

Summer Research Program 2025 – Projects

Project #11

Title: Identifying tumor-specific targets for cancer treatment using CRISPR/Cas9

Description: Cancer affects one in five people globally, resulting in approximately 10 million deaths annually. In response, efforts to reduce cancer-related deaths have driven the rapid development of novel treatments to more precisely target cancer cells and prevent metastasis.

This project addresses a key challenge in cancer therapy; the identification of highly tumor-specific targets that play crucial roles in cancer hallmarks including sustained proliferation, resistance to cell death, invasion and evading immune destruction.

Using CRISPR/Cas9 gene editing technology, we will manipulate the expression of novel candidate tumor targets and evaluate potential therapeutic effects on cancer cell survival and progression. Phenotypic changes will be assessed through functional analyses such as proliferation, cytotoxicity and apoptosis assays, as well as cancer cell stemness and immune cell characterization.

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Project workflow

