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HEALTHY SKIN SCIENCE

Understanding & Addressing
Hyperpigmentation



HEALTHY SKIN MATTERS

Skin is the **LARGEST** organ in our body. Without skin, we would not survive. It is our protector, acting as a barrier against irritants, UV damage, and pollutants.

Skin health is an essential part of overall health

Skin's resiliency and ability to protect the body are impacted by our health and wellness decisions, which impact our **healthspan - the number of years spent in GOOD health.**

Healthy Skin at Amway means products and bundles that help maintain the skin, scalp, and hair in good condition and appearance—while also supporting the skin's vital role in overall well-being.

HOW DO WE SUPPORT THE BUILDING BLOCKS OF YOUR HEALTHSPAN

Researchers at Amway have identified key drivers that influence **health + wellbeing** and help support healthspan by leveraging:

CELLULAR HEALTH

You have trillions of hardworking cells. **Each one plays a role in how your body functions as you age and experience everyday stressors.** Your cells need support along the way.

PLANT NUTRIENTS

Phytonutrients are beneficial compounds developed by plants when they are exposed to stressors; **they work with your body to help support integral functions.**

BALANCED MICROBIOME

Our body is home to trillions of beneficial microbes that can **help your cells absorb nutrients, support your immune health, and more!**

**Gut microbiome
Skin microbiome
Oral microbiome**

EXPOSOME DEFENCE

Every day, we are surrounded by things that can work for or against our health and wellbeing. Things like air pollution, water quality, poor nutrition, and climate-related factors such as UV exposure, humidity, and temperature extremes.

HOW SCIENCE SUPPORTS YOUR HEALTHY SKIN WITH CELL RESEARCH ON HYPERPIGMENTATION

CELLULAR HEALTH

Oxidative stress — a constant assault on your cells from factors like pollution, poor diet, or ongoing stress — caused by free radicals can, over time, impair how well your cells function.



10+ years of cellular research by Amway and Yale University scientists led us to discover the first Artistry functional active for whitening registered in Korea: [CYTIDINE \(Link to Credibility video\)](#)

HOW BOTANICALS SUPPORT HEALTHY-LOOKING SKIN BY ADDRESSING HYPERPIGMENTATION

PLANT NUTRIENT

Plant nutrients are key! They can help **support our cells and microbiome by playing a role in exposome defence.** Our deep expertise in botanicals and these connections help in our design of effective products and solutions.



7+ years to grow, harvest, and process a potent Nutrilite-grown botanical that has incredible pigment reducing properties in specific fractions of its roots: **IRIS FLORENTINA** ([Link to Credibility video](#))

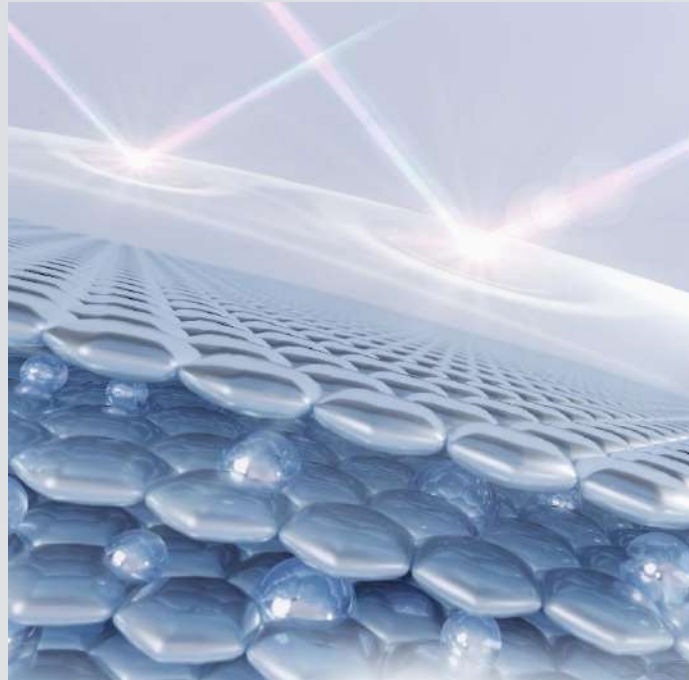
Organic Iris Florentina RESEARCH ([Link to MDPI's Molecules Journal](#)) demonstrated its ability to target the visible signs of uneven pigmentation, providing an advanced skin-evening effect and noticeable reduction in the appearance of dark spots.

PROTECT YOUR HEALTHY SKIN FROM THE ENVIRONMENT

OUR PRODUCTS can support your health and wellbeing **IN, ON and AROUND** :

EXPOSOME DEFENCE

Every day, we are exposed to air pollution, water quality, poor nutrition, and climate-related factors such as UV exposure, humidity, and temperature extremes. Every exposure impacts our cells and can even accelerate the natural ageing process that ultimately leads to decline. Science calls these collective exposures the “exposome”.



EXPOSOME DEFENCE FOR SKIN HEALTH

Strengthening the skin’s support barrier helps reduce irritation and inflammation — important triggers for dark and age spot formation.

Using antioxidants like niacinamide and botanicals reduces oxidative stress and shields cells from damage.

With healthier, more resilient cells, the skin renews more efficiently, maintains balanced pigmentation, and appears brighter, clearer, and more evenly toned.

FIVE PROTECTIVE BARRIERS OF SKIN

Based on scientific understanding of the skin's protective functions, researchers have identified five key surface barriers. The support barrier is key for the skin's ability to fight dysregulations such as hyperpigmentation



DEFENCE BARRIER

Purify

Keeps skin clean, soothe and removes surface pollutants



MICROBIOME BARRIER

Balance

Nurture an optimal microbiome to help skin stay in balance



SUPPORT BARRIER

Rebuild

Strengthen skin by revitalising its support system



MOISTURE BARRIER

Moisturise

Saturate skin with lasting hydration



ENVIRONMENTAL BARRIER

Protect

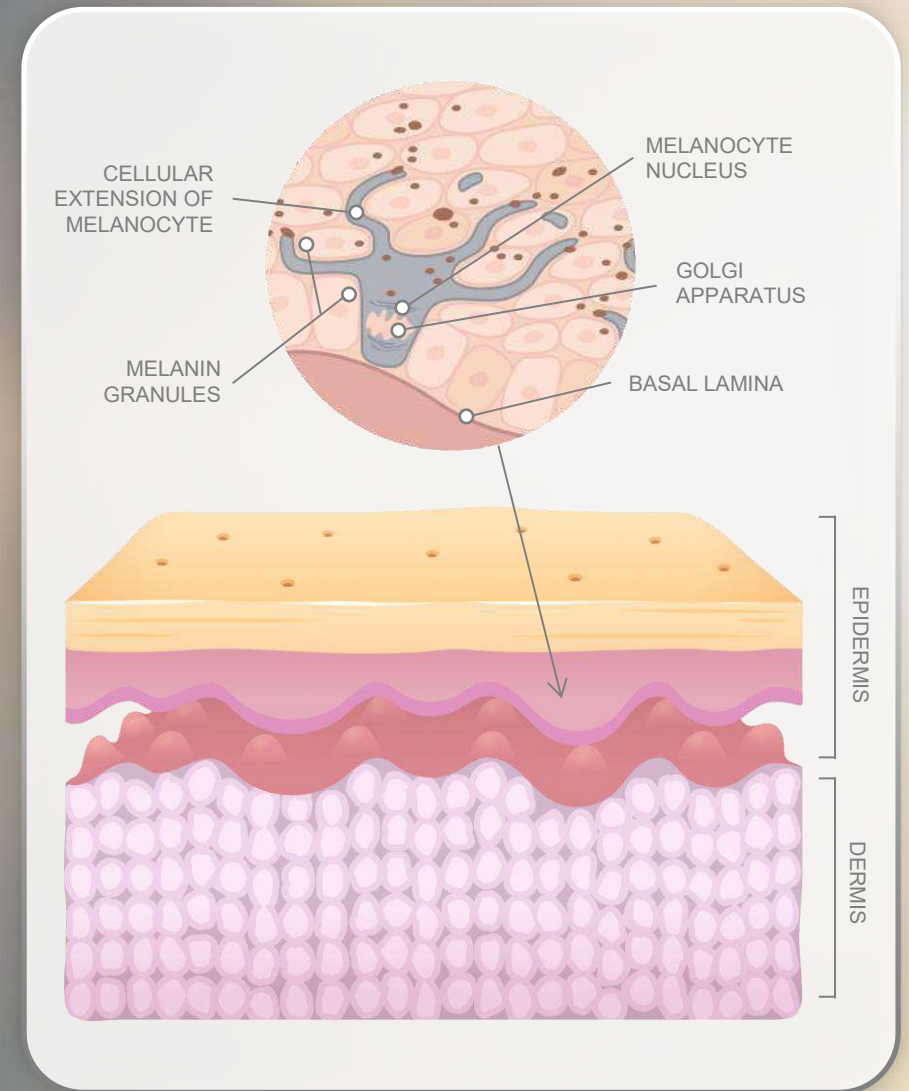
Fight environmental aggressors with SPF and antioxidants

WHAT IS SKIN HYPERPIGMENTATION

Dark spots, discolouration and tiny marks are all signs of uneven pigmentation – also known as hyperpigmentation – caused by excess melanin production.

UV light activates melanocytes as part of the skin's natural defence against sun exposure.

However, excessive UV and other environmental stressors can irritate the skin and trigger inflammation. This inflammation sends signals that overstimulate melanocytes, causing them to produce too much melanin, which leads to **dark spots and hyperpigmentation**.



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HOW DO DARK SPOTS FORM?

THERE ARE TWO PROCESSES INVOLVED IN SKIN PIGMENTATION:

MELANOGENESIS – Melanin Production

Melanocytes create melanin through oxidation reactions that activate tyrosinase- an enzyme that converts the amino acid tyrosine into melanin.

MELANOSOME TRANSFER - Melanin Delivery

Melanosomes (tiny melanin-filled organelles) are transferred from melanocytes to surrounding skin cells (keratinocytes).

When either or both of these biological processes are overstimulated, excess melanin is produced and distributed unevenly, resulting in dark spots.

The number of melanosomes transferred, their size, distribution, and the amount of melanin they contain all influence the final skin colour. In darker skin, a greater number of larger, more heavily pigmented melanosomes are transferred and retained in the keratinocytes.

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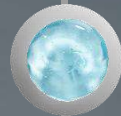
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INGREDIENTS THAT HELP PROTECT AGAINST BOTH PIGMENTATION PROCESSES

GOLD STANDARD TECHNOLOGY (SCIENCE)



CYTIDINE - a scientific breakthrough functional active for brightening



NIACINAMIDE - a multifunctional ingredient that promotes an even skin tone and helps smooth the complexion.



AA2G – a proven, stabilised Vitamin C derivative that supports a more uniform skin tone.



TRANEXAMIC ACID – helps reduce the visible effects of UV-induced discolouration.

PHYTONUTRIENT TECHNOLOGY (NATURE)



ORGANIC IRIS FLORENTINA - a botanical extract that may help improve skin uniformity and reduce the appearance of dark spots



LIQUORICE ROOT - a soothing ingredient known for its calming properties.



CACTUS FLOWER - a powerful extract that gently exfoliates the skin's surface, enhancing the absorption of serums.

Ingredient icons are symbolic and do not correspond to the exact components in the product.



SUN PROTECTION. Always use sunscreen to shield skin from UV damage.

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HOW INGREDIENTS HELP FIGHT BOTH PIGMENTATION PROCESSES

- Reduce melanin production and slow its release, while defending skin against UV and free-radical stress.
- Minimise melanosome transfer to visibly limit discolouration.

NIACINAMIDE VITAMIN B3

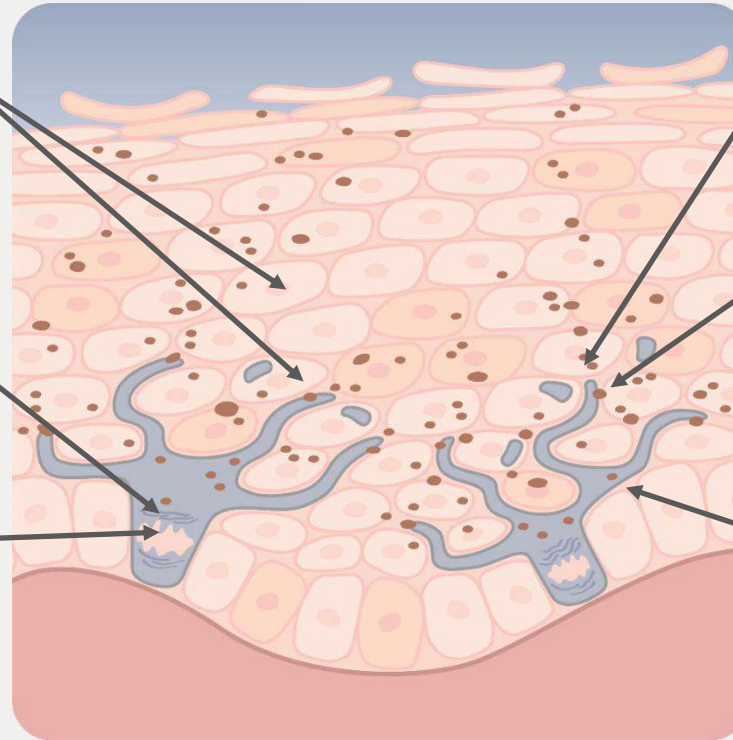
Downregulate the transfer of pigment from melanocytes to keratinocytes; Increase cellular turnover

ASCORBYL GLUCOSIDE

Inhibit Melanin production

IRIS FLORENTINA ROOT EXTRACT

Inhibit Tyrosinase activity



CYTIDINE

Inhibit melanosome transfer to epidermal cells

LICORICE

Inhibit inflammatory cytokine signaling

↓ Endothelin-1
↓ PGE₂

TRANEXAMIC ACID

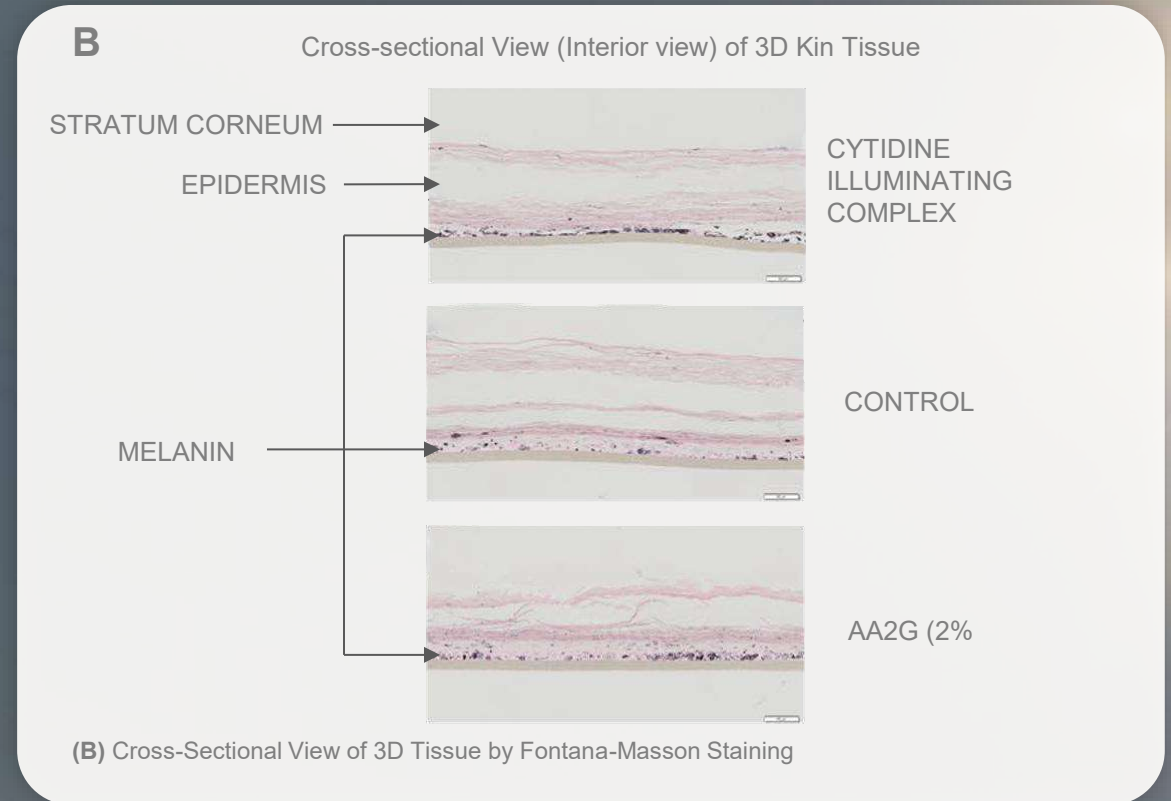
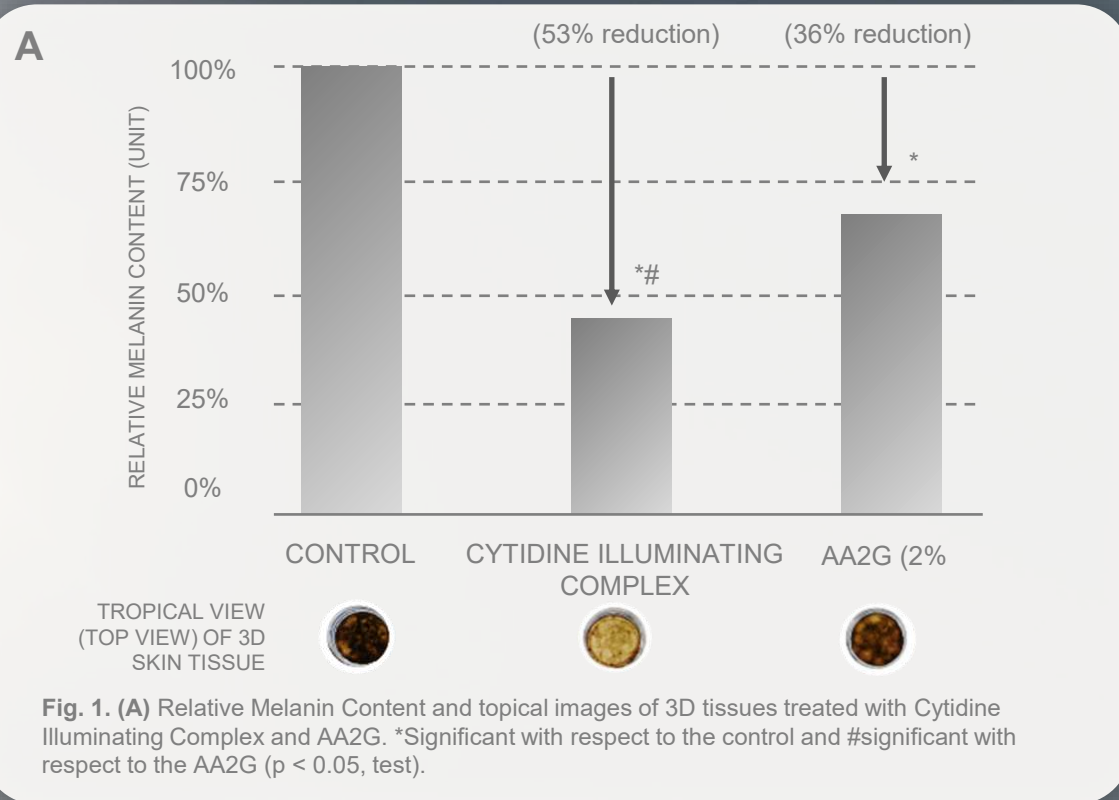
Inhibit effects of UV light-induced plasminogen activator & plasmin activity

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RESEARCH DATA ON ACTIVE INGREDIENTS

Cytidine Complex outperforms a well-known brightening ingredient (AA2G) by 40%* for reducing the appearance of dark spots.



¹Yim S, Wu Z, Rothouse J, Leverett J, Herbel A. 1288 Quantification of pigmentation via digital imaging in 3D skin-equivalent tissue: A case study of combined treatment efficacy using AA2G, cytidine, and niacinamide. *Journal of Investigative Dermatology*. 2023 May 1;143(5): S221

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BOTANICAL INNOVATION

After an extensive screening process, Amway scientists discovered incredible pigment reducing properties in specific fractions of the Iris Florentina roots. This traceable, floral botanical is Nutrilite-grown for Artistry on our Trout Lake East Farm and has a patent-pending extraction method unique to Amway.

Iris Florentina root extract is a potent phytonutrient that hinders tyrosinase activity. Tyrosinase is an enzyme that controls melanin production (it converts the amino acid tyrosine into melanin, a dark pigment). The root extract compounds target the same pathway as the industry-standard brightening ingredient AA2G (a stabilised vitamin C derivative)

The skin lightening/brightening efficacy on the appearance of dark spots/melanin of Iris EtOH Extract is comparable to AA2G at 1/10th of concentrate!*

*0.2% of Iris EtOH Extract was the same as AA2G at 2%

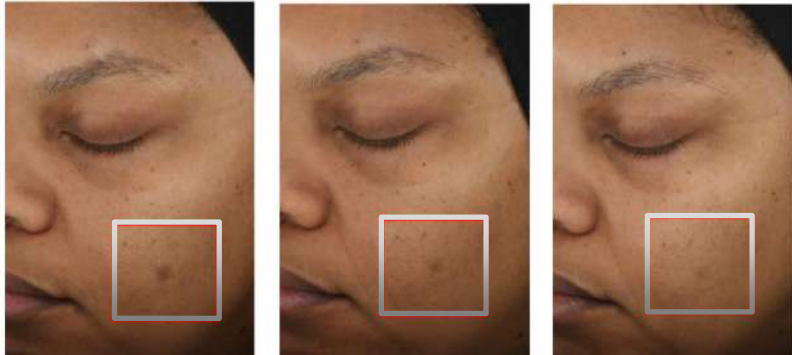


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RESEARCH

12 weeks of CLINICAL TESTING

SUBJECT 1: 050 DARK SPOT INTENSITY



BASELINE

4 WEEKS

12 WEEKS

SUBJECT 2: 029 LIGHTNESS/BRIGHTNESS



BASELINE

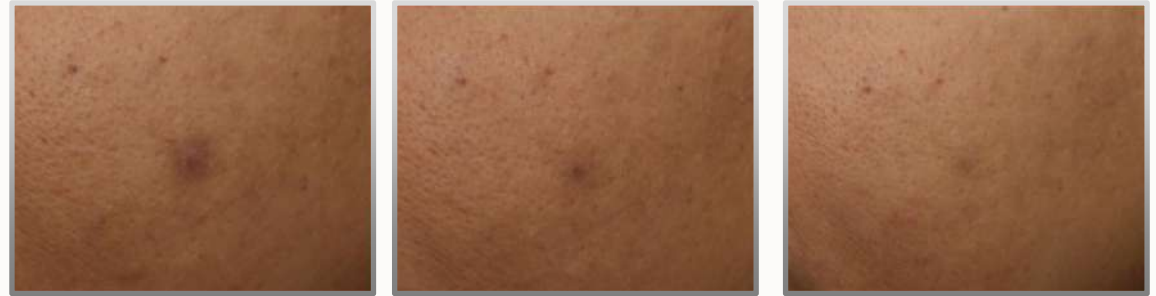
4 WEEKS

12 WEEKS

BASELINE

4 WEEKS

12 WEEKS



BASELINE

4 WEEKS

12 WEEKS



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GLOSSARY OF TERMS

- **Dermis** – the skin layer below the epidermis containing collagen, elastin and glycosaminoglycans. It also provides energy and nutrition to the epidermis.
- **Epidermis** – the outermost layer of skin on the body that consists of multiple layers.
- **Basal layer** – the lowest level of the epidermis where keratinocytes are formed.
- **Hyperpigmentation** – another term for dark spots or skin discolouration. When skin is exposed to harsh conditions like the sun, stress, hormonal changes and the normal ageing process, an increased number of signals are triggered within skin cells. These signals cause the melanocytes to become hyperactive, overmultiplying themselves and overproducing melanin. • Post-inflammatory hyperpigmentation (PIH) results when skin becomes inflamed from things like infections, allergic reactions, burns, injuries and more, causing darkening and discolouration that show up as spots, or as large patches on a person's body.
- **Keratinocytes** – the primary type of cell found in the epidermis. In humans, they constitute about 90% of epidermal skin cells.
- **Melanin** – pigment in skin cells that gives skin, eyes and hair colour.
- **Melanocytes** – cells found at the bottom of the epidermis that produce melanin-containing melanosomes and that subsequently distribute them into the surrounding keratinocytes.
- **Melanosomes** – small organelle within a melanocyte where melanin is synthesised and transported.
- **Nutriline-sourced/Nutriline-grown ingredient** – botanical extracts and phytonutrients derived from plants grown on Nutrilite organic farms or NutriCert™ certified partner farms.
- **Tyrosinase** – an enzyme in melanin production that converts the amino acid tyrosine into melanin.
- **Oxidative stress** – occurs when the skin faces more environmental aggressors than its antioxidant defences can manage. When UV exposure, pollution and daily stressors increase, they create more reactive molecules than the skin can neutralise, weakening cells and accelerating visible ageing. It's the point where the skin's protection is overwhelmed, leading to cellular damage.

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