

PRESS RELEASE

BRAIN AG expands patent protection for Aurase[®] enzyme for the treatment of chronic wounds

- **Patent protection in 20 countries of the most important entry markets**
- **Possible fields of application address, among others, the growing markets for the treatment of chronic wounds**
- **BRAIN engaged in discussions regarding different partnership options in the BioIndustrial business segment**
- **Common green bottle fly served as natural model for the researchers**

Zwingenberg, March 21, 2017: B.R.A.I.N. Biotechnology Research and Information Network AG (“BRAIN AG“; ISIN DE0005203947 / WKN 520394) has obtained far-reaching patent protection for a newly developed enzyme with the product name Aurase[®]. For a total of 20 countries in Europe, Asia, North America, Oceania and Africa, this laid the foundation for the later marketing of applications based on Aurase[®] in the fields of skin and scar treatment as well as the strongly growing market for the care of chronic wounds. The development of Aurase[®] is part of the portfolio of BRAIN’s BioIndustrial business segment. Currently, BRAIN is evaluating concrete application possibilities for Aurase[®] and is engaged in discussions with industrial partners regarding different marketing strategies.

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Enzymes are proteins which, as biocatalysts, accelerate biochemical reactions. Living nature offers a rich collection of these vital biomolecules. Aurase[®], which has been developed by BRAIN, is a nature-based enzyme from the family of serine proteases, which can cleave proteins and peptides.

At an early stage, BRAIN had the commercial use of the Aurase[®] enzyme protected by patent (WO 2010/099955), both for products under development and future products as well as for possible cooperation projects. This now covers the potentially most important entry markets: Apart from 13 European countries (Austria, Belgium, Denmark, France, Germany, Great Britain, Ireland, Italy, Netherlands, Poland, Spain, Sweden, Switzerland) this also includes the United States and Canada in North America, China, Japan and Hong Kong in Asia, and on top of this Australia and South Africa. Most recently, the patent validation of Canada was added, the final confirmation of India is still pending. The protected applications encompass the skin and scar and also wound treatment application fields.

Treatment of chronic wounds

There is an increasing number of patients with chronic wounds in Germany, Europe and other regions of the world. Experts believe that the current number is about three to four million people in Germany, who suffer from it, with an increasing tendency. Mostly elderly people are affected. Therefore the demographic change has an impact on the number of diseases. Another factor are diet-related diseases such as excess weight, diabetes or malnutrition.

Aurase[®] offers the possibility to improve the efficient and conservative treatment of chronic wounds in hospitals and surgeries as well as in home-based health care. Substantial tests have shown that Aurase[®] is efficient and well-tolerated. In the meantime, development activities in BRAIN's laboratories are well advanced and they are targeted at achieving a clearly enhanced production

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method for Aurase[®]. The development of the Aurase[®] enzyme is part of the portfolio of BRAIN's BioIndustrial business segment.

“With Aurase[®] we are further expanding our BioIndustrial business segment, which is dedicated to the development and marketing of our products and product components via own sales channels or in cooperation with partner companies,” according to Dr Jürgen Eck, CEO of BRAIN AG. “The comprehensive protection of our inventions by patent law here is an important prerequisite.“

The annual sales volume of the markets potentially addressed by BRAIN for wound treatment is estimated by experts to reach more than EUR 100 million in Europe alone. BRAIN intends to participate with Aurase[®]-based products in this.

Model and research achievements of BRAIN

BRAIN's researchers found a model for the Aurase[®] development in the wide-spread common green bottle fly (*Lucilia sericata*). It has been known since the Middle Ages that open wounds which are infested by maggots of the common green bottle fly can heal better.

In the laboratories of BRAIN AG it was possible to identify exactly that maggot enzyme which dissolves fibrin, one of the main components of wound debris, without affecting healthy tissue. In a next step, a biotechnological procedure has been developed which allows the generation of the active enzyme in large quantities and high purity. The basis for this is a yeast culture. BRAIN's researchers chose the product name Aurase[®] following the Latin term “aurum” (gold), and thus as an indicator for the enzyme's natural occurrence in the maggots of the common green bottle fly, which is called “gold fly” in Germany.

“The Aurase[®] enzyme is a good example for the enormous and still mostly unexplored biodiversity, which we also hold available in our own bio archive. As a bio-economy company, we have specialized in



exploiting this treasure for nature-based applications in manifold product areas,” said Dr Jürgen Eck.

About BRAIN

BRAIN is one of Europe’s leading technology companies in the field of industrial biotechnology, the core discipline of Bioeconomy. As such, BRAIN identifies previously untapped, efficient enzymes, microbial producer organisms or natural substances from complex biological systems that can be put to industrial use. The innovative solutions and products developed by help of this „Toolbox of Nature” are successfully applied in the chemistry, the cosmetics and the food industries. Today, BRAIN’s business model is based on two pillars – „BioScience“ and „BioIndustrial“. The first pillar, „BioScience“, comprises its – frequently exclusive –collaboration business with industrial partners. The second pillar „BioIndustrial“ comprises the development and commercialisation of BRAIN’s own products and active product components. Further information is available at www.brain-biotech.de/en.

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