

## CHAPTER 43

### PHARMACY AND PHARMACOLOGY

#### Doctoral Theses

506. KONDIBA (Pawar Pravin)  
**Studies on Ocular Formulations of Fluoroquinolone.**  
Supervisor : Dr. D. K. Majumdar  
Th 16873

#### *Abstract*

Attempts to prepare aqueous ophthalmic formulations of moxifloxacin and study its permeation characteristics through freshly excised goat, sheep and buffalo corneas. Aqueous isotonic ophthalmic solutions of moxifloxacin hydrochloride of different concentrations (pH 7.2) or 0.5% (w/v) solutions of different pH or 0.5% solutions (pH 7.2) containing different preservatives are made. Permeation characteristics of drug permeated in the receptor (containing 10 mL bicarbonate ringer at 37°C under stirring) by spectrophotometry at 291 nm, after 120 minutes. The results shows that moxifloxacin 0.5% ophthalmic solution (pH 7.2) containing BAK (0.01%) and EDTA (0.01%) provides increased in vitro ocular availability through goat, sheep, and buffalo corneas without causing any corneal damage.

#### *Contents*

1. Introduction. 2. Effect of formulation factors on vitro permeation of moxifloxacin from aqueous drops through excised goat, sheep, and buffalo corneas. 3. In-vitro permeation characteristics of moxifloxacin from oil drops through excised goat, sheep, buffalo and rabbit corneas. 4. Stability studies of aqueous and oily ophthalmic solutions of moxifloxacin. 5. Design and evaluation of moxifloxacin hydrochloride ocular. 6. Summary and conclusions. Bibliography.

507. NIDHI  
**Interaction of melatonin and Other Antioxidants With Certain Anti - Epileptic Drugs for Cognitive Dysfunction During Experimental Epileptogenesis.**  
 Supervisors : Dr. K. K. Sharma and Dr. Pramod K. Mediratta  
Th 16872

*Abstract*

The present study has investigated anticonvulsant activity and derangement of cognitive functions produces by lamotrigine, topiramate and oxcarbazepine alone and also produces by maximal electroshock (MES) - induced convulsions in mice. Further, per se effect of the above antiepileptic drugs, viz. lamotrigine, topiramate and oxcarbazepine alone and in combination with melatonin, alpha lipoic acid are evaluated on cognitive function and also on epileptogenesis as well as the consequently deranged PTZ-kindling induced cognitive function in mice. Additionally oxidative stress is also evaluated in brains PTZ-kindled animals.

*Contents*

1. Introduction. 2. Aims and objectives. 3. Review of literature. 4. Materials and methods. 5. Results. 6. Discussion. 7. Summary and conclusions. Bibliography.

508. SHARMA (Ashish Kumar)  
**Evaluation of Cardiovascular Complications With Markers in Streptozotocin Induced Insulin Resistant Type-2 Diabetes and Investigation of Potential New Pharmacological Interventions.**  
 Supervisor : Prof. B. P. Srinivasan  
Th 16870

*Abstract*

The present work studies, cardiovascular complications in streptozotocin induced insulin resistance type 2 diabetic rats were assessed by suitable biochemical markers (i.e Von Willebrand Factor (vWF) & Plasminogen Activator Inhibitor-I (PAI-I) for thrombosis and fibrinolysis, Matrix Metalloproteinase-9 (MMP-9) for atherosclerosis, plaque formation & rupture, Tumor Necrosis Factor- $\alpha$  (TNF- $\alpha$ ), Interleukin-10 (IL-10), Homocysteine, Adiponectin, C-Reactive Protein (CRP) and Homocysteine for measure of drug effect of new pharmacological interventions on cytokines, immunomodulatory property and diabetic myocardium.

Moreover, insulin sensitivity was checked by Fasting Plasma Insulin (FPI), Homeostasis Model Assessment of Insulin Resistance (HOMA-IR) & Hyperinsulinemic euglycemic clamp technique.

*Contents*

1. Introduction. 2. Aims and objectives. 3. Review of literature. 4. Materials and methods. 5. Results. 6. Discussion. 7. Summary and conclusions. Bibliography.