Gingko Biloba
Product Code: P4683
Categories: Cognitive Support, Circulation Support

TECHNICAL SUMMARY

Product Description: P4683 Ginkgo Biloba contains *Ginkgo biloba* extract standardized to 24% ginkgoflavonglycosides and 6% terpene lactones, including Ginkgolide B, the most significant fraction, and Ginkgolides A, C and Bilobalide. Additionally, it contains Gotu Kola and Eleuthero for further support of cognitive function and circulation.

Chemical Names: Ginkgo flavonoid glycosides (including quercetin and kaempferol); terpene lactones (including ginkgolides A, B, C, and bilobalide).

Structural Formulas:

![Structural formula of Bilobalide and Ginkgolides](image)

Product Composition: *Ginkgo biloba* Extract (Leaf), Gotu Kola (*Centella asiatica*) (Leaf), Eleuthero (*Eleutherococcus senticosus*) (Root), Cellulose (capsule) and Stearic Acid (vegetable source).

Allergen Statement: Contains no common allergens. Vegan/vegetarian product.

Delivery Form: Vcaps®

ROLE AS A NUTRIENT

Essentiality: Not essential nutrients.

Typical Consumption: *Ginkgo biloba* is known as an herbal remedy that originated in China about 5,000 years ago. Today it is among the top ten utilized supplements in the U.S. and is widely used in Europe (i.e. France) as medicine indicated in cases of age-related cognitive impairment.¹,²

Structural and Functional Role: *Ginkgo biloba* has been shown to improve microcirculation due to increased synthesis of prostacyclin and nitric oxide, well established factors in vasorelaxation. It also decreases blood viscosity and blood clotting by acting as a platelet activating factor (PAF) antagonist. This effect, generally attributed to Ginkgolide B. *Ginkgo biloba*, has also been shown to affect the expression and release of certain neurotransmitters and positively impact antioxidant plasma status.¹,³
**RECOMMENDED USE**

**Cognitive Function Support:** In a double-blind, placebo-controlled, randomized trial, 262 cognitively intact volunteers 60 years and older received standardized Ginkgo extract (180 mg/day for 6 weeks) or placebo. A variety of objective, standardized, neuropsychological panels were utilized to evaluate cognitive performance before and after intervention in both groups. The study demonstrated statistically significant improvement in delayed (30 minute) free recall (p<0.04) and recognition of auditory-verbal material (p<0.01) in the Ginkgo group at 6 weeks as compared to the placebo.  

**Healthy Circulation Support:** In order to assess the affect of Ginkgo biloba extract on vascular function, 64 patients with early stage diabetic nephropathy were randomized to receive one Ginkgo leaf extract tablet (containing 19.2 mg flavonol glycoside and 4.8 mg terpene lactone) or placebo for 8 weeks. Blood flow in the brachial artery, as well as plasma levels of von Willebrand Factor (vWF), nitric oxide (NO), and endothelin-1 (ET-1), were measured. Results showed that blood flow measured by the endothelium-dependent dilating function increased in the treatment group from 4.91 ±2.31% before treatment to 6.78 ±3.89% after treatment (p<0.05). N.O. levels increased significantly (from 50.16 ±24.62 µmol/L to 70.65 ±28.71 µmol/L) while vWF decreased significantly in the treatment group (p<0.01).  

**NATUROKINETICS℠**

**Liberation:** Dissolution test has not been performed. P4683 Ginkgo Biloba passes the standard disintegration test in water (<60min).

**Absorption:** Terpenes (ginkgolide A and B) and bilobalide found in Ginkgo biloba extract have been demonstrated to be bioavailable in human volunteers, with dose-dependent plasma concentrations and T_{max} of 1.0, 0.75, 1.5 hours, respectfully (Figure 1).  

**Distribution:** Following absorption, Ginkgo constituents are distributed according to organ perfusion with the liver showing the highest concentrations.  

**Metabolism:** The enzyme CYP2B is predominantly responsible for metabolism of Ginkgo diterpenes. Induction of this metabolizing enzyme peaks 6 hours post-administration.  

**Excretion:** Flavonoid glycosides and terpenes in Ginkgo biloba are excreted predominantly in urine.  

**SAFETY INFORMATION**

**Tolerability:** Ginkgo biloba is generally well-tolerated. Side effects include minor gastrointestinal irritation, dizziness, palpitations, headaches, constipation, and allergic skin reactions. Spontaneous bleeding is likely to occur when taken with anticoagulant supplements and certain medications.  

**Contraindications:** Individuals who suffer from infertility, bleeding disorders, diabetes, or who will undergo surgical procedures should be advised to use with caution. Advise patients to discontinue Ginkgo at least 2 weeks before elective surgical procedures. Do not take if pregnant or breastfeeding.  

**INTERACTIONS**

**Drug Interactions:** Anticoagulants/antiplatelet medications used with Ginkgo increase the risk of bleeding. It may also decrease the effectiveness of some anti-convulsive drugs (phenobarbital, primidone).  

**Supplement Interactions:** Concomitant use of Ginkgo extract with herbs and supplements that affect platelet aggregation could theoretically increase the risk of bleeding (angelica, danshen, garlic, Panax ginseng). When combined with St. John’s Wort, it might cause hypomania in patients with depression.  

**Interactions with Lab Tests:** Prothrombin time and INR are recommended to be monitored closely in patients taking Ginkgo and warfarin.
Storage & Stability: Store in a cool, dry environment in a tightly sealed container.

References