GINKGO BILOBA TERPENES PHYTOSOME®

SOOTHING, LENITIVE

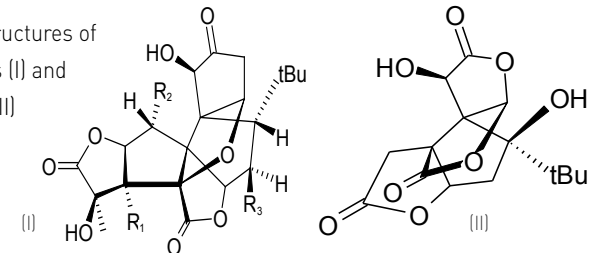
PERSONAL CARE

CHARACTERISTICS

GINKGO BILOBA TERPENES PHYTOSOME®	AVAILABLE DOCUMENTATION
HPLC Content: ≥ 30% of total ginkgoterpenes with reference to the anhydrous and solvent free substance Form: light brown powder, odorless pH: not applicable (insoluble in water) Stability: retesting date after 24 months Level of use: 0.5% - 1.5% Solubility*: soluble in Ethoxydiglycol, Polyisoprene, C12-15 Alkyl Benzoate, Wheat Germ Oil, Paraffin Oil, Isopropyl Myristate, C10-18 Triglycerides, Caprylic Capric Triglycerides	Botanical Certificate Method of analysis Reference Standards Declaration GMO free Safety Data Sheet Stability data Published literature Confidential documentation

* 50 mg of Ginkgo biloba Terpenes Phytosome® in 10 g solvent at 40°C

General structures of ginkgolides (I) and bilobalide (II)



SAFETY DATA*

In all the safety trials conducted to date, the product has shown a good tolerability and can therefore be considered innocuous for the foreseen use.[1,2,3]

	R1	R2	R3
Ginkgolide A	OH	H	H
Ginkgolide B	OH	OH	H
Ginkgolide C	OH	OH	OH
Ginkgolide J	OH	H	OH

FORMULATION EXAMPLES

SOOTHING EMULSION WITH GINKGO BILOBA TERPENES PHYTOSOME®				Formulation Advice
Aqua (water)	66.30%	Simmondsia Chinensis (jojoba) Oil	4.00%	The physico-chemical characteristics of Ginkgo biloba Terpenes Phytosome® and its ready dispersibility in water and oil virtually pose no limitations to the preparations of cosmetic formulations. Ginkgo biloba Terpenes Phytosome®, dispersed in aqueous phase by a homomixer or a turboemulsifier, is suitable for incorporation into monophasic and biphasic systems.
Glycerin	4.00%	Caprylic / Capric Trglyceride	4.00%	
Betain	1.00%	Squalane	3.00%	
Potassium Sorbate	0.15%	Omegablue ®	2.00%	
Aqua (water) / Sodium phytate	0.10%	Tocopherol /Heliantus Annuus (sunflower) Seed oil	0.10%	
Ginkgo biloba Terpenes Phytosome®	0.50%	Lecithin / Tocopherol / Ascorbyl palmitate / Citric acid	0.05%	
Xilogel®	0.50%	Aqua / Dehydroacetic acid / Benzyl alcohol	0.80%	
Xanthan gum	0.10%	ALSO SUITABLE FOR: After sun products After shave products Bodycare and after peeling products After depilation Products for sensitive and challenged skin Baby care products.		
Glyceryl stearate citrate / Cetearyl alcohol / Glyceryl caprilate	4.00%			
Hydrogenated Olive Oil / *Olea europaea* (olive) Fruit Oil / *Olea europaea* (olive) Oil Unsaponifiables	2.40%			
Glyceryl stearate	1.00%			
Cetearyl alcohol	2.00%			
Cetyl alcohol	0.50%			
Butyrospermum parkii (shea) Butter	3.50%			

* All safety trials are compliant to EU regulation 1223/2009.

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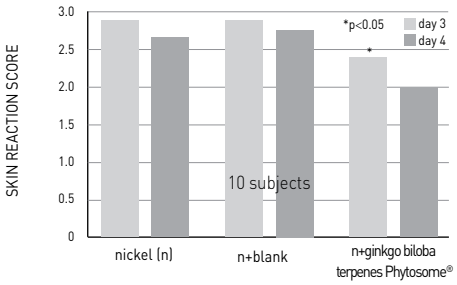
SOOTHING EFFECT ON NICKEL CHALLENGED SKIN

A study[4] was undertaken to evaluate the activity of Ginkgo Biloba Terpenes Phytosome® against a condition of skin nickel challenge in human volunteers.

10 women (aged 19-56 years), presenting a positive response to nickel (nickel sulphate 5% in mineral oil, applied in occlusive patches) have been selected and treated daily on their arms with a gel containing 1.5% of Ginkgo Biloba Terpenes Phytosome® (on one arm) and blank formulation (on the other arm). After three and four days, the responses to nickel were scored (from 0 to 3 according to International Contact Dermatitis Research Group quotation).

Results showed a statistically significant reduction of the skin reaction intensity.

Soothing effect of Ginkgo biloba Terpenes Phytosome® on nickel challenged skin



SOOTHING EFFECT ON LONG TERM APPLICATION

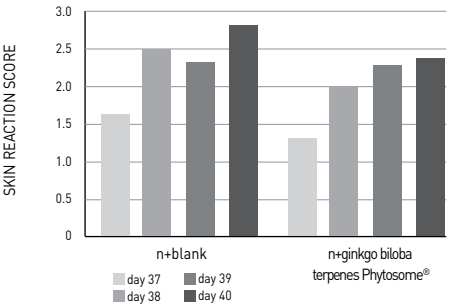
After a long term treatment over forty days,[4] the scoring of the response to nickel has been repeated, and the trend toward a reduction of the inflammatory response has been confirmed.

Allergic contact dermatitis is a complex phenomenon in which the skin immune system is involved with the stimulation of specific T-cells and keratinocytes that produce cytokines.

Usually, allergic contact dermatitis is expressed as erythema, oedema and itching.

Ginkgo Biloba Terpenes Phytosome® was shown to be effective on soothing individual contact reactions to other substances contained in topical formulations.

Soothing effect of Ginkgo biloba Terpenes Phytosome® on nickel challenged skin



MECHANISM OF ACTION

Studies demonstrated that ginkgolides are specific and potent antagonists of Platelet-Activating Factor (PAF), an inflammatory autacoid that is produced by, and acts on, a wide variety of cells.[5] They inhibit the binding of PAF to its platelet membrane receptor, and as ginkgolides do not interact with any other known receptor, their effect is highly specific.[6]

DID YOU KNOW...

Ginkgo biloba is considered as a living fossil, as it is the only survivor of a species originated 150 million years ago: as the tree defended itself thoughout the centuries, it is in its components that modern science has identified the reasonons for this immutability.

The standardized extract from the *Ginkgo biloba* leaves contains flavonoids and unique terpenoids such as ginkgolides and bilobalide, which have been observed to be potent inhibitors of the pro-inflammatory PAF (Platelet Activating Factor); this property is related to the soothing efficacy of the terpenoid fraction, and its formulation with lecithin (Ginkgo biloba Terpenes Phytosome®) is therefore recommended for the topical application on challenged skin.

TRADE NAME	INCI (PCPC)	INCI (E.U.)	EINECS N.	CAS N.	INDENA CODE
Ginkgo Biloba Terpenes Phytosome®	Lecithin (syn. Phospatidylcholine) (and) Ginkgo biloba Leaf Extract	Lecithin (syn. Phosphatidylcholine), Ginkgo Leaf Terpenoids	232 - 307 - 2 289 - 896 - 4	8002 - 43 - 5 90045 - 36 - 6	9033015

1. Internal report: 7548-M-03999. - 2. Internal report: 7731/T/7174/2000. - 3. Internal report: 7456/T/018/2000. - 4. Cristoni A., Di Pierro F., Guglielmini G., Giori A., Morazzoni P., "Soothing activity of terpenoid fraction of Ginkgo biloba and of its phospholipidic complex", Proceedings of 22nd IFSCC Congress, Edimbourgh, **2002**. - 5. Braquet P., Toqui L., Shen T.Y., Vargaftig F.F., "Perspectives in platelet aggregating factors research", *Pharmacological Reviews* 39, 97-145, **1987**. - 6. Braquet P., Hoshford D., "Ethnopharmacology and the development of natural PAF antagonists as therapeutic agents", *Journal of Ethnopharmacology* 32, 135-139, **1991**.

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