

BCH 252 Seminar Series



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**Seminar Title: “Long non-coding RNA Gm47283
regulates diet induced obesity in adipose
macrophages”**

Abstract: Obesity is a global epidemic, leading to increased incidence of comorbidities such as cardiovascular disease, type II diabetes and stroke. Sex differences are prevalent in obesity mediated comorbidities, with men being more likely to be affected than women. Chronic inflammation drives obesity pathogenesis, with macrophages playing an important role. Previous work in our lab demonstrated the effect of macrophage-produced RELMa in protecting female mice from obesity induced by a high-fat diet. Single cell RNA sequencing from adipose tissue stromal vascular fraction (SVF) revealed an increase in average transcript count of long noncoding RNA, Gm47283 in HFD RELMa KO female mice versus Ctr. Gm47283 also known as Erythroid Differentiation Regulator 1 (Erdr1), was enriched in specific regions of the gene in KO females. RNA scope of visceral adipose tissue sections confirmed increased expression of Gm47283 in KO females but also increased colocalization with the nucleus. I also used lentiviral overexpression experiments to verify the effect of free fatty acids on Gm47283 expression in BMDM and its relationship with Relma. QPCR preliminary data revealed that the changes in expression of Gm47283 and Erdr1 were not consistent, suggesting that the two play different roles. In conclusion, our data suggests that RELMa potently downregulates Gm47283, with future research investigating whether Gm47283 is a downstream effector of RELMa.

Tuesday, April 29th, 2025 12:00 p.m. - 12:50 p.m. PST

In-Person: Genomics Auditorium 1102A

Host: Dr. Meera Nair / Gregor Blaha