

LINUMINE™

Flax lignans for seboregulation



*Source Acatris Holding

Linum Seed Extract

... for Natural Regulation of Oily Skin

Seboregulating and Non-Comedogenic Effects

Natural regulation of seborrhea

Decrease in cutaneous lesions

with Innovative Lignans

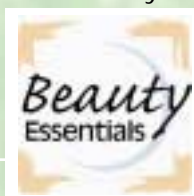
The worldwide richest source of Lignans: 20%

5 α -reductase inhibition



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Lucas Meyer



LINUMINE™

LINUMINE™ is a food-grade powder comprising lignans which inhibit 5 alpha-reductase for a global action against oily skin.

A Linum Seed Extract



The richest source of lignans

Standardized on 20% lignans as secoisolariciresinol diglucoside (SDG)

Produced with a patented GMP process



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... for a Global Action against Oily Skin

Reduction of sebum production

Non-comedogenic effect: decrease in cutaneous lesions

LINUM HISTORY

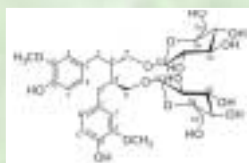
Linum is the Latin name of flax, a Linaceae family member. It is cultivated under temperate and tropical climates and has a **Mediterranean origin**. It was used in Ancian Egypt but also in traditional official Chinese Pharmacopoeia and Ayurvedic Medicine.

Flax has been in cultivation for many centuries. The Egyptians held it in such high esteem that linen made from its fibre was used to wrap mummies!

During the Middle Ages, flax flowers were thought to be a protection against sorcery and the Bohemians believed that if seven-year-old children danced among the flax fields they would be favoured with **the gift of beauty!**

A NATURAL SOURCE

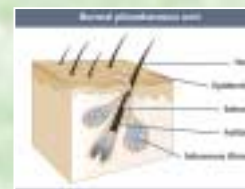
LINUMINE™ is a natural source of lignans from flax. The powder is produced from flax seed coats through a patented GMP certified process. **LINUMINE™** is about **20 times more concentrated in lignans** than regular flaxseed is. It is standardized to **20% lignans**.



Lignans are a group of polyphenolic compounds containing a 2,3-dibenzylbutane skeleton. Over 200 lignans have been identified but flaxseed is the **richest source** providing 75-200 times more plant lignans than any other source. The main lignan in flaxseed is **secoisolariciresinol diglucoside (SDG)** which plays a major role in the sebum rate decrease.

5 alpha-reductase (isoenzyme type 1) is located in sebaceous glands. The over-activity of this enzyme leads to a growth in size of the sebaceous glands. As **LINUMINE™** inhibits the 5 alpha-reductase, **the size of the sebaceous glands is reduced**. So, it reduces the secretion and the excretion of sebum.

Seborrhea is regulated and the skin condition is improved. The skin reaches a new balance.

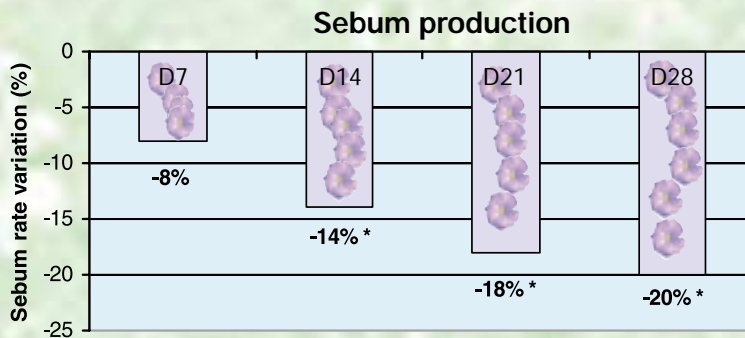


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IN VIVO SEBUMETRY TEST

Significant sebum decrease from D₁₄ and until D₂₈

A 1% **LINUMINE™** O/W cream (reference 4.097.01) was applied twice a day for one month on 20 female subjects with oily skin.



Results expressed as % of non treated zone at D0
* Significantly different ($p < 0.05$)

In vivo sebumetry test has shown a **significant* decrease** in sebum rate at **D14: -14%***.

At D28, **the reduction of sebum rate was of 20%** as compared to the non treated zone (D0).

At D0, 100% of the volunteers sebum rate was between 100 and 200 $\mu\text{g}/\text{cm}^2$. **At D28, 50%*** of them had a normal skin with a sebum rate $< 100 \mu\text{g}/\text{cm}^2$!

IN VIVO SEBUTAPE PATCH TEST

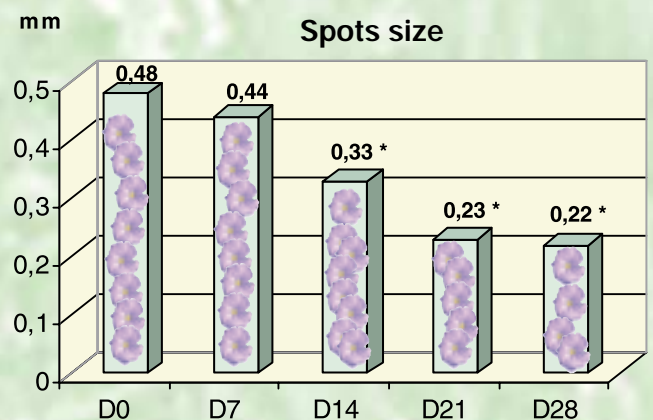
Significant reduction of spots size from D₁₄ and until D₂₈

Sebutape patch measures the activity of sebaceous glands. The activity is directly linked to the number of oily spots left on the tape.

At D14, 70% of volunteers had a decrease in the number of spots.

At D21, 80% of volunteers had a lower quantity of spots. The number of spots diminished of 25%.

At D28, 90% of volunteers had less spots. The number of spots **decreased of 34%** and their size was reduced from 0.48 mm to 0.22 mm (-54.2%*).



* Significantly different ($p < 0.05$).

IN VIVO NON COMEDOGENIC EFFECT

The non-comedogenic effect was evaluated by a dermatologist.

At D28, **79% of volunteers** had a reduction of **34%*** in the number of cutaneous lesions.

After one month, **LINUMINE™** could be considered as **non comedogenic**.

* Significantly different ($p < 0.05$) compared to D0.

SPECIFICATIONS



*Source Acatris Holding

INCI name	LINUM USITATISSIMUM (LINSEED) SEED EXTRACT
appearance	dark yellow powder
formulation	hot process: pre-disperse in water
dosage	0.5-1%
optimum pH	>4.5

OILY SKIN ENHANCER

4.124.05

Ingredient	INCI Name	%	
A	Deionised water	Aqua	Up to 100%
	Glycerin	Glycerin	3
	Satiaxane CX 91	Xanthan Gum	0.5
	DERMOSOFT™ LP*	Caprylyl Glycol (and) Glyceryl Caprylate (and) Glycerin (and) Phenyl Propanol (and) Aqua	1
B	AMISOL™ SOFT*	Behenyl Alcohol (and) Glyceryl Stearate (and) Phospholipids (and) Glycine Soja (Soybean) Sterols	4
	Cetiol SB 45	Butyrospermum Parkii	5
	DERMOFEEL™ BGC*	Butylene Glycol Dicaprylate/Dicaprate	5
	Nipinox BHT	BHT	0.1
	Dub Inin	Isononyl Isononanoate	1
	DC 345	Cyclopentasiloxane	3
C	LINUMINE™*	Linum Usitatissimum (Linseed) Seed Extract	0.5
	Deionised Water	Aqua	10
D	White Covasop	CI 77891 (and) Propylene Glycol	8
	Yellow Covasop	CI 77492 (and) Propylene Glycol	1.76
	Red Covasop	CI 77491 (and) Propylene Glycol	0.5
	Black Covasop	CI 77499 (and) Propylene Glycol	0.15
E	SJ Touch	Poly Methyl Methacrylate	4
F	C 3043/23	Fragrance	0.3

pH: 7 - Viscosity: 7000-11000 mPa.s

1. Heat phase A and B up to 75 °C.
2. Introduce B in A under slow stirring during 20 min to hydrate phospholipids.
3. Homogenize under strong stirring (rotor stator blender as Silverson or Ultra Thurrax) at 3000 rpm during 3 min.
4. Heat C up to 75 °C under strong stirring.
5. Introduce C in A + B under rotor stator during 2 min.
6. Introduce D, E and F at room temperature.

* distributed by Lucas Meyer Cosmetics

SOFT SEBOREGULATING SERUM

4.106.02

Ingredient	INCI Name	%	
A	Deionised water	Aqua	Up to 100%
	Satiaxane CX 91	Xanthan Gum	0.3
	Glycerin	Glycerin	4
	Butylene Glycol	Butylene Glycol	3.5
	DERMOFEEL™ PA3*	Aqua (and) Sodium Phytate	0.05
	DERMOSOFT™ LP*	Caprylyl Glycol (and) Glyceryl Caprylate (and) Glycerin (and) Phenyl Propanol (and) Aqua	1
	EMULMETIK™ 300*	Lecithin	1.5
B	AMISOL™ SOFT*	Behenyl Alcohol (and) Glyceryl Stearate (and) Phospholipids (and) Glycine Soja (Soybean) Sterols	1.5
C	DC 345	Cyclopentasiloxane	2
	DC 1501	Cyclopentasiloxane (and) Dimethiconol	2
	DC 9040	Cyclopentasiloxane (and) Dimethiconol	1
		Crosspolymer	
	Vit E Acetate	Tocopheryl Acetate	0.1
	HELIOGEL™*	Sodium Acrylates Copolymer (and) Hydrogenated Polyisobutene (and) Phospholipids (and) Polyglyceryl-10 Stearate (and) Helianthus Annuus (Sunflower) Seed Oil	0.5
D	Deionised Water	Aqua	5
	LINUMINE™*	Linum Usitatissimum (Linseed) Seed Extract	0.5
E	FDC Red 4	CI 14700	Up to colour
	FDC Yellow 5	CI 19140	Up to colour
F	C 3810*	Fragrance	0.3

pH: 6-7 - Viscosity: 1500-2500 mPa.s

1. Heat A up to 75-80 °C.
2. Add B in A under slow stirring: Hydration step.
3. Heat C up to 75-80 °C.
4. Add C in A + B. Keep under slow stirring during 5 min. Then increase stirring rate up to maximum level with a rotor stator blender during 3 min: Emulsification step.
5. Heat D up to 75 °C under strong mixing.
6. Add D in A + B + C under maximum stirring rate and homogenize during 1 min.
7. Cool down under medium stirring.
8. Add E.
9. Add F below 35 °C.
10. Adjust the pH if necessary.

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