

Hard evidence that HyaCare® makes skin moist and soft



New HyaCare, developed by Novozymes' biopolymer business, can make skin softer and younger-looking. Clinical trials with HyaCare showed that hydration values increased by 7% and skin elasticity by 27%.

"With the creation of Novozymes Biopolymer A/S in 2003, Novozymes branched out into a completely new area - biopolymers," says Thomas C. Beck, senior director of Novozymes Biopolymer. "This is in line with the company strategy of extending the use of our core technologies to the production of biotech products other than enzymes."

The first biopolymer to be launched in 2004 was hyaluronic acid for cosmetic applications known by the brand name HyaCare.

Hyaluronic acid is a sugar macromolecule that is found naturally in all humans, animals and plants. It has a unique ability to bind water and can be used for skin-care, the treatment of osteoarthritis and in eye operations. Novozymes is initially focusing on the cosmetics industry, in which hyaluronic acid is used in moisturising and anti-wrinkle creams. HyaCare works by locking in moisture to make the skin appear smoother and more radiant.

High purity

HyaCare is certainly not the only hyaluronic

acid product on the market - there are currently some 15 other producers around the world. They either extract the product from cockscombs or produce it using *Streptococcus* bacteria.

Novozymes' hyaluronic acid, on the other hand, is produced using a micro-organism that has been approved for the production of foodstuffs for many years, namely *Bacillus subtilis*. Furthermore, no organic solvents are used in the recovery process, and no animal ingredients.

Given Novozymes' many years of process experience with *Bacillus subtilis* and other microorganisms, they are able to reproduce any amount of HyaCare to the same high level of purity.

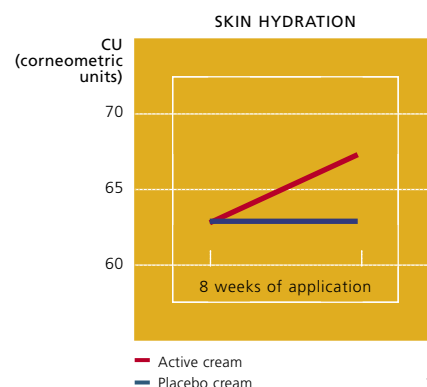
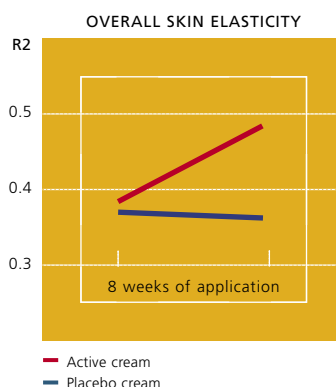
Proven claims

Hyaluronic acid is regarded as a commodity product by the market, but Novozymes claims that new HyaCare is different. "My people have worked hard to develop exactly what prospective customers need," says senior R&D manager Khadija Schwach-Abdellaoui.

"One of the ways we differ from our competitors is that our product is purer and more consistent due to the unique production process. Another difference is that we can substantiate everything we claim," says Søren Halbye, global business manager at Novozymes Biopolymer. He was recently in the USA and Canada presenting HyaCare to some of the largest cosmetics companies in the world. "They were very impressed by our scientific approach. We don't just give them a product specification but a whole series of results from clinical trials."

In one trial, hydration of the skin was measured by corneometry after applying cream containing HyaCare for eight weeks. Compared to a placebo cream containing no HyaCare, the hydration values were 7% higher with HyaCare. A large increase of

The skin area treated with the active cream containing 0.1% HyaCare® showed a significant increase of 27% in overall elasticity and 7% in hydration values after eight weeks. The creams were applied twice a day for eight weeks by 12 volunteers. Note that corneometry determines the capacitance of the stratum corneum layer, and thus reflects the moisture in the skin. The higher the CU value, the larger the amount of moisture in the skin. Skin elasticity was measured using a Cutometer SEM 575. R2 is a measure of overall elasticity.



Novozymes tailors textile

27% in skin elasticity was also measured. In addition, a statistically significant decrease in the maximum roughness value equal to 10% was observed. A reduction in this value reflects a decrease in deep wrinkles.

These clinical trials prove that creams containing HyaCare have anti-wrinkle and moisturising effects.

"Obviously we can't just sell the product to every cosmetics company in the world on our own, so we're working with a number of regional partners in the USA, Europe and China," says Søren Halbye, who is responsible for sales of HyaCare to the cosmetics industry. "So far, HyaCare is our only product, but we see a lot of potential for second-generation, tailor-made hyaluronic acid products developed in cooperation with customers."

Other applications

Novozymes has plans to develop hyaluronic acid products for use in fields other than cosmetics. In future, Novozymes will be looking at medical applications such as contact lens cleaning, wound healing, tissue engineering and topical pharmaceuticals. Novozymes is also looking at other high-value biopolymers where the company's core technology can give a competitive advantage. ●



HyaCare® is a hyaluronic acid product designed to be used as a component of moisturising and anti-wrinkle creams.

FOR MORE INFORMATION
biopolymer@novozymes.com



From pretreatment to creation of innovative shades and finishes, Novozymes' range of laundry enzymes is unsurpassed. But now, in addition to the peace of mind that comes with choosing from Novozymes' range of safe, high-quality, reliable products, laundry customers will also benefit from a value package to suit their specific needs.

Up to now, Novozymes' textile laundry products have been differentiated according to their function, for example denim bleaching, denim abrasion, Bio-Polishing or desizing. Under the new initiative, the products will be organised into three brands: Denimax®, Valumax™ and Novotech™. And each of these brands offers customers something different. Sameera Gujarathi, the project coordinator working with the textile group on this project,

comments: "The aim of this exercise is to recognise the different needs of our customers and to offer them an enzyme solution and service that is tailored to those needs. The bottom line is that Novozymes will go above and beyond its traditional role as a quality ingredient supplier to provide first-class support and service to its customers."

Top of the line

Novozymes works hard to offer the textile industry the most innovative ready-to-use products. Over the years, Novozymes has been the first to provide fashion houses with new and unique tools for creating garments with a diversity of original shades and finishes.

Now Novozymes' best and most unique products will be placed under the