



# G+C Complex CLR™

The BioGenetic Codex

## G+C Complex CLR™

in vivo	ex vivo	in vitro
<input type="checkbox"/> skin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

G+C Complex CLR™ is based on almost 50 years of scientific research on the effect of Bifida Ferment Lysate on skin aging. With its natural next generation approach, it acts on the core of skin aging, the ability to compensate for the threefold negative effects of sunlight on the biogenetic code of skin: DNA damage, immunosuppression and dysregulation of the circadian rhythm. G+C Complex CLR™ provides essential support to the skin cells. It acts on UV-induced immunosuppression and brings balance to the circadian rhythm of skin cells, allowing for effective DNA repair.

G+C Complex CLR™ induces the repair of persistent CPD mutations, increases skin cells' longevity and healthy functionality. Consequentially, G+C Complex CLR™ slows down the skin aging process by interfering with the production of inflammatory mediators involved in the 'inflammaging' processes.

**Dosage:** 1.0–5.0%

**pH range:** 3.8–7.0

**INCI Name:**  
Bifida Ferment Lysate

For more information,  
such as formulations  
click or scan QR-code



## Skin benefits

- Stimulates cellular DNA repair mechanisms after UV irradiation
- Reduces cell apoptosis, increases cell longevity
- Slows down the photoaging process
- Maintains the ATP production after UV-irradiation for cell viability
- Reduces 'inflammaging' by reducing internal inflammatory mediators
- Acts against UV-induced immunosuppression
- Activates and harmonizes the skin's circadian clock genes
- COSMOS approved

## Marketing opportunities\*

- Protects skin against 'inflammaging'
- Maintains the repair capabilities of DNA
- Protects the biogenetic code of skin against the negative effects of UV light
- Postbiotic "skinmunity" booster for healthy and strengthened skin
- Re-syncs the circadian rhythm

\* This list is for illustrative purposes only.  
Make sure to comply with relevant legislation.

## Applications

- Skin protection

for fine cosmetics · since 1926



# G+C Complex CLR™

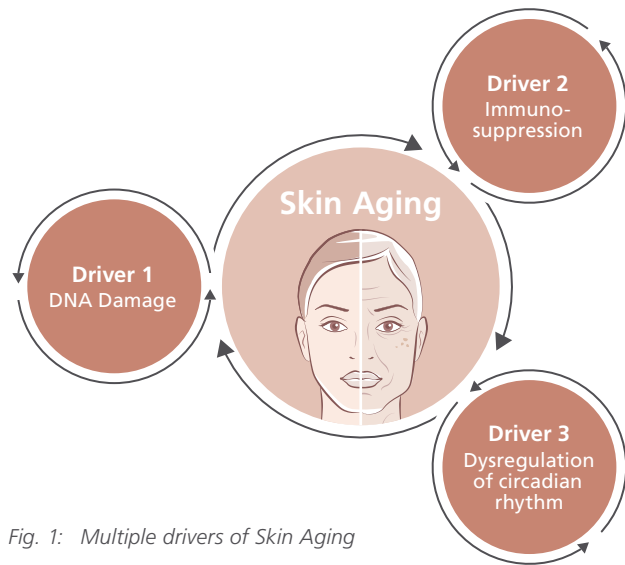


Fig. 1: Multiple drivers of Skin Aging

## Selected efficacy studies

### DNA repair

HaCaT keratinocytes were pretreated with active ingredients for 48 hours. Then cells were irradiated with 1.5 J/cm<sup>2</sup> UVA, 0.15/cm<sup>2</sup> UVB. Analysis with ELISA took place after irradiation. Use level of active ingredients: 1%. Non-irradiated control is set at 100%. Control was not treated with active ingredient (Fig. 2).

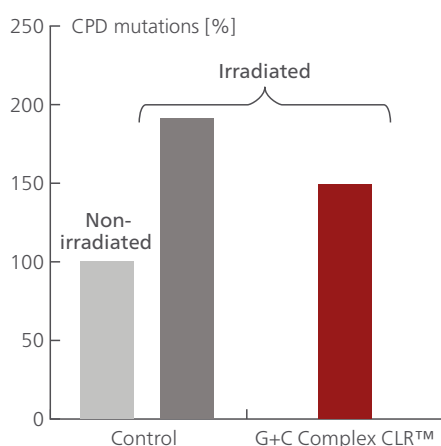


Fig. 2: G+C Complex CLR™ reduces DNA damage after UV-irradiation

### Stabilization of the chronobiological clock

Skin explant. Fresh human skin with adipose tissue sheet. Donor: female, 60 y/o, Caucasian, phototype IV. Treated with and without G+C Complex CLR™ (1%). Topical application on three consecutive days (day 1-3). After last application (day 3): UV irradiation (1 MED, 60 mJ/cm<sup>2</sup> UVB, 1.14 J/cm<sup>2</sup> UVA). Analysis of gene expression on day 4. Grey column: Gene expression of non-irradiated and non-treated skin is set at 0%. Red column: Gene expression of irradiated and non-treated skin is set at 0% (Fig. 3).

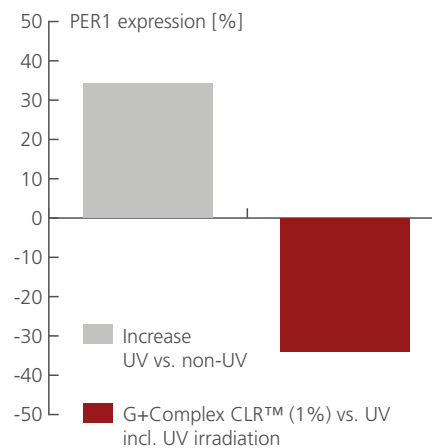


Fig. 3: G+C Complex CLR™ balances PER-1 expression after UV-irradiation

### Immune strengthening

IL-12 expression by human keratinocytes after UV irradiation with 1 J/cm<sup>2</sup> UVA + 0.1 J/cm<sup>2</sup> UVB. Expression of IL-12 by control cells (non-treated, but irradiated) is set at 0% (Fig. 4).

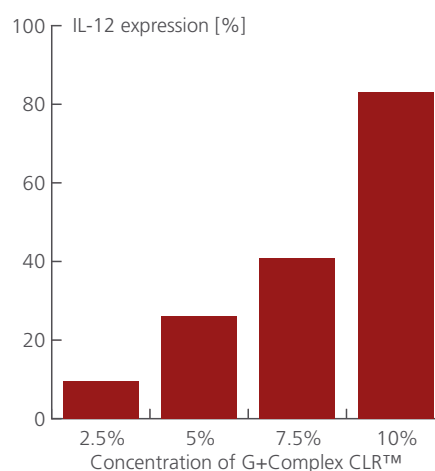


Fig. 4: G+C Complex CLR™ induces expression of IL-12 after UV-irradiation

### CLR

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