



ORGANIC  
BIOACTIVES  
NEW ZEALAND

# OceanDerMX™ RESTORE & PROTECT

## Introduction

New Zealand's geographical isolation since its separation from the mass continent Gondwana, around eighty million years ago, produced a wide variety of biodiverse flora and fauna. Consequently, our marine and land botanicals managed to maintain unrivalled survival mechanisms in the form of potent bioactives. Any polysaccharides, protein peptides, minerals and vitamins displaying effects on cellular activities are classed as bioactive compounds [1].

Before the Europeans arrived in New Zealand, the native Māori people had their own systems for treating their common illnesses and ailments. Traditional Māori medicine is referred to as "Rongoā", which is composed of physical therapies and herbal remedies. Their herbal remedies generally consisted of water extracts derived from native botanicals like Kawakawa, Mamaku - native New Zealand Black fern or Rimu - native New Zealand red seaweed [1].

Red seaweeds are a known source of versatile sulphated glycosaminoglycans (sGAGs), which are currently sought after in the nutraceutical, pharmaceutical and cosmeceutical industries [2,3,4]. This versatility is attributed to their sulfate content (15% - 40%) and its pattern of distribution within the molecule [2,3,4,5,6].

These features resemble the "eight essential sugars" of human cells, allowing specific binding to proteins, polysaccharides and molecules within cells to induce specific activities (Table 1) [2,3]. Organic Bioactives Ltd utilises this **bioactive delivery system to bind and enhance the delivery of potent bioactives into the skin.**

Table 1. Sugar content (%) of seven common industry used sugars derived from land and sea botanicals

Sugars	Mamaku	Aloe Vera	Brown Seaweed	Red Seaweed	Silver Birch	Activities	Reference
Rhamnose	3	1.5	-	-	0.6	Promotes Collagen IV and Procollagen I	1,7,14,15,16
Arabinose	3	4.7	-	-	0.4	Anti-hyperpigmentation	1,8,14,15,16
Xylose	14	4.4	28.85	5.71	24.9	Proteoglycan biosynthesis promoter	1,9,14,15,16
Galactose	16	4.3	26.48	86.68	0.7	Anti-aging	1,10,14,15,16
Mannose	20	47.5	5.04	1.15	3.2	Moisturising agent	1,11,14,15,16
Galacturonic	37	-	-	-	-	Depigmentation	1,12,14,15,16
Glucuronic /uronic acid	-	-	1.24	1.48	3.6	Anti-aging and cell protective	1,13,14,15,16

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NEW ZEALAND  
NATIVE RED  
SEAWEED



MAMAKU -  
NEW ZEALAND  
NATIVE BLACK  
FERN MERISTEMS



NEW ZEALAND GROWN  
GREEN TEA



NEW ZEALAND GROWN  
BLACKCURRANT

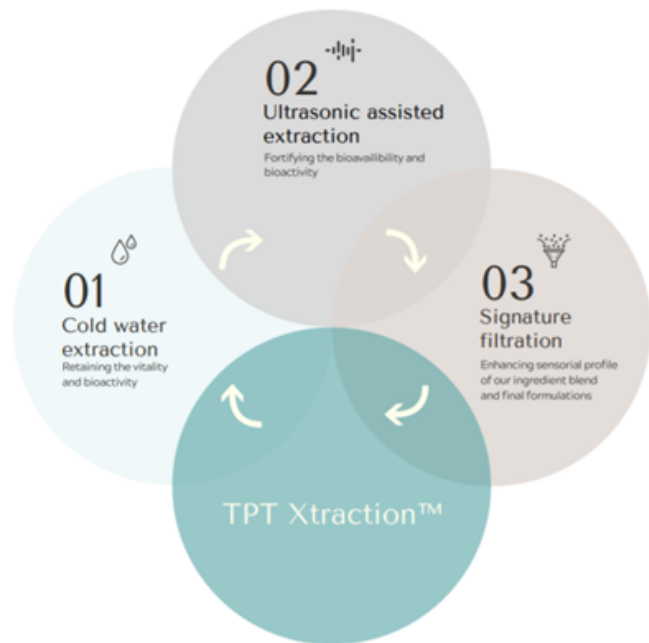
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## Patented extracting technology

Combining time-proven traditional practices with clinically tested botanicals and scientifically backed methods, Organic Bioactives Ltd created their signature carrier blend OceanDerMX™ with their patented ‘clean beauty’ TPT Xtraction™ technology. This 4 in 1 multitasking ingredient blend synchronises functional, structural, bioactive and sensorial properties of our biopolymers - abundantly present in biodiverse New Zealand Rhodophyta (red seaweed) and Cyathea medullaris (Mamaku - native New Zealand Black fern).

The OceanDerMX™ range enhances these properties by encompassing the most potent bioactives proven to help skin appearance.



## Promoters of premature aging

UV rays and environmental pollution are the most concerning current skin aggressors that actively increases oxidative stress, which in turn induces imperfections and accelerate premature ageing. The cosmetics industry is always searching for new natural ingredients that are abundant in antioxidants and anti-pollutants (metal chelators). It is widely known that **Camellia sinesis (green tea)** and **Ribes nigrum (blackcurrant)** generally contain higher concentrations of bioavailable antioxidants and anti-pollutants than other bioactives [17,18,19].



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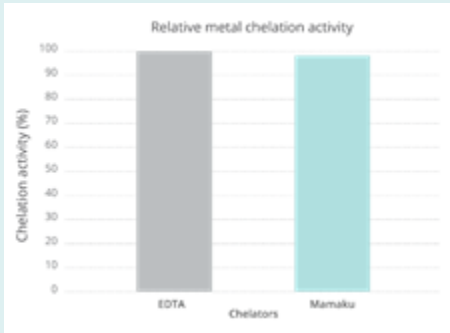


Fig 1. The total metal chelation activity (%) of Mamaku, compared to EDTA. Note: Chelation activity is related to anti-pollution activity.

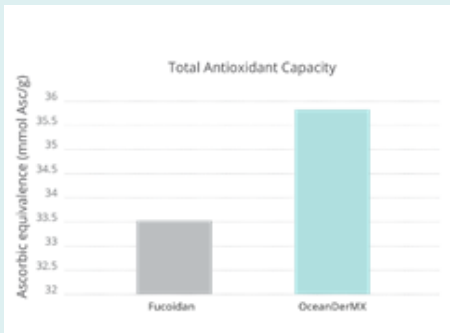


Fig 2. The Total Antioxidant Capacity of OceanDerMX™ compared to Fucoidan at 1% concentration.

## New Zealand's antioxidant treasure trove

Due to New Zealand's geographical location, our blackcurrants and Zealong green tea contain much higher concentrations of **glycosides and polyphenols** than the same species from the other parts of the world [1,18,19,20]. A New Zealand Crown Research Institute surmised that New Zealand blackcurrants have **(3x) more antioxidant activity** than that measured for blueberries in another study based in America. Aside from being a treasure trove for potent antioxidants, blackcurrants are known to have skin restorative properties.

Human fibroblast models have consistently shown that blackcurrant extracts or the anthocyanins they contain, are able to increase the expression of collagen (types I and III) and elastin [18,21].

Although there are currently no published articles on New Zealand grown certified organic Zealong green tea, several in vitro studies have shown green teas to possess antiaging properties due to their abundance in antioxidants and anti-pollutants (metal chelators).

**Polyphenols** are responsible for these properties and their expression was found to be dependent on geographical location of the plants.

Polyphenols can also protect and restore the content of **vitamin C** in the skin, which is needed for **collagen production**, which maintains **skin elasticity and strength** [22,23].

Various compounds within green tea act together to have a **photo-protective effect on the skin**.

For example, a clinical study involving 21 healthy volunteers wearing skin patches irradiated with UVB (up to 100 mJ/m<sup>2</sup>) had significant reductions in UV-induced damage after topical application of a 4% of green tea extract (water in oil emulsion) [24].

## Our solution for premature aging

**OceanDerMX™** consists of extracts derived from Mamaku - native New Zealand Black fern and native New Zealand red seaweed. Galactose is known to have antiaging properties and is usually derived from brown seaweeds or silver birch bark by big brand cosmetic companies. Red seaweed species, especially New Zealand sourced, generally have significantly higher amounts of **galactose** (Table 1) because of their geographical location and evolution.

Big cosmetic brands typically use **rhamnose** derived from silver birch to promote skin restorative processes such as Collagen IV and Procollagen I production.

Mamaku consists of **significantly higher proportions of rhamnose** (Table 1) than common ingredients currently on the market.

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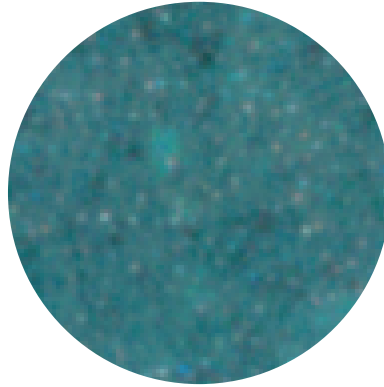
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## The multitasking biopolymers

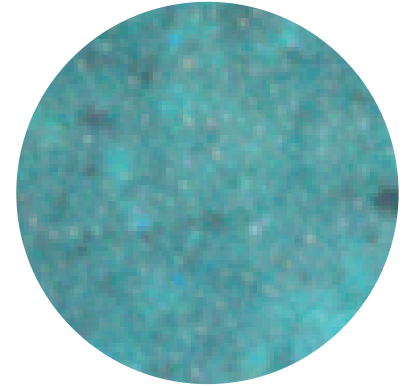
The unique biopolymers derived from the meristem of Mamaku are known to contain **significantly high antioxidant and anti-pollutant properties** (Fig.1-2). While the unique mix of **sGAGs** derived from New Zealand red seaweed is known to have antioxidant activities but can also bind and help deliver other bioactives introduced to the blend.

We combined New Zealand grown blackcurrants and Zealong green tea to our carrier blend to create **OceanDerMX™ Restore & Protect** a novel, unrivalled ingredients blend to **effectively combats environmental aggressors**, while helping deliver all natural, bioavailable antioxidants and other actives directly to the skin.

## Visible Differences & Benefits



BEFORE APPLICATION  
[untreated skin]



AFTER APPLICATION  
[14 days of continuous application twice a day, showing brightening and restoring of the skin from the UV induced sun damage]

Photos taken by Observe 520, Synton diagnostic systems, under the True UV mode

Proven benefits	Technical Information
OUTSTANDING DETOXIFYING AND ANTIOXIDANT ACTIVITY	General use: <b>1-5%</b> Restorative and protecting benefits: <b>5%</b>
PROMOTES AGE DEFYING ACTIVITIES	<b>Organic status:</b> Bio-Gro New Zealand, Natrue Certified organic [in a process] <b>China status:</b> Compliant <b>Vegan, Gluten free</b>
HELPS PROTECT THE SKIN AGAINST ENVIRONMENTAL POLLUTION	<b>INCI:</b> Algae extract [New Zealand native Red seaweed] (and) <i>Cyathea medullaris</i> extract [New Zealand native Black fern] (and) <i>Camellia sinesis</i> [New Zealand grown certified organic green tea] (and) <i>Ribes nigrum</i> [New Zealand grown certified organic Blackcurrant] (and) Gluconolactone & Sodium Benzoate & Calcium Gluconate (and) Potassium Sorbate.
ACTS AS AN INCREDIBLE MOISTURE RETAINER	

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