ACKNOWLEDGEMENTS

I sincerely express my deep sense of gratitude to Prof. K. L. Mukherjee, M.B.B.S. (Calcutta), Ph.D. (Calcutta), Ph.D. (Wisconsin), Head, Department of Biochemistry, Vivekananda Institute of Medical Sciences, Calcutta, my teacher, mentor and guide for his constant inspiration, valuable guidance and suggestions throughout the present investigation.

I am deeply indebted to the Director General, Indian Council of Medical Research, for awarding me the fellowship under the scheme "Developmental Neurobiology of Human Fetuses", which enabled me to carry out the research.

I am sincerely grateful to Dr. K. P. Sengupta, former Director, Institute of Post Graduate Medical Education & Research, Calcutta, for permission to work in the Department of Biochemistry of the Institute.

Thanks are due to Dr. Narayan Chaudhuri, former Professor Director of Obstetrics & Gynaecology and Late Dr. S. K. Mitra, former Professor of Surgery, S. S. K. M. Hospital, Calcutta, for providing the permission to use the materials (human fetuses and biopsy specimens) to carry out the investigation.

My gratitude goes to Dr. Niranjan Bhattacharya, the eminent scientist, for his invaluable suggestions in every stage of the work. Without his continuous encouragement and constructive criticism it would never have been possible to complete the work. My heartfelt thanks are due to him.
I owe a debt of gratitude for technical advices to Dr. Anthony J. Turner, University of Leeds, U.K.; Prof. H. F. Bradford, ex-editor, the "Journal of Neurochemistry", U.K.; Prof. P. S. Sastry, Indian Institute of Science, Bangalore; Prof. Proboed Roy, Department of Anatomy, University College of Basic Medicine, Calcutta; for chromatography techniques; oxygenation in the incorporation experiments; $^{32}P$ incorporation experiments; histological techniques of fetal brain respectively. The techniques I learnt from the above scientists were adopted and were incorporated in this thesis work.

I thank my teacher Prof. J. J. Ghosh, Department of Biocremistry, University College of Science, Calcutta, for providing valuable suggestions at the primary stage of the work.

I would thank specially Prof. B. K. Bhattacharya, Indian Institute of Technology, Kharagpur, for allowing me to use his departmental facilities for the photomicrographs.

I should mention my debt to Mr. Gautam Bhattacharya, Indian Statistical Institute, Calcutta, for his suggestions on the anthropometric measurements and statistical analysis of the data.

My heartfelt thanks are due to Prof. A. L. Bagchi, Head, Department of Biochemistry, R. G. Kar Medical College & Hospital, Calcutta, who has always encouraged me to finish the work. I express my thanks to all members of the Dept. of Biochemistry, R. G. Kar Medical College & Hospital, who have always expressed their interests in the progress of my work.

I am also thankful to my past and present research colleagues Dr. Nima Chand Chandra, University of Notre Dame, U.S.A.; Dr. (Miss) Chameli Ganguly, Dr. (Mrs) Aditi Sen, Vivekananda Institute of Medical Sciences, Calcutta; Dr. (Miss) Gitanjali Guhathakurta, Calcutta National Medical
College; Dr. Tarun Kumar Das, Calcutta Medical College Hospital; Dr. (Miss) Gita Datta, Institute of Post Graduate Medical Education & Research; Dr. (Miss) Reba Chatterjee, K. S. Roy T. B. Hospital, Calcutta; and Dr. (Mrs) Ratnamala Roy, Asoke Laboratory, Calcutta; for their timely advices and inspirations.

I wish to express my thanks to Mr. N. Saha, Chittaranjan National Cancer Research Centre, Calcutta, for his photomicrography; Mr. Prasanta Kumar Hait and Mr. Arun Chakraborty for the typing of the manuscripts.

Finally I would like to thank my parents and brothers for their support during the entire course of the work.

Calcutta
November 9, 1989.

(BIMAL KRISHNA SAMANTA)