

I would like to thank firstly my tutor Dr. Roberto Nisini not only for the continuous and valid scientific and human support, but also for giving me the possibility to attend his laboratory and the opportunity to achieve the important qualification as PhD.

A special thank to my laboratory colleagues: Raffaela Teloni and Dr. ssa Cristina Gagliardi for the help and the wonderful days spent together, and in particular Dr. ssa Sabrina Mariotti who has guided me in this project; thanks to her professionality and her advise I could realize this work.

Thanks to "Istituto Superiore di Sanita" that has been given me hospitality for many years, in the hope that I will have the possibility to continue my career there.

Special thanks to my family and to Daniele that all along have shared with me pleasures and troubles encouraging me in every single moment.