**Beiersdorf Research & Development**

* Around 600 R&D employees worldwide in Consumer Business Segment
* Internationally leading skin research center in Hamburg
* Regional development laboratories increase closeness to consumers

Beiersdorf’s research and development expertise has been driving the company’s success for more than 130 years. Groundbreaking innovations, outstanding quality, and excellent skin tolerance – tailored to the different consumer needs around the world – underpin the immense popularity of Beiersdorf’s products.

**Basic research: A solid foundation**

Discovering and researching the effect of particular substances on human skin and developing new product compositions have always been central components of Beiersdorf’s research. Even early products such as Eucerin (1900) and NIVEA Creme (1911) came about as a result of systematic research into new emulsions, closely aligned with dermatological research. This principle still holds true today, and research and development continues to be the source of Beiersdorf’s dermatological expertise and the high degree of innovation shown by the company and its brands.

In 2014, research and development activities focused on investigating the processes of skin aging and developing ways to improve skin elasticity and firmness. Beiersdorf’s scientists found two key factors affecting skin aging. Firstly, the interaction between skin cells and connective tissue (collagen, for example) plays a critical role. The second finding revolves around the role of the protein periostin in the formation of collagen, and the effect of UV radiation on periostin activity. which in turn interferes with the formation of collagen, causing the skin ultimately to lose elasticity.

**One of the leading research centers in the world**

The Beiersdorf research and development facilities reflect the importance of the function to the company. Around 600 scientists support the Consumer Business segment worldwide. The facility is the largest and most advanced skin research center of its kind in Germany and one of the most important such centers in the world. The work conducted in the center is symbolized by the architecture of the auditorium – known by resident researchers as the “philosopher’s stone” – which is modeled on the structure of a skin cell. The skin research center in Hamburg has its own consumer test center where about 1,600 studies on new skin care products were conducted involving approximately 36,000 participants in 2014.

Beiersdorf AG has an international research network and is involved in over 500 research partnerships with universities, research institutions, and start-ups that work on basic research projects and innovations for NIVEA and many other brands. One example of a successful collaboration with external partners is the Ground State Depletion followed by Individual Molecule Return Microscopy (GSDIM) joint research project, part of the publicly funded “Optical Technologies in the Life Sciences – Fundamental Cellular Functions” initiative sponsored by Germany’s Federal Ministry of Education and Research (BMBF). Beiersdorf’s researchers worked with Prof. Dr. Stefan Hell, the winner of the 2014 Nobel Prize for Chemistry, to develop the cutting-edge GSDIM technology, a method which allows cellular processes to be observed extremely accurately. GSDIM is a further development of the STED technology for which the Nobel Prize was awarded. This process enables extremely small changes in cellular structure – only a few nanometers in size – to be observed. Beiersdorf’s researchers aim to use the GSDIM microscope to investigate how cosmetic treatments could better delay, or even reverse, age-related structural changes in the skin.

Another of Beiersdorf’s current joint research projects focuses on developing new methods for assessing skin irritation and eliminating side effects. In 2014, a research consortium consisting of the Charité University Hospital in Berlin, a start-up company based in Berlin, and Beiersdorf presented the first functioning skin/liver organ model. This model mimics the interaction between skin and liver cells by reproducing how substances are absorbed by the skin, transported by the blood, and broken down by the liver. The skin/liver/organ model is an important first step on the way to producing a complex multi-organ model that could lead to an alternative toxicity screening method in the future.

Research for the La Prairie brand is concentrated in the La Prairie Group in Zurich, Switzerland. The high profile of Beiersdorf’s researchers in the worldwide scientific community, shows that Beiersdorf, as a global skin care company, aims to continue shaping the market in the future with new research findings and innovative products.

**Integrating consumers**

When developing new products, the top priority for Beiersdorf researchers is to meet consumers’ wishes and needs. Modern consumer research methods have helped achieve this objective for over a decade.

The Product Consumer Research Center (PCR) enables product testing under real-life conditions. This kind of direct dialog between consumers and developers allows the information gained to be incorporated immediately in product optimization.

Based on a method developed in the past few years, consumers use visual and associative techniques to communicate their emotions while using the products. In addition, a variety of communication channels are used to gather consumer feedback,

which then flows into the development process. The resulting data and information is used to supplement the scientific work when developing new products and adapting them to meet regional conditions and requirements.

**Focused development for regional markets**

An important factor in Beiersdorf’s global success is its focus on the specific requirements of regional markets. Our belief that iterative adaptation of product properties with local consumers enables rapid translation of ideas into products, led to an expansion of our Research and technology expertise into the regions. In addition to the regional labs in Japan and the USA a new laboratory was opened in Wuhan (China) in 2012. This lab is working on product insights that satisfy the wide consumer needs in the Far East region.

The second development laboratory was opened in Silao (Mexico) in 2014, with the goal of developing products to meet the needs of consumers throughout the South American region. Researchers will focus on adapting formulas, technology scouting, and new packaging solutions that reinforce Beiersdorf position as an innovative skin care partner in the Latin American market.

The third regional laboratory will open in Sanand (India) in 2015.

**Setting standards**

Throughout its history, Beiersdorf’s extensive skin expertise and high-quality research have repeatedly led to establishing global industry standards in testing methodology. A prime example of this is the introduction of the sun protection factor, which permitted a scientific comparison of the effectiveness of sun protection products. The factor has been displayed on NIVEA sun protection products since1975, and quickly developed into a worldwide standard for this product category.

Beiersdorf’s effective measurement technique for dermatological research purposes, PRIMOS, is now also a global standard. PRIMOS is a contact-free system that uses white light to assess the surface of human skin quickly and precisely. The Hamburg Research Center has used it since 1997 for state-of-the-art testing of the effectiveness of skin care products in smoothing skin.

**Innovation through research**

In addition to setting industry standards for testing, there are many firsts in Beiersdorf’s history. One example is the 8x4 brand, which goes back to the discovery of an active ingredient that restricts bacteria growth in sweat, thereby helping to prevent body odor (1951). Another was the introduction of NIVEA Milk, the first stable water-in-oil
emulsion – which was a true technical achievement in 1981. Another example is the development of the first alcohol-free, low-viscosity emulsions, which paved the way for deodorant pump sprays in 1995

In 1998, Nivea was the first to incorporate Q10, which occurs naturally in skin, as an ingredient in skin care products for the mass market. To this day, the Q10 products are bestsellers around the world: One NIVEA Q10 product is sold around the world every two seconds.

The Q10 success story was propelled in 2014 by the launch of the innovative pearl technology in NIVEA Q10 plus Anti-Wrinkle Serum.The pearls’ formula combines coenzyme Q10, hyaluronic acid, and creatine – three ingredients that are present naturally in skin – in a hydrogel suspension. The patented serum formula is freshly activated each time the dispenser is pressed.

Another key breakthrough was the NIVEA Sun broadband ultraviolet filter system dating back to 2001, which offers highly effective protection against sunburn, premature aging of the skin, and cell damage.

Beiersdorf’s researchers satisfied a global consumer need in 2011 with NIVEA Deodorant Invisible for Black & White. Together with textile experts, Beiersdorf’s scientists developed the first deodorant that leaves no white marks on dark fabrics and helps reduce yellow stains on light-colored clothes. Its effectiveness was confirmed by the renowned Hohenstein International Textile Institute. In addition, following extensive research, Beiersdorf’s scientists developed a deodorant in 2012 that offers additional protection against stress-induced sweat: NIVEA Stress Protect Deodorant.

In addition, the NIVEA In-Shower Body line launched in 2013 is setting new standards in the body care segment. This is the first time that body lotion, or body milk, can be used directly in the shower. The innovation is the response to consumers’ clear need to save time and get dressed immediately after showering.

In 2010, Beiersdorf launched the groundbreaking Aquaporin technology Hydra IQ in Eucerin. The innovative formula includes the nature-identical active ingredient glyco-glycerol, which stimulates the formation of natural water channels in the skin – so-called aquaporins. This increases water exchange through the epidermal skin cells and moisturizes the skin for over 24 hours. The Eucerin Ultra SENSITIVE care range for extremely sensitive facial skin was launched in 2014. The the unique active ingredient SymSitive[[1]](#footnote-1) that delivers an immediate, long-lasting effect stinging and itchiness. The formulas contain no preservatives, alcohol, or perfume. They soothe the skin and boost its defenses. Special vacuum packaging provides additional anti-contamination protection for this product range.

Hansaplast Aqua Protect, Hansaplast’s waterproof plaster keeping wounds 100% dry during washing and showering, bathing and swimming, was also launched on the market in 2014. The plaster’s flexible, waterproof backing adapts to movement, making it very comfortable to wear. The new, especially strong adhesive material gives the skin safe, robust protection against water in particular, so that the wound can heal freely.

**Open innovation at Beiersdorf**

In January 2011, Beiersdorf officially launched its international Open Innovation Initiative, “Pearlfinder.” Pearlfinder is a trusted network that is based on a confidential web platform and that enables even more information to be exchanged with external research and development partners throughout the world. Beiersdorf publish open briefings for which external partners can offer solutions. With Pearlfinder, Beiersdorf provides access to knowledge and the needs of the company with previously unseen level of openness. At the same time, the protected platform supports confidential collaboration with external partners and scientific exchange which is an integral part of research and development.

In October 2011, Beiersdorf received the Best Open Innovator Award from the “Handelsblatt” newspaper for its innovation strategy, and for Pearlfinder in particular. Since then, Pearlfinder has developed into a global network with 270 registered international partners from a variety of sectors.

Further information can be found at [www.Pearlfinder.Beiersdorf.com](http://www.Pearlfinder.Beiersdorf.com).

February 2015

1. 1 registered trademark of SYMRISE, Germany [↑](#footnote-ref-1)