

Mo 28. January 2019
Time: 17:00 h

Departement of
Biomedical Research
(DBMR)

Murtenstr. 35, 3008
Bern, Room H810

Everybody is welcome

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Jan Loffing
is Professor at the
Institute of Anatomy,
University of Zürich (CH)

This lecture is hosted by
Prof. Hugues Abriel
(IBMM)

NCCR TransCure Lecture in Biology by Jan Loffing

The renal distal convoluted tubule: Key player in ion homeostasis and blood pressure control

The distal convoluted tubule (DCT) is a rather short but important nephron portion in the mammalian kidney. The DCT has a very high sodium (Na^+) transport capacity and hence contributes significantly to the maintenance of extracellular volume and arterial blood pressure. Moreover, the DCT is involved in the fine-tuning of renal potassium (K^+), calcium (Ca^{2+}), and magnesium (Mg^{2+}) excretion. Na^+ transport across the DCT depends on the activity of the thiazide-sensitive NaCl cotransporter (NCC). The relevance of the DCT and NCC is evidenced by genetic diseases (e.g. Gitelman syndrome, Gordon syndrome) in which an altered NCC activity profoundly impacts on ion homeostasis and blood pressure. In recent years, significant progress was made regarding the identification of the hormonal systems and the molecular mechanism regulating DCT and NCC function. The talk will focus on these regulatory mechanisms and will highlight their key role for ion balance and blood pressure.