

**AN X-RAY CRYSTALLOGRAPHIC STUDY ON THE
STRUCTURE AND INTERACTIONS OF A FEW
PHARMACEUTICALLY IMPORTANT MOLECULES**

**THESIS SUBMITTED FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY (SCIENCE)
OF THE
UNIVERSITY OF CALCUTTA
1989**

By
SUTAPA GHOSH
CRYSTALLOGRAPHY AND MOLECULAR BIOLOGY DIVISION
SAHA INSTITUTE OF NUCLEAR PHYSICS
CALCUTTA - 700064
INDIA

C O N T E N T S

P A R T - I

CHAPTER 1	
<i>Introduction (I)</i>	1
CHAPTER 2	
<i>Adrenergic Receptors</i>	12
CHAPTER 3	
<i>Adrenergic Imidazoli(di)nes: Some Previous Investigations</i>	25
CHAPTER 4	
<i>Crystal and Molecular Structure of Hordenine Sulfate</i>	52
CHAPTER 5	
<i>Crystal and Molecular Structure of Xylometazoline Hydrochloride</i>	86
CHAPTER 6	
<i>Crystal and Molecular Structure of Tetrahydrozoline Hydrochloride</i>	108
CHAPTER 7	
<i>Crystal and Molecular Structure of Tramazoline Hydrochloride</i>	139
CHAPTER 8	
<i>Crystal and Molecular Structure of Tolazoline Hydrochloride</i>	171
CHAPTER 9	
<i>Conformational Analysis of some α-Adrenergic Imidazoli(di)nes</i>	198
CHAPTER 10	
<i>Summary and Conclusions</i>	216

P A R T - II

CHAPTER 11 <i>Introduction (II)</i>	233
CHAPTER 12 <i>Crystal and Molecular Structure of Sulfisomidine Dihydrochloride Dihydrate</i>	240
CHAPTER 13 <i>Crystal and Molecular Structure of (1:1) Molecular Complex of 9-Aminoacridine-Sulfamethoxypyridazine</i>	266
CHAPTER 14 <i>Crystal and Molecular Structure of (1:1) Molecular Complex of 9-Aminoacridine-Sulfadimidine</i>	307
APPENDIX <i>Computer Programs Used</i>	346
REFERENCES	348