



Myristyl Phosphomalate

Function:

Recreates the skin's own natural moisture by supporting the water and lipid balance in the epidermis.

Definition:

Myristyl Phosphomalate, a phosphorylated complex lipid, in an oil soluble excipient.

Properties:

Acts on the active layer of the epidermis to promote the skin's natural moisturising components and maturation of the *stratum corneum* (cornified cell envelope and intercorneocyte space) for a more perfectly constructed epidermis.

Characteristics:

Stimulates the entire Natural Moisturising Factor (NMF) production pathway through the increase of profilaggrin, filaggrin, and the enzymes filaggrinase and caspase-14. Also, activates glycerol synthesis in keratinocytes.

Points of interest:

Mimics the natural bioactive phospholipid, sphingosine 1-phosphate, that stimulates keratinocyte maturation and filaggrinase activity.

INCI Name (proposed):

(Check PCPC on-line dictionary for latest INCI name)

Ethylhexyl Palmitate – Sorbitan Oleate – Sorbitan Laurate – Myristyl Phospho-Malate

Applications:

All moisturizing products for face and body for men and women.

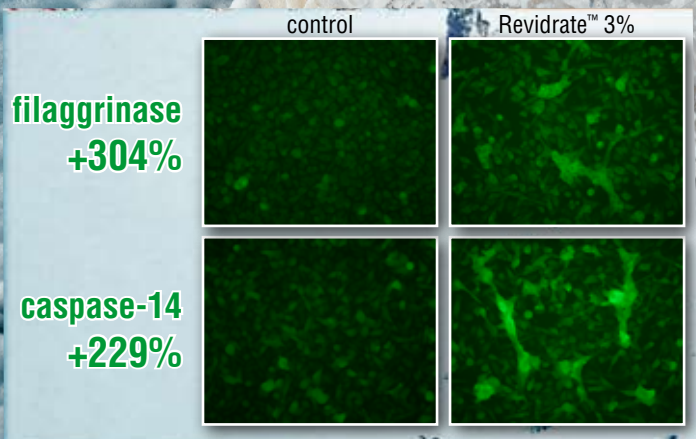
Formulation:

Oil soluble. Incorporate in oil phase at 25°C - 80°C (2 hours max.) before creating the emulsion.

Recommended use level:

3%

Self Moisturizing Control Revives the Skin



Key Enzymes of the Natural Moisturizing Factor Synthesis

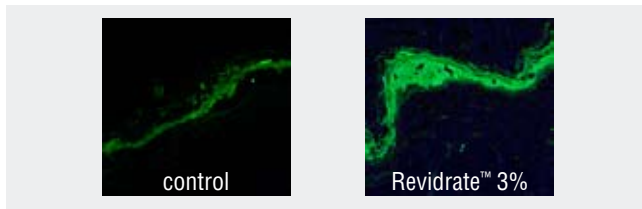
In vitro tests

Tests performed with 3% Revidrate™

FILAGGRIN METABOLISM

Evaluation of the filaggrin/profilaggrin synthesis:

- Keratinocyte culture+259%, p<0.01
- Skin explants+33%, p<0.01



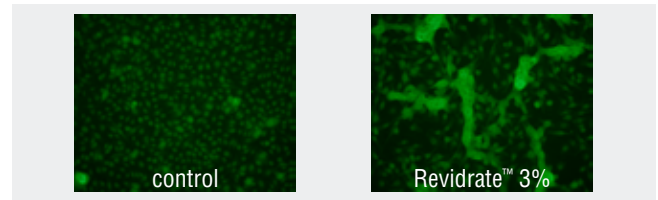
Enzyme stimulation in keratinocytes:

- Filaggrinase+304%, p<0.01
- Caspase-14+229%, p<0.01

EPIDERMIS MATURATION

Evaluation of the loricrin and transglutaminase synthesis in keratinocytes:

- Loricrin+426%, p<0.01



- Transglutaminase+101%, p<0.01

Evaluation of the lipid synthesis in keratinocytes:

- Cholesterol+107%, p<0.04
- Non hydroxylated ceramides+256%, p<0.01
- Hydroxylated ceramidesx7.5, p<0.01

Revidrate™ activates various biological mechanisms that lead to better moisture and barrier improvement by helping the synthesis of strategic molecules inside and outside the cells.

In vivo tests

38 volunteers (male and female), mean age 47 years, with dry skin, applied twice daily a cream containing 3% Revidrate™ on the face and forearm for 2 months versus placebo. Measurements at 21 days, 2 months and after 1 week without application.

EVALUATION OF BIOCHEMICAL MOISTURE MARKERS (forearm) *ex vivo*, n=15, 6 strippings

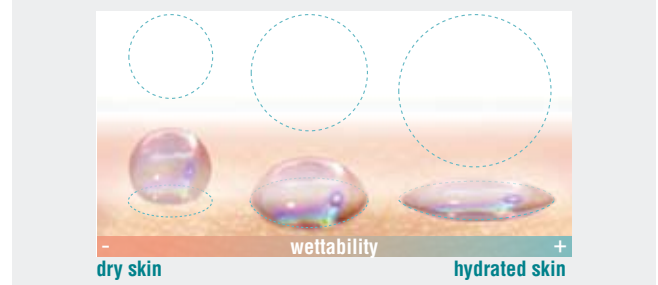
- Caspase-14+34.8%/placebo/T0, p<0.02
- Endogenous glycerol+327%/placebo/T0 (or x6.3), p<0.01

EPIDERMIS MOISTURISATION (face)

Time	Corneometer®	Moisturemeter-D™
After 21 days, n=17	+13.1%/placebo/T0, p<0.04 up to +123%	+16.6%/placebo/T0, p<0.02 up to +117%
After 2 months, n=38	+30.4%/placebo/T0, p<0.01 up to +130%	+28.6%/placebo/T0, p<0.01 up to +106%
Remnant moisturisation after 1 week without application		
n=27	+12.7%/placebo/T0, p<0.01, up to +52%	+24.6%/placebo/T0, p<0.01, up to +64%

RESTORATION OF THE HYDROLIPIDIC BARRIER (forearm)

- TEWL measurement by Vapometer® after stripping-54.2%, p<0.01
- Wettability measurement by videomicroscope and image analysis+33.9%, p<0.05



For the first time, the natural glycerol content of skin is assessed. Revidrate™, a strong moisturiser, was specially designed to instruct the skin to recreate the epidermis hydrosphere using its own natural process.

Formulation

Self Moisturising Cream with Revidrate™

Suggested formula Ref.: SFD0906767 F

Part A	%
Water deionized	qsp 100
Optasense™ G83 (Carbomer, Croda)	0.20
Part B	%
Glycerin	3.00
Preservatives	qs
Part C	%
Crodafos™ CES (Cetearyl Alcohol (and) Dicapryl Phosphate (and) Ceteth-10 Phosphate, Croda)	5.00
Crodamol™ GTCC (Caprylic/Capric Triglyceride, Croda)	3.00
Crodamol™ AB (C12-15 Alkyl Benzoate, Croda)	7.00
Crodamol™ STS (PPG-3 Benzyl Ether Myristate, Croda)	1.00
Crodamol™ CAP (Cetearyl Ethylhexanoate, Croda)	5.00
Part D	%
Revidrate™ (Sederma)	3.00

Part E	%
Potassium Sorbate	0.10
Part F	%
Water deionized	4.00
Sodium hydroxide 30%	0.30
Part G	%
Verbena (Fragrance, Expressions Parfumées)	0.10

Protocol:

Part A: sprinkle Optasense™ G83 in the water, without stirring and allow swelling for 30 minutes. Weigh and mix Part B. Pour Part A into Part B and heat to 75°C in water-bath. Heat Part C to 75°C in water-bath. Combine Part D with Part C and homogenize well. When Part A+B has reached 75°C, pour Part C+D with helix stirring (quick speed: 1000 rpm). Then at 65°C, add Part E to Part A+B+C+D and mix well. At around 35°C, adjust pH to 6 with Part F and mix well. Weigh Part G and mix into the emulsion. Homogenize well.

Non-warranty : This formulation has been subject to limited stability tests and has been shown to perform well. However formulators adopting this approach should ensure to their own satisfaction long term stability and functionality. It is good practice to conduct safety tests on all final formulations prior to marketing. Suggested uses should not be taken as an inducement to infringe any existing patents.



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