

## CHAPTER 7

### BOTANY

#### Doctoral Theses

033. PATHAK (Monika)  
**Molecular Cloning, Expression and Characterization of Peanut Lectin SL-I and Analysis of Lipopolysaccharides of Mesophizobium sp. Rcd301 Mutants.**  
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#### *Abstract*

The actual in vivo ligand of plant lectins remains enigmatic. Whatever role(s) lectins may play, the proposed function(s) have to be compatible with their distribution among the different organs and tissues, subcellular localization and changes during the plant life cycle. The vegetative tissue lectins found in bark, stem, leaf, flower, and root are less characterized in comparison to their seed counter part. Studies concerning such vegetative tissue lectins that are developmentally expressed in various plant tissues are crucial and may aid in outlining the biological function of the lectins. Peanut (*Arachis hypogaea*) vegetative tissue lectin SL-1, is differentially expressed in the various tissues of the plant, and thus may constitute a conceited experimental system. Native SL-L (nSL-1) is a glycoprotein with a submit molecular mass of 31 kDa and the sugar specificity for  $\alpha$ -methyl mannoside. The main objectives of the present study included identification and sequencing of the gene coding for SL-1, cloning and expression of SL-1 gene, deciphering the biological significance of lectin SL-1.

#### *Contents*

1. Introduction 2. Materials and Methods. 3. Characterisation and Expression. 4. Identification & Characterization of Mutants in *Mesorhizohium Ciceri* Rcd301. 5. Summary and Conclusion. Bibliography and Appendix.