Title: Investigating the influence of age and transporter genotypes on coproporphyrin levels in healthy children

Description: Coproporphyrin I (CPI) and CPIII have been identified as suitable endogenous biomarkers for assessing OATP1B transporter activity. While the utility of those two isomers as biomarkers in adults is subject of ongoing studies in the field, CP levels in children have never been addressed.
The aim of this research project is to investigate whether CPs are also applicable as biomarkers of OATP1B1-function in children. Therefore, serum and urine samples are being collected from healthy children as part of a clinical study in collaboration with the Clinical Pharmacy at the UKBB (University Children's Hospital Basel). Each sample will then be measured for its CPI and CPIII content by UHPLC-MS/MS. In addition each individual will be genotyped for genetic variants within transporter genes involved in the handling of coproporphyrins. Currently this is known for *SLCO1B1*, *SLCO1B3* and *ABCC2* encoding for the Organic Anion Transporting Polypeptide 1B1 (OATP1B1), OATP1B3 and the Multidrug resistance-associated protein 2 (MRP2), respectively. The observed variants will be used to predict the OATP1B1, OATP1B3 and MRP2 phenotypes of the respective individual. Further, genotype predicted phenotypes will be connected to CP levels of the children, to examine whether there are any links between transporter phenotypes and coproporphyrin levels. This project combines clinical sample management with different laboratory methods including genotyping (DNA extraction, real-time PCR) as well as solid phase extraction and UHPLC-MS/MS measurements in different matrices.

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