Definition – Composition

• Almondermin® LS 3380 is a complex of polyuronides, heteropolysaccharides with a high MW (= polymers of oses and uronic acid) of 2 types combined with peptides :
- **mucilages** being worked out and secreted by the specialized cells of the external tegument of plants,
- **hemicellulose** and pectins constituting the matrix and the cement of the plant cell partition.

• These substances are extracted from 3 plants (fig. 1) enjoying more especially **emollient** benefits :
- grain of *Linum usitatissimum*,
- root of *Althaea officinalis*,
- almond of *Amygdalus communis*.

***Fig. 1** – Selection of three phytocomponents with moisturizing, emollient benefits and improving the hair shine.*

Main components :
The active material of Almondermin® is made of :

- *mucilages*, hemicellulose pectins ~ 86 %
  of the following elementary biochemical composition :
  - total galacturonic and glycuronic acids ~ 22 %
  - total neutral oses (Rhamnose, Galactose, Arabinose, Xylose, Glucose, Mannose) ~ 78 %
- *peptides* (combined with polysaccharides) ~ 14 %
  based on : Glu, Asp, Gly, Ala, Arg, Leu.

Hair benefits

- Moisturizing / hydroretaining effect on hair.
- Bio-filmcoating, substantive, conditioning.
- Softening, suppling the pilar stem.
- Improvement of hair shine and embellishment.

Cosmetic uses

Shampoos, shower gels, perms, lotions and hair masks, foaming baths, after color products.

Dosage – Solubility – Mode of incorporation

1 Dose of use = 2 % to 5 %

2 Solubility = hydro dispersible, insoluble in oils

3 Mode of incorporation

- Incorporate the requested concentration of Almondermin® into the cosmetic preparation during the finishing process. Keep on stirring until reaching a perfect distribution and homogeneity.

Compatibilities

• Within the frame of formulations into hair and/or foaming preparations, Almondermin® :
- is compatible with the anionic and non ionic surfactants,
- is incompatible with cationic surfactants, along with cationic conditioning polymers.

• Within the frame of emulsions (non rinsed or rinsed creams) Almondermin® can be formulated with cationic surfactants combined with non ionic surfactants.
• Within the frame of tonic lotions, Almondermin® is compatible provided a sufficient quantity of carbomer is added up.
• Compatible with hydro-alcoholic solutions up to 30° C.

INCI Name

Linseed (Linum Usitatissimum) Extract (and) SD Alcohol 39C (and) Althea Officinalis Extract (and) Sweet Almond (Prunus Amydgalus Dulcis) Extract (and) Xanthan Gum.

Manufacturer

Laboratoires Sérobiologiques S.A.

Efficacy tests

❶ Conditioning effect on hair (confocal microscopy).

Purpose

To demonstrate the conditioning and protective effect of Almondermin® incorporated at 3 % in a shampoo, versus a placebo shampoo, on model of dry human hair.

Results (Fig. 2)

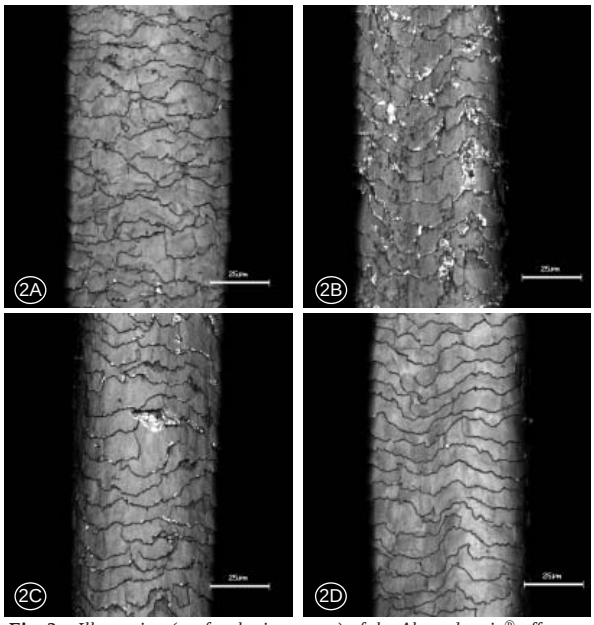

***Fig. 2** – Illustration (confocal microscope) of the Almondermin® effect on the dry hair model.*
2A : control hair.
2B : dry hair (after delipidation) : uplifting of cuticle scales.
2C : dry hair treated afterwards with the placebo shampoo : slight improvement of the state of surface of hair.
2D : dry hair treated afterwards with the shampoo containing 3 % of Almondermin® LS 3380 : clear improvement of the state of surface. The hair is smooth.

Conclusion

The dry hair treatment with Almondermin® at 3 % has clearly improved the benefits and the state of hair surface.

❷ Filmcoating effect on human hair (SEM and image analysis).

Purpose

To demonstrate the conditioning and protective effect of Almondermin® incorporated into a shampoo on dry human hair.

Protocol (Fig. 3)

Fig. 3 *– Protocol of hair damage and treatment.*

Results (Fig. 4 and 5)

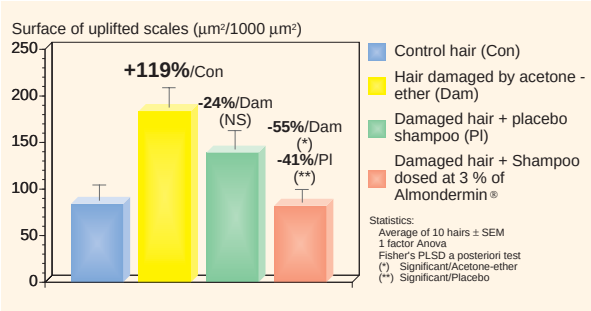

Fig. 4 *– Quantitative evaluation of the repairing - filmcoating effect of the shampoo dosed at 3 % of Almondermin® versus placebo.*

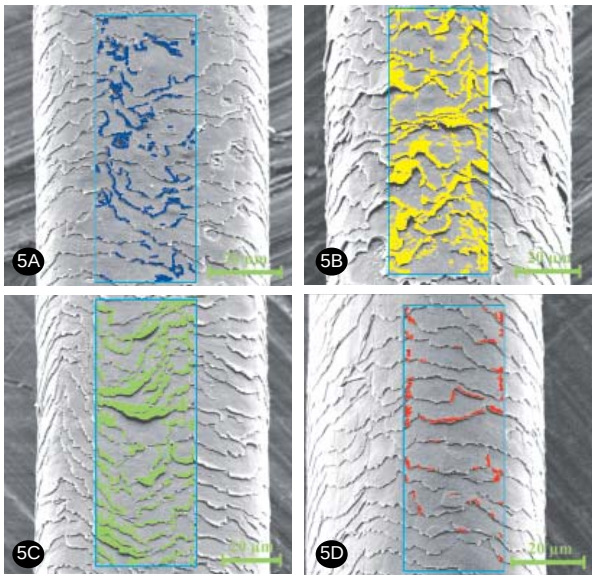

Fig. 5 *– Illustration (Scanning Electron Microscope) of the effect of Almondermin® on the dry hair model.*

5A : control hair.

5B : dry hair (delipidation with acetone/ether) : uplifting of cuticle scales.

5C : dry hair treated afterwards with placebo shampoo : light improvement of the state of hair surface.

5D : dry hair treated afterwards with shampoo contained at 3 % of Almondermin® : clear improvement of the state of surface. The hair is smooth.

Conclusion

The treatment of dry hair with Almondermin® at 3 % has clearly improved the benefits and state of the hair surface.

❸ Sensory hair evaluation.

Purpose

Sensory evaluation of the effect of the treatment with a shampoo dosed at 3 % of Almondermin® on locks of human control hairs that are damaged by two different processes.

Protocol (Fig. 6)

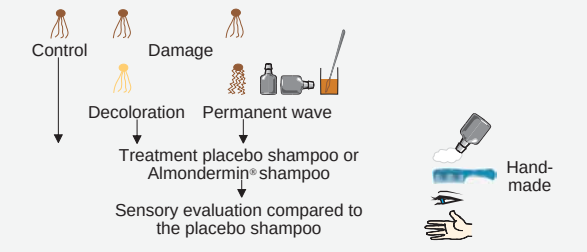

Fig. 6 *– Schema of the protocol.*

Results (Fig. 7)

Conclusion

The treatment with Almondermin® incorporated at 3 % in the placebo has improved in a significant way the sensory hair benefits.
Its effect has been stronger on undamaged hair.

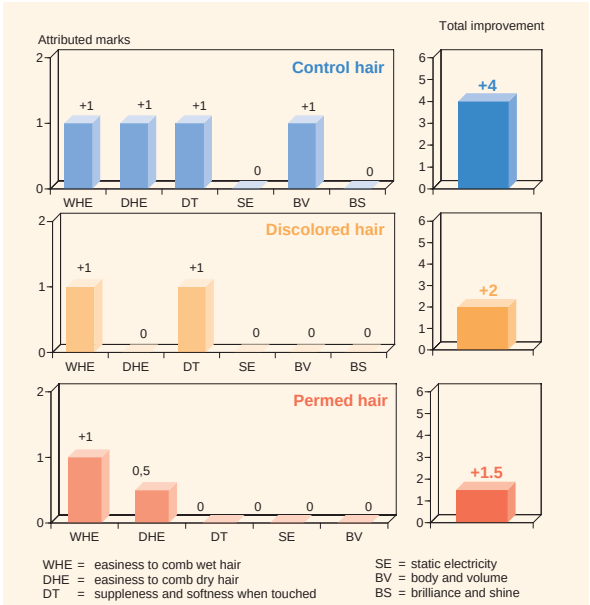

Fig. 7 *– Sensory evaluation of the effect of the treatment with the shampoo dosed at 3 % of Almondermin® when compared to the treatment with placebo shampoo on 3 types of hair locks.*

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