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Heel Pioneers with Genome Research at ECIM

Next Generation Genome Sequencing Inflames Discussion on Multi-Target Approach and Bioregulatory Medicine

Berlin / Baden-Baden (Germany) – Modern genome research enables a deeper understanding of biological processes. It has shown that a single cause-and-effect approach is not sufficient to cure a disease. In fact, changes in multiple biological networks have to be anticipated during a treatment. At the European Congress for Integrative Medicine (ECIM) in Berlin, Heel has unveiled its latest pioneering research showing that genome changes during an inflammation and its treatment can now be traced globally. The scientific findings underline the necessity of a system biological view on disease.

Scientists have made global observations of the biological processes during an inflammation. By using so-called “Next Generation Genome Sequencing” they identified changes in gene expression in cells after an infection stimulus. Further, they analyzed the effect medications had on the inflammation resolution process. In control groups they tested a classical anti-inflammatory dexamethasone preparation, as well as a multi-target complex medication based on low dosed natural substances.

The inflammatory processes were studied on an infection that was artificially initiated by inhaling Lipopolysaccharides (LPS). Scientists took lung samples in six time intervals (0, 3, 6, 12, 24 and 48 hours) and isolated the RNA. The readout of roughly 1.5 billion gene sequences allowed for e.g. detecting more than 400 inflammation induced changes in gene expression and splicing. On this basis, the researchers comprised complex process charts that visualize all relevant pathways and interactions.

Side effects in a biological system can be visualized

“With our study we were able to genomically map all involved biological networks and observed very accurately what happens during an inflammation and its treatment”, explains Dr. Bernd Seilheimer, Head of Bioregulatory Development at Biologische Heilmittel Heel GmbH in Baden-Baden, who commissioned the trial.

“We now have clear scientific evidence that the body responds to a stressor with numerous reactions that interrelate within a self-regulating network.”

“Furthermore, we were able to see that immune suppression through a classical drug based on the single substance dexamethasone produces a series of changes in genes not usually perturbed during inflammation,” Dr. Seilheimer ads. “Thereby proteins were activated that could be responsible for undesired side effects. The immune response is forced down – but at an unknown physiological cost.”

Genomic research supports multi-target approach

The likewise tested multi-target combination medication based on low dosed natural substances displayed a different action profile. The body’s natural immune response remained intact but was modulated over time in a way that minimized undesired impacts. “Deep sequencing genomics has shown us that Systems Biology is the future of medicine. The reductionist singe-target approach is outdated. It is simply not comprehensive enough,” says Dr. Seilheimer.

Heel will continue to benefit intensively from modern genomics in addition to preclinical and clinical trials. Pioneering in scientific research helps the company to better understand diseases and their efficient treatment. Being the global leader in homeopathic combination preparations, Heel is continuously developing its portfolio of multi-target medications on the basis of low dosed natural substances. The goal is to support the natural inflammatory response of humans and animals in a bioregulatory manner.

524 words, 3,659 characters (incl. blanks)

***Heel** is a pharmaceutical company that develops, manufactures and distributes medications based on natural substances. Being the global leader in homeopathic combination preparations, the company is also a pioneer in the field of scientific research in natural healthcare. In cooperation with academic institutions, Heel actively fosters the concept of Integrative Medicine and is striving to build the bridge between homeopathy and conventional medicine to improve patient care and health.*
The ‘Biologische Heilmittel Heel GmbH’ with its corporate headquarters located in Baden-Baden/Germany and a staff of 1,300, achieved an annual turnover of 184 million Euros in 2010 – more than 70 percent of it outside of Germany. Heel medications are available through subsidiaries and distribution partners in over 50 countries around the world. www.heel.com

***Dr. Bernd Seilheimer** is the Head of Bioregulatory Development at Biologische Heilmittel Heel GmbH in Baden-Baden (Germany). In this role he is responsible for the broadening of the scientific knowledge base related to Heel’s product portfolio. He makes sure that state-of-the-art technology platforms are applied and cooperations with centers of excellence are*

established. Dr. Seilheimer gained his Ph.D. at the University of Heidelberg and was awarded a research fellowship at the Harvard Medical School (HMS). As an expert for the Central Nervous System (CNS), he worked at Roche and headed the CNS Research at Schering where he later became the Head of Global R&D Risk Management. From 2002-2010 he was a board member of the European Neuroscience Institute (ENI) in Göttingen. From 2006 on, he has been a member of the Council of Scientific and Business Advisors of the Johnnie B. Byrd Institute, Florida, USA. www.heel.com

Photo caption: Dr. Bernd Seilheimer, Head of Bioregulatory Development at Biologische Heilmittel Heel GmbH in Baden-Baden (Germany), made global observations of the biological processes during an inflammation by using modern genomic research. Source: Biologische Heilmittel Heel GmbH

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