



PhD Project

Project Details

Project Title	Development of diagnostics panel for the detection of respiratory tract infections (RTIs).
Project Summary	<p>Globally, every year, hundreds of millions of people suffer from respiratory illnesses, with 4 million dying prematurely. According to the National Health Portal of India, approximately 42 million cases and about 4000 death were reported from RTI in 2018. Antibiotics are usually prescribed for RTIs in adults and children in primary care. RTI are the reason for 60% of all antibiotic prescribing in general practice. Irrational use of antibiotics may not only increase in antibiotic resistance but will increase the severity, disease length, adverse effect, health complications and risk of death.</p> <p>A prospective cross-sectional study on 500 children aged 0 to 5 years with RTIs will be conducted over a period of 3 years. Samples (two nasal swabs) will be collected and will be processed for culture, PCR (for bacterial and viral detection respectively). Performance of automated cartridge (developed by IIT-Delhi) will be evaluated for respiratory viral detection. The study shall provide an opportunity to reduce antibiotic prescription burden and hence may further help in reducing the emergence of antimicrobial resistance. Clinical evaluation of an automated cartridge system will make the device employable for resource limited point-of-care diagnostics.</p>

PhD Supervisors

Role	Faculty	Academic Unit in IITD	Email ID
Supervisor 1	Dr. Ravikrishnan Elangovan	Department of Biochemical Engg and Biotechnology	elangovan@dbeb.iitd.ac.in
Supervisor 2	Prof Vivekanandan Perumal	Kusuma School of Biological Science	vperumal@bioschool.iitd.ernet.in
Supervisor 3	Dr. Vikas Manchanda	Department of Microbiology	micromamc@gmail.com

Project requirements (Student qualifications, experience required, etc)

-M. Sc. In biology

Source of funding (IRD/FITT Project details, if any)

No sponsored position available. Candidates with funding (JRF/SRF/part-time) can apply

Role of Faculty Members involved:

Dr. Ravikrishnan Elangovan Lab: Dr. Ravi will be mentoring student in development of automated cartridge for respiratory viral detection.

Dr. Vivekanandan Perumal Lab: Dr Vivek will be mentoring student in development of PCR assay protocols and probes

Dr. Vikas Manchanda Lab: Dr. Vikas will be mentoring student in biological sample processing and molecular work.