

PRESS RELEASE

New efficient detergent enzymes from the metagenome – start of another cooperation between BRAIN AG and Henkel KGaA

Zwingenberg, Düsseldorf (Germany), February 2005 – The German biotech company BRAIN AG and Henkel KGaA announce a further cooperation for the development of improved enzymes for laundry applications. The goal of the cooperation is the development of novel proteases from non-cultivated microorganisms to be active at low temperatures. This cooperation is supported by a grant of the German federal ministry of science and education (BMBF) to Henkel KGaA.

As soiling is typically of biological origin, hydrolytic enzymes are critical active ingredients for the performance of laundry detergents. Standard detergent proteases optimally perform between 30°C and 60°C, though are less efficient at lower temperatures. The use of detergent enzymes with activity at lower temperatures facilitates significant lowering of washing temperatures leading also to a tremendous reduction in the consumption of chemicals detergent and water. Consequently the development of such enzymes will bring enormous environmental benefits and additionally promises substantial financial savings. Global sales of laundry detergents in 2002 amounted to USD 600 million.

Both cooperation partners will join forces to screen comprehensive metagenome libraries of biologically diverse uncultivated microorganisms and develop resulting proteases.

Contact:

BzRzAzlZn
Biotechnology Research
And Information Network AG
Dr. Jürgen Eck
Darmstädter Str. 34
D-64673 Zwingenberg

ph: +49-(0)-6251-9331-0
fax.: +49-(0)-6251-9331-11
e-mail: je@brain-biotech.de
www.brain-biotech.de

Henkel KGaA
VTC R&D & Sustainability
Communications
Wolfgang Zengerling
Henkelstraße
D-40191 Düsseldorf

ph: +49-(0)-211-797-9336
fax.: +49-(0)-211-798-5598
e-mail: wolfgang.zengerling@henkel.com
www.henkel.com

Henkel has been collaborating with BRAIN in various projects since 1998 in the field of detergent enzymes using their proprietary BioArchives as molecular resource.

“There is a clear trend towards lower washing temperatures and we have to move along new avenues to master the challenge of developing new appropriately tuned enzymes systems. This is the first time we apply metagenomics to develop low-temperature detergent proteases” states Dr. Karl-Heinz Maurer, Head of Research Enzyme Technologies at Henkel KGaA.

As Dr. Jürgen Eck, CSO at BRAIN AG puts it: “ We have been successful in the past to find very promising novel enzymes for Henkel probing the metagenome, so it was an obvious decision to apply our technologies and the metagenomic resources in this discovery project once again.”

As Dr. Holger Zinke, CEO of BRAIN, says: “ We have over the years built up a trustfull, synergistic and successful partnership with Henkel. We highly appreciate our continuing business relationship with Henkel as it reflects BRAIN’s successful business model.”

The German Federal ministry of science and education (BMBF) supports Henkel expenditures in this cooperation with EUR 704.431 from resources allocated with its program on “Sustainable Production” (“Nachhaltige Bioproduktion”, see BMBF press release of 27.9.2004, www.bmbf.de/press/1265.php, BMBF funds sustainable production through biotechnology – 12 new projects kicked-off with 20 million Euros). The duration of the project is planned to be 42 months.

The cooperation with Henkel KGaA is already BRAIN’s second announcement this year on cooperations in the field of White Biotechnology. White Biotechnology stands for the application of modern biological processes for industrial products and processes.

White biotechnology currently is one of the most attractive developmental areas of biotechnology. EuropaBio and McKinsey estimate that in 2010 between 10% and 20% of total sales volumes in the chemical industry will be based on biological products and processes.



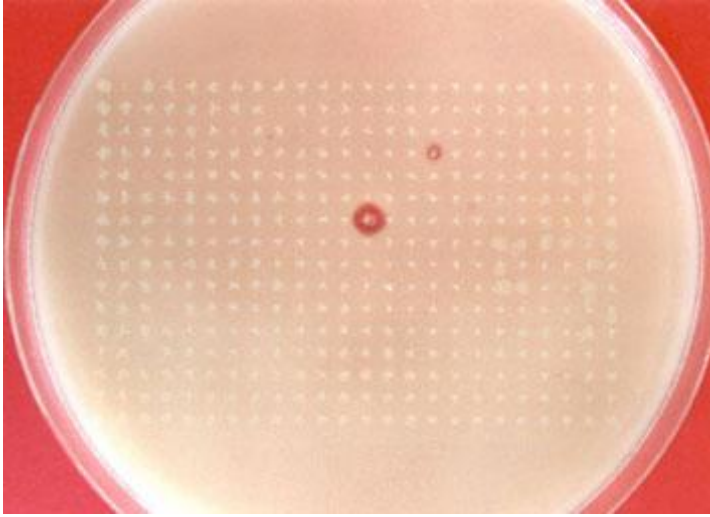
Biotechnology Research
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About BRAIN AG:

BRAIN Biotechnology Research and Information Network AG is an innovative company focusing on the discovery and development of novel enzymes and bioactives. Its novel EvoSolution® technology platform combines the untapped biodiversity of microorganisms and plants with modern methods of molecular biology. The company located in Zwingenberg within the research and industrial region Rhine-Main-Neckar has at its disposal a comprehensive BioArchive with over 100 million genes of unique and non-cultivable microorganisms. Based on these resources BRAIN identifies novel technical enzymes for biotechnological production and synthesis processes (biotransformation) in the chemical and life science industries as well as new bioactive substances and lead candidates for the pharmaceutical and cosmetics market, and develops the basis for their large-scale industrial production. The company, which was founded in Darmstadt in 1993, currently employs a staff of 40.

About Henkel KGaA

„Henkel – A brand like a friend“. Henkel is a leading provider of brands and technologies that make human life simpler, better, nicer. The Henkel Group is active in 3 strategic areas - Home Care (laundry/dishwashing detergents), Personal Care (Cosmetics/Body care) and Adhesives, Sealants and Surface Treatments. In the business year 2004 the Henkel Group reached total revenues of EUR 10.592 million. The Henkel Group employs over 50.000 people globally and markets its products in 125 countries.



BRAIN AG: Proteases screening for detergent applications

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Henkel KGaA: Main production facilities in
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