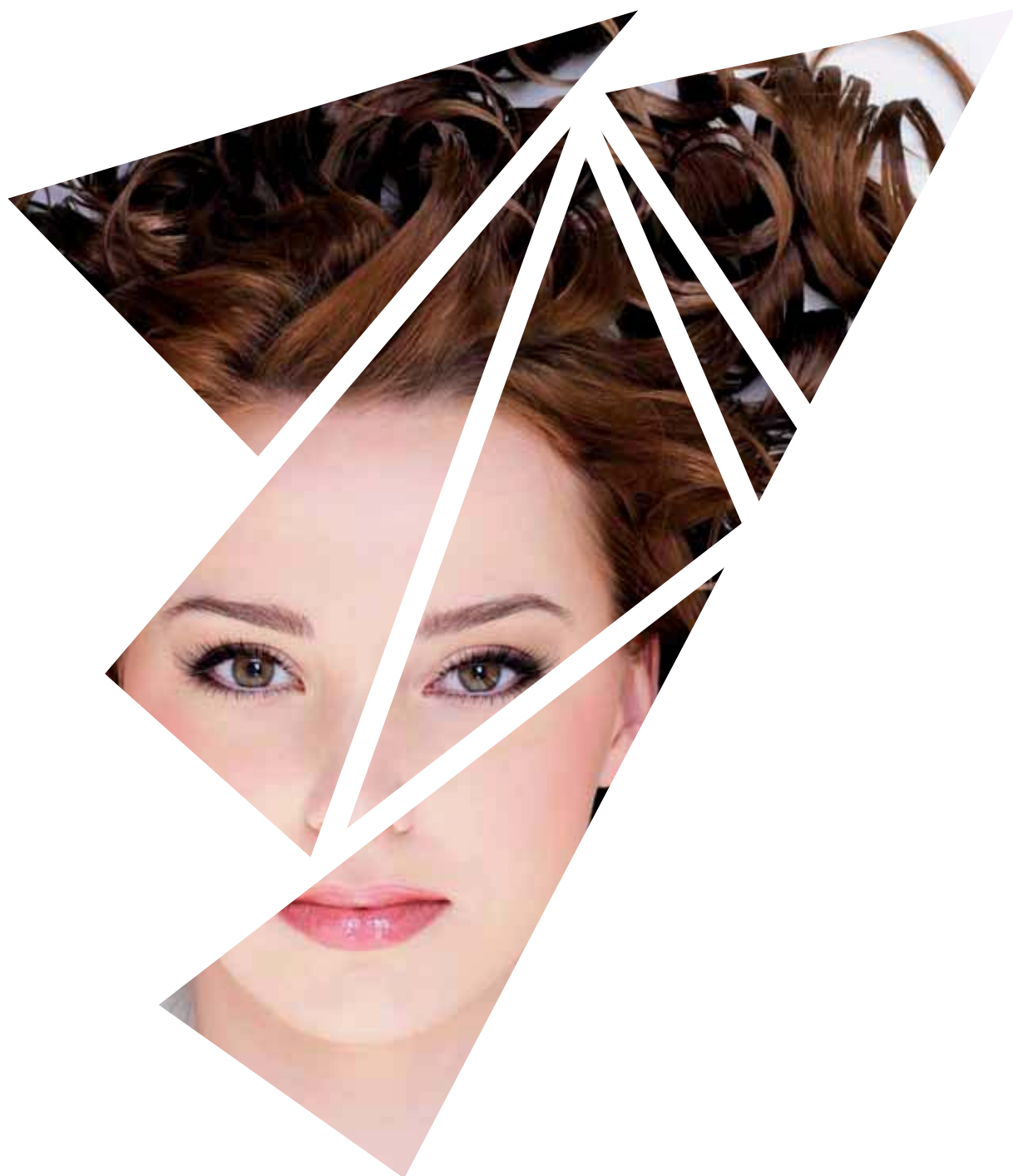


# CAPALGIN<sup>®</sup>



ANTI-HAIR LOSS  
HAIR GROWTH

**EXSYMOL**  
MONACO

# CAPALGIN

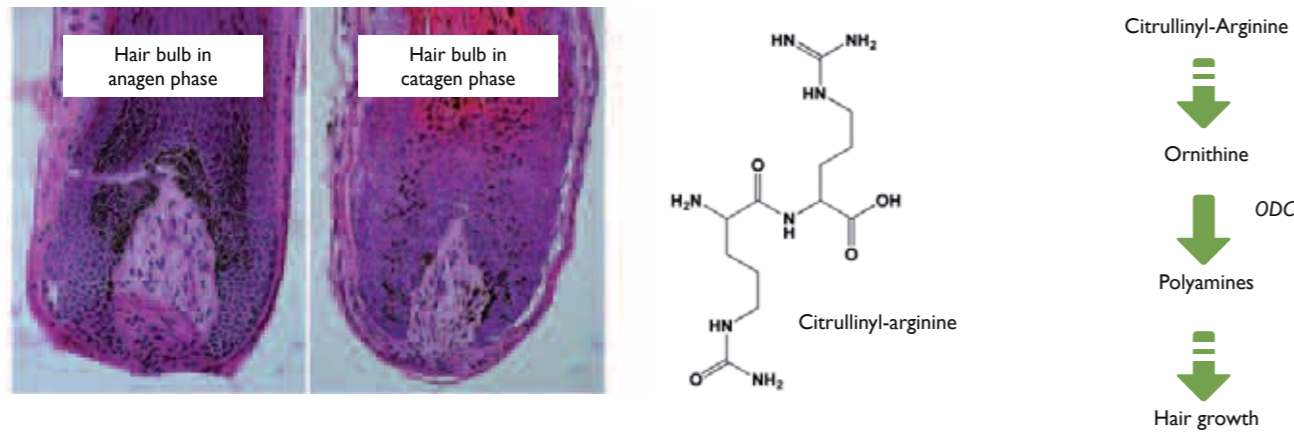
## Anti-aging for hair

# CAPALGIN

## Anti-aging for hair

### CAPALGIN: an active for hair care

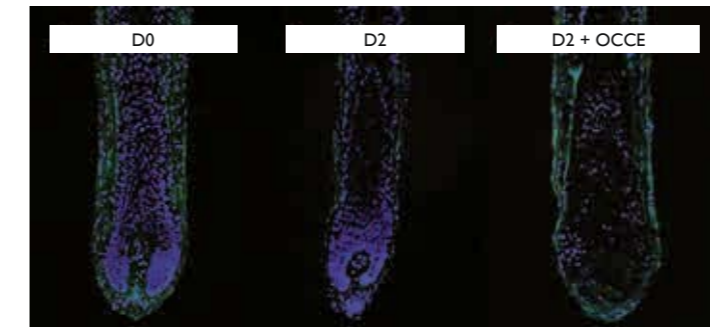
The hair follicle is a mini-organ that cyclically switches between growth (anagen), regression (catagen, characterized by an oval-shaped dermal papilla, hair matrix thinning, melanin content decrease...) and relative quiescence (telogen) phases. Age, emotional stress or hormonal imbalance are responsible for altering this cycle and to promote the catagen phase ultimately leading to hair loss. CAPALGIN is an "Overwintered" *Chondrus crispus* extract (OCCE) characterized by a very high concentration of citrullinyl-arginine together with high amounts of floridosides (combination of glycerol and galactose), and taurine.



The dipeptide citrullinyl-arginine plays a key role in hair growth as it is a precursor to ornithine that will later be metabolized (through the action of ODC) into the polyamines responsible for stimulating hair growth. This makes of CAPALGIN a product of choice for hair care treatments as it improves hair vitality (growth, anti-hair loss, hair color...) and protection.

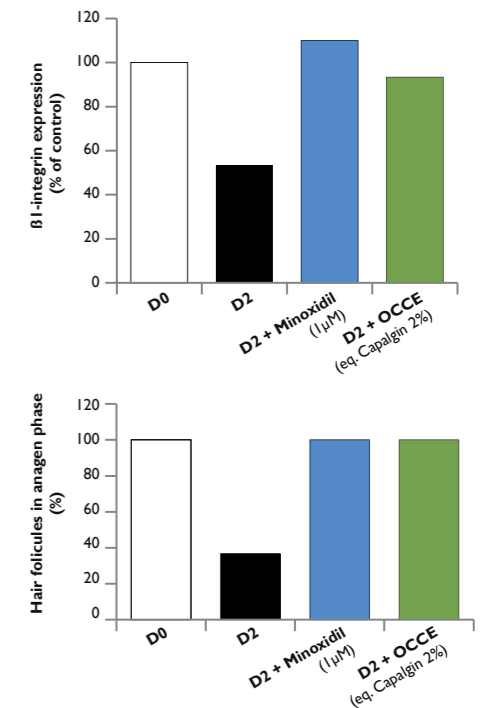
### CAPALGIN delays hair loss

In time, the level of ODC (ornithine decarboxylase) within the hair bulb drops hence initiating the shift from anagen to catagen phase. During the anagen phase, the hair is tightly bound to the root sheath via anchoring proteins such as  $\beta 1$ -integrin. When in catagen phase, the expression of  $\beta 1$ -integrin drops and the hair falls.



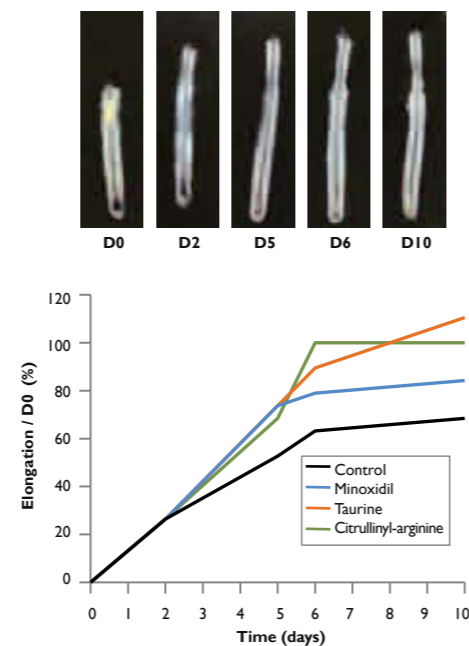
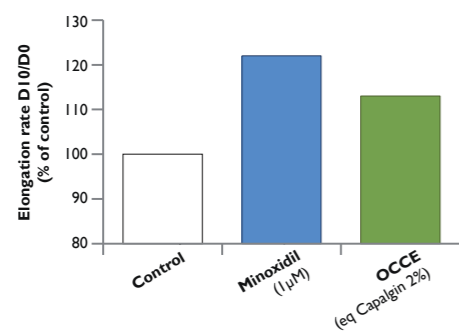
After two days of treatment of hair follicles with CAPALGIN, the optimal expression of  $\beta 1$ -integrin (green) is preserved, the hair is maintained in anagen phase ( $\uparrow$ ).

CAPALGIN is therefore capable of delaying the catagen phase by maintaining most hair in anagen phase, hence supporting hair growth as observed using histological cuts ( $\rightarrow$ ).

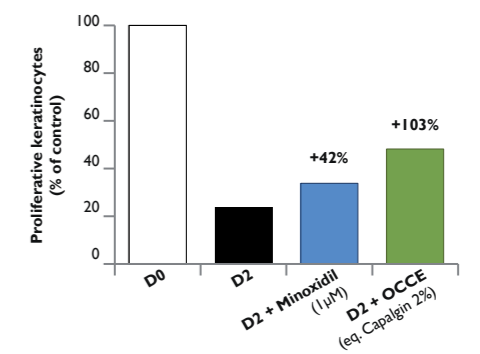
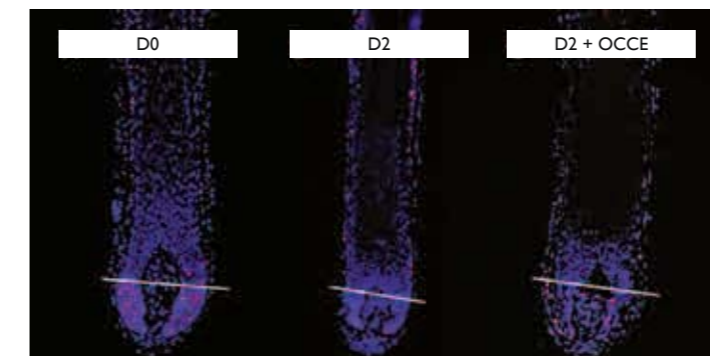


### CAPALGIN stimulates hair growth

CAPALGIN, the "Overwintered" *Chondrus crispus* extract (OCCE) is capable of improving hair growth. Several constituents of this unique extract act in synergy and are thus responsible for this elongation, among them, taurine and the dipeptide citrullinyl-arginine.



In proliferating, keratinocytes at the surface of the hair papilla ensure hair growth. A treatment of hair follicles with CAPALGIN increases the number of proliferative keratinocytes (Ki67 positive cells in red) in the hair bulb. CAPALGIN is therefore capable of improving hair growth rate and may also be responsible for thickening the hair shaft by increasing the proliferation rate of keratinocytes.



# CAPALGIN

INCI name: CHONDRUS CRISPUS EXTRACT

## COSMETIC APPLICATIONS



Anti-hair loss  
Hair growth

## TECHNICAL CHARACTERISTICS

### ANALYTICAL COMPOSITION

Chondrus crispus.....	≈ 3.25%
including citrullinyl-arginine .....	≈ 0.35%
Propanediol.....	≈ 55%
Water (sq).....	100%

### PHYSICO-CHEMICAL CHARACTERISTICS

Limpid to slightly opalescent, yellow to red orange liquid.  
Slight algal odor  
pH ≈ 6  
Miscible with water.

### PRESERVATIVES

No preservative

### TOLERANCE AND TOXICITY STUDIES

CAPALGIN does not show any toxicity, and tolerance studies show that it is perfectly tolerated.

### FORMULATION

Advised doses : 1% - 4%.  
No particular formulation restriction.



EXSYMOL S.A.M. - 4 avenue Albert II - MC 98000 MONACO  
Tél.: +377 92 05 66 77 - Fax : +377 92 05 25 02  
exsymol@exsymol.com - www.exsymol.com

