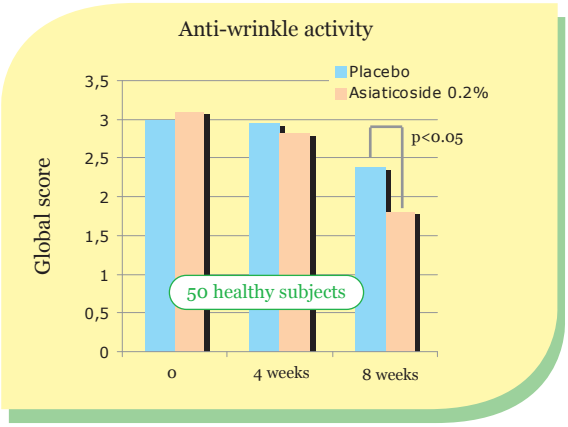
Asiaticoside

Anti-wrinkles

Proven efficacy on humans

The assessment of skin wrinkle is essential for evaluating the efficacy of cosmeceutical products believed to reduce age-related skin changes.[1]



The effect of asiaticoside on lip wrinkles by topical application in a lipstick containing 0.2% of the active was evaluated on 50 women by digital image-processing method in a double blind, placebo-controlled study. The volunteers were required to apply the lipstick twice a day for 8 weeks. Morphological assessments, digital photographs and replicas were taken before, after 4 and 8 weeks of application of lipstick. The overall lip status representing both the number and the depth of wrinkles was visually graded by three dermatologists on a 5 points scale. Their score indicated the wrinkle improving effect of lips after 8 weeks, in which the number and depth of lip wrinkles were statistically improved. Together with objective replica assessment, the image analysis also approved the efficacy of asiaticoside containing lipstick, enhancing lip coloring to be more evenly applied.

Improvement of collagen synthesis

Collagen I ng/10000 fibroblasts/48 hours	medium + DMSO	asiaticoside	madecassic acid
Without sodium ascorbate	470±97 183±43*	1557±245 140±37*	1362±82 825±83*
With 0.15 mM sodium ascorbate	825±83 210±54*	1875±148 290±34*	1912±170 228±41*

*cell associated

Skin aging appears to be principally related to a decrease in the levels of type I collagen, the primary component of the skin dermis.[2]

Asiaticoside, together with asiatic acid and madecassic acid, were tested on skin human fibroblast collagen *in vitro*.

Asiaticoside and the other ursane skeleton terpenoids tested were observed to increase collagen I synthesis both in presence and absence of ascorbic acid.

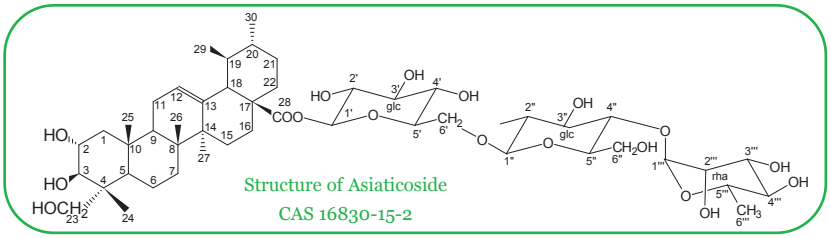
At a molecular level, asiaticoside appears to induce phosphorilation of Smad 2 and Smad 3 proteins, which are mediators of transcriptional activation. Asiaticoside can therefore induce type I collagen synthesis via the activation of the TGFbeta receptor I kinase-independent Smad pathway.[3]

An in-vitro study involving cDNA micro arrays technology, conducted on human normal skin fibroblasts, showed that Asiaticoside cell stimulation upregulates the expression of some genes with known functions in processes relevant to wound healing. For example those encoding enzymes wich play a direct part in collagen (also of extra cellular matrix collagen) synthesis, in particular the Protocollagen I and III peptides levels showed a time-dependent pattern: the concentration of both two increased significantly in asiaticoside-treated supernatants skin fibroblasts cells.[4]

1. Ryu J.S. et al.: “Improving lip wrinkles: lipstick-related image analysis” - Skin Research and Technology 11, pag. 157-164, 2005 - 2. Bonte F. et al.:”Influence of asiatic acid, madecassic acid and asiaticoside on human collagen I synthesis” - Planta Med. 60, pag. 133-135, 1994 - 3. Lee J. et al.: “Asiaticoside induces human collagen I synthesis through TGF beta receptor I kinase-independent Smad signaling” - Planta Med. 72 (4), pag. 324-328, 2006 -4. L. Lu et al.: “Dermal fibroblast-associated gene induction by asiaticoside shown in vitro by DNA microaaray analysis” - BJD 151 571-578 (2004)

Asiaticoside

Safety Data



Structure of Asiaticoside
CAS 16830-15-2

The use of Asiaticoside in the tests perfomed showed the complete absence of side effects as localized erythema or any kind of discomfort. In all the trials conducted to date, Asiaticoside exhibited an excellent tolerability.

Characteristics

Asiaticoside	Available Documentation
HPLC content of asiaticoside ≥ 85% Form: fine white powder Level of use: 0.1% - 0.5% Odour: odourless pH: not applicable (not soluble in water) Very soluble in*: Propylene glycol, Ethoxydiglycol, Ethoxydiglycol/water (1:1 w/w). Soluble in*: Alcohol 50° (v/v), Glycerin, Butylene glycol, Polyethylenglicol 400, Polyethylenglicol 600	Botanical Certificate Method of analysis Reference Standard Declaration GMO free Safety Data Sheet Confidential documentation

*According to European Pharmacopoeia classification

Formulation examples

ASIATICOSIDE 0,2% GEL	
ASIATICOSIDE (code 3018800)	0.20 g
Propylene Glycol	10.00 g
Ethyl Alcohol 95%	10.00 g
Polysorbate 20	7.00 g
AminoMethyl Propanol 10% sol.	3.20 g
Carbomer (Ultrez 10 Goodrich)	1.00 g
Phenoxyethanol	0.70 g
Methylparaben	0.20 g
Disodium EDTA	0.20 g
Menthol	0.20 g
Purified water	q.s. to 100.00 g

Formulation advice

Asiaticoside can be easily solubilized in many hydrophilic solvents (propylenglycol, glycerin, ethoxydiglycol, ...) commonly used in the manufacturing of topical formulations (gel, emulsion, ...). If an emulsion has to be prepared, Asiaticoside is incorporated in the hydrophilic portion, before emulsyfication with the lipophilic phase.

Also suitable for

Restructuring creams, Anti hair loss lotions, Nail care products

Did you know...

Collagen, the predominant matrix skin protein, is known to impart tensile strength to skin.
In particular, among different collagen types (about 28 forms) the I form is the most abundant of the human body: it is present in scar tissue, the final product when tissue heals by repair, it is also found in tendons, the endomysium of myofibrils and the organic part of the bone. The type III is collagen of granulation tissue, and is produced quickly by young fibroblasts before the tougher type I collagen is synthesized, it is also found in artery walls, intestines and the uterus.

TRADE NAME	INCI (CTFA)	INCI (E.U.)	EINECS	CAS	INDENA CODE
Asiaticoside	Asiaticoside	Asiaticoside	240-851-7	16830-15-2	3018800

-Cod.DPR 00136 - 03/2007 printed by MATRIX Milano