

AMRITLAL MANDAL, Ph.D.



Assistant Research Scientist
Department of Physiology
University of Arizona
Tucson, AZ 85724, USA

Cell: (520) 289-5695, Email: mandal@email.arizona.edu

SUMMARY

- Expert scientist with **15+** years of research experience in ocular diseases, pulmonary arterial hypertension and cancer biology.
- **50+** peer-reviewed research publications, **2800+** research citations and **175+** invited reviewer assignments for scientific journals.
- Expert grant reviewer [Arizona Department of Biomedical Research Commission (ABRC), Arizona Department of Health Services (ADHS)].

ACADEMIC QUALIFICATION

Ph.D., Biochemistry (2005), University of Kalyani, India

PROFESSIONAL AFFILIATIONS

The Association for Research in Vision and Ophthalmology (ARVO)	2006-Present
The American Physiological Society (APS)	2007-Present
The American Medical Writers Association (AMWA)	2016-Present

EMPLOYMENT HISTORY AND ACHIEVEMENTS

July 2012-Present: University of Arizona, Tucson, AZ, USA, Assistant Research Scientist

Key investigator in NIH sponsored projects related to blinding diseases, glaucoma, cataract and dry eye disease. Use animal models, whole eye organ cultured (*ex vivo*) and cellular (*in vitro*) models to study protein phosphorylation dependent cross-talk and signal transduction exploiting cellular/molecular biology and biochemical approaches. The goal of the study is to develop potential pharmacotherapeutics for better management of those ocular disease conditions.

Aug 2006-June 2012: University of Arizona, Tucson, AZ, USA, Postdoctoral Research Associate

Worked in NIH sponsored projects related to different ocular diseases and developed large platform high throughput ELISA-based immuno-assays for screening and validating primary antibodies (cancer biomarkers), drugs and siRNAs in large plate-based platform.

Discovered a propidium iodide (PI) uptake-based fluorometric assay for gap junctional ion transport activity in cell based assay or in organ cultured intact lens model. Established two experimental protocols for challenging optic nerve head astrocytes, glial primary cultured cells with controlled increased hydrostatic pressure to mimic (*in vitro*) acute hypertensive glaucoma.

Developed pig specific primary antibody conjugates directed against individual Src Family Kinase (SFK) members, cSrc, Lyn, Fyn, Hck and Yes1 to study phosphorylation mediated cellular cross talk in ocular disease progression employing immunoprecipitation methods.

Identified the role of sodium hydrogen exchanger-1 (NHE-1) as a critical sodium influx machinery in esophageal cancer progression and apoptosis resistance.

Jan 2006-Aug 2006: University of Louisville, Louisville, KY, USA, Postdoctoral Research Associate

Worked in NIH sponsored project and discovered the role of sodium hydrogen exchangers (NHEs) in pH regulation in optic nerve cells which has implications in glaucoma and cataract.

Introduced and Implemented zymogram assay of matrix metalloproteinases in the lab for quantification of glial tissue remodeling in primary cultured cell model for assessing the fate of extracellular matrix (ECM) in experimental ocular hypertension.

Jan 2000-Dec 2005: University of Kalyani, Kalyani, WB, India, Doctoral Fellow

Worked in CSIR and ICMR sponsored projects and developed a reliable colorimetric assay for measuring matrix metalloproteinase-2 (MMP2) activity (replacing hazardous and conventional assay that uses radioactive C¹⁴-labeled collagen substrate) *in vitro* by employing a synthetic DNP-labeled peptide substrate that has also been designed and synthesized as an integral part of the assay development.

Purified and characterized matrix metalloproteinases (MMP1/2) and their endogenous inhibitors (TIMP1/2) and sarco(endo)plasmic reticulum calcium-ATPase isoform 2b (SERCA2b) enzyme from pulmonary arterial smooth muscle tissue.

Reconstituted purified calcium-ATPase protein in defined compositions of proteoliposomes to study and characterize *in vitro* enzyme activity. Provided strong experimental evidence showing mechanistic roles of calcium, calcium-ATPases and sodium calcium exchangers (NCX) in pulmonary arterial hypertension.

SIGNIFICANT AWARDS

Appointed Section Editor (Section: ROS in Carcinogenesis) for the book 'Oxidative stress and cancer' to be published by Springer Nature, 2019.

Awarded certificate for Outstanding Reviewer from Experimental Eye Research, Elsevier, Amsterdam, The Netherlands, Dec 2016 for securing 10th percentile of top quality reviews performed for the journal.

Received Recognized Reviewer award from Experimental Eye Research, Elsevier, Amsterdam, The Netherlands, Dec. 2017.

Received Special Recognition by the Cell and Molecular Physiology Section, American Physiological Society (APS) in Experimental Biology Annual Meeting 2012, San Diego, CA, for outstanding contribution on discovering TRPV4 ion channel's role in regulating Na,K-ATPase pump activity in maintaining lens transparency.

CITATIONS

52 publications. Total citations: 2829 as of 18 Aug 2019. h-index: 18, i10-index: 29

Detailed citations can be found at

http://scholar.google.com/citations?hl=en&user=wqARIFUAAAAJ&view_op=list_works&pagesize=100

ORCID iD: 0000-0001-9401-5649

Scopus Author ID: 7201535535

ResearcherID: G-7946-2018

PUBLICATIONS

He has more than 35 publications in various international journals across the world

TALKS

More than 25 talks in various conferences across the world .