Indication

- This very potent concentrated serum has clinically researched product ingredients that are proven to be specifically effective for very dark skin race and/or skins that have resistant melanin cells.
- Contains a natural component called Sepiwhite, N-undecylenoyl phenylalanine, a reported alpha-melanocyte-stimulating hormone (MSH) receptor antagonist, has been observed to reduce melanin production in cultured melanocytes. Sepiwhite inhibits the process of melanin synthesis from the hypothalamus.
- Provides long term skin lightening with no risk of rebound hyperpigmentation.
- This silky and non greasy concentrated complex is quickly absorbed into the skin and can be used on all skin types.
- Results can be seen in just a few days to three weeks applying twice daily. Must be used continuously for at least a 12 week period for best results.
- Ellagic acid is a naturally occurring polyphenol with very strong antioxidant and anti-inflammatory properties
- P TeroWhite® is a skin care active based on pterostilbene that is said to have antioxidant, anti-inflammatory and skin-lightening properties.

Active Ingredients

SepiWhite® (MSH)
Ellagic Acid
pTeroWhite™
Tetrahydrocurcumin Diacetate
Pearl Powder
Alpha Arbutin
Paper Mulberry Extract
Glutathione
Licorice Extract

Ingredients

Water (Aqua), Aloe Barbadensis (Aloe Vera), Undecylenoyl Phenylalanine (Sepiwhite®MSH), Ellagic Acid, pTeroWhite™Pterostilbene, Tetrahydrocurcumin Diacetate, Phyllanthus Emblica Fruit (Indian Gooseberry) Extract, Pearl Powder, Ubiquinone (Coenzyme Q10), Alpha Arbutin, Broussonetia Papyrifera Bark (Paper Mulberry) Extract, Niacinamide (Vitamin B3), Glutathione, Sodium Lactate, N– Acetylcysteine (NAC), Glycyrrhiza Glabra (Licorice Extract), Retinoic Acid, Sodium Hyaluronate, Xanthan Gum, Phenoxyethanol, Azadiractha Indica (Neem) oil, Potassium Sorbate, Phenoxyethanol

PRECAUTION:

Note: Contains no chemical masking agents or synthetic fragrances. The scent is naturally composed and will dissipate. Shake Before Use.
Protect this product from light and heat, as it is photosensitive. Store in a cool dark place.

DIRECTIONS FOR USE:

On a clean skin dry skin, Apply one pump to the skin concentrating directly onto pigmentation marks or use all over to even out overall tone. Must be used for a 12 week consecutive period — as per clinical studies. Avoid eye area. Apply Z Plus Broad Spectrum SPF 45+ daily for best results.
N-undecyl-10-enoyl-L-phenylalanine (Sepiwhite), N-undecylenoyl phenylalanine, a reported alpha-melanocyte-stimulating hormone (MSH) receptor antagonist, has been observed to reduce melanin production in cultured melanocytes. In other testing, niacinamide has been found to inhibit melanosome transfer in cultured cells and to reduce the appearance of hyperpigmented spots in clinical studies. Since these two agents function by different mechanisms, we conducted two studies to determine if their combination is more effective than niacinamide alone in reducing facial hyperpigmentation.

METHODS:

Two double-blind, 10-week (2-week washout + 8-week treatment), left-right randomized, split-face clinical studies were conducted. In one, two groups of Japanese women applied one of two pairs of test emulsion formulations: a vehicle control and a 5% niacinamide formulation \( n = 40 \), or a 5% niacinamide and a 5% niacinamide plus 1\%N-undecylenoyl phenylalanine formulation \( n = 40 \). Each formulation was applied to the randomly assigned side of the face. In the second study, Caucasian women applied one of three emulsions: vehicle control, 5% niacinamide formulation, or combination 5% niacinamide plus 1\%N-undecylenoyl-phenylalanine formulation to the randomly assigned side of the face \( n = \) approximately 60 treatment sites per formulation). In both studies, hyperpigmented spots were evaluated at weeks 4 and 8 by quantitative image analysis.

RESULTS:

In both studies, the combination formulation was significantly more effective than the vehicle and the 5% niacinamide formulation in reducing the appearance of hyperpigmentation after 8 weeks.

CONCLUSIONS:

The combination of 5% niacinamide and 1\%N-undecylenoyl phenylalanine is an effective anti-aging technology for use on facial skin.

Ellagic acid—(EA)

Is generally known to be found in leaves or seeds of raspberries, strawberries and pomegranates. Ellagic acid is a naturally occurring polyphenol with very strong antioxidant properties. It is considered as a powerful lightening agent by suppressing formation of sun and age spots without injuring cells. It also has properties that make it effective as an anti-inflammatory ingredient.

Based on the results reported, EA is thought to suppress melanogenesis by reacting with activated melanocytes and without injuring cells.
STRIKING LITE COMPLEX

**P TeroWhite®**

A skin care active based on pterostilbene that is said to have antioxidant, anti-inflammatory and skin-lightening properties. P TeroWhite® is extracted from sustainably grown dried heartwood of *Pterocarpus marsupium* (Kino tree of India). Pterostilbene active is said to be more effective in inhibiting pro-inflammatory enzymes in vitro. In addition, found it more effective then resveratrol in inhibiting melanogenesis and supporting skin tone lightening and dyschromia management. It was also found to effectively protect the skin from damage by UV radiation.

**pTeroWhite®** is more effective in inhibiting cell membranes against lipid peroxidation; and acts as anti-inflammatory.

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**Tetrahydrocurcumin Diacetate**

*Tetrahydrocurcuminoids (THC)* is a colorless hydrogenated product derived from the yellow curcuminoids, the biologically active principles from the rhizomes of *Curcuma longa* (Turmeric), function as efficient antioxidant compounds. Curcuminoids are reported to be potent antioxidant compounds by virtue of their molecular structure. When natural yellow curcuminoids (curcumin, demethoxycurcumin, bisdemethoxycurcumin) from *Curcuma longa* (Turmeric) roots are hydrogenated a color free mixture of *Tetrahydrocurcuminoids* is obtained.

This natural blend is valued as a topical antioxidant and anti-inflammatory agent, with superior free radical scavenging and lipid peroxidation inhibition efficacy as compared to vitamin E. Studies indicate that *Tetrahydrocurcuminoids* (trademarked SabiWhite®, Sabinsa Corporation), particularly ultrapure Tetrahydrocurcumin efficiently inhibit tyrosinase. Laboratory studies revealed *Tetrahydrocurcuminoids (THC)* is an effective skin lightening agent with multifunctional topical benefits. The extract is safe for topical use with no irritant or sensitization side effects.

A randomized, double-blind, placebo-controlled, comparative study. The safety and efficacy of 0.25% Tetrahydrocurcumin (tumeric) cream as depigment agent against 4% hydroquinone cream Hydroquinone, which is extensively used in the treatment of hyperpigmentary disorders is associated with known side effects. Safer, natural depigmenting actives are therefore being explored. A randomized, placebo controlled study in 50 human subjects, showed that the depigmenting effects of 0.25 percent tetrahydrocurcumin cream and 4 percent hydroquinone cream were comparable in a four week trial. No adverse reactions were noted from 0.25 percent tetrahydrocurcumin cream, while mild to moderate adverse effects were observed with 4 percent hydroquinone cream. 0.25 percent Tetrahydrocurcumin cream is therefore an effective and safe alternative to 4 percent hydroquinone cream in depigmenting formulations.

[Chart showing mean Mexameter readings of patients]
**Pearl Powder**

Contains a unique pearl protein called "Conchiolin", which gives pearls and pearl shells their beautiful luminous radiance. The 20-22 amino acids contained in pearl's conchiolin is similar to that of amino acids in collagen. Conchiolin is shown to restore vitality to the skin, keeping smooth, firm, flawless and well moisturized. It is widely believed that the antioxidant properties of pearl powder help prevent skin pigmentation by slowing down melanin production.

**Alpha Arbutin**

Alpha Arbutin
Origin: Switzerland

Recognized as the safest, most effective skin whitening compound, this ingredient is not to be mistaken for Beta Arbutin (commonly known as Arbutin). Most manufacturers use Arbutin, because it is far less expensive and easier to source than Alpha-Arbutin. A patented ingredient manufactured in Switzerland, Alpha-Arbutin has shown extra ordinarily rapid and safe skin whitening properties.

Alpha-Arbutin is a patented synthetic mono-substance that acts as a tyrosinase inhibitor. Alpha-Arbutin shows impressive in-vitro tyrosinase inhibition on human cells. Alpha Arbutin blocks epidermal melanin biosynthesis by inhibiting enzymatic oxidation of Tyrosine and Dopa. A skin-lightening study on 80 women demonstrated that an emulsion containing 1% Alpha-Arbutin results in a faster and more pronounced skin lightening effect after one month when compared with other commonly used mono-substances at 1% each. Alpha Arbutin acts faster and more efficiently than existing single components, minimizes liver spots and reduces the degree of skin tanning after UV exposure. In conclusion Alpha-Arbutin acts faster, safer and more efficiently than commonly used single components.

**Paper Mulberry Extract**

Paper Mulberry extract, is obtained from the root of Broussonetia kazinoki, Siebold. or B. papyrifera, Vent. Tabl. Regn. Veget. Or hybrids of both, family Moraceae.

The plant roots from which paper mulberry was isolated were collected in Korea.

A comparison of the tyrosinase inhibition of paper mulberry with kojic acid and hydroquinone reveals that the IC50 (ie, the concentration causing 50% inhibition of the activity of tyrosinase) is 0.396%, compared with 5.5% for hydroquinone and 10% for kojic acid. A patch test using 1% paper mulberry extract and found no significant irritation at either 24 hours or 28 hour

In conclusion

Paper Mulberry root bark extract was found to be a potent inhibitor of tyrosinase enzyme. The major constituent was identified and found to be fourteen times more potent than hydroquinone.
L—glutathione can be synthesised from the amino acids glycine, L-glutamic acid and L-cysteine. GSH exists in two forms namely, glutathione disulfide (GSSG) and glutathione (GSH) with former being the common form. The presence of GSH induces the production of pheomelanin (light coloured pigment for skin whitening and fairness) and suppresses the production of eumelanin (darker brown/black pigment).

Being an ingredient of skin whitening products it inhibits melanin synthesis by interrupting L-DOPA’s ability to bind to enzyme Tyrosinase (monophenol monooxygenase). Glutathione induces inhibition of tyrosinase glycosylation. This blocks the maturation as well as transfer of tyrosinase from Golgi-endoplasmic recticulum-lysosome (GERL)-coated vesicles to the premelanosome. GSH is believed to direct tyrosinase inactivation within the enzyme’s active site by chelating copper. As glutathione takes part in the conversion of dopaquinone to pheomelanin, it mediates in the transformation of eumelanogenesis to pheomelanogenesis. Its antioxidant properties help to neutralize the peroxides and free radicals which induce melanin synthesis. GSH modulates the capabilities of melanocytotoxic agents in depigmentation and whitening.

Glabridin is the main ingredient in licorice extract. Glabridin has been studied for its inhibitory effect on pigmentation and is reported that glabridin inhibited tyrosinase activity of melanocytes without cytotoxicity. They further showed that UV-B–induced pigmentation and erythema were inhibited by topical application of 0.5% glabridin. The anti-inflammatory properties of glabridin were attributed to inhibition of superoxide anion production and cyclooxygenase activity.

Studies have shown that it can provide a considerable skin brightening effect while remaining non-toxic to the melanin forming cells. Glabridin is found in very small traces and therefore it is important to ensure that the correct part of the licorice plant is used.

Licorice’s anti-inflammatory properties (due to inhibition of superoxide anion production and cyclooxygenase activity) also make it a very popular ingredient in the skin care industry.