

GINKGO BILOBA



Ginkgo Biloba is a very long-lived tree species, some specimens are more than 2,500 years old. It has been used as a natural remedy for centuries in traditional Chinese, Japanese and Hindu medicine. Nowadays, it is used in order to obtain raw materials that are added to the formula of anti-aging products. This is because it is considered as a wonderful antioxidant, with proven free radical scavenger action. In addition, this kind of tree is known for its neuroprotective and vasoregulatory properties, among many other benefits. (1)

The most common **pharmaceutical forms** are: tablets, dried infusion leaves, baths, drops and poultices. (2)

Ginkgo Biloba is usually used as a dietary supplement. With regard to its **dosage**, the amounts range from 80 to 240 mg of extract, 2 or 3 times a day. The average recommended dose is 120 mg / kg. (2)

Description

The Ginkgo plant drug is mainly obtained from the leaves. The seeds and fruits are only used in Chinese medicine. (1)

These leaves can have various shapes and can be very divided, bilobed or a whole leaf. Ginkgo leaves are harvested in early autumn, when they have a yellowish tint. (1)

CHEMICAL COMPOSITION:

- **Flavonic compounds:** free flavonoids such as quercetin or kenferol, gluco-rhamnoside p-hydroxycinnamates and biflavonoids.

- **Terpenic lactones: ginkgolides A, B, C, J, M:** with a hexacyclic diterpenic structure and bilobalide sesquiterpene.

- **Others:** Phytosterols. (1)

Neuroprotective effect

The ginkgo biloba leaf and its preparations are used in cases of minor or moderate cerebrovascular insufficiency and arterial circulatory disorders. The European Commission approves the use of its hydroacetic dry extract for the following indications: (1)

- **Primary degenerative dementia syndromes** or vascular dementia, memory deficit, concentration disorders and depressive emotional conditions.
- **Intermittent claudication** or occlusive arteriopathies.
- **Vertigo and Tinnitus:** vascular and involutive origin.

The **mechanism of action** involved is related to: (3)

- A reduction in the release of glutamate in various brain areas.
- Antioxidant activity (free radical scavenger)
- Anti-inflammatory, apoptotic and antiproliferative activity (through the activation of intracellular signaling pathways)
- Inhibition of Platelet Activation Factor (PAF)

Other properties

- **Vasoregulator:** arterial vasodilator, venous vasoconstrictor, capillary resistance enhancer and increased blood flow. (1)

- **Platelet antiaggregant:** PAF antagonist (platelet activating factor) (1)

- **Increased tolerance to anoxia:** increased glucose and oxygen uptake and decreased brain oxygen requirements. (1)

- **Antioxidant:** increased expression of the transcription factor erythroid nuclear factor-2 (Nrf2). When activated, it stimulates the expression of a set of cytoprotective antioxidant genes. (3)

- **Antibacterial:** against *Staphylococcus aureus* and *Escherichia coli* species. (3)

Bibliography

1. Aguaviva, B. G. (2011). Monográfico del ginkgo biloba. Medicina naturista, 5(2), 93-99
1. Rodríguez Hernández, V. (2019). Actividad proliferativa de los polifenoles presentes en el extracto de Ginkgo biloba en las etapas de desarrollo del cáncer en ratas macho Wistar (Doctoral dissertation, Universidad Veracruzana. Facultad de Química Farmacéutica Biológica. Región Xalapa.).
1. Mathey, L. I. P., Aguilar, E. J., Espinoza, J. L., Jiménez, T. M., & Hernández, M. E. A. (2019). Usos terapéuticos del Ginkgo biloba: ventajas, desventajas y perspectivas. Revista Médica de la Universidad Veracruzana, 18(2), 67-83.

Farma- Química Sur SL

C/ Carlo Goldoni, 32 Polígono Industrial
Guadalhorce – Málaga 29004 España ·

Teléfono: 952 240 988 · Fax: 952 242

585 · e-Mail:

farmaquimicasur@farmaquimicasur.com