



# 18-β GLYCYRRHETINIC ACID and 18-β GLYCYRRHETINIC ACID PHYTOSOME®

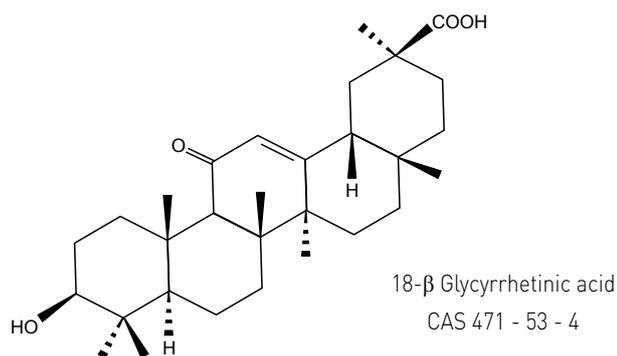
SOOTHING, LENITIVE

PERSONAL CARE

## CHARACTERISTICS

18-β GLYCYRRHETINIC ACID PHYTOSOME®	18-β GLYCYRRHETINIC ACID	AVAILABLE DOCUMENTATION
HPLC content: 27 - 31 % of 18 β glycyrrhetic acid Form: yellow-brownish powder Level of use: 0.5% - 3% Solubility*: soluble in Ethoxydiglycol, Isopropyl Miristate, C10-18 Triglycerides, C12-15 Alkyl Benzoate, Triticum vulgare (Wheat Germ Oil), Caprylic/Capric Triglycerides	Acidimetric content: 98 - 102 % of glycyrrhetic acid referred to the anhydrous substance Form: white - off white crystalline powder MP: 280 - 290°C Stability: retesting date after 2 years Level of use: 0.5 - 3% Solubility*: soluble in Ethanol 96%, Propylene glycol, Ethoxydiglycol	Botanical Certificate Methods of analysis Reference Standards Declaration GMO free Safety Data Sheet Confidential documentation

\* solubility has been tested at 50 mg in 10 g of solvent (RT)



## SAFETY DATA\*

- In all the safety trials conducted to date, 18-β Glycyrrhetic acid and 18-β Glycyrrhetic acid Phytosome® have shown a good tolerability and can therefore be considered innocuous for the foreseen use.<sup>1,2,3</sup>
- The topical application of 18-β Glycyrrhetic acid Phytosome® (at a 3% concentration in a O/W emulsion) showed good tolerability and no cutaneous sensitization on 15 healthy volunteers.<sup>4</sup>

## FORMULATIONS EXAMPLES

LENITIVE CREAM WITH 18-β GLYCYRRHETINIC ACID PHYTOSOME®		ALSO SUITABLE FOR: After sun products After shave Lotions for insect bites Bodycare and after peeling, after depilation products Products for sensitive skin Toothpaste (Glycamil®) Mouthwash (Glycamil®) Medical devices	Formulation Advice  The physico-chemical characteristics of 18β-Glycyrrhetic Acid Phytosome® and its ready dispersibility in water and oil virtually pose no limitations to the preparations of cosmetic formulations. 18β-Glycyrrhetic Acid Phytosome®, dispersed in aqueous phase by a homomixer or a turboemulsifier, is suitable for incorporation into monophasic and biphasic systems at a temperature lower than 40°C.
Ingredient	Concentration		
C12-20 Acid PEG-8 Ester	15.00%		
Octyl octanoate	5.00%		
C12-15 Alkyl benzoate	4.50%		
Dimethicone	0.50%		
Aqua (water)	5.50%		
Preservatives	q.s.		
Disodium EDTA	0.10%		
Glycerin	3.00%		
18β-Glycyrrhetic Acid Phytosome®	1.00%		
Fragrance	0.50%		

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

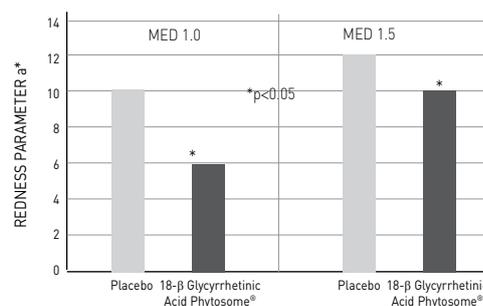
The ingredients described herein are offered for consideration for use in personal care products. The information provided describes historical use, ingredient activity and other information that may be relevant to their use in such products. How each ingredient would contribute to a particular product would be formulation specific. Furthermore please note that this documentation is available for various countries all over the world and hence it may contain statements not applicable to your country.



## ● DECREASE OF SKIN SENSITIVITY TO UV

- 18-β Glycyrrhetic Acid Phytosome® was tested for its capacity of decreasing skin sensitivity to UV on 20 healthy volunteers.<sup>5</sup> Skin redness was induced by exposing the subjects to a 1.0 or 1.5 MED (Minimal Erythral Dose) radiation for 4 minutes, being MED the amount of UV energy necessary to induce a measurable erythema.
- 18β-Glycyrrhetic Acid Phytosome®, incorporated at 3% concentration in a oil/water emulsion, and the control formulation were applied on two different areas of the back immediately after radiation, and covered with an occlusive patch for 24 hours. The reddening of the skin was then evaluated by using a chromometer.
- Statistically significant lowering of the skin reddening (measured as a\* parameter) was observed in the 18-β Glycyrrhetic Acid Phytosome® treated area compared to the placebo at both MED dosages 1.0 and 1.5.

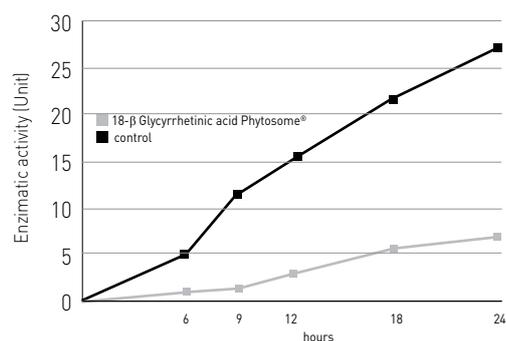
Evaluation of decrease of sensitivity to UV



## ● EFFICACY OF 18-β GLYCYRRHETINIC ACID PHYTOSOME® ON CELLULAR RESPONSE TO INFLAMMATION

- 18-β Glycyrrhetic Acid Phytosome® was tested for its ability to reduce inflammation cellular response.<sup>6</sup> Inflammation, in fact, in particular during the acute phase, causes the migration of granulocytes towards the inflammation site by chemotaxis. It is also known that the degree of peroxidase activity is directly proportional to the number of granulocytes present in the tissue. By measuring a reduced activity of myeloperoxidase, one can conclude that the cellular response to inflammation is reduced accordingly. In the tested model, the enzymatic activity of peroxidase was almost 75% lower than the activity measured with the control product even after 24 hours.

Effect of 18-β Glycyrrhetic Acid Phytosome® on peroxidase activity



## ● MECHANISM OF ACTION

- The formulation of 18-β Glycyrrhetic Acid in the Phytosome® form creates an original delivery system. 18-β Glycyrrhetic Acid Phytosome® is the formulated form of 18-β Glycyrrhetic Acid with phospholipids. The passage of the compound through the skin takes place through the interaction with cutaneous structures. The active component 18-β Glycyrrhetic Acid is structurally similar to cortisol, and potentiates the anti-inflammatory activity of cortisol by inhibiting its intracellular inactivation.

## ● DID YOU KNOW...

- 18-β Glycyrrhetic Acid is a metabolite of Glycyrrhizin, a saponin found in licorice (*Glycyrrhiza glabra*) root. The licorice plant is a legume related to beans and peas and derives its name from the word "liquorice", the ancient Greek for "sweet root". The sweet principle is Glycyrrhizin, a sweetener 50 times sweeter than sucrose. The sweet compound Glycyrrhizin and its salts may be used in personal care formulations as mouthwashes or toothpastes as a sweetener, not to forget lipsticks or lip glosses. Thus Glycamil® (ammonium glycyrrhizinate) has a personal care application as a sweetener at dosages ranging between 0.01 and 0.02%.

TRADE NAME	INCI (PCPC)	INCI (E.U.)	EINECS N.	CAS N.	INDENA CODE
18-β Glycyrrhetic Acid	Glycyrrhetic Acid	Glycyrrhetic Acid	207 - 444 - 6	471 - 53 - 4	3005100
18-β Glycyrrhetic Acid Phytosome®	Lecithin (syn. Phosphatidylcholine)	Lecithin (syn. Phosphatidylcholine)	232 - 307 - 2	8002 - 43 - 5	9001000
	(and) Glycyrrhetic Acid	Glycyrrhetic Acid	207 - 444 - 6	471 - 53 - 4	
Glycamil®	Ammonium Glycyrrhizinate	Ammonium Glycyrrhizinate	258 - 887 - 7	53956 - 04 - 0	3037100

1. Data on file, Inverni della Befra report 73/87/LFT, 1987. - 2. Final report on the safety assessment of glycyrrhetic acid, potassium glycyrrhetate, disodiumsuccinoyl glycyrrhetate, glyceryl glycyrrhetate", *International Journal of Toxicology*, 26(suppl 2), 79-112, 2007. - 3. Data on file, Biolab report 91/168, 1987. - 4. Data on file, University of Urbino, Italy, 1990. - 5. Bombardelli E., Cristoni A., Morazzoni P. "Phytosome® in functional cosmetics", *Fitoterapia*, vol LXV (5), 387-401, 1994. - 6. Bombardelli E., Curri S.B., Della Loggia F., Del Negro P., Tubaro A., Gariboldi P. "Anti-inflammatory activity of 18β-glycyrrhetic acid in PHYTOSOME® form", *Fitoterapia*, vol LX (suppl. of issue 1), 29-37, 1989.