



Beata Hurst,
Head of Marketing,
Mibelle Biochemistry

Mibelle Biochemistry presents solutions for combating hair loss

11 questions for Beata Hurst, Head of Marketing

EURO COSMETICS: *AnaGain™ is an effective agent your company has developed to combat hair loss and promote hair growth. From what extract is it made?*

Beata Hurst: AnaGain™ is based on young sprouts of organic peas. Many health benefits are attributed to pulses, including peas. Pulses belong to the family of fabaceae and are thus rich in isoflavones, a class of polyphenolic secondary plant metabolites in order to protect the plant. Many of these phytochemicals are known to exert beneficial effects on human health or to play an active role in fighting diseases. Because the sprouts of a plant are especially vulnerable, secondary metabolites are very abundant at this stage. A few day old sprouts have the highest concentration of phytonutrients which might be responsible for the impressive effect on hair growth.

EURO COSMETICS: *What are the advantages of AnaGain™?*

Beata Hurst: Hair loss is characterized by a reduced number of anagen (growing) hair combined with an increased number of telogen (degenerating) ones. AnaGain™ was shown to significantly increase the ratio of anagen to telogen hair and thus to improve hair growth. It reactivates hair growth by stimulating the dermal papilla signaling

molecules that are key to the hair growth cycle. Thanks to its double action, AnaGain™ boosts the expression of the noggin gene, which results in a shorter resting period, and it also enhances the expression of the fibroblast growth factor-7 gene. This in turn stimulates the proliferation of hair germ cells to trigger the anagen growth phase.

EURO COSMETICS: *And where can AnaGain™ be used?*

Beata Hurst: For best results we recommend it primarily for leave-on products, but it can certainly be used as a line ingredient in rinse-off products too.

EURO COSMETICS: *What can you tell us about the causes of hair loss?*

Beata Hurst: Hair follicles cycle independently leading to growing, resting and shedding hair at the same time. The density and total number of scalp hairs does not change. The proportion of telogen hair is normally 10% to 15%. Diffuse hair loss is characterized by a uniform reduction of hair density. Telogen effluvium is a diffuse hair loss during stress with premature development of catagen and telogen follicles and premature termination of anagen follicles. In this case telogen hair accounts to 20% or more. Triggers for diffuse hair loss include physiologic or emotional stress, a hormonal imbalance or nutritional inefficiencies.

EURO COSMETICS: *And who is affected by it? Differences between men and women?*

Beata Hurst: Both, women and men are affected, but in different ways. Hair loss affects at least 50 % of men and about 25 % of women at the age of 50+. Above age 70 even 40% of women are concerned. Women experience mainly diffuse hair loss and tend to lose the hair on the top of their head. Hair loss in men may be much more extensive, affecting mostly the temporal areas and the top of the head. The cause can be diffuse or androgenic alopecia.

EURO COSMETICS: *Which methods can be used to test the effectiveness of products to combat hair loss?*

Beata Hurst: One of the most common method is the phototrichogram analysis. It is a non-invasive technique which allows measurements of the proportion and the density of hair in the different phases of the hair growth cycle. In addition this method allows to indicate the hair growth coefficient (A/T ratio). The ratio of the number of anagen hairs to the number of telogen hairs indicates the proportion of active hair follicles. If A/T is above 5, the hair loss is normal. If the ratio is below 5 it means that not enough hair are re-growing to compensate the hair loss.

EURO COSMETICS: *And what were your test results for AnaGain™?*

Beata Hurst: For me the most impressive result was that after a three months' treatment with a product containing AnaGain™, the A/T ratio improved from 4 to 7.2 thus going clearly beyond 5. This indicates that the hair regeneration was restored to a normal level.

The evaluation of the phototrichogram showed that AnaGain™ significantly decreased the density of telogen hair (-28.3%) and increased the density of anagen hair (+7.9% - p = 0.002 versus initial conditions).

In order to study the mechanism of action the gene expression of plucked hairs of 10 volunteers was analyzed before and after a 14 days treatment with a hair balm fluid containing 2% of the active. AnaGain™ was shown to modulate the expression of genes important in hair physiology such as the fibroblast growth factor-7 and the noggin genes. AnaGain™ can thus reduce hair loss which is characterized by too much telogen hairs and reduced anagen ones.

At the end of the study, the volunteers were asked to evaluate the efficacy of the treatment in a questionnaire. 95% of the volunteers noticed a slight to strong reduction in hair loss and a slight to strong improvement

of the general hair condition 85% of the volunteers.

EURO COSMETICS: At *in-cosmetics* in Barcelona, you will present a new effective ingredient, RootBioTec HO, which should prevent hair loss. What's behind this biotechnology?

Beata Hurst: For the production of RootBioTec HO, Mibelle Biochemistry applied a novel sustainable technique to produce the active compounds of basil in bioreactors. The so called "hairy roots" technology is a type of plant tissue culture that is used to produce high quality phytogenic compounds. After producing sufficient biomass, the roots are harvested and the active compounds are carefully extracted.

EURO COSMETICS: How does this new effective ingredient work?

Beata Hurst: RootBioTec HO successfully reduces hair loss by inhibiting 5 α reductase II activity and by stimulating the dermal papilla cells in hair follicles. It therefore has a different mechanism of activity than AnaGain™. RootBioTec HO address mainly hair loss that is caused by an increased sensitivity of the hair follicles to the androgenic hormone dihydrotestosterone (DHT). Androgenic alopecia, which is the name of the condition, is hereditary, permanent and continues as one gets older. In a clinical study, RootBioTec HO has proven to significantly reduce hair loss by 31% after only two months of application.

EURO COSMETICS: And how do the effects of RootBioTec HO differ from those of AnaGain™?

Beata Hurst: RootBioTec HO addresses mainly hereditary hair loss where as AnaGain™

addresses diffuse hair loss. Women and man can be affected from both causes.

EURO COSMETICS: Do you regard anti-aging for hair as a market with a future?

Beata Hurst: You may not get wrinkles in your hair, but it ages all the same. Thinning, hair loss, dullness, color fading and graying are all part of the hair aging process. As consumers continue to strive on healthy and good looks as they age, they will be looking beyond skin care. Grey hair may be ok but thin or dull hair will never be in fashion and therefore I strongly believe that hair care products with anti-aging claim will be of growing interest.

EURO COSMETICS: We thank you for the conversation.