



RADICARE®

Protects Against Free Radicals



RAHN | Cosmetics

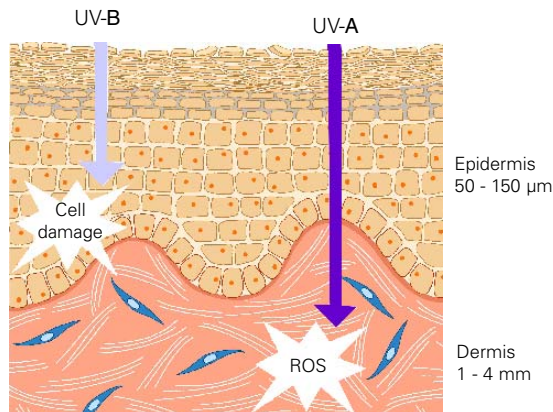
Your partner for excellence

RADICARE®

The cosmetic active agent RADICARE®, consisting of melissa and barley extracts, as well as rutin derivatives, sets new standards in anti-ageing care. Interesting results from in vivo and in vitro tests already confirm its efficacy even at low dosages.

Introduction

For roughly two decades, the scientific community has been intensely occupied with the effects of free radicals, and their influence on our human metabolism. Numerous scientific publications confirm the connection between an excessive concentration of free radicals and the ageing of skin. When the skin lacks a suitable defence system, cells may be damaged, which can further have an adverse effect on DNA, proteins, or lipids. RADICARE® can successfully offer the cosmetic industry an active substance that massively counteracts radical induced skin damage, while also protecting the skin.



The function

The melissa extract, with a substantial content of rosmarinic acid, is one of the most efficient, naturally occurring radical scavengers.

The high proportion of selenium, manganese, and zinc in the barley extract promotes the enzymatic deactivation of free radicals.

The water soluble rutin derivative works synergistically with the rosmarinic acid against free radicals, and thereby - in effect - against skin ageing.

Description of the Active Substance



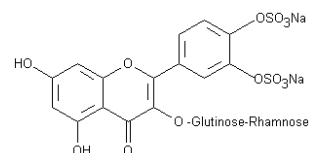
Rosmarinic acid from lemon balm

Already in antiquity, melissa was used as a medicinal plant against inflammation, as well as aches and pains. As a result of scientific research into hydrocinnamic acid derivatives, melissa has once again become very interesting to modern medicine. Rosmarinic acid, which is present in large proportions in melissa, is a member of the group of hydrocinnamic acid derivatives. The typical concentration of rosmarinic acid in melissa is around 6%. The extract employed in RADICARE® is standardised at a minimum of 12% rosmarinic acid.



Trace elements selenium, zinc, and manganese

Amongst the different types of grains, barley assumes an important place thanks to the high concentration of trace elements it contains. Barley is particularly distinguished by its higher-than-average selenium, manganese, and zinc content. These three trace elements have received increased scientific attention recently because of the powerful effect they have on the immune system. That our skin needs these three trace elements is beyond dispute. Selenium, manganese, and zinc act as catalysts to promote the effectiveness of antioxidative enzymes in the skin. In this way, free radicals are deactivated more quickly, or prevented from emerging.



Rutin, the antioxidative flavonoid

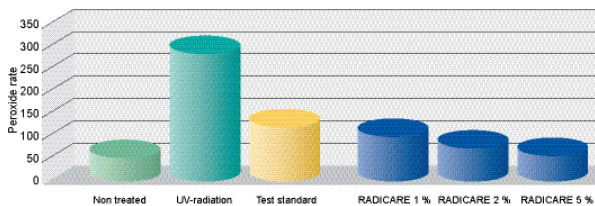
Flavonoids are very common in the plant kingdom. Many flavonoids are coloured an intense yellow, and received their name for this reason (flaves = yellow). Most flavonoids are effective antioxidants, and are excellent radical scavengers. The biological scarcity of flavonoids, which are barely water soluble, is elegantly circumvented with this derivative. A water soluble rutin derivative is used in RADICARE®. The vascular stabilizing characteristics of this ingredient make it all the more valuable.

Protects Against Free Radicals

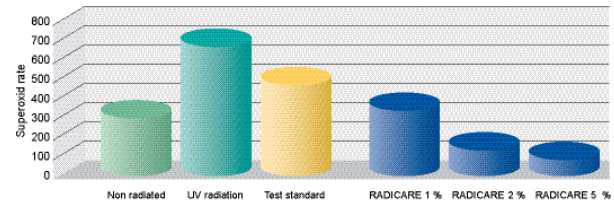
Studies of Effectiveness

Peroxide and superoxide measurements (*in vitro*)

By means of further *in vitro* testing, it was shown definitely that RADICARE® reduces the formation of different free radicals.

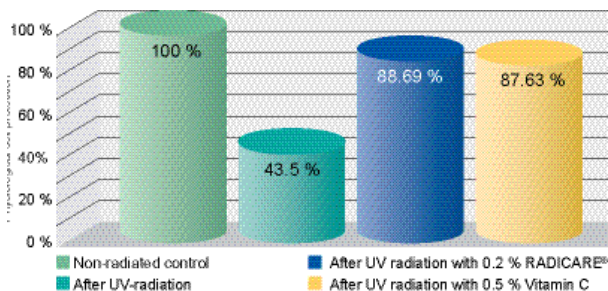


RADICARE® protects the skin from the negative effects of peroxide radicals, and from the cell toxic characteristics of the superoxide.



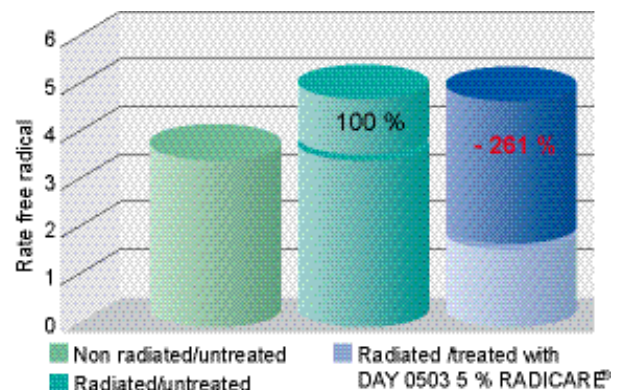
Cell protection (*in vitro*)

To further substantiate the *in vivo* test results, an RBC photo test was carried out with 0.1% - 1% RADICARE®. Na-Ascorbylphosphate was used to provide a reference.



Antioxidative effect (*in vivo*)

The skin of 15 test subjects was irradiated with UV-A and UV-B light, and was then treated with a test gel containing 5% RADICARE®. A stripping method was then used to remove the upper-layer of skin, and the concentration of free radicals that had been generated was examined.



The comparative measurement demonstrates that the cell protective action obtained with 0.2% RADICARE® is comparable to that from 0.5% Na-Ascorbylphosphate.

RADICARE® possesses an intensive protective effect.

Range of application:

Sun care and after-sun products, intensive care products, anti-ageing products, night and day creams.

Application concentration:

0.2% - 5%

Technical information:

Preservative: 0.45% sodium benzoate

RADICARE® was tested for ecotoxicology and toxicity, with the finding that it is not toxic, causes no irritation, and is biodegradable.

RADICARE® contains no ingredients originating from animals or petroleum, it is free of genetically modified organisms, as well as carcinogens, mutagens, and substances toxic to reproduction (GMO and CMR free). The product was not tested on animals, and contains no pesticides.

INCI:

EU: Aqua, Melissa Officinalis Leaf Extract, Disodium Rutinyl Disulfate, Hordeum Distichon Extract

USA: Water, Melissa Officinalis (Balm Mint) Leaf Extract, Disodium Rutinyl Disulfate, Hordeum Distichon (Barley) Extract

Japan: Water, Melissa Officinalis (Balm Mint) Leaf Extract, Disodium Rutinyl Disulfate, Hordeum Distichon (Barley) Extract



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