XANTALGOSIL C® is a silanol obtained by condensation of a silicon derivative on acefylline and alginic acid. The silicon derivative and acefylline are obtained by synthesis, no derivative of animal origin is used. Alginic acid is obtained after extraction from brown algae, no derivative of animal origin. All silanols are endowed with some particular biological activities; XANTALGOSIL C® has been specially designed for lipolysis.

Origin

INCI name: ACEFYLLINE METHYLSILANOL MANNURONATE
CAS number: 162030-43-5

Analytical composition

- Monomethylsilanetriol in which silicon: 0.34% in 0.1%
- Acefylline: 0.87%
- Alginic acid: 0.1%
- Water sq: 100%

Technical characteristics

- Limpid to slightly opalescent liquid, colorless to slightly yellow
- pH: around 5.5
- Density, 20°C: around 1.0
- Miscible with water at room temperature, not miscible with concentrated alcohols

Availability

- 5, 30 or 60 kg drums

Uses

- Body contour (LIPOLYTIC, ANTI-CELLULITE)
- Body and face firming
- Bags under the eyes / puffy eyes
- Body and face moisturization
**BIOLOGICAL ACTIVITIES**

**XANTALGOSIL C®** has a notable lipolytic activity. This activity is directly linked to silicon content; liberated glycerol content increases with silicon content.

After treating adipose tissue with XANTALGOSIL C®, intracellular cyclic AMP concentration is increased in a significant way. The lipolytic activity obtained with XANTALGOSIL C®, compared with results obtained with phosphodiesterase inhibitors, cannot be only linked to this cAMP increase in concentration.

Hypothesis of a stimulative action on cAMP is advanced; it can be due to silicon. The lipolytic activity could be the answer to an activation of the membrane system, leading to adenylate cyclase formation, thus to cAMP synthesis which activates, by a series of reactions, the hormono-sensitive lipase.

**SLIMMING ACTIVITY**

XANTALGOSIL C® and ALGISIUM C® have been tested for glycerol production due to their activity on adenylate cyclase, promoting lipolysis. In vitro study has shown that the lipolytic activity induced by XANTALGOSIL C® was higher than the lipolytic activity of ALGISIUM C® and theophylline.

This slimming activity comes along with the regeneration of the surrounding connective tissue, leading to a better microcirculation which normalizes cellular exchanges and improves the skin aspect.

**RESULTS ON XANTALGOSIL C® AND ALGISIUM C® FOR GLYCEROL PRODUCTION**

**SIMPLIFIED OUTLINE OF LIPOLYSIS MECHANISMS**

**EFFECTS OF ACEFYLLINE ON THE LIPOPROTEIN LIPASE**

XANTALGOSIL C® is obtained from acefylline. This compound is well known to inhibit phosphodiesterases and enhance the cAMP concentration in the cells. Cosmetic application of this pharmacologic activity is the cAMP dependent lipolysis. Concerning its activity on fatty acids metabolism, acefylline inhibits the lipoprotein lipase (LPL). Inhibition of LPL by acefylline was studied in vitro. The graph on the left shows the activity level of the lipoprotein lipase depending on the concentration in acefylline (XANTALGOSIL C® is obtained from 0.87 % of acefylline).

As other compounds of the same family (caffeine and theophylline derivatives), results show that acefylline inhibits the activity of LPL in a dose dependent manner.

**CLINICAL TEST : ACTIVITY OF XANTALGOSIL C® ON LIPIDIC OVERLOADS**

25 volunteers with different types of cellulite were selected for this study. After twice applications per day during 30 days, the centimeters lost were measured for waist, hips, thighs and knees. The results evaluated on centimeters-loss are summarized in the graphs below:
Tolerance study

The product is neither toxic nor irritant.

Tolerance has been studied in vitro by alternative methods on both cell culture and reconstituted epidermis. Ocular tolerance is evaluated by studying cytotoxicity on cornea isolated fibroblasts culture. Cutaneous tolerance is evaluated on reconstituted epidermis by valuation of cells viability after a contact period of 24 hours with the product.

Formulation

XANTALGOSIL C® is stable for pH included between 3.5 and 6.5. On average, the recommended concentration is 3 to 6%.

Important remark: XANTALGOSIL C® must not be stored at temperature inferior to 0°C otherwise an irreversible polymerization might occur.

Existing studies

Technical document
* Lipolytic activity in vitro: adipocytes
* Tolerances investigations
* Activity on lipidic overloads “clinical test”
* Toxicity Tolerance - alternative methods