Acknowledgement

I am indebted to my Supervisor Prof. S.C. Agrawal, Head of the Department of Applied Microbiology and Biotechnology, Dr. Hari Singh Gour University, Sagar (M.P.) and for his encouragement and valuable advice.

I owe my gratitude to my Co-supervisor Dr. A. Ayyagari, Professor and Head, Department of Microbiology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow (U.P.) for her support and constructive and valuable criticisms that improved this thesis.

I am indebted to Dr. T.N. Dhole, Additional Professor, Department of Microbiology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow (U.P.) for introducing me into the field of Virology and Molecular biology and for his support and advice which guided me throughout this work.

My warmest thanks are due to Dr. Amit Kapoor for his kind interest, encouragement and help in one of the most obscure time of my life. I am also thankful to him for creating an inspiring and peaceful atmosphere and for generous help and practical advice during these years.

My sincere thanks goes to Dr. K.N. Prasasd, Dr. Jank Kishore, Dr. P.C. Jain and Dr. Naveen Kango for their help and advice during the preparation of this thesis. I thank Dr. Ujjala Ghosal for revising the language of this thesis.

I wish to thank my seniors Rashmi, Manisha, Pratibha and my colleagues Ashish, Vandana and Brijesh Rathore for their support and contribution to my scientific and personal developments through thoughtful conversations advice, humor and cheerful company.

My special thanks to Mrs. Nikhil Srivastava for her help in collecting the clinical data and solving computer problems. I also thank for her cheerful company.

I am thankful to Mr. Navin Srivastava for his technical assistance in molecular work with full sincerity besides his friendly attitude.

I owe my sincere thanks to Mr. V.N. tripathi and Mr. V.K. Mishra for their skillful care and technical guidance. I am thankful to Dr. Shashikant, Dr. Rajesh and WHO Polio staff, Mr Avadesh, Rishi, Tapas, Mahendra, S. Pandey, Vijay, and Joy for their assistance and support in the laboratory work. I also want to acknowledge Mr. Anil Kumar for computer assistance.

I am thankful to WHO for providing the samples of children and instruments to carry out this work. This work has been financially supported by the Ministry of Environment and Forest.

I am thankful to my Parents for their unconditional love and for never obstacle my own decision although some of them must have been difficult to accept, and my sisters and brothers for always being close to me.

Finally, I would like to thank GOD ALMIGHTY for the blessings showered on me, which encouraged me to complete the task successfully.

Deendayal Patel