

## Kojic Acid

**Kojic acid** with the chemical name 5-hydroxy-2-hydroxymethyl-4-pyrone is produced by several species of fungi, especially *Aspergillus oryzae*, which has the Japanese common name koji. It is a by-product in the fermentation process of malting rice, for use in the manufacturing of sake, the Japanese rice wine. 13C-Labeling studies have revealed at least two pathways to kojic acid. In the usual route, dehydratase enzymes convert glucose to kojic acid. Pentoses are also viable precursors in which case dihydroxyacetone is invoked as an intermediate.

Kojic acid is a mild inhibitor of the formation of pigment in plant and animal tissues, and is used in food and cosmetics to preserve or change colors of substances.

Kojic Acid is used in cosmetic products as a skin whitening, skin lightener or depigmenting agent. It is added to the products to lighten freckles and other dark spots on the skin. When used on the skin, it reduces the amount of melanin production.

Kojic acid can be added to many beauty products, including soaps, lotions and creams. People apply these products to their face in hopes of lightening the skin color. It also helps skin discoloration conditions that turn the skin brown such as melasma. Some customers use this method to remove freckles, sunspots and other unsightly pigmentations. Toothpaste companies have even included kojic acid in some tooth whiteners.

### 1. Kojic Acid Soap

Skin whitening soap may lighten and brighten the skin by inhibiting the production of melanin. It is often used to even skin tone, decrease the appearance of scars, and reduce age spots. It can be as a treatment for hyperpigmentation and melasma.

Some ingredients that have been used in skin whitening soap are potentially dangerous, such as mercury and hydroquinone.

Melanin production involves a complex process involving the enzyme tyrosinase. Kojic acid soap might stop tyrosinase from entering skin cells, blocking melanin.

### 2. Kojic Acid Cream

Kojic acid whitening cream is another option for those who wish to obtain lighter skin. It works to lighten the skin and reduce imperfections while smoothing and soothing the skin. Unlike the soap, kojic acid whitening cream is formulated to remain on the body for a prolonged period of time.

Since skin whitening products work by blocking the production of melanin, people using them are advised to stay out of the sun. Using sunblock is also important to protect the skin and maximize the results obtained from cosmetic whitening. Sunblock

should have UVA and UVB protection for maximum benefit.

3. Kojic acid lotion

Kojic acid lotion is most often used to lighten a person's skin tone; it also can be minimize the appearance of freckles and other discolorations.