# **INTRODUCTION**

1 - 17

#### MATERIAL AND METHODS 18-38

# **CHAPTER – 1**

39-58 NEONATAL MELATONIN ANTAGONISM IN THE PRE-WEANING PERIOD INDUCES HYPERINSULINEMIA, DECREASES INSULIN SENSITIVITY AND ALTERS CARBOHYDRATE HOMEOSTASIS.

# CHAPTER - 2

NEONATAL MELATONIN RECEPTOR **RY** ANTAGONISM LUZINDOLE DECREASES PERIPHERAL GLUCOSE UPTAKE IN THE RAT: AN IN VITRO STUDY ON LIVER AND MUSCLE SLICES.

## CHAPTER – 3

DIFFERENTIAL EFFECTS OF LUZINDOLE (MT2 RECEPTOR BLOCKER) ON TISSUE LIPID AND CHOLESTEROL CONTENTS AND SERUM LIPID PARAMETERS IN RAT NEONATES.

# **CHAPTER – 4**

REVERSED SERUM INSULIN AND GLUCOSE LEVELS AND GLYCOGENIC RESPONSE BUT POTENTIATED **HEPATIC** PROTEIN ANABOLIC RESPONSE FROM WEANING TO PUBERTAL AGE DUE то NEONATAL **MELATONIN** ANTAGONISM.

# CHAPTER - 5

106-131 INCREASED GLUCOSE UPTAKE BUT DECREASED GLUCOSE **OXIDATION IN THE PUBERTAL PERIOD BY LIVER AND MUSCLE** SLICES OF RATS SUBJECTED TO **NEONATAL** HYPOMELATONEMIA.

74-86

59-73

87-105

# CHAPTER - 6

NEONATAL MELATONIN ANTAGONISM IN THE PRE-WEANING PERIOD FAVORS LIPID SYNTHESIS FROM THE WEANING TO PUBERTAL PERIOD.

CHAPTER – 7 DECREASED HEPATIC GLYCOGEN CONTENT BUT INCREASED MUSCLE GLYCOGEN, TISSUE PROTEIN AND SERUM GLUCOSE LEVEL WITH HYPOINSULINEMIA AS A LONG TERM EFFECTS OF NEONATAL MELATONIN ANTAGONISM IN POST PUBERTAL RATS.

## CHAPTER – 8

DOWN REGULATION OF GLUCOSE UPTAKE BY LIVER AND MUSCLE OF YOUNG RATS SUBJECTED TO NEONATAL **MELATONIN ANTAGONISM: AN IN VITRO STUDY** 

### CHAPTER – 9

NEONATAL MELATONIN ANTAGONISM SIGNIFICANTLY DECREASES SERUM LIPID FRACTIONS AND TISSUE LIPIDS BUT INCREASES TISSUE CHOLESTEROL IN YOUNG ADULT RATS.

### CHAPTER - 10

195-242 INCREASED B-CELL REGENERATION AND PROTECTION AGAINST DIABETOGENIC INFLUENCE OF ALLOXAN DUE TO NEONATAL LUZINDOLE ADMINISTRATION.

## CHAPTER – 11

NEONATAL FUNCTIONAL MELATONIN DEFICIENCY ADULT RATS TO B CELL PREDISPOSES LOSS AND CHANGES IN RESPONSE DIABETOGENIC TO WEANING ALLOXAN TREATMENT.

## **GENERAL CONCLUSIONS**

# **BIBLIOGRAPHY**

308-346

291-307

162-182

132-142

143-161

183-194

243-290