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IMAGE SKINCARE:

Glabridin- botanical skin lightening clinical research

by Marc A. Ronert MD PhD, Clinical Director Image Skincare

ABSTRACT

Image Skincare offers products with many active, scientifically proven and researched key ingredients to achieve a certain result on the skin. In order to achieve the maximum benefit, not only one key ingredient, but an array of synergistically working ingredients, to target specific skin concerns, is found in every product. This concept is found throughout each and every line and not the name of the product identifies which ingredient is used, but the ingredient listing. All key ingredients are named on the international nomenclature of cosmetic ingredients (INCI) and are furthermore described on product key ingredient manuals. The uniqueness about Image Skincare is the blend of these ingredients into an advanced formulation with a perfectly balanced pH, which dictated the effectiveness of several ingredients. All products follow the concept of the exclusive CPN System™, a unique blending of Correction, Prevention and Nutrition, only offered by Image Skincare. This three in one concept greatly enhances the effect of each product on the skin and achieves results quicker and more profound.

General Findings of Glabridin-Licorice

Licorice species are herbs native to the Mediterranean area. The root of licorice is a traditional medicine used mainly for the treatment of peptic ulcer, hepatitis C, and pulmonary and skin diseases. Clinical and experimental

studies have shown it to contain pharmacological properties such as anti-inflammatory, antiviral, antimicrobial, anti-oxidative, anti-cancer activities, immune-modulatory, hepato-protective and cardio-protective effects. The licorice is made up of active constituents such as saponins, flavonoids, chalcones, isoflavones, coumarins, stilbenoids, as well as other compounds such as asparagines, glucose, sucrose, starch, and polysaccharides. It has been used for treating skin eruptions, including dermatitis, eczema, pruritus and cysts. Image Skincare uses Glabridin in its main function as a potent, natural skin lightening agent amongst other botanical and natural derived skin lightening ingredients.

Anti-inflammatory properties of Glabridin-Licorice

Research has shown the anti-inflammatory properties of licorice are in the major metabolite of glycyrrhizin, β-Glycyhrritinic acid. It is suggested to work as an anti-inflammatory because it inhibits glucocorticoid metabolism and potentiates their effects. Since, β-glycyhrritinic acid is a potent inhibitor of 11β-hydroxysteroid hydroxygenase, it causes an accumulation of glucocorticoids with anti-inflammatory properties. Along with this, β-Glycyhrritinic acid Glycyrrhizin inhibited reactive oxygen species **(ROS)** generation by neutrophils which are the potent mediator of tissue inflammation in an *in vitro* study. It was thought that one of the acid's anti-inflammatory effect was due to this inhibitory effect. It also reduced myocardial inflammatory edema in experimental myocardial damage.

Anti-oxidant and free radical scavenging activity of Glabridin-Licorice

Clinical studies about licorice extracts showed great antioxidant and free radical scavenging activities in topical formulations. This is why topical creams with licorice in them can be used in order to protect the skin against damage caused by free radical and reactive oxygen species. The anti-oxidative effects of the licorice appear to come from its

licochalcones, echinatin, and albridin. The constituents of the licorice root licochalcone A, B, C, D and echinatin, were effective in preventing microsomal lipid peroxidation induced by Fe (III)-ADP/NADPH and licochalcone B, D showed potent anti-oxidative and superoxide scavenging activities. Along with this glabridin, an isoflavan of *G. glabra*, or a specific type of licorice, was a potent antioxidant toward LDL oxidation in *in vitro* and *in vivo* studies.

Skin lightening effect of Glabridin-Licorice

Licorice has also been found to be an effective skin lightening agent. Along with this recent glycyrrhizin treatment has showed protective effects against UVB-irradiated human melanoma cells. It is believed that it is the liquiritin in the licorice that causes the cells to turnover by two mechanisms. The first is via melanindispersion through the pyran ring of the liquiritins flavonoidal nucleus and second through the acceleration of epidermal renewal. Concerning the mechanisms of glabridin on melanogenesis and inflammation, it has been shown that it inhibits the tyrosinase activity of melanocytes.

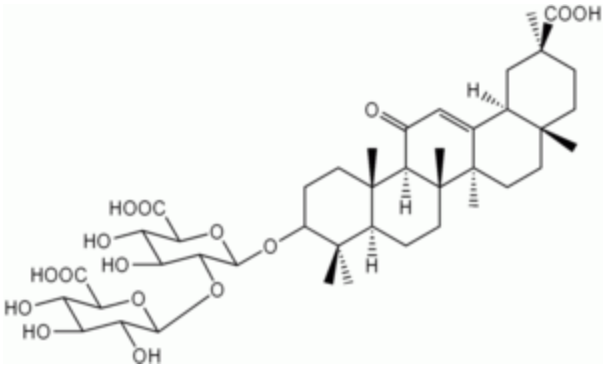

Fig 1: An image of Glycyrrhiza

Combination of different skin lightening agents

Active ingredients found in Image Skincare lightening products are:

Arbutin
Azeleic Acid
Bearberry
Kojic Acid
Glycolic Acid
Hydroxy Acid
Mulberry Extract
Vitamin C

Bearberry and its constituents crystallizable glucoside known as arbutin, have both skin lightening effects by inhibiting the melanosomal tyroninase activity rather than suppression of tyrosinase synthesis.
Azeleic acid, in a 20% concentration has been shown to be more effective than 2% Hydroquinone and produces lightening of lesions as well as reduction in their size. It well tolerated and can be used for longer periods than Hydroquinone.
Kojic acid is a tyrosinase inhibitor derived from fungus species. It is most effective in combination with other ingredients.
Mulberry extract is a tyrosinase inhibitor, derived from roots of Broussonetia papyrifera.
In the order of effectiveness Image Skincare offers different types of skin lightening products:
Image MD skin lightening crème Rx, a physician strength lightening product with Hydroquinone, *Ageless total skin bleaching serum, Ageless total skin lightening serum and Komplexion S*, a body skin lightening crème.

For more information about clinical studies of Image Skincare lightening agents refer to the research papers: Hydroquinone and Kojic Acid as well as our clinical study results in pre-and post treatment documentations.

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