

Helmholtz Zentrum München and Boehringer Ingelheim jointly identify biomarker for diabetes-relevant protein

Neuherberg, 12 May 2011 . The cooperation between the Helmholtz Zentrum München and Boehringer Ingelheim has produced its first results: the two partners have jointly identified a biomarker that now allows for the testing of active substances on a diabetes-related protein. The results, which have now been published in the *Journal of Biomolecular Screening*, prove the added value of collaboration between the pharmaceutical industry and academia in researching new drugs for the treatment of diabetes and atherosclerosis (*Journal of Biomolecular Screening*).



The Helmholtz Zentrum München and Boehringer Ingelheim have jointly identified a biomarker for the testing of active substances on a diabetes-relevant protein. Boehringer Ingelheim provided the necessary biological and indication-specific knowledge; the Helmholtz Zentrum München contributed expertise in metabolomics and bioinformatics. The biomarker allows for the pre-clinical testing of FABP4* inhibitors and thus facilitates the selection of potentially effective substances.

Studies on human subjects and mouse models show that the FABP4* protein could be a promising target protein for new drugs to treat diabetes mellitus and atherosclerosis. What was missing up to now was a suitable biomarker that can reveal the acute effects of a large number of active substances as FABP4* inhibitors in preclinical tests. The biomarker that has now been identified by the Helmholtz Zentrum München closes this gap and makes it possible, in cooperation with the pharmaceutical company Boehringer Ingelheim, to do further research on FABP4* inhibitors that protect against diabetes mellitus and atherosclerosis.

The practical and functionally relevant biomarker was found through the use of lipidomics* and metabolomics. Scientists at the Helmholtz Zentrum München were the first to use the modern lipidomics technologies to successfully identify such functionally relevant biomarkers for FABP4*. The basic functional principle is described in the *Journal of Biomolecular Screening*. Since this method has universal application, it can also be used to develop other drugs.

The development of the biomarker for FABP4 was the pilot project for the collaborative research venture to identify functional biomarkers.

Caption:

Diabetes experts at the Helmholtz Zentrum München: Prof. Jerzy Adamski, Prof. Karsten Suhre and Prof. Martin Hrabé de Angelis

Further information

Background* Lipidomics: a sub-discipline of metabolomics that specialises in fat metabolism.* Metabolomics: Characterisation of metabolites in biological samples.* FABP4: Fatty acid-binding protein 4Original publication:Suhre, K. et al.(2011) Identification of a Potential Biomarker for FABP4 Inhibition: The Power of Lipidomics in Preclinical Drug Testing, Journal of Biomolecular Screening, Published online before print May 4, 2011, doi: 10.1177/1087057111402200

[Link to publication](#)

The Helmholtz Zentrum München is the German Research Centre for Environmental Health. The leading research facility in this field, it conducts research into chronic and complex diseases caused by the interaction of environmental factors and an individual's genetic disposition. The Helmholtz Zentrum München has about 1,700 staff members and is headquartered in Neuherberg in the north of Munich on a 50-hectare research campus. The Helmholtz Zentrum München is a member of the Helmholtz Association, Germany's largest scientific organisation, a community of 17 scientific-technical and medical-biological research centres with a total of 30,000 staff members.

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