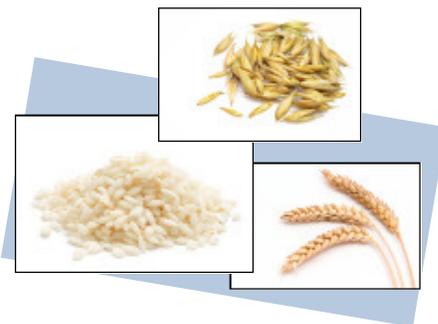


Ferulic Acid



INCI Name: Ferulic Acid

CAS Numbers: 1135-24-6

Description:

Ferulic Acid is found in the seeds and leaves of most plants such as oats, wheat and rice. It can also be found in coffee, apples, peanuts, artichoke, pineapple and oranges. It is an antioxidant which make it especially useful in the formulation of anti-aging cosmetics. Ferulic Acid is an antioxidant that can destroy several different types of free radicals such as superoxide, hydroxyl radical and nitric oxide.

Technical Data:

<i>Test</i>	<i>Range</i>	<i>Results</i>
Appearance	Almost white crystalline powder	Conforms
Melting Point	170-174° C	170.7 -172.5° C
Loss on Drying	≤ .50%	0.30%
Assay (by HPLC)	≥ 99.0%	99.5%
Heavy Metals	≤ 10 ppm	<10 ppm

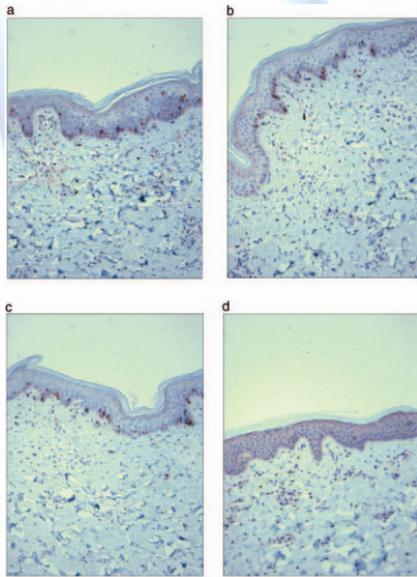
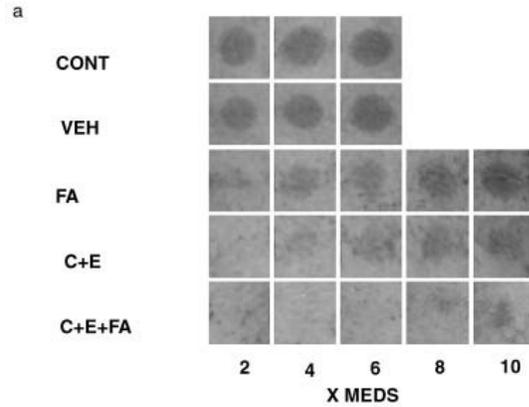
Applications:

The antioxidant properties neutralizes free radicals known as nitric oxide, superoxide and hydroxyl radical which can cause oxidative damage to the cell membranes and DNA. In the skin, this damage can be perceived as aging. Ferulic acid helps to prevent damage to our cells caused by ultraviolet light. It actually increases the antioxidant potency by exposure to ultraviolet light.

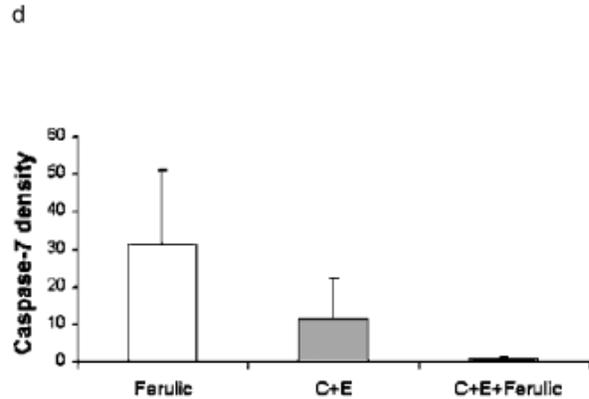
Ferulic Acid also acts as a synergistic with other antioxidants especially vitamin C and E. When used with these vitamins, Ferulic Acid prevents them from breaking down or becoming ineffective. This super antioxidant has also shown to protect against a variety of cancers, bone degeneration and menopausal symptoms such as hot flashes.

Ferulic acid is suitable for cosmetics, sunscreens, supplements and a base for fragrances. It is used as a raw material for the production of the flavor vanillin and preservatives.

Photoprotection (chart to right) by topical antioxidant formulations. Skin was pretreated with vehicle, 0,5% ferulic acid, 15% vitamin C and 1% vitamin E, 15% vitamin C and 1% Vitamin E, and 0.5% ferulic acid and irradiated with solar-simulated radiation 2 X to 10 X minimal erythema dose (MED) at 2 X MED intervals. Evaluation was carried out 1 day later. Visual erythema of photoprotection provided by antioxidant solutions.¹



The figure above show immunohistochemistry of activation of caspase-3 by 4 X MED of solar-simulated light. Activation is particularly strong in the basal layer. Ferulic acid alone (3b) and vitamins C+E (3c) provide partial protection but vitamins C,E, and ferulic acid (3d) provides virtually complete protection.²



The above results show skin treated with vitamin C, E, and ferulic acid was completely negative for UVB-induced erythema. Ferulic acid not only provides increased stability to a solution of vitamins C & E, but also adds a substantial photoprotection, essentially doubling its efficacy.³

^{1,2&3} Lin, F., Lin, J., Gupta, R., Tourmas, J., Burch, J., Selim, M., Monteiro-Riviere, N., Grichnik, J., Zielinski, J., Pinnell, S. "Ferulic Acid Stabilizes a Solution of Vitamins C and E and Doubles its Photoprotection of Skin" *Journal of Investigative Dermatology*, (2005) pp. 826-832, Illustration, MEDLINE, EBSCO



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