



EDITORIAL

August 15, 2022 marked the 75th anniversary of Indian independence. Added to the ongoing *Azadi ka Amrit Mahotsav*, India, the emerging economy, proudly announced its forthcoming host role for the International Summit G20 2023. Interestingly, the year also marks the birth centenary of a great Indian Biophysicist. Dr. G N Ramachandran.

G N Ramachandran was born in Ernakulam district of Kerala, on the 8th October 1922. He endeavoured for D. Sc. Degree at Indian Institute of Science under the guidance of the Nobel Laurette, Sir C V Raman. Later, he pursued Ph.D. at the Cavendish Laboratory of Cambridge University, England. The American Chemist, Linus Pauling initiated Dr Ramachandran into polypeptide chain modelling studies. He started his career at the Indian Institute of Science (IISc), Bangalore as an Assistant Professor from 1949 to 1952. Subsequently, Dr. Ramachandran took up the position of ‘Professor of Physics’ at the University of Madras and established an X-ray crystallography laboratory. In this laboratory, Ramachandran and his fellow researcher Gopinath Kartha produced X-ray diffraction patterns of the collagen fibres. They published the famous left handed, triple helical structure of collagen in ‘*Nature*’ in 1954 and its revised model in 1955.

His investigations on the rigid structure of peptide bonds led him to arrive at the Ramachandran plots and the research paper which got published in the ‘*Journal of Molecular Biology*’ in 1963. Ramachandran plots have the unique capability of representing the 3D structure of a protein in 2D space without losing even minor details. Prof. Janet Thornton, a leading structural biologist, said on Ramachandran plot that “This major discovery highlights the importance of clear thought and vision that do not always need expensive equipment and huge teams of people”. Dr Ramachandran established the Molecular Biophysics Unit (MBU) at the IISc in 1971. He was elected as a Fellow of the Royal Society, London, in 1977 and received several awards and prizes, which include the prestigious Ewald Prize in 1999, by the International Union of Crystallography. Though, his work did not earn a Nobel prize, it certainly served as a foundation for many Nobel prize winning works later. Ramachandran passed away in 2001, at the age of 78. Dr. G N Ramachandran’s birth centenary is seen as an occasion by the Indian and international scientific community for commemorating his great contributions to structural biology and preparing the students to take up unresolved questions of the field.

Utilizing this historic occasion, the Department of Biochemistry, Maharaja Sayajirao University of Baroda, Vadodara, Gujarat, organized an International Conference, on “Celebrating Proteins” on the birth centenary of Dr. G N Ramachandran during March 03-04, 2023. When the organizers approached us, the CSIR-National Institute of Science Communication and Policy Research (NIScPR), New Delhi, to bring out a special issue on the theme of the international conference, we readily agreed as such opportunities come rarely. We find such dynamic platforms, an ideal stage for promoting our academic journals. Accordingly, we went ahead planning a special issue in the Indian Journal of Biochemistry and Biophysics (IJBB), the flagship journal of CSIR-NIScPR with the theme “**Multiple facets of Protein Science**”.

The IJBB, a monthly premier peer-reviewed research journal in the subject area of Biochemistry, Biophysics and Biotechnology, with the JIF score of 1.4, ranks first among all the CSIR-NIScPR research journals across the disciplines. With the able guidance and active support of the recently re-constituted Editorial Board with reputed national/international experts, IJBB has been receiving considerable attention from researchers and academicians in the area of biochemistry, biophysics and biotechnology worldwide. This special issue with 12 research papers, including 4 review articles, and 8 original research papers from renowned subject experts, runs into 120 pages broadly covers the emerging trends in “Protein Science”.

Overall, the articles discuss about the Design and development of mutant EGFR inhibitors from a structural perspective; Mechanistic insights into the oncogenic partnership of hADA3 and HPVE6 - paving ways for improved cervical cancer therapy; Protein Carbamylation in Neurodegeneration and other age-related disorders; Newly-discovered behaviour in the bacterial histone-like protein, HU; Genotypic, phenotypic, and *in silico* analysis of carbapenem-resistant *Klebsiella pneumoniae*; Mitigation of pathological parameters under Jagged1 influence in DMD knockout zebrafish and patient-derived myoblast cultures; Isolation, purification and characterization of a protease from the seeds of *Artocarpus heterophyllus*; Synthesis, DFT and Molecular docking study of novel bis 1,2,3-triazole derivatives of 2-hydroxyquinoline-4-carboxylate as antimicrobial agents; Determination of neuroprotective effects of medium chain fatty acids and their derivatives on mutant huntingtin aggregates, oxidative stress and ATP levels in HD150Q cell line model of Huntington's disease; The role of water molecules and its dynamics to the binding site of β -lactamase enzyme with respect to β -lactamase inhibitor; Polyphenol MHQP as an allosteric inhibitor of Kinesin-5: Cease the molecular catwalk of "Drunken Sailor"; and Solution structures and thermodynamics of *cis-trans* X-Pro conformers of a novel single disulfide conopeptide.

"Protein Science" has been increasingly gaining the attention of biochemists, biophysicists, biotechnologists, cell and molecular biologists and also researchers of molecular evolution and molecular medicine. This special issue of the IJBB provides the readers up-to-date developments in the important fields of structural biology.

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