

## 5. Safety

GINKGOLON-24 contains extremely low levels of ginkgolic acid, which is an allergen substance in Ginkgo. This level is less than 5 ppm, representing the same quality as the materials used for medicines with Ginkgo in Europe.

Acute toxicity: more than 2000 mg/kg

## 6. Recommended dosage

From many clinical tests and the COMMISSION E monograph, the recommended dosage is 120-240 mg/day.

## 7. Contact

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# GINKGOLON

## Ginkgo biloba extract



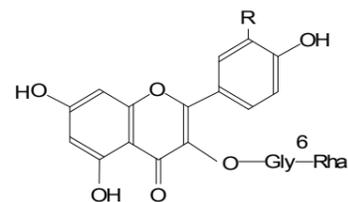
## 1. Introduction

Ginkgo biloba, which is well known in Japan and China, is a gymnosperm with fan-shaped leaves. Ginkgo is an extremely tough, long-lived tree that dates back about 250 million years; it is thus sometimes called a “living fossil.” Like certain other plants, ginkgo has been used for the treatment of pulmonary and cardiac conditions, and asthma since ancient times, when its chemical ingredients and physiological functions were unknown. Today, however, many of the chemical ingredients and physiological functions of ginkgo have been clarified. Ginkgo was first used as a medicine for improving angioplasty, dementia, and other diseases in Germany in 1965 and in France in 1974. In Japan, it has yet to be approved as a medicine. It can also be regarded as a functional food, optimal for use in stressed, middle-aged, and elderly individuals.

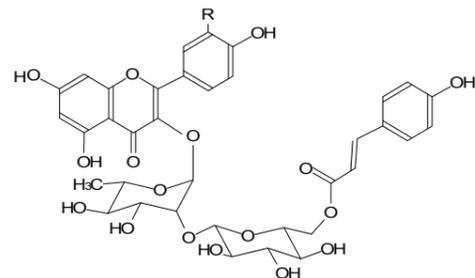
## 2. Constituents of Ginkgo

### ■ Flavone glycosides

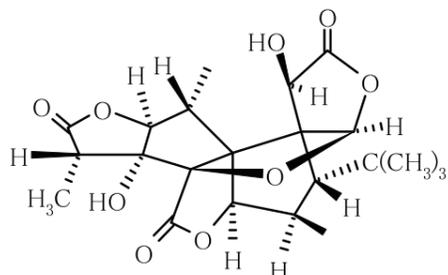
### ■ Terpenoids



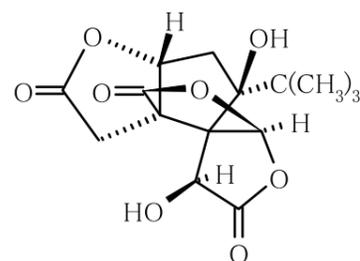
R = H: kaempferol-3-O-rutinoside  
R = OH: quercetin-3-O-rutinoside (rutin)  
R = OCH<sub>3</sub>: isorhamnetin-3-O-rutinoside



R = H: kaempferol-3-O-(6'''-trans-p-coumaroyl-2''-glucosyl)rhamnoside  
R = OH: quercetin-3-O-(6'''-trans-p-coumaroyl-2''-glucosyl)rhamnoside



	R1	R2
Ginkgolide A	H	H
Ginkgolide B	H	OH
Ginkgolide C	OH	OH



Bilobalide

## 3. Pharmacological activity of Ginkgo

- Inhibitory effects on platelet aggregation
- Vasodilatory effect
- Cerebral blood flow-increasing and cerebroprotective effects
- Anti-anxiety effects
- Anti-oxidant effects (ORAC: Oxygen Radical Absorbance Capacity)

## 4. Clinical trials

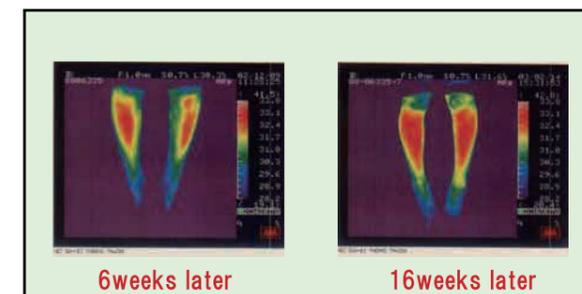
The GINKGOLON-24 clinical investigation conducted tests against chronic-stage of brain attack disease and coldness, both of which are caused by insufficient circulation through capillary vessels.

### ■ Improvement in chronic-stage brain attack diseases

All nine patients receiving GINKGOLON-24 showed definite or slight improvement of subjective symptoms and clinical findings on neurological examinations. In all patients, clinical pharmacological effects occurred early, usually 1-8 weeks after starting treatment.

### ■ Improvement in coldness

GINKGOLON-24 was effective for all participants in treating air conditioner disease in winter and summer. Stiffness of the shoulders, tension headaches, and constipation were also improved in some participants. The onset of these clinical pharmacological effects was observed within 1-6 weeks of treatment with GINKGOLON-24.



Many clinical tests of Ginkgo biloba leaf extract have also been performed in Europe since the 1960s. Based on the results, Ginkgo biloba extract has been used as a medicine for improving memory, dementia, and circulatory problems.