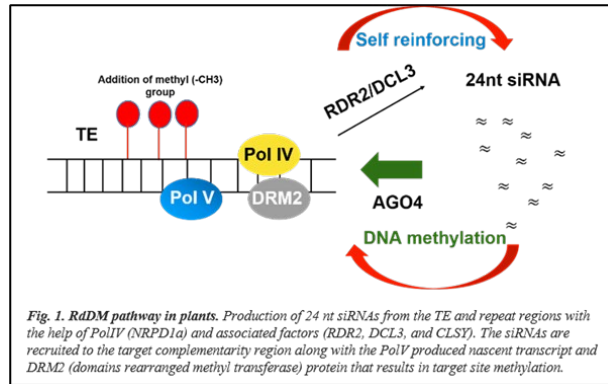


# Deciphering the Role of Small RNAs in Transposon Silencing during Male Gametophyte Development in Rice

## Graphical Abstract/ Lavout



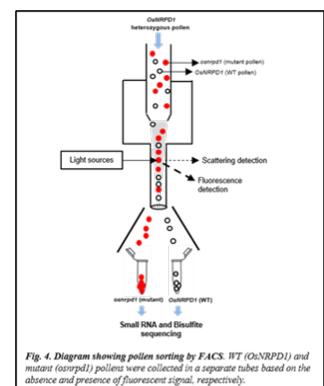
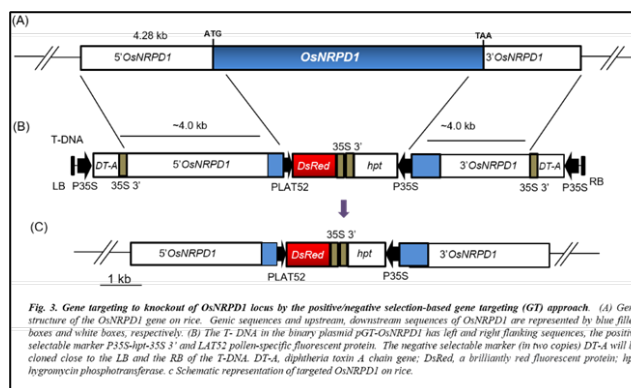
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## Project Description

Small RNA plays an important role in reinforcing transposable elements (TEs) silencing during epigenetic reprogramming in pollen development. Small RNAs are classified into miRNA and siRNA based on their origin and mode of action. In this project, in order to identify the importance of siRNAs in transposon silencing and genome integrity during pollen development, *Pol IV/OsNRPD1* gene will be specifically knock-out in rice using a homologous recombination-mediated gene targeting approach. The heterozygous *OsNRPD1* line will be used to sort out the WT and *osnrpd1* knock-out pollens. *OsNRPD1* gene expression is not limited to pollen, but we would like to study their activity specifically during pollen development. Overall, this study would provide a good platform to expand our understanding of small RNAs and DNA methylation-mediated TE regulation and its importance in reproduction and seed development.

## Products/ Instruments/ Results/ Outreach Activities



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**Name of the Funding Agency**  
Department of Science and Technology  
(DST)  
**Name of the Scheme**  
Startup Research Grant (SRG)  
**Sanctioned Amount (in Rupees)**  
Rs. 26,24,032  
**Duration of the Project (years)**  
2