

TECHNICAL DATA SHEET

Product Name: Ginger root powder

INCI Name: Zingiber officinale root powder

CAS: 84696-15-1

Botanical name: Zingiber officinale

Product quality: The product is concentrated at a 10:1 ratio, meaning that the amount of plant material used to obtain the extract is ten times greater than the final quantity of the extract. This ratio is used to emphasize the strength and efficacy of the extract.

Origin of raw material: China

Description: Ginger (Latin Zingiber officinale) is a perennial spice plant from the Zingiberaceae family. It originated in China, from where it was spread to India, Southeast Asia, West Africa, and the Caribbean. The plant has thick rhizomes, fleshy underground parts, which spread horizontally. They have a yellow-brown exterior and a light yellow, fibrous interior. The rhizomes branch in many directions, allowing ginger to spread and form new plants. These rhizomes are known for their aroma and spicy, sharp taste, making them highly valued in both culinary and medicinal uses. The stem is erect, resembling a reed, and the leaves are narrow and lanceolate. The plant produces clusters of yellow-green flowers with purple lips, usually arranged in conical inflorescences. Ginger is rich in numerous phytochemicals that contribute to its medicinal properties, including gingerol, shogaol, zingerone, paradol, curcumin, terpenoids such as zingiberene and bisabolene, and numerous flavonoids. The dry rhizome contains 1.5-3% essential oil. It also contains vitamins C, B1, B2, and essential amino acids.

Benefits:

- **Antioxidant protection:** Ginger contains powerful antioxidants that help protect the skin from external stressors such as pollution and UV radiation. Free radicals are unstable molecules that can damage cells, including DNA, proteins, and lipids in cell membranes, leading to cell dysfunction and accelerated aging. Antioxidants in ginger, such as gingerols, can react directly with free radicals, neutralizing them and preventing the chain reaction of oxidative damage. These antioxidants can help prevent the appear-

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ance of signs of skin aging, such as wrinkles and fine lines.

- **Enhancement of antioxidant defense systems:** Ginger can stimulate the activity of antioxidant enzymes in the body, such as superoxide dismutase (SOD), glutathione peroxidase, and catalase. These enzymes help break down and remove free radicals, further protecting cells from oxidative stress.

- **Inhibition of new free radical formation:** Gingerols and shogaols can inhibit enzymes involved in the synthesis of inflammatory mediators that can generate free radicals.

- **Protection from lipid peroxidation:** Lipid peroxidation is a process in which free radicals damage the lipids in cell membranes, which can lead to cell dysfunction and death. Antioxidants from ginger can help protect the lipid structures in cell membranes.

- **Reduction of inflammatory cytokine production:** Ginger can influence the reduction of levels of pro-inflammatory cytokines such as tumor necrosis factor-alpha (TNF- α) and interleukins (IL-1, IL-6, IL-8). By reducing their production, ginger contributes to reducing inflammation.

- **Immune system modulation:** Ginger can affect the activity of certain immune cells, such as macrophages, T-cells, and B-cells, modulating their activity and production of inflammatory mediators. This action helps reduce excessive immune responses that can contribute to chronic inflammatory conditions.

- **Thermal effects:** Ginger can produce a mild warming effect when applied locally (for example, in the form of balms or creams), which can help alleviate muscle and joint pain. Ginger is known to stimulate blood circulation. Improved circulation helps deliver nutrients to skin cells.

- **Stimulation of collagen production:** By stimulating collagen production and providing antioxidant protection, ginger can help maintain skin elasticity and firmness, which is essential for a youthful appearance.

Usage: Used for making water-glycerin extracts, glycerites, tinctures, and other cosmetic semi-products. Recommended concentrations range from 1-10%.

Storage: Stable when stored in a dry and cool place. Approximate shelf life of 2 years.

Animal testing: The substance has not been tested on animals

GMO: Non-GMO

Vegan: Does not contain animal-derived components

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