OBJECTIVES OF THE PRESENT STUDY

1. To study the histological changes in the brain regions - corpus striatum, cerebral cortex and hypothalamus using periodic acid stain.

2. To study the changes in the pancreas of control, diabetic and insulin treated diabetic rats using hematoxylin and eosin stain.

3. To quantify the striatal dopamine and homovanillic acid in streptozotocin induced diabetic rats at different time intervals using High Performance Liquid Chromatography.

4. To assess the change in corpus striatal dopamine and homovanillic acid in rats injected with different doses of streptozotocin using High Performance Liquid Chromatography.

5. To study the changes in dopamine and homovanillic acid content in the brain regions - corpus striatum cerebral cortex, brain stem, hypothalamus - pancreas, adrenals and plasma of control, diabetic and insulin treated diabetic rats using High Performance Liquid Chromatography.

6. To study the dopamine and dopamine D₂ receptor changes in corpus striatum, cerebral cortex, brain stem, hypothalamus and pancreatic islets of control, diabetic and insulin treated diabetic rats.

7. To study the role of dopamine and dopamine D₂ receptors on glucose induced insulin secretion in-vitro using rat pancreatic islets.

8. To study the dopamine D₂ receptor gene expression in the brain regions- corpus striatum, cerebral cortex, brain stem and hypothalamus of control, diabetic and insulin treated diabetic rats.