The succinate receptor as a key regulator in renal damage

Clinical relevance

The succinate receptor SUCNR1 (also called GPR91) is a G protein coupled receptor that acts as a local sensor of disturbed metabolism. This receptor recently emerged as a key player in sensing local disturbances in a tissue's metabolism and mediating adaptive responses to these conditions. As such, we believe SUCNR1 and its ligand succinate is an important novel intermediate in the damage/repair in renal damage and hypertension.

Background

We recently identified SUCNR1 as an important regulator of renal sodium transport under physiological conditions, as it controls the renin-angiotensin-aldosterone system (RAAS). To identify its role in renal damage due to a high-sodium and high fat diet, we subjected both wildtype and SUCNR1 knockout mice to these diets for increasing time periods, after which kidneys, urine and plasma were collected.

Goals

In this internship we want to answer the following question:

- Do the diets have different effects in wildtype mice compared to SUCNR1 knockout mice?

To answer this question, this project will focus on determining changes in renal sodium transporters, components of the RAAS and relevant markers of renal damage.

Techniques

This internship will allow you to learn and apply several techniques such as:

- Immunohistochemistry
- Microscopy
- Realtime-PCR
- Westernblotting

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