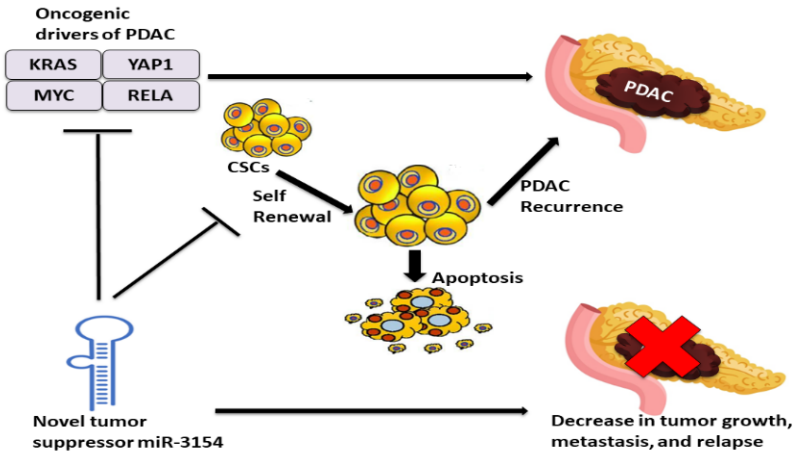
A novel tumor suppressor miRNA-3154 attenuates Pancreatic Ductal Adenocarcinoma (PDAC) through inhibiting Cancer Stem Cells (CSCs) propagation by targeting multiple oncogenic drivers YAP1, KRAS, MYC and RELA

Principal Investigator
Dr. Naveen Kumar Perumal
Assistant Professor (Sr.)
School of Biosciences and Technology (SBST)

Graphical Abstract:



Project Description:

Pancreatic ductal adenocarcinoma (PDAC), the most aggressive form of pancreatic cancer, has a 5-year survival rate below 10%. Although rare in India, its incidence is expected to rise due to lifestyle factors like obesity and smoking. Current treatments are ineffective, highlighting the need for multi-target therapies to improve outcomes.

The current study involves developing a new miRNA-based therapeutic approach for targeting potential oncogenic drivers of PDAC such as YAP1, KRAS, MYC and RELA that promote Cancer Stem Cells, using a novel miR-3154. We have a two-part approach to study the therapeutic usage of miR-3154 for PDAC. First, to unravel the impact of miR-3154 expressional variation on PDAC using stable inducible cell lines. Then, accentuating the mechanistic inhibitory action of miR-3154 on PDAC CSCs mediated tumor progression and recurrence.

Products/ Instruments/ Results/ Outreach Activities

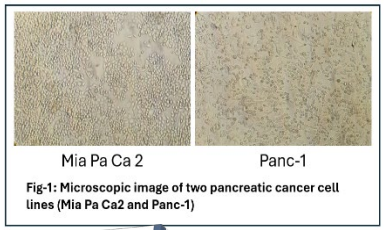


Fig-1: Microscopic image of two pancreatic cancer cell lines (Mia Pa Ca2 and Panc-1)

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Science and Engineering Research Board (SERB)

Name of the Scheme
Start-up Research Grant (SRG)

Sanctioned Amount (in Rupees)
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Duration of the Project (years)
2