Research interests

My research work focusses on Cancer biology and Cancer therapeutics. Majorily, the research projects are directed towards Pancreatic Ductal Adencarcinoma (PDAC) and tumors of the Lymphoid organs. Our work in the PDAC project has led to the development of an aggressive murine Gentically Engineered Mouse Model (GEMM) which expresses mutant Kras G12/D gene and human Thymidylate Synthase (TS) gene.We have been working with different therapeutic modalities to target PDAC tumor viz., novel TS inhibitors, Myxoma virus treatment and as well as targeting by Nano-particles.

The Lymphoid tumor project has a GEMM model where p16 gene has been knocked out and the human Thymidylate Synthase (TS) gene has been activated.The p16 is a major tumor suppressor gene and its homozygous mutation is found in multiple tumor types. This model develops tumors of the lymph organs and sarcomas. We have been treating these mice with Lenti virus TS shrNAs as a treatment modality. Our aim is to understand the mechanisms of tumor initiation and development and to develop novel drugs that taget these tumor types.