

Causes of Pigmentation and its Natural Treatment

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Description

Humans have evolved to adapt to fluctuations in the environment. Similarly, human skin color is an adaptive phenomenon and has evolved due to the differences in melanin secretion obtained by natural selection. Human skin color is affected by both the amount and distribution of melanocytes. Changes in the amount and type of basal epidermal melanin are the major causes of the natural pigmentation of human skin. Melanin protects the skin from the damage caused by UV rays. Disturbance of common homeostasis of individual melanin synthesis leads to weakened skin pigmentation. Therefore, a good understanding of skin pigmentation and the prognosis of such disorders is important in treating them and devising various strategies for their prevention and healing.

Causes of Pigmentation

The pigmentation of human skin is mainly derived from melanin. Melanin is a very dense, virtually insoluble, high molecular weight polymer that is bound to structural proteins. Brown-black melanin and reddish-yellow pheomelanin are two types of melanin found in human skin. The dark skin phenotype is characterized by high levels of melanin, including tanned skin. There is considerable variability in the concentration of pheomelanin within a given group of humans. The synthesis and distribution of the pigmented biopolymer melanin is specialized in a very small population of cells called melanocytes, which are derived from progenitor cells called melanoblasts during embryogenesis. Melanoblasts are derived from neural crest cells.

Natural Treatment Process

Synergistic effects are one of the phenomena observed in herbal extracts, which help improve their effects and are widely used in cosmetic formulas. Hydroquinone, vitamin C or ascorbic acid, arbutin, colic acid and their derivatives are the most common active ingredients. In addition, extracts of mulberry, morus alba and orchid are used in cosmetic formulas. Hydroquinone is considered to be of excellent quality in the tropical treatment of hypnosis. Skin irritation, extrinsic ochronosis, and contact dermatitis are side effects associated with use in people with dark skin. Long-term use of

corticosteroids also causes local or systemic side effects. Therefore, natural plant extracts have been studied and have led to the identification of many potentially active compounds that can be used as new pigments agents.

Flavonoids are multi-active ingredients with antioxidant and sedative properties and are often used in cosmetics. Over 5000 flavonoids have been extracted and identified, forming the largest group of plants with active properties. The most well-known effect of flavonoids on the skin is due to their anti-radical properties. The presence of phenolic groups with high reduction potentials leads to the formation of resonance stabilizing anion radicals. The degree of structure and physicochemical properties determine the flavonoid removal activity.

Aloecin is a compound extracted from aloe plants. It has been shown to competitively inhibit tyrosinase in human, fungal, and mouse sources. Aloecin inhibits the activity of tyrosine hydroxylase and DOPA oxidase in a dose-dependent manner. It has been observed that aloecin with arbutin can synergistically inhibit melanin production by inhibiting tyrosinase activity through the use of an integrated mechanism of non-competitive and competitive inhibition.

Morus alba plants belong to the Morus alba family. They are usually cultivated as a source of nutrition for silk moths and as a raw material for making jams, vinegars, juices, wines and cosmetics. Dry morus alba (Morus alba) containing 85% ethanol extract shows inhibition of tyrosinase activity. An active ingredient called Mulberrosid.

It has been shown to inhibit tyrosinase activity on melanocyte formation in melanocytes. In addition, several phenol flavonoids have been isolated from the leaves, including quercetin, gallic acid, fatty acids such as palmitic acid and linoleic acid. Due to its superoxide scavenging effect, it is used as one of the ingredients of whitening agents and also provides protection against autoxidation.

Melanin plays an important role in the pigmentation of human skin. Not only it is pigment, it is also a pesticide that protects the skin from harmful UV rays. Melanin levels are higher in people with darker skin, so they are less susceptible to DNA damage than people with lighter skin. Skin pigmentation disorders are primarily due to pigmented melanin disorders.