Depigmentation Factor 2U™

Botanical active for skin lightening & skin luminosity

Description (161005.00.2)

Depigmentation Factor 2U™ is a plant-based liposomal serum containing a skin lightening agent derived from bearberry *(Arctostaphylos uva-ursi)*.

- Light brown milky liquid

INCI Name

US. Water, Alcohol, Hydrogenated Lecithin, Glycerin, Cholesterol, Arctostaphylos Uva Ursi Leaf Extract
EU. Aqua, Alcohol, Hydrogenated Lecithin, Glycerin, Cholesterol, Arctostaphylos Uva Ursi Leaf Extract
(Please refer to proprietary composition declaration for up-to-date INCI listing.)

Properties

Depigmentation Factor 2U™ is a skin lightening agent which has claims substantiation data to show that it:

- Inhibits tyrosinase activity
- Reduces melanin concentration in melanocytes

Recommended Applications & Use Levels

Applications: Skin care, especially for anti-ageing products to fade age spots and to brighten the skin and increase skin luminosity or radiance
Recommended use levels: 1-2%; maximum 10%

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Activity

Tyrosinase Inhibition

- The skin lightening properties of a lotion containing 0.1% Depigmentation Factor 2U™ was tested *ex vivo* on skin explants, using 1% hydroquinone as the positive control
- Tyrosinase activity is revealed by enzymatic colouration of the melanocytes using the method of oxidation of L-DOPA (L-dihydroxyphenylalanine), the substrate of tyrosinase
- The presence of black pigments in the melanocytes reflects tyrosinase activity

Results & conclusion

- The product containing 0.1% Depigmentation Factor 2U™ almost totally inhibits pigmentation (Fig. 1)
- The control shows no inhibition of pigmentation (Fig. 2)
- The reference product containing 1% hydroquinone totally inhibits the pigmentation (Fig. 3)

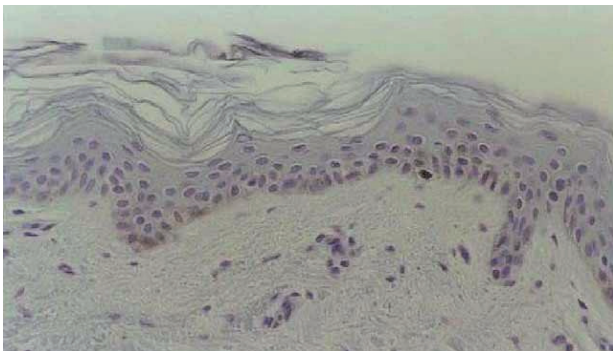

Fig. 1 Effect of product containing 0.1% Depigmentation Factor 2U on the enzymatic activity of tyrosinase on the skin explant

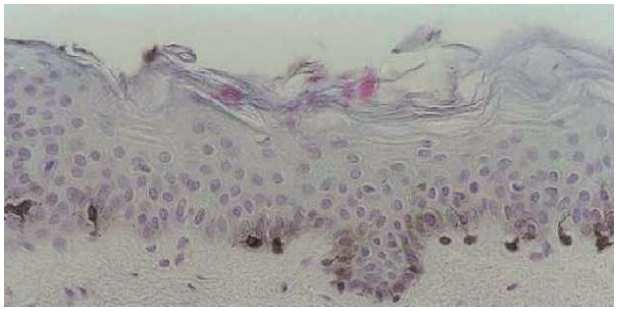

Fig. 2 Enzymatic activity of tyrosinase on the CONTROL skin explant

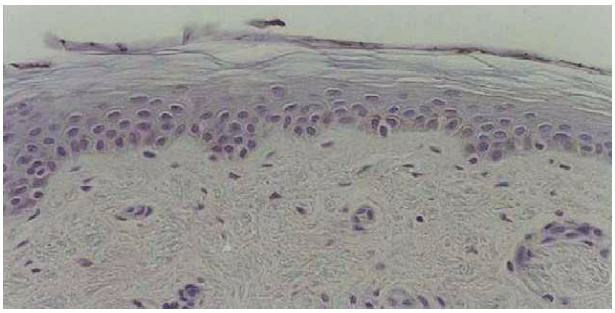

Fig. 3 Effect of reference product containing 1% hydroquinone on the enzymatic activity of tyrosinase on the skin explant

Reduction in melanin synthesis in melanocytes

- Human melanocytes, of Caucasian type, were treated in cell culture with test substances to investigate their effects on melanin synthesis
- Melanin concentration was determined after 48 hours by dissolving melanin in NaOH and quantification was made by comparison with melanin standards
- A negative control was used of untreated cells and retinyl palmitate as comparison, due to conflicting evidence for melanin inhibition

Results & conclusion

- The melanin content in human melanocytes treated with 4% Depigmentation Factor 2U™ is significantly reduced compared to the control (Fig.4)

Formulation Recommendations

Depigmentation Factor 2U™ is a liposomal-based product and is easily formulated into creams as long as guidelines below are followed:

- Add below 40°C using low shear mixing after emulsification
- Ethyl alcohol concentration should be kept below 5% and solvent in general below 10%
- Surfactants generally should be avoided but low levels (<1%) of non-ionic high HLB are tolerated

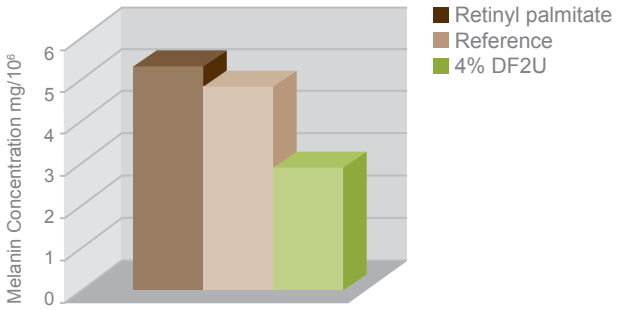

Fig. 4 Reduction in melanin in human melanocytes by Depigmentation Factor 2U

Safety & Regulatory

Toxicology: Non-irritating to skin and eyes
REACH: Compliant with the REACH regulation (EC) N° 1907/2006 and its amendments