

## CHAPTER 47

### PLANT MOLECULAR BIOLOGY

#### Doctoral Theses

535. GOGOI (Nabanita)  
**Molecular Interactions between Sri Lankan Cassava Mosaic Virus and Two Experimental Hosts; Nicotiana Benthamiana and Arabidopsis Thaliana.**  
Supervisor : Prof. Indranil Dasgupta  
Th 21253

#### *Contents*

1. Review of literature 2. Mutational analysis of two complementary sense genes of Sri Lankan cassava mosaic virus 3. Evaluation of hairpin RNA producing constructs for RNAi- mediated resistance to SLCMV infection in nicotiana benthamiana plants 4. Analysis of tissue tropism of recombinant SLCMV constructs and evaluation of SLCMV genome based transient gene expression systems 5. Analysis of infectivity of SLCMV agroinfectious clones in arabidopsis thaliana mutants defective in RNA silencing 6. Summary and conclusions. References and appendices.

536. KANWAR (Poonam)  
**Functional Analysis of CBL-CIPK Network in Rice and Arabidopsis.**  
Supervisor : Prof. Anil Grover  
Th 21215

#### *Contents*

1. Comprehensive structural, expression and interaction analysis of rice CBLs and CIPKs 2. Functional characterization of CBL-interacting protein kinase 9 (CIPK9) and its interactor, VDACC3 in oxidative stress signaling 3. Functional characterization

of CBL-interacting protein kinase 21 (CIPK21) in osmotic and salt stresses in arabidopsis 4. Summary and conclusions 5. References and annexure.

537. KULWINDER KAUR  
**Development of Transgenic Lines in Rice for Male Sterility.**  
 Supervisor : Prof. Madan Mohan  
Th 21255

*Contents*

1. The barnase-barstar system- An introduction 2. Identification of a selectable marker gene for both in vitro and in field selection of transgenic rice 3. Development of transgenics in the rice with barnase gene constructs and their analysis. Annexures, Summary and conclusions. Bibliography.

538. MISHRA (Ratnesh Chandra)  
**Rice ClpB/Hsp100 Proteins: Function and Regulation Biology.**  
 Supervisor : Prof. Anil Grover  
Th 21333

*Contents*

1. Review of literature 2. Materials and methods 3. Results and discussion 4. Summary and conclusions. Literature cited and appendix.

539. SINGH (Amarjeet)  
**Comprehensive Analysis of Rice Phospholipases and Protein Phosphatases and Functional Role of Rice OsPP108 an Arabidopsis AP2C1 Protein Phosphatases.**  
 Supervisor : Dr. Girdhar K. Pandey  
Th 21251

*Contents*

1. Review of literature 2. Materials and methods 3. Results 4. Discussion 5. Summary and conclusions. References and appendix.

540. SINGH (Raj Kumar Mohan)  
**Methylome Profiling During the Anther Development in Rice.**  
 Supervisors : Dr. Sanjay Kapoor and Dr. Meenu Kapoor  
Th 21254

1. Review of literature: DNA methylation patterns: Methodologies of methylome profiling and influence of DNA methylation on Gene Expression 2. Materials and methods 3. Results 4. Discussion. References and Appendix.

541. SHARMA (Malini)  
**Identification and Characterization of Gene Regulatory Mechanisms that Contribute to Male Gametophyte Development in Rice.**  
Supervisor : Dr. Sanjay Kapoor  
Th 21334

*Contents*

1. Review of literature: Transcriptional regulatory elements in eukaryotes 2. Materials and methods 3. Results 4. Discussion and conclusions. References.

542. YADAV (Akhilesh Kumar)  
**Comprehensive Analysis of Rice Calcium Transporters and Functional Role of Cation Transporters in CBLs-CIPK9 Regulated Low Potassium Signaling in Arabidopsis.**  
Supervisor : Dr. Girdhar K. Pandey  
Th 21252

*Contents*

1. Review of literature 2. Materials and methods 3. Results and discussions 4. Summary and conclusions. References. List of publications