# CHAPTER 32

# MEDICAL SCIENCES
# BIOCHEMISTRY

## Doctoral Theses

362. DIKSHIT (Piyush)
**Biochemical Studies on Antidiabetic Effect of Central Part of Stem of Musa. Sapientum.**
Supervisors: Dr. Rimi Shukla, Prof. Jaswinder K. Gambhir and Dr. Vibha Tandon
Th 20138

*Contents*

1. Introduction and review of literature. 2. Aims and objective. 3. Materials and methods. 4. Prelimnary studies with stem of Musa Sapientum. 5. Antihypocholesterolemic and antioxidative effect of AqMS. 6. Isolation and characterization of antidiabetic compounds. 7. Studies on mechanism of action of MSH-3. 8. Toxicity assessment and safety profile of MSH-3. Summary and conclusion. References and annexure.

363. SHUKLA (Kirtikar)
**Biochemical Studies on Antidiabetic Effect of Fruit of Withania Coagulans.**
Supervisor : Prof. Jasvinder K. Gambhir
Th 20137

*Contents*

1. Introduction and review of literature. 2. Aims and objectives. 3. Materials and methods. 4. Preliminary study on antihyperglycemic and antihyperlipidemic effects of water extract of fruit of withania coagulans. 5. Purification and isolation of active antihyperglycemic component from water extract of fruit of withania coagulans. 6. Mechanism of action of antihyperglycemic effects of active component (aqWCFIId) ilosated from aqWC. 7. Toxicity studies of active component (aqWCFIId). 8. Summary, conclusions and bibliography.

364. SHUKLA (Santosh Kumar)
**Molecular and Immunohistochemical Studies on Cardioprotective Mechanism (S) of Terminalia Arjuna (TA) and Eugenia Jambolana (EJ) in Ischemic Model of Myocardial Infarction : An Experimental Study.**
Supervisors : Dr. Suman Bala Sharma, Dr. Shridhar Dwivedi and Dr. Usha Rani Singh
Th 20135

*Contents*

1. Introduction. 2. Review of literature. 3. Aims and objectives. 4. Materials and methods. 5. Induction of experimental myocardial ischemia. 6. Experimental groups and treatment protocol. 7. Estimation of oxidative stress parameters. 8. Estimation of cardiac markers. 9. Assessment of pro-inflammatory cytokines. 10. Histopathological studies. 11. Determination of myocardial apoptosis and necrosis. 12. Statistical analysis. 13. Results. 14. Discussion. 15. Summary and conclusions. 16. Bobliography. 17. Publications.

365. SINHA (Rajesh)
**Functional Analysis of mce 1A and mce 4A genes of M. tuberculosis H37 Rv Using Overexpression Approach.**
Supervisors : Prof. H. G. Raj, Prof. Mridula Bose and Prof. Ashok K. Prasad
Th 20136

*Contents*

1. Introduction. 2. Review of literature. 3. Cloning and overexpression of mce1A (RvO169) and mce4A (Rv3499c) genes of M. tuberculosis H37Rv in suitable shuttle and expression vectors and purification of the proteins. 4. To assay for the putative cholesterol binding activity of the overexpressed Mce1A and Mce4A proteins of M. tuberculosis H37Rv. 5. Effect of overexpression of mce4A and mce1A genes on the expression of other genes of M. tuberculosis. 6. Comparative analysis of survival of wild type M. tuberculosis H37Rv with recombinant M. tuberculosis H37Rv overexpressing McelA and Mce4A, in mouse model. Summary and conclusions. References and appendix.