**Effect of dietary soluble fiber on mouse liver transcriptome**

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The American Heart Association currently encourages a diet rich high in soluble and insoluble fiber to promote healthy bowel movements and weight management. However, previous studies have demonstrated that a diet high in soluble fiber (inulin) promotes liver cancer in mice. Furthermore, irritable bowel syndrome is associated with deficient levels of toll-like receptor 5 (TLR5), which binds to gut bacteria. The effect of inulin on liver cancer depends on the presence of gut microbiota, thus this experiment will use wild type C57BL/6 and TLR5 knock-out mice to explore what transcriptional changes occur in the liver after a month of this diet. RNA sequencing (Illumina HiSeq 4000) will be performed in biological triplicates of wild type, knock-out mice susceptible to liver disease (indicated by high bilirubin levels), and knock-out mice resistant to liver disease (normal bilirubin levels).

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