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http://www.ilkk.uu.se/research/afk_en/biomarker-discovery/

Title: New biomarker discovery approaches for pancreatic cancer

Abstract: Pancreatic cancer is one of the most lethal cancer type worldwide with very low survival rates due to the absence of sensitive and reliable diagnostic tools for an early detection. The discovery of unknown early-stage biomarkers for pancreatic cancer is urgently required and the impact of host-microbiome interactions for the development of pancreatic cancer on a molecular level is still unknown. Analysis of metabolites in any type of human specimen comprises a high potential for the identification of unknown biomarkers. Our interdisciplinary projects are focussed on the development of new methodologies using techniques at the interface of chemistry and biology for an advanced quantitative and qualitative mass spectrometric analysis to discover disease-specific metabolites. These new methodologies are aimed at enhancing the scope of mass spectrometry-based metabolomics research and simplifying biomarker discovery. Validated specific early-stage biomarkers are a crucial first step for the development of new diagnostics, which would allow for improved and more efficient therapeutic interventions.

Short biography: Associate Professor Daniel Globisch defended his PhD thesis in Organic Chemistry in the group of Professor Thomas Carell at the Ludwig-Maximilians-University of Munich in 2011. His research focused on the synthesis and mass spectrometric quantification of natural modified transfer-RNA nucleosides and the recently discovered epigenetic DNA marker 5-hydroxymethylcytosine. To extend his expertise in Chemical Biology, he joined the laboratory of Professor Kim D. Janda at The Scripps Research Institute, La Jolla, CA, USA to develop new strategies for the inhibition of bacterial Quorum Sensing holding a research grant from the German Academic Exchange Service (DAAD). During his postdoctoral research, Dr. Globisch also discovered a small molecule urine biomarker using a metabolomics-mining approach for the neglected tropical disease onchocerciasis within the Worm Institute for Research and Medicine (WIRM).^[1] He started his independent research group at Uppsala University in September 2015 as a Science For Life Laboratory (SciLifeLab) Fellow in the Division of Analytical Pharmaceutical Chemistry at the Department of Medicinal Chemistry.

[1] **D. Globisch**, A. Y. Moreno, M. S. Hixon, A. A. K. Nunes, J. R. Denery, S. Specht, A. Hoerauf, K. D. Janda

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[“*Onchocerca volvulus*-neurotransmitter tyramine is a biomarker for river blindness”](#)