PD Dr. Nikolaus Berndt



Group leader Metabolic and Biophysical Simulations in Systems Medicine – German Heart Center of Charité – Charité Berlin

Role in LiSyM-Cancer

- Project leader in DEEP-HCC
- Application of kinetic models to HCC and liver zonation

Expertise

- Expert in metabolic modeling of different organ systems like neuronal tissue, liver and heart
- Large scale, molecular resolved kinetic models of central liver metabolism, tissue models of liver metabolism coupling the kinetic models with structural and blood flow models, structural models of hepatic lipid droplet metabolism as well as kinetic models of short-term hormonal signaling

Publications

2026-01-09	Modeling the dynamics of hepatic metabolism: the predominance of 12-hour rhythmicity in metabolic adaptation	*Cellular and Molecular Life Sciences*
2025-05-27	Patient-specific effects of metformin on the hepatic metabolism in adolescents with metabolic dysfunction-associated steatotic liver disease (MASLD)	*Journal of Molecular Medicine*
2025-02-26	Assessing customized multivalent chemokine-binding peptide treatment in a murine model of coxsackievirus B3 myocarditis	*Basic Research in Cardiology*
2024-10-18	Beyond hemoglobin: Critical role of 2,3-bisphosphoglycerate mutase in kidney function and injury	*Acta Physiologica*
2024-10-01	Pregnancy alters fatty acid metabolism, glucose regulation, and detoxification of the liver in synchrony with biomechanical property changes	*Heliyon*
2023-12-01	Hepatocellular loss of mTOR aggravates tumor burden in nonalcoholic steatohepatitis-related HCC	*Neoplasia*
2022-09-21	Alterations of Central Liver Metabolism of Pediatric Patients with Non-Alcoholic Fatty Liver Disease	*International Journal of Molecular Sciences*