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Tissue specific secretomes – A treasure chest for the identification of disease related marker proteins

Modulations of tissue-specific secretome profiles, triggered by obesity and sedentary lifestyle or influenced by physical activity are supposed to play a crucial role in the development, prevention and therapy of metabolic diseases including type 2 diabetes. The Deutsches Diabetes-Zentrum (DDZ) established an analysis platform to profile tissue specific secretomes and provide secretome profiles for adipose tissue, skeletal muscle and islets. These comprehensive protein maps, available under diabetesprot.org, will help to achieve a deeper understanding for the complex and dynamic interplay of proteins involved in the communication between different tissues and its alteration in disease pathophysiology. The most crucial step to get closer to this goal is utilizing an adequate sample processing. Preparation according to standard operation procedures combined with close quality control is irreplaceable in order to achieve high quality samples suitable for secretome analysis. Next to this, integration of different proteomic profiling techniques (Gel-based and gel-free MS approaches, Multiplex Immunoassays) is necessary to allow a comprehensive characterization of the complex tissue secretomes. Ultimately, this provides a treasure chest of novel tissue-specific secretion products, which potentially can be used for diagnostic or therapy purpose of metabolic disorders.

Biography

Stefan Lehr is a Biologist. He is recognized in the field of Clinical Proteome Research particular for his work on tissue specific secretomes and interorgan communication in the context of metabolic disorders. He has published more than 70 papers in ISI journals with more than 1100 SCI citations and an H-factor of 20.

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