**Megha Shah**

Address: University of Auckland, School of Biological Sciences, Room 260, Level 2, Thomas Building, 3a Symonds Street, Auckland CBD, Auckland 1010, New Zealand

Tel. No.: **+91-98791 04590, +64 -2108 209 249** E-mail ID: [**shah.megs@gmail.com**](mailto:shah.megs@gmail.com)

* 7+ years of total experience; 2 years of industrial experience.
* Hands on experience in molecular biology, mammalian cell lines, pathogenic and non-pathogenic bacterial manipulations, transmission electron microscopy, protein expression & purification.
* Specialized in working with pathogens esp. multi drug resistant & clinical strains of *Pseudomonas aeruginosa* & studying host-pathogen interactions.
* Skilled at managing resources efficiently and able to deliver under pressure of challenging timelines. Professional scientist experienced in working with external collaborations and in multi-disciplinary and cross-functional team environments.

**EDUCATION**

University of Auckland, New Zealand May 2009- Present

**Ph.D. in Biological Sciences**

Thesis: The roles of the phosphate-binding proteins as virulence factors of *Pseudomonads*

Supervisor: Dr. Ken Scott

University of Chicago, Department of Surgery, USAAug 2011 – Feb 2012

**Non degree visiting student**

Pursuing part of my Ph.D. project in Dr. Alverdy’s lab, Department of Surgery

Advisor: Dr. John C Alverdy & Dr. Olga Zaborina

Dr. D. Y. Patil University, Mumbai, India Aug 2005 – Aug 2007

**M.Tech in Biotechnology**, 2nd in college – 79.28%

Thesis: Bioassay for an antiviral agent based on cytopathic effect reduction-A study involving Amido Black, MTT and Alamar Blue.

Supervisor: Dr. Venkata Ramana & Vaidyanathan R.V.

St. Xavier’s College, Gujarat University, Ahmedabad, India July 2002 – May 2005

**B.Sc. in Biochemistry with Vocational Biotechnology**, 1st in college – 75.14%

Thesis: Isolation and Inhibition Studies of *β –*Tryptase

Supervisor: Dr. Vincent Braganza

**INDUSTRIAL EXPERIENCE**

**Management Incharge,** Sarin Agencies, Ahmedabad, India July 2007-July 2008

* Maintenance of office stocks and ordering incharge
* Supervision of packaging and delivery of goods
* Coordinating and delegating work amongst various workers.

**M.Tech Dissertation project,** Department of Therapeutic Proteins Feb 2007 - June 2007

Reliance Life Sciences Pvt. Ltd., Mumbai, India

* Designing and optimization of antiviral bioassays.
* Transient & Stable gene expression in mammalian cells for recombinant protein production.
* Gained hands on training in animal cell culture, transfection procedures, cytotoxicity assays, handing and performing viral bioassays, basic molecular biology techniques, cloning in bacteria, protein expression studies using bacterial host.

**Independent Trainee**, Industrial Training Unit, St. Xavier’s College, India Apr 2004 – March 2005

* Acquired hands on training in all aspects of commercial micro propagation of ornamental and forestry plants.

**Summer Intern, Genetics Research Centre (FRIGE),** Ahmedabad, India May 2003-June 2003

* Acquired hands on experience in isolation and culturing of lymphocytes as well as chromosome preparation for karyotyping. Learned differential banding techniques – Giemsa banding (G-banding) and NOR (Nucleolus organizing region) banding.

**ACADEMIC EXPERIENCE**

**Graduate Research Student**, University of Auckland, New Zealand & May 2009- Present

**Visiting Graduate Research Student**, University of Chicago, USA Aug 2011 – Feb 2012

Mentors: Ken Scott (Ph.D.), Dr. John C. Alverdy (M.D., FACS) & Olga Zaborina (Ph.D.)

* Investigated the role of phosphate-binding proteins, DING/PstS in formation of non-flagellar appendages in clinical and multi-drug resistant strains of *P. aeruginosa* as well as *P. fluorescens* SBW25 strain using transmission electron microscopy.
* Created overexpression and gene-complemented mutant strains of *P. aeruginosa* for enhanced appendages formation as well as studied the various factors and mechanisms responsible for formation of these appendages.
* Studied the role of DING/PstS family proteins in adhesion and cytotoxicity to intestinal epithelial cells.
* Antibody purification and standardization of expression and protein purification in *P. aeruginosa* and *E. coli* strains.
* Established collaboration with Dr. Alverdy’s lab at Department of Surgery, University of Chicago, USA and worked in their lab for 6 months.
* Was responsible for ordering and maintenance of lab supplies and providing training for using lab equipment’s.
* Secured grants for lab by experimental designing, writing and generating data
* Mentored undergraduate and graduate students

**Teaching Assistant**, University of Arkansas at Little Rock, USA Aug 2008-Dec 2008

* Took labs for Human Anatomy and Physiology I & II - undergraduate students

**Research Associate**, Xavier’s Research Foundation, India June 2004- June 2005

Mentor: Dr. Vincent Braganza

* Isolation of *β –*Tryptase from skin, intestine, spleen and lungs of rats and testing the inhibitory effect of several plant extracts on this enzyme as a potential treatment for Asthma
* Performed rat dissections and extensive protein purification

**TECHNICAL AND COMPUTER SKILLS**

* Cell culture: Plant tissue culture, viral and fungal cultures, bacterial cultures, mammalian cell lines.
* Microscopy: Transmission electron microscopy (TEM), Bright field, immunofluorescence.
* Molecular biology: standard and touch down PCR, Agarose gel electrophoresis, SDS-PAGE, Immunoblotting, Cloning, DNA extraction from all types of tissues, Protein expression and purification in *E.coli* and *P. aeruginosa*, Antibody purification, enzymatic assays.
* Bacterial work: isolation and growth optimization, transformation, RAPD analysis, structural and biochemical analysis of surface structures, genotyping, activity assays, adhesion and cytotoxicity assays on mammalian cell lines.
* Chromatographic techniques: Affinity and gel exclusion chromatography.
* Bioassays: Viral bioassays, Cell viability and cytotoxicity assays.
* Instrumentation: UV-Vis Spectrophotometry, Philips and CM-12 Transmission electron microscopy, Nano-Drop, Plate reader, Roche xCELLigence system.
* Computer and statistical skills: Microsoft Office( Word, Excel, PowerPoint), Adobe Acrobat, Adobe Photoshop and InDesign, BLAST, CLUSTAL, Sequence Manipulation suite, Sigma Plot, Image J, Endnote, Vector NTI, SAS and SPSS statistical packages, PyMol, SuperPose.

**HONORS AND FELLOWSHIPS**

* University of Auckland International Doctoral Scholarship funded by University of Auckland 2012
* SBS Contestable travel fund – funded by University of Auckland to attend Gordon Research Conference and pursue part of Ph.D. research at University of Chicago, USA 2011
* The New Zealand International Doctoral Research Scholarships (NZIDRS) - funded by the New Zealand Government to pursue Ph.D. at University of Auckland 2009
* Scholarship – 2nd place in M.Tech Biotechnology 2nd semester examination 2006
* Scholarship – 1st place in M.Tech Biotechnology 1st semester examination 2005
* Scholarship – 2nd in All India Entrance Test – M.Tech 2005 conducted by Padmashree Dr. D. Y. Patil University.
* The S. J. Braganza Research Fellowship and a gold medal – undergraduate research 2005
* Awarded Centurion Bank Prizecomprising of asilver medal - first in Xavier’s college in the Gujarat University Third year B.Sc. (Biochemistry) examination 2005
* The Prof. J. J. Chinoy Prize -1st  place in Xavier’s college in the Gujarat University Third year B.Sc. (Biochemistry ) examination 2005
* Muljibhai K. Shah prize **–** 1s**t** place in Second year B.Sc. college exams Chemistry 2004
* “Eklavya Scholarship of Excellence Award” comprisingof a gold medal anda scholarship -1st among Vocational Biotechnology students in Second year B.Sc. examination 2004

**POSTER PRESENTATIONS**

* The Hxc Type II Secretion System is required for the Secretion of PstS & DING but not for production of PstS/DING Appendages 2013

**American Society for Microbiology (ASM)-113th General Meeting-Colorado**

* Expression and Localization of PstS/DING Family Proteins in *Pseudomonas aeruginosa* PA14 and Multi-drug Resistant Clinical Isolates of *P. aeruginosa* 2012

**American Society for Microbiology (ASM)-112th General Meeting-San Francisco**

* Expression and Localization of PstS/DING Family Proteins in *Pseudomonas aeruginosa* PA14 and Multi-drug Resistant Clinical Isolates of *P.* *aeruginosa* 2012

**19th annual Charles B. Huggins Symposium – Chicago**

* Adhesion and Transcriptional Regulation by Bacterial DING Proteins 2011

**Gordon Research Conference on Microbial Adhesion & Signal Transduction– Newport, RI**