and) sea water.</p>	<p align="center">1% - 5%</p>   
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**SKIN BARRIER**  
to minimize TEWL & roughness

<p><b>ALGOMEGA NP®</b></p> 	<p align="center"><b>Strengthens the skin's barrier function</b></p> <p><u>Description</u> Synergistic combination of liposoluble fractions extracted from the green microalga <i>Nannochloropsis oculata</i> and the red macroalga <i>Porphyra umbilicalis</i> in a natural botanical virgin seed oil from <i>Silybum marianum</i>.</p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Re-equilibrates lipid deficient skin due to its balanced composition in polyunsaturated fatty acids (omega-3 and omega-6).</li> <li>➤ Reduces TEWL, thereby reinforces the skin barrier function.</li> <li>➤ Decreases skin desquamation.</li> <li>➤ Guarantees full cell membrane functionality after barrier function damage.</li> </ul> <p><u>Clinical studies</u></p> <ul style="list-style-type: none"> <li>➤ Improves skin hydration and reduces water loss.</li> </ul> <p><u>Benefits</u> Functional agent that helps skin built its natural barrier function.</p> <p><b>INCI names :</b> <i>Silybum marianum</i> seed oil (and) <i>Nannochloropsis oculata</i> extract (and) <i>Porphyra umbilicalis</i> extract.</p>	<p align="right">3% - 5%</p>  
<p><b>ALGYL®</b></p> 	<p align="center"><b>Marine guardian of skin barrier functionality</b></p> <p><u>Description</u> Unique complex of three red macroalgae extracts in synergism with glycerin.</p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Reinforces the outside-in barrier to improve the structural basis of the <i>stratum corneum</i>: <ul style="list-style-type: none"> <li>→ up-regulation of key biomarkers genes involved in <ul style="list-style-type: none"> <li>◆ keratinocyte differentiation: ZNF-50 - involucrin - stratifin - filaggrin</li> <li>◆ sphingolipid metabolism: SMPD1 - SPTLC1</li> <li>◆ desquamation kallikreins: KLK7 - KLK5</li> <li>◆ keratinocyte proliferation during epidermis formation syndecans: SDC1 - SDC4</li> <li>◆ epidermal recovery after stress/ageing conditions</li> </ul> </li> <li>→ stimulation of involucrin synthesis (immunolabeling on irradiated skin human explants).</li> </ul> </li> <li>➤ Strengthens the inside-out barrier: <ul style="list-style-type: none"> <li>→ up-regulation of desmosomes proteins to improve cellular cohesion</li> <li>→ up-regulation of tight junctions components: CLDN 1 - CLDN 4 - CLDN 7- OCLN</li> <li>→ stimulation of claudin-4 synthesis (immunolabeling on irradiated skin human explants).</li> </ul> </li> <li>➤ Improves the immune barrier: <ul style="list-style-type: none"> <li>→ up-regulation of key biomarkers involved in the antimicrobial function.</li> </ul> </li> <li>➤ Boosts the antioxidant defense: <ul style="list-style-type: none"> <li>→ up-regulation of genes linked to antioxidant and detoxification process</li> <li>→ stimulation of the transcription factor Nrf 2 acting in numerous pathways of cellular defense.</li> </ul> </li> </ul> <p><u>Clinical studies</u></p> <ul style="list-style-type: none"> <li>➤ Improves skin cohesion and hydration.</li> <li>➤ Decreases Trans Epidermal Water Loss (TEWL).</li> </ul> <p><u>Benefits</u> Multifunctional barrier activation through intelligent ways of action to strengthen and regenerate skin barrier functions while to limit barrier deterioration from environmental aggressions.</p> <p><b>INCI names :</b> water (and) glycerin (and) <i>Gigartina stellata</i>/ <i>Kappaphycus alvarezii</i> extract (and) <i>Corallina officinalis</i> extract.</p>	<p align="right">1% - 4%</p>  






## SKIN ENERGIZING to increase cellular metabolism

  	<p><b>A marine-derived answer to invigorate skin</b></p> <p><u>Description</u> <i>Calibrated active ingredient prepared from the brown seaweed <i>Fucus serratus</i> abundant in the North Atlantic.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Offers intense nutrition to revitalize and rejuvenate the skin.</li> <li>➤ Guaranties cells life expectancy in food starved conditions.</li> <li>➤ Reactivates the cellular energetic status: <ul style="list-style-type: none"> <li>➔ stimulation of the intracellular ATP synthesis.</li> </ul> </li> <li>➤ Maintains proper mitochondrial functioning and good cell metabolism.</li> </ul> <p><u>Benefits</u> A nourishing and energizing marine agent to keep the skin vital.</p> <p><b>INCI names : water (and) <i>Fucus serratus</i> extract.</b></p>	<p>0.2% - 2%</p>   
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## SKIN REPAIRING to restore skin integrity

  	<p><b>Marine enhancer of skin repair</b></p> <p><u>Description</u> <i>Association of the brown seaweed <i>Laminaria saccharina</i> (: <i>Saccharina latissima</i>) and arginine in a glycerin excipient.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Accelerates wound-healing activity to regulate the major phases of skin regeneration: <ul style="list-style-type: none"> <li>➔ increase of the differentiation of fibroblasts into myofibroblasts</li> <li>➔ stimulation of remodelling to up-regulate genes coding for several collagens</li> <li>➔ over-expression of essential growth factors: PDGF - EGF - IGF1.</li> </ul> </li> <li>➤ Boosts the proliferation of skin cells.</li> </ul> <p><u>Clinical studies</u></p> <ul style="list-style-type: none"> <li>➤ Favors skin's natural recovery and increases skin hydration.</li> <li>➤ Improves superficial skin imperfections.</li> </ul> <p><u>Benefits</u> Efficient strategy to enhance the regenerative capacity of the skin.</p> <p><b>INCI names : glycerin (and) water (and) <i>Laminaria saccharina</i> extract (and) L-arginine.</b></p>	<p>1% - 5%</p>   
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## SEBUM REGULATION for oil control

  	<p><b>The effective marine sebum regulator</b></p> <p><u>Description</u> <i>Combination of two extracts prepared from the brown macroalga <i>Fucus spiralis</i> et the green microalga <i>Tetraselmis chui</i> obtained by biotechnology.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Decreases sebum production ➔ inhibition of 5<math>\alpha</math>-reductase.</li> <li>➤ Limits the resulting irritation ➔ inhibition of IL-8 and TNF-<math>\alpha</math>.</li> </ul> <p><u>Clinical studies &amp; consumer evaluation</u></p> <ul style="list-style-type: none"> <li>➤ Decreases the sebum spots number.</li> <li>➤ Enlightens complexion of oily skin in only 28 days and leaves the skin looking natural and smoother.</li> </ul> <p><u>Benefits</u> Specific algal solution to improve the comfort of the oily skin.</p> <p><b>INCI names : water (and) <i>Fucus spiralis</i> extract (and) <i>Tetraselmis chui</i> extract.</b></p>	<p><b>PATENTED</b></p> <p>1% - 3%</p>   
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**PROTECTION - DETOXIFICATION**  
to prevent damage against reactive species & free radicals





<p><b>ASTAPLANTON® G8</b></p> 	<p align="center"><b>Advanced scavenger of reactive species</b></p> <p><u>Description</u> <i>Aqueous agent prepared from the green vegetative cells of Haematococcus pluvialis cultured in optimal nutritional conditions under moderate light intensity, adequate temperature and pH. It is supplemented with sea water.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Boosts skin metabolism due to its excellent composition in amino acids and minerals.</li> <li>➤ Protects against reactive oxygen species ROS             <ul style="list-style-type: none"> <li>→ scavenging activity.</li> </ul> </li> <li>➤ Protects DNA against singlet oxygen &amp; hydroxyl radical.</li> <li>➤ Captures reactive carbonyl species RCS, known to yield AGEs that cause damage to cellular proteins:             <ul style="list-style-type: none"> <li>→ protection of proteins from oxidation</li> <li>→ preservation of the fine cell structure against RCS induced damage.</li> </ul> </li> <li>➤ Complementary benefits with ASTAPLANTON® HA prepared from the same microalga <i>Haematococcus pluvialis</i> submitted to various cultivation conditions to obtain different biochemical substances.</li> </ul> <p>ASTAPLANTON COMPLEX forms a highly potent protective duo-system with high performance antioxidant protection to combat accelerated skin extrinsic ageing.</p> <p><u>Benefits</u> For clever advantageous protection against dangerous reactive molecules.</p> <p><b>INCI names :</b> water (and) <i>Haematococcus pluvialis</i> extract (and) sea water.</p>	<p>0.5% - 2%</p>   
<p><b>SEA HEATHER®</b></p> 	<p align="center"><b>The best radical scavenger from the Mediterranean</b></p> <p><u>Description</u> <i>Complex of several typical brown Mediterranean seaweeds. Caespitose Cystoseira species only occurs along the Mediterranean coasts where they play the role of canopy algae taken over in cold temperate regions by the Laminariales. They form dense populations grouped into large belts at wave-exposed places on unpolluted areas.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Combats damage induced by the both pathways of the lipid peroxidation:             <ul style="list-style-type: none"> <li>• action on the no enzymatic pathway:                 <ul style="list-style-type: none"> <li>→ protection against cellular lysis due to several reactive oxygen species: superoxide anion, hydrogen peroxide, alkoxyl radical, singlet oxygen and hydroxyl radical.</li> </ul> </li> <li>• action on the enzymatic pathway:                 <ul style="list-style-type: none"> <li>→ antiinflammation activity                     <ul style="list-style-type: none"> <li>♦ phospholipase A2 induces the production of arachidonic acid</li> <li>♦ 5-lipoxygenase leads to the production of leukotrienes.</li> </ul> </li> </ul> </li> </ul> </li> <li>➤ Protects DNA against superoxide anion and hydrogen peroxide.</li> <li>➤ Guarantees full cell membrane functionality after chemical irritation.</li> </ul> <p><u>Clinical studies</u></p> <ul style="list-style-type: none"> <li>➤ Lowers skin reactivity to reduce stinging sensations.</li> </ul> <p><u>Benefits</u> Excellent anti-lipoperoxide activity recommended to improve the comfort of reactive and sensitive skins.</p> <p><b>INCI names :</b> water (and) <i>Cystoseira amentacea/caespitosa/brachycarpa</i> extract.</p>	<p><b>PATENTED</b></p> <p>2% - 10%</p>   

**PROTECTION - DETOXIFICATION**  
to prevent damage against pollution and extreme environmental conditions





<p><b>KIMARINE®</b></p>  <p><b>KIMARINE® HC</b></p> <p><b>NEW</b></p> 	<p align="center"><b>DUAL ACTION FOR SKIN CARE AND HAIR CARE</b></p> <p><u>Description</u> <i>Low molecular fraction prepared from the brown edible seaweed Undaria pinnatifida also known as wakame, playing a major role in Asian market for food and medicine.</i></p> <p align="center"><b>Protects the skin against city pollution</b></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>▶ Reinforces the natural defense system against everyday damage due to major free radicals e.g. super anion oxide and hydrogen peroxide.</li> <li>▶ Protects UVA-induced damage.</li> <li>▶ Counter-regulates the effects of skin against urban pollution:             <ul style="list-style-type: none"> <li>→ protection against cigarette smoke</li> <li>→ protection against exhaust fumes</li> <li>→ protection against heavy metals e.g. cadmium and lead.</li> </ul> </li> </ul> <p><u>Benefits</u> Marine shield to protect the skin against daily skin pollution.</p> <p align="center"><b>Prevents hair weathering and ageing from environmental concerns</b></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>▶ Protects the outer sheath cells (stem cells) of the follicle from UVR and benzopyrene to maintain hair growth and strengthen fragile hair.</li> <li>▶ Reduces damage on the cuticle of the hair shaft from sun exposure, cigarette smoke, exhaust fumes, to reinforce fiber integrity and improve elasticity and resistance.</li> </ul> <p><u>Benefits</u> for healthier and younger-looking hair.</p> <p>➔ Promising treatment for skin and hair damage induced by environmental stressors.</p> <p><b>INCI names : water (and) Undaria pinnatifida extract.</b></p>	<p><b>PATENTED</b></p> <p>2% - 5%</p>   <p align="center">★</p> <p>1% - 2%</p>
<p><b>OROSEA®</b></p> 	<p align="center"><b>Safeguards the skin against extreme environmental conditions</b></p> <p><u>Description</u> <i>Calibrated agent based on the huge capacity of the red Mediterranean alga Risoella verruculosa to resist to severe environment with high degree of habitat adaptation.</i></p> <p><i>This alga is unique by its biological characteristics: It is thermophilous, silicicolous, photophile, revisiscente, eurythermal and euryhaline.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>▶ Strengthens the skin's defence from outside aggressions acting as an efficacious shield thanks to a unique ecological strategy.</li> <li>▶ Protects against extreme environmental conditions (heat-cold-osmotic stresses).</li> <li>▶ Modulates the expression of numerous genes involved in cellular defence: HSP response cellular redox regulation, cell apoptosis prevention, antioxidant protection, inflammation prevention, thereby ensures a better control of stress protein synthesis, increases survival and combats premature skin ageing to keep skin metabolism at a suitable level without additional spending energy.</li> </ul> <p><u>Clinical studies</u></p> <ul style="list-style-type: none"> <li>▶ Provides the skin comfort <i>via</i> moisturizing after unique application for 8h.</li> <li>▶ Improves the skin's appearance after two days applications only.</li> </ul> <p><u>Benefits</u> New approach to energize and protect the skin while to enhance repair against severe climatic stresses.</p> <p><b>INCI names : water (and) Risoella verruculosa extract.</b></p>	<p><b>PATENTED</b></p> <p>0.5% - 3%</p>  



<p><b>PHYACTYL®</b></p> 	<p style="text-align: center;"><b>A detoxifying agent from marine origin</b></p> <p><u>Description</u> Concentrated and standardized fraction of the invasive "Alien" brown alga <i>Sargassum muticum</i> collected in the Mediterranean.</p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Protects against the most harmful ROS: singlet oxygen, superoxide anion, hydrogen peroxide and hydroxyl radical.</li> <li>➤ Protects DNA against singlet oxygen and hydroxyl radical.</li> <li>➤ Protects against ozone.</li> <li>➤ Protects against chemical stress (sodium lauryl sulphate).</li> </ul> <p><u>Benefits</u> Ideal marine active to detoxify and purify the skin.</p> <p><b>INCI names : water (and) <i>Sargassum muticum</i> extract.</b></p>	<p><b>PATENTED</b></p> <p>2% - 5%</p>   
<p><b>SOOTHING – ANTI-INFLAMMATION – SENSITIVE SKIN</b> to protect and calm reactive skin</p>		
<p><b>EFFICIENSEA®</b></p> 	<p style="text-align: center;"><b>Offers efficient protection to irritated skin</b></p> <p><u>Description</u> Calibrated agent obtained from the brown alga <i>Pelvetia canaliculata</i>. <i>This species is endemic to the European Atlantic Ocean, commonly found in abundance on the rocky shores. It is known as "a seaweed that shuns the sun" offering high resistance to stress against drying.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Protects DNA against singlet oxygen-induced damage.</li> <li>➤ Keeps inflammation under control: <ul style="list-style-type: none"> <li>→ inhibition of IL-1<math>\alpha</math>, phospholipase A2, 5-lipoxygenase.</li> </ul> </li> <li>➤ Complementary properties: <ul style="list-style-type: none"> <li>→ protection against UVB radiation and inhibition of elastase.</li> </ul> </li> </ul> <p><u>Clinical studies</u></p> <ul style="list-style-type: none"> <li>➤ Reduces skin irritation reactions (stinging sensations).</li> </ul> <p><u>Benefits</u> Marine active designed to reduce the appearance of irritated skin.</p> <p><b>INCI names : water (and) <i>Pelvetia canaliculata</i> extract.</b></p>	<p><b>PATENTED</b></p> <p>1% - 10%</p>   
<p><b>SEA HEATHER®</b></p> 	<p style="text-align: center;"><b>The best radical scavenger from the Mediterranean</b></p> <p><u>Description</u> Complex of caespitose brown seaweeds endemic in the Mediterranean</p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>➤ Combats damage induced by the both pathways of the lipid peroxidation: <ul style="list-style-type: none"> <li>• action on the no enzymatic pathway to fight the major reactive oxygen species</li> <li>• action on the enzymatic pathway: <ul style="list-style-type: none"> <li>→ anti-inflammation activity <ul style="list-style-type: none"> <li>♦ phospholipase A2 induces the production of arachidonic acid</li> <li>♦ 5-lipoxygenase leads to the production of leukotrienes.</li> </ul> </li> </ul> </li> </ul> </li> <li>➤ Protects DNA against superoxide anion &amp; hydrogen peroxide.</li> <li>➤ Guarantees full cell membrane functionality after chemical irritation.</li> </ul> <p><u>Clinical studies</u></p> <ul style="list-style-type: none"> <li>➤ Lowers skin reactivity by reducing stinging sensation.</li> </ul> <p><u>Benefits</u> Ideal agent associating anti-oxidant and anti-inflammation activities to improve the comfort of reactive and sensitive skins.</p> <p><b>INCI names : water (and) <i>Cystoseira amentacea/caespitosa/brachycarpa</i> extract.</b></p>	<p><b>PATENTED</b></p> <p>2% - 10%</p>   

<p><b>OCEA DEFENCE®</b></p> 	<p><b>Marine immunity booster</b> to improve the comfort of fragile and vulnerable skin</p>	<p>2%</p>   
	<p><u>Description</u> <i>Complex of an oily extract of tocopherols and the brown alga Laminaria ochroleuca present in the Atlantic Ocean and the south-west Mediterranean.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>▶ A new approach to regulate the level of tolerance of sensitive and vulnerable skin, against various cutaneous disorders from the external environment.</li> <li>▶ Reinforces the cutaneous shield (gene expression profiling) <ul style="list-style-type: none"> <li>→ boosts the innate immune system</li> <li>→ regulates the protective damage mechanisms linked to cellular homeostasis and oxidative stress</li> <li>→ protects the connective tissue from degradation</li> <li>→ decreases inflammation.</li> </ul> </li> <li>▶ Protects against DNA strand breaks from UVA/visible-induced damage (Comet assay) <ul style="list-style-type: none"> <li>• With 0.1 % active .... + 52.8 % DNA protection</li> <li>• With 0.5 % active .... + 62.8 % DNA protection.</li> </ul> </li> </ul> <p><u>Clinical studies</u></p> <ul style="list-style-type: none"> <li>▶ Reduces UV-induced redness with a short term efficacy.</li> </ul> <p><u>Benefits</u> Suitable solution to stimulate skin immunity and to improve the cutaneous comfort of fragile and vulnerable skin.</p> <p><b>INCI names :</b> caprylic capric triglycerides (and) <i>Laminaria ochroleuca</i> extract (and) tocopherols.</p>	

**SLIMMING**  
to shape and contour fatty areas

<p><b>SLENDYL®</b></p> 	<p><b>Reshapes the silhouette &amp; prevents the loss of firmness</b></p>	<p>1% - 4%</p>   
	<p><u>Description</u> <i>Unique blend of two brown algae extracts prepared from the two brown macroalgae Himanthalia elongata and Undaria pinnatifida using a specific mineral spring water known for its richness in certain mineral (Ca – Mg) and its therapeutic benefits for the prevention of obesity.</i></p> <p><u>Substantiated efficacy</u></p> <ul style="list-style-type: none"> <li>▶ Intercept fat deposits before they starts to act on the three main pathways: <ul style="list-style-type: none"> <li>▶ <u>Action on adipogenesis</u> (mature adipocyte formation) <ul style="list-style-type: none"> <li>• Blocks adipocyte differentiation to reduce the capacity to store fats in pre-adipocytes through multiple ways of action; <ul style="list-style-type: none"> <li>→ locks precursors recruitment (action before adipose conversion)</li> <li>→ regulates differentiation at different time points</li> <li>→ triggers the induction of key transcription factors</li> <li>→ controls the transport/oxidation of fatty acids</li> <li>→ decreases lipid accumulation during pre-adipocytes maturation.</li> </ul> </li> <li>▶ <u>Action on lipogenesis</u> <ul style="list-style-type: none"> <li>• Regulates lipogenesis to prevent the formation of new adipocytes thus fat storage.</li> </ul> </li> <li>▶ <u>Action on lipolysis</u> <ul style="list-style-type: none"> <li>• Stimulates the lipolysis to promote triglycerides breakdown in adipocytes.</li> </ul> </li> </ul> </li> <li>▶ Firms up the skin naturally <ul style="list-style-type: none"> <li>→ reinforces the properties of dermis to stimulate Type I collagen synthesis, thereby enhances firmness and gives improved tone.</li> </ul> </li> </ul> <p><u>Clinical studies &amp; Consumer evaluation</u></p> <ul style="list-style-type: none"> <li>▶ Reduces the shape/morphology of the thighs to refine the silhouette.</li> </ul> <p><u>Benefits</u> Innovative marine combination for a multi-targeted sliming activity.</p> <p><b>INCI names :</b> water (and) <i>Himanthalia elongata</i> extract (and) <i>Undaria pinnatifida</i> extract.</p> </li></ul>	

**TANNING – SKIN GLOW**  
to develop a more natural tan

**BRONZ'ALG®**



**For a sun-kissed & healthy complexion all year round**

**PATENTED**

**Description** *Calibrated aqueous extract of the brown seaweed Bifurcaria bifurcata with acetyl-tyrosine.*

*Bifurcaria bifurcata is a Lusitanic alga that contains particular interesting chemicals, notably several kinds of oligomers of phloroglucinol.*

*It offers numerous proved biological properties e.g. antioxidant, antimicrobial, antiinflammatory, antitumoral activities.*

0.5 % - 5 %

**Substantiated efficacy**

- Regulates the major genes of melanogenesis pathways notably:  
MITF factor and melanogenic enzymes TYR and TYRP-1, Wnt/catenin, endothelin/protein kinase signaling pathways implicated in melanin formation, all that makes more compelling the pro-pigmenting capability of BRONZ'ALG®.
  - Facilitates the melanin synthesis in melanocytes (action on SLC24A5).
  - Improves the interactions melanocytes-keratinocytes (action on E-cadherin).
  - Protects against UVA/UVB-induced damage, thereby ameliorates skin photoprotection.
  - Promotes skin pigmentation independent to sun exposure.
- Confirmation by histological staining observations.

**Clinical studies**

- Accelerates tanning.
- Induces healthier look & revives dull skin after 28 days application with a significant improvement in the radiance complexion.
- Guarantees efficient skin protection against free radicals and both UVA and UVB radiations, that helps maintain a harmonious tan and improve the skin's own natural UV protection.

**Benefits** Smart suntan enhancer from marine origin.

**INCI names :** water (and) *Bifurcaria bifurcata* extract (and) acetyl-tyrosine.

**SUN CARE**  
to protect against UV damage

**ASTAPLANTON®**  
HA



**Astaxanthin helps for potent UVA-UVB protection**

**Description** *Oily extract prepared from red, non-motile resting stage of Haematococcus pluvialis cultured under inductive high light intensity –sunlight in order to favor the accumulation of the carotenoid astaxanthin.*

0.5% - 2%









**Substantiated efficacy**

- Stimulates the cellular metabolism.
  - Shows anti-oxidant protection superior to that of tocopherol.
  - Protects against UVA & UVB radiations.
  - Complementary benefits with ASTAPLANTON® G8 prepared from the same microalga submitted to various cultivation conditions to obtain different biochemical substances.
- ASTAPLANTON COMPLEX forms a highly potent protective duo-system for high performance antioxidant protection and combat accelerated skin ageing, especially extrinsic ageing.**

**Benefits** Efficient protector against UV damage for delaying skin photoageing.

**INCI names :** *Helianthus annuus* (Sunflower) seed oil (and) *Haematococcus pluvialis* extract.



<p><b>HELIONORI®</b></p> 	<p style="text-align: center;"><b>Acts as a genuine UVA bioprotector against UVA induced skin alterations</b></p> <p><b>Description</b> <i>Water and concentrated active ingredient prepared from the red seaweed <i>Porphyra umbilicalis</i> (L.) Kützinger known as "nori" in Japan.</i></p> <p><i>This alga contains mycosporine-like amino-acids (MAAs), a group of water-soluble nitrogenous compounds typically absorbing between 310 nm and 360 nm acting as natural UV sunscreens.</i></p> <p><i>These compounds are never present in terrestrial environments, except in fungi spores. They are always reported in marine organisms (animals or algae) exposed to intense UV stress, their concentration being correlated to the depth and quantity of UV.</i></p> <p><b>Substantiated efficacy</b></p> <ul style="list-style-type: none"> <li>➤ Provides a safe marine alternative to synthetic UVA filters: <ul style="list-style-type: none"> <li>→ agent stable to intense solar light and heat exposure.</li> </ul> </li> <li>➤ Prevents the formation of sun burn cells.</li> <li>➤ Protects cell metabolism against UVA irradiation.</li> <li>➤ Protects DNA (Comet assay on human melanocytes).</li> <li>➤ Protects cell membranes against UVA.</li> </ul> <p><b>Benefits</b> Genuine natural bioprotector against UVA induced skin alterations to prevent premature photoageing.</p> <p><b>INCI names :</b> <i>water (and) Porphyra umbilicalis extract.</i></p>	<p><b>PATENTED</b></p> <p>1% - 4%</p>   
<p><b>SUN'ALG®</b></p> 	<p style="text-align: center;"><b>Helps shield your skin against damaging effects of sun exposure</b></p> <p><b>Description</b> <i>Innovative combination of natural bioactive ingredients:</i></p> <ul style="list-style-type: none"> <li>◆ <i>Pongamia glabra seed oil (Karanga seed oil, deodorized grade) providing a primary shield against UV radiations, due to its important absorption ability especially for UVB but also for UVA.</i></li> <li>◆ <i>Two microalgal extracts prepared from <i>Dunaliella salina</i> and <i>Haematococcus pluvialis</i> rich in several carotenoids, bringing additional protective capacity:</i> <ul style="list-style-type: none"> <li>*<i>Dunaliella salina</i> extract is mainly rich in <math>\beta</math>-carotene</li> <li>*<i>Haematococcus pluvialis</i> extract is chiefly rich in astaxantin.</li> </ul> </li> </ul> <p><b>Substantiated efficacy</b></p> <ul style="list-style-type: none"> <li>➤ Strengthens the skin's defence mechanisms (compared to untreated control) to up-regulate the expression of key genes involved in: <ul style="list-style-type: none"> <li>→ oxidative stress/detoxification <ul style="list-style-type: none"> <li>◆ NOQO1 (x 125), AKR1C3 (x 328)</li> </ul> </li> <li>→ DNA repair <ul style="list-style-type: none"> <li>◆ GADD45 (x 134)</li> </ul> </li> <li>→ skin defense <ul style="list-style-type: none"> <li>◆ leukotriene B4 receptor 2 (x 141), <math>\beta</math> defensin 4A ( x 302)</li> </ul> </li> <li>→ barrier function <ul style="list-style-type: none"> <li>◆ cornifin (x 172), transglutaminase-3 (x 197).</li> </ul> </li> </ul> </li> <li>➤ Offers high protection against both UVA and UVB radiations.</li> <li>➤ Prevents the formation of sun burn cells: <ul style="list-style-type: none"> <li>→ with 5 % active in a basic Carbopol gel, the efficacy is comparable with those of the positive control (commercial cream SPF 50).</li> </ul> </li> <li>➤ Fights against inflammatory skin reactions: <ul style="list-style-type: none"> <li>→ inhibition of IL-8.</li> </ul> </li> </ul> <p><b>Clinical studies</b></p> <ul style="list-style-type: none"> <li>➤ Diminishes redness and soothes sunburns (erythema) with a short efficacy (30 min) from application.</li> </ul> <p><b>Benefits</b> Unique protector against the daily attacks by harmful UV rays to maintain skin health and good look.</p> <p><b>INCI names :</b> <i>Pongamia glabra seed oil (and) Dunaliella salina / Haematococcus pluvialis extract.</i></p>	<p>2% - 5%</p>   

## SKIN LIGHTENING to regulate skin pigmentation

LIGHTOCEANE®



### Potent skin lightener from the Ocean

PATENTED

**Description** *Calibrated agent prepared from the brown seaweed Halidrys siliquosa considered as an European Atlantic endemic. It is known for its special chemical composition rich in oligomers of phloroglucinol and secondary metabolites and its efficient biological properties eg. antioxidant, antibacterial, antibiotic, antiprotozoal and antifouling properties.*

**Substantiated efficacy**

► Offers a clever mechanisms of action against melanogenesis to influence all main pathways involved in this process:

▶ **Action before melanin synthesis**

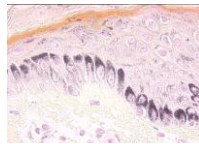
→ reduction of the production of nitric oxide NO

- ♦ with 1 % active .... - 72 % inhibition with 15 mJ.cm<sup>2</sup> irradiation.

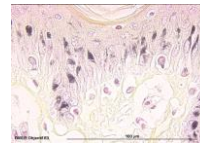
▶ **Action during melanin synthesis**

→ inhibition of tyrosinase & melanin synthesis

- ♦ with 1 % active .... - 93 % inhibition tyrosinase activity
- ♦ ex-vivo study on human skin explants at day 10.



Irradiated untreated explant

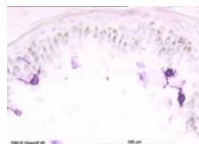


Irradiated treated explant

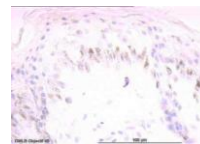
▶ **Action after melanin synthesis**

→ control of melanosome transfer to keratinocytes

- ♦ with 2 % active .... + 98 % increase TRP-1 cells number at day 10 compared to no irradiated control.
- ♦ ex vivo study on human skin explants at day 10 irradiated.



Irradiated untreated explant



Irradiated treated explant

► Complementary properties:

- protection against free radicals and UVA/UVB radiations.
- protection against inflammation (inhibitions LOX and IL-1α).
- protection against protease deterioration, notably anti-collagenase, anti-elastase and anti-hyaluronidase properties.

**Benefits** Marine multi-targeted strategy to lighten the skin.

**INCI names :** water (and) *Halidrys siliquosa* extract.




LIGHTOCEANE®  
G40





**Description** *LIGHTOCEANE® G40 is supplemented with 40% plant origin glycerin.*

**INCI names :** glycerin (and) water (and) *Halidrys siliquosa* extract.



## GELYOL® LINE

standardised & concentrated hydroglycolic seaweeds extracts  
all compliant with the Chinese regulation for cosmetic ingredients 

<p><b>GELYOL® AN 55</b></p>	<p><u>Description</u> <i>Hydroglycolic extract prepared from the Atlantic edible seaweed <i>Ascophyllum nodosum</i>, known to serve numerous applications</i></p> <p><u>Benefits</u> Slimming and antioxidant properties.</p> <ul style="list-style-type: none"> <li>➤ This extract offers a specific composition in minerals, notably in:             <ul style="list-style-type: none"> <li>♦ iodine, thereby it is suitable for slimming treatments and anti-cellulite products</li> <li>♦ other minerals (e.g. magnesium and silicon) important for the maintenance of skin firmness, thereby it helps preserve dermal tissue and restore firmness.</li> </ul> </li> <li>➤ In addition it offers antioxidant properties, so it protects skin from oxidative attacks.</li> </ul> <p><b>INCI names :</b> butylene glycol (and) water (and) <i>Ascophyllum nodosum</i> extract.</p>	<p>0.5% - 3%</p> <p></p>
<p><b>GELYOL® LN 25</b></p>	<p><u>Description</u> <i>Hydroglycolic extract prepared from the brown seaweed <i>Lessonia nigrescens</i> a kelp of Pacific South America, known as "Chascon" in Chile.</i></p> <p><u>Benefits</u> Moisturizing &amp; osmoregulating properties.</p> <ul style="list-style-type: none"> <li>➤ GELYOL® L.N. 25 is an ingredient of choice to treat dry skin and to prevent dehydration, due to its chemical composition in:             <ul style="list-style-type: none"> <li>♦ NMF-like components, to improve the moisture of the <i>stratum corneum</i> and prevent the skin from drying out.</li> <li>♦ special amino acids e.g. alanine and proline to maintain healthy skin and provide skin flexibility.</li> </ul> </li> </ul> <p><b>INCI names :</b> butylene glycol (and) water (and) <i>Lessonia nigrescens</i> extract.</p>	<p>1% - 3%</p> <p></p>
<p><b>GELYOL® GS 45</b></p>	<p><u>Description</u> <i>Hydroglycolic extract prepared from <i>Gelidium sesquipedale</i>, a red alga known for its high-quality agar.</i></p> <p><i>This alga grows mixing in the same habitat than <i>Plocamium cartilagineum</i>, with which it presents large morphological similitude that can explain the species confusion name "Gelidium cartilagineum".</i></p> <p><u>Benefits</u> Re-mineralizing &amp; revitalizing properties.</p> <ul style="list-style-type: none"> <li>➤ This extract offers a balanced content in minerals, trace elements and amino acids, appropriate to enhance skin hydration, improve cell metabolism and help restructure damaged conjunctive tissues.</li> </ul> <p><b>INCI names :</b> butylene glycol (and) water (and) <i>Gelidium sesquipedale</i> (: <i>G. cartilagineum</i>) extract.</p>	<p>2% - 5%</p> <p></p>
<p><b>NEW</b></p> <p><b>GELYOL® PC 25</b></p>	<p><u>Description</u> <i>Hydroglycolic extract prepared from the red calcareous seaweed <i>Lithothamnium calcareum</i> (: <i>Phymatolithon calcareum</i>), distributed as maerl.</i></p> <p><u>Benefits</u> Marine mineral energizer.</p> <ul style="list-style-type: none"> <li>➤ GELYOL® P.C. 25 shows excellent mineral composition and effective metabolic functions to:             <ul style="list-style-type: none"> <li>♦ control the skin electrolyte balance and increase osmotic exchanges.</li> <li>♦ stimulate skin vitality and energy (increase ATP levels).</li> </ul> </li> </ul> <p><b>INCI names :</b> butylene glycol (and) water (and) <i>Lithothamnium calcareum</i> extract.</p>	<p>1% - 3%</p> <p></p>



## THE WORLD OF GELYMA

Founded by experts in Marine Biology, GELYMA cultivates independence and passion for Phycology.

### Our strengths and values

Thanks to its in-depth algal scientific know-how, always looking for new sourcing and applications, GELYMA creates, develops, manufactures and sells innovative ingredients prepared from microalgae and seaweeds collected throughout the world.

The R & D laboratory is in possession of its own large database (12 000 scientific papers about algae, 800 books specialized) and an important herbarium (more than 5 000 sheets of seaweeds from different countries) for rapid and targeted development of new actives.

Through continuous research activities, we are able to successfully introduce high-quality marine ingredients every year, focusing the main demands of the Blue Cosmetic market.

Understanding where “algae” present in our products as raw materials come from is a priority for us.

This is demonstrated by:

- ♦ strict selection for optimal quality and traceability of sourcing algal biomass from field as well as from cultivation.
- ♦ correct systematic determination of species in agreement with the Botanical code of International nomenclature and the currently accepted names by Algae base ([www.algaebase.org](http://www.algaebase.org)).
- ♦ environmental responsibility for the conservation of natural resources and the algal biodiversity in order to insure the regeneration of algal biomass, reduce environmental operational impacts and contribute to the health of aquatic ecosystems.
- ♦ responsible and close considerations of partnerships with local experienced harvesters and well-trained international producers in the respect of local way of life, ensuring the sustainability of the valuable resource and its ecosystem in order to minimize the social footprint of commercial production in agreement with Nagoya Protocol.
- ♦ strict compliance of resource management with laws and regulations e.g. EU Nature directives (Natura 2000) – CITES (Washington Convention).
- ♦ optimization of manufacturing process within eco-responsible guidelines.

Our ultimate goal is to deliver consumers visible benefits as main challenge combination of innovation and efficiency with sustainability and respect of the algal biodiversity.

### About Algae

The name « algae » is a collective term for a polyphyletic assemblage of aquatic or sub-aerial organisms referred as « microalgae » and « macroalgae - seaweeds ».

How many algae are there? Anybody knows.

Generally algae are overlooked, perhaps because their abundance and importance are not estimated at their true value.

Algae are notoriously difficult to identify, showing substantial-environmentally-induced plasticity. Moreover taxonomy is under constant revision at all levels following every new genetic and ultrastructure investigation.

However, considering the great morphological diversity and the widely ranging chemical composition, this group of organisms represents one of the most promising sources for new products and applications.

Algae are not found in the same diversity throughout the world's oceans but everywhere an algal species shows its own biochemical characteristics and properties for bioactive compounds likely to be of industrial interest. It is well important to understand that a species collected in the Atlantic Ocean will offer different properties than the same species collected in another ocean.

For these reasons, GELYMA select species from all seas and oceans. [Our sourcing sites are presented next page.](#)

As macroalgae offers multitude of peculiarities, [GELYMA's researchers wrote detailed synopsis relative to chosen species](#) for giving general information on several algal aspects e.g. major morphological, biological and in biochemical distinctive traits, in addition to scientifically proved bioactivities and common uses. These algae synopsis may give comprehensive data for marketing support (on request).





#### ATLANTIC OCEAN (EUROPE)

- *Ascophyllum nodosum*
- *Bifurcaria bifurcata*
- *Corallina officinalis*
- *Enteromorpha compressa*
- *Fucus serratus*
- *Fucus vesiculosus*
- *Gelidium sesquipedale*
- *Halidrys siliquosa*
- *Halopteris scoparia*  
(*Stypocaulon scoparium*)
- *Himanthalia elongata*
- *Laminaria ochroleuca*
- *Laminaria saccharina*  
(*Saccharina latissima*)
- *Lithothamnium calcareum*
- *Palmaria palmata*
- *Porphyra umbilicalis*
- *Undaria pinnatifida*



#### ATLANTIC OCEAN (AFRICA)

- *Meristotheca dakarensis*  
(*Meristotheca senegalensis*)



#### MEDITERRANEAN

##### Cosmopolite element

- *Jania rubens*

##### Endemic element

- *Cystoseira* sp.
- *Rissoella verruculosa*

##### Invasive species (Aliens)

- *Codium fragile*
- *Sargassum muticum*
- *Undaria pinnatifida*



#### SOUTH PACIFIC OCEAN

- *Lessonia nigrescens*
- *Macrocystis pyrifera*

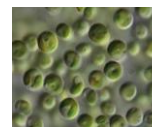


#### INDIAN OCEAN

- *Undaria pinnatifida*

##### Cultivation

- *Caulerpa lentillifera*
- *Kappaphycus alvarezii*



#### MICROALGAE

##### Cultivation

France-Spain-Hawaii-Australia

- *Dunaliella salina*
- *Haematococcus pluvialis*
- *Nannochloropsis oculata*
- *Tetraselmis chui*

