

**CBCB
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bioinformatics.udel.edu

BIOINFORMATICS SEMINAR

CONGYU LU

PhD Student, Department of BISC UNIVERSITY OF DELAWARE

THE ROLE OF ADAM9 IN COLORECTAL CANCER

Colorectal cancer (CRC) is one of the most aggressive and common human cancers in the United States. Aberrant activation of Wnt signaling pathway is responsible for oncogenesis of over 80% of colorectal cancer. We found that knockdown of ADAM9, an ADAMs protein that has crucial functions in various types of cancers, can not only reduce the canonical Wnt signaling, but also reduce cancer cell migration in colorectal cancer cells. To further explore the role of ADAM9 in CRC, we used an RNA-Seq approach to investigate the differentially expressed genes between the ADAM9 knockdown and control colorectal cancer cells. PI3K-AKT signaling pathway was found to be significantly enriched by differentially expressed genes and further analysis revealed a critical role for ADAM9 in regulating mTOR activity.

JOSE DANIEL CHAZI CAPELO

PhD Student, Department of AFS UNIVERSITY OF DELAWARE

AN ONLINE MICROBIAL DATA MANAGEMENT SYSTEM TO UNCOVER THE HORSE GUT MICROBIOME

Horses are uniquely sensitive to dietary change and prone to dysbiosis related to conditions such as colic and laminitis, thus the gut microbiome plays a key role in supporting and regulating homeostasis in the horse. While specific parameters of the “healthy microbiome” remain to be defined, microbial community profiling techniques have enormously contributed to identifying alterations between healthy and unhealthy microbiomes. The Equine Microbiome Project seeks to uncover the roles that gut microbes play in health, nutrition, immunity, and disease in diverse contexts for the horse. To understand these effects, over 200 horse owners have donated fecal samples and have reported metadata about medical health history and diet habits. Fecal samples have been analyzed using the 16S rRNA technique and a custom bioinformatics pipeline. Concurrently, an entity-relationship model was designed to integrate and store the information of meta-analyses in a publicly accessible online database.

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