

**Name:** Somesh Baranwal, PhD  
**Designation:** Assistant Professor & Ramalingaswami Fellow  
**Centre for Biochemistry and Microbial Sciences**  
**School of Basic and Applied Sciences**  
**Central University of Punjab**  
**Bathinda- 151001**  
**Email Id:**  
[someshbaranwal@gmail.com](mailto:someshbaranwal@gmail.com)  
[somesh.baranwal@cup.edu.in](mailto:somesh.baranwal@cup.edu.in)  
**Mobile:** 890-105-4147



<b>Education</b>		
<p>PhD, Microbiology and Molecular Biology, Department of Chemistry, Bose Institute, Kolkata, India (Thesis awarded from Jadavpur University, Kolkata, India in October 2004).            Title of the PhD Thesis: “Mechanisms of antibiotic resistance in enteric bacteria”</p> <p>June, 1997, M.Sc. (Zoology) Dr.BR Ambedkar University, Agra, India (First division)</p> <p>June, 1995, B.Sc. (Biology and Chemistry) Agra University, Agra, India (First division)</p>		
<b>Experience</b>		
<b>Organization</b>	<b>Title</b>	<b>Year (from – to)</b>
University of Pennsylvania, Philadelphia, PA, USA	Post-doctoral Fellow	Oct 2004- May 2007
LSUHSC, New Orleans, LA, USA	Postdoctoral Researcher	May 2007- June 2010
University of Rochester, Rochester ,NY, USA	Postdoctoral Associate	July 2010- May 2012
Virginia Commonwealth University, Richmond, VA, USA	Instructor (Faculty)	June 4 <sup>th</sup> 2012- June 30 <sup>th</sup> 2015
Central University of Punjab, Bathinda, Punjab India	Assistant Professor (Ramalingaswami Fellow)	December 2015 to Present
<b>Teaching Assignments</b>		
<p>1. Microbiology LSS506            2. Microbiology (Practical) LSS507            3. Microbial Physiology LSS557            4. Microbial Physiology (Practical) LSS588            5. Industrial Microbiology LSS565            6. Industrial Microbiology (P) LSS566</p>		
<b>Research Project</b>		
<p><b>Ongoing</b></p> <p>Principal Investigator - Role of Integrin binding protein, kindlin in colon cancer progression (Department of Biotechnology)            ₹ 8.8 million including five years of fellowship from July 2015 to June 2020.</p>		

### Professional Recognition /Awards/Scholarship

1. Selected for the prestigious Ramalingaswami Re-entry Fellowship of the Department of Biotechnology for the year 2013-2014.
2. Qualified Joint CSIR-NET for Lifetime Lectureship (two times) June 2001 and December 2001 conducted by Council of Scientific and Industrial Research (CSIR) India.
3. Qualified Graduate Aptitude Test in Engineering (GATE) in March, 1999 conducted by Indian Institute of Technology, Delhi, India Percentile Score 98.09 with (All India Rank 25).
4. Life Member of Indian Society of Cell Biology
5. Life Member of Indian Science Congress Association
6. Life Member of Indian Association for Cancer Research
7. Member of the American Association for Advancement of Science, 2009-2010
8. Associate member of American Association for Cancer Research, 2012 to present
9. Full membership of Sigma XI honor society, 2012 to present

### Peer Recognition

1. Editorial Board Member of the International Journal of Molecular Biology.
2. Editorial Board member of the Journal of Molecular Biomarkers & Diagnosis.
3. Reviewer for Indian Journal of Microbiology, Indian Journal of Microbiology and Pathology, PLoS One, Molecular Cancer, Tissue Barrier, Journal of Cancer Science & Therapy.

### Area specializations/Research Interest

Molecular and Cellular Biology of Gastro-intestinal Cancer.

### Publications

#### Research Papers

S. No.	Authors, title, journal, volume, page numbers	Impact Factor
1.	Somesh Baranwal*, Shiv G. Rawat, and Pooja Gupta miR-301, pleiotropic microRNA in Regulation of Inflammatory Bowel Disease and colitis-associated cancer Opinion article Frontiers in Immunology doi: 10.3389/fimmu.2018.00522	6.429
2.	Maziveyi M, Dong S, Baranwal Somesh, Alahari SK. Nischarin regulates focal adhesion and Invadopodia formation in breast cancer cells. Molecular cancer. 2018 Feb 7; 17(1):21. doi: 10.1186/s12943-018-0764-6	6.204

3.	Baranwal Somesh* Commentary: HNRNPLL, a newly identified colorectal cancer metastasis suppressor, modulates alternative splicing of CD44 during epithelial-mesenchymal transition. Front Cell Dev Biol. 2017 Oct 16; 5:91. doi:10.3389/fcell.2017.00091	International Peer Reviewed
4.	Heparan sulfate hexasaccharide selectively inhibits cancer stem cells self-renewal by activating p38 MAP kinase. Patel NJ, Sharon C, Baranwal Somesh, Boothello RS, Desai UR, Patel BB. Oncotarget. 2016 Dec 20; 7(51):84608-84622. doi: 10.18632/oncotarget.12358.	5.168
5.	Book Review Article: Gastrointestinal Physiology and Diseases Methods and Protocols Baranwal Somesh* Front Cell Infect Microbiology 2017; 7: 319. Published online 2017 Jul 14. doi: 10.3389/fcimb.2017.00319	4.125
6.	Dong S, Baranwal Somesh, Garcia A, Serrano-Gomez SJ, Eastlack S, Iwakuma T, Mercante D, Mauvais-Jarvis F, Alahari SK. Nischarin inhibition alters energy metabolism by activating AMP-activated protein kinase. J Biological Chemistry 2017 Oct 13; 292(41):16833-16846. doi: 10.1074/jbc.M117.784256	4.125
7.	Dongdong Wang, Nayden G. Naydenov, Alex Feygin, <b>Somesh Baranwal</b> , John F. Kuemmerle, Andrei I. Ivanov. Actin-depolymerizing factor and cofilin-1 have unique and overlapping functions in regulating intestinal epithelial junctions and mucosal inflammation research article submitted to American Journal of Pathology	4.591
8.	Susana Lechuga, <b>Somesh Baranwal</b> , Andrei I. Ivanov. Actin interacting protein 1 controls assembly and permeability of intestinal epithelial apical junctions. Am J Physiol Gastrointest. Liver Physiol. 2015 May 1; 308 (9):G745-56.	3.72
9.	Chetna Sharon, <b>Somesh Baranwal</b> , Nirmita J. Patel, Daniel Rodriguez-Agudo, William M. Pandak, Adhip PN Majumdar, Geoffrey Krystal, Bhaumik B. Patel. 2015 Inhibition of Insulin-like Growth Factor Receptor/AKT/Mammalian Target of Rapamycin Axis Targets Colorectal Cancer Stem Cells by Attenuating Mevalonate-Isoprenoid Pathway in vitro and in vivo. Oncotarget. 2015 Jun 20;6(17):15332-47.	6.63
10.	Susana Lechuga* , <b>Somesh Baranwal*</b> , Chao Li , Nayden G. Naydenov, John F. Kuemmerle, Vera Dugina , Christine Chaponnier, Andrei I. Ivanov Loss of $\gamma$ -cytoplasmic actin triggers myofibroblast transition of human epithelial Cell (* denotes equal contribution) Mol Biol Cell. 2014 Oct 15; 25(20):3133-46	5.861
11.	Jagrut Patel*, <b>Somesh Baranwal*</b> , Ian Love, Nirmita Patel, Steven Grossman, Bhaumik B. Patel. Inhibition of C-terminal Binding Protein attenuates Transcription Factor 4 signaling to selectively target Colon Cancer Stem Cells. (* denotes equal contribution) Cell Cycle. 2014 Nov 15; 13(22):3506-18.	5.006
12.	Patel, N*, Karuturi, Rajesh, Al-Horani, Rami*, <b>Somesh Baranwal</b> , Patel, Jagrut; Desai, Umesh; Patel, Bhaumik. Synthetic, Non-Saccharide Glycosaminoglycan Mimetics Selectively Target Colon Cancer Stem Cells (*denotes equal contribution) ACS Chem Biol. 2014 Aug 15;9(8):1826-33.	5.442
13.	Patel J*, <b>Somesh Baranwal*</b> , IM Love, NJ Patel, A Raqhibana, C Sharon, BB Patel C-Terminal Binding Protein is an important therapeutic target for	16.716

	Colorectal Cancer to Selectively aim at Cancer Stem Cells by regulating $\beta$ -Catenin signaling., Gastroenterology 146 (5), S-516-S-517 2014 <b>(Abstract)</b>	
14.	Patel NJ*, R Karuturi*, RA Al-Horani*, <b>Somesh Baranwal</b> , J Patel, UR Desai, BB Patel Synthetic, non-saccharide glycosaminoglycan mimetics selectively target colon cancer stem cells Gastroenterology 146 (5), S-84-S-85 2014 <b>(Abstract)</b>	16.716
15.	Sharon Chetna, Somesh Baranwal, J Patel, NJ Patel, BB Patel. Inhibition of Insulin-Like Growth Factor Receptor Activity Attenuates Colon Cancer Stem Cells Growth and Self-Renewal by Targeting Mevlonate-Isoprenoid Metabolism, Gastroenterology 146 (5), S-692 2014 <b>(Abstract)</b>	16.716
16.	Dong S, <b>Somesh Baranwal</b> , M. Maziveyi, S. Alahari Nischarin-integrin interaction and downstream signaling regulate mouse mammary development and tumorigenesis Mol. Biol. Cell, December 15, 2013 vol. 24 # 888 <b>(Abstract)</b>	4.548
17.	Nayden G. Naydenov*, <b>Somesh Baranwal</b> *, Shadab Khan, Alex Feygin, Pooja Gupta and Andrei I. Ivanov Novel mechanism of cytokine-induced disruption of epithelial barriers: janus kinase and protein kinase D dependent down regulation of junction protein expression Tissue Barriers. 2013 (*denotes equal contribution) Oct 1;1(4):e25231	A Landes Bioscience Journal established in 2013
18.	Prachi Jain, <b>Somesh Baranwal</b> , Amanda P. Struckhoff, Rebecca A. Worthylake, Suresh K Alahari LKB1 interacts with Nischarin to regulate breast tumor growth and metastasis. J Biol Chem. 2013 May 31; 288(22):15495-509	4.773
19.	Michael J. Walters*, Angela C. Brown*, Thomas C. Edrington, <b>Somesh Baranwal</b> , Yurong Du, Edward T. Lally, and Kathleen Boesze-Battaglia Contact with Membrane Lipids Induces Changes in Aggregatibacter actinomycetemcomitans Leukotoxin Secondary Structure. Mol Oral Microbiol. 2013 Oct; 28(5):342-53	2.641
20.	<b>Somesh Baranwal</b> , Nayden G. Naydenov, Gianni Harris, Vera Dugina, Kathleen G. Morgan, Christine Chaponnier, Andrei I. Ivanov, Non-redundant roles of cytoplasmic beta- and gamma-actin isoforms in regulation of epithelial apical junctions Mol Biol Cell. 2012 Sep; 23(18):3542-53.	5.861
21.	Nayden G Naydenov, Bryan Brown, Gianni Harris, Michael R Dohn, Victor M Morales, <b>Somesh Baranwal</b> , Albert B Reynolds, Andrei I. Ivanov A membrane fusion protein alpha-SNAP is a novel regulator of epithelial apical junctions PLoS One. 2012;7(4):e34320	4.11
22.	<b>Somesh Baranwal</b> , Wang Y, Rathinam R, Lee J, Jin L, McGoey R, Pylayeva Y, Giancotti F, Blobe GC, Alahari SK. Molecular characterization of the tumor-suppressive function of Nischarin in breast cancer. J National Cancer Inst. 2011 Oct 19;103 (20): 1513-28	14.697
23.	Prachi Jain, <b>Somesh Baranwal</b> , Suresh K Alahari, Tumor suppressor LKB1 cooperates with the integrin-binding protein Nischarin to inhibit breast cancer Cancer Research. 04/2011; 71(8 Supplement):2196-2196. <b>(Abstract)</b>	9.28
24.	Yanfang W*, Shenouda S*, <b>Somesh Baranwal</b> *, Rathinam, R. Jain P., Hazari S, Dash S, Alahari SK. Integrins alpha-5 and alpha-6 regulate cell cycle by	5.40

	modulating the Chk1 and Rb/E2F pathways to affect breast cancer metastasis. Molecular Cancer. 2011 Jul 13; 10:84. (*Denotes equal contribution)	
25.	<b>Somesh Baranwal</b> , Walch A, Lakins J, Weaver VM and Alahari SK. Nischarin over expression inhibits metastasis by restoring epithelial markers in metastatic breast cancer cells Mol. Biol. Cell 19 (suppl), #. 1436/B655 <b>(Abstract)</b>	<b>5.979</b>
26.	Wang, Y, Lavezzi, T, Walch Amelia, Milosavljevic T, <b>Somesh Baranwal</b> , S.K. Alahari. December, 2007 "MicroRNA Profiling of Human Breast Cancer Cell Line MDA-MB-231 (sub-line 4175) and MCF10A. Mol. Biol. Cell 19 (suppl), #. 1436/B655 <b>(Abstract)</b>	<b>5.578</b>
27.	Fong KP, Pacheco CM, Otis LL, <b>Somesh Baranwal</b> , Kieba IR, Harrison G, Hersh EV, Boesze-Battaglia K, Lally ET. <i>Actinobacillus actinomycetemcomitans</i> leukotoxin requires lipid micro domains for target cell cytotoxicity. Cellular Microbiology 2006 Nov; 8(11): 1753-67.	<b>5.625</b>
28.	<b>Somesh Baranwal</b> , Kieba IR, Sava M and Lally ET March, 2006, Interaction of Actinobacillus actinomycetemcomitans Leukotoxin (Ltx) with soluble LFA-1 (sLFA-1)", in 35th Annual Meeting & Exhibition of the AADR, Orlando, FL, USA. J of dental Research 85A #1096 <b>(Abstract)</b>	<b>3.496</b>
29.	Karen P. Fong, Cinthia M.F. Pacheco, Linda L. Otis, <b>Somesh Baranwal</b> , Irene R. Kieba, Elliot V. Hersh, Kathleen Boesze-Battaglia, Gerald Harrison and Edward T. Lally. March 2005 Actinobacillus actinomycetemcomitans leukotoxin (Ltx) associates with lipid micro domains of target cells 82nd General Session and Exhibition of the IADR/AADR/CADR. Baltimore, Maryland, USA. J of Dental Research 84A # 2842 <b>(Abstract)</b>	<b>3.475</b>
30.	<b>Somesh Baranwal</b> , Dey K, Ramamurthy T, Nair GB, Kundu M. Role of active efflux in association with target gene mutations in fluoroquinolone resistance in clinical isolates of <i>Vibrio cholerae</i> . Antimicrobial Agents Chemotherapy 2002 Aug; 46(8): 2676-8	<b>4.672</b>

#### Book Chapters

- **Nirmita Patel, Somesh Baranwal, and Bhaumik B. Patel. A Strategic Approach to Identification of Selective Inhibitors of Cancer Stem Cells Glycosaminoglycan, Chemistry and Biology Methods Mol. Biol. 2015;1229:529-41 . (Journal Impact Factor 1.29).**

#### Review Articles

- **Somesh Baranwal, Alahari SK Rho GTPase Effector Functions in Tumor Cell Invasion and Metastasis. Current Drug Targets. 2011 Jul 1; 12(8):1194-201. (Journal Impact factor – 3.061)**
- **Somesh Baranwal, Alahari SK. miRNA control of tumor cells invasion and metastasis. Int J Cancer. 2010 Mar 15; 126 (6): 1283-90. (Journal Impact factor – 5.44)**
- **Somesh Baranwal, Alahari SK. Molecular mechanisms controlling E-cadherin expression in breast cancer. Biochem. Biophys. Res. Commun. 2009 Jun 19; 384 (1):6-11 (Journal Impact factor – 2.595)**

#### Conferences

##### Attended/Presented

- Somesh Baranwal, Sharon C. Patel NJ and Bhaumik B Patel. Inhibition of Insulin-like growth factor-1 receptor-Akt-Mammalian target of rapamycin axis selectively attenuates CCS phenotype through regulation of  $\beta$ -catenin/TCF4 signaling via modulation of protein prenylation. VCU Massey Cancer Center Research Retreat May 22nd 2015 Richmond VA.
- Chetna Sharon, Somesh Baranwal, Bhaumik B Patel IGF-1R attenuates Cancer Stem cell growth through inhibition of Mevalonate Biosynthetic pathway by preferentially targeting isopentenyl diphosphate delta isomerase 1. VCU Massey Cancer Center Research Retreat May 22nd 2015 Richmond VA.
- Rio Boothello, Nirmita Patel, Chetna Sharon, Somesh Baranwal, Bhaumik B Patel. Non-anticoagulant heparin hexasaccharide selectively inhibit Cancer stem Cell. VCU Massey Cancer Center Research Retreat, May 22nd 2015 Richmond VA.
- Nirmita Patel, Nehru Sankaranarayanan, Balaji Nagarajan, Rio Boothello, Somesh Baranwal, Steven Grossman, Umesh R Desai, Bhaumik B. Patel. A unique non-saccharide mimic of heparin hexasaccharide selectively inhibits Cancer stem Cell growth via a novel p38MAPK-CtBP2-TCF4 axis. VCU Massey Cancer Center Research Retreat May 22nd 2015 Richmond VA.
- Somesh Baranwal, Nayden G. Naydenov and Andrei I. Ivanov, “Non-redundant functions of cytosolic alpha and beta -actin isoforms in regulating epithelial apical junctions” Poster Presentation at Gordon Research Conference on Cell Contact & Adhesion – Cell Interactions and Tissue Organization in Health and Disease. June, 2011.
- Prachi Jain, Somesh Baranwal, Suresh K. Alahari. Tumor suppressor LKB1 cooperates with the integrin-binding protein Nischarin to inhibit breast cancer” in poster presentation in 102 Annual AACR Annual meeting Orlando, FL. USA April, 2011.
- Lianjin Jin, Somesh Baranwal, Yanfang Wang and Suresh K. Alahari. October, 2010 “MiR-23b promotes human breast cancer growth and metastasis by down-regulating Nischarin expression” poster presentation in Twenty fourth annual Graduate Research Day LSU Health Science Centre, New Orleans, LA. USA.
- April, 2010 Invited talk on “Molecular Characterization of Tumor Suppressive Function of Nischarin in Breast Cancer” at Department of Obstetrics and Gynecology University of Chicago, Illinois.
- February, 2010 Oral presentation on “Generation and preliminary characterization of Nischarin Integrin binding domain deleted knockout mice” in the Department of Biochemistry and Molecular biology LSUHSC, New Orleans. LA USA.
- Somesh Baranwal, Y Wang, R. Rathinam and S. K. Alahari. November, 2009 Tumor suppressor function of Nischarin in Breast cancer in Twenty third annual Graduate Research Day LSU Health Science Center. New Orleans, LA .USA.
- April 2007, Invited talk “Actinobacillus actinomycetemcomitans Leukotoxin /LFA-1 interaction” at the laboratory of Immunology, National Institute of Aging Baltimore,



## Research Grants

1. Role of Integrin binding protein, Kindlin in colon cancer progression (Department of Biotechnology) ₹ 8.8 million grant including fellowship from July 2015 to June 2020.
2. Role of Nischarin in the regulation of intestinal apical epithelial junction Rs 49.20 Lakhs (36 Months) Department of Science and Technology, New Delhi India
3. Identification and characterization of the functional significance of gastric cancer stem cells Rupees 10 Lakhs 24 Month University Grant Commission, New Delhi, India
4. Role of OmpU of *Vibrio cholerae* in the disruption of Intestinal Junctional barrier Rupees 3 Lakhs (24 Months) Research Seed Money grant (RSM), Central University of Punjab (CUP), Bathinda

## Workshop

1. Biomarkers & Bio-repositories in Translational Research  
October 28-29, 2010 University of Rochester Medical Centre, School of Medicine and Dentistry, 601, Elmwood Avenue Rochester, NY 14642.
2. JMP 11 Day (Statistical Analysis Software)  
September 27th 2013 organized by VCU technology services  
Session 1: JMP Basics Hands-on Workshop,  
Session 2: JMP Data Visualization Demo,  
Session 3: JMP 11 Features, Hands-on Workshop.

## Collaboration

Prof Suresh K Alahari LSUHSC, New Orleans USA