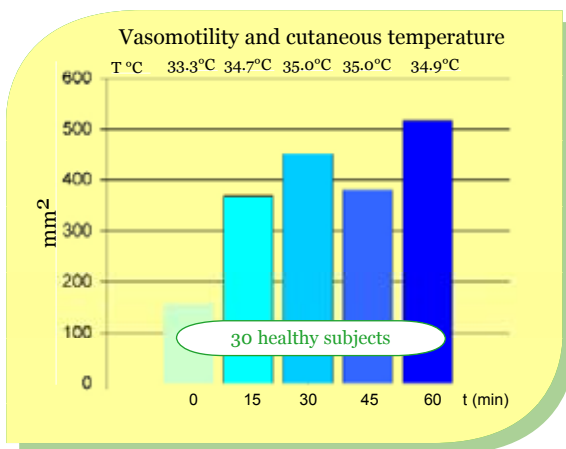
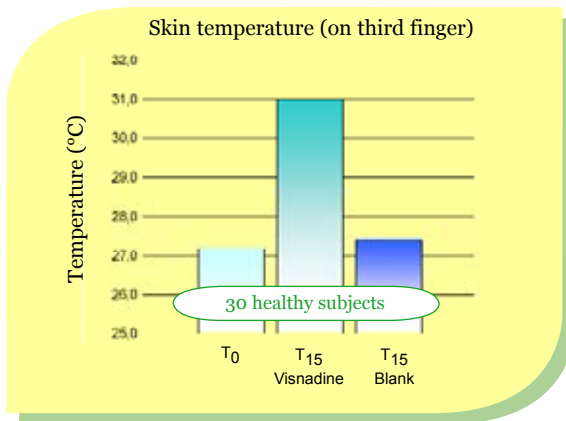




Visnadine

**Microcirculation improver¹,
anticellulite**

Proven efficacy on humans



The effects of acute topically applied O/W emulsion containing 1.5% of Visnadine have been evaluated in 30 healthy female volunteers². Three ml of ointment have been applied either on palmar surface of left hand or on the cheek.

After single application, the results of cutaneous temperature have been evaluated both on left hand and cheek, by means of dCT (direct cutaneous thermometry) and HPCT (High Performance Liquid Crystal Thermography).

Cutaneous temperature increased by 14% after 15 min, showing similar performances after 30 min from application. These results are related to an increased microcirculatory blood perfusion.

This increase in blood flow has been further demonstrated by i.r.Ph.P.P. (infrared photopulse pletysmography), revealing a marked increase above the baseline level of the flowmotion values and HFRV (High Frequency Rhythmic Variation). The increase is most prominent at 30 - 60 min. These changes in vascular activity are associated with an increase in cutaneous temperature.

The design of the aforementioned studies was double-blind, randomized and controlled versus a blank preparation. The results were statistically significant ($p < 0.01$ Student's t test).

The overall results suggest that Visnadine is a good active for the treatment of the localized panniculopathies. Moreover the improvement in microcirculatory situation ameliorates skin aspect in terms of beauty and functionality.

Mechanism of action

Visnadine has a strong vascular activity, not associated with vasodilating properties. Its efficacy, in fact, is due to the enhancement of the inotropic activity of the wall myocytes in microcirculatory vessels.

Visnadine is also endowed with a strong antiphosphodiesterase activity, maintaining high levels of cAMP and, therefore, an activation of lipases, thus improving lipolysis in fat cells.

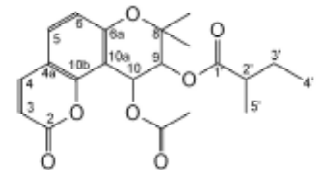
1. United States Patent N.5176919 - 2. Bombardelli E., Spelta M., Curri S.B. "Aging skin: activity on the smallest skin blood vessels of an Ammi visnaga purified extract" - 16th IFSCC/SCC Conference (New York, 1990) - 3. Internal Report: Urbino's University, 1990.



Visnadine

Safety Data

The use of Visnadine in the tests performed showed they are devoid of effects as localized erythema or skin discomfort of any type. In all the trials conducted to date, Visnadine exhibited an excellent tolerability and was proved not mutagenic. Visnadine is not irritating nor sensitizing on human skin³.



Structure of Visnadine
CAS N.477-32-7

Characteristics

Visnadine	Available Documentation
HPLC content of Visnadine \geq 90% Form: white fine powder Stability: retesting date at 24 months Level of use: 0.5% - 1% Odour: odourless pH: not applicable (not soluble in water) Solubility*: soluble in Alcohol (95°), Butylene Glycol/Water 1:1, Ethoxydiglycol/Water 1:1, C12-15 Alkyl Benzoate**, Wheat Germ Oil**, Caprylic/Capric triglycerides**	Botanical Certificate Method of analysis Reference Standard Declaration GMO free Safety Data Sheet Published Literature Confidential documentation

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

** solubility has been tested at 50 mg in 10 g of solvent at 40-50°C

Formulation examples

O/W emulsion with Visnadine	Formulation advise																					
<table border="0"> <tr><td>VISNADINE</td><td>1.00%</td></tr> <tr><td>Lecithin</td><td>20.00%</td></tr> <tr><td>Cholesterol</td><td>0.50%</td></tr> <tr><td>Ethanol</td><td>8.00%</td></tr> <tr><td>BHT</td><td>0.01%</td></tr> <tr><td>Imidazolidinyl urea</td><td>0.30%</td></tr> <tr><td>Dehydroacetic acid and salt</td><td>0.20%</td></tr> <tr><td>Sodium EDTA</td><td>0.15%</td></tr> <tr><td>Hydroxypropyl methyl cellulose</td><td>2.00%</td></tr> <tr><td>Distilled Water</td><td>as needed to 100</td></tr> </table>	VISNADINE	1.00%	Lecithin	20.00%	Cholesterol	0.50%	Ethanol	8.00%	BHT	0.01%	Imidazolidinyl urea	0.30%	Dehydroacetic acid and salt	0.20%	Sodium EDTA	0.15%	Hydroxypropyl methyl cellulose	2.00%	Distilled Water	as needed to 100	Visnadine is particularly suitable to be associated with phospholipids (specifically phosphatidylcholine, as in Indena's product Visnadex®). Phospholipids, in fact, act as a carrier in topical formulation. Furthermore, they exert an anti-seborrheic action and reduce the lipid content of greasy hair, becoming suitable for hair lotion treatments. Visnadine is also suitable for the combination with other active ingredients: Centella asiatica triterpenes and Ginkgo Biloba	Dimeric Flavonoids for anticellulite treatment; grape seeds extract for antiaging.
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		Also suitable for Antiaging creams Anticellulite emulsions Emulsions for heavy legs Anti hair loss lotions Firming gels																				

Did you know...

Visnadine is a natural product extracted from the seeds and aerial parts of Ammi visnaga (Umbelliferae), plant widely used in Egyptian medicine since the Pharaohs times as antispastic and for the treatment of angina pectoris and other cardiovascular diseases. It has been used since a long time in western medicine for the treatment of various cardiac diseases and peripheral vasculopathies.

TRADE NAME	INCI (CTFA)	INCI (E.U.)	EINECS	CAS	INDENA CODE
Visnadin	Visnadine	Visnadine	207-515-1	477-32-7	3065530
Visnadex®	Phospholipids (and) Visnadine	Phospholipids	232-307-2	8002-43-5	9080150
		Visnadine	207-515-1	477-32-7	