



KAILASH C PANDEY, Ph.D

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EDUCATION

2002	Ph.D in Biotechnology, International Centre for Genetic Engineering and Biotechnology, New Delhi, affiliated with Jamia Hamdard University, INDIA
1996	M.Sc. in Biochemistry, Dr. Ram Manohar Lohia Avadh University, UP, INDIA
1994	Diploma in Chemical Processing Instrumentation & Control, Anna Malai Univ. INDIA
1991	P.G Diploma in Biotechnology, Delhi University, New Delhi, INDIA
1990	B.Sc. (Honors) in Biochemistry, Delhi University, New Delhi, INDIA

Employment

Aug.2017- Present;	Scientist E, Protein Biochemistry & Engineering lab., ICMR-NIMR, New Delhi ,
Oct.15 Aug.17	Scientist E & Head Dept. of Biochemistry, National Institute for Research in Environmental Health
2010-2015	Scientist D (Prof. Ramalingaswami Fellow, DBT), National Institute of Malaria Research
2009-2010	Research Scholar (Wellcome Trust), University of Exeter, UK.
2006-2008	Associate Specialist III, University of California San Francisco, School of Medicine, Division of Infectious Diseases, USA.
2004-2006	Associate Specialist II, University of California San Francisco, School of Medicine, Division of Infectious Diseases, USA.
2002-2004	Visiting Post-Doctoral Scholar, University of California San Francisco, School of Medicine, Division of Infectious Diseases, USA.
1996-1998	Research Assistant, International Centre for Genetic Engineering and Biotechnology, New Delhi
1992-1994	Research Assistance, National Institute of Immunology, New Delhi

Research Specialization: Drug Targeting and Screening, Enzyme/Protein Engineering for determining the Functions of Macromolecules, Proteins as Diagnostic Tools for Vector-Borne Diseases

Major Research Accomplishments

- Developed a new technology in the field of protein folding. International patent for inventing methods for renaturation of the polypeptide (European Patent Code: C07K14/445; and International Patent Code: C07K14/195).
- Identification of Novel Immunogenic Malarial Epitopes with Implications in Diagnostic Kit and Vaccine Development”2020; Patent app. No. 202011015006;
- Characterization of erythrocyte binding proteins of malaria parasite as recombinant malaria vaccine candidates (and *JBC*, 2001, *MBP*, 2002).
- Discovered three independent domains for inhibition, refolding and activity of novel cysteine proteases of human malaria parasite as drug targets (*JBC*, 2004, *PLoS one* 2009).
- Discovered a hemoglobin-binding domain in a major cysteine protease of the human malaria parasite, *P. falciparum* (*PNAS*, 2005).
- Major contribution in finding a structural basis for unique mechanisms of folding and hemoglobin binding by malarial cysteine protease as drug targets (*PNAS*, 2006 and *Structure* 2007).
- Discovered a new molecule named falstatin, an endogenous cysteine protease inhibitor in the human malaria parasite, which facilitates erythrocyte invasion (*PLoS Pathogen*, 2006).
- Identification of hot-spots based on protein-protein interactions in malarial cysteine proteases, and Engineering nucleotide specificity without changing the binding site residues: the emerging role of Gatekeeper residues in drug discovery and enzyme evolution (*Biochemistry*, 2017, *PLoS One*, 2012 and *PLoS One* 2014, *Experimental Parasitology* 2019,).

- Discovery of Allosteric inhibitor against cysteine proteases of malaria parasite; New tool to combat drug resistance problem (Scientific Report, 2018).
- Metacaspases, unusual proteases as a new drug target for malaria (Molecular Biochemical Parasitology., 2018, Int J Biol Macromol., 2019, Biochemical J, 2020, Frontier Pharmacology, 2019).
- Contribution in defining the classification and nomenclature of Metacaspases and Paracaspases (Mol. Cell., 2019).

Mentoring/ Teaching Experiences

One day workshop was organized at NIMR, New Delhi, on 4 th March, 2020, Title “ Igniting young minds”. Graduate students from Shri Aurbindo College, Delhi University, visited at NIMR and took part in various laboratory activities.

Currently, mentoring two PhD students and one PDF in the field of drug targets and study protein-protein interactions in malaria.

Four PhD students have submitted their PhD degrees, and three are awarded with degrees.

PhD student received a travel award for GRC-Biology of Host-Parasite Interactions at Salve Regina University, Newport, USA from June 10-15, 2018.

PhD student received the best oral presentation award at 1st International Conference on Integrative Chemistry, Biology & Translational Medicine, Feb 25-26, 2019 organized by Hansraj College, University of Delhi, India and Loyola University Chicago, USA.

PhD Student received a travel award for flash talk & poster presentation at GRC-Malaria 2019 at Les Diablerets Conference Center in Switzerland from June 30-July 05, 2019.

PhD student received the award for best poster presentation at National Conference of Parasitology and Global Summit for Malaria Elimination held at JNU, India from September 26-28, 2019.

PhD Student received a travel award for poster presentation at Keystone Symposia to be held in Ethiopia from October 30-November 2, 2019.

PhD student received the Innovative Fellowship Award from National Innovation Foundation by DST, in August 2019.

Teaching B.Tech. Students; Techniques and fields covered in this course; Expression of recombinant protein in *E.coli*, Protein purification by Ion-exchange and affinity chromatography, analysis of antigen-antibody interactions by western blot analysis. Purification of antibody from serum. (ICMR-NIREH-SRM), 2017.

Travel award to PhD student for the 28th Molecular Parasitology Meeting 2017 at Woods Hole, USA from 10th to 14th September 2017.

Swiss Government Excellence Fellowship to PhD student for working Rational Design of Thyroid Hormone Receptor as a Bio-recognition element; A computational approach (2017-2018).

Traveling grant to PhD student for an invited talk at Molecular Parasitology meeting XIII, Marine Biological Laboratory Woods Hole, MA, USA, Sept. 2016.

Participated in mentors-students workshop on innovation projects, 2015-2016 (S.No. 311). Design, synthesis and Screening of silver Nano-Particles as Anti-malarial and Anti-bacterial agents, at NIMR and Srivenkeshwara College, Delhi University.

Mentoring Ph.D students and undergraduates in the field of Protein Chemistry at University of Exeter, UK, 2009-2010.

Teaching (Biochemistry) to San Francisco state high school students (4 months) and mentoring graduate students (5 months) at University of California Berkeley, USA, during 2007.

Mentoring Post-Doc fellows at University of California San Francisco in the field of protein chemistry, USA, 2004-2007.

Supervising summer trainees in the field of protein chemistry at International Center for Genetic Engineering and Biotechnology, New Delhi, INDIA, 1996-2002.

Honored as a group leader at the international meeting for host-pathogen interaction organized by Tata Institute of Fundamental Research, Mumbai and green hill campus Mahabaleshwar, INDIA, 18-23 November 2000.

Membership/Coordinator

Coordinator of a PhD programme of ICMR-National Institute of Malaria Research & Academy of Scientific and Innovative Research, (CSIR-HRDC), Organization Established as an Institution of National Importance, 3 March 2020.

Nominated member of American Chemical Society, 1155 Sixteenth Street, N.W, Washington, DC, 20036, 16-17.

Coordinator of seminar series at National Institute of Malaria Research, New Delhi (2010-2015).

Coordinator of seminar series at National Institute for Research in Environmental Health, Bhopal (2016-2017).

Member of Scientific Committee of National Institute for Research in Environmental Health, 2015-2017

Member of International Society of Protistologists and the British Society for Protist Biology, 2009-2011.

Member of the Malaria Journal Club organized by University of California San Francisco, and University of California Berkeley, 2005-2008, USA.

Member of Bay Area Malaria Meeting organized by University of California San Francisco, University of California Berkeley and Stanford University, 2005-2008, USA.

Fellowship

Prof. Ramalingaswami fellowship for five years (2010-2016) by Department of Biotechnology, Govt. of India.

National eligibility fellowship for Lectureship/Assistant Professorship in Biochemistry by Agriculture Scientist Recruitment Board, New Delhi, Govt. of India, 1998.

Award

- Outstanding scientist in the field of Biochemistry by Venus International Foundation, 2015
- Bharat Excellence Award in the field of Protein Chemistry by Friendship Forum of India, 2015

Editorial responsibilities

- Review Editor; Pharmacogenetics and pharmacogenomics,
- Associate Editor; BMC Biochemistry
- Reviewer: ACS Infect Dis, Protein Science, Nature Scientific Report, JBC, Biochemistry, Biochemical Journal, PLoS Neglected Disease, Molecular Biochemical Parasitology, Malaria Journal, Parasitology today, BMC Biochemistry, Reviewer of ICMR-Clinical Research Internship Program.

Book Chapter;

- Pasupureddy R, Dixit R, Seshadri S, **Pandey KC*** (2019). Book Chapter; Protein-protein Interactions in Malaria; Emerging Arena for future chemotherapeutics. **Parasitology and Microbiology Research**, Publisher., IntechOpen.
- Cysteine Proteases of Human Malaria Parasites by **Kailash C Pandey**; “**Role of proteases in cellular dysfunction**” volume 7, DOI 10.1007/978-14614-9233-7, page 121-134, edited by Dhalla N and Chakraborti S, Publisher Springer Science and Business Media New York, 2013.