

Research Project

NCCR kidney.ch Nutrients and Metabolism

Project funded by own resources

Project title NCCR kidney.ch Nutrients and Metabolism

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Organisation / Research unit

Departement Pharmazeutische Wissenschaften / Molecular and Systems Toxicology (Odermatt)

Project Website <http://www.nccr-kidney.ch/>

Project start 01.08.2010

Probable end 31.07.2014

Status Completed

We investigate the impact of reduced renal mass (unilateral nephrectomy) on the homeostasis of L-arginine (Prof. F. Verrey, University of Zürich), glucocorticoids (Prof. A. Odermatt, University of Basel), bile acids and drugs (Prof. G.A. Kullak-Ublick, University of Zürich) using cell and rodent models and taking advantage of complementary expertises in physiology (F. Verrey), toxicology (A. Odermatt), and clinical pharmacology (G.A. Kullak-Ublick). These studies will yield important knowledge about the effect of reduced kidney mass on the renal and hepatic metabolism of three classes of organic molecules known to impact on body metabolism and blood pressure control.

Furthermore, we investigate the impact of reduced renal mass (unilateral nephrectomy) on main metabolic functions of the body taking advantage of established rodent models and the complementary expertise of basic (Prof. J. P. Montani, University of Fribourg, Prof. A. Odermatt) and clinical (Dr. D. Konrad, University of Zürich) scientists. We test the hypothesis that a loss of renal tissue may worsen or even induce a metabolic syndrome. Together with the results from project 1, the studies may provide novel insights into a yet not well understood cross-talk of the kidney with other metabolically active organs. The studies will also contribute to the long-term risk assessment of unilateral nephrectomy.

Keywords kidney, metabolism, nutrients, drugs, physiology, toxicology

Financed by

Other funds

Add publication

Published results

984366, Odermatt, Alex, The Western-style diet : a major risk factor for impaired kidney function and chronic kidney disease, 0002-9513, American journal of physiology. Renal Physiology, Publication: JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

2237794, Sorensen, Mads V.; Grossmann, Solveig; Roesinger, Marian; Gresko, Nikolay; Todkar, Abhijeet P.; Barmettler, Gery; Ziegler, Urs; Odermatt, Alex; Loffing-Cueni, Dominique; Loffing, Johannes, Rapid dephosphorylation of the renal sodium chloride cotransporter in response to oral potassium intake in mice, 0085-2538 ; 1523-1755, Kidney International, Publication: JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

2291943, Penno, C. A.; Arsenijevic, D: Da Cunha; Kullak-Ublick, G. A.; Montani, J.-P.; Odermatt, A., Quantification of multiple bile acids in uninephrectomized rats using ultra-performance liquid chromatography-tandem mass spectrometry, 1759-9660 ; 1759-9679, Analytical Methods, Publication: JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

Add documents

Specify cooperation partners

ID	Kreditinhaber	Kooperationspartner	Institution	Laufzeit - von	Laufzeit - bis
2356601	Odermatt, Alex	Pasch, Andreas	University Hospital Berne	01.01.2013	31.07.2018
2356608	Odermatt, Alex	Kullak-Ublick, Gerd	University Hospital Zürich	01.01.2013	31.12.2014
2356610	Odermatt, Alex	Loeffing, Jan	University of Zürich	01.01.2013	31.12.2014