

Curriculum Vitae of Dr. Ashis K. Mukherjee

Current Position: Professor

Address: Department of Molecular Biology and Biotechnology, Tezpur University, Tezpur-784 028, Assam, India.

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Other Affiliations: ■ Associate Faculty (Professor), School of Biological Sciences, University of Northern Colorado, Greeley, USA.

Administrative Experience: ■ Dean, Research and Development, Tezpur University (2016-2019)
■ Head and Coordinator, DBT Nodal Cell for Medical Colleges and Biomedical Research Institutes of NE India (A Unit of DBT, Govt. of India), Tezpur University (2009- 2018)
■ Head, ONGC Center for Petroleum Biotechnology, Tezpur University (2014-2017)
■ Head and Coordinator, Department of Molecular Biology and Biotechnology, Tezpur University (2008-2011)

Academic Qualification (Bachelor degree onwards):

1987-	1990	B. Sc.	Chemistry (Honors)	Banaras Hindu University, Varanasi, India.	First class First position
1990-	1992	M. Sc.	Biochemistry	Banaras Hindu University, Varanasi, India.	First class First position
1993-	1998	Ph.D.	Ph.D. in Science	Department of Biochemistry, Burdwan Medical College, Burdwan University, India	
2011-	2017	D. Sc.	Biotechnology	University of Calcutta, Kolkata, India	

Employment Details (starting with present employment):

2009 -	Till date	Professor	Department of Molecular Biology and Biotechnology, Tezpur University, India
2011-	2012	Visiting Scientist	School of Biological Sciences, University of Northern Colorado, Greeley, USA
2007 -	2009	Associate Professor	Dept. of MBBT, Tezpur University, India
2004-	2006	Reader	Dept. of MBBT, Tezpur University, India
2002-	2003	Sabbatical Visitor	Department of Molecular, Microbial and Structural Biology, School of Medicine, University of Connecticut Health Center, Farmington, CT, USA
2001-	2004	Senior Lecturer	Dept. of MBBT, Tezpur University, India
1997-	2001	Lecturer	Dept. of MBBT, Tezpur University, India
1994-	1997	Senior Research Fellow (UGC-CSIR NET)	Department of Biochemistry, Burdwan Medical College, Burdwan, India
1993-	1994	Junior Research Fellow (UGC-CSIR NET)	Department of Cell Biology, Indian Institute of Chemical Biology, Kolkata, India

Professional Recognition/Honors/Awards/ Academic Achievements

1990	Banaras Hindu University (B.H.U.) cash prize recipient for securing first class first position in B. Sc. (Chemistry Hons.) Examination
1991	Qualified the UGC-CSIR NET for Junior Research Fellowship (JRF) and eligibility for lectureship in Life Sciences in Colleges and Universities of India
1992	B. H.U. Gold Medal for securing first class first position in M. Sc examination
1995	Certificate of Honor awarded by the Association of Medical Biochemists of India
1995	Young Scientist Gold Medal awarded by Zoological Society of India
1997	Young Scientist Gold Medal awarded by Physiological Society of India
1999	Young Scientist Award recipient in Medical and Veterinary Sciences section of Indian Science Congress Association
2001	BOYSCAST Fellowship (2002-2003) from the Department of Science and Technology (DST), Ministry of Science and Technology, Govt. of India for advance research and training at USA
2007	International Travel Award from the Department of Biotechnology, Govt. of India for presenting papers in an International conference at Seville, Spain

- 2008 **Sectional Chairman**, International CME & Conference on Snakes, Venom and Snakebite, Angamaly, Kerala
- 2008 **Best Research Worker Award** of Tezpur University
- 2009 **Sectional Chairman**, 54th Technical Meeting of Assam Science Society, Tezpur University
- 2009 **Sectional Chairman**, International Symposium on Environmental Pollution, Ecology and Human Health, S.V. University, Tirupati
- 2009 **Co-Chairman**, National Symposium on “Recent advances in snake venom research and snakebite therapy: national and International Perspectives”, Tezpur University
- 2010 Executive Committee Member, DBT Nodal Cell for Medical Colleges and Biomedical Research Institute of NE India, Department of Biotechnology, Ministry of Science and Technology, Govt. of India
- 2010 **Dr. J. N. Baruah Memorial Science Award**, 2010 in Biological Sciences by Assam Science Society, India
- 2010 **Co-Chairman, National Conference** on “Animal, Microbial, and Plant Toxins & Snakebite Management” held at IICB, Kolkata and KPC Medical College and Hospital, Kolkata
- 2010 **Sectional Committee Member** (2011-2012), New Biology section, Indian Science Congress Association, Kolkata
- 2011 **DBT-CREST (Cutting Edge Research Enhancement and Scientific Training) Award** 2010-11 from the Department of Biotechnology, Ministry of Science and Technology, Govt. of India for advance training in the field of proteomics and drug discovery at UNC, USA
- 2011 **Member, Star College Scheme**, Department of Biotechnology, Ministry of Science and Technology, Govt. of India (2011-2014)
- 2012 **Sectional Co-Chairman and Member of the Scientific Organization committee** 17th World Congress on Venoms and Toxins organized by International Society on Toxinology, Honolulu, Hawaii, USA
- 2013 **Unit of Excellence Award (2013) in NER** of India by the Department of Biotechnology, Ministry of Science and Technology, Govt. of India
- 2014 **Session Co-Chairman, Society of Biological Chemists (India)** meeting of NE chapter, February 22, 2014 at North-East Institute of Science and Technology (CSIR), Jorhat
- 2014 **National Bioscience Award for career Development-2013** by Department of Biotechnology, Ministry of Science and Technology, Govt. of India

- 2014 **Sreenivasaya Memorial Award-2014** for outstanding contribution in Biochemistry and allied sciences by the Society of Biological Chemists (India), held at KIIT University, Bhubaneswar, December, 2014
- 2015 **Cama Memorial Travel Grant** for presenting a paper in the 18th World Congress of International Society on Toxinology, Oxford, UK from Society of Biological Chemists (India), Bangalore
- 2015 **“International Travel Grant”** for presenting a paper in the 18th World Congress of International Society on Toxinology, Oxford, UK awarded by Department of Science and Technology (DST), Ministry of Science and Technology, Govt. of India.
- 2015 **Sectional Co-Chairman**, TSICO2015, 5th National Conference of Toxinological Society of India, organized by Little Flower Hospital, Cochin.
- 2015 **Sectional Chairman**, Recent Developments in Medical Biotechnology and Structure Based Drug Designing [RDMSBDD-2015] organized by IIT, Guwahati.
- 2016 **Sectional Committee Member**, Medical (including Physiology) Section, Indian Science Congress Association, Kolkata (2016-2017)
- 2016 **Chairman, National seminar** on “Snake Venom Research and Snakebite Therapy: National and International Perspectives (SnakSymp2016)”, 22 to 24 November, 2016, Tezpur University.
- 2017 **Sectional Co-Chairman**, New Biology Section, 104th Indian Science Congress, S. V. University, Tirupati, 3-7 January, 2017
- 2017 **Sectional Committee Member**, New Biology Section, Indian Science Congress Association, Kolkata (2017-2018)
- 2017 **Awarded “Doctor of Science (D. Sc.)”** in Biotechnology by Calcutta University
- 2018 **Certificate of Appreciation** by Tezpur University in recognition and appreciation of academic achievements.
- 2018 **Received “Visitor’s Award for Research in Basic and Applied Sciences-2018”** from honorable **President of India** at Rashtrapati Bhawan on 2 May, 2018
- 2018 **Awarded “Tata Innovation Fellowship (2017-18)”** by Department of Biotechnology, Ministry of Science and Technology, Govt. of India
- 2018 **Elected Fellow Royal Society of Biology (FRSB)**, United Kingdom.
- 2018 **INSA Teachers Award-2018** from Indian National Science Academy (INSA), New Delhi
- 2018 **Received “Indian Council of Medical Research Prize for Biomedical Research Conducted in Underdeveloped Areas”** (Prize for the year 2017) from ICMR, New Delhi
- 2018 **Professor Sohail Ahmad Award-2018** from Indian Academy of Biomedical Sciences,

Lucknow for outstanding research contribution in the field of Biomedical Sciences (basic research).

- 2018 **Expert Member**, Department of Biotechnology, Ministry of Science and Technology, Govt. of India -NER Technical Expert Committee in the area of Knowledge Generation and Discovery Research, New Tools, and Techniques
- 2019 **Nominated and sponsored by Ministry of Human Resource Development (MHRD), Govt. of India** for participation in three weeks programme (two weeks in India and one week in abroad) on the “Leadership-for-Academicians Programme (LEAP)” organized by UGC-Human Resource Development Centre, JNU, New Delhi (two weeks) and National University of Singapore, Singapore (one week). The main objective of LEAP is to prepare second tier academic heads who are potentially likely to assume leadership roles (VC / Director) in the future
- 2019 **National Task Force Expert Member** “ICMR-National Task Force for Research on Snake Bite in India”, Indian Council of Medical Research, Ministry of Health and Family Welfare, Govt. of India.
- 2019 **Elected Fellow, West Bengal Academy of Science and Technology**, Kolkata, West Bengal, India.
- 2019 **Expert Member, National Advisory Committee on Snakebite Envenoming**, Department of Biotechnology, Ministry of Science and Technology, Govt. of India

Invited Speaker in National and International Conferences/Resource Person in Workshops/ Training Courses

- 1999 **Invited speaker**, Medical and Veterinary Science section of 86th session of Indian Science Congress, Chennai
- 2000 **Invited speaker**, Medical and Veterinary Science section of 87th session of Indian Science Congress, Pune
- 2002 **Invited speaker**, Physiology section of 89th session of Indian Science Congress, Lucknow
- 2003 **Resource person**, Recent Trends in Malaria Research, Organized by Defense Research Laboratory, Tezpur
- 2005 **Resource person**, Short Term Course on Bioelectronics, a refresher course organized by Department of Electronics, School of Engineering, Tezpur University
- 2008 **Invited speaker**, International CME & Conference on Snakes, Venom and Snakebite, Organized by Little Flower Hospital and Research Center, Angamaly, Kerala
- 2008 **Resource person**, Short term training course in Bioinformatics, Organized by the Department of Molecular Biology and Biotechnology, Tezpur University, Tezpur
- 2009 **Invited speaker**, New Biology section of 96th session of Indian Science Congress,

Shillong

- 2009 **Invited speaker and Sectional Chairman**, International Symposium on Environmental Pollution, Ecology and Human Health, S. V. University, Tirupati
- 2009 **Invited speaker**, 78th annual meeting of the Society of Biological Chemists (India), Pune
- 2009 **Speaker**, INSA Platinum Jubilee International Symposium on Research in Molecular Medicine Based on Natural Resources and Traditional Knowledge, National Chemical Laboratory, Pune
- 2009 **Invited speaker**, International Conference on Integrative & Personalized Medicine and 42nd Annual Conference of IPS held at Calcutta Medical College Hospital, Department of Pharmacology, Kolkata
- 2009 **Invited speaker**, National Symposium on "Recent advances in Snake Venom Research and Snakebite Therapy: National and International Perspectives", Department of Molecular Biology and Biotechnology, Tezpur University
- 2010 **Resource person** in DBT, Govt. of India sponsored workshop-"Advance Techniques in Cellular and Molecular Biology", at Department of Biotechnology, Indian Institute of Technology, Guwahati
- 2010 **Invited speaker**, National conference on "Animal, Microbial, Plant Toxins & Snakebite Management" held at IICB, Kolkata and KPC Medical College and Hospital, Kolkata
- 2010 **Resource person**, INSPIRE programme of Department of Science and Technology (DST), Govt. of India, Tezpur University
- 2011 **Invited speaker**, New Biology section of 98th session of Indian Science Congress, held at S.R.M. University, Chennai
- 2011 **Resource person**, Short Term Course on "Tools for Bioresource Conservation" organized by Department of Biotechnology, Indian Institute of Technology, Guwahati
- 2012 **Invited speaker and member of the International Scientific Advisory committee**, 17th World Congress of International Society of Toxinology and Venom Week 2012, Honolulu, Hawaii, USA
- 2012 **Invited speaker and Resource person**, National Conference on Recent Developments in Health, Hygeine and Environment, organized by Defense Research Laboratory, Tezpur
- 2012 **Invited speaker**, 2nd National Conference on Toxinological Society of India, Organized by Dept. of Biochemistry, University of Mysore and Karnataka State Open University, Mysore
- 2013 **Invited speaker**, Medical Science Section of 100th session of Indian Science Congress held at Calcutta University, Kolkata
- 2013 **Resource person**, Snake bite study - "Protocol Development Workshop" organized by Christian Medical College, Vellore
- 2013 **Invited speaker**, UGC-SAP National Seminar on Recent Advances in Microbial Biotechnology and Molecular Evolution, Department of MBBT, Tezpur University

- 2013 **Resource person and Chief Guest**, Training Programme on Biomedical Waste Management, Pollution Control Board, held at Tezpur
- 2013 **Resource person**, INSPIRE programme of DST, Govt. of India, Tezpur University
- 2014 **Invited speaker**, SBC (I) meeting of NE chapter, NEIST, Jorhat
- 2014 **Invited speaker and Sectional chairperson**, National Seminar on “Recent Advances in Biotechnological Research in NE India: Challenges and Prospects”, Tezpur University, Tezpur
- 2014 **Resource person and Organizing secretary**, workshop on “Molecular Biological and Analytical Techniques in Petroleum Biotechnology”, ONGC-Center for Petroleum Biotechnology, Tezpur University
- 2014 **Invited speaker**, 83rd Annual meeting of SBC (I) KIIT University, Bhubaneswar, Orissa
- 2015 **Resource person**, Workshop on Research Methodology, Tezpur Medical College and Hospital, April, 2015, Tezpur
- 2015 **Invited speaker**, Institute of Advance Studies in Science and Technology (IASST), Guwahati
- 2015 **Invited Speaker**, 18th World Congress of International Society on Toxinology, Oxford, UK from 25-30 September
- 2015 **Invited Speaker**, TSICON-15, 5th National Conference on Toxinological Society of India, Organized by Little Flower Hospital, Cochin 21-22 November
- 2015 **Invited Speaker**, “Recent Developments in Medical Biotechnology and Structure Based Drug Designing [RDMSBDD-2015] organized by IIT, Guwahati, 6-7 December
- 2016 **Invited Speaker**, Medical and Physiology Section of 103rd Indian Science Congress, Mysore University, Mysore, 3-7 January
- 2016 **Chief guest**, Hands on training in Molecular Biology organized by Dept. of Pathology, Agartala Govt. Medical College and Hospital, Agartala, Tripura, 15-17 April
- 2016 **Invited Speaker**, DBT Biotech Hub, Department of Zoology, Pragjyotish College, Guwahati, 4 November, 2016
- 2016 **Invited Speaker**, “Recent Advances in Snake Venom Research and Snake-bite Therapy: National and International Perspectives” SnakSymp2016, Organized by the Department of Molecular Biology and Biotechnology & Toxinological Society of India, Tezpur University, 22-24 November
- 2017 **Invited Speaker**, New Biology Section of 103rd Indian Science Congress, S. V University, Tirupati, 3-7 January
- 2017 **Invited speaker**, National Seminar on “Petroleum Biotechnology and Bioenergy”, Organized by ONGC-CPBT, Department of Molecular Biology and Biotechnology & Department of Energy, Tezpur University, 3-4 March, 2017

- 2017 **Invited speaker and Resource Person**, Orientation Programme for students, University of Science and Technology, Meghalaya, 7 September, 2017
- 2017 **Invited speaker**, 3rd International Conference on Translational Research: Application in Human Health and Agriculture. Organized by Indian Society of Translational Research, Amity University, Kolkata, 22-25 September, 2017
- 2017 **Resource Person**, DBT New Delhi sponsored “Stake-holder’s meeting to evolve a comprehensive cancer research programme in NER”, Organized by IIT Guwahati, 26-27 October, 2017 at Guwahati.
- 2017 **Resource Person**, DBT Biotech Hub sponsored Workshop on “Basic Tools and Techniques in Molecular Biology and its Applications”, organized by Department of Biotechnology, Darrang College, Tezpur, 1-3 November, 2017.
- 2017 **Resource Person**, Continuing Education Programme (CEP), Defense Research Laboratory, Solmara, Tezpur, 8 November, 2017
- 2017 **Invited Speaker**, One day workshop on Translational Research on Natural Products for Therapeutic Uses, IASST, Guwahati, 21 November, 2017
- 2017 **Invited Speaker and Resource Person**, Induction Training for Faculties at Tezpur University, Teaching Learning Center, Tezpur University, 27 November, 2017
- 2017 **Invited Speaker**, SnakSymp: National Seminar on Snake Venom Research and Snake-bite Therapy, CCMB, Hyderabad, 30 November-3 December, 2017
- 2018 **Invited Speaker**, Trends in Biochemical and Biomedical Research: Advances and Challenges, Department of Biochemistry, Banaras Hindu University, Varanasi, February 13-15, 2018
- 2018 **Invited speaker**, National Conference on Drug Discovery from Natural Products and their Traditional Uses, University of Science and Technology, Meghalaya, March 23-24, 2018
- 2018 **Invited Speaker**, National Conference on Recent Advances on Applied Biological Sciences, Department of Biotechnology and Bioinformatics, North Eastern Hill University, Shillong, 4-5 May, 2018
- 2018 **Invited Speaker and Resource Person**, Induction Training for Faculties at Tezpur University, Teaching Learning Center, Tezpur University, 25 June, 2018
- 2018 **Invited Speaker**, International Toxicology Conference, Hanoi, Vietnam, 5 November, 2018
- 2018 **Invited Speaker and Resource Person**, Induction Training for Faculties at Tezpur University, Teaching Learning Center, Tezpur University, 03 December, 2017
- 2018 **Invited Speaker**, 10th Annual Meeting of PSI & International Conference on Proteomics for Cell Biology and Molecular Medicine, NCCS, Pune, 12-14 December, 2018
- 2019 **Invited speaker**, 106th Indian Science Congress, New Biology section, Lovely Professional University, Phagwara, Punjab, 3-7 January, 2019
- 2019 **Invited speaker and Resource Person**, National Workshop on Recent Advances in Immuno-Proteomics, CSIR-IGIB, North campus, Mall Road, Delhi, 29-30 August, 2019

- 2019 **Invited speaker**, International Symposium on Snakebites, Indian Institute of Science, 16 October, 2019
- 2019 **Invited Plenary Speaker**, 4th Chapter of National Seminar in Frontiers in Biotechnology, St. Xavier's College (Autonomous), Kolkata, 5 November, 2019
- 2019 **Invited speaker**, 65th Annual Conference of the Association of Physiologists and Pharmacologists of India (APPICON 2019), Guwahati Medical College and Hospital, Guwahati, 28-30 November, 2019
- 2019 **Invited speaker**, 11th Annual Meeting of the Proteomics Society, India (PSI) and the International Conference on Proteomics for System Integrated Bio-Omics, One Health and Food Safety, NDRI, Karnal, from 2-4 December, 2019.
- 2020 **Invited Plenary Speaker**, Venom Week 2020, 7th Annual Meeting of the North American Society of Toxinology, at University of Florida, Gainesville, USA from 4-7 March, 2020.
- 2020 **Resource Person**, Electronic Faculty Development Programme (e-FDP) on Research-Methodologies-Resilience for Good Research, Faculty of Science, Assam Downtown University, from 22-28 July, 2020.

Member of the Editorial Board

1. Editorial Board Member Nature Scientific Reports
2. Editorial Board Member American Journal of Bioengineering and Biotechnology, Columbia International Publishing (CIP)
3. Senior Associate Editor Journal of Venom Research, published from University of Strathclyde, UK
4. Section Editor Handbook on Toxinology, Volume Snake venom, Springer publication
5. Editorial Board member Journal of Postgraduate Medicine, Mumbai (past)

Membership of Professional / Scientific Societies

1. Life member Indian Science Congress Association, Kolkata.
2. Life member Physiological Society of India, Kolkata.
3. Life member Society of Biological Chemists (India), Bangalore.
4. Life member National Academy of Sciences (India), Allahabad
5. Life member Association of Microbiologists of India.
6. Life member Toxinological Society of India, Kolkata.
7. Life member Society for Translational Research, India.

8. Life member Proteomics Society of India, Hyderabad
9. Member International Society on Toxinology, U.K

Past and Present Collaborators

- Dr. Glenn F. King, Ph.D., Professor, Laboratory Head, Chemistry and Structural Biology Division, Institute of Molecular Bioscience, The University of Queensland, Australia
- Dr. Stephen Mackessy, Ph.D., Professor, College of Natural and Health Sciences, University of Northern Colorado, USA
- Dr. Yuri Utkin, Ph.D., Professor, National University of Science and Technology MISiS, Moscow, Russia
- Dr. Dulal Panda, Ph.D., Professor, Department of Biosciences and Bioengineering, IIT Bombay
- Dr. Siddhartha Sankar Ghosh, Ph.D., Professor, Department of Biosciences and Bioengineering, IIT Guwahati
- Dr. Biplab Bose, Ph.D., Associate Professor, Department of Biosciences and Bioengineering, IIT Guwahati
- Dr. Anupam Chatterjee, Ph.D, Professor, Department of Biotechnology and Bioinformatics, NEHU, Shillong
- Dr. Subhro Chatterjee, Ph.D, UGC-FRP Associate Professor, Centre for Biotechnology; AU-KBC Research Center, Anna University, Chennai
- Dr. Pronobesh Chattopadhyay, Ph.D, Scientist D, Division of Pharmaceutical Technology, DRL, Tezpur
- Dr. C. H. Tan, Department of Pharmacology, Faculty of Medicine, University of Malaya, Malaysia
- Dr. L. V. Dong, Vietnam Military Medical University, Hanoi city, Vietnam
- Dr. M. V. Khadilkar, Premium Serum and Vaccines Pvt. Ltd, Mumbai

Research Publications Cell Biology, Analysis of Snake Venom & Antivenom, and Drug Discovery from Venom:

1. Puzari, U., **Mukherjee, A. K.** (2020) Recent developments in diagnostic tools and bioanalytical methods for analysis of snake venom: A critical review. ***Analytica Chimica Acta*** (in press).

2. Islam, T., Majumder, M., Kalita, B., Bhattacharjee, A., Mukhopadhyay, R., Mukherjee, A. K. (2020) Transcriptomic, proteomic and biochemical analyses reveal a novel neuritogenesis mechanism of *Naja naja* venom α -elapitoxin post binding to TrkA receptor of rat pheochromocytoma cells. ***Journal of Neurochemistry*** (in press)
3. Islam T, Majumdar, M., Bidkar, A., Ghosh, S. S., Mukhopadhyay, R., Utkin, Y., **Mukherjee, A. K.** (2020) Nerve growth factor from Indian Russell's viper venom (RVV-NGFa) shows high affinity binding to TrkA receptor expressed in breast cancer cells: Application of fluorescence labeled RVV-NGFa in the clinical diagnosis of breast cancer. ***Biochimie*** 176, 311-44
4. Chanda, A., **Mukherjee, A. K.** (2020) Mass spectrometry analysis to unravel the venom proteome composition of Indian snakes: Opening new avenues in clinical research. ***Expert Review of Proteomics*** 17:5, 411-423
5. Patra, A. **Mukherjee, A. K.** (2020) Proteomic analysis of Sri Lanka *Echis carinatus* venom: Immunological cross-reactivity and enzyme neutralization potency of Indian polyvalent venom. ***Journal of Proteome Research*** (in press).
6. Chanda, A., **Mukherjee, A. K.** (2020) Quantitative proteomics to reveal the composition of Southern India spectacled cobra (*Naja naja*) venom and its immunological cross-reactivity towards commercial antivenom. ***International Journal of Biological Macromolecules*** 160, 224-232
7. Das, B., Patra, A., **Mukherjee, A. K.** (2020) Correlation of venom toxinome composition of Indian red scorpion (*Mesobuthus tamulus*) with clinical manifestations of scorpion sting: Failure of commercial antivenom to immune-recognize the abundant of low molecular mass toxins of this venom. ***Journal of Proteome Research*** 19(4),1847-1856
8. Kalita B, Dutta, S., **Mukherjee, A. K.** (2019) RGD-independent binding of Russell's Viper venom Kunitz-type protease inhibitors to platelet GPIIb/IIIa receptor. ***Scientific Reports*** 9, 8316
9. Kalita B, **Mukherjee, A. K.** (2019) Recent advances in snake venom proteomics research in India: A new horizon to decipher the geographical variation in venom proteome composition and exploration of candidate drug prototypes. ***Journal of Proteins and Proteomics*** 10, 149-164
10. Thakur, R., Chattopadhyay, P., **Mukherjee, A. K.** (2019) The wound healing potential of a pro-angiogenic peptide purified from Indian Russell's Viper (*Daboia russelii*) venom. ***Toxicon*** 165, 72-82
11. Patra, A., Chanda, A., **Mukherjee, A. K.** (2019) Quantitative proteomic analysis of venom from Southern India common krait (*Bungarus caeruleus*) and identification of poorly immunogenic toxins by immune-profiling against commercial antivenom. ***Expert Review of Proteomics*** 16 (5), 457-469
12. Dutta, S., Sinha, A., Dasgupta, S., **Mukherjee, A. K.** (2019) Binding of a *Naja naja* venom acidic phospholipase A₂ cognate complex to membrane-bound vimentin of rat L6 cells: Implications in cobra venom-induced cytotoxicity. ***Biochimica et Biophysica Acta-Biomembrane*** 1861, 958-977

13. Chanda, A., Kalita, B., Patra, A., W. D. Sandani T. Senevirathne, **Mukherjee, A. K.** (2019) Proteomic analysis and antivenomics study of Western India *Naja naja* venom: Correlation between venom composition and clinical manifestations of cobra bite in this region. ***Expert Review of Proteomics*** 16 (2), 171-184
14. Chanda, A., Patra, A., Kalita, B., **Mukherjee, A. K.** (2018) Proteomics analysis to compare the venom composition between *Naja naja* and *Naja kaouthia* from the same geographical location of eastern India: correlation with pathophysiology of envenomation and immunological cross-reactivity towards commercial polyvalent venom. ***Expert Review of Proteomics*** 15 (11), 949-961
15. Kalita, B., Mackessy, S. P., **Mukherjee, A. K.** (2018) Proteomic analysis reveals geographic variation in venom composition of Russell's Viper in the Indian subcontinent: Implications for clinical manifestations post-envenomation and antivenom treatment. ***Expert Review of Proteomics*** 15, 837-849
16. Patra, A., Kalita, B., **Mukherjee, A. K.** (2018) Assessment of quality, safety, and pre-clinical toxicity of an equine polyvalent anti-snake venom (Pan Africa): Determination of immunological cross-reactivity of antivenom against venom samples of Elapidae and Viperidae snakes of Africa. ***Toxicon*** 153, 120-128
17. Kalita, B., Patra, A., Das, A., **Mukherjee, A. K.** (2018) Proteomic analysis and immunoprofiling of eastern India Russell's viper (*Daboia russelii*) venom: Correlation between RVV composition and clinical manifestations post RV bite. ***Journal of Proteome Research*** 17, 2819–2833
18. Kalita, B., Singh, S., Patra, A., **Mukherjee, A. K.** (2018) Quantitative proteomic analysis and antivenom study revealing that neurotoxic phospholipase A₂ enzymes, the major toxin class of Russell's viper venom from southern India, shows the least immuno-recognition and neutralization by commercial polyvalent antivenom. ***International Journal of Biological Macromolecules*** 118, 375-385
19. **Mukherjee, A. K.**, Saviola, A. J., Mackessy, S. P. (2018) Cellular mechanism of resistance of human colorectal adenocarcinoma cells against apoptosis-induction by Russell's Viper venom L-amino acid oxidase (Rusvinoxidase). ***Biochimie*** 150, 8-15
20. Kalita, B., Patra, A., Jahan, S., **Mukherjee, A. K.** (2018) First report of the characterization of a snake venom apyrase (Ruviapyrase) from Indian Russell's viper (*Daboia russelii*) venom. ***International Journal of Biological Macromolecules*** 111, 639-648.
21. Mackessy, S. P., Saviola, S. P., **Mukherjee, A. K.** (2018) Venom toxins to drugs: Anti-thrombotic and anti-metastatic compounds from snake venoms. ***Toxicon*** 150, 320
22. Patra, A., Kalita, B., Chanda, A., **Mukherjee, A. K.** (2017) Proteomics and antivenomics of *Echis carinatus carinatus* venom: Correlation with pharmacological properties and pathophysiology of envenomation. ***Nature Scientific Reports*** 7, 17119
23. Makarova, Y. V., Shelukhina, I. V., **Mukherjee, A. K.**, Kuznetsov, D.V., Tsetlin, V.I., Utkin, Y. N. (2017) Detection of human neuronal $\alpha 7$ nicotinic acetylcholine receptors by conjugates of

- snake α -neurotoxin with quantum dots. *Doklady Biochemistry and Biophysics* 475, 252-255
24. Thakur, R., **Mukherjee, A. K.** (2017) Pathophysiological significance and therapeutic applications of snake venom protease inhibitors. *Toxicon* 131, 37-47
 25. Dutta, S., Chanda, A., Kalita, B., Islam, T., Patra, A., **Mukherjee, A. K.** (2017) Proteomic analysis to unravel the complex venom proteome of eastern India *Naja naja*: correlation of venom composition with its biochemical and pharmacological properties. *Journal of Proteomics* 156, 29-39
 26. Kalita, B., Patra, A., **Mukherjee, A. K.** (2017) Unravelling the proteome composition and immuno-profiling of western India Russell's Viper venom for in-depth understanding of its pharmacological properties, clinical manifestations, and effective antivenom treatment. *Journal of Proteome Research* 16, 583-598
 27. Thakur, R, Kini, S., Karkulang, S., Banerjee, A., Chatterjee, P., Chanda, A., Chatterjee, A., Panda, D., **Mukherjee, A. K.** (2016) Mechanism of apoptosis induction in human breast cancer MCF-7 cell by Ruviprase, a small peptide from *Daboia russelii russelii* venom. *Chemico-Biological Interactions* 258, 297-304
 28. **Mukherjee, A.K,** Dutta, S., Kalita, B., Jha, D.K., Deb, P., Mackessy, S. P. (2016) Structural and functional characterization of complex formation between two Kunitz-type serine protease inhibitors from Russell's Viper venom. *Biochimie* 128-12, 138-147
 29. **Mukherjee, A.K,** Kalita, B., Mackessy, S. P. (2016) A proteomics analysis of Pakistan *Daboia russelii russelii* venom and assessment of potency of Indian polyvalent and monovalent antivenom. *Journal of Proteomics* 144, 73-86
 30. Modahl, C. M., **Mukherjee, A.K.,** Mackessy, S. P. (2016) An analysis of venom ontogeny and prey-specific toxicity in the Monocled Cobra (*Naja kaouthia*). *Toxicon* 119, 8-20
 31. Saviola, A. J., Burns, P. D., **Mukherjee, A. K.,** Mackessy, S. P. (2016) The disintegrin Tzabcanin inhibits adhesion and migration in melanoma and lung cancer cells. *International Journal of Biological Macromolecules* 88, 457-464
 32. **Mukherjee, A. K.,** Saviola, A. J., Burns, P.D., Mackessy, S. P. (2015) Apoptosis induction in human breast cancer (MCF-7) cells by a novel venom L-amino acid oxidase (Rusvinoxidase) is independent of its enzymatic activity and is accompanied by caspase-7 activation and reactive oxygen species production. *Apoptosis* 20, 1358-1372
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4. **Mukherjee, A. K.** (2013) An updated inventory on properties, pathophysiology and therapeutic potential of snake venom thrombin-like proteases. In: S. Chakraborti, N.S. Dhalla, (Eds.), ***Proteases in Health and Disease-Advances in Biochemistry in Health and Disease Volume 7 (ISBN 978-1-4614-9233-7)***, Springer, pp.163-180.
5. Thakur, R., **Mukherjee, A. K.** (2016) Pathophysiological significance and therapeutic implications of Russell's Viper venom proteins and peptides affecting blood coagulation. In: ***Snake Venoms and Envenomation: Modern Trends and Future Prospects***, Utkin, Y.N., Krivoshein, A.V., Ed; Nova Science Publishers: New York, 2016; pp: 93-114.
6. Saikia, S., **Mukherjee, A. K.** (2017) Anticoagulant and membrane damaging properties of snake venom phospholipase A₂ enzymes. In: ***Handbook of Toxinology, volume – snake venom***, (Gopalakrishnakone, P., Inagaki, H., Mukherjee, A.K., Rahmy, T.R., Vogel, C.W., Eds); Springer Nature: Netherlands, DOI 10.1007/978-94-007-6648-8_18-1, pp: 87-104
7. Thakur R, and **Mukherjee, A. K.** (2017) A Brief Appraisal on Russell's Viper Venom (*Daboia russelii*) Proteinases. In: ***Handbook of Toxinology, volume– snake venom***, (Gopalakrishnakone, P., Inagaki, H., Mukherjee, A.K., Rahmy, T.R., Vogel, C.W., Eds); Springer Nature: Netherlands, DOI 10.1007/978-94-007-6648-8_18-1, pp: 123-144

8. Y. N. Utkin, I. Y. Cherepakhin, E. V. Kryukova, I. V. Shelukhina, Y. V. Makarova, I. E. Kasheverov, **A. K. Mukherjee**, A. A. Gusev, D. V. Kuznetsov (2017). Conjugates of α -Cobratoxin with CdSe Quantum Dots: Preparation and Biological Activity. In: Nano Hybrids and Composites (A. Gusev, T. Dyatchek and A. Godymchuk, Eds), Vol. 13, pp. 3-8, DOI: 10.4028/www.scientific.net/NHC.13.3 ([online book chapter](http://www.scientific.net/NHC.13.3)).
9. **Mukherjee, A. K.**, Kalita, B., Dutta, S., Patra, A., Maity, C.R., Punde D. (2020). Snake Envenomation: Therapy and Challenges in India. In: **Section V: Global Approaches to Envenomation and Treatments, Handbook of Venoms and Toxins of Reptiles**, Second Edition (S. P. Mackessy, Editor), CRC Press, USA (accepted manuscript in press).

List of International / National Patents Granted/Applied:

- **US patent** on "ACARICIDAL COMPOSITIONS AND METHODS OF USE THEREOF". **United States patent No.:** US 7,575,758 B2; **filing date:** 13.09.2006; **Publication date:** August 2009
- **International patent** on "ACARICIDAL COMPOSITIONS AND METHODS OF USE THEREOF". International patent publication No. **WO/2007/035382**, **dated** 29 March, 2007
- **PCT International Application** on "ANTICOAGULANT ACTIVES AND SYNERGISTIC ANTICOAGULANT COMPOSITION AND METHOD FOR PRODUCING THE SAME" application No. PCT/IN2016/050448 dated 17.12.2016

B. Indian Patents:

- **Indian Patent** on "ANTICOAGULANT ACTIVES AND SYNERGISTIC ANTICOAGULANT COMPOSITION AND METHOD FOR PRODUCING THE SAME" PATENT NO. 313/KOL/2015; Filing date: 18 December, 2015
- **Indian Patent** on "SYNTHETIC ANTICOAGULANT PEPTIDES DERIVED FROM NAJA NAJA SNAKE VENOM" PATENT APPLICATION NO. 201831010001; Filing date: 19 March, 2018
- **Indian Patent** on "TOXIN EPTOPE-BASED DETECTION OF SPECIES-SPECIFIC SNAKE ENVENOMATION" PATENT APPLICATION NO. 201831010002; Filing date: 19 March, 2018
- **Indian Patent** on "TOXINS-TARGETED SPECIFIC NOVEL ANTI SNAKE VENOM" PATENT APPLICATION NO. 201831038837, Filing date: 5 October, 2019

Ph.D. Thesis Guided/Guiding:

Sl. No.	Name of Student	Title of Thesis	Year of Award
1	Dr. Robin Doley	Studies on some biochemical and pharmacological	2005

		properties of two phospholipase A ₂ isoenzymes (NK-PLA ₂ -I and NK-PLA ₂ -II) from Indian monocled cobra (<i>Naja kaouthia</i>) venom	
2	Dr. Kishore Das	Isolation, characterization and some industrial application of biosurfactants produced by <i>Bacillus subtilis</i> and <i>Pseudomonas aeruginosa</i> strains	2006
3	Dr. Pallabi Kalita	Evaluation of nutritional potential of some aquatic weeds of North-East India for formulation of fish-feed for Indian Major Carps.	2008
4	Dr. Sudhir K. Rai	Production, isolation and characterization of microbial alkaline protease and their industrial applications.	2011
5	Dr. Debashree Saikia	Characterization of anticoagulant phospholipase A ₂ enzymes from <i>Daboia russelli</i> venom	2013
6	Dr. Jitendra K. Rai	Biochemical characterization and industrial application of α -amylases from bacteria	2014
7	Dr. Rupamoni Thakur	Characterization of some procoagulant and anticoagulant protein(s) and peptide(s) purified from Indian Russell's Viper (<i>Daboia russelii russelii</i>) venom	2015
8	Dr. Sourav Majumdar	Studies on bacterial fibrin(ogen)olytic enzymes and their therapeutic applications	2015
9	Bandana Bora	Biochemical and pharmacological characterization and therapeutic application of a recombinant fibrino(geno)lytic enzyme from <i>Bacillus cereus</i> .	Deceased
10	Dr. Debanada Gogoi	Studies on anticoagulant, thrombolytic and platelet aggregation inhibition properties of some ethno-medicinal plants of North East India.	2019
11	Dr. Sumita Dutta	Characterization and assessment of therapeutic potential of anticoagulant protein(s) isolated from Indian cobra <i>Naja naja</i> venom	2019
12	Dr. Bhargab Kalita	Studies on venomics and antivenomics of Indian Russell's viper (<i>Daboia russelii</i>) venom	2019
13	Tafikul Islam	Characterization of nerve growth factor (NGF) from snake venoms: Pathophysiological significance and biomedical application	In progress
14	Abhisek Chanda	Proteomics and antivenomics of Indian spectacled cobra	In

		<i>(Naja naja)</i> venom	progress
15	Aparup Patra	Proteomics and antivenomics of Indian saw scaled viper (<i>Echis carinatus</i>) and assessment of the quality of Indian commercial polyvalent antivenom	In progress
16	Ms. Nitisha Boro	Bacterial recombinant protease and its industrial application	In progress
17	Ms. Bhabana Das	Biochemical and proteomic analysis of scorpion venom	In progress
18	Ms. Dev Madhubala	Characterization of nerve growth factor from snake venom	In progress
19.	Ms. Hirak J. Kakati	Proteomic analysis of snake venom	In progress
20.	Ms. Upasana Pujari	Development of snake venom diagnostic kit	In progress

Project Thesis Guidance for Master's (M.Sc.) Degree:

S.N	Name of the student	Title of the project	Year of Award
1	Ms.Monimala Mahanta	Neutralization of some enzymatic activities of <i>Naja kaouthia</i> venom by <i>Mimosa pudica</i> plant extracts: a prospective study	1999
2.	Mr. Rahul Pandey	A comparative biochemical study of the ATPase activity contained in the venom of two Indian cobra- <i>Naja naja</i> and <i>Naja kaouthia</i>	2000
3.	Ms. Riku Das	Biochemical characterization of acetylcholinesterase activity of <i>Naja naja</i> and <i>Naja kaouthia</i> venom....	2000
4	Ms. Madhumita Ghosh	A prospective study on the inhibition of phospholipase A ₂ and protease activity of Russell's viper (<i>Daboia russelli</i>) venom by medicinal plant extracts	2001
5	Mr. Bibek Yumnam	Purification of a liver hemorrhagin from Russell's viper (<i>Daboia russelli</i>) venom and inhibition of hemorrhagic activity by plant extracts and a polyvalent antivenom	2001
6	Mr. Prabhat Kr. Purbey	Partial purification of hemolysin and coagulant protein from Russell's viper (<i>Daboia russelli</i>) venom and their inhibition by Indian medicinal plants	2001
7	Mr. Debok J. Das	Pharmacological reassessment of traditional medicinal plants for their anti- phospholipase A ₂ and protease activity of Russell's viper (<i>Daboia russelli</i>) venom	2001
8	Mr. Anurodh S. Agrawal	Screening of α -amylase producing microbes from the soil samples of north east India and cloning of α -amylase encoding gene from a <i>Bacillus</i> sp.	2005
9	Ms. Sushmita Singh	Cloning and expression of α -amylase producing gene from a <i>Bacillus</i> sp isolated from environmental samples of north east India	2005
10	Mr. Hemanta Adhikary	Characterization and some industrial application of protease produced by <i>Bacillus subtilis</i> in solid state fermentation.	2006
11	Ms. Mayuri Borkataki	Production and characterization of α -amylase produced by <i>Bacillus subtilis</i> strain in solid state fermentation using unconventional carbon sources	2006

12	Mr. Ravi Kumar	Correlation between enzymatic activity and hemolytic and coagulant properties of acidic and basic phospholipase A ₂ isoenzymes from Russell's viper (<i>Daboia russelli</i>) venom	2006
13	Mr. Jitendra K. Roy	Purification and characterization of alkaline α -amylase from <i>Bacillus</i> sp. isolated from north-east India	2007
14	Mr. Rezwan Ahmed	Optimization of culture parameters for the production of α -amylase by <i>Bacillus</i> sp. isolated from north-east India	2007
15	Ms. Snigdha Rani Das	Covalent immobilization of industrially important microbial enzymes on iron-oxide (Fe ₃ O ₄) magnetic nanoparticles: A prospective study	2007
16	Ms. Mamta Jaiswal	Studies on alkaline α -amylase producing alkalophilic bacteria from a soil sample of Assam, North East India	2008
17	Mr. Rocktotpal Konwar	Statistical Optimization of the Media Components Using Response Surface Methodology for Alkaline Keratinase Production in Solid State Fermentation by a Feather Degrading <i>Bacillus subtilis</i> strain and Immobilization of the Crude Keratinase onto γ -Fe ₂ O ₃ Magnetic Nanoparticle	2008
18	Mr. T. Satish Kumar	Covalent immobilization of crude alpha-amylase from <i>Bacillus</i> sp. as-s1a onto iron-oxide magnetic nanoparticles	2008
19	Ms. Sangeeta Hatibaruah	Statistical optimization of binding, characterization assessment of biotechnological potential of Ag nanoparticle bound microbial keratinase.	2009
20	Ms. Supriya Sarma	Exploration of Microbial Diversity of Soil and Water by Culture Dependent Method and Recovery of High Molecular-Weight Metagenomic DNA from Soil.	2009
21	Ms. Shrutidhara Biswas	A mutagenic approach to enhance the production of protease by <i>Brevibacillus</i> sp. AS-S10-II: Purification and characterization of an alkaline protease.	2010
22	Ms. Sumita Biswas	Cloning and expression of the protease gene from <i>Bacillus subtilis</i> RM-01	2010
23	Ms. Chenole Keppen	Statistical optimization of process parameters for the production of fibrinolytic protease from bacillus sp. FF01 strain	2011

24	Ms. Samanwita Goswami	Statistical optimization of process parameters for the production of fibrinolytic protease from <i>Bacillus</i> sp. FF02B strain	2011
25	Mr. Biplob Sarmah	Purification and characterization of a fibrinolytic serine protease from <i>Bacillus</i> sp. strain FF02B: Potential of enzyme in cardiovascular drug development	2013
26	Ms. Sumita Dutta	Mechanism of anticoagulant action of a non-cytotoxic acidic phospholipase A ₂ from Indian cobra (<i>Naja naja</i>) venom	2013
27	Mr. Pawan Kumar	Studies on protease from <i>Naja kaouthia</i> venom for therapeutic application	2014
28	Mr. Jayesh K. Sevak	Isolation and characterization of protease and protease complex from <i>Naja naja</i> venom.	2014
29	Mr. Rahul Hazarika	Effect of aqueous extract of two medicinal plants on <i>in vitro</i> thrombolysis and anticoagulant activity	2014
30	Ms. Sagufta Jahan	Purification and characterization of an ATPase enzyme showing ADPase activity from Russell's viper (<i>Daboia russelii russelii</i>) venom	2015
31	Mr. Abhisek Chanda	Identification and Characterization of a Pyrene Degrading <i>Pseudomonas</i> sp. strain 53 Isolated from Petroleum-Oil Contaminated Soil Sample	2015
32	Mr. Bhim Bhahadur Biswa	Influence of physico-chemical parameters on growth kinetics and proteomic analysis of <i>Pseudomonas aeruginosa</i> strain 53 when grown in presence of pyrene	2016
33	Ms. Shambhavi Jha	A process for the preparation of anticoagulant herbal drug from an ethno-medicinal plant of India	2016
34	Ms. Sheetal Ramani	Phytochemical analysis and elucidation of anticoagulant mechanism of active fraction isolated from aqueous leave extract of <i>Clerodendrum colebrookianum</i> for development of alternative cardiovascular drug	2017
35	Ms. Anjali Das	Assessment of quality, enzyme-neutralization potency, and immuno-reactivity of commercial antivenom	2017

		against venom of Big Four snakes of India	
36	Ms. Sudeepa Singh	Quantitative proteomics and assessment of neutralization potency of commercial antivenom against Russell's Viper venom	2018
37	Ms. Surabhi Bharati	Functional characterization of active component of a medicinal plant for the development of cardiovascular drug	2018
38	Ms. Anushree Roy	Proteomics of <i>Mesobuthus Tamulus</i> venom and potency assessment of commercial antivenom	2019
39	Mr. Indrajit Mukherjee	Role of biosurfactant from <i>Roseomonas sp.</i> in enhancing the bioavailability of carbazole: application as laundry detergent additive	2019
40	Ms. Komal Rani	Studies on Anticoagulation Mechanism of Snaclec from Indian Russell's Viper (<i>Daboia russelii</i>) Venom	2020
41	Mr. Pawan Kumar	Identification, optimization and characterization of a major biosurfactant produced by <i>Roseomonas sp.</i>	2020

Details of 16S Nucleotide sequence submitted to GenBank:

S.No	Name of bacterial strain	Amplified Gene	Gene Bank Id No	Enzyme producer
1.	<i>Brevibacillus</i> sp. AS-S10-II	16S ribosomal RNA gene, partial sequence,	GU332637	Alkaline β -keratinase(Brevicarnase)
2.	<i>Bacillus</i> sp. AS-S20-I	16S ribosomal RNA gene, partial sequence,	GU001817	Fibrinolytic protease
3.	<i>Bacillus licheniformis</i> strain AS-S24-I	16S ribosomal RNA gene, partial sequence,	GU269542	Alkaline β -keratinase(Alkarnase)
4.	<i>Paenibacillus</i> sp. AS-S24-II	16S ribosomal RNA gene, partial sequence,	FJ804507	Detergent stable alkaline protease
5.	<i>Bacillus</i> sp. AS-S01a	16S ribosomal RNA gene, partial sequence,	FJ887877	Detergent stable alkaline α -amylase
6	<i>Chelatococcus</i> sp. NBTU-06	16S-rRNA gene, partial sequence, Delhi University	JN034906	Biodesulfurizing agent
7	<i>Achromobacter</i> sp. NBTU-02	16S ribosomal RNA gene, partial sequence	JN034907	-do-

8	<i>Bacillus</i> sp. AS-S01a	16S-23S ribosomal RNA intergenic spacer, complete sequence	JN118575	Alkaline α -amylase
9	<i>Bacillus</i> sp. AS-S01a	gyrase A (<i>gyrA</i>) gene, partial	JN133844	-do-
10	<i>Bacillus</i> sp. AS-S01a	RNA polymerase beta subunit (<i>rpoB</i>) gene, partial	JN133845	-do-
11	<i>Bacillus</i> sp. AS-S08E	16S ribosomal RNA gene, partial sequence	JN118574	-do-
12	<i>Bacillus</i> sp. AS-S08E	16S-23S ribosomal RNA intergenic spacer,	JN133843	-do-
13	<i>Bacillus</i> sp. AS-S08E	gyrase A (<i>gyrA</i>) gene, partial	JN133841	-do-
14	<i>Bacillus</i> sp. AS-S08E	RNA polymerase beta subunit (<i>rpoB</i>) gene, partial	JN133842	-do-
15	<i>Bacillus</i> sp. AS-S01a	Alpha-amylase complete CDS	KC113313	Acidic amylase
16	<i>Bacillus</i> sp. AS-S08E	Alpha-amylase complete CDS	KC802019	Alkaline α -amylase
17	<i>Pseudomonas</i> sp. NBTU-01	16S ribosomal RNA gene, partial sequence	JQ241432	Biosurfactant producer
18	<i>Chelatococcus</i> sp. NBTU-06	Desulfurization gene DszA	KJ395107	Desulfurization enzyme (DszA)
19	<i>Chelatococcus</i> sp. NBTU-06	Desulfurization gene DszB	KJ395108	Desulfurization enzyme (DszB)
20	<i>Chelatococcus</i> sp. NBTU-06	Desulfurization gene DszC	KJ395109	Desulfurization enzyme (DszC)
21	<i>Bacillus cereus</i> strain FF01	16SrDNA partial sequence	KC992322	Fibrinolytic enzyme
22	<i>Bacillus cereus</i> strain AB01	Serine protease gene	KM502865.1	Protease enzyme

Details of snake venom proteome data submitted to public domain:

S.No	Venom	Project name	Dataset identifier	Data bank
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1. *Echis carinatus* venom *Echis carinatus* (India) venom proteomics PXD007980 ProteomeXchange Consortium (via the PRIDE)
2. *Naja naja* venom Venom proteomics of *Naja Naja* of western India origin PXD008011 ProteomeXchange Consortium (via the PRIDE)
3. *Daboia russelli* venom Proteomics analysis of *Daboia russelli* venom samples from Eastern India PXD008607 ProteomeXchange Consortium (via the PRIDE)
4. *Bungarus caeruleus* venom Proteomic analysis of venom proteome from Southern India Common Krait (*Bungarus caeruleus*) PXD012290 ProteomeXchange Consortium (via the PRIDE)
5. *Mesobuthus tamulus* Proteomic analysis of Indian red scorpion *Mesobuthus tamulus*) venom PXD017433 ProteomeXchange Consortium (via the PRIDE)
6. *Echis carinatus* venom (Sri Lanka) Proteomics analysis of *Echis carinatus* venom from Sri Lanka” PXD018130 ProteomeXchange Consortium (via the PRIDE)

Research Projects Completed:

Sl. No	Duration	Project Title	Sponsoring agency	Fund sanctioned (Rupees)
1	Apr 1999- Mar 2000	Identification of some local herbs and plants of Assam for antsnake venom activity.	UGC, New Delhi	15,000.00
2	Oct 1999- Mar 2008	Isolation, characterization and commercial applications of biosurfactant produced by thermophilic and mesophilic bacteria from the soil	ONGC-CPBT	18890000.00 (to the Department)

samples of Assam, India.

3	Jul 2001-	Jun 2004	Isolation, characterization and biological activities of phospholipase A ₂ enzyme from Indian monocled cobra (<i>Naja kaouthia</i>) venom.	UGC, New Delhi	612000.00
4	Mar 2005-	Feb 2008	Isolation, biochemical and pharmacological characterization of pro-coagulant and anti-coagulant proteins from Indian Russell's viper (<i>Daboia russelli</i>) venom.	UGC, New Delhi	867000.00
5	Nov 2005-	Oct 2008	Exploration of potential microbes from North-east India for the production of three commercially important enzymes- protease, amylase and cellulose.	DBT, New Delhi	894000.00
6	Apr 2009-	Mar 2014	Microbial enzymes, biosurfactant and probiotics (under SAP, DRS-I).	UGC, New Delhi	42,00000.00 (to the Department)
7	Oct 2009-	Sep 2014	Strengthening of biotechnology teaching, research, and training in Assam with special reference to Tezpur University	DBT special project , New Delhi	29800000.00 (to the Department)
8	Sep 2010-	Aug 2011	Demonstration of novelty of protease produced by selected bacteria isolated from North-east India.	DBT, New Delhi	714000.00
9	Apr 2011-	Sep 2014	Assessment of thrombolytic potential and anticancer activity of fibrinolytic enzymes purified from Russell's viper venom and bacteria isolated from NE-	DBT, New Delhi	12086000.00

			India		
10	May 2014-	Apr 2016	Proteomics study of aromatic hydrocarbon degradation enzymes of some selected bacterial strain prospecting strategies for environmental bioremediation	ONGC-CPBT, Tezpur University	706000.00
11	Dec 2014-	Nov 2017	Application of snake venom toxins labeled with functionalized nanoparticles for detecting endogenous targets in cells and ex vivo tissues with prospects for the development of novel diagnostic and therapy tools	DBT, New Delhi under Indo-Russia collaborative project	4560000.00
12	Dec 2014-	Mar 2018	Discovering novel drug formulations from non-toxic, potent anticoagulant components of snake venom for the prevention and/or treatment of cardiovascular disease (CVD).	DBT, New Delhi under National Bioscience Award for Career Development-2013	150000.00
13	Apr 2017	Mar 2018	Assessment of purity and contaminating protein(s) in equine polyvalent anti snake venom manufactured by Premium Serum & Vaccines Pvt. Ltd., Pune	Premium Serum & Vaccines Pvt. Ltd., Pune	4,05,750.00
14	Oct 2016-	Jun 2018	Development of a cost-effective, novel antithrombotic anticoagulant herbal drug and standardization of its biomarker assisted quality Control	BIRAC-BIG project	4975000.00
15	Dec 2014-	Dec 2018	Venomics and antivenomics of Indian Cobra and Russell's viper: implications in drug discovery and quality	DBT, New Delhi under Unit of Excellence in NER-2013	13220000.00

Research Projects Ongoing:

SI. No	Duration		Project Title	Sponsoring agency	Fund sanctioned (Rupees)
1	Feb 2018	Jan 2021	Studies on epidemiology, hospital management of snakebite, and standardization of laboratory tests for assessment of efficacy and quality control of commercial antivenom manufactured in India and in ASEAN countries.	DST-SERB (Under ASEAN)	46,43,800.00
2	Apr 2018	Mar 2021	Development of functionalized nanoparticles-based novel diagnostic kit for the detection of species-specific snake envenomation	DBT Tata Innovation Fellowship	18,00,000.00
3	Jun 2018	Dec 2019	Development of snake venom toxins-targeted specific novel anti-venom	BIRAC-PACE	38,00,000.00
4	Dec 2018	Nov 2021	Studies on signal transduction mechanism(s) of neurotrophin molecules from Indian cobra (<i>Naja naja</i>) and Russell's Viper (<i>Daboia russelii</i>) venoms in cultured neuronal cells and their functional significance	SERB, New Delhi	39,29,600.00
5	Apr 2019	Mar2020	Studies on country specific polyvalent Snake Venom Antiserum for Sri Lanka developed by Premium Serums & Vaccines Pvt. Ltd: Purity assessment and immuno cross-reactivity	Premium Serum & Vaccines Pvt. Ltd., Pune	5,09,152.00

6	Sep2018	Mar2020	analyses Pharmacological studies of recombinant and mutant fibrin(ogen)olytic protease(s) for the prevention and/or treatment of hyperfibrinogenemia associated cardiovascular disorders	DBT, New Delhi	26,04,400.00
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Seminar / Conference paper Presentation (2003 onwards):

S. No.	Names of all the authors (as they appear in each paper)	Title of the paper	Name of the Conference, place, and year
1	Maggio, F., Mukherjee, A.K. , King, G.F	Development of next generation of biopesticides	Annual Graduate Students Day, The University of Connecticut Health Center, Farmington, CT, USA, June 11, 2003
2	Mukherjee A. K. and King G. F.	Genetically modified baculovirus as new generation of biopesticide: fact or fiction?	Department of Zoology, University of Burdwan, Burdwan, 24-15 February, 2005
3	Mukherjee, A. K.	Purification and characterization of two non-conventional, three-finger-family toxins from the venom of the cobra <i>Naja kaouthia</i> .	Abstracted in (abstract No. 0425) Bioscience 2006-bioscience for the 21 st century, Glasgow. U. K., 23-26 July, 2006.
4	Mukherjee A. K.	Molecular arrangement of <i>Naja kaouthia</i> venom phospholipase A ₂ - susceptible phospholipids domains in biological membranes: Evidence of existence of distinct catalytic and membrane binding sites in phospholipase A ₂ molecules.	New Biology section of 93 rd Indian Science Congress, N. G.Ranga Agricultural University, Hyderabad, 3-7 January, 2006
5	Mukherjee A. K.	Iturin A- a novel class of microbial lipopeptide possessing potent antibiotic activity: Production, purification and characterization.	National Seminar on Condensed Matter Day of Physics, Department of Physics, Tezpur University,

Tezpur, 29-31 August 2006

- 6 **Mukherjee, A.K.** Production of diverse cyclic lipopeptide (CLP) biosurfactant isoforms by *Bacillus subtilis* strains: Role in sustaining the growth and survival of bacteria in their parent habitat. 75th Annual Meeting of Society of Biological Chemists (India), School of Life Sciences, Jawaharlal Nehru University, New Delhi, 8-11 December 2006.
- 7 Rai S.K., Saikia, D. and **Mukherjee, A. K.** Application of enzymes and microbes as molecular recognition elements (MREs) in Biosensors. Seminar on Bioelectronics, Bioelectronics Division, Dept. of Electronics and Communication Engineering, Tezpur University, Tezpur, 27th March, 2007.
- 8 Kalita , Hui Tag, A. K. Das, P. K. Mukhopadhyay, **Mukherjee, A. K.** *Ipomoea reptans* a source of feedstuff for Indian major carp fingerlings. Aquaculture Europe 2007, "Competing claims". Istanbul, Turkey, October 24-27, 2007.
- 9 **Mukherjee, A. K.** Characterization of a thrombin-like, pro-coagulant serine protease from venom of Indian Russell's viper (*Daboia russelli*) and some medical application of the enzyme. 76th Annual Meeting of Society of Biological Chemists (India), Sri Venkateswara University Tirupati 517502, 25-27 November, 2007.
- 10 **Mukherjee A. K.** Rai, S. K. Production of alkaline protease by a thermophilic *Bacillus subtilis* under submerged fermentation (SmF) using low cost agro-industrial waste materials: some industrial application of protease. II International Conference on Environmental, Industrial and Applied Microbiology (BioMicroWorld2007), University of Seville, Spain. 28 November - 1 December 2007.
- 11 **Mukherjee, A. K., Das, K.** Biosurfactant from *Bacillus subtilis*: Production, characterization and application in environment protection. Biosurfactant from *Bacillus subtilis*: Production, characterization and application in environment protection. II International Conference on Environmental, Industrial and Applied Microbiology), University of Seville, Spain. 28 November - 1 December 2007.
- 12 Rai, S. K., **Mukherjee, A. K.** Nutritionally improved livestock feed formulation from chicken-feather using an alkaline keratinase producing thermophilic *Bacillus subtilis* strain. New Biology section of 95th Indian Science Congress, organized by Andhra University, Vishakapattanam, India, 3-7 January, 2008.

- 13 Saikia, D., Mukherjee, A. K. Biochemical-venom. 53rd Annual Technical Session of Assam Science Society, College of Veterinary Science, Khanapara, Guwahati-22, 15th March 2008.
- 14 Mukherjee A. K. Correlation between the phospholipids domains of the target cell membrane and differential hydrolysis of membrane phospholipids by PLA₂ enzymes from monocled cobra *Najakaouthia* venom. CME and International Conference on Snakes, Venom and Snakebite, Little Flower Hospital and Research Center, Angamaly, Cochin, Kerala, September 20-21, 2008.
- 15 Mukherjee, A. K. Application of microbial biosurfactant as an eco-friendly alternative to synthetic chemical surfactants in laundry detergent formulations: A novel approach for environment protection. Environmental Science section of 96th Indian Science Congress, North-eastern Hill University, Shillong, India, 3-7 January, 2009.
- 16 Mukherjee, A. K. Differential hydrolysis of membrane phospholipids by PLA₂ enzymes from *Naja kaouthia* venom reinforces the membrane domain hypothesis: Role of vitamin E in partial inhibition of venom PLA₂-induced membrane damage. New Biology section of 96th Indian Science Congress, North-eastern Hill University, shillong, India, 3-7 January, 2009.
- 17 Rai, S. K. and Mukherjee, A. K. Characterization and industrial application of an organic solvent stable alkaline protease from *Bacillus subtilis*, isolated from a soil sample of North-East India. New Biology section of 96th Indian Science Congress, 3organized by North-eastern Hill University, shillong, India, 3-7 January, 2009.
- 18 Saikia, D., and Mukherjee, A. K. Characterization of an anticoagulant phospholipase A2 enzyme purified from Indian Russell's viper (*Daboia russelli*) venom. Medical Science section of 96th Indian Science Congress, organized by North-eastern Hill University, shillong, India, 3-7 January, 2009,
- 19 Mukherjee, A. K. Microbial biodegradation of petroleum hydrocarbons: towards a safer and cleaner environment. International Symposium on Environmental Pollution, Ecology and Human Health, S. V. University, Tirupati, India, July 25-27, 2009

- 20 **Mukherjee, A.K.,** Rai, S. K. and Bhuyan, P Production, characterization and therapeutic application of fibrinolytic enzyme from bacteria isolated from soil samples of Assam, North-east India. INSA Platinum Jubilee International Symposium on Research in Molecular Medicine Based on Natural Resources and Traditional Knowledge, National Chemical Laboratory, Pune, India, November 21-23, 2009.
- 21 **Mukherjee, A. K.** Differential hydrolysis of membrane phospholipids by snake venom PLA₂ enzymes and membrane domain hypothesis. International Conference on Integrative & personalized Medicine and 42nd Annual Conference of IPS, Calcutta Medical College Hospital, Department of Pharmacology, Kolkata, India, December 10-12 2009
- 22 **Mukherjee, A. K.** Mechanism of anticoagulant action of a neutral PLA₂ purified from Indian Russell's viper (*Daboia russelli*) venom National Symposium on "Recent advances in snake venom research and snakebite therapy: National and International Perspectives, Department of Molecular Biology and Biotechnology, Tezpur University, 18-19 December, 2009.
- 23 **Mukherjee, A. K.** Development of genetically modified baculovirus expressing insect-selective neurotoxins from spider venom gland: Potential for pest control. DBT sponsored workshop "Advance Techniques in Cellular and Molecular Biology", Department of Biotechnology, IIT Guwahati, November, 2010
- 24 R. Thakur, D. Saikia, **A. K. Mukherjee** Insight into the anticoagulant mechanism of a low molecular weight serine protease isolated from Indian Russell's viper (*Daboia russelli russelli*) venom. National conference on "Animal, Microbial, Plant Toxins & Snakebite Management" held at IICB, Kolkata and KPC Medical College and Hospital, Kolkata, 11-12 December, 2010.
- 25 **Mukherjee, A. K.** Therapeutic application of direct-acting fibrinolytic enzymes from snake venom and bacteria. National conference on "Animal, Microbial, Plant Toxins & Snakebite Management" held at IICB, Kolkata and KPC Medical College and Hospital, Kolkata, 11-12 December,

- 2010.
- 26 **Mukherjee, A.K.** From venom to drug: Therapeutic application of direct-acting fibrinolytic enzyme from snake venom for the treatment of thrombosis. New Biology section of 98th session of Indian Science Congress, S.R.M. University, Chennai, 3-7 January 2011
- 27 **Mukherjee, A. K.** Identification and conservation of medicinal plants used traditionally for the treatment of snakebite patients: from biodiversity and cultural perspectives. Short Term Course on "Tools for Bioresource Conservation", organized by Department of Biotechnology, Indian Institute of Technology Guwahati from July 11-15, 2011.
- 28 **Mukherjee, A. K.** Discovery of novel drugs from snake venom New Biology section of 99th session of Indian Science Congress, KIIT University, Bhubaneswar, 3-7 January 2012
- 29 **Mukherjee, A. K.** Drug Development from Snake Venom: Biomedical Application of Fibrin(ogeno)lytic Serine Proteases as Cardiovascular and Anticancer Drugs. Recent Developments in Health, Hygiene and environment: emphasizing challenges of the troops of North-East India, Defense Research Laboratory, Solmara, Tezpur, November 6-8, 2012.
- 30 **Mukherjee, A. K.** Recent Progress in Snake venom research in India: Opportunities and Challenges. 2nd National Conference of Toxinological Society of India, Dept. of Biochemistry, University of Mysore, 10-12 December, 2012.
- 31 Thakur, R.,
Mukherjee, A. K. Characterization of biochemical and pharmacological properties of a low molecular mass cytotoxin-like molecule purified from Indian Russell's viper (*Daboia russellii russellii*) venom. 2nd National Conference of Toxinological Society of India, Dept. of Biochemistry, University of Mysore, 10-12 December, 2012.
- 32 **Mukherjee, A. K.** From venom to drug: Therapeutic application of thrombin-like novel serine protease from snake venom for the treatment of hyperfibrinogenemia associated disorders. Medical Science (including Physiology) section of 100th session of The Indian Science Congress, University of Calcutta during 3rd - 7th January, 2013
- 33 Roy, J. K.,
Mukherjee, A. K. Optimization of thermostable amylase production from *Geobacillus* New biology section of 100th session of The Indian Science

- thermodenitrificans* strain AS02a using Plackett–Burman and response surface methodology (RSM) (poster presentation).
- 34 Mukherjee A. K. and Mackessy, S. P.** Russelobin, a Non-toxic thrombin-like serine protease from the venom of Russell's Viper (*Daboia russelli russelli*): Possible applications in cardiovascular drug development. 17th World Congress on Venom and Toxins, Organized by International Society on Toxinology, Honolulu, Hawaii, USA July 8-13, 2012.
- 35 Modahl, C. M., Mackessy, S. P and Mukherjee, A. K.** Prey-specific toxins in non-murine models: Non-conventional three-finger toxins and *Naja kaouthia* Venom. 17th World Congress on Venom and Toxins, Organized by International Society on Toxinology, Honolulu, Hawaii, USA, July 8-13, 2012
- 36 Mukherjee, A. K** Microbial proteases and their Industrial applications. National Seminar Cum Workshop on Recent Advances in Microbial Biotechnology and Molecular Evolution, Department of Molecular Biology and Biotechnology, Tezpur University, 01-4 March, 2013.
- 37 Rai. S. K., Mukherjee, A. K.** Bacterial keratinase: A tool for development of feedstuff from poultry waste(chicken-feather). National Seminar Cum Workshop on Recent Advances in Microbial Biotechnology and Molecular Evolution, Department of Molecular Biology and Biotechnology, Tezpur University, 01-4 March, 2013.
- 38 Majumdar, S., Mukherjee, A. K.** Characterization and pharmaceutical application of a potent fibrin (genolytic enzyme purified from *Bacillus* sp FF02B strain isolated from fermented food of NE India. National Seminar Cum Workshop on Recent Advances in Microbial Biotechnology and Molecular Evolution, Department of Molecular Biology and Biotechnology, Tezpur University, 01-4 March, 2013.
- 39 Thakur, R., Chattopadhyay, P., Kar, S., Mukherjee, A. K.** Characterization of a direct-acting fibrinolytic serine protease from *Bacillus* sp. strain AS-S20-I: An evaluation of its *in vivo* toxicity, anticoagulant property and thrombolytic potency. National Seminar Cum Workshop on Recent Advances in Microbial Biotechnology and Molecular Evolution, Department of Molecular Biology and Biotechnology, Tezpur University, 01-4 March, 2013

- 40 **Mukherjee, A. K.** Strategies to improve snakebite treatment: challenges and progress. Snake bite study and protocol development workshop, Christian Medical College, Vellore, 11-12 March, 2013.
- 41 **Mukherjee, A. K.** Proteases from Russell's Viper venom: Biochemical characterization and biomedical applications. 3rd National Conference of Toxinological Society of India and 1st International Conference on Biology of Natural Toxins, BITS Pilani-Goa, 19-21 December, 2013
- 42 Dutta, S, **Mukherjee, A. K.** Characterization of a non-cytotoxic, anticoagulant, acidic phospholipase A₂ from Indian cobra (*Naja naja*) venom and its possible biomedical application. 3rd National Conference of Toxinological Society of India and 1st International Conference on Biology of Natural Toxins, BITS Pilani-Goa, 19-21 December, 2013.
- 43 Saikia, D., **Mukherjee, A. K.** Two non-lethal PLA₂ isoenzymes purified from venom of *Daboia russelli* of eastern India origin shows anticoagulant activity by different mechanisms of action 3rd National Conference of Toxinological Society of India and 1st International Conference on Biology of Natural Toxins, BITS Pilani-Goa, 19-21 December, 2013.
- 44 **Mukherjee, A. K.** Snake is not our enemy but friends to human: medical application of venom toxins. INSPIRE programme of DST, Govt. of India, Tezpur University, 23-27 December, 2013.
- 45 **Mukherjee, A. K.** Biomedical application of fibrin(ogeno)lytic serine proteases isolated from bacteria and snake venom as cardiovascular drugs 1st Annual Conference of Society of Biological Chemists of India, NE Chapter, CSIR-NEIST Jorhat, 22nd February, 2014
- 46 **Mukherjee A. K.** Discovery of Novel Drugs from Snake Venom: Prospects and Challenges in Indian Scenario National Seminar on Recent Advances in Biotechnological Research in North East India: Challenges and Prospects, Dept. of MBBT, TU, 27-29 November, 2014
- 47 Thakur R, Kumar A, Bose B, Panda D, Saikia D, Chattopadhyay P, **Mukherjee A. K.** Characterization of an anticoagulant peptide with pro-apoptotic properties purified from *Daboia russelii russelii* (*Russell's Viper*) venom National Seminar on Recent Advances in Biotechnological Research in North East India: Challenges and Prospects, Dept. of MBBT, TU, 27-29 November, 2014
- 48 **Mukherjee, A. K.** Therapeutic Application of 83rd Annual Conference of Society

- Anticoagulant Proteins Purified from Snake Venom for the Treatment of Cardiovascular Disorders: Prospects and Challenges.
- 49 Thakur R, Kumar A, Bose B, Panda D, Saikia D, Chattopadhyay P, **Mukherjee A. K.** Anticoagulant mechanism of a peptide purified from *Daboia russelii russelii* (*Russell's viper*) venom of Biological Chemists of India, KIIT University, Bhubaneswar 17-21 December, 2014
- 50 Kalita B, Thakur R, **Mukherjee A. K.** Characterization and mechanism of two anticoagulant PLA₂ isoenzymes purified from the venom of Indian monocled cobra *Naja kaouthia* 83rd Annual Conference of Society of Biological Chemists of India, KIIT University, Bhubaneswar 17-21 December, 2014
- 51 Dutta A, **Mukherjee A. K.** Characterization of biochemical and pharmacological properties of a non-cytotoxic, acidic phospholipase A₂ purified from Indian cobra (*Naja naja*) venom 83rd Annual Conference of Society of Biological Chemists of India, KIIT University, Bhubaneswar 17-21 December, 2014
- 52 **Mukherjee, A.K.**, Dutta, S. Bjargab, K., Mackessy, S. P. Potential biomedical application of Kunitz-type protease inhibitors from *Daboia russelii russelii* venom 18th World Congress of International Society on Toxinology, Oxford, UK from 25-30 September, 2015
- 53 **Mukherjee, A. K.** Mechanism of apoptosis induction in human breast cancer (MCF-7) cells by an L-amino acid oxidase (LAAO) purified from Russell's Viper (*Daboia russelii russelii*) venom TSICON-15, 5th National Conference on Toxinological Society of India, Organized by Little Flower Hospital, Cochin 21-22 November, 2015
- 54 Thakur, R., Chattopadhyay, P., **Mukherjee, A. K.** A new prothrombin activator from Indian Russell's viper (*Daboia russelii russelii*) venom: characterization and pathophysiological significance TSICON-15, 5th National Conference on Toxinological Society of India, Organized by Little Flower Hospital, Cochin 21-22 November, 2015
- 55 **Mukherjee, A. K.** Microbial anticoagulant proteases for the prevention and/or treatment of cardiovascular Disorders Recent Developments in Medical Biotechnology and Structure Based Drug Designing [RDMBSBDD-2015] organized by IIT, Guwahati,

6-7 December, 2015

- 56 **Mukherjee, A. K.** Assessment of therapeutic potential of microbial fibrin(ogen)olytic serine proteases for the treatment of cardiovascular disorders Medical (including Physiology) section, 103rd Indian Science Congress, Mysore University, 3-7 January, 2016
- 57 **Mukherjee, A.K. et al.** Characterization of Ruvikunin complex isolated from *Daboia russelii russelii* venom to comprehend its potent biological activity Recent Advances in Snakebite Research and Snakebite Therapy: National and International Perspective: SnakSymp2016, Tezpur University, 22-24 November, 2016
- 58 **Mukherjee, A.K.** Venomics and antivenomics of Russell's Viper (*Daboia russelii*)- A major venomous snake in Indian subcontinent New Biology section, 104th Indian Science Congress, S. V. Tirupati University, 3-7 January, 2017
- 59 **Mukherjee, A.K.** Proteomics approach to reveal the polyromantic hydrocarbons degradation pathways operate in hydrocarbon degrading bacteria with a specific example of *Pseudomonas aeruginosa* Petroleum Biotechnology and Bioenergy, ONGC-Center for Petroleum Biotechnology and Department of Energy, Tezpur University, 3-4 March, 2017
- 60 **Mukherjee, A. K., Islam, T., Utkin Y.** Application of snake venom nerve growth factor labelled with functionalized nanoparticles for the detection of cancer 3rd International Conference on Translational Research: Application in Human Health and Agriculture. Organized by Indian Society of Translational Research, Amity University, Kolkata, 22-25 September, 2017
- 61 **Mukherjee, A. K.** Strategies for therapeutic application and commercialization of traditional medicinal plants used against snakebite One day workshop on Translational Research on Natural Products for Therapeutic Uses, IASST, Guwahati, 21 November, 2017
- 62 **Mukherjee, A. K.** Career Opportunities and Job Prospects in Biotechnology Teaching & Research: Unprecedented Growth Opportunity DBT Biotech Hub sponsored Workshop on Basic Tools and Techniques in Molecular Biology and its Applications organized by Department of Biotechnology,

- Darrang College, Tezpur, 1-3
November, 2017
63. **Mukherjee, A. K.** Cardiovascular Drug Development from Indian Snake Venom: Prospects and Challenges Continuing Education programme, Defense Research Laboratory, Tezpur, 8 November, 2017
64. **Mukherjee, A. K.,** Studies on venom proteome composition of Indian Saw-scaled viper (*Echis carinatus*) and cross-reactivity of venom proteins with commercial polyvalent antivenom Patra, A., Kalita, B., Chanda, A. SnakSymp: National Seminar on Snake Venom Research and Snake-bite Therapy, CCMB, Hyderabad, 30 November-3 December, 2017
65. **Mukherjee, A. K.** Venomics and antivenomics of Indian cobra *Naja naja* venom: Failure to immuno-recognition of low molecular mass venom proteins by commercial polyvalent antivenom Trends in Biochemical and Biomedical Research: Advances and Challenges, Department of Biochemistry, Banaras Hindu University, Varanasi, February 13-15, 2018
66. **Mukherjee, A. K.** Green medicine for snakebite: From therapeutic applications to conservation strategies National Conference on Drug Discovery from Natural Products and their Traditional Uses, University of Science and Technology, Meghalaya, March 23-24, 2018
67. **Mukherjee, A. K.** Assessment of Quality of Antivenom for Efficient Hospital Management of Snakebite National Conference on Recent Advances on Applied Biological Sciences, Department of Biotechnology and Bioinformatics, North Eastern Hill University, Shillong, 4-5 May, 2018
68. **Mukherjee, A. K.** Assessment of Efficacy and Quality Control of Commercial Antivenom for Efficient Hospital Management of Snakebite International Toxicology Conference, Bach Mai Hospital, Hanoi, Vietnam, 5th November, 2018.
69. **Mukherjee, A. K.,** Proteomic analyses show geographical variation in venom composition of Indian Russell's Viper (*Daboia russelii*): Requirement of well-designed antivenom production Kalita B. 10th Annual Meeting of PSI & International Conference on Proteomics for Cell Biology and Molecular Medicine, NCCS, Pune, 12-14 December, 2018

70. **Mukherjee, A. K.,** Protein and peptide-based Antithrombotic Cardiovascular Drug Development from Snake Venoms: Prospects and Challenges 106th Indian Science Congress, New Biology section, Lovely Professional University, Phagwara, Punjab, 3-7 January, 2019
71. **Mukherjee, A. K.** Tandem mass spectrometry analysis to show geographical variation in Indian Russell's Viper (*Daboia russelii*) venom composition and its impact on clinical manifestations and antivenom therapy 8th Annual Conference of Indian Academy of Biomedical Sciences Thiruvananthapuram, 25-27 February, 2019
72. **Mukherjee, A. K.** Quality Control of Commercial Anti-snake Venom by Quantitative Proteomic Analysis and Immuno-profiling against Snake Venoms National Workshop on Recent Advances in Immuno-Proteomics, CSIR-IGIB, North campus, Mall Road, Delhi, 29-30 of August, 2019
73. **Mukherjee, A. K.** Characterization of Indian snake venoms and commercial antivenom International Symposium on Snakebites, Indian Institute of Science, 16 October, 2019
74. **Mukherjee, A. K.** Drug from Snake Venom: Exploring the Anticancer Mechanism of Russell's Viper Venom Proteins 4th Chapter of National Seminar in Frontiers in Biotechnology, St. Xavier's College (Autonomous), Kolkata, 5 November, 2019
75. **Mukherjee, A. K.** Proteomic Analysis to Correlate the Russell's Viper (RV) Venom Proteome Composition with Clinico-pathological Manifestation Post-Envenomation: Therapy Against RV Envenomation 65th Annual Conference of the Association of Physiologists and Pharmacologists of India (APPICON 2019), Guwahati Medical College and Hospital, Guwahati, 28-30 November, 2019
76. **Mukherjee, A. K.** Recent developments in snake venom proteomics research in India: A new perspective 11th Annual Meeting of the Proteomics Society, India (PSI) and the International Conference on Proteomics for System Integrated Bio-Omics, One Health and Food Safety from 2-4 December, 2019
77. **Mukherjee, A. K.** Species-specific and geographical variation in venom composition of Indian Cobra: Impact on polyantivenom therapy Venom Week 2020, 7th Annual Meeting of the North American Society of Toxinology, at University of Florida, Gainesville, USA from 4-7 March, 2020.
78. **Mukherjee, A. K.** Research and Project Management: Electronic Faculty Development

Keys to Success

Programme (e-FDP) on Research-
Methodologies-Resilience for Good
Research, Faculty of Science,
Assam Downtown University, from
22-28 July, 2020.
