



FOR IMMEDIATE RELEASE

caprotec bioanalytics Discovers Novel Drug-Protein Interactions of Three Anti-Cancer Drugs Using its CCMS Technology

Berlin, Germany and Burlington, MA, December 8, 2011 – caprotec bioanalytics GmbH announced today the discovery of previously unknown specific drug-protein interactions for several anti-cancer drugs and the identification of potential novel co-targets of the drug molecules through the use of company's CCMS technology. These scientific findings are published in peer-reviewed articles in *Journal of Proteomics*, *Proteomics* and *Journal of Biomedicine and Biotechnology*.

These findings substantiate the use of Capture Compound Mass Spectrometry (CCMS) technology as a very powerful tool in the field of functional proteomics enabling the comprehensive investigation of interactions between small molecules and proteins from any biological system including human proteins.

“The CCMS profiling information identifying target and OFF-targets in the human proteome can be used to improve subsequent lead optimization. Due to its potential for risk-reduction and management, it can be expected that CCMS profiling of drug-protein interactions will become a standard approach in drug development workflows,” stated Hubert Köster, CEO of caprotec.

The articles published in *Journal of Proteomics* and the scientific publication *Proteomics* report CCMS-based profiling using the kinase inhibitors dasatinib and imatinib and the histone deacetylase (HDAC) inhibitor suberoyl hydroxamic acid (SAHA), also known as vorinostat, as Capture Compound selectivity functions. The SAHA study was carried out in collaboration with the Leibniz Institute for Molecular Pharmacology in Berlin-Buch.

Most strikingly, in addition to the known HDAC targets, interactions of SAHA (vorinostat) with several non-HDAC proteins were identified. Among them was the ISOC2 protein that has been reported to be associated with the regulation of the tumor-suppressor p16(INK4a).

In the publication *Journal of Biomedicine and Biotechnology*, dasatinib, imatinib and staurosporine Capture Compounds were used to compare their drug-specific and distinctly different binding profiles at subsets of kinases. In addition to the expected kinases, additional specific interactors were identified: OFF-targets which may be relevant for the pharmacological or unwanted properties of these compounds.

The results are summarized in experimental detail in the publications listed below, and a recent review article compares the currently used technologies in chemical proteomics. Abstracts from these articles can be found at the US National Center for Biotechnology Information's website www.pubmed.gov.

1. **Dasatinib, imatinib and staurosporine capture compounds – Complementary tools for the profiling of kinases by Capture Compound Mass Spectrometry (CCMS);** Fischer JJ, Dalhoff C, Schrey AK, Graebner Neé Baessler OY, Michaelis S, Andrich K, Glinski M, Kroll F, Sefkow M, Dreger M, Koester H; *J Proteomics* (2011) Dec 10; 75(10):160-168
2. **Probing small molecule–protein interactions: A new perspective for functional proteomics;** Lenz T, Fischer JJ, Dreger M; *J Proteomics* (2011) Dec 10; 75(1):100-115
3. **SAHA Capture Compound – A Novel Tool for the Profiling of HDACs and the Identification of Additional Vorinostat Binders;** Fischer JJ, Michaelis S, Schrey AK, Diehl A, Graebner OY, Ungewiss J, Horzowski S, Glinski M, Kroll F, Dreger M, Koester H; *Proteomics* 2011 Oct, Vol 11, Issue 20: 4096–4104

Improvement of Capture Compound Mass Spectrometry (CCMS) Technology for the Profiling of Human Kinases by Combination with 2D LC-MS/MS; Fischer JJ, Graebner Neé Baessler OY, Dreger M, Glinski M, Baumgart S, Koester H; *Journal of Biomedicine and Biotechnology*, 2011;2011:850589. Epub 2011 Sep 19.

About Leibniz-Institute for Molecular Pharmacology, Berlin

The Leibniz-Institute for Molecular Pharmacology (FMP) is devoted to research in molecular pharmacology, a field which deals with the interaction of small molecules with their cellular targets, and the effects of these interactions on cells and organisms as a whole. The FMP was founded in 1992 as a successor to the "Institut für Wirkstoffforschung", an Institute of the Academy of Sciences of the GDR. It was renamed "Forschungsinstitut für Molekulare Pharmakologie" - hence, its acronym FMP. Then as now, the institute focused on the identification and utilisation of potential targets for pharmaceutical intervention, aiming eventually at the development of novel therapeutic concepts.

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About caprotec bioanalytics GmbH

caprotec bioanalytics is headquartered in Berlin, Germany with a US subsidiary in Burlington, MA. The company focuses on the commercialization of its proprietary Capture Compound Mass Spectrometry (CCMS) technology. The core of the CCMS technology consists of small, tri-functional molecules called capture compounds (CCs). They enable a targeted isolation of proteins directly from complex biological samples. After isolation the captured proteins are identified and characterized by mass spectrometry. Providing a state-of-the-art platform for the isolation and analysis of proteins from complex mixtures, the CCMS technology has enormous potential in proteomics, drug development and the development of biomarkers. The technology is protected by a broad patent portfolio. The company is supported by an international scientific advisory board including one Nobel Laureate.

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