CURRICULUM VITAE

Personal data

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Place of Birth:	New Delhi, India
Citizenship:	India
Visa Status:	H1-B

Education

Educational Qualifications:

1**. M.B.B.S (MD)**	Mahatma Gandhi Institute of Medical Sciences, Sewagram, Wardha, India, (Nagpur University), India. (1996)
2) **Residency (General Surgery):**	Mahatma Gandhi Institute of Medical Sciences Sewagram, Wardha, India (Jan 1998- Dec 2000).
3) **Post doctoral fellowship (Molecular Oncology)**	ENH Research Institute, Northwestern University Evanston, IL-60611, USA

Employment History

Post doctoral fellowship (Molecular Oncology) **Jan 2004- till date**
ENH Research Institute, Northwestern University
Evanston, IL- USA

Senior Resident, (Dept of Surgery) **Oct 2001– Nov 2003**
Pushpawati Singhania Research Institute, New Delhi, India

Chief Resident (Dept of Surgery) **Jan 2000- Dec 2000**
Mahatma Gandhi Institute of Medical Sciences, India

Residency (Post graduation), General Surgery **Jan 1998 - Dec 2000**
Mahatma Gandhi Institute of Medical Sciences, India

Resident Doctor **Jan 1996 – Jan 1998**
Arpana Hospital, India

Clinical Rotating Internship **Jan 1995- Dec 1995**
Mahatma Gandhi Institute of Medical Sciences, India

Awards

1) Recepient of **Edward. F. Scanlon post doctoral fellowship**.

2) Awarded **Bronze medal** and a **certificate of Merit** for excellent academic Performance in the medical school at Mahatma Gandhi Institute of Medical Sciences.

3) My work on "Mycophenolate Mofetil in the treatment of nephrotic syndrome " was Awarded the **best paper award** in the conference of Indian society of Nephrology held at Vishakhapatnam, India in Dec 2003.

Research Experience

Broad project Aim: To define the elements of cancer cell signaling and use these to develop targeted therapeutics and early diagnostic/prognostic markers in cancer. (Especially Breast Cancer)

Research Field: Cancer biology, Molecular Oncology and Signal transduction
ENH Research Institute, Northwestern University, Evanston, IL- USA
Jan 2004- till date
Program Director: Dr Hamid Band, M.D, PhD.

The major focus of our laboratory is to investigate the mechanisms through which ErbB receptors regulate tumorigenesis.

In my ***first project***, I focused on understanding the endocytic trafficking of ErbB1 (EGFR) receptor. The project aimed to understand differential sorting signals on EGF Receptor that regulate its endocytic trafficking .I generated EGFR mutants using site-directed mutagenesis approach either to abolish EGFR interaction with Cbl, a ubiquitin ligase or abolish EGFR sorting nexin interaction, or dileucine based sorting signals. Those mutations were made either individually or combined as double or triple mutations. These mutants were stably transfected into Flp-In CHO cell lines to achieve homogenous expression of EGFR. These cell lines were then analyzed for EGFR down regulation and endocytic trafficking using biochemistry, FACS and confocal microscopy. I am currently sub cloning these mutants into retroviral based vectors to generate alternative cell system in MEFs or other mammary epithelial cell lines.

In my ***second project***, I collaborated with "Dr Lei Duan" a senior member of the lab. We investigated the role of Vav2, a guanine nucleotide exchange factor(GEF) for Rho A, Rac1 and Cdc 42, in regulating epidermal growth factor receptor(EGFR) induced disassembly of adherens junctions in immortalized mammary epithelial MCF 10 A cells. Stable over expression of wild type or constitutive active Vav2, enhanced, EGF-induced Rac1 and cdc42 activation correlated with disruption of cell-cell adhesion, resulting in cell colony spreading in 2D culture and abnormal acini in the 3 D matrigel. Dominant negative Vav2 or specific Vav2 small interference RNA (siRNA) decreased RhoA, Rac1 and cdc 42 activation. Immuno-confocal analysis using E cadherin and actin confirmed these findings. Further dissection with Rho A and Rac1 siRNA knockdown, or expression of dominant negative Rho A and Rac 1, revealed that Rho A is required for the formation of circumferential actin ring and mature adherens junctions, while Rac1 is essential for establishment of adherens junctions, its activation caused disruption of established circumferential actin ring and adherens junctions.

The manuscript is being completed for publication.

Research skills and Techniques:

More than two years of research experience in the area of cell biology, cancer biology and Signal transduction

Molecular & Cell biology

- Mammalian cell culture (including 3-D cultures using matrigels)
- Colony selection and making stable expression cell lines.
- Immuno-staining and microscopy. (Confocal)
- Cell Transfections-(Calcium phosphate, Fugene)
- Protein expression in mammalian systems, and analyses (SDS PAGE , WESTERN blotting).
- FACS fluocytometry
- Dynabead selection of the cells
- Biotinylation of cell membrane proteins
- Protein – Protein interaction studies (Co-Immunoprecipitation of proteins).
- Gene manipulation, cloning, expression and analyses. (Restriction mapping, ligation, transformation, DNA preps, Agarose gel electrophoresis).
- PCR, RT-PCR.
- Phosphorylation of the protein
- Enzyme Linked Immunosorbant Assay (ELISA).

Special Techniques

- Small animal handling
- Inoculation of mice (oral, intraperitoneal and subcutaneous)

Bio-Instrumentation

- Comfortable in using various bio- instruments like, Spectrophotometer, Densitometry, ELISA plate readers, ULTRA centrifuge and Particle counter for cell count.

Additional skills

- Diligence in research, records keeping and presentations.
- Excellent team worker.
- Ability to think of new ideas and develop independent projects.
- Manage multiple research projects, meet deadlines.
- Good written & verbal communication skills.
  (All education in English) (TOEFL score 270/300)
- Well versed with PC and Mac applications (End Note, MS Origin, Prism, Graph Pad, MS word, Excel and Power Point, Adobe Photoshop image) for bibliography, statistics, data analysis and presentations.
- Experience with NCBI genomic databases and Blast applications

Project: "Mycophenolate mofetil in the treatment of Nephrotic syndrome"
Institute: Pushpawati Singhania Research Institute, New Delhi, India
Jan 2002 – Dec 2002
Mentor: Dr Sanjiv Saxena M.D (Med), DNB (Nephrology) AIIMS

The study involved prospective analysis of the data of patients presenting with primary glomerular disease resistant to the conventional treatment who were empirically treated with mycophenolate mofetil (MMF). The study included all patients who presented to the Nephrology department of pushpawati singhania research institute, New Delhi, India with nephrotic syndrome with biopsy proven histology and those who were resistant to conventional treatment over a period of 1 year (i.e. from Jan 2002 to Dec 2002). The purpose of study was to evaluate the use of MMF for the empirical treatment of primary glomerulopathies.

Project: "Changing clinico-pathological trends in acute appendicitis as seen in a rural based institution of vidarbha".
Institute: Mahatma Gandhi Institute of Medical sciences
Jan 1998 – Dec 2000
Mentor: Dr (Prof) V.K. Mehta, (Dept of Surgery)
Dr (Prof) N. Gangane, (Dept of Pathology)

As a part of my residency training I had the opportunity to work on the research project titled "Changing clinico-pathological trends in acute appendicitis as seen in a rural based institution of vidarbha".The main aim of the project was to study the controversial aspects of this common disease ranging from its epidemiology to the management It was a retrospective and prospective study in which all cases of appendicitis admitted in the hospital were interrogated, examined and data recorded in proforma. All the histopathological slides in the prospective group were examined for H.pylori using special stains (toludine blue and grams stain) and H.Pylori could be demonstrated histologically in about 5% of the patients.

Publications

Sumeet Virmani, Lei Duan, Hamid Band; **Vav2 plays a critical role in EGFR-mediated disruption of adherens junctions through reorganizing actin cytoskeleton**. Paper accepted for presentation at poster presentation category at ENH Research institute, IL, USA; Dated: 05 / 2006
Manuscript is being prepared for publication.

Lei Duan, ***Sumeet Virmani***, Hamid Band; **Regulation of Vav family proteins by Cbl ubiquitin ligases;** Paper presented in the **poster presentation category at ENH Research institute**, IL, USA; Dated: 05 / 2005

Sumeet Virmani, Rashmi Dawar, Sushma, Nagrajpalankar, Deepak Govil; Clinical presentations in Acute Appendicitis; Gastroenterology Today, Publication Date: 07 / 2004 , Volume: 8, Pages: 117-118

Sudeep Khanna, Sanjeev Saxena, ***Sumeet Virmani;*** Intravascular catheter - related Infections; Hospital Today, Publication Date: 04 / 2004, Volume: 9, Pages: 138-144

D Govil, Khanna S, ***Virmani S***, Jha A, Kumar S; Surgery for complicated pancreatic pseudocysts -Report from a tertiary center; Indian Journal of Gastroenterology, Publication Date: 01 / 2004 , Volume: 23, Pages: 33 - 34

S. Saxena, ***Sumeet Virmani***, K Singh, KK Malhotra; Mycophenolate Mofetil in the treatment of Nephrotic Syndrome; Indian journal of Nephrology; Publication Date: 01 / 2004 , Volume: 14, Pages: 15-17

S Kumar, ***Sumeet Virmani***, Sushma, V Garg, R Khanna; Gastrointestinal stromal tumors - present status; Gastroenterology Today, Publication Date: 11 / 2003

S Kumar, ***Sumeet Virmani***, D Govil. Surgery in Ulcerative colitis; Gastroenterology today; Publication Date: 2002, Volume: 7, Pages: 25-26

Mehta VK, Singh K, ***Virmani S***. Unusual presentations of Acute Appendicitis; Journal of Mahatma Gandhi Institute of medical sciences; Publication Date: 1999 , Volume: 4, Pages: 32-34

References:

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