

Summer Research Program 2025 – Projects

Project #10

Title: Validation of the Functional Role of Long Noncoding RNAs (lncRNAs) Identified from a CRISPR-Cas9 Screen in Breast Cancer

Description: Breast cancer is the second most common cancer type around the world underscoring a need for better understanding of breast cancer and the development of novel diagnostic and therapeutic strategies. While only 2% of the human genome encodes for protein, almost 93% of the entire genome could actively be transcribed, suggesting a role for various noncoding RNAs in regulating various physiological and pathological processes. In current study, we aim to use CRISPR-Cas9 genome editing technology and functional validation using Antisense Oligonucleotides (ASOs) to understand the role of lncRNAs in breast cancer and their potential utilization as disease biomarkers and therapeutic targets. This project will involve multiple techniques including bioinformatics, next generation sequencing, cell and molecular biology technologies.

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