

PERFECT HAIR
COVERAGE FOR
HEAT PROTECTION

bicohair® hp
by bicosome®

BICOHAIR HEAT PROTECTION



Bicohair®HP is a novel Bicosome system specially created to protect the hair from the damage caused by heat tools and aggressive procedures.

Chemical treatments such as dyes and bleaching and the use of the hair dryer and other hair tools are very popular procedures to change the styles and colour of the hair. However, while the immediate results may be satisfactory, if the hair is not properly protected, these procedures may result in burned, dry, brittle and rough hair fibres.

Heat protection is an essential part of any hair care routine to avoid split ends, dullness and breakage. Restoring hair mechanical properties and hydration on a daily basis is vital for maintaining the hair smooth and manageable.

Bicohair® HP is a novel Bicosome® system specially

created to protect the hair from the damage caused by heat tools and aggressive procedures.

Bicohair® HP adheres to the hair cuticle by electrostatic interactions, adding a barrier to direct contact of the heat with the hair fibre surface, protecting the hair from thermal damage.

The bicosome dual structures reinforce the hair cortex, recovering hydration and mechanical properties such as hair elasticity and resistance.

Bicohair® HP provides a perfect hair coverage resistant to washes, being indicated for daily care formulations and products to be used before, during and after thermal procedures.



FIGURE 1. HAIR COVERAGE AND WASH-OFF RESISTANCE

The capacity of Bicohair® HP to adhere on the hair and to resist to washes is evidenced by 3D reconstructions of Confocal Microscopy images. Hair samples were incubated for 5h with three different formulas containing the hydrophobic and hydrophilic fluorescent probes Rhodamine and Sodium fluorescein: A) control solution B) a liposome system, and C) Bicohair® HP. After incubation the samples were washed with a shampoo and analysed by Confocal Microscopy.

The images show that Bicohair®HP performs the best coverage being massively adsorbed on the hair, whereas the other formulations lose the fluorescent molecules after washing, showing large empty spaces.

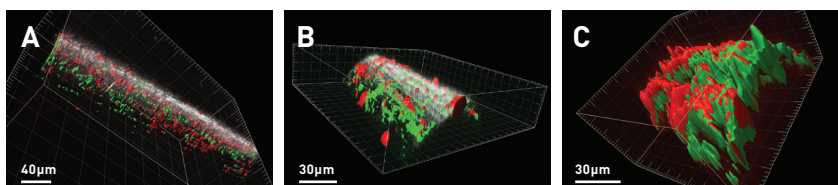


Figure 1. 3D reconstructions from Confocal microscopy. Red areas indicate the Rhodamine fluorescence and green areas indicate Sodium fluorescein fluorescence.

FIGURE 2. HEAT PROTECTION

Heat exposure can cause severe hair cuticle damages that can be observed by Scanning Electron Microscopy.

As shown in figure 2A, cuticle cracking is observed after 4 heat exposures using a hair dryer. In contrast, when the hair is pre-treated with Bicohair® HP 1% leave-on formulation, the compactness and cohesion of cuticle scales are preserved, as shown in figures 1B and 1C after 4 and 10 heat exposures, respectively.

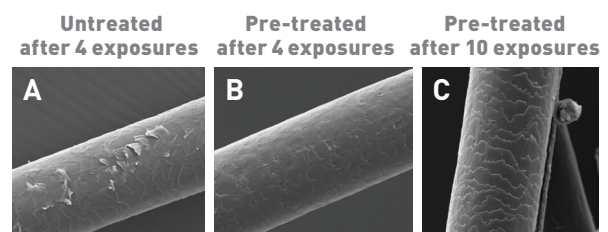


Figure 2. Effect of heat exposure on A) natural untreated hair, B) and C) natural hair pre-treated with Bicohair® HP 1% leave on formulation. The heat treatment consisted in applying hair dryer at a distance of 15 cm and temperature of 60°C for 5 minutes.



In order to evaluate the ability of Bicohair®HP to improve hydration and hair mechanical properties, experiments with natural and bleached hair were performed.

FIGURE 3: HAIR HYDRATION

As shown in figure 3, bleaching reduces around 4% of natural hair hydration (red bar). After a sole application of Bicohair® HP leave on formulation, hair hydration is fully recovered and increased (purple bar). After 10 applications, hair hydration is increased in almost 10% (light blue bar).

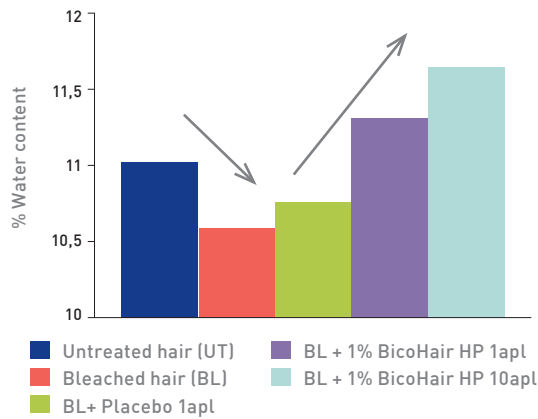


Figure 3: Water content of the hair before (blue) and after bleaching (red), treated with placebo (green) and with Bicohair® HP 1% leave on on formulation 1 time (purple) and 10 times (light blue).

FIGURE 4: MECHANICAL PROPERTIES

Hair elasticity and breaking stress were measured on bleached hair samples before and after five 5 applications of Bicohair® HP leave on formulation. As shown in figure 4 Bicohair® HP increases the elasticity of the bleached hair on 19% and the force required to break the hair fibres on 21% after 5 applications.

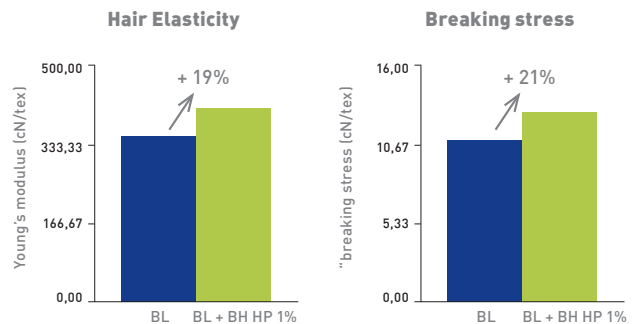


Figure 4. Mechanical properties of the bleached hair before (blue bar) and after 5 applications of Bicohair® HP 1% leave on formulation (green bar).

PRODUCT TYPES:



Summary of Bicohair® HP benefits:

- ⊗ Prevents thermal damage
- ⊗ Restores hydration
- ⊗ Improves hair mechanical properties
- ⊗ Wash-off resistance

Formulating with Bicohair® HP

Concentration of use: 0,5-1%

pH range: 3-9

INCI of Bicohair® HP:

AQUA, LECITHIN, PANTHENYL HYDROXYPROPYL STEARDIMONIUM CHLORIDE, PHENETYL ALCOHOL, TOCOPHERYL ACETATE, CAPRYLHYDROXAMIC ACID, CAPRYLYL GLYCOL, SODIUM PHYTATE, CITRIC ACID.

