With great pleasure I acknowledge my indebtedness to the Principal, JIPMER and the Director General of Health Services, Government of India for providing me the necessary facilities to undertake this work.

I express my sincere thanks to Dr. (Mrs) Lalitha Kameswaran, Professor & Head of the Department of Pharmacology, Madras Medical College, Madras and Dr. B. Sanker Subramanian, Professor & Head of the Department of Chemistry, JIPMER for their interest and advice during the course of this study.

I owe a heavy debt of gratitude to Dr. J. W. Warm, Director, Ophthalmology Research, School of Medicine, University of Maryland, U.S.A. and Dr. H. L. Aurora, Professor & Head of the Department of Pathology, JIPMER for their keen interest, help and guidance in the studies on galactosominc cataracts.

I am profoundly grateful to Dr. J. J. Golden of the Clinical Research Division of Zyva, Nyon, Switzerland; Dr. M. Gabor, Professor of Pharmacology, Institute of Pharmacodynamics, University Medical School, Szeged, Hungary; Prof. H. Wagner, Director, Institute of Pharmaceutical Sciences, University of Munich, West Germany; Dr. H. P. T. Wammon, Institute of Pharmaceutics, University of Tuebingen, West Germany and
Dr. E.C. Robbins, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida, U.S.A. for their kind help in providing various books, monographs and pure compounds used in this work.

I am extremely grateful to Prof. A.K. Bhattacharya, Professor & Head of the Department of Radiology and Shri C. Gangadhar, Physicist for their help in conducting the X-irradiation studies. I am also thankful to Dr. A.G.K. Nair, assistant Professor of Chemistry and Shri S. Rajasekhar, Scientific Officer-cum-Tutor in Biochemistry for their kind help at the different stages of this work.

I am highly thankful to my colleagues in the Department of Pharmacology, especially, Dr. Nitesh Chandra, Dr. I.C. Gandhi, Dr. Jayasundar, Dr. A. Hashim and Miss Lekshamma Cherian for their suggestions and help throughout the study. Deep appreciation is also expressed for the technical assistance of Shri T. Annamalai.

I am also thankful to Shri K. Vijayan Pillai for doing all the photographic work and Shri T. Natarajan for typing the thesis.

N.S. Parmar