

DBMR Research Conference

Date **March 1 2021, 5 pm – 6 pm**

Title **Mud in the blood: The role of fetuin-A protein-mineral complexes in mineral metabolism**

Speaker **Prof. Dr. Wilhelm E. Jahnen-Dechent, Helmholtz-Institute for Biomedical Engineering, RWTH Aachen University, DE**

Bio: Dr. Jahnen-Dechent graduated as Ph.D. in Biochemistry from the University of Cologne in 1986. He did postdoctoral research at the Plant Cell Biology Research Centre, Melbourne University, at the Joint Protein Structure Laboratory of the Ludwig Institute for Cancer Research and the Walter and Eliza Hall Institute in Melbourne, and at the Department of Plant and Soil Sciences at University of Massachusetts, Amherst. He received his habilitation in Physiological Chemistry and Pathobiochemistry at the Medical Faculty of Johannes Gutenberg University Mainz in 1999. His work centers on the function of fetuin family serum proteins as prototypic blood proteins with high surface activity involved in mineral metabolism, blood coagulation and reproduction biology. Practical consequences of this research include the potential toxicity and clearing of nanoparticles with medical applications, the diagnosis and therapy of calcification disease and fertility control in humans.

Abstract: Mineralization in vertebrates is restricted to bones and teeth. Mineral concentration throughout the body is similarly high and therefore mineralization proceeds once started. For this reason, all other tissues must be actively protected against accidental or pathological mineralization commonly called calcification. Calcification is a frequent bystander phenomenon in dystrophic tissue remodeling. Ectopic calcification results when mineral deposition exceeds clearance, which is common in chronic metabolic and degenerative diseases. We introduced the concept of calciprotein particles or CPP as carriers of otherwise insoluble calcium phosphates. We study their synthesis, metabolism and their role in physiological mineralization and in pathological calcification. Fetuin-A/ α 2-HS glycoprotein is an important regulator of mineralized matrix metabolism and acts as a »mineral chaperone« stabilizing mineral precursors and mediating clearance of excess mineral as protein-mineral complexes.

References:

1. Rudloff S, Janot M, Rodriguez S, Dessalle K, Jahnen-Dechent W and Huynh-Do U. Fetuin-A is a HIF target that safeguards tissue integrity during hypoxic stress. Nature Comm. 2021;12: 549-16.
2. Jahnen-Dechent W, Büscher A, Koeppert S, Heiss A, Kuro-o M and Smith ER. Mud in the blood the role of protein-mineral complexes and extracellular vesicles in biomineralisation and calcification 2020:107577.

Prof. Dr. Wilhelm E. Jahnen-Dechent, has been invited by Prof. Dr. Uyen Huynh

The DBMR Research Conference will take place as a webinar via Zoom.

For those wishing to attend, please use this link

<https://unibe-ch.zoom.us/j/97909036121>

Meeting-ID: 979 0903 6121

or scan the QR code for the details



Next DBMR Research Conference

April 12, 2021

Prof. Dr. Oliver Söhnlein, title to be announced



Department for BioMedical Research DBMR

www.dbmr.unibe.ch

https://twitter.com/dbmr_unibe

u^b

**UNIVERSITÄT
BERN**