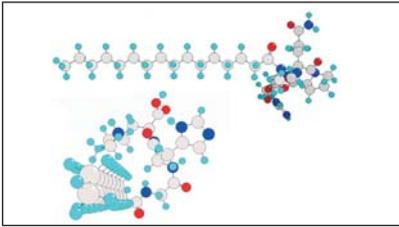




Patent N° WO 2005/048968

MATRIXYL®3000



Pal-GHK and Pal-GQPR

Function:
Anti-wrinkle.

Definition:
Matrixyl®3000 contains the matrikines Pal-GHK and Pal-GQPR acting in synergy to repair the cutaneous damages of age.

Properties:
Matrixyl®3000 contains matrikines which are messengers of cutaneous restructuring and repair. They activate the neosynthesis of extracellular matrix macromolecules providing Matrixyl®3000 with a visible anti-wrinkle efficacy.

Characteristics:
As messenger molecules, matrikines are capable of regulating cell activities. They interact with specific receptors to activate certain genes involved in the process of extracellular matrix renewal and cell proliferation. With age these mechanisms become progressively weaker.

INCI Name:
(Check CTFA on-line dictionary for latest INCI name)
Glycerin – Aqua (Water)
– Butylene Glycol –
Carbomer – Polysorbate 20
– Palmitoyl Oligopeptide –
Palmitoyl Tetrapeptide-7*
* former INCI name: Palmitoyl Tetrapeptide-3

Applications:
Anti-wrinkle products.

Formulation:
Water soluble.

Recommended use level:
3 - 4%



Matrikines

The best way to smooth things over

As the wrinkle volume decreases, the spread angle increases.

-17.1%

+5.4%



Before



After 56 days



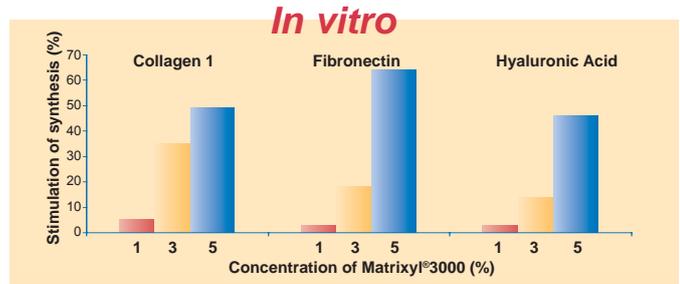
In vitro tests

● **Synthesis of matrix macromolecules**

Study demonstrating the ability of Matrixyl®3000 (1, 3 and 5%) to stimulate the synthesis of extracellular matrix molecules by fibroblasts after 72h of incubation.

● **Stimulation of gene expression**

Study of the regulation of dermal and epidermal genes by matrikines from Matrixyl®3000, using DNA-Array technique on reconstructed epidermis and on fibroblast culture.



The matrikines of Matrixyl®3000 possess a gene activation profile that compliments the skin's natural mechanism for skin reconstruction.

In vivo test

● **Anti-wrinkle efficacy**

39 male panelists aged 54.5 ± 6 years, applied a cream containing 4% Matrixyl®3000 to one-half of their face against a placebo on the other half, twice a day for 56 days. The anti-wrinkle efficacy was assessed by profilometry and photography.

Variation of parameters compared to T0 (%)	Matrixyl®3000	Placebo
Surface occupied by deep wrinkles (>200µm)	- 29.4**	+5.1ns
Main furrows density	- 30.4**	- 19.7ns
Roughness	- 8.4**	- 2.2ns
Mean volume of main furrows	- 17.1**	- 2.7ns
Mean depth of main furrows	- 10.2**	+ 0.2ns
Wrinkle spread (angle)	+ 5.4*	-0.7ns

ns : non significant *significant / T0 (p<0.05) **significant /T0 (p<0.01)



T0 – left half-face placebo



T56 – left half-face placebo



T0 – right half-face MATRIXYL®3000



T56 – right half-face MATRIXYL®3000

Anti-Ageing Cream for Men with Matrixyl®3000

Tested formulation ref.: SED0608573 A

Formulation

Part A	%	Part E	%
Deionised water	qsp 100	Deionised water	2.50
Ultrez 10 (Carbomer, Noveon)	0.25	Sodium Hydroxide 30%	0.40
Part B	%	Part F	%
Glycerin	3.50	Matrixyl®3000 Men (Sederma)	4.00
Part C	%	Part G	%
Volpo S2 (Steareth 2, Croda)	0.40	Fragrance	qs
Crodafos CES (Cetearyl Alcohol (and) Dicyetyl Phosphate (and) Ceteth 10 Phosphate, Croda)	4.00		
DC 345 (Cyclomethicone, Dow Corning)	2.00		
Azone	2.50		
Crodamol OSU (Dioctyl Succinate, Croda)	7.00		
Volpo S10 (Steareth-10, Croda)	1.20		
Preservative	qs		
Part D	%		
Potassium Sorbate	0.10		

Protocol: Part A: Sprinkle Ultrez 10 in the water. Allow swelling for 20 minutes then add Part B. Heat Part A+B to 75°C in bain-marie. Weigh Part C and heat it to 75°C in bain-marie. Mix well. Pour Part A+B into Part C with staro stirring (s=30%). Homogenise well and then add Part D. Neutralise with Part E at around 55°C. Add Part F to the cream at around 45°C. At around 35°C, add Part G and homogenise well. Adjust pH to 6.20 with part E.

Non-warranty: This formulation has been subjected 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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