HEALTH

LUBRIZOL LIFE SCIENCE

Botanical Ingredients

A healthy diet...

...can impact appearance of skin

As nutrition and diet play a big role in skin health, there is a growing demand for "Beauty From Within" solutions.

Beautiful skin starts from within

Nutricosmetics Market is Poised to Reach US$7.93 billion by 2025

CAGR: 5%

Main functional beauty benefits:

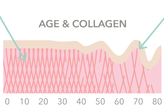
- Anti-ageing
- Sun/UV protection
- Hair care

Skin ageing and collagen

Collagen is one of the major building blocks of the skin, responsible for its elasticity and strength

High levels of **reactive oxygen species (ROS)** lead to the activation of collagenase.

Accumulation of **advanced glycation end products (AGEs) leads to more** brittle collagen.



Collagen deterioration is linked to skin ageing

Curcumin and skin ageing

Is turmeric's (one of the most revered plants in Ayurveda), main bioactive polyphenol with potent **anti-oxidant** & **anti-inflammatory** properties.

...can slow down the ageing process...

However the potential of curcumin is limited by its poor bioavailability.

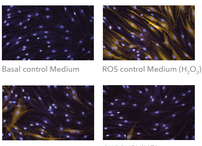
The solution

CURCUSHINE™ microcapsules

Bioavailable and soluble curcumin with anti-aging benefits

Efficacy

1. In vitro-ROS reduction effect



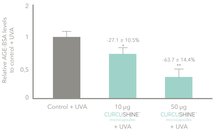
Basal control Medium | ROS control Medium (H_2O_2)

Green Tea Extract 10 µg/mL | CURCUSHINE™ microcapsules 10 µg/mL

CURCUSHINE™ microcapsules **shows significant protection vs oxidative stress on HDFa cell cultures**

CURCUSHINE™ microcapsules exhibits better anti-oxidant performance compared to another well-known extract, thus preventing skin ageing from within.

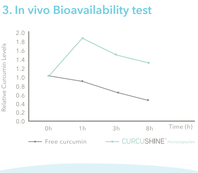
2. In vitro- UVA-induced glycation Protection



CURCUSHINE™ microcapsules **significantly protects from UVA-induced glycation**

The in vitro treatment with CURCUSHINE™ microcapsules significantly protects from UVA-induced glycation, by decreasing Advanced Glycation End products (AGEs) up to 63.7%, compared to the untreated control.

3. In vivo Bioavailability test



CURCUSHINE™ microcapsules **bioavailability is much higher than control, lasting until 8 hours after the intake**

CURCUSHINE™ microcapsules displays a pharmacokinetics profile of slow release of curcumin compared to the quick absorption, metabolization and removal of free curcumin.

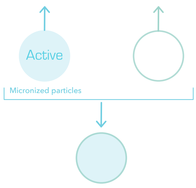
Benefits

- Superior curcumin absorption
- High solubility
- Protection vs oxidative stress
- Collagen Care

Water solubility

Superior water dispersion of CURCUSHINE™ microcapsules compared to free curcumin extract.

Technology



Applications

Nutraceutical, functional beverages and nutricosmetic applications.

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For more information visit, www.lipofoods.com