

CREAM FOR SKIN BARRIER RESTORATION



ABOUT US

- We are a team of scientists from Riga Stradins university (RSU) - one of the most modern universities in the Baltic States focused on study programs in health care.
- RSU has a strong foundation in research and international recognition.
- RSU recently received the title of Export Champion at the Export and Innovation Awards organized by the Investment and Development Agency of Latvia (LIAA) and the Ministry of Economics.
- Our team has developed an innovative product within the RSU and ERAF project “Cream for skin barrier restoration”



THE MODERN CHALLENGE

Nowadays having youthful, healthy skin is more important than ever. For most people the skin starts to age already between the age of 30-40.

The main reason for skin aging is oxidative stress¹ (both due to intrinsic and extrinsic factors), which damages the natural epidermal barrier of the skin.

A variety of products against premature skin aging is already available on the market, but not all of them have been scientifically proven to be effective and rarely offer a complex solution.

Finding the best product against skin aging has become a modern challenge.



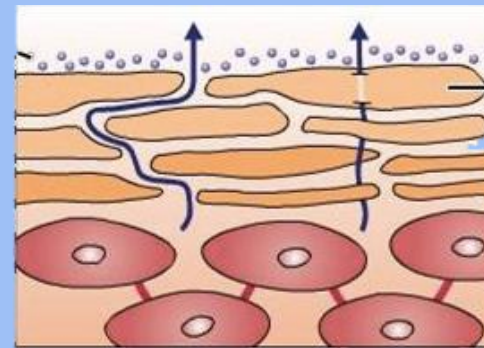
¹<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6047276/> "Fighting against skin aging"

SKIN BARRIER FUNCTION

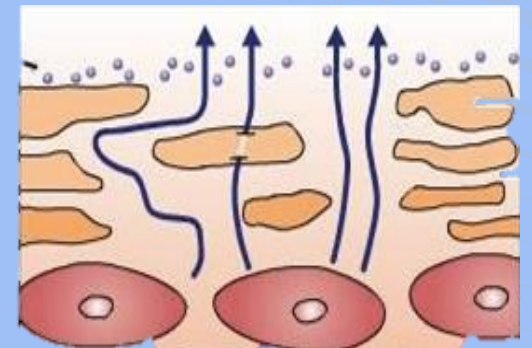
The outermost layer of the skin consists of corneocytes and lipid matrix - the skin barrier. It provides an effective barrier between the organism and the environment.

Thanks to a healthy skin barrier function, the skin gets the necessary protection from constant oxidative stress and premature aging.²

If the barrier function is impaired, the skin increasingly loses water, becomes dry, starts to excessively scale, wrinkle formation intensifies, pigment spots and redness can appear.



Normal skin
barrier



Impaired skin barrier

Images: I. Angelova- Fischer, 2014

² <https://pubmed.ncbi.nlm.nih.gov/19907407> "The skin's barrier"

UV RADIATION, TOBACCO AND POLLUTION

The skin is continuously and simultaneously exposed to several oxidative stressors that can have additive, if not synergistic, effects.⁴

Ultra-violet radiation, cigarette smoking and air pollution are the three main extrinsic factors that have been implicated in skin ageing.

Studies have shown that exposition to the air pollution, UV radiation and smoking, are all linked to increased oxidative stress levels in the skin. All of these factors are also associated with skin barrier dysfunction.^{5, 6}

To protect the skin surface from the damage caused by pollution, smoking, and UV radiation, and often their combination, it is important to supplement the skin with antioxidants.

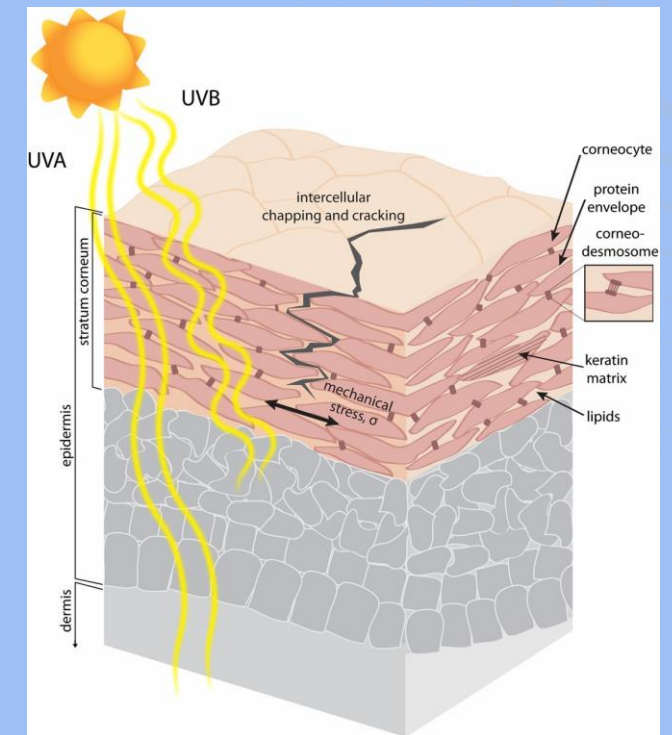


Image: <https://www.pnas.org/content/109/42/17111>

⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7322554/> "Oxidative contribution of air pollution to extrinsic skin ageing"

⁵ <https://insight.jci.org/articles/view/145185> "Particulate matter causes skin barrier dysfunction"

⁶ <https://www.pnas.org/content/109/42/17111> "Solar UV radiation reduces the barrier function of human skin"

METABOLIC SYNDROME

Studies have shown that increased oxidative stress in the skin is also commonly associated with metabolic syndrome. Metabolic syndrome is a combination of glucose intolerance, obesity and dyslipidemia.

About 1/3 of the adult population in developed countries currently suffer from it and due to the current lifestyle, the number is increasing. It can be considered a global epidemic.³

Metabolic syndrome is also shown to cause skin barrier dysfunction and premature skin aging.

The skin of people with metabolic syndrome needs special care and a complex solution.

³<https://pubmed.ncbi.nlm.nih.gov/29480368> "The Global Epidemic of the Metabolic Syndrome"

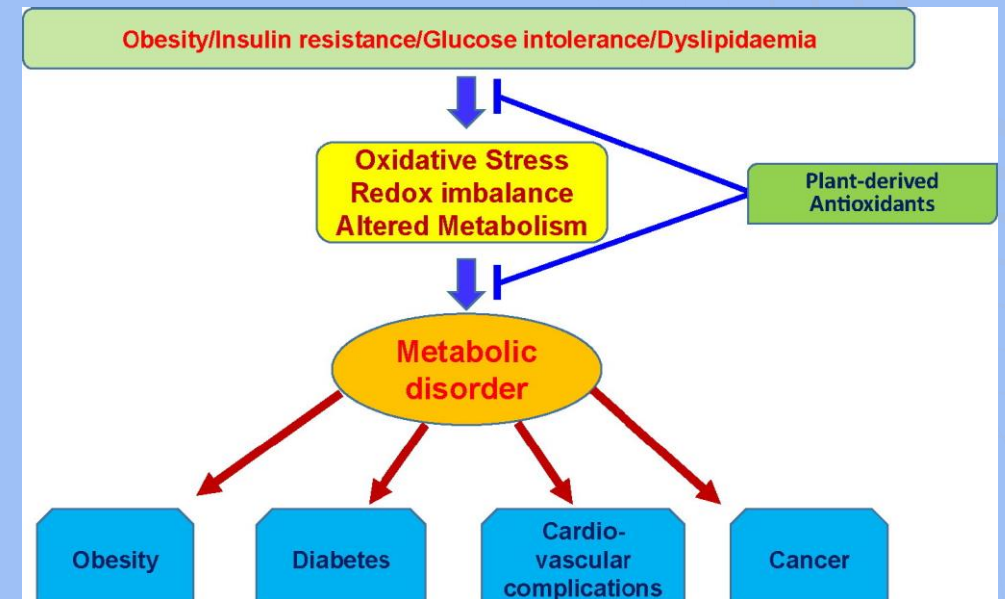


Image:

<https://www.sciencedirect.com/science/article/abs/pii/S0024320516300522>

OUR PRODUCT

A team of scientists at Riga Stradins University's (RSU) has developed a new product: dermocosmetic cream that protects skin from oxidative stress and restores the natural skin barrier.

Unlike most of the available products on the market, it is scientifically tested and provides a complex solution with several cosmetic and therapeutic properties:

- restoration of the skin barrier function
- skin regeneration and rejuvenation
- skin hydration
- antioxidant protection
- anti-redness properties



NATURAL, SCIENTIFICALLY PROVEN INGREDIENTS

Some of the main ingredients in our product are part of the most important natural components of the skin barrier, which protect the skin surface from oxidative stress⁴, for example:

Seleno-L-methionine

- powerful antioxidant, prevents lipids of the skin barrier from peroxidation
- works synergistically with vitamin E

Squalane

- antioxidant, prevents lipids of the skin barrier from peroxidation
- minimizes transepidermal water loss

Vitamin E

- potent antioxidant, protects skin from UV-caused damage
- antiinflammatory properties

⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7322554/> "Oxidative contribution of air pollution to extrinsic skin ageing"

OUR TARGET CUSTOMERS

Individuals, whose skin barrier is compromised or who need special protection from the oxidative stress, will appreciate our product



Our product can be used by:

- elderly;
- individuals with premature skin aging;
- individuals living in highly polluted areas;
- people exposed to increased UV radiation (in addition to SPF products);
- smokers;
- people suffering from metabolic syndrome, a condition that predisposes to skin barrier dysfunction.

PROVEN CLINICAL EFFECTIVENESS

- We performed a controlled non-invasive clinical study on patients with participation of expert dermatologists at one of the most modern aesthetic medicine clinics in Riga - LIPEX.
- We aimed to dermatologically test the cream in 2 groups of participants (metabolic syndrome patients and control (healthy) group) to obtain comparative results that would prove the effectiveness of the cream.

The results after 1 month of cream usage:

Skin dryness decreased in 67% of cream users;

Pores normalized in 46%;

Skin discoloration decreased and erythema disappeared in 86%;

Small wrinkles disappeared in 62%;

MICROBIOLOGICAL PURITY

- The cream has been tested for microbiological purity and antimicrobial protection at an accredited AUCTORITAS laboratory that complies with ISO standards.
- The product was found to comply with all requirements.

Analīžu rezultāti

Rādītājs	Nr.	Rezultāts	Metode
Mezofilo aerobo mikroorganismu skaits		$<1 \times 10^1$ KVV / 1g	LVS EN ISO 21149 : 2017
Staphylococcus aureus		Nav konstatēts / 1g	LVS EN ISO 22718 : 2016
Pseudomonas aeruginosa		Nav konstatētas / 1g	LVS EN ISO 22717 : 2016
Candida albicans		Nav konstatētas / 1g	LVS EN ISO 18416 : 2016
Escherichia coli		Nav konstatētas / 1g	ISO 21150 : 2015
Raugi un pelējumi		$<1 \times 10^1$ KVV / 1g	LVS EN ISO 16212 : 2017

Testēšanas pārskats sagatavots: 15/06/2020



Latvian National Accreditation Bureau
Signatory of the Multilateral Agreement of the European Cooperation for Accreditation (EA MLA)
In the field of accreditation of testing and calibration laboratories, certification bodies for products, persons and management systems, inspection bodies and verification bodies

ACCREDITATION CERTIFICATE*

State Agency "Latvian National Accreditation Bureau"
herewith verifies that

"Laboratory AUCTORITAS" Ltd.

Ciekurkalna 1. line 11, Rīga, LV-1006

is competent to perform testing in accordance with the requirements of standard
LVS EN ISO/IEC 17025:2017 in the voluntary scope:

microbiological testing of food, animal feed, water, cosmetics, surface swabs,
fertilizers; physical chemical testing of water and cosmetics; sampling of water,
wastewater, surface swabs and food

Accreditation Certificate is valid until May 13, 2024.
The scope of accreditation in voluntary sector is defined in the Annex on 7 pages
and is an integral part of this accreditation certificate.
LATAK registration No **LATAK-T-312-18-2005**

Rīga, April 29, 2021

G. Jaunbērziņa-Beitika
Director of the State Agency "Latvian
National Accreditation Bureau"

M. Drille
Chair of accreditation
committee

*This accreditation certificate is translation from original certificate in Latvian. In case of dispute, the certificate in Latvian has priority.
DOCUMENT IS SIGNED WITH A SECURE ELECTRONIC SIGNATURE AND CONTAINS A TIME STAMP

PUBLIC PRESENTATION

Our cream was presented during the 12th International Congress on Skin Ageing & Challenges 2021 in a Short Oral presentation with a title “Cream for Skin Barrier Restoration”.

The presentation was given an award by the scientific committee as the best Short Oral presentation.



THANK YOU FOR ATTENTION!



RIGA STRADINS UNIVERSITY, 2021

