



BIOINFORMATICS SEMINAR

CONGYU LU

Graduate Student, UNIVERSITY OF DELAWARE

ADAM9 DIFFERENTIALLY REGULATES Wnt AND mTOR SIGNALING DOWNSTREAM OF Akt IN COLORECTAL CANCER CELLS

The disintegrin and metalloproteinases (ADAMs) have long been associated with diseases such as cancer and arthritis. Among all the ADAMs, transmembrane ADAMs have been implicated in tumor progression and have emerged as new targets for cancer therapy. Previous research in our lab suggests that ADAM9, a transmembrane ADAMs that is highly expressed in many types of solid tumors, promotes colorectal cancer (CRC) progression. In this study, to better understand the role ADAM9 plays in colorectal cancer and provide guidance for targeting it as a novel approach of cancer treatment, we investigated the underlying mechanism of how ADAM9 regulates colorectal cancer using RNA-seq. We found that ADAM9 differentially regulates Wnt and mTOR signaling downstream of Akt in colorectal cancer cells.

BIOGRAPHY

Congyu Lu is currently pursuing a PhD in Bioinformatics Data Science. He works as a research assistant in Dr. Shuo Wei's lab in the department of Biological Science. He obtained a master's degree in Biological Science at University of Delaware in 2018. His current research is focused on investigating the role of ADAM9 in colorectal cancer using transcriptomic and proteomic analyses.

JONATHAN HICKS

Graduate Student, UNIVERSITY OF DELAWARE

DNA METHYLATION PATTERNS IN BLOOD CELLS OF CHILDREN WITH CEREBRAL PALSY AND EPILEPSY SHOW CONSERVED AND IDENTIFIABLE PATTERNS WITH POTENTIAL DIAGNOSTIC CAPABILITY

Spastic cerebral palsy, with a prevalence of 1 in 345 children, is a disease characterized by abnormal gait and stiffness in motion. This disease often comes with a severe decrease in quality of life. It has been shown that a hypoxic-ischemic event or other perinatal trauma is the genesis of cerebral palsy, and can be associated to sustained epigenetic alterations. In patients with cerebral palsy, epilepsy is very frequently a comorbidity and is believed to share epigenetic changes with cerebral palsy. Illumina MethylationEPIC is used in this study to assess methylation changes to the genome of subjects with cerebral palsy and epilepsy. These methylation changes are then implemented into machine learning algorithms and a diagnostic tool is developed.

BIOGRAPHY

Jonathan Hicks is a PhD student in the Bioinformatics and Computational Biology program. He conducts research under Dr. Akins at Nemours Children's Health in Wilmington. Jonathan obtained his bachelors from Purdue University in Biomedical engineering where he worked on pharmaceutical development. Jonathan's current research is in epigenetic patterns of cerebral palsy and epilepsy, and their use as a diagnostic tool in the pediatric population. His long-term goal is to implement machine learning algorithms to the medical community

CBCB SEMINAR

5/2/2022

3:30-4:30PM

AP BioPharma

Room 140

(590 Avenue 1743)

or via ZOOM:

<https://udel.zoom.us/j/93068494454>

(Passcode: BINP)

bioinformatics.udel.edu

