TRR 374 RENPRO

Regensburg **E**rlangen **N**ephrology **PRO**gram

Seminar



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Title:
Metabolite Sensing in the Renal Niche

The kidney is metabolically one of the most highly organized organs in the human body. But metabolism does more than provide energy: emerging evidence suggests that the local metabolic microenvironment actively instructs cellular identity, injury and repair. In this lecture spatial metabolomics and isotope-based metabolic flux analysis will be deployed to reveal these metabolic niches at near-cellular resolution. Following acute kidney injury, persistent mitochondrial dysfunction creates a profoundly altered metabolite field, characterized by accumulation of metabolites such as succinate and remodeling of membrane lipids. These changes can influence epigenetic regulation, cellular repair programs and susceptibility to ferroptosis. Extending these observations from experimental models to human donor kidneys and ex vivo kidney perfusion, the lecture will explore the concept that metabolites are not merely biomarkers of kidney injury, but may also be instructive signals that determine whether the kidney successfully repairs or progresses toward chronic disease.

Time: **Monday, November 23rd 2026**
04:00 p.m.

At: Uniklinikum Erlangen
Oberer Hörsaal Pathologie
Krankenhausstraße 8 – 10
91054 Erlangen

and online via **Zoom**

For further information and to receive the Zoom link please contact:
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