

SEQENS

PERSONAL CARE

GLYCURON™ 2.78

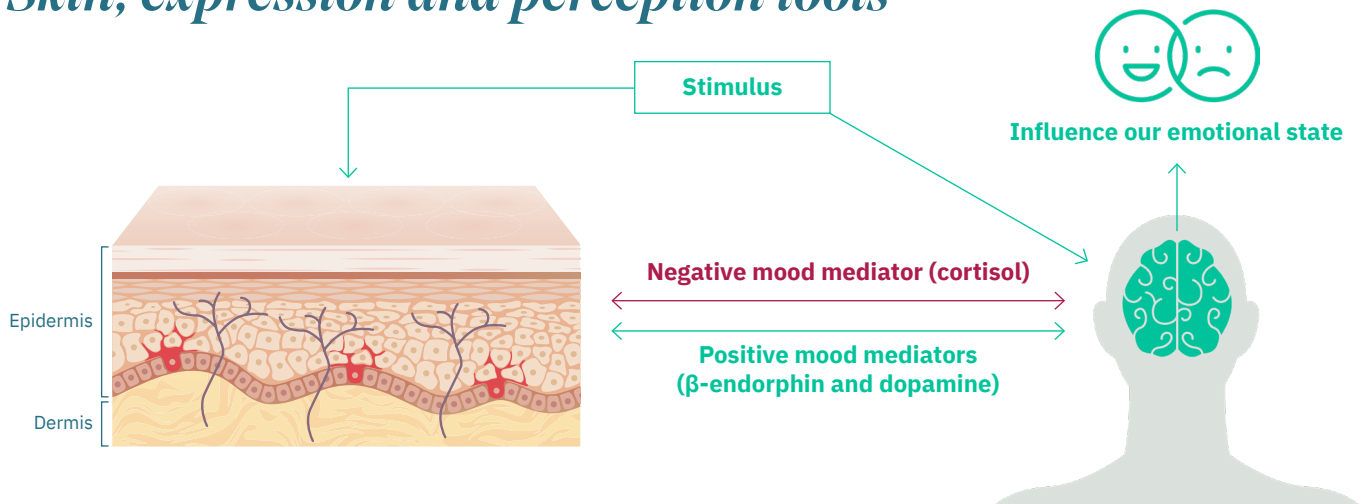
A 4 MDa exopolysaccharide
obtained by blue biotech

THE WELL-BEING & HAPPINESS BOOSTER

- Self-esteem and social impression booster
- Skin cell renewal and innervation protector
- Happiness pathways and rare dopamine modulator



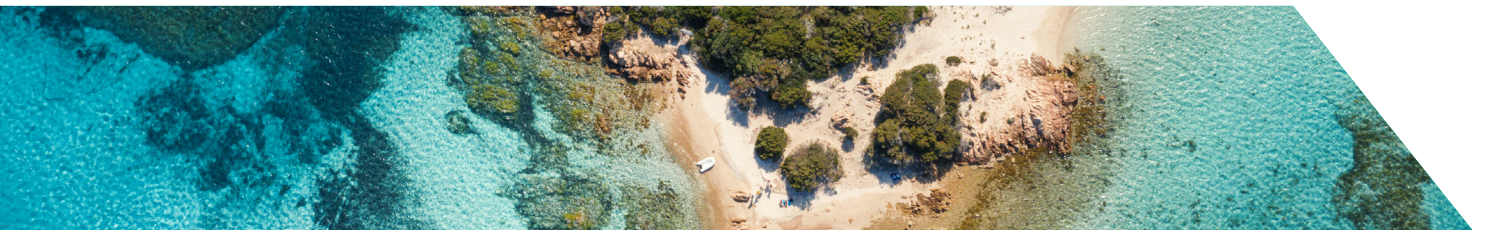
Skin, expression and perception tools



Our own image is dependent on our skin and our brain. Dermatologist & President of the Psychodermatology Group (Psyderm) of the French Society of Dermatology, **Laurent Misery**, explains that the **brain-skin connection** is complex and can influence each other in both directions. In response to a stimulus, they release **negative and positive mood mediators that will influence our emotional state**.

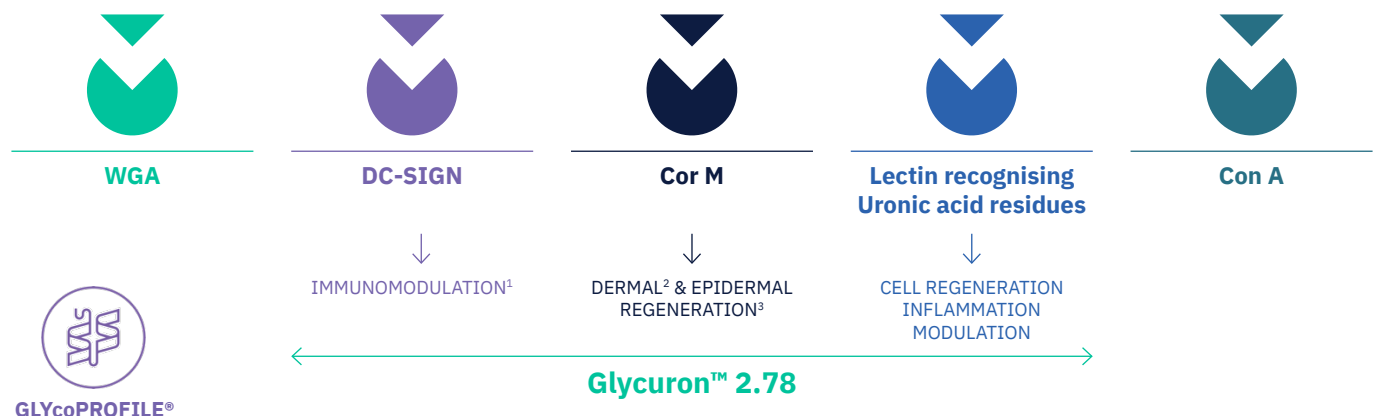
Inspired by this skin-brain interaction, **SEQENS Personal Care** has studied **exopolysaccharides (EPS)**. The **EPS 2.78** was selected from among others studied in the GLYcoPROFILE® performed by GLYcoDIAG, for its **interaction with skin receptors (lectins) involved in well-being pathways**, resulting in **Glycuron 2.78**.

This EPS is derived from an isolated ***Alteromonas sp.***, a microorganism obtained from the bacterial flora of *Heteractis magnifica*, a species of sea anemone found in **Polynesian waters near the island of Moorea**, which releases EPS into its surrounding environment.



Biological activities screening

PROTOCOL:
GLYcoPROFILE®* is the interaction profile of a range of lectins.
 *Performed by GLYcoDIAG



1. Y. Zhang, Y. Luo, W. Li, et al. *DC-SIGN promotes allergen uptake and activation of dendritic cells in patients with atopic dermatitis*. Journal of Dermatological Science (2016)
 2. G. Faury, J. Molinari, E. Rusova, et al. *Receptors and aging: Structural selectivity of the rhamnose-receptor on fibroblasts as shown by Ca²⁺-mobilization and gene-expression profiles*. Archives of Gerontology and Geriatrics 53 (2011) 106–112
 3. D. Cerdan, C. Grillon, M. Monsigny, et al. *Human keratinocyte membrane lectins: characterization and modulation of their expression by cytokines*. Biology of Cell. 1991;73(1):35-42.

Psychological benefits

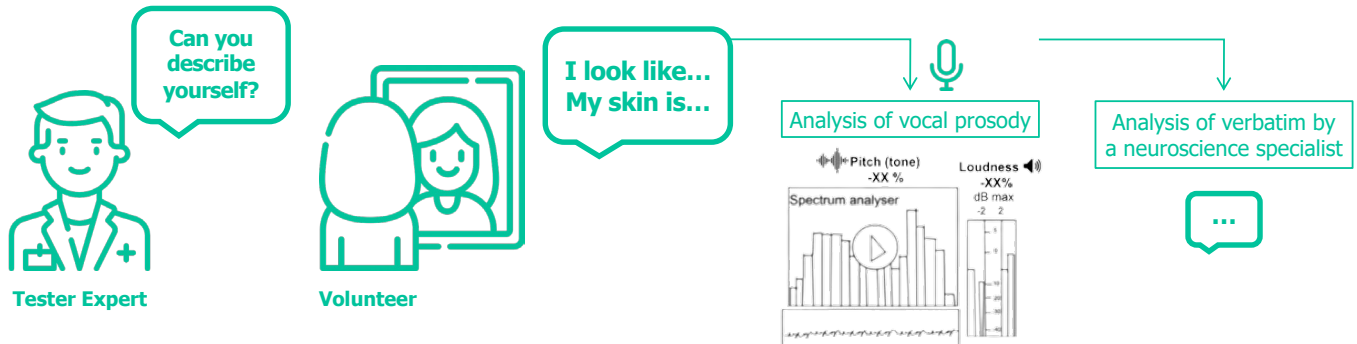
MIRROR TEST

PROTOCOL:

- 44 Caucasian female volunteers with irregular and dull complexion divided into 2 panels:
- Glycuron 2.78 at 1% formula
- Placebo formula

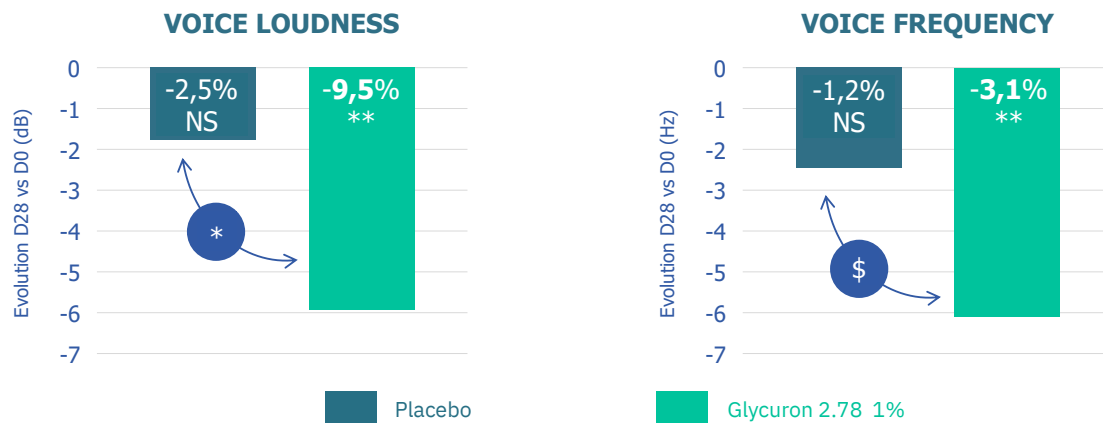
TECHNOLOGIES:

- Software-based vocal analysis
- Quantitative analysis of subject answer word content (occurrences)



VOICE STRESS REDUCER

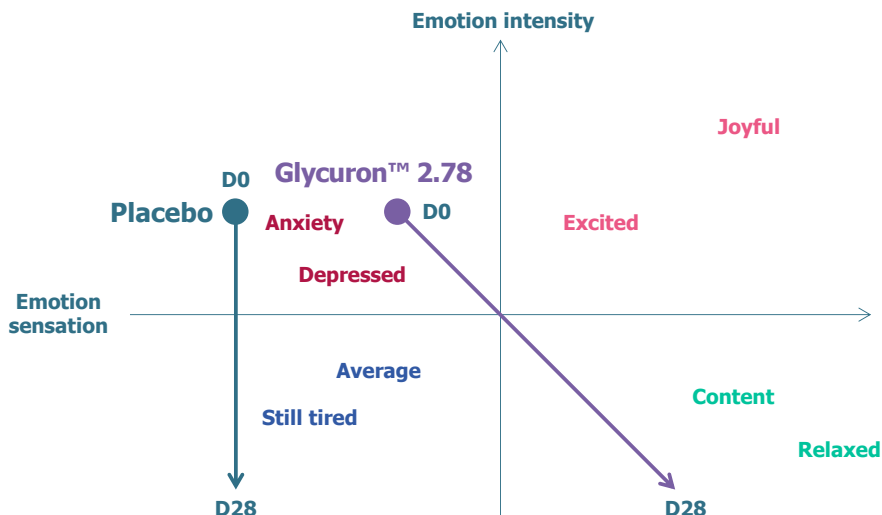
NS Non-significative / **p < 0.01 / *p < 0.05 / †p < 0.1



By reducing vocal prosody, Glycuron™ 2.78 reduces emotional distress and thus vocally expressed stress.

SELF-ESTEEM IMPROVEMENT • "HOW WOULD YOU DESCRIBE YOURSELF?"

All parameters are statistically significant with $p \leq 0.065$



Glycuron™ 2.78 increases self-esteem, people like their reflection more and they feel more beautiful: the change in their emotions is more positive.

Skin improvement

IN VIVO

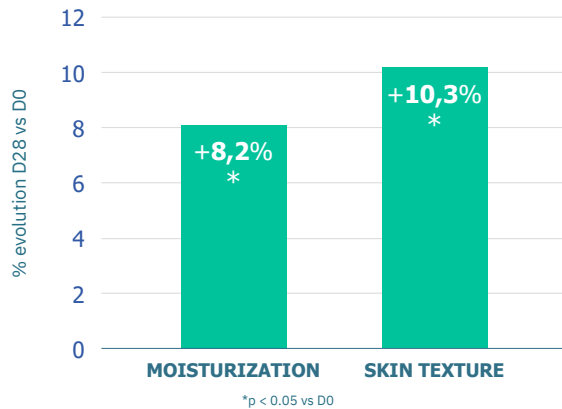
BETTER SKIN APPEARANCE

PROTOCOL:

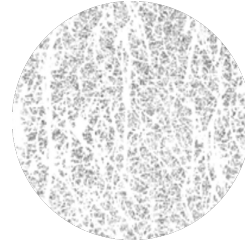
- 22 Caucasian female volunteers with irregular and dull complexion
- Glycuron 2.78 at 1% formula

TECHNOLOGIES:

- Distribution by MoistureMap MM 100. Measure of GrayIndexT.
- Visual sensory analysis (CLBT method).



Volunteer #30



D0



D28

MOISTURIZATION

Glycuron™ 2.78 significantly increases skin moisturization and smooths the skin grain thus promoting a healthier appearance.

EX VIVO

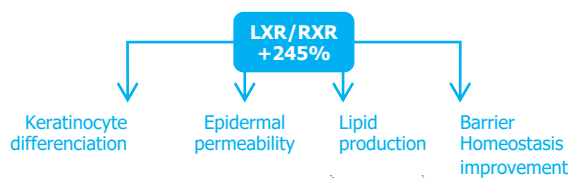
BETTER SKIN CELL RENEWAL

PROTOCOL:

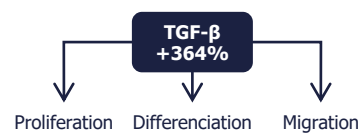
Global proteomic study. Unstressed skin explants treated with Glycuron 2.78 at 1% or not (control).

NEW DATA!

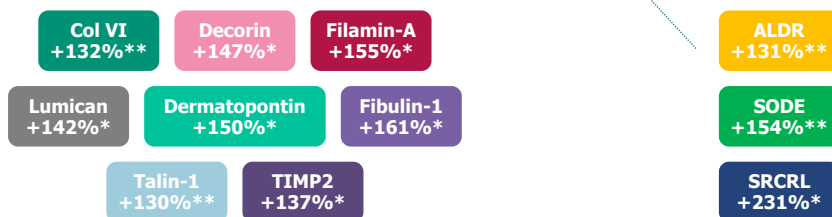
Skin barrier homeostasis



Skin renewal



Promotion of the cell movement biofunction +246%



ECM activity

Antioxidant activity

*p-value < 0,05 vs control / **p-value < 0,01 vs control

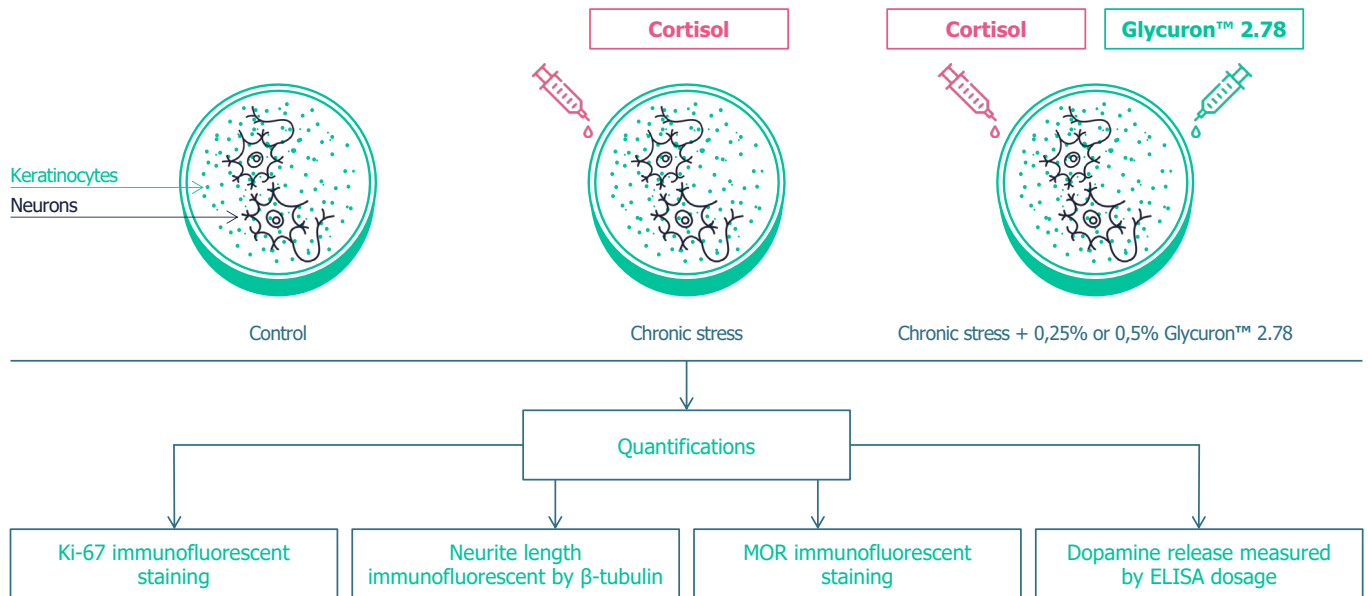
Impact of Glycuron™ 2.78 on keratinocytes-Nerves interactions



IN VITRO

PROTOCOL:

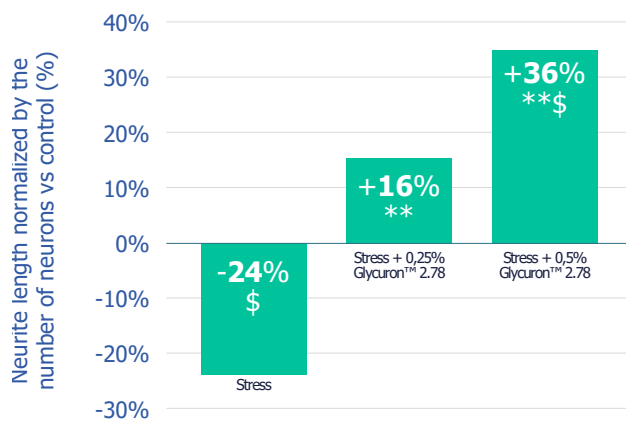
Stressed (cortisol) co-culture of keratinocytes and human sensory neurons were treated daily or not (stress) with Glycuron 2.78 at 0,25% and 0,5%.



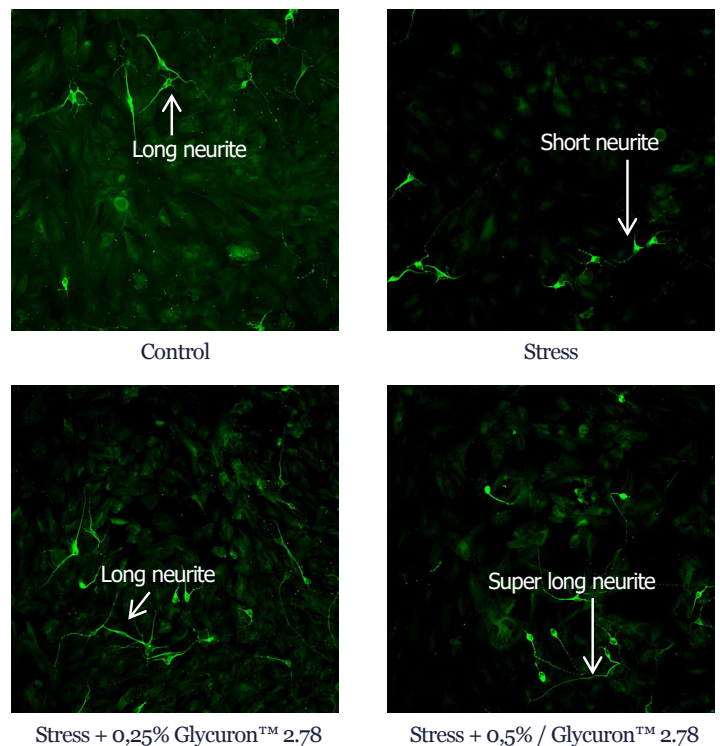
SKIN INNERVATION PROTECTOR

*p-value < 0,05 vs control / **p-value < 0,01 vs stress

Neurite length stimulation evaluation



Immunofluorescent staining with β-tubulin marker



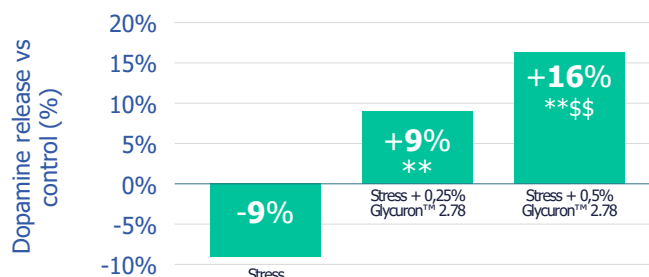
Glycuron™ 2.78 protects neurons from stress impairment.

MOR expression rate stimulation evaluation

\$p-value<0,05 vs control / \$\$p-value<0,01 vs control / **p-value<0,01 vs stress



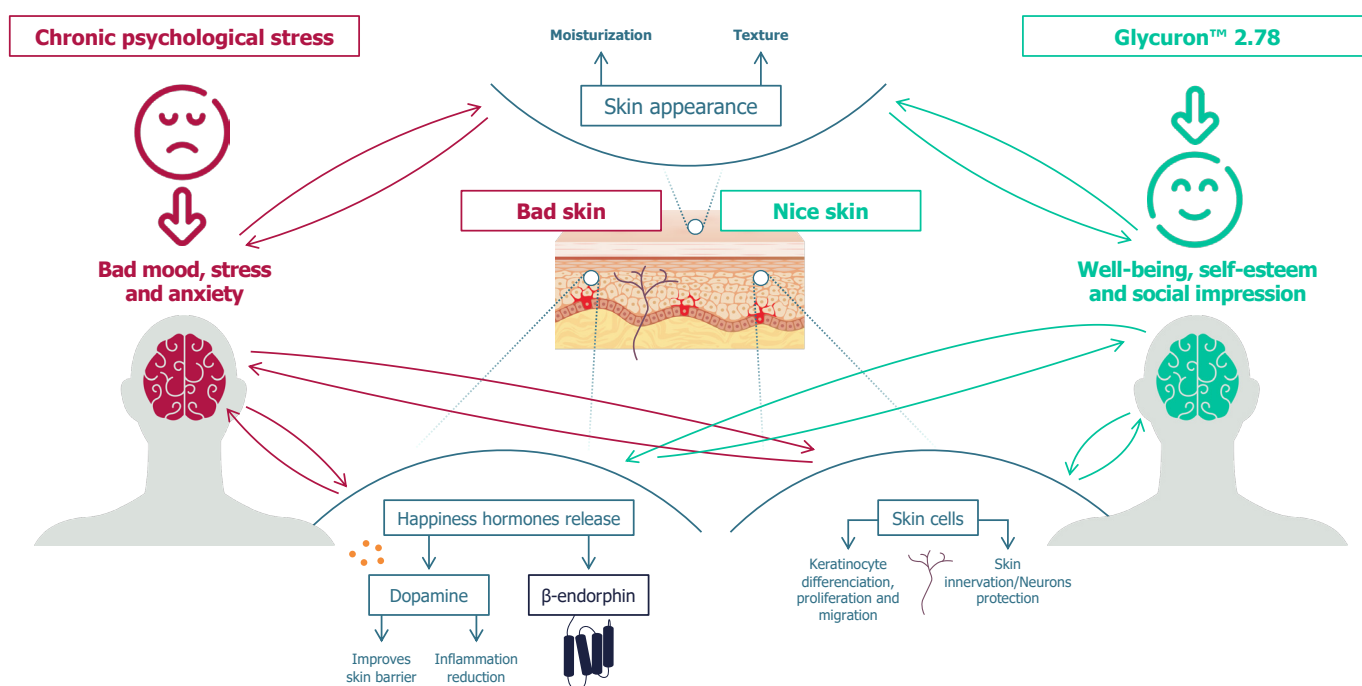
Dopamine release levels stimulation evaluation



Glycuron™ 2.78 increases MOR expression under conditions of psychological stress. This leads to a higher probability of β -endorphin binding to the receptor, ultimately reducing stress.

Glycuron™ 2.78 stimulates the release of dopamine in the skin under conditions of psychological stress.

Glycuron™ 2.78: the skin well-being and happiness booster



Product Information

Reference	LBG-278-01
INCI	AQUA – PROPANEDIOL – PENTYLENEGLYCOL – ALTEROMONAS FERMENT EXTRACT
China IECIC 2021	Listed
Product description	
Physical form	Liquid
Color	Translucent to clear
Odor	Characteristic
Use	
Recommended percentage of use	1%
Formulation	Add at the end of the formulation around 30°C
Efficacy	
Biological efficacy	Promotes skin cells renewal by boosting a marker of cellular proliferation (Ki-67) and skin barrier function by promoting markers of cell movement biofunction. Protects neurons from chronic stress impairment by increasing neurite length. Modulates happiness signaling pathways by increasing MOR expression and dopamine release under conditions of chronic psychological stress.
Clinical efficacy	Moisturizes and smooths the skin while also improving the overall well-being and emotional state by reducing vocal stress and enhancing self-perception and social impression (allo-perception).
Marketing information	
Cosmos status	Approved
Trademark	Glycuron™ 2.78
IP France	Patent pending: FRANCE No.19 03473 EXTRAIT D'ALTEROMONADACEAE ET SON UTILISATION COSMETIQUE
Origin	France

Claim suggestions

- Moisturizes the skin
- Smooths the skin and refines skin texture
- Promotes cell renewal at the dermis and epidermis levels
- Boosts well-being
- Reduces chronic stress
- Enhances self-esteem
- Improves social impression (allo-perception)
- Modulates happiness signaling pathways
- Increases dopamine release
- Improves the emotional state

Trend applications

- Emotional Beauty
- Mind-skin connection
- Neurocosmetics & Neurobeauty
- Holistic Beauty
- Marine biotech ingredient
- Marine spa
- Relaxation and well-being
- Daily cream fighting chronic stress



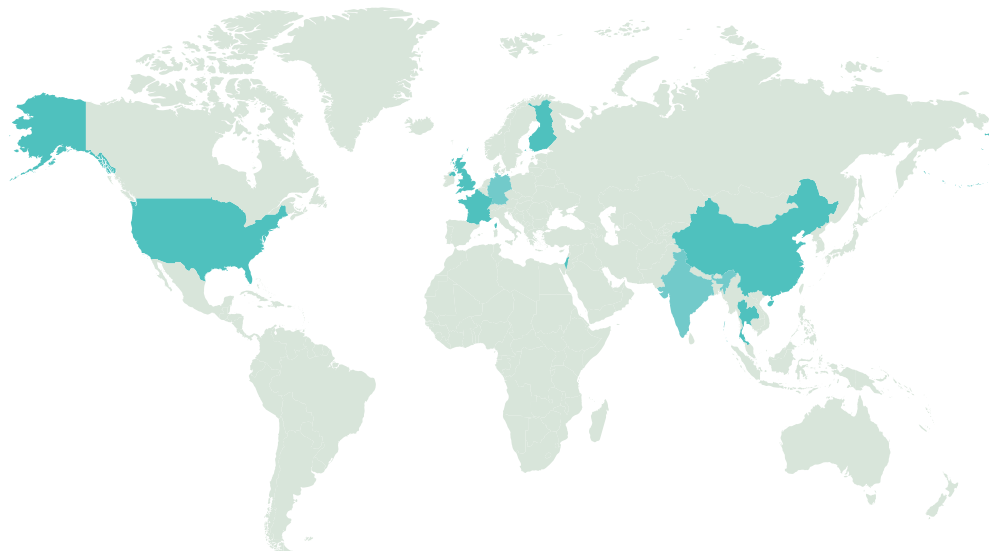
Bibliography:

1. Y. Zhanga, Y. Luoa, W. Lib, J. Liuc, M. Chena, H. Gua, B. Wang, Dr., X. Yao, Dr.
DC-SIGN promotes allergen uptake and activation of dendritic cells in patients with atopic dermatitis.
Journal of Dermatological Science 84(2) (2016): 128-136.
2. G. Faury, J. Molinari, E. Rusova, B. Mariko, S. Raveaud, P. Huber, V. Velebny, A.M. Robert, L. Robert
Receptors and aging: Structural selectivity of the rhamnose-receptor on fibroblasts as shown by Ca2+-mobilization and gene-expression profiles.
Archives of Gerontology and Geriatrics 53(1) (2011) 106–112 *Biol Cell*.
3. D. Cerdan, C. Grillon, M. Monsigny, G. Redziniak, C. Kieda
Human keratinocyte membrane lectins: characterization and modulation of their expression by cytokines.
Biology of Cell. 1991;73(1):35-42.

Technologies:

4. **MoistureMap:** Touch sensor providing graphical information about the distribution of moisture to the surface. Measurement of the electromagnetic field penetration.
Humidity is increasing conductivity and means darker pixels.
 5. **Emospin:** instrumental evaluation of spontaneous verbatim using a quantitative analysis of subject answer word content (occurrences). Mirror test performed by EMOSPIN.
- For each category, results are listed from the highest number of occurrences to the lowest. All parameters are statistically significant. Frequency of appearance: $p \leq 0.06$

SEQENS, an integrated global leader in pharmaceutical synthesis, specialty and personal care ingredients



3,300
people



300
scientists & experts
and engineers



9
countries



9
R&D centers

ABOUT SEQENS PERSONAL CARE

Created in 2003, SEQENS is an integrated global leader in pharmaceutical synthesis, specialty and personal care ingredients, delivering outstanding performance, unrivaled market responsiveness and bespoke solutions to our customers.

SEQENS Personal Care manufactures a wide range of natural actives ingredients, preservative boosters and multifunctionals for the cosmetic market.

Our strong pharmaceutical heritage and health expertise allows us to provide:

- Strong expertise in synthesis from high potent to simple molecules
- Strict respect of quality, global compliance, environmental regulations
- Unique R&D and large production capacities for new development and scale up activities
- FLAGSHIP technologies such as flow chemistry, multi-catalysis, fractionated distillation...

SEQENS is committed to a CSR approach for over 15 years (Gold & Platinum Ecovadis certifications).



SEQENS

OUR SCIENCE FOR YOUR FUTURE

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