

Filename: GC_Metadata_mx176318.xlsx

Project summary:

Metformin, a biguanide molecule, which is used as first line therapy for type 2 diabetes. In this study, we would like to investigate the inhibition of an enzyme called diamine oxidase (DAO) (also known as ABP1), by metformin. Based on our preliminary in vitro study using diamine oxidase enzyme, we saw increased level of putrescine with increasing metformin concentrations (see reference PMID: 26335661). This proposed in vivo study was to determine whether metformin could increase putrescine levels and other metabolites in mice. Aminoguanidine, a known inhibitor of DAO, in this study as positive control, following similar study design described in this paper (PMID: 8912017).

Treatment summary:

Twenty (20) adult rats (male, weighing approximately 200g) were randomized by body weights and assigned to five treatment groups (saline, aminoguanidine (positive control), 3 different oral doses of metformin). Before treatment, rats were starved for 24 hours. On treatment day, saline or aminoguanidine or metformin will be given to the rat. After 1 hour of treatment, blood was collected from the portal vein. Blood from the portal vein was cannulated with a fine syringe and blood was aspirated. Blood was spun down and plasma was collected and stored in -80. Urine was collected from bladder after 1 hour. Tissues (liver, kidney, intestine) were collected at the end of 1 hour. Only duodenum and ileum were used for metabolomics analysis. This study was conducted under the auspices of approved IACUC procedures in MuriGenics, Inc (Vallejo, CA).