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

**Join the Zoom meeting using this link.**

For questions, contact:
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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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Excellence in Membrane Transport Research

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**Program**

| | |
|---|---|
| 13h45 | **Welcome and introduction** |
| 14h00 | **Franz Dürrenberger**<br>Head of Chemical and Preclinical Research and Development<br>bei Vifor Pharma, Switzerland<br><br>"Discovery of the ferroportin inhibitor VIT-2763 and its potential therapeutic applications" |
| 15h00 | **Mitchell D. Knutson**<br>Professor of Nutritional Biochemistry<br>Food Science and Human Nutrition Department<br>University of Florida, United States<br><br>"Iron uptake pathways in the heart, kidney, and brain: current paradigms and new perspectives" |
| 16h00 | **Ming Zhou**<br>Professor of Biochemistry and Molecular Biology<br>Baylor College of Medicine<br>Houston, Texas, United States<br><br>"Mechanism of iron transport and regulation in ferroportin" |
| 16h55 | Closing remarks |

VIFOR PHARMA

UF IFAS UNIVERSITY of FLORIDA

Baylor College of Medicine

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