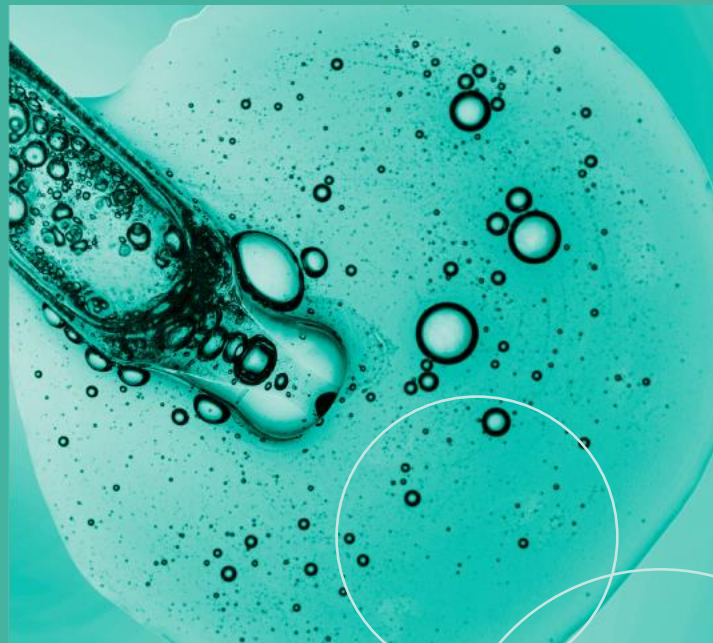
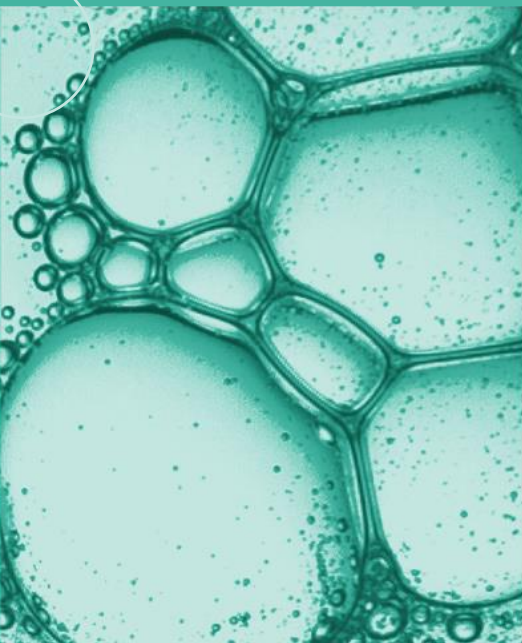


Coenzyme Q10

Has become a leading cosmetic ingredient



July 2025

Biotech | Nature, enhanced by science

dsm-firmenich 

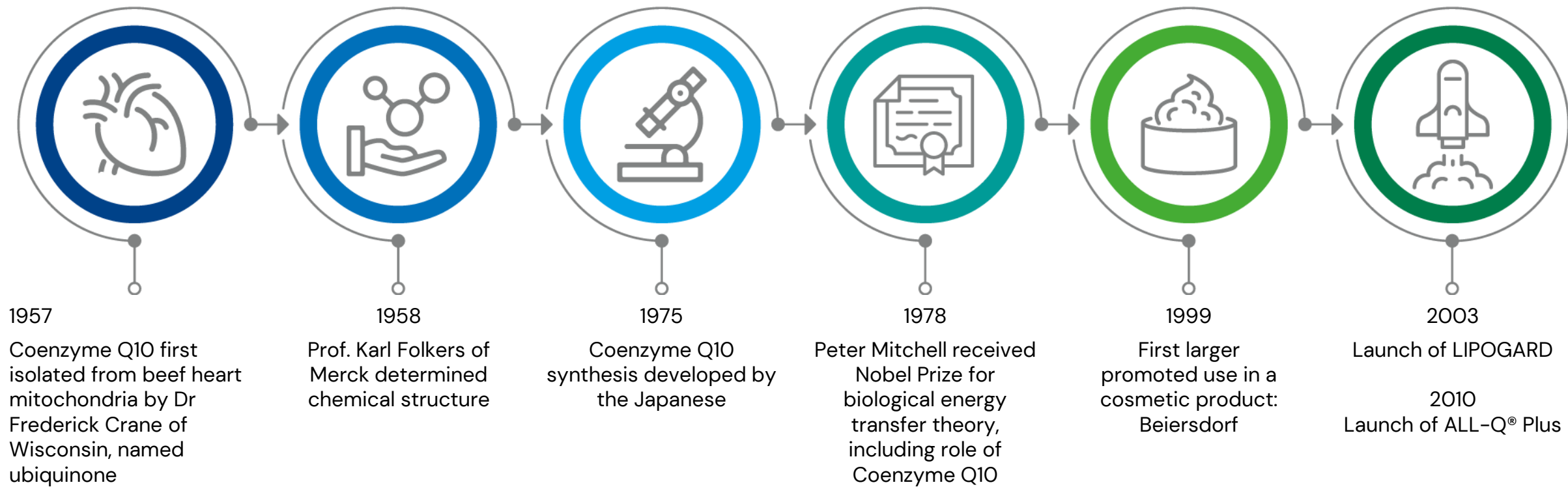
What is Coenzyme Q10 ?

- **Over the last years, Coenzyme Q10 has become a leading cosmetic ingredient** particularly in anti-aging formulations.
- **Coenzyme Q10 (CoQ10), also known as Q10 or ubiquinone**
- **Coenzyme Q10 is a naturally occurring, fat-soluble compound** found in virtually all human cells, particularly in the mitochondria.
- **Coenzyme Q10 levels decline with age and UV exposure**

*Biofactors. 2015 Nov 12; 41(6): 383–390



History of Coenzyme Q10

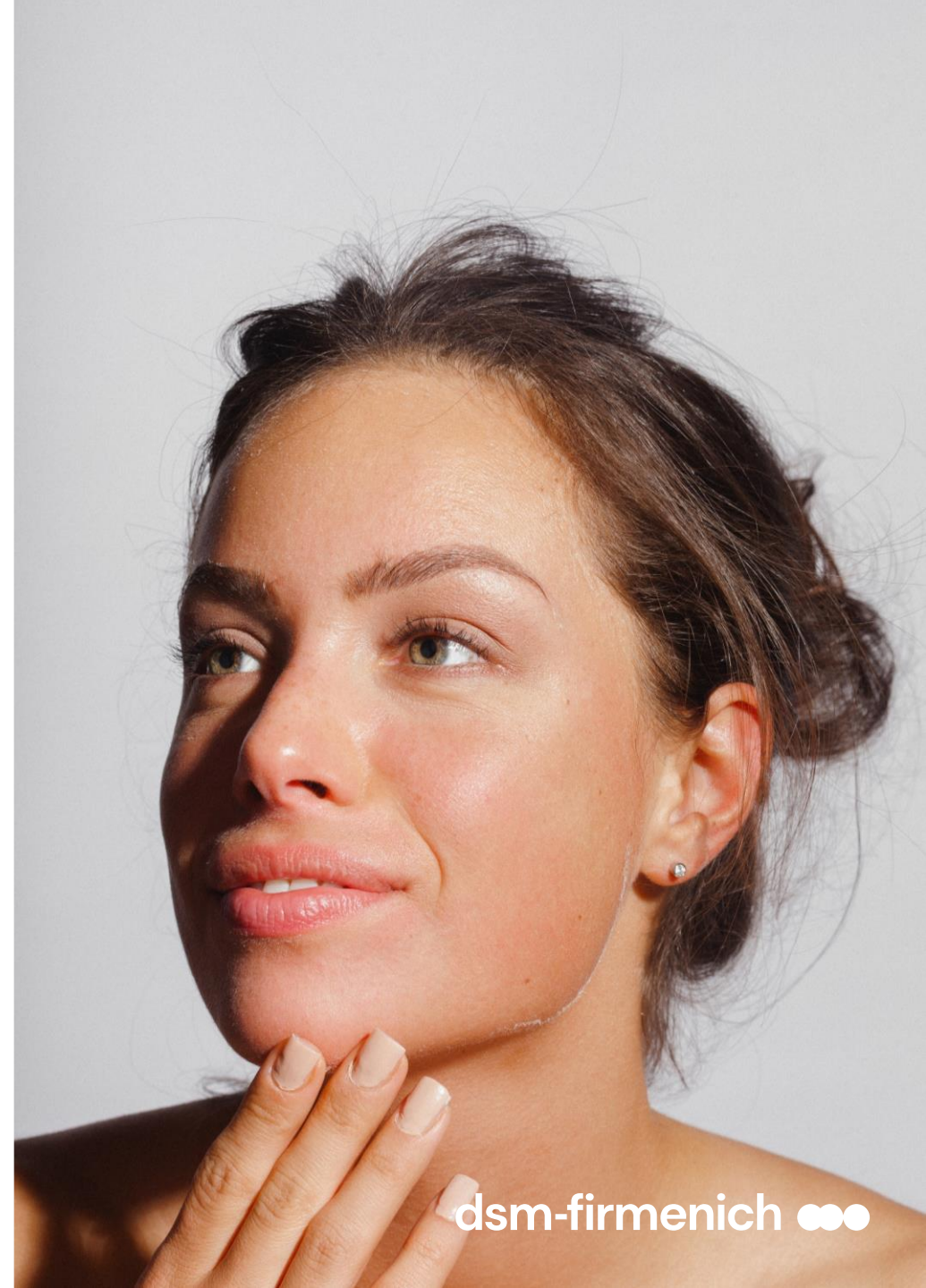


Coenzyme Q10 – the ingredient of more than 20 years of research

- Beiersdorf have invested more than 20 years of intensive research into Q10, **how it works and the benefits for skin care.**
- This has made it possible to create an anti-wrinkle face care range that combats the aging process naturally.*



* Source: <https://www.nivea.co.uk/advice/skin/what-is-q10-233>



Coenzyme Q10 (Q10) – a still unbroken trend



Anti-Wrinkle Power



Revitalize



Pore Minimising



Protecting Day Cream



Anti-Age Hand Cream



Hair Therapy



How does Coenzyme Q10 work?

Coenzyme Q10 (Q10) works through **two primary biological mechanisms** that are especially relevant in skincare and cellular health:

- **Energy production (ATP Synthesis)**

- Coenzyme Q10 is a vital component of the mitochondrial electron transport chain. This process is essential for the production of adenosine triphosphate (ATP), the energy currency of cells. In skin cells, this energy supports:

- Cell regeneration
- Repair of damaged tissues
- Maintenance of skin elasticity and firmness

- **Antioxidant defense**

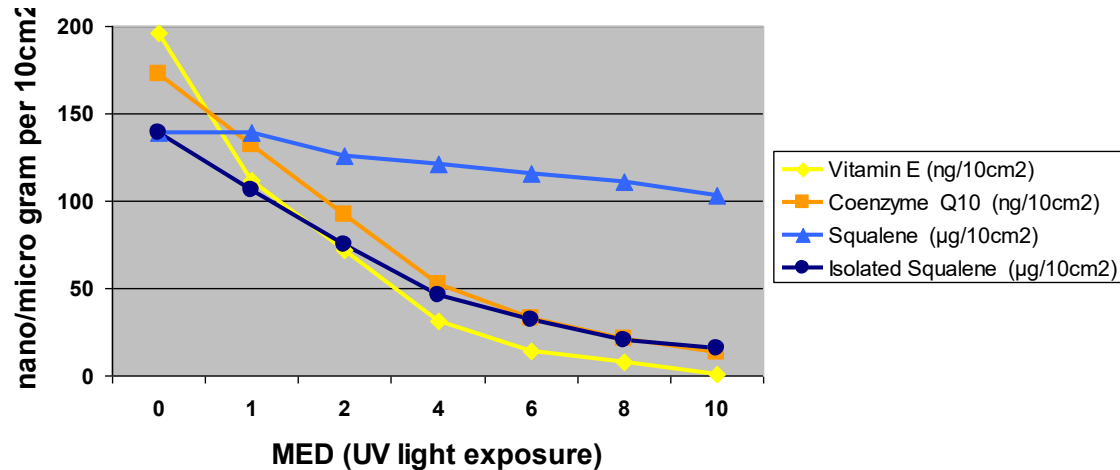
- Coenzyme Q10 acts as a lipid-soluble antioxidant, neutralizing reactive oxygen species (ROS) and preventing oxidative damage to:

- Lipids
- Cell membranes
- Proteins
- DNA

This is particularly important in protecting the skin from **UV-induced aging, inflammation, and lipid peroxidation.**

CoQ10 protects together with Vitamin E the skin surface lipids from peroxidation

Lit: Passi et al.: Lipophilic antioxidants in human sebum and aging. Free Radical Research, 36, 471-477 (2002)



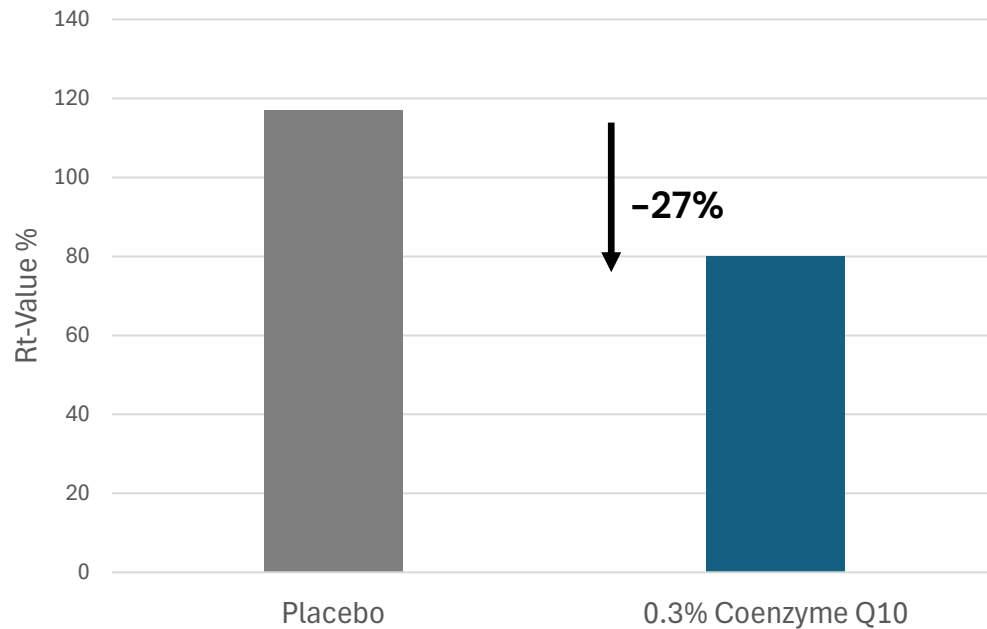
The study by Passi et al. (2002) is frequently cited in dermatological literature for its insights into how Coenzyme Q10 (CoQ10) and Vitamin E protect skin surface lipids from oxidative damage, particularly under UV exposure

- Skin surface lipids (mixture of sebum and lipids originating from corneocytes) were collected from healthy volunteers. Coenzyme Q10 and Vitamin E were determined in skin surface lipids.
- Irradiation of the skin surface lipids with increasing amounts of UV light led to an almost complete depletion of CoQ10 and Vitamin E, whereas squalene was only marginally decreased i.e. oxidized.
- The protective effect of CoQ10 and Vitamine E on squalene becomes obvious when isolated squalene is exposed to UV-irradiation. It is almost completely peroxidized.

The decline of CoQ10 and Vitamin E under UV stress underscores the need for topical replenishment

CoQ10 reduces wrinkle depth

Reduction of wrinkles depth around the eyes
after application of CoQ10 in 6 months



Lit: Hoppe et al 1999 BioFactors 9, 1999, 371–378

- **Placebo-controlled study** involving two groups of 24 healthy, aged volunteers with a **formulation with 0.3% CoQ10** were once daily applied. The reduction of the wrinkle depth was measured by profilometry. Silicon replicas were taken from defined skin area around the eye and the Rt-value = max wrinkle depth was measured by means of a laser.

27% reduction of wrinkle depth after
application of 0.3% CoQ10 in 6 month

Coenzyme Q10 – The Ultimate Benefits



Coenzyme Q10 is a powerful antioxidant¹



Coenzyme Q10 works to sustain energy production to fulfil the skin's vital functions²



Coenzyme Q10 protects the deeper layers of your skin from damage caused by UVA³



Coenzyme Q10 fights against wrinkles⁴



Coenzyme Q10 can help to prevent hyperpigmentation⁵

¹ BioFactors. 2015 Nov 12; 41(6): 383–390.

² Biochemical and Biophysical Research Communications 396 (2010) 74–79.

³ BioMed Research International Volume 2020.

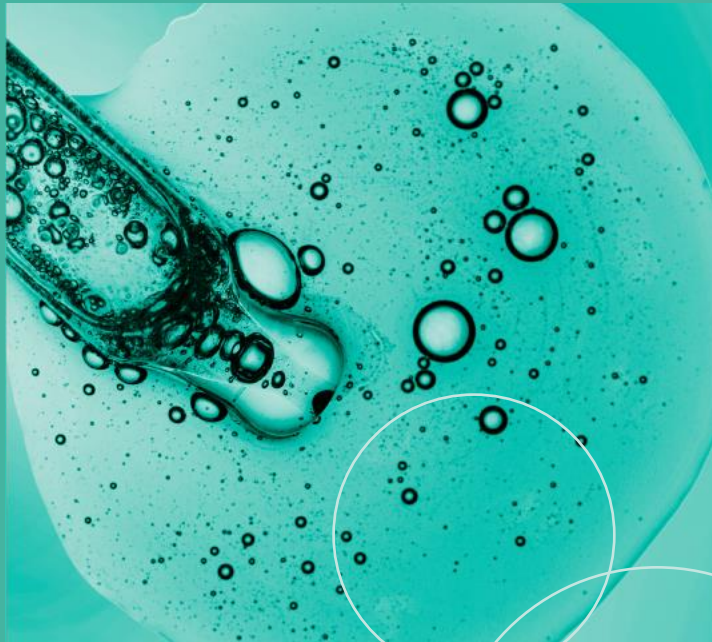
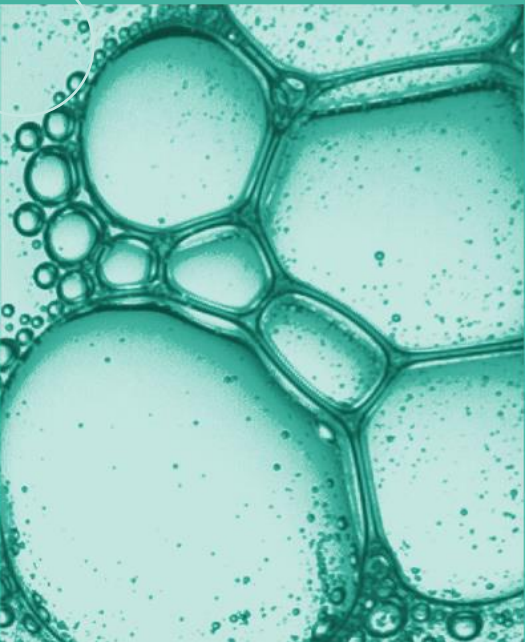
⁴ BioFactors 32 (2008) 237–243.

⁵ Biochemical Pharmacology 164 (2019) 299–310.



LIPOGARD

Replenish your skin's natural superpowers

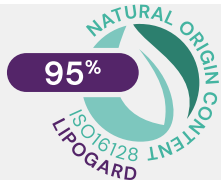


LIPOGARD

ID Card

INCI NAME:	Tocopheryl Acetate, Ubiquinone, Squalane		
TECHNOLOGY:	A perfect blend of 1% Ubiquinone, 5% Tocopheryl Acetate, 94% Squalane • Q10/Ubiquinone: manufactured by biotechnological fermentation • Tocopheryl Acetate: synthetic origin, acts as a powerful antioxidant that may be effective to protect your skin • Squalane: derived from olives, found naturally in the skin, is a natural emollient and protects the skin from moisture loss • 95% natural origin (ISO 16128)		
TECHNICAL:	Form: Clear, orange colored, slightly viscous, oily solution	Use level: 1 – 3% Preservative: Free	Solubility: Soluble in lipophilic components Storage: 15–25°C
BENEFITS:	• Replenishing endogenous antioxidant levels of Q10 and Vitamin E. • Inhibiting lipid peroxidation on human skin • Protecting the skin barrier from UV and pollution-induced damage. • Boosting skin cell activity and reducing casual inflammation • Reduces wrinkle depth • Gives skin the energy it needs for natural repair and regeneration • Helps to reduce sun damage • Makes the skin look and feel firmer, softer and well toned		

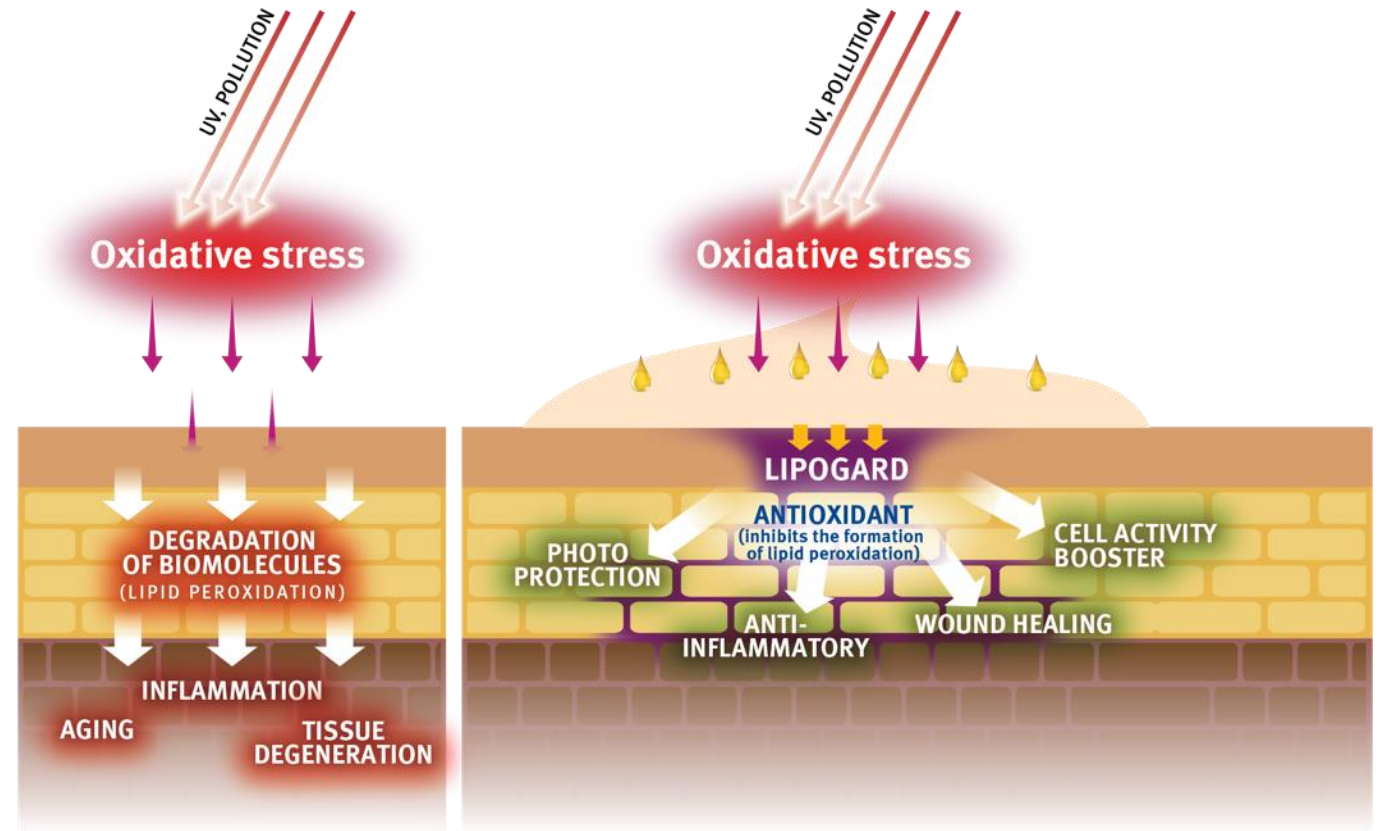
REGISTRATION CERTIFICATION



LIPOGARD

Mode of action

- Replenishing endogenous antioxidant levels of Q10 and Vitamin E.
- Inhibiting lipid peroxidation on human skin
- Protecting the skin barrier from UV and pollution-induced damage.
- Boosting skin cell activity and reducing casual inflammation

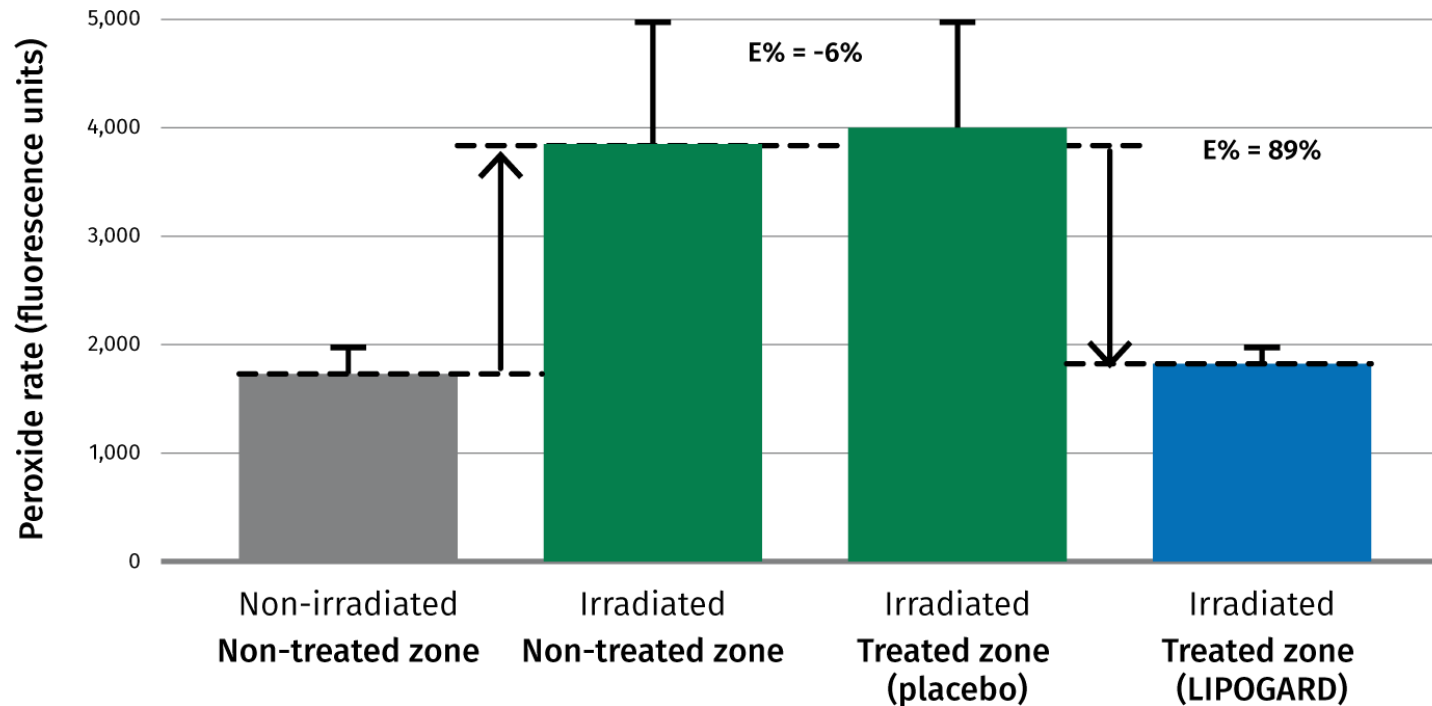


LIPOGARD

Strong inhibition of lipid peroxidation

Ex vivo

Scavenging effect of LIPOGARD vs placebo ex vivo on human skin



Test method

Selection of subjects

6 healthy volunteers aged between 23 and 41.

Principle an devices

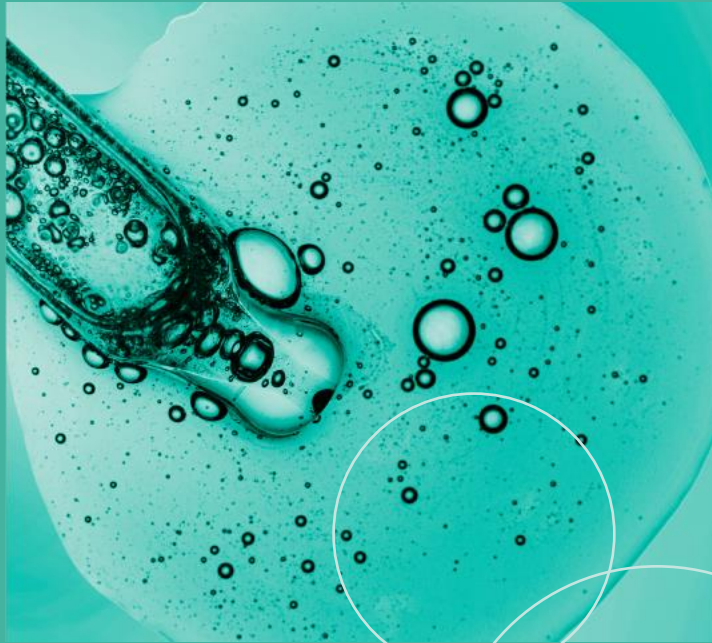
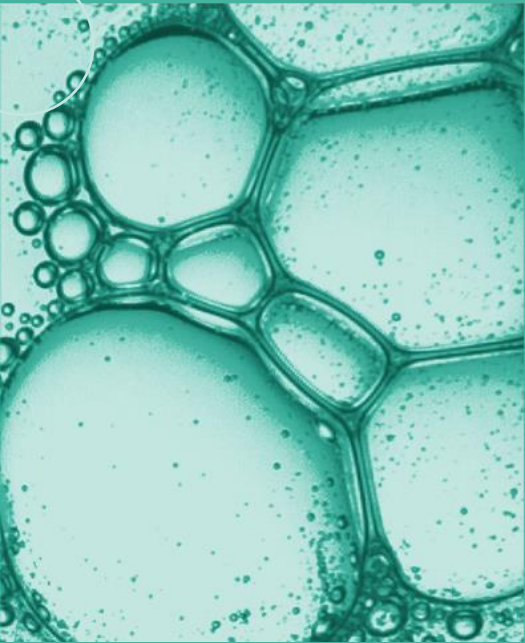
The efficacy of LIPOGARD (3%) has been investigated with a method, assessing the basal or UV-induced peroxidation of the stratum corneum

An UVA irradiation allows to increase the free radical rate. On cutaneous lipids free radicals generate lipoperoxides. The measuring tool was implemented with a probe which became fluorescent in presence pf peroxides. The fluorescence is detected by fluorimetry with the Fluoroskan II® (Labsystem).

LIPOGARD inhibits the formation of lipid peroxidation on human skin by up to 89%

ALL-Q[®] plus

Replenish your skin's natural superpowers



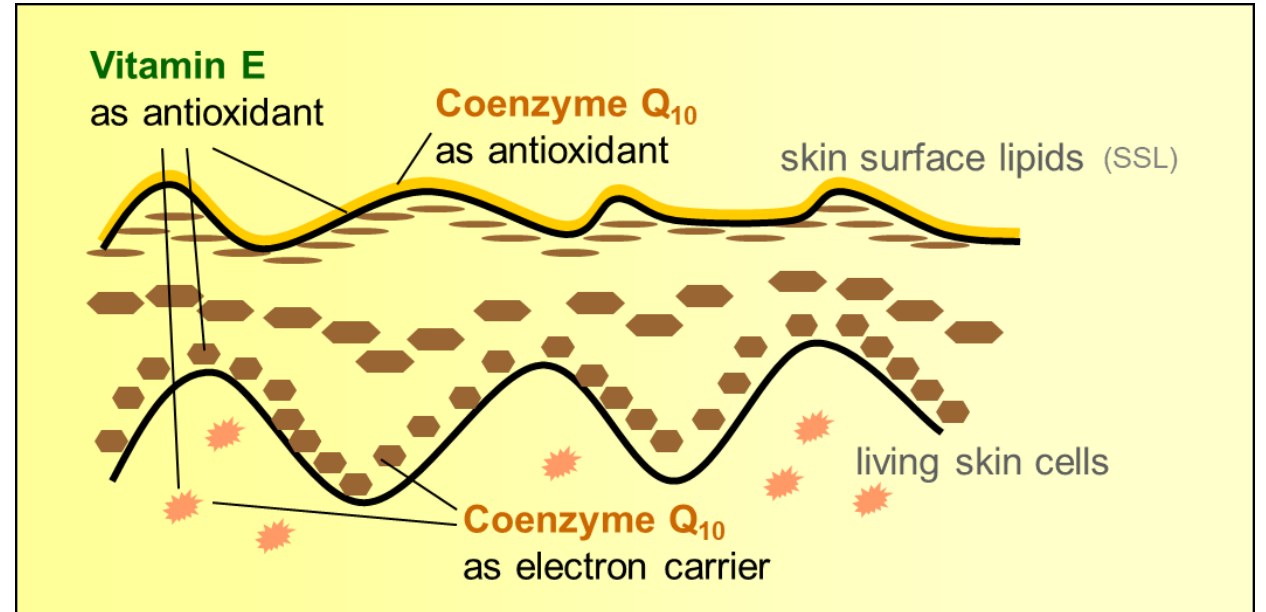
ALL-Q® Plus

ID Card

INCI NAME:	Tocopheryl Acetate, Ubiquinone, C12-15 Alkyl Benzoate		
TECHNOLOGY:	Blend of 7.5% Ubiquinone, 20% Tocopheryl Acetate, 72.5% C12-15 Alkyl Benzoate • Q10/Ubiquinone: manufactured by biotechnological fermentation • Tocopheryl Acetate: synthetic origin, acts as a powerful antioxidant that may be effective to protect your skin • C12-15 Alkyl Benzoate: synthetic, cosmetic carrier oil, acts as an emollient • 7.5% natural origin (ISO 16128)		
TECHNICAL:	Form: Reddish clear liquid	Use level: 0.5 – 4% Preservative: Free	Solubility: Soluble in lipophilic components Storage: 15-25°C
BENEFITS:	• Replenishing endogenous antioxidant levels of Q10 and Vitamin E. • Inhibiting lipid peroxidation on human skin • Protecting the skin barrier from UV and pollution-induced damage. • Boosting skin cell activity and reducing casual inflammation • Reduces wrinkle depth • Gives skin the energy it needs for natural repair and regeneration • Helps to reduce sun damage • Makes the skin look and feel firmer, softer and well toned		
REGISTRATION CERTIFICATION	     		

ALL-Q® plus Mode of action

- ALL-Q® plus mirrors the natural presence of Coenzyme Q10 and Vitamin E in the skin
- ALL-Q® plus is a powerful antioxidant active ingredient to protect the skin surface lipids
- ALL-Q® plus acts as a mitochondrial electron carrier to fulfil the skin's vital functions

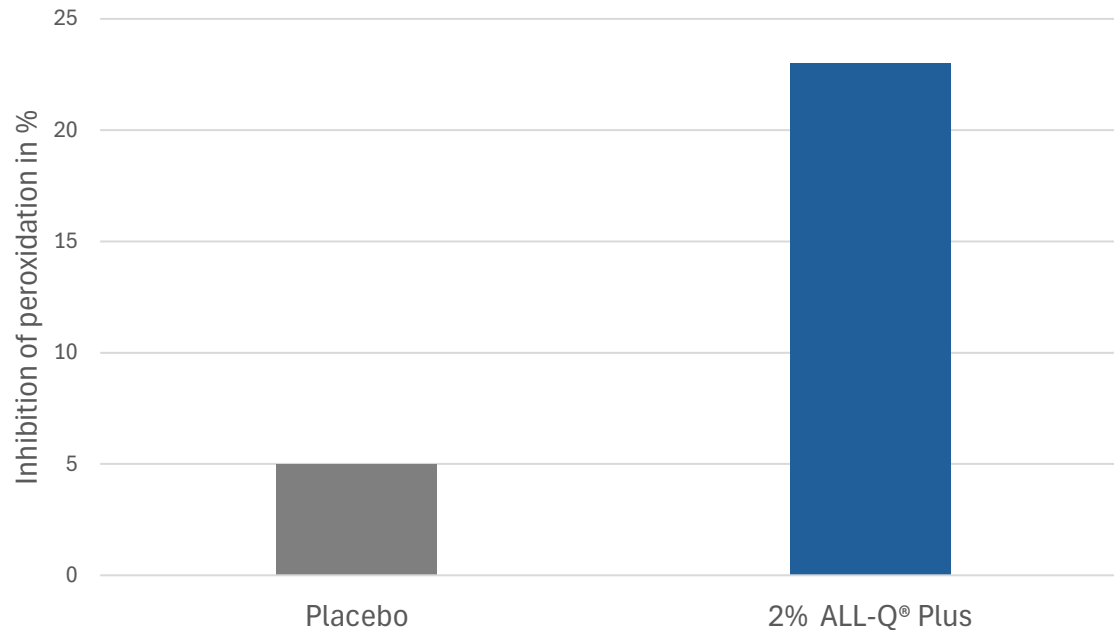


ALL-Q® Plus

Strong inhibition of lipid peroxidation

In vivo

Scavenging effect of LIPOGARD vs placebo on human skin



Test method in vivo

20 healthy volunteers (37 – 65 years) were treated once daily for seven days with the test products (placebo, formulation with **2% ALL-Q® Plus**), which were applied on the inner forearm. **The forearm was then irradiated with UVA light (10J/cm²) and the squalene peroxide formed were quantitatively determined by HPLC.**

ALL-Q® plus protects the skin lipids from UV-induced peroxidation

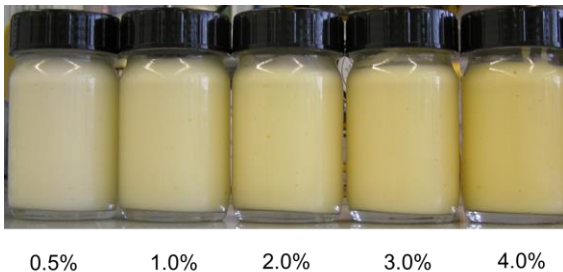
LIPOGARD/ALL-Q® Plus

The formulation

- LIPOGARD and ALL-Q® Plus are oil-miscible
- Ready-to-use liquid, orange-colored form
- Processing either hot (up to 80°C) or cold
- **LIPOGARD :**
 - Contains 1% Ubiquinone, 5% Tocopheryl Acetate, 94% Squalane
 - Recommended use level: 1-3%
 - Appearance of different LIPOGARD concentrations in a cosmetic formulation:



- **ALL-Q® Plus:**
 - 7.5% Ubiquinone, 20% Tocopheryl Acetate, 72.5% C12-15 Alkyl Benzoate
 - Recommended use level: 0.5 – 4%
 - Appearance of different ALL-Q® Plus concentrations in a cosmetic formulation



LIPOGARD/ALL-Q® Plus

The benefits

- Replenishes your skin's natural superpowers
- Maintains younger-looking skin for longer
- Gives skin the energy it needs for natural repair and regeneration
- Helps to reduce sun damage
- Makes the skin look and feel firmer, softer and well toned

LIPOGARD/ALL-Q® Plus are the ideal active ingredients for:

- Skin protection formulations (sun care, environmental stress...)
- Regenerating products to reduce wrinkles
- Intensive treatment products: eye care
- Energizing applications (wake-up formulations)



We bring progress to life

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