Curriculum Vitae

Name: Dr Debabrata Chanda

Date of birth: 26th June, 1976

Current affiliation:

Principal Scientist, *In- vivo* Testing Laboratory

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Central Institute of Medicinal and Aromatic Plants (CSIR),

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Educational Qualifications:

S.No.	Degree	University	Year	Subjects
1	BVSc&AH	WBUAFS, Kolkata, WB, India	1999	Veterinary and Animal Sciences
2	MVSc	WBUAFS, Kolkata, WB, India	2002	Vety. Pharmacology and Toxicology
3	PhD	IVRI, Bareilly, UP, India	2006	Vety. Pharmacology and Toxicology
4	Postdoc	King's College, London, UK	2013	Cardiovascular Pharmacology
5	Postdoc	University of Pittsburgh, Pittsburgh, USA	2023	Cardiometabolic diseases

PhD thesis title: *Molecular characterization of Na+/K+ ATPase isoforms and their regulation by 5HT and norepinephrine in ovine pulmonary artery*.

In my doctoral program, we have characterized different isoforms of Na-K-ATPase alpha subunit in ovine pulmonary vasculature. Subsequent regulation study showed that alpha-1 is the major regulator of basal tone in conduit vessels of ovine pulmonary vasculature and also the agonist induced contractility (J Cardiovasc Pharmacol. 2008; 52:167–175). It was also proved that sodium pump is an important contributor in vasorelaxation of NO-independent activators of soluble guanylate cyclase like BAY-412272 for its ODQ (inhibitors of sGC) resistant component of vasorelaxation (*J Pharmacol and Exp. Thera* 2005, 314(1) 207-13).

Field of specialization: Cardiovascular and smooth muscle pharmacology and toxicology

Current Research Interest:

We are exploring the anti-hypertensive activity of novel medicinal plant derived molecules using ex-vivo, in-vitro and in-vivo models. Role of potassium channels, calcium, protein kinases etc. are explored as a mechanism of action studies. We are using SHRs, L-NAME and DOCCA models for in-vivo evaluation of the lead molecules. We also exploring the potential of natural molecules for addressing vascular hyporeativity in sepsis in animal models. We are also evaluating lab identified potential medicinal plant leads for the management of cardiometabolic disease addressing hypertension, oxidative stress, inflammation and metabolic dysregulations in rodent model.

Additionally, I am involved in the safety profiling of important herbs with the objective to looking for the adverse effects of the most frequently used herb in Indian System of Medicine in small laboratory animals with special emphasis on herbal drug development particularly, in relation to antioxidant, anti-inflammatory and hepatoprotective properties. We use chemically fingerprinted herbs for our study in acute and subacute toxicity model in experimental animals using classical observational, biochemical and pathological parameters. We are presently exploring cytokine-based pathway, second messenger based pathway to look for the mechanism of action of toxicity produced by herbs if any so also the herb drug interactions. I am also actively involved in ADME study of plant based novel molecules and development of novel techniques for pharmacokinetic study.

Significant accomplishment (Awards & Fellowship):

International:

1. ICMR-DHR International Fellowship 2022-23 for postdoctoral training at School of Medicine, University of Pittsburgh, Pittsburgh, USA.
2. DBT-CREST Fellowship 2011-12 (Formerly DBT Overseas Fellowship) 2012-2013 for postdoctoral training at Division of AALB, School of Medicine, King's College, London, UK.
3. As a co-investigator cum visiting scientist to University of Milan, University of Padova, Mario Negri Institute, Nerviano Medical Science Centre, San Raffaele Hospital, Milan, Italy under DST sponsored Indo-Italian bilateral project with Professor Daniele Passarella at University of Milan, Italy during 06.10.2018 to 20.10.2018.

National:

1. National Scholarship from Ministry of Human Resource Development, Govt. of India during B.V.Sc. & A.H. (1994-1999).
2. University Merit Scholarship during M.V.Sc. (1999-2000)
3. Senior Research Fellowship (2002-2005) from Indian Veterinary Research Institute for Doctoral Program in Pharmacology.
4. National Eligibility Test (NET) 2004-2005 – Agricultural Scientist Recruitment Board.
5. Postdoctoral fellowship at School of Medicine, University of Maryland, Baltimore (2005).
6. Saroj Sharma award for best paper in cardiovascular pharmacology from Indian Pharmacological Society in annual conference held at AIIMS, N Delhi, 2008.
7. Best poster award in Drug Discovery at Bangalore Bio, 2008, Bangalore, India.
8. Best poster award in Bioinformatics at International symposium on current status and opportunities in aromatic and medicinal plants (AROMED) held at CIMAP, Lucknow, 2010, India.
9. Received the best publication award 2013-14 from CSIR-CIMAP on CSIR-CIMAP annual day on 26th March, 2014.

10. Received the best poster award for our work presented in the ICOMP-2015 organized by CSIR-CIMAP, Lucknow topic entitled “Design and synthesis of non-steroidal analogues of 2-Methoxyestradiol”.

Ph.D. thesis supervised/awarded: Four PhD thesis supervised and degrees were awarded to the students.

1. **Arjun Singh; Thesis Title:** Study of Antihypertensive Potential of Medicinal Plant Based Leads using Preclinical Ex-vivo and In-vivo Studies.
2. **Hina Iqbal; Thesis Title:** Study of antihypertensive potential of natural and derived plant phenolics in rodents using in-vitro and in-vivo studies.
3. **Pankaj Yadav; Thesis Title:** Study of novel steroidal and nonsteroidal molecules against endotoxemia and sepsis in animal models: effects on vascular hyporeactivity.
4. **Divya Mishra; Thesis Title:** Study of dehydroepiandrosterone as a biomarker in hypertension using ex-vivo and in-vivo studies in rodents: role in vasorelaxation and restoration upon treatment with standardized extract of *Curcuma longa*.

Total research papers: 60; **Patents:** 07**; Book Chapters**: 02

5-10 Representative Research Publications:

1. Iqbal H, Yadav P, Verma AK, Mishra D, Vamadevan B, Singh D, Luqman S, Negi AS, Chanda D. Anti-inflammatory, anti-oxidant and cardio-protective properties of novel fluorophenyl benzimidazole in L-NAME-induced hypertensive rats. Eur J Pharmacol. 2022 Aug 15;929:175132. doi: 10.1016/j.ejphar.2022.175132. Epub 2022 Jul 2. PMID: 35792173.
2. Abdulkareem AO, Tiwari P, Lone ZR, Iqbal H, Gupta S, Jha RK, Chanda D, Jagavelu K, Hanif K. Ormeloxifene, a selective estrogen receptor modulator, protects against pulmonary hypertension. Eur J Pharmacol. 2023 Mar 15;943:175558. doi: 10.1016/j.ejphar.2023.175558. Epub 2023 Jan 30. Erratum in: Eur J Pharmacol. 2023 May 3;:175750. PMID: 36731722.
3. Iqbal, H., Verma, AK., Yadav, P., Alam, S., Shafiq, M., Mishra, D., Khan, F., Hanif, K., negi, AS., Chanda, D. 2020. Antihypertensive effect of a novel angiotensin II receptor blocker fluorophenyl benzimidazole: contribution of cGMP, voltage-dependent calcium channels and BKCa channels to vasorelaxant mechanisms. Front. Pharmacol. doi: 10.3389/fphar.2021.611109.
4. Shafiq M, Jagavelu K, Iqbal H, Yadav P, Chanda D, Verma NK, Ghosh JK, Gaestel M, Hanif K. Inhibition of Mitogen-Activated Protein Kinase (MAPK)-Activated Protein Kinase 2 (MK2) is Protective in Pulmonary Hypertension. Hypertension. 2021 Apr;77(4):1248-1259. doi: 10.1161/HYPERTENSIONAHA.120.15229. Epub 2021 Mar 1. PMID: 33641361.
5. Srivastava N, Mishra S, Iqbal H, Chanda D, Shanker K. Standardization of Kaempferia galanga L. rhizome and vasorelaxation effect of its key metabolite ethyl p-methoxycinnamate. J Ethnopharmacol. 2021 May 10;271:113911. doi: 10.1016/j.jep.2021.113911. Epub 2021 Feb 9. PMID: 33571614.
6. Singh A, Kumar BS, Iqbal H, Alam S, Yadav P, Verma AK, Khan F, Shanker K, Hanif K, Negi AS, Chanda D. 2019. Antihypertensive activity of diethyl-4,4'-dihydroxy-8,3'-neolign-7,7'-dien-9,9'-dionate: A continuation study in L-NAME treated wistar rats. Eur J Pharmacol. 2019 Jun 21;858:172482. doi: 10.1016/j.ejphar.2019.172482.
7. Singh A, Kumar BS, Alam S, Iqbal H, Shafiq M, Khan F, Negi AS, Hanif K, Chanda D. Diethyl-4,4'-dihydroxy-8,3'-neolign-7,7'-dien-9,9'-dionate exhibits antihypertensive activity in rats

through increase in intracellular cGMP level and blockade of calcium channels. *Eur J Pharmacol*. 2017, 799:84-93. doi: 10.1016/j.ejphar.2017.01.044.

8. Chanda D, Prieto-Lloret J, Singh A, Iqbal H, Yadav P, Snetkov V, Aaronson PI. Glabridin-induced vasorelaxation: Evidence for a role of BKCa channels and cyclic GMP. Life Sci. 2016 Nov 15;165:26-34. doi: 10.1016/j.lfs.2016.09.018.

9. D Chanda, A V Krishna, P K Gupta, T U Singh, V R Prakash, B Sharma, P Joshi and S K Mishra 2008. Role of low ouabain-sensitive isoform of Na+K+-ATPase in the regulation of basal tone and agonist induced contractility in ovine pulmonary artery. Journal of Cardiovascular Pharmacology 52(2):167-75.

10. D.U. Bawankule, K. Sathishkumar, K.K. Sardar, D. Chanda, A. Vamsi Krishna, V. Ravi Prakash and S.K. Mishra (2005). Bay-41-2272 induced dilation in ovine pulmonary artery: role of sodium pump. Journal of Pharmacology and Experimental Therapeutics (2005). 314(1): 207-13.