CLSA Approved Project

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Project Title
Genetic Determinants of Metabolites and their Effect on Common Disease

Project Summary
Metabolites are biomarkers that can be particularly helpful for understanding disease physiology because they can be measured en masse and allow for data-driven identification of the biomarkers. Many of these metabolites have genetic determinants, which can be assessed through genome-wide association studies, which seek to understand what the genetic determinants of biomarkers like metabolites are. Then a simple question can be asked, "Do the genetic determinants of these metabolites influence disease outcomes". The advantage of this study design is that genetic alleles are randomly assigned, like in a randomized controlled trial and this randomization can help to better understand whether these metabolites play a causal role in disease risk. Both of our objectives are data driven objectives. They are not hypothesis-driven objectives and thus we will be able to identify roles for metabolites that had not previously been suspected.

Keywords
Genome Wide Association Study, Metabolomics, Mendelian randomization