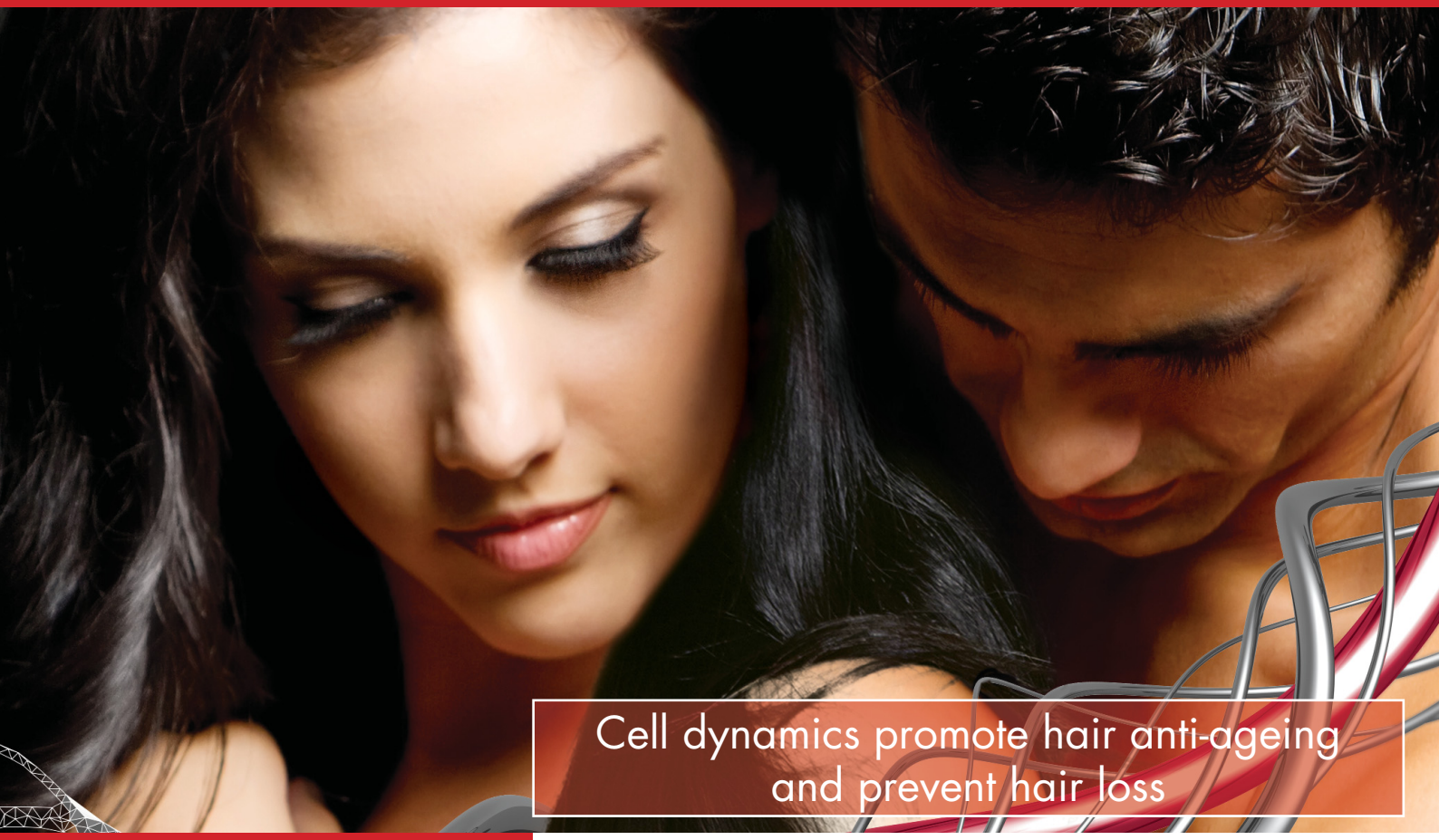
HAIR

PROCAPIL®



Cell dynamics promote hair anti-ageing and prevent hair loss

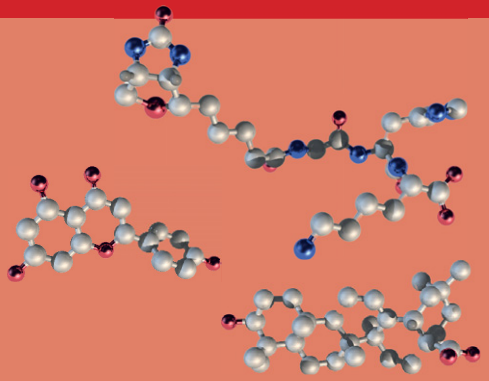
FUNCTION Fortifies and rejuvenates hair follicle to prevent hair loss for both men and women.

DEFINITION Combination of a vitaminated matrikine (biotinyl-GHK) with apigenin (a natural flavonoid) and oleanolic acid from natural origin.

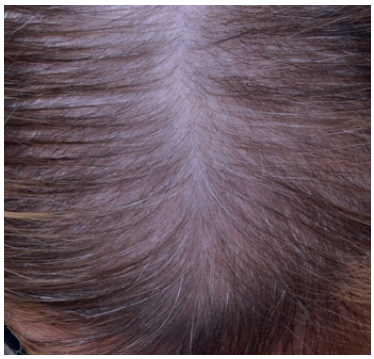
PROPERTIES PROCAPIL® promotes hair anchoring by strengthening the follicle metabolism and structure.

CHARACTERISTICS Oleanolic acid inhibits 5α-reductase, apigenin improves micro-circulation and biotinyl-GHK stimulates cell metabolism.

APPLICATIONS Hair strengthening and anti-hair loss treatments: lotions, conditioners, leave-on, hair oils...



Biotinyl-GHK, apigenin and oleanolic acid



before

after 4 months

68 % volunteers had an improvement in the anagen hair density

Lively hair for men and women

FORMULATION water soluble
Add in the water phase between room temperature and 65°C.
Can also be incorporated in hair oils. Contact us for formulation recommendations.

RECOMMENDED USE LEVEL 3 %

PATENTS WO 2000/58347

INCI NAME Butylene Glycol – Water (Aqua) – PPG-26-Buteth-26 – PEG-40 Hydrogenated Castor Oil – Apigenin – Oleanolic Acid – Biotinoyl Tripeptide-1

sederma
Part of Croda International Plc

www.sederma.com
sederma@sederma.fr

CLAIM SUBSTANTIATION

in vitro STIMULATION OF CELL METABOLISM

MITOSIS RATE

Evaluation of root sheath keratinocytes after a 14-day culture of hair follicles. Biotinyl-GHK (2 ppm) stimulates Ki-67 expression, indicating enhanced cell proliferation.

GENE EXPRESSION

PROCAPIL® promotes the expression of numerous genes involved in tissue repair mechanisms (DNA-array on 3D SkinEthic® epidermis).

Gene	Activity	Activation
Laminin binding protein	Adhesion	+146 %
Acetyl CoA transferase	Cell metabolism	+137 %
Cytokeratins 10	Differentiation	+154 %

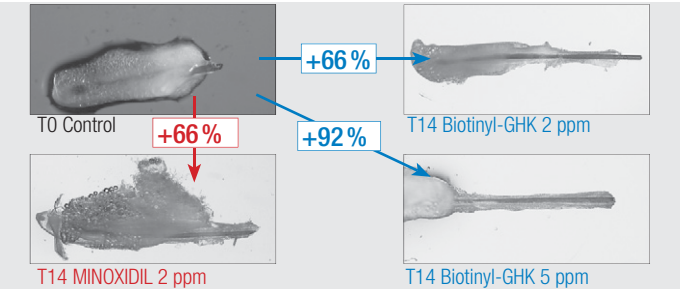
HAIR ANCHORING

Hair follicles are incubated for 14 days with biotinyl-GHK (2 ppm). Morphological observation of the dermis/root sheath junction. Laminin 5 and collagen IV are revealed by immunofluorescence.

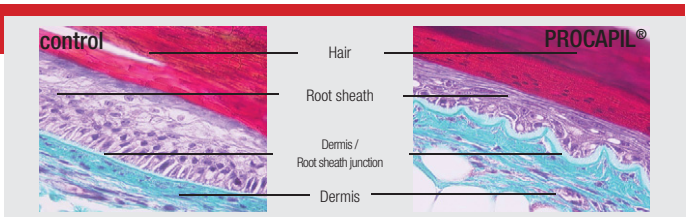
Presence of adhesion molecules	T14 Control	T14 PROCAPIL®
Laminin 5	+	+++
Collagen IV	+	++++

STIMULATION OF HAIR GROWTH

Hair follicles are incubated for 14 days with biotinyl-GHK or minoxidil (2 ppm).



Biotinyl-GHK is as efficient as minoxidil at the same concentration (2ppm).



The persisting dermis/root sheath junction is thick and recovers its normal sinusoidal shape.

PROCAPIL® provides a protecting and repairing effect on the structure components of the hair follicle, slowing down the ageing process.

in vivo CLINICAL STUDIES

TEST ON MALE VOLUNTEERS

- **Videotrichogramme**

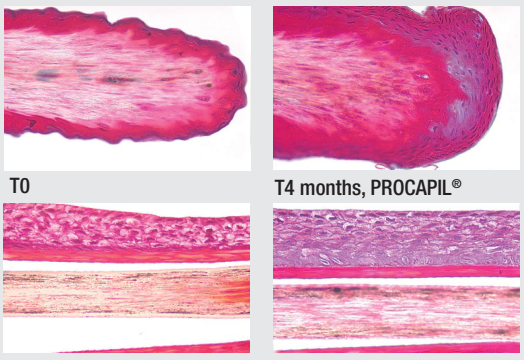
The proportion of hair observed in anagen phase (A) and telogen phase (T) was determined and the ratio A/T established. Hair samples were taken and analysed.

n=35 males with alopecia (Tmean=28 %) applied a hair lotion with 3 % PROCAPIL® (n=18) or a placebo (n=17) twice daily for 4 months.

A/T (Mean value)	PROCAPIL® on male panel	PLACEBO
T0	2.84	2.61
T4 months	**3.13**	2.54

- **Hair follicle morphological study**

After treatment, hair bulb cells were found to be highly structured and differentiated. The root sheath was thicker and more able to provide optimum anchoring.



Hair anti-ageing can be promoted by stimulation of follicle cell metabolism, leading to a slow down in hair loss.

TEST ON FEMALE VOLUNTEERS

- **Videotrichogramme**

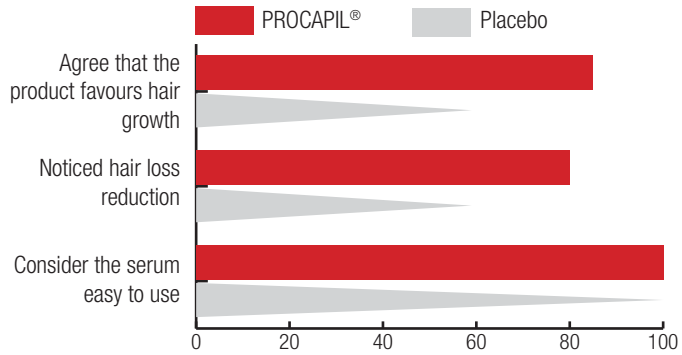
The proportion of hair observed in anagen phase (A) and telogen phase (T) was determined and the ratio A/T established. Hair samples were taken and analysed.

n=42 females (FPHL grade 1-2) applied a serum with 3 % PROCAPIL® (n=21) or a placebo (n=21) for 4 months with a massage, min. 3 times a week.

A/T (Mean value)	PROCAPIL® on female panel	PLACEBO
T0	5.08	4.85
T4 months	**9.57**	6.17

Procapil® promotes the slow down in hair loss by increasing the anagen hair while reducing the telogen hair for both male and female volunteers.

- **Self-evaluation**



The tested formulation was totally accepted by the panel. The volunteers perceived the benefits of the serum on the density of their hair.

sederma
29 rue du Chemin Vert
78612 Le Perray-en-Yvelines cedex France
Tel. : +33 (0)1 34 84 10 10

09/20 PCS PO 26775 18 V3 EN