

Virtual Symposium;
Zoom

**Wednesday,
June 2nd, 2021
at 13h45**

Co-organized by:

Institute of Biochemistry
and Molecular Medicine,
University of Bern

Department of
Biochemistry,
University of Zurich

Everybody is welcome

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NCCR TransCure

MiniSymposium on divalent metal transporters

Franz Dürrenberger

Head of Chemical and Preclinical Research and Development
Vifor Pharma

Discovery of the ferroportin inhibitor VIT-2763 and its potential therapeutic applications

Systemic regulation of iron metabolism is governed by the peptide hormone hepcidin and its receptor the iron exporter ferroportin (SLC40A1). Binding of hepcidin to ferroportin blocks cellular iron egress and thereby rapidly lowers blood iron levels at an organismal level. The discovery of the small molecule ferroportin inhibitor VIT-2763 (vamifeport) and its efficacy in disease models of hemochromatosis, beta-thalassemia and polycythemia vera will be discussed.

Mitchell D. Knutson

Professor of Nutritional Biochemistry; Food Science and Human Nutrition Department
University of Florida

Iron uptake pathways in the heart, kidney, and brain: current paradigms and new perspectives

Although iron uptake pathways have been well characterized in some cell types (e.g., enterocytes, erythroid cells), the mechanisms mediating iron uptake in most other cell types are less well understood. In this talk, I will discuss known and potential iron uptake pathways in the heart, kidney, and brain under normal physiologic conditions and in the context of iron overload.

Ming Zhou

Professor of Biochemistry and Molecular Biology; Baylor College of Medicine
Houston, Texas United States

Mechanism of iron transport and regulation in ferroportin

Ferroportin is an iron exporter essential for the homeostasis of iron in human. Ferroportin activity is inhibited by a peptide hormone hepcidin and regulated by calcium ions. Mutations that affect ferroportin activity or its sensitivity to hepcidin lead to genetic diseases with the root cause of iron overload in cells. We have determined the structures of ferroportin in complex with hepcidin or with a calcium ion and examined the mechanism iron transport and its inhibition and regulation.

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Program

13h45 Welcome and introduction

14h00 **Franz Dürrenberger**

Head of Chemical and Preclinical Research and Development
bei Vifor Pharma, Switzerland

"Discovery of the ferroportin inhibitor VIT-2763 and its potential
therapeutic applications"

15h00 **Mitchell D. Knutson**

Professor of Nutritional Biochemistry
Food Science and Human Nutrition Department
University of Florida, United States

"Iron uptake pathways in the heart, kidney, and brain: current
paradigms and new perspectives"

16h00 **Ming Zhou**

Professor of Biochemistry and Molecular Biology
Baylor College of Medicine
Houston, Texas, United States

"Mechanism of iron transport and regulation in ferroportin"

16h55 Closing remarks



Baylor
College of
Medicine