

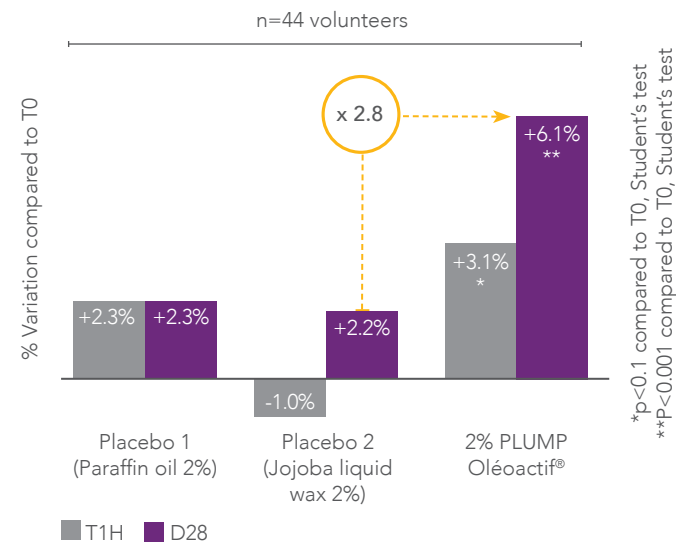
### Lip volumizing action

Only one hour after the first application, 2% PLUMP Oléoactif® significantly increases lip volume by +3.1% compared to T0. After 28 days, the plumping effect is confirmed with a significant increase of lip volume by +6.1%.

2% PLUMP Oléoactif® immediately plumps the lips up to 6 times compared to jojoba liquid wax alone (Placebo 2).

After 28 days, bioactive molecules extracted from pomegranate flowers multiply lip volume by 2.8 compared to jojoba liquid wax alone (Placebo 2).

After 28 days, the lip volumizing effect of PLUMP Oléoactif® is positively measured for more than 93% of volunteers.

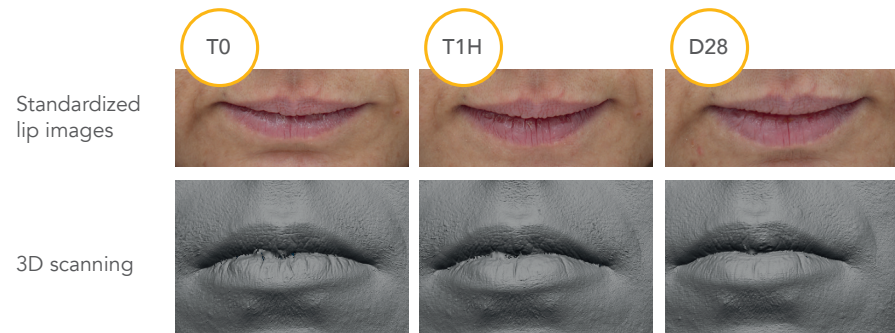


Thanks to the synergistic effect of jojoba liquid wax and active compounds extracted from pomegranate flowers, PLUMP Oléoactif® significantly plumps the lips providing immediate and long-term benefits.

### Proof of efficacy

Biometric measurements revealed that 2% PLUMP Oléoactif® gives a significant immediate (T1H) and long-term (D28) plumping effect.

Those data are visibly confirmed through 3D scanning provided by fringe projection and standardized image captures obtained with Canfield Scientific VISIA-CR® analysis.



PLUMP Oléoactif® visibly repairs the lips, reducing dryness and cracking induced by cold weather and oxidative stress. Furrows progressively disappear, and lips are naturally moisturized, smoother, plumped and replenished, with a better-defined contour.

Unlike paraffin (mineral) oil which creates a plumping appearance by a negatively-perceived occlusive barrier effect, PLUMP Oléoactif® has a natural biological impact on lips, with non-occlusive action and high bioavailability for short-term and long-term efficacy.

### TECHNICAL AND REGULATORY DATA

INCI NAME:	Simmondsia Chinensis Seed Oil (and) Punica Granatum Flower Extract (and) Polyglyceryl-3 Diisostearate
RECOMMENDED DOSE:	2% - 5%
RECOMMENDED pH:	4-8
SOLUBILITY:	Liposoluble
FORMULATION:	In the fatty phase before emulsification or at the end of the formulation process or directly in anhydrous formulas.



# PLUMP OLÉOACTIF®

Natural lip plumping

Substantiated oil-based active ingredient concentrated by Oléo-éco-extraction patented green process

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# PLUMP OLÉOACTIF®

## NATURAL LIP PLUMPING ACTIVE INGREDIENT

PLUMP Oléoactif® is a new oil-based ingredient dedicated to lip care, obtained through patented Oléo-éco-extraction technology. By associating the powerful antioxidant activity of biomolecules extracted from pomegranate flowers with the restructuring efficacy of jojoba liquid wax, PLUMP Oléoactif® immediately gives lips a naturally firmer and fuller look by plumping and repairing them. PLUMP Oléoactif® is biomimetic, eco-designed, 100% vegetal, totally safe and COSMOS certified.

## POMEGRANATE AND JOJOBA: A PERFECT LIP CARE COMPLEX

Pomegranate, or *Punica granatum*, is a sacred tree from western Asia and one of the oldest symbols of love, prosperity and fertility. Pomegranate flowers are well-known to present anti-erythematous, astringent and healing properties<sup>[1]</sup>. They are rich in polyphenols like phenolic acids (ellagic acid) and flavonoids (anthocyanins), giving them powerful antioxidant functionality<sup>[2]</sup>. Terpenoids (oleanolic and ursolic acids) and sterols (stigmasterol,  $\beta$ -sitosterol) with anti-inflammatory properties are also present<sup>[3][4]</sup>.

Jojoba liquid wax is extracted from the seeds of a shrub, *Simmondsia chinensis*, located in semi-desert areas of southern Arizona, California and northern Mexico. Its high content of long chain esters (C40, 2 double bonds) gives jojoba liquid wax a very strong affinity with lipids from intercorneocytory cement providing moisturizing, restructuring and emollient effects. By creating a natural film on the surface of the lips, jojoba liquid wax reduces trans-epidermal water loss and reinforces the barrier function of lips' stratum corneum, which is extremely thin by nature compared to facial skin.

## FOUR-LEVEL MECHANISM OF ACTION BY KEY PHYTO-MOLECULES

Thanks to its richness of natural bioactive compounds, PLUMP Oléoactif® boasts an innovative four-step mechanism:

### Renewing and repairing

Lip volumizing effect is provided by bioactive compounds. Anthocyanins and ellagic acid stimulate micro-circulation and promote cell regeneration.<sup>[5][6]</sup> Oleanolic and ursolic acids fight against inflammation.<sup>[2]</sup> Thanks to their healing properties, pomegranate flowers repair epithelium.<sup>[1]</sup> PLUMP Oléoactif® gives lips a naturally firmer and fuller look.

### Protecting

Ellagic acid and anthocyanins protect collagen and elastin fibers against oxidative stress<sup>[9][11]</sup> and proteolytic enzymes.<sup>[7][8][9][10]</sup> PLUMP Oléoactif® helps lip connective tissue avoid subsidence.



### Strengthening

Jojoba liquid wax and polyphenols synergistically reinforce the hydrolipidic film and stratum corneum. PLUMP Oléoactif® limits lip dehydration thanks to a non-occlusive and natural barrier effect.

### Restructuring

Ellagic acid stimulates collagen and elastin production (structural proteins) through fibroblasts.<sup>[7][8]</sup> PLUMP Oléoactif® restores lip connective tissue resistance and elasticity.

The efficacy of PLUMP Oléoactif® is proven through *in tubo* and *in vivo* tests.

<sup>[1]</sup> Abdollah Ghasemi et al., The wound healing activity of flower extracts of Punica granatum and Achillea kellalensis in Wistar rats. Acta Poloniae Pharmaceutica – Drug Research. 67(1):107-110 (2010)

<sup>[2]</sup> Lihua Zhang et al., Composition of anthocyanins in pomegranate flowers and their antioxidant activity. Food Chemistry. 127:1444-1449 (2011)

<sup>[3]</sup> Quanjuan Fu et al., Extraction optimization of oleanolic and ursolic acids from pomegranate (Punica granatum L.) flowers. Food and bioproducts processing (2013)

<sup>[4]</sup> Ephraim P. Lansky et al., Punica granatum (pomegranate) and its potential for prevention and treatment of inflammation and cancer. Journal of Ethnopharmacology. 109:177-206 (2007)

<sup>[5]</sup> Dilip Ghosh and Tetsuya Konishi. Anthocyanins and anthocyanin-rich extracts: role in diabetes and eye function. Asia Pac J Clin Nutr. 16(2):200-208 (2007)

<sup>[6]</sup> Xiang Lan et al., Effects of season, variety, and processing method on ellagic acid content in Pomegranate leaves. Tsinghua Science and Technology. 13(4):460-465 (2008)

<sup>[7]</sup> Kim YH et al., Anti-wrinkle activity of Platycarya strobilacea extract and its application as a cosmeceutical ingredient. J Cosmet Sci. 61(3): 211-24 (2010)

<sup>[8]</sup> Felipe Jimenez et al., Ellagic and Tannic Acids Protect Newly Synthesized Elastic Fibers from Premature Enzymatic Degradation in Dermal Fibroblast Cultures. Journal of Investigative Dermatology. 126: 1272-1280 (2006)

<sup>[9]</sup> Ji-Young Bae et al., Dietary compound ellagic acid alleviates skin wrinkle and inflammation induced by UV-B irradiation. Experimental Dermatology. 19:182-190 (2010)

<sup>[10]</sup> Losso Jack N. et al., In vitro anti-proliferative activities of ellagic acid. J Nutr Biochem. 15(11):672-678 (2004)

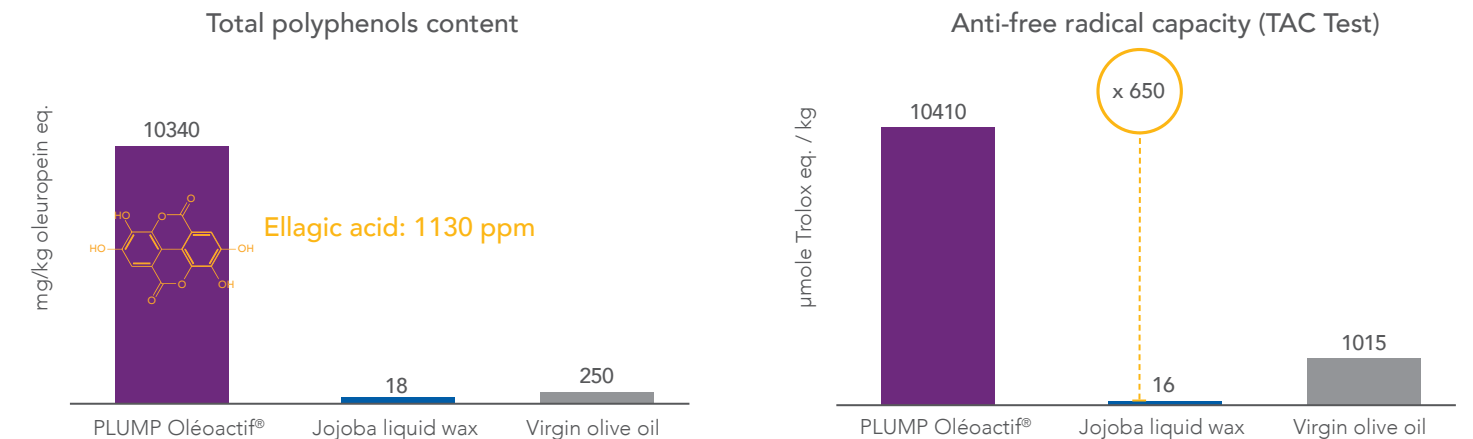
<sup>[11]</sup> Festa F et al., Strong antioxidant activity of ellagic acid in mammalian cells in vitro revealed by comet assay. Anticancer research. 21: 3903-3908 (2001)

## RICHNESS IN ANTIOXIDANT POLYPHENOLS TO PROTECT AND REDENSIFY LIP CONNECTIVE TISSUE

External conditions (cold weather, UV) expose lips to oxidative stress which impairs their quality. Production of reactive oxygen species (ROS) causes damage to the connective tissue's integrity and stimulates collagenases and elastase production. In those conditions, lips appear rough and chapped, and there is an increased pulling sensation.



*In tubo* tests demonstrate the high level of polyphenols (FOLIN-CIOCALTEU method) and the strong antioxidant capacity of PLUMP Oléoactif® (TAC method). These biochemical assays are conducted in comparison with jojoba liquid wax alone and virgin olive oil, a well-known antioxidant vegetable oil. In parallel, ellagic acid, PLUMP Oléoactif®'s key molecule, is identified and quantified by HPLC-UV method.



Thanks to its anti-free radical activity and its high polyphenols content including ellagic acid, PLUMP Oléoactif® protects collagen and elastin fibers from degradation and acts to redensify the lip connective tissue.

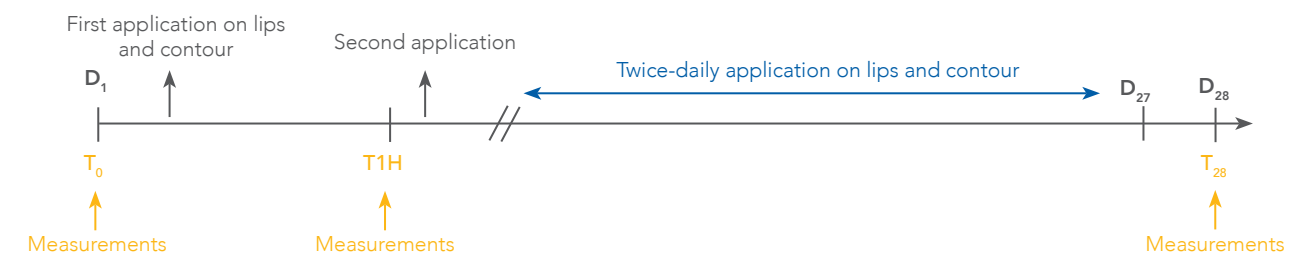
## SIGNIFICANT LIP PLUMPING AND REPAIRING COMPLEX: IMMEDIATE AND LONG-TERM EFFECTS AT 2% DOSE



### Clinical study design

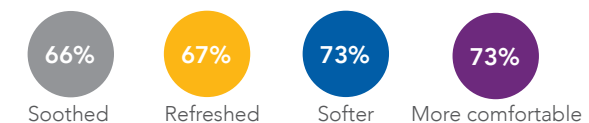
To prove the immediate and long-term lip plumping and repairing actions of PLUMP Oléoactif®, a complete single-blind *in vivo* efficacy test is carried out in winter on a targeted group of 44 Caucasian women, aged from 24 to 40 years old and presenting thin, dry and chapped lips. Volunteers are divided in three distinct groups: for 27 days, subjects apply a cream containing 2% of paraffin oil (Placebo 1) or a cream with 2% of jojoba liquid wax (Placebo 2) or a cream including 2% PLUMP Oléoactif® twice a day on their lips and lip contour.

For each volunteer, lip volume is measured using an EOTECH Aeva 3D-HE fringe projection method, at the beginning of the study (Day 1 at T<sub>0</sub>), 1 hour after the first application (Day 1 at T<sub>1H</sub>), then after 27 days of twice-daily application (Day 28).



### Self-evaluation

At first applications of PLUMP Oléoactif®, volunteers observe that their lips are:



2% PLUMP Oléoactif® delivers immediate and perceivable sensorial benefits to lips and is fully tolerated over the course of 28 straight days.