



# GinsenoLite™-G

Vital energy

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# GinsenoLite™-G – Characteristics

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- *Panax ginseng* C.A. Meyer
  - Korean Ginseng, harvested after 4-6 years of growth
- Water soluble extraction
  - Column chromatography purification
  - Fractionation based on melanogenesis inhibition assay
  - Lyophilization (freeze-dry)
  - Solubilization in glycerin and water
- Molecular composition
  - Ginsenosides (bioactive components)
  - Standardization as per Rb3 content
- INCI name
  - Glycerin (and) Water (and) Panax ginseng root extract

# GinsenoLite™-G – Ginseng & Ginsenosides

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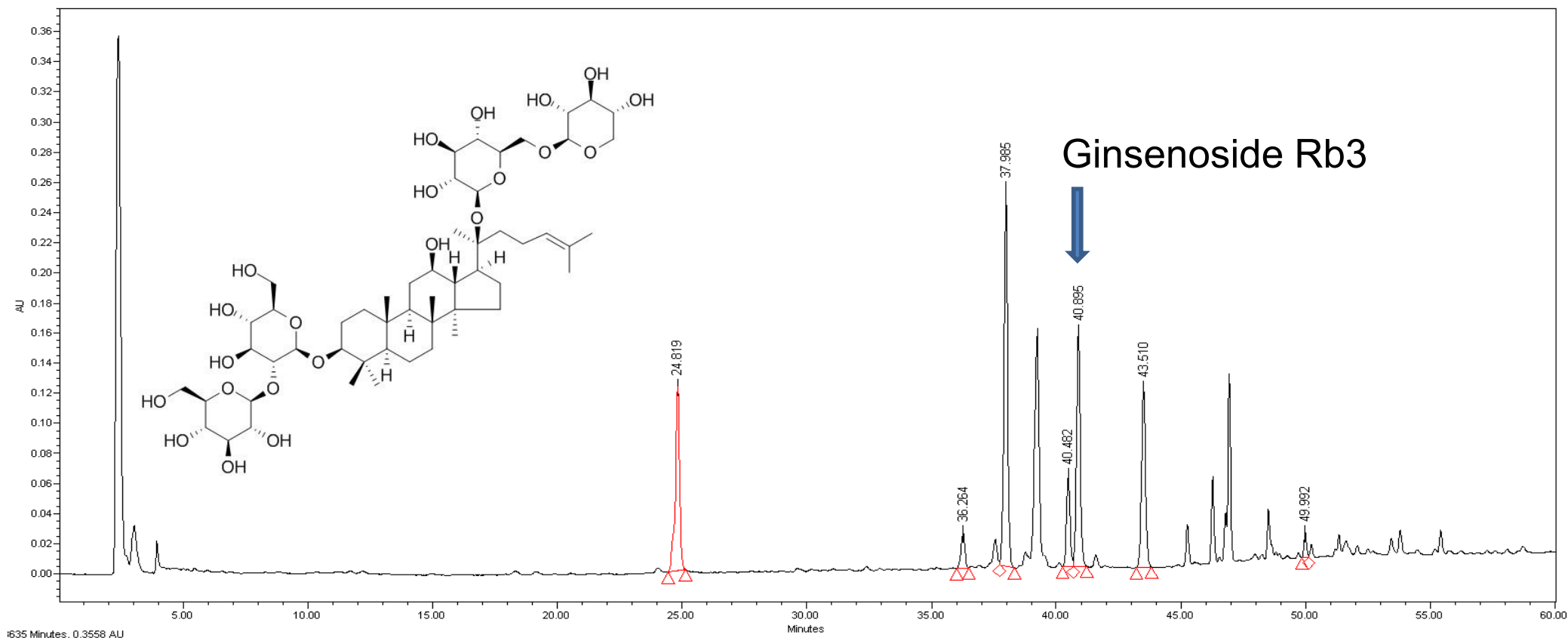
- Panax ginseng is a traditional herbal medicine
  - Panax ginseng is a traditional herbal medicine used therapeutically for more than 2000 years
  - It is the most valuable of all medicinal plants
  - The name Panax means “all healing”
  - Ginsenosides: major biologically active components
- Known biological actions
  - Neuroprotective, Antidepressant
  - Suppresses oxidative stress
  - Wound healing
  - Anti-aging (↓wrinkles, ↑collagen synthesis)
  - Anti-inflammatory
  - Anti-oxidant
- New benefits of ginseng
  - Whitening Activity
  - Digital Aging protection



# GinsenoLite™-G – Ginsenoside Profile

## HPLC analysis of GinsenoLite™-G ginsenoside profile

- Each peak represents a different ginsenoside

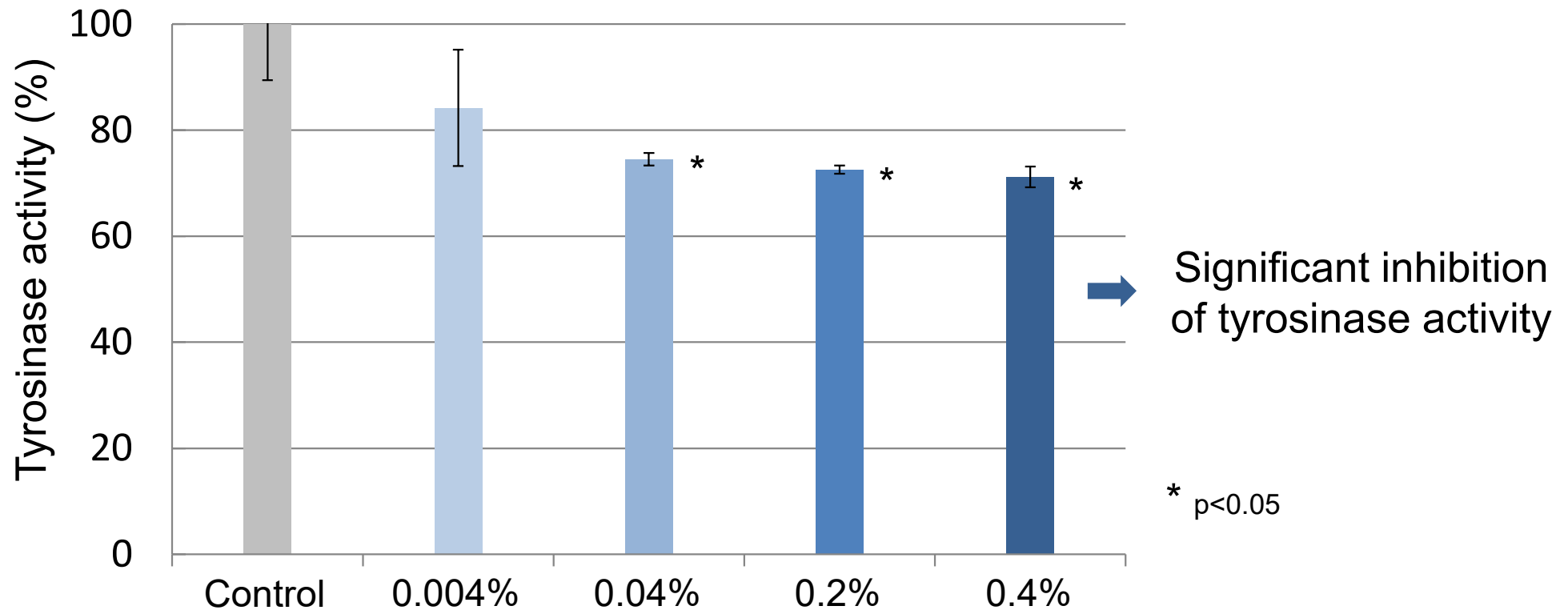


- Inhibition of tyrosinase activity
  - Oxidation of L-DOPA
- Inhibition of melanogenesis
  - Human melanocytes in culture
- Reduction of melanin pigmentation
  - Reconstructed epidermis

# GinsenoLite™-G – Inhibition of Tyrosinase

The **enzyme Tyrosinase** produces melanin pigments by oxidizing the precursor L-DOPA

Evaluation of Tyrosinase activity in human melanocyte was examined by measuring the rate of oxidation of L-DOPA

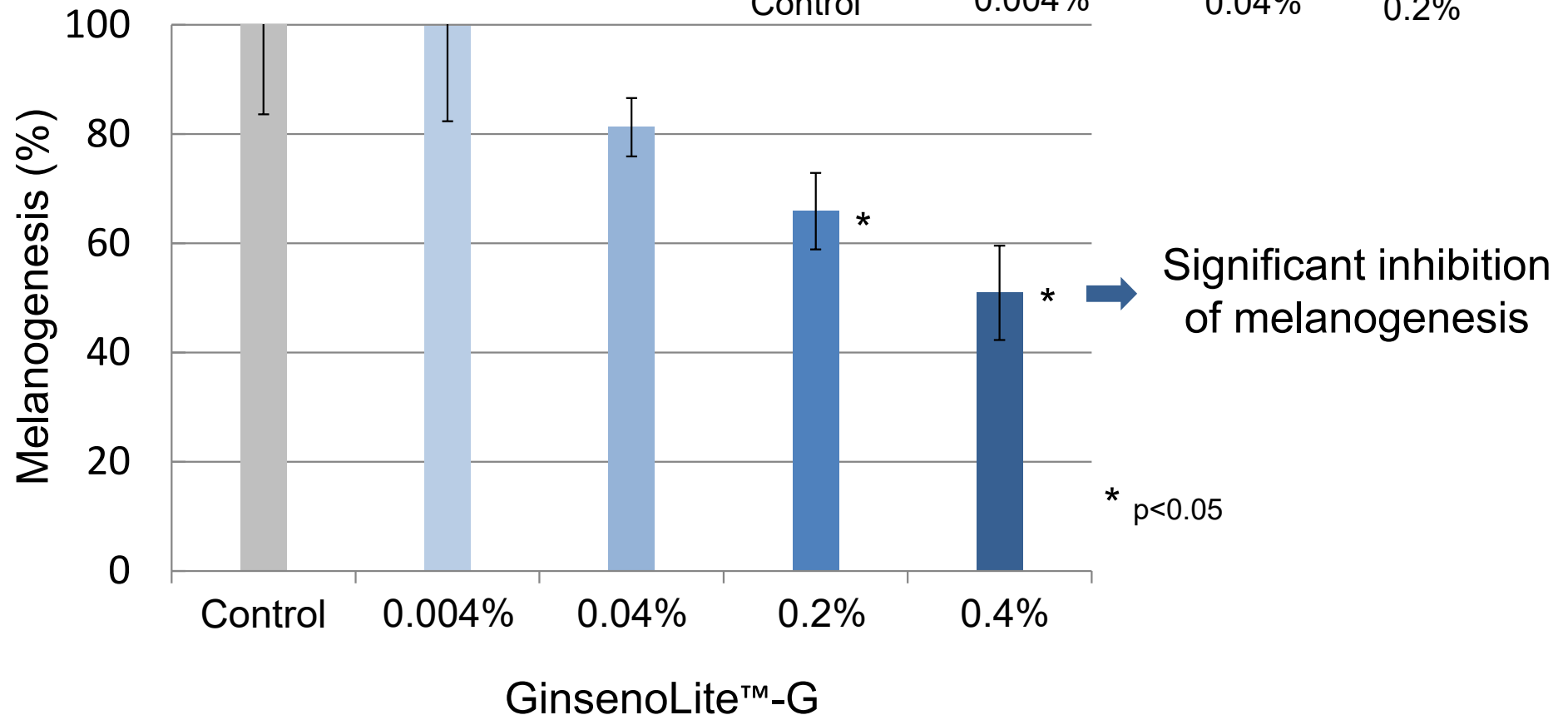
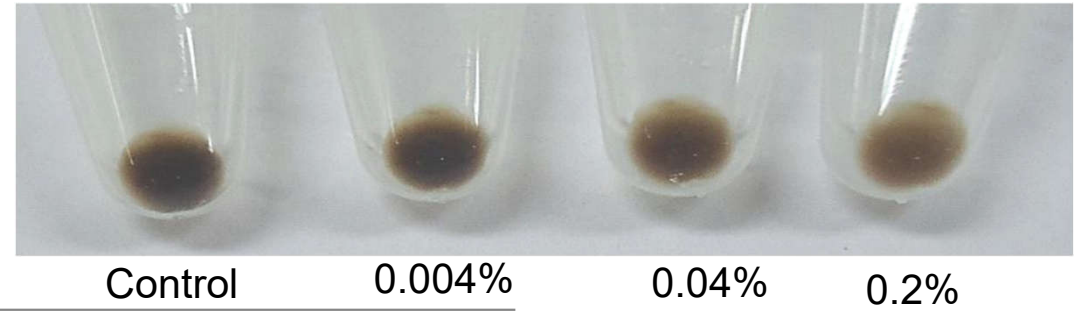


GinsenoLite™-G

# GinsenoLite™-G – Inhibition of Melanogenesis

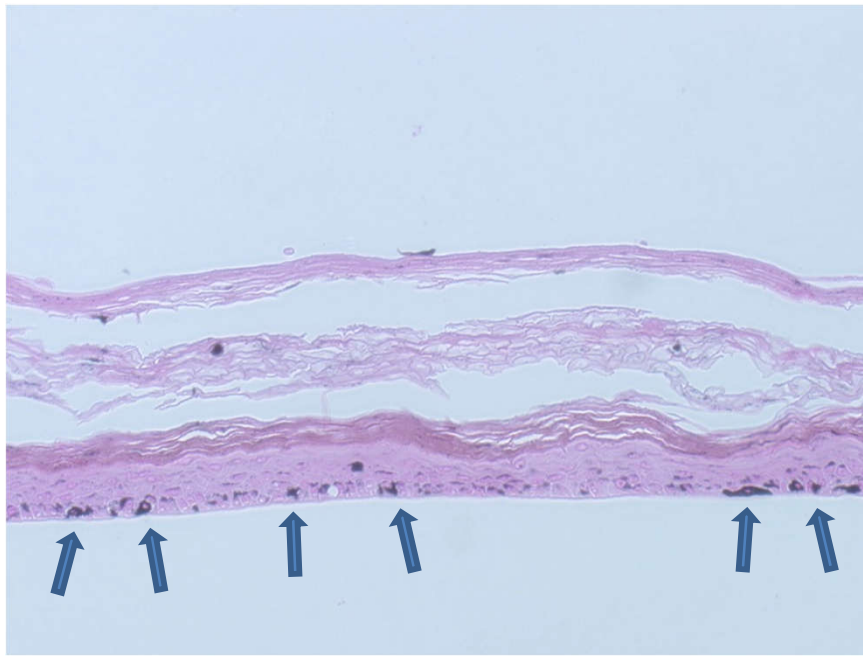
**Melanogenesis** is the biochemical process by which the pigment melanin is produced in melanosomes by melanocytes

- Human melanocytes in culture

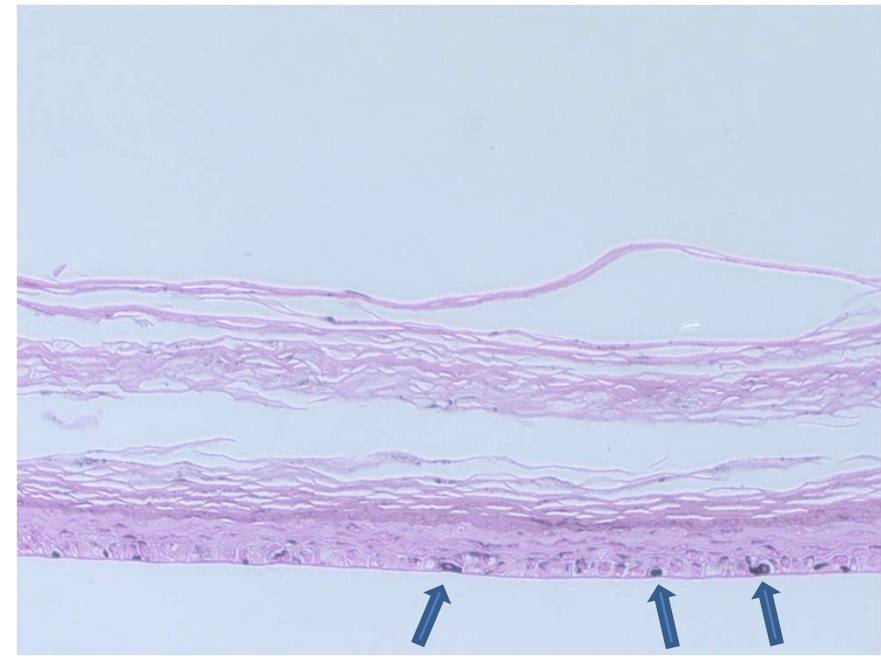


# GinsenoLite™-G – Inhibition of Melanogenesis

- Melanogenesis in reconstructed epidermis



Control



GinsenoLite™-G 0.4%

➔ Reduction of melanin granule density

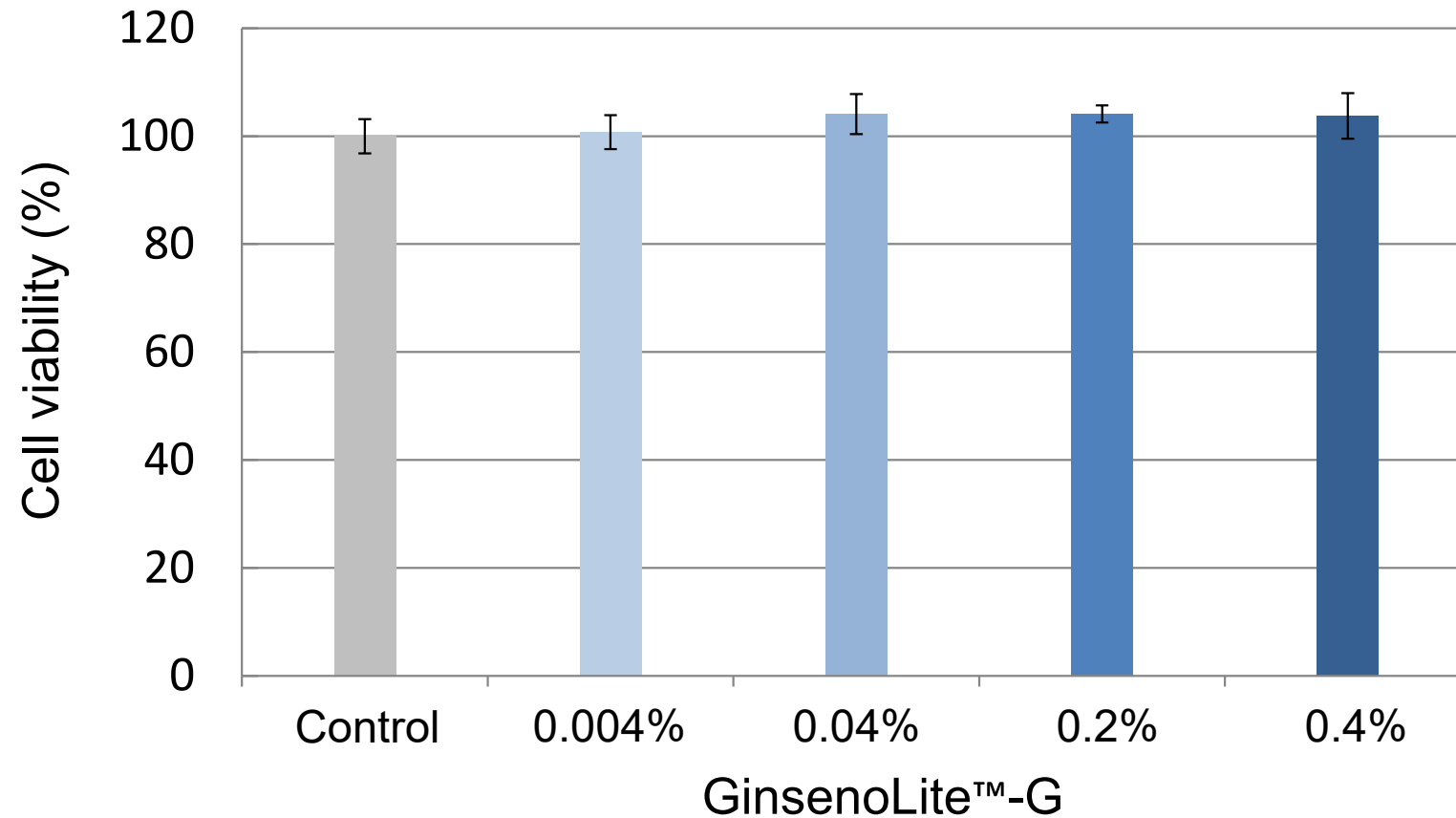


## Cytotoxicity test

- Human epidermal melanocyte were grown in culture and treated with or without GinsenoLite™-G
- Cells were exposed to the product for 24 hours
- MTT assay was performed to evaluate cell viability

# GinsenoLite™-G – Cellular Viability

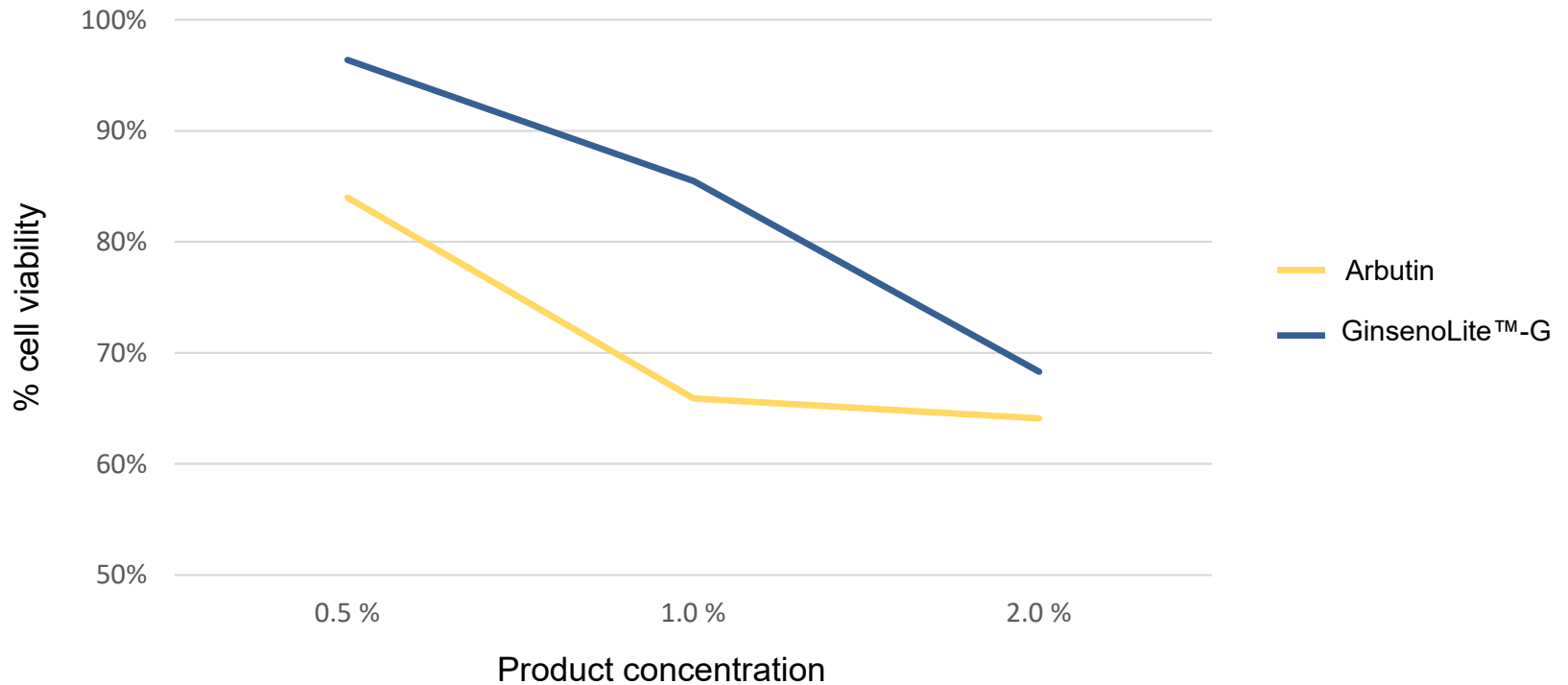
- Human melanocytes in culture



➔ No sign of cytotoxicity

# GinsenoLite™-G - Cellular Viability

Cytotoxicity test – comparison with Arbutin\*



➔ Cells treated with GinsenoLite™-G have a higher viability than those treated with Arbutin at all tested concentrations

\*Arbutin, a glycosylated hydroquinone, is known for its action in preventing melanin production

# GinsenoLite™-G – Clinical Protocol

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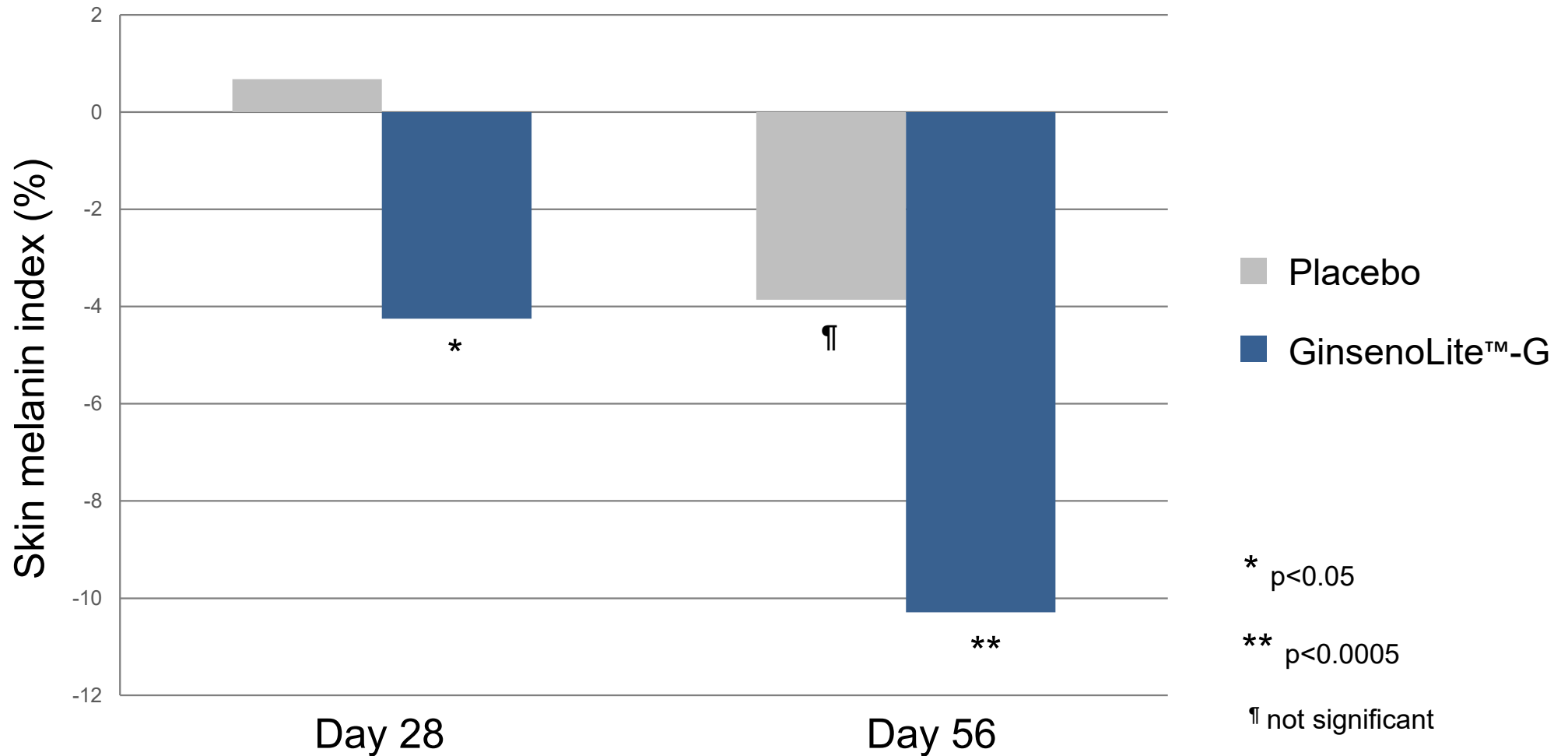
- 19 female subjects, 18-45 years of age
- Asian skin, skin type 3 and 4
- Half-face, placebo-controlled, double-blind
- Formulations: Placebo or containing 2% GinsenoLite™-G
- Evaluations at Day 0, 28 and 56
  - Melanin pigmentation – Complexion
  - Hemoglobin index – Irritation

(Mexameter® MX18, triplicate measurements)



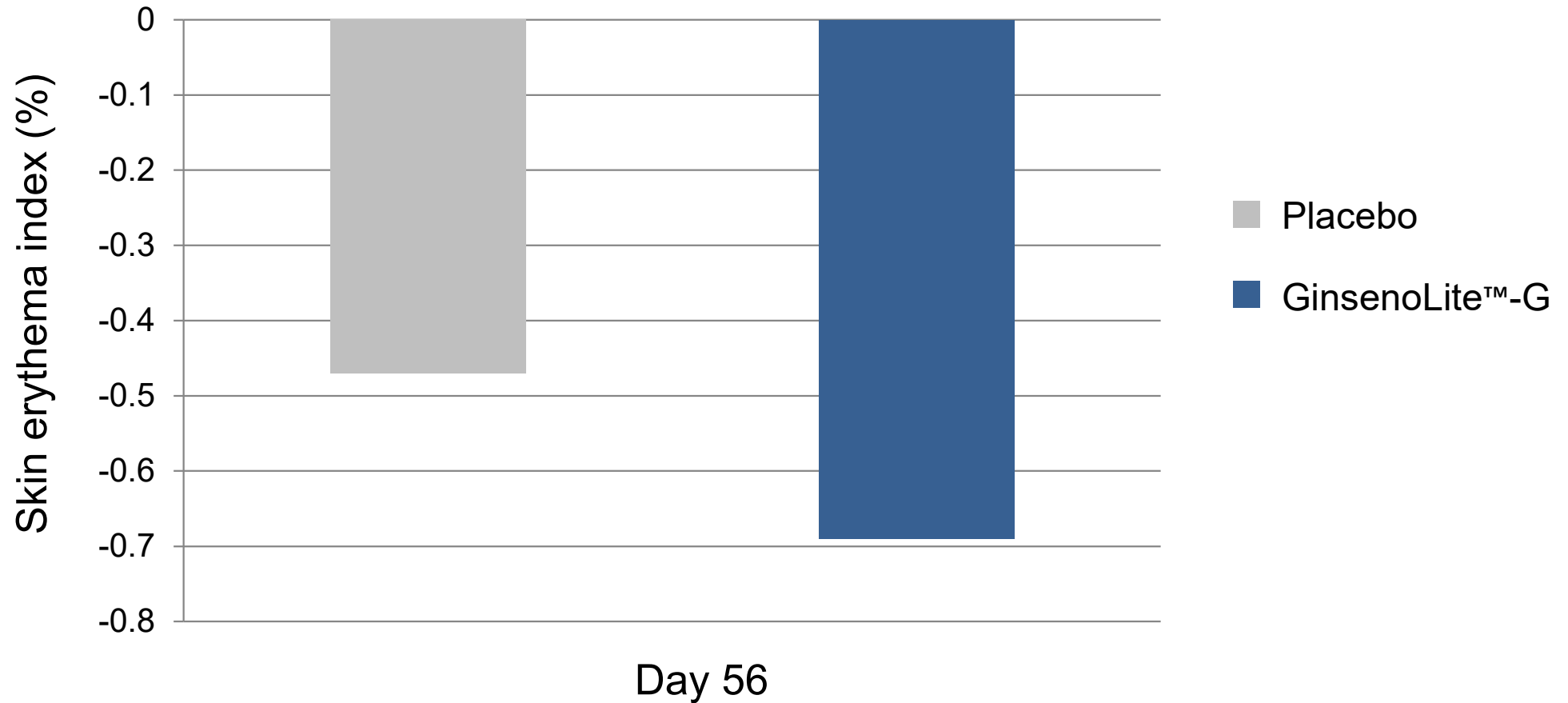
2% of GinsenoLite™-G does not affect the formulation colour

# GinsenoLite™-G – Skin Melanin Index



➔ Significant skin lightening after 28

# GinsenoLite™-G – Skin Erythema Index



➔ No irritation induced by the active ingredient

# Ginsenolite G – Digital Aging Protection

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## *Digital Aging*

The dull complexion and skin aging signs caused by exposure to electronic devices

The Blue light emitted by electronic devices increases the production of Reactive Oxygen Species (ROS)



# Protective action against “Digital Aging”- Protocol

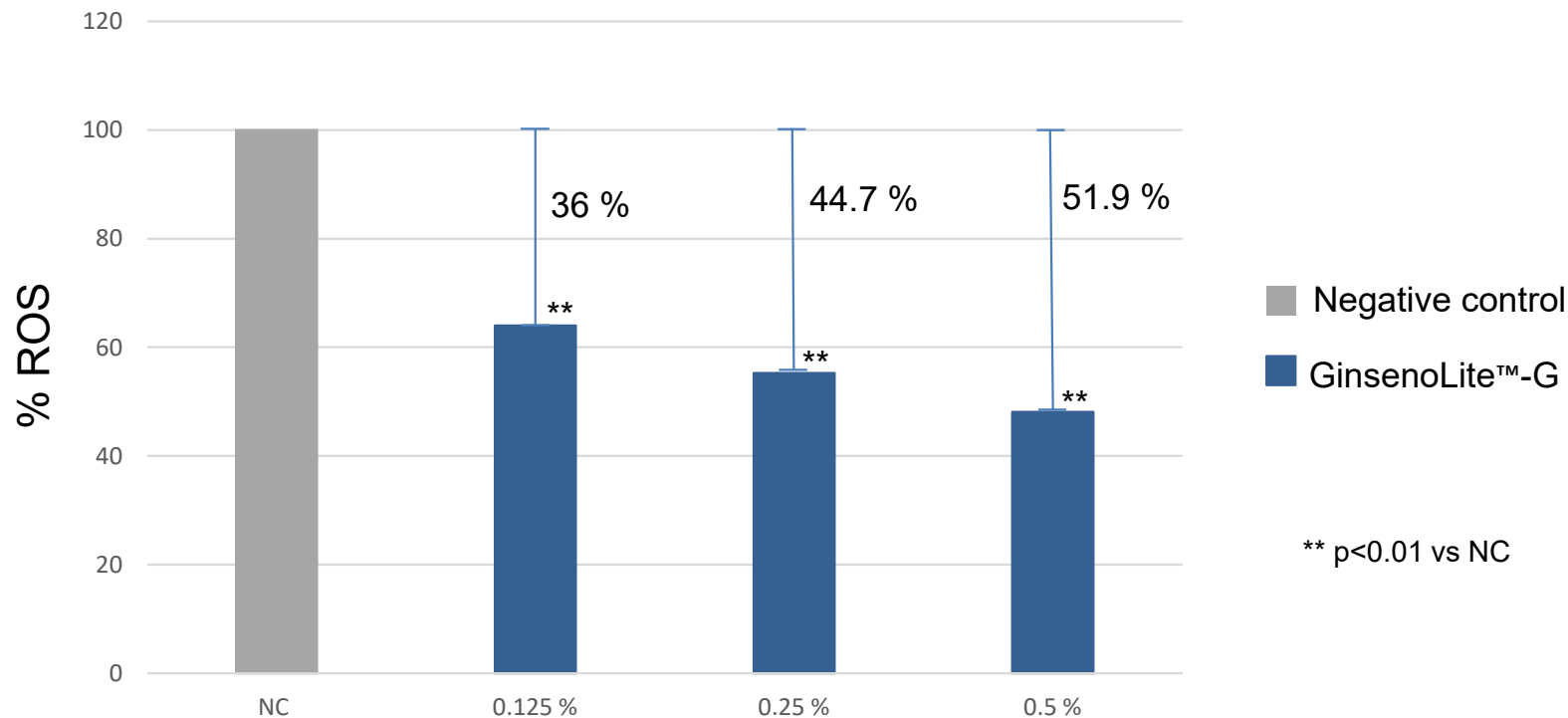
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- Human keratinocytes in culture were treated with or without GinsenoLite™-G
  - A preliminary MTT assay was carried out to evaluate the cell viability
- Cells were irradiated with 35 J/cm<sup>2</sup> of blue light (≈ 400 nm) to cause significant oxidative damage;
  - Wood lamp with an irradiance of 4.7 mW/cm<sup>2</sup>
- After irradiation, a fluorimetric reading of the produced reactive oxygen species (ROS) was carried out.



# “Digital Aging” protection

ROS assay on human keratinocytes in culture – blue light-induced oxidative damage



- ➔ In the negative control (NC), blue light exposure causes the production of Reactive Oxygen Species (ROS)
- ➔ GinsenoLite™-G significantly and progressively reduces the ROS production of the cells stimulated with blue light
- ➔ GinsenoLite™-G has a protective activity against Digital Aging, preventing blue light induced damage

# Protective action against “Digital Aging”- Protocol

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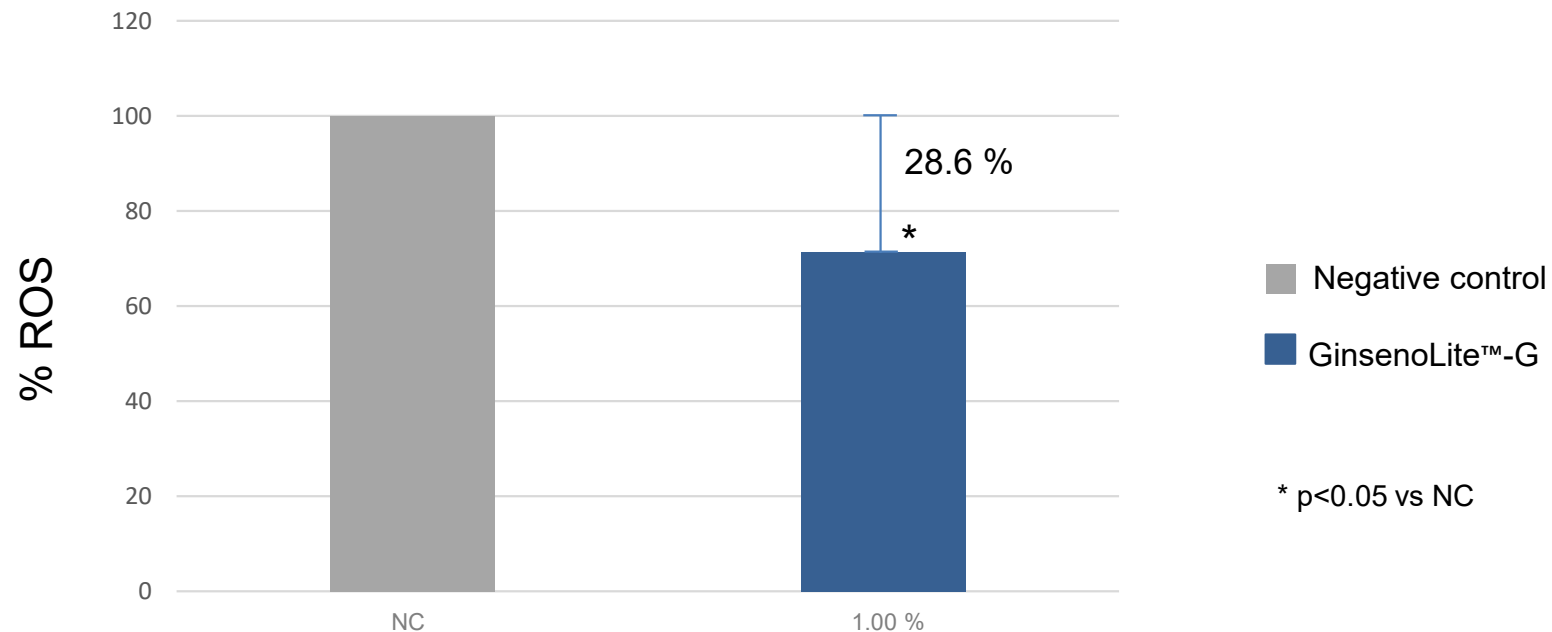
- Reconstructed Human Epidermis (RHE), were treated with or without GinsenoLite™-G

*The RHE model presents a histological morphology, composition, and aspects of biochemistry comparable to the in vivo human tissue*

- Tissues were irradiated with 15 J/cm<sup>2</sup> of blue light (≈ 400 nm) to cause significant oxidative damage;
  - Wood lamp with an irradiance of 4.7 mW/cm<sup>2</sup>
- After irradiation, a fluorimetric reading of the produced reactive oxygen species (ROS) was carried out.

# “Digital Aging” protection

ROS assay on Reconstructed Human Epidermis – blue light-induced oxidative damage



- ➔ In the negative control (NC), blue light exposure causes the production of Reactive Oxygen Species (ROS)
- ➔ GinsenoLite™-G significantly reduces the ROS production of RHE stimulated with blue light
- ➔ GinsenoLite™-G has a protective activity against Digital Aging, preventing blue light-induced damage

# GinsenoLite™-G – When to use it?

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*Panax ginseng* has been used traditionally to treat various diseases, due to its several activities

(immunomodulatory, neuroprotective, antioxidative, antitumoral)

Ginsenolite™-G inhibits melanogenesis *in vivo* and *in vitro* down regulating the enzyme Tyrosinase

Ginsenolite™-G protects against Digital Aging

Ginsenolite™-G shows a very safe profile

It reduces the expression of pathways involved in physiological skin pigmentation preserving melanocytes from cytotoxicity and skin from irritation



# Technical information and Applications

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- *Panax ginseng* fraction enriched in ginsenosides
- Significant skin lightening after 28 days
  - Inhibition of melanogenesis
- Very good innocuity profile
  - No toxicity to skin cells
  - No irritation
  - Preservative-free; water soluble
- Recommended use level: 1-2%
- Applications
  - Skin whitening/lightening
  - Even complexion
  - BB cream
  - Intimate depigmentation “Gintimate”





GinsenoLite™-G

- Skin whitening
- “Digital Aging” protection

GinsenoLite™-G decreases the physiological skin pigmentation

GinsenoLite™-G protects against Digital Aging reducing the ROS production caused by blue light exposure



Activoil™  
Spotless ZRO

- Improvement of skin luminescence
- Reduction of age spots pigmentation

Activoil™ Spotless improves the skin brightness

Activoil™ Spotless reduces and prevents the appearance of age spots caused by UV-damage



GinsenoLite™-G

Vital energy

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