

ANURAG VARSHNEY, PhD, MBA

A501, Aarogyam Apts, Opp Crystal world, NH-58, Haridwar, 249 405 INDIA

Contact: 91 - 989 957 9510; e-mail: anurag.varshney@yahoo.com

Drug discovery-development professional with in-depth understanding of product development with 23 years of research and management experiences. Molecular physiology and cell signalling specialist, with well-honed managerial skills with focused project management and resource planning.

Career USP:

- Strategic management planning with direct R&D deliverables.
- Effective leadership to manage material, money and manpower.
- Science driven operational excellence and leader idea generation teams.
- Marker/sensor-hunting for biological responses on genomics and proteomics platforms.
- In-vivo study design planning and execution, with efficient harvesting of top line information.
- Global Project Team player for non-clinical risk assessment.
- Pre-clinical pharmacology, Novel assay develop-deployment. Stem cell biology: Lung regeneration.
- Patch clamp Electrophysiology; Membrane protein biochemistry, immuno-analysis, reconstitution and assaying ion channel activity.
- Advanced molecular biology skills, which include site-directed mutagenesis of large proteins, siRNA mediated gene silencing and in-vitro translation.

Research Experience and Achievements

03/2018 – onwards Vice President and Head, Patanjali Research Institute, Haridwar.

At Patanjali, I am leading the entire Drug Discovery and Development Division. I have centralized the operations and working towards organization efficiencies. More than 50 new research themes have been initiated for natural products based drug discovery and reverse pharmacological biomarkers. Special attention has been given to ancient metallic medicines (*bhasma*) and their nano-form efficacies.

- Proof of Concept studies for traditional Indian medicines through modern biological research.
- Biomarker driven clinical mapping for natural products/processes efficacies.
- External research partnership building and nurturing; CRO managements and Result oriented contracts.
- Member Secretary: Institutional Ethics Committee for human clinical trials.
- Chairman: Institutional Animal Ethics Committee.
- Chairman: Institutional Bio-Safety Committee.

04/2017 – 01-2018 Senior Director, Business Strategy and Operations.

I worked with new technology companies as senior advisor and chief strategy officer. I conceptualized the business operation, designed the laboratories, and devised the marketing strategy for a Genomics start-up company (Theracues Innovations Pvt Ltd, Bengaluru). This venture is based around Nano-string technology of DNA bar coding, for genomic biomarkers detections. I also worked with two more start-up operations in biopharma space and medico-marketing.

- Bio-technological leadership to evaluate, acquire and expand new technology platforms.
- Strategy planning and execution road mapping.
- Grass-root resource management and business risk mitigation.

07/2010 – 03/2017 Associate Director, Daiichi Sankyo India.

At Daiichi Sankyo India, I co-led Toxicology division and was in-charge of pre-clinical safety pharmacology. Cardio-toxicity, Geno-toxicity, Hepato-toxicity, nephro-toxicity and dermal toxicity were the core in-vitro tox competencies of my team. More than 40 different research themes were supported for initial liability assessments. I conducted in-vivo Tox studies through external CROs, as sponsor representative and monitoring scientist. Study planning, designing, data review and communication were the central component of my responsibilities. I also represented non-clinical safety function in DS Global Project Team, across geographies.

For four years (2010-2014), I also led the molecular biology department, with a focus on bio-reagent generations for pharmacology; and bio-signal detections on genomics platforms.

- Designed Tox studies, strategized Tox evaluation plan for discovery programs.
- Planned/scheduled, budgeted, resourced, executed, reviewed, communicated, audited and reported preclinical safety studies.
- Evaluated Contract Research Organization for preclinical toxicity studies, functioned as study sponsor/and study monitor for timely execution and final reporting of Tox studies.
- Set up Electrophysiology and HCS based in-vitro toxicology screening assays at Daiichi Sankyo India.
- Designed a rather non-conventional hypothesis for a Tox finding, that could rescue the research theme.
- Established a fully functional High Content Screening facility at Daiichi Sankyo India.
- Setup an in-house kinase panel of 60+ active kinases for off-target profiling.
- Organized an international conference on lung diseases, raised external funds and chaired a session.
- Identified, established and led an academic alliance on lung regeneration for three years.
- Led an entire research theme on metabolic diseases as Biology leader and mentor.

03/2006 – 06/2010 Sr Group Leader – Pharmacology, Ranbaxy Research Laboratories

At Ranbaxy, I employed my well-honed electrophysiological skills to set three functional setups for gauging in-vitro cardiac toxicity liabilities of new chemical entities. In-vitro Genotoxicity capabilities were also incorporated to complement the group's expertise.

- Established a functional electrophysiology laboratory with three different experimental rigs.
- Developed and trained a team of scientists on electrophysiology.
- Established a functional genotoxicity screening laboratory.
- Led the screening group for pre-clinical detection of cardio-toxicity and geno-toxicity of potential druggable compounds, with on-time data delivery.
- Designed, generated and successfully tested a recombinant biosensor in-house for metallo-proteases.

04/2003 – 03/2006 Postdoctoral Researcher in Pharmacology at Yale University School of Medicine, New Haven, USA

As a postdoctoral fellow, I used biochemical, confocal and electrophysiological methods to study a novel molecular interaction between InsP₃R and Polycystin-2 (PC2). Genetic and somatic modifications in PC2 cause Autosomal Dominant Polycystic Kidney Disease (ADPKD). Functionally, PC2 is an ER resident protein like InsP₃R and has been shown to constitute a calcium release channel. These studies were carried out using calcium imaging on kidney epithelial cells expressing different levels of PC2. In collaboration with Manuel Estrada, I demonstrated that elevated Testosterone could initiate apoptosis in neuronal cells. These experiments were carried out using basic cell biology and biochemical tools.

- Biochemical and electrophysiological studies on Polycystin proteins and their role in pathogenesis of human Polycystic Kidney Disease.
- Demonstrated molecular and functional interactions between polycystin-2 and InsP₃R in kidney cells. Suggested these interactions are critical in pathogenesis of ADPKD.

- Demonstrated that the supra-physiological Testosterone could trigger neuronal cell death and intracellular calcium pathway is central to this phenomenon. Recommended a careful re-examination of clinical hormone replacement therapy.

08/1997 - 04/2003 Graduate Student at National Center for Biological Sciences, TIFR, Bangalore, India

As a part of my doctoral training at NCBS, I employed molecular biological, electrophysiological and pharmacological tools to dissect the structure-function correlates of voltage-gated potassium (Kv) channels: hKv1.1, hKv1.2 and hKv1.4. In addition, I also improvised electrophysiological expertise in following apoptosis in a time resolved manner at a single cell level.

- Characterized the novel properties of chimeric channels unveiled by various N-terminal swaps and co-expression experiments between human Kv channels. Demonstrated that the N-terminal cytoplasmic segments are important modulators of voltage sensing process.
- Developed the *Xenopus* oocyte system as a potent technique to study cytochrome *c* induced apoptosis. Suggested that membrane potential is an early marker of cell death.
- Characterized the role of the C-terminal in the inactivation gating of voltage sensitive potassium channels. Suggested that C-terminal residues are required to stabilize the inactivated state.
- Pharmacologically screened the Indian scorpion (*Buthus tamulus*) toxins on human Kv channels and demonstrated that BTK-2 selectively blocks hKv1.1.

Academic and Professional Honors

- 2016 - Daiichi Sankyo MinDS INdia title award.
- 2014 - Daiichi Sankyo SMART awards for Effective Team Risk Management.
- 2012 - Team of year award (Winner) for best Collaborative performance in Daiichi Sankyo India.
- Innovation award (runner up) for new Ideas and Implementation in Daiichi Sankyo India.
- 2011 - Team of year award (1st and 2nd runner up) for best Collaborative performance in Daiichi Sankyo India.
- 2007 - Ranbaxy Global Appreciate Award for best individual performance in whole organization globally.
- Ranbaxy Appreciate Award for best individual performance in whole R&D function.
- 2004 - Asian-Pacific Society for Neurochemistry (APSN) travel fellowship to Hong Kong.
- Postdoctoral Fellowship from National Kidney Foundation (NKF), USA.
- Brown-Coxe Postdoctoral Fellowship in the Medical Sciences at Yale University, USA (not availed).
- 2003 - Postdoctoral Fellowship from National Institute of Health (NIH), USA.
- 2002 - International Union of Pure and Applied Biophysics (IUPAB) travel fellowship to Buenos Aires, Argentina.
- Best poster award in NCBS International Symposia on Cancer and Cell Death at Bangalore, India
- 2001 - Kanwal Rekhi Research Scholarship for excellence in Graduate studies at TIFR.
- American Physiological Society (APS) travel award to Christchurch, New Zealand.
- International Brain Research Organization (IBRO) travel fellowship to Christchurch, New Zealand.
- Young Investigator Award from International Union of Physiological Sciences (IUPS).
- European Journal of Neuroscience travel fellowship to Sydney, Australia.
- Council for Scientific and Industrial Research (CSIR) travel fellowship to Katoomba, Australia.
- 2000 - International Federation of Cell Biology (IFCB) Student Scholarship to Gold Coast, Australia.
- Keystone Symposia Scholarship and Travel Fellowship to Tahoe City, USA.
- 1999 - Frank R. Lillie Fellowship and Mountain Memorial Scholarship at MBL, Woods hole, USA
- COSTED Travel Fellowship to Marine Biological Laboratory, Woods hole, USA.
- Anita Zorzoli Memorial Fund Award at MBL, Woods hole, USA.
- International Society for Neurochemistry Scholarship.

- 1997 - Graduate Research Scholarship from NCBS-TIFR, India.
1987 - Government Merit Scholarship from State Govt., India.

Education

- MBA
(Weekend Program) University School of Management Studies, GGS Indraprastha University, New Delhi.
Aug '07 - Jul '09
Specialization: International Business Management.
Dissertation Title: Trade related aspects of intellectual property rights and their relevance in pharmaceutical industry.
- Ph.D.
(Integrated Program) National Centre for Biological Sciences, TIFR, Bangalore, India.
Aug '97 - Apr '03
Dissertation Title: The role of cytoplasmic residues in human potassium channels: An investigation using chimeric channels. *Thesis Advisor:* Professor M. K. Mathew
- B.Sc. Rohilkhand University, Bareilly, UP, India.
Aug '95 – May '97
(Zoology, Chemistry, and Botany)
Physiology: The Molecular and Biochemical basis of cell Signalling
- Physiology course A training course at Marine Biological Laboratory, Woods Hole, USA.
Jun '99 - Aug '99

Bibliography

Peer reviewed research articles:

1. Balkrishna A, Raj P, Singh P, Varshney A* (2021) Influence of Patient-Reported Treatment Satisfaction on Psychological Health and Quality of Life Among Patients Receiving Divya-Swasari-Coronil-Kit Against COVID-19: Findings from a Cross-Sectional “SATISFACTION COVID” Survey. *Patient Prefer. Adherence* (In Press)
2. Balkrishna A, Khandrika L, Varshney A*. (2021) Giloy Ghanvati (*Tinospora cordifolia* (willd.) Hook.f. & Thomson) Reversed SARS-CoV-2 Viral Spike-protein Induced Disease Phenotype in the Xenotransplant Model of Humanized Zebrafish. *Front. Pharmacol.* doi: 10.3389/fphar.2021.635510 (In Press)
3. Balkrishna A, Solleti SK, Singh H, Sharma N, Varshney A* (2021) Withanolides from *Withania somnifera* Ameliorate Neutrophil Infiltration in Endotoxin-Induced Peritonitis by Regulating Oxidative Stress and Inflammatory Cytokines. *Planta Medica* (In press)
4. Balkrishna A, Gohel V, Singh R, Bhattacharya K, Varshney A* (2021) Livogrit Ameliorates Acetaldehyde-induced Steatosis in HepG2 cells Through Modulation of Lipogenesis and β -oxidation Pathways. *Phytomedicine Plus* (In Press)
5. Balkrishna A, Gupta AK, Singh K, Haldar S, Varshney A* (2021) Effects of Fatty Acids in Super Critical Fluid Extracted Fixed Oil from *Withania somnifera* Seeds on Gram-Negative *Salmonella enterica* Biofilms. *Phytomedicine Plus* 1(4): 100047. doi: 10.1016/j.phyplu.2021.100047.
6. Balkrishna A, Nain P, Joshi M, Khandrika L, Varshney A*. (2021) Supercritical Fluid Extract of *Putranjiva roxburghii* Wall. Seeds Mitigates Fertility Impairment in a Zebrafish Model. *Molecules*; 26(4):1020. doi: 10.3390/molecules26041020.

7. Devpura G, Tomar BS, Nathiya D, Sharma A, Bhandari D, Haldar S, Balkrishna A, [Varshney A*](#) (2021) Randomized placebo-controlled pilot clinical trial on the efficacy of ayurvedic treatment regime on COVID-19 positive patients. *Phytomedicine*; 84:153494. doi: 10.1016/j.phymed.2021.153494.
8. Balkrishna A, Verma S, Sharma P, Tomer M, Srivastava J, [Varshney A.*](#) (2021) Comprehensive and Rapid Quality Evaluation Method for the Ayurvedic Medicine Divya-Swasari-Vati Using Two Analytical Techniques: UPLC/QToF MS and HPLC-DAD. *Pharmaceuticals* (Basel) ;14(4):297. doi: 10.3390/ph14040297.
9. Balkrishna A, Haldar S, Singh H, Roy P, [Varshney A*](#) (2021) Coronil, a Tri-Herbal Formulation, Attenuates Spike-Protein-Mediated SARS-CoV-2 Viral Entry into Human Alveolar Epithelial Cells and Pro-Inflammatory Cytokines Production by Inhibiting Spike Protein-ACE-2 Interaction. *J Inflamm Res.* 16;14:869-884. doi: 10.2147/JIR.S298242.
10. Balkrishna A, Pokhrel S, Singh H, Joshi M, Mulay VP, Haldar S, [Varshney A*](#) (2021) Withanone from *Withania somnifera* Attenuates SARS-CoV-2 RBD and Host ACE2 Interactions to Rescue Spike Protein Induced Pathologies in Humanized Zebrafish Model. *Drug. Des. Devel. Ther.* 11;15: 1111-1133. doi: 10.2147/DDDT.S292805.
11. Balkrishna A, Pokhrel S, [Varshney A*](#) (2021) Phyto-compounds from a rather poisonous plant, *Strychnos nuxvomica*, show high potency against SARS-CoV-2 RNA-dependent RNA polymerase. *Curr Mol Med.* Feb 17. doi:10.2174/1566524021666210218113409.
12. Balkrishna A, Verma S, Solleti SK, Khandrika L, [Varshney A*](#). (2020) Calcio-Herbal Medicine Divya-Swasari-Vati Ameliorates SARS-CoV-2 Spike Protein-Induced Pathological Features and Inflammation in Humanized Zebrafish Model by Moderating IL-6 and TNF- α Cytokines. *J Inflamm Res.* 13:1219-1243. doi: 10.2147/JIR.S286199.
13. Balkrishna A, Singh K, Singh H, Haldar S, [Varshney A*](#) (2020) GermiX: A skin friendly hand sanitizer with prolonged effectivity against pathogenic bacteria. *AMB Express.* 1;10(1):210. doi: 10.1186/s13568-020-01151y.
14. Balkrishna A, Solleti SK, Verma S, [Varshney A*](#) (2020) Application of Humanized Zebrafish Model in the Suppression of SARS-CoV-2 Spike Protein Induced Pathology by Tri-Herbal Medicine Coronil via Cytokine Modulation. *Molecules* 25(21): E5091. doi: 10.3390/molecules25215091
15. Balkrishna A, Sakat SS, Karumuri S, Singh H, Tomer M, Kumar A, Sharma N, Nain P, Haldar S, [Varshney A*](#) (2020) Herbal Decoction Divya-Peeditak-Kwath Alleviates Allodynia and Hyperalgesia in Mice Model of Chemotherapy-Induced Peripheral Neuropathy via Modulation in Cytokine Response. *Front. Pharmacol.* 11:566490. doi: 10.3389/fphar.2020.566490
16. Balkrishna A, Subarna P, [Varshney A*](#) (2020) Tinocordiside from *Tinospora cordifolia* (Giloy) may curb SARS-CoV-2 contagion by disrupting the electrostatic interactions between host ACE2 and viral S-protein receptor binding domain. *Comb. Chem. High Throughput Screen.* Nov 10. doi: 10.2174/1386207323666201110152615.
17. Balkrishna A, Solleti SK, Singh H, Verma S, Sharma N, Nain P, [Varshney A*](#) (2020) Herbal decoction Divya-Swasari-Kwath attenuates airway inflammation and remodeling through Nrf-2 mediated antioxidant lung defence in mouse model of allergic asthma. *Phytomedicine* 78:153295. doi: 10.1016/j.phymed.2020.153295.
18. Balkrishna A, Gohel V, Singh R, Joshi M, Varshney Y, Srivastava J, Bhattacharya K, [Varshney A*](#) (2020) Tri-Herbal Medicine Divya Sarva-Kalp-Kwath (Livogrit) Regulates Fatty Acid-Induced Steatosis in Human HepG2 Cells through Inhibition of Intracellular Triglycerides and Extracellular Glycerol Levels. *Molecules* 25(20):4849. doi: 10.3390/molecules25204849.
19. Balkrishna A, Solleti SK, Verma S, [Varshney A*](#) (2020) Validation of a Novel Zebrafish Model of Dengue Virus (DENV-3) Pathology Using the Pentaherbal Medicine Denguenil Vati. *Biomolecules* 10(7):971. doi: 10.3390/biom10070971.

20. Balkrishna A, Pokhrel S, [Varshney A*](#) (2020) Comparative COX I Molecular Docking of Phyto-chemicals (Flavonoids, Alkaloids, Lignans and Terpenoids) for Anti-Platelet Aggregation Dynamics. *Curr Comput Aided Drug Des.* doi: 10.2174/1573409916666200630110711.
21. Balkrishna A, Rustagi Y, Bhattacharya K, [Varshney A*](#) (2020) Application of Zebrafish Model in the Suppression of Drug-Induced Cardiac Hypertrophy by Traditional Indian Medicine Yogendra Ras. *Biomolecules* 10(4):600. doi: 10.3390/biom10040600.
22. Balkrishna A, Sakat SS, Ranjan R, Joshi K, Shukla S, Joshi K, Gupta A, Bhattacharya K, [Varshney A*](#) (2020) Polyherbal Medicine Divya Sarva-Kalp-Kwath Ameliorates Persistent Carbon Tetrachloride Induced Biochemical and Pathological Liver Impairments in Wistar Rats and in HepG2 cells. *Front. Pharmacol.* doi: 10.3389/fphar.2020.00288
23. Balkrishna A, Thakur P, Singh S, Chandra Dev SN, [Varshney A*](#) (2020) Mechanistic Paradigms of Natural Plant Metabolites as Remedial Candidates for Systemic Lupus Erythromatosus. *Cells* 9(4):1049. <https://doi.org/10.3390/cells9041049>
24. Balkrishna A, Solleti SK, Singh H, Tomer M, Sharma N, [Varshney A*](#) (2020) Calcio-Herbal Formulation, Divya-Swasari-Ras, Alleviates Chronic Inflammation and Suppresses Airway Remodelling in Mouse Model of Allergic Asthma by Modulating Pro-Inflammatory Cytokine Response. *Biomed. Pharmacother.* 126, 110063. doi: 10.1016/j.biopha.2020.110063
25. Balkrishna A, Thakur P, [Varshney A*](#) (2020) Phytochemical Profile, Pharmacological Attributes and Medicinal Properties of *Convolvulus prostratus* – A Cognitive Enhancer Herb for the Management of Neurodegenerative Etiologies. *Front. Pharmacol.* 11:171. doi: 10.3389/fphar.2020.00171
26. Balkrishna A, Nain P, Chauhan A, Sharma N, Gupta A, Ranjan R, and [Varshney A*](#) (2020) Super Critical Fluid Extracted Fatty Acids from *Withania somnifera* Seeds Repair Psoriasis-Like Skin Lesions and Attenuate Pro-Inflammatory Cytokines (TNF- α and IL-6) Release. *Biomolecules* 10(2), 185; doi: 10.3390/biom10020185
27. Balkrishna A, Pokhrel S, Tomer M, Verma S, Kumar A, Nain P, Gupta A, and [Varshney A*](#) (2019) Anti-Acetylcholinesterase Activities of Mono-Herbal Extracts and Exhibited Synergistic Effects of the Phyto-constituents: A Biochemical and Computational Study. *Molecules*, 24, 4175; doi: 10.3390/molecules24224175
28. Balkrishna A, Sakat SS, Joshi K, Joshi K, Sharma V, Ranjan R, Bhattacharya K, and [Varshney A*](#) (2019) Cytokines Driven Anti-Inflammatory and Anti-Psoriasis Like Efficacies of Nutraceutical Sea Buckthorn (*Hippophae rhamnoides*) Oil. *Front. Pharmacol.* 10:1186. doi: 10.3389/fphar.2019.01186
29. Balkrishna A, Sakat SS, Joshi K, Paudel S, Joshi D, Joshi K, Ranjan R, Gupta A, Bhattacharya K and [A Varshney*](#) (2019) Anti-Inflammatory and Anti-Arthritic Efficacies of an Indian Traditional Herbo-Mineral Medicine “Divya Amvatari Ras” in Collagen Antibody-Induced Arthritis (CAIA) Mouse Model Through Modulation of IL-6/IL-1 β /TNF- α /NF κ B Signalling. *Front. Pharmacol.* 10:659. doi: 10.3389/fphar.2019.00659
30. Balkrishna A, Sakat SS, Joshi K, Paudel S, Joshi D, Joshi K, Ranjan R, Gupta A, Bhattacharya K, and [A Varshney*](#) (2019) Herbo-mineral Formulation 'Ashwashila' Attenuates Rheumatoid Arthritis Symptoms in Collagen-Antibody-Induced Arthritis (CAIA) Mice Model. *Scientific Reports*; 9(1):8025. doi: 10.1038/s41598-019-44485-9
31. P.Banerjee, H.Surendran, K.Morishita, K.Bharti, [A.Varshney*](#) and R.Pal* (2017): Long noncoding RNA RP11380D23.2 drives distal-proximal patterning of the lung by regulating PITX2 expression. *Stem Cells* doi: 10.1002/stem.2740. * *Equal Contribution.* [web link](#)
32. A.Kumar, S.Dudha, A.Sundari T, M.Sunkara, H.Usman, [A.Varshney](#) and A.Mukhopadhyay (2016): Dopaminergic-primed fetal liver mesenchymal stromal-like cells can reverse parkinsonian symptoms in 6hydroxydopamine-lesioned mice. *Cytotherapy* Vol 18, Issue 3 pp. 307–319. [web link](#)
33. M.Estrada*, [A.Varshney*](#) and B.E.Ehrlich (2006): Elevated testosterone induces apoptosis in neuronal cells. *J Biol Chem.* Vol. 281, Issue 35 pp. 25492-501. * *Equal Contribution.* [web link](#)

34. C.Schlecker, W.Boehmerle, A.Jeromin, B.DeGray, [A.Varshney](#), Y.Sharma, K.Szigeti-Buck, and B.E.Ehrlich (2006): Neuronal calcium sensor-1 enhancement of InsP₃ receptor activity is inhibited by therapeutic levels of lithium. *J Clin Invest*. Vol. 116, Issue 6 pp.1668-74. [web link](#)
35. S.Kavitha, [A.Varshney](#) and M.K.Mathew (2005): N-type rapid inactivation in human Kv1.4 channels: Functional role of a putative C-terminal helix. *Mol Mem Biol*. Vol. 22, Issue 5 pp. 389-400. [web link](#)
36. [A.Varshney](#), B.Chanda and M.K.Mathew (2004): Arranging the elements of the potassium channel: The T1 domain occludes the cytoplasmic face of the channel. *Eur Biophys J*. Vol. 33, Issue 4 pp. 370- 376. [web link](#)
37. [A.Varshney](#) and M. K. Mathew (2004): Architecture of a membrane protein: The voltage-gated K⁺ channel. *Cur Sci*. Vol. 87, Issue. 2 pp. 166-174. [web link](#)
38. [A.Varshney](#) and B. E. Ehrlich (2003): Intracellular Ca⁺⁺ signaling and human disease: The hunt begins with Huntington's. *Neuron*. Vol. 39, Issue 2 pp. 195-197. [web link](#)
39. [A.Varshney](#) and M. K. Mathew (2003): A tale of two tails: Cytosolic termini and K⁺ channel function. *Prog Biophys & Mol Biol*. Vol. 83, Issue 3 pp. 153-170. [web link](#)
40. [A.Varshney](#) and M. K. Mathew (2003): Inward and outward potassium currents through the same chimæric human Kv channel. *Eur Biophys J*. Vol. 32, Issue 2, pp. 113 –121. [web link](#)
41. R.Dhawan, [A.Varshney](#), M.K.Mathew and A.K.Lala (2003): BTK-2, a new inhibitor of the Kv1.1 potassium channel purified from Indian scorpion *Buthus tamulus*. *FEBS Letts*. Vol. 539, Issues 1-3, pp. 7-13. [web link](#)
42. [A.Varshney](#), Kavitha, S. and M.K.Mathew (2002): Modulation of voltage sensitivity by N-terminal cytoplasmic residues in human Kv1.2 channels. *Eur Biophys J*. Vol. 31, Issue 5, pp. 365-372. [web link](#)
43. A.K.Bhuyan, [A.Varshney](#) and M.K.Mathew (2001): Resting membrane potential as a marker of apoptosis: studies on *Xenopus* oocytes microinjected with cytochrome *c*. *Cell Death & Differ*. Vol. 8, pp. 63-69. [web link](#)
44. [A.Varshney](#) and M.K.Mathew (2000): Cytoplasmic residues influence the voltage dependent gating of human potassium channels. *Neuroreport*. Vol. 11, Issue 13, pp. 2913-17. [web link](#)
45. B.Chanda, J.K.Tiwari, [A.Varshney](#) and M.K.Mathew (1999): Transplanting the N-terminus from Kv1.4 to Kv1.1 generates an inwardly rectifying K⁺ channel. *Neuroreport*. Vol.10, Issue 2-5, pp. 237-241. [web link](#)
46. B.Chanda, J.K.Tiwari, [A.Varshney](#) and M.K.Mathew (1999): Exploring the architecture of potassium channels using chimeras to reveal signal transduction. *Biosci Rep*. Vol. 9, No. 4, pp. 301-306. [web link](#)

Selected Presentations:

1. [A.Varshney](#) (2021): Shastra, Science And Technology: Dialogue Across Borders. *Keynote speaker in 4th Global Ayurveda Festival 2021* during 12th -19th March 2021, at FICCI, New Delhi, India
2. [A.Varshney](#) (2021): Scientific Evidence-based Development of Ayurvedic Medicine Against COVID-19: The story of Coronil. *Keynote speaker and Panellist in DST Training program: Traditional Medicine- Modern Approaches for Affordable and Accessible Healthcare* during 8th -12th Feb 2021, at Amity University, Noida, India
3. [A.Varshney](#) (2020): Scientific Research Careers Beyond Academic Options. *Invited speaker and Panellist in Workshop on Scientific Communication & Careers in Science* at Regional Centre for Biotechnology in collaboration with Wellcome Trust/DBT India Alliance, New Delhi, India.
4. [A.Varshney](#) (2019): Seabuck Thorn (*Hippophae rhamnoides*) Oil Ameliorates Psoriasis Like Skin Inflammation in Mice and Suppresses TNF- α , IL-6, IL-1 β , and NF- κ B pathway. *Invited speaker in 3rd National Conference of Seabuckthorn Association of India on Seabuckthorn: Translating research into sustainable development* at Delhi University, Delhi, India.
5. [A.Varshney](#) (2019): Animal Bio-resources: Conservation of animal resources, Challenges & Suggestive Approaches. *Invited speaker in Conservation of Bio- Resource of Medicinal Value: Current Scenario and Way Forward* at CCRAS, Ministry of AYUSH, Govt of India, Delhi, India.

6. A.Varshney (2019): Herbo-mineral formulation ‘Ashwashila’ attenuates rheumatoid arthritis symptoms in collagen-antibody induced arthritis (CAIA) mice model. *Invited* speaker in *International Seminar on Integrated Approaches to Autoimmune Disorders* at Haridwar, India.
7. A.Varshney (2018): High Content Screening: Applications in Detecting Drug Induced Liver Injuries. *Invited* speaker in *Thermo-Fisher Scientific HCS workshop*, at Gurgaon, India.
8. A.Varshney (2017): IND-Enabling Toxicity Studies: The Base Primer for Regulatory Toxicology. *Invited* speaker in *Pre-Conference Workshop on Regulatory Toxicology*, 37th Annual conference of Society of Toxicology, at PGIMER Chandigarh, India.
9. A.Varshney (2016): High Content analysis in Early Genotoxicity Assessments. *Invited* speaker in *Thermo Scientific Cell Biology User Group Meeting*, at Gurgaon, India.
10. A.Varshney (2016): Preclinical Toxicology Assessments in Drug Discovery. *Invited* speaker in *Industry Academia Interaction Program*, at Jamia Hamdard University, New Delhi, India.
11. A.Varshney (2014): Exploring the Horizon - Careers Beyond Academic Research. *Invited* speaker and Panel discussion conductor in *International Symposium on Translational Neuroscience & XXXII Annual Conference of the Indian Academy of Neurosciences*, at NIMHANS, Bengaluru, India.
12. A.Varshney (2009): Ion Channels and Drug Discovery. *Invited* speaker at *Dr. Reddy's Institute of Life Sciences*, at University of Hyderabad, India.
13. A.Varshney, M.Kumar, V.Veerabhuvaneshwari, M.Chatterjee, S.Sharma, R.Dev, P.K.Srivastava, A.Ray and P.K.Bhatnagar (2009): Development of Genetically Encoded Luciferase Based Biosensor for Matrix Metallo Proteases. *Promega awarded* poster presented at the *6th General Meeting of International Proteolysis Society*, at Surfers Paradise, Queensland, Australia.
14. V.Bansal, J.Banerjee, A.Ray, P.K.Bhatnagar and A.Varshney (2008): Cardiac Action Potentials: The Electrophysiological Tool for Early Drug Safety Profiling. Poster presented at *International Conference on Translational Pharmacology & 41st Annual Conference of Indian Pharmacological Society* at New Delhi, India.
15. A.Varshney and I.A. Cliffe (2007): Molecular Understanding of hERG K⁺ Channel and Its Impact on New Drug Discovery Research. Poster presented at *9th CRSI National Symposium in Chemistry* at New Delhi, India.
16. A.Varshney (2007): Managing Pain: Looking Through the Ion Channels. *Invited* lecture at *IBC Conference on Drug Discovery Technology: Anti-Inflammatory and Pain Management* at Mumbai, India.
17. A.Varshney, Y. Cai, Z. Yu, D. Okuhara, S. Somlo and B.E. Ehrlich (2006): Polycystin-2 and the InsP3 Receptor interact to sculpt calcium signaling patterns in renal epithelial cells. *Platform* presentation at *50th Annual Meeting of the Biophysical Society* at Salt Lake City, USA.
18. A.Varshney, Y. Cai, S. Somlo and B.E. Ehrlich (2005): Polycystin-2 and InsP₃R form a functional signaling complex in renal epithelial cells. Poster presented at *49th Annual Meeting of the Biophysical Society* at Long Beach, USA.
19. A.Varshney, G.I. Anyatonwu, Y. Cai, S. Somlo and B.E. Ehrlich (2004): Polycystins form a functional channel complex in primary cilia in renal epithelial cells. Poster presented at *48th Annual Meeting of the Biophysical Society* at Baltimore, USA.
20. A.Varshney and M.K.Mathew (2004): The effect of soluble N-terminal residues on voltage dependent gating of neuronal Kv channels. Poster presented at *6th Biennial Meeting of the Asian-Pacific Society for Neurochemistry* in Hong Kong.
21. A.Varshney, B. Chanda and M.K.Mathew (2002): Voltage gated K⁺ channels: Putting together the three dimensional jigsaw Puzzle. *Invited* lecture delivered in “2002: *An Ion Channels and Transporters Odyssey*” a satellite symposium of XIV IBC, in Valdivia, Chile.
22. A.Varshney, Kavitha, S. and M.K.Mathew (2002): N-terminal effect in human Kv channels: Cytoplasmic residues influence the voltage sensitivity of hKv1.2. Poster presented at the *XIV International Biophysics Congress* at Buenos Aires, Argentina.

23. A.Varshney and M.K.Mathew (2002): A tale of tails: Making ends meet in a potassium channel. *Awarded poster presented at NCBS Symposia on Cancer and Cell Death* an International symposium at Bangalore, India.
24. A.Varshney and M.K.Mathew (2001): Two rectifiers in one body: Inward and outward currents from the same chimeric potassium channel. Poster presented at *34th World Congress of the International Union of Physiological Sciences* at Christchurch, New Zealand.
25. A.Varshney and M.K.Mathew (2001): Bi-directional voltage dependent K⁺ currents through a chimeric potassium channel. Poster presented at *International Symposium on Structure and Function of Ion Channels* at Leura, Blue Mountains, Sydney, Australia.
26. A.Varshney, Kavitha, S. and M.K.Mathew (2001): Altered voltage sensitivity in human potassium channels: Interaction of N-terminal residues with the cytoplasmic face of the channel. Poster presented at *XXII Annual Conference of the Australian Society for Biophysics* at Katoomba, Sydney, Australia.
27. A.Varshney and M.K.Mathew (2001): A tale of rectification in K⁺ channels: Inward and outward currents from the same molecule. Poster presented at *NCBS Symposia on Cell and Developmental Biology* an International symposium at Bangalore, India.
28. A.Varshney and M.K.Mathew (2000): N-terminal structures influence voltage sensitivity in chimeric potassium channels: Characterization of the 1N/2 chimera. Poster presented at *International Congress on Differentiation, Molecular and Cell Biology* at Gold Coast, Queensland, Australia.
29. A.Varshney and M.K.Mathew (2000): Nuts and bolts of human potassium channels: The T1 domain occludes residues on the cytoplasmic face of the channel. Poster presented at *Keystone Symposia on Potassium channels: Structure, Function and Therapeutic Utilities* at Tahoe City, California, USA.
30. A.Varshney and M.K.Mathew (1999): Modulation in voltage sensing and transduction in human K⁺ channels by the N-terminus. Poster presented at *XIII International Biophysical Congress* at New Delhi, India.
31. A.Varshney, B. Chanda and M.K.Mathew (1999): The architecture of voltage-gated potassium channels: The tetramerization domain occludes some of the cytoplasmic loops. Poster presented at *Membranes, Sensors and Cell Surfaces*, a satellite symposium of XIII IBC at Hyderabad, India.
32. A.Varshney, B.Chanda and M.K.Mathew (1999): Heads and Tails: The N-terminal ‘ball-and-chain’ perturbs voltage-dependent activation in K⁺ channels. Poster presented at *Ion Channel Structure & Function*, a conference at *Yale University School of medicine*, New Haven, CT, USA.
33. A.Varshney and M.K.Mathew (1999): Form and Function in Ion Channels: The N-terminal “Ball & Chain” influences the voltage sensitivity of the channel. Poster presented at *Frontiers in Structural Biology*, an International symposium at Bangalore, India.
34. A.Varshney, A.K.Bhuyan and M.K.Mathew (1999): The redox conformation of cytochrome *c* required for the initiation of apoptosis: Studies on *Xenopus* oocyte. Lecture delivered at *Cell Death in Development & Differentiation*, an international symposium cum workshop at NCBS, Bangalore, India.
35. A.Varshney and M.K.Mathew (1999): Inactivation in K⁺ channels: Effect of chain length variation. Poster presented at *5th International Symposium on Biochemical Roles of Eukaryotic Cell Surface Molecules* at Bangalore, India.
36. A.Varshney, B.Chanda, J.K.Tiwari and M.K.Mathew (1998): Reversal of rectification characteristic of a human K⁺ channel by modulation in N-terminal. *Platform presentation at The IBRO Seminars on Neurobiology* at Mahabaleshwar, India.

Professional Affiliations

1. Member of *Society of Toxicology (SOT)*, USA



2. Member of *Safety Pharmacology Society*.



3. Member of *Drug Safety Executive Council*. 
4. Lifetime member of *Society of Toxicology (STOX), India*. 
5. Member of *American Society for Pharmacology and Experimental Therapeutics*. 
6. Member of *International Brain Research Organization*. 
7. Lifetime member of *Indian Biophysical Society*. 