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Preparation of the Manuscript (for Research Paper)

Manuscript must be written in clear and concise English. Either British or American spelling is acceptable. It must be sent in Microsoft Word format (.doc or .docx).

General format of the research papers should be as follows in given template:

1. Title page
2. Abstract and key words
3. Introduction
4. Material and Methods
5. Results
6. Discussion
7. Conclusion
8. Acknowledgement (if any)
9. Conflict of Interest (if any)
10. References

In general, the length of full research papers should not exceed six printed pages of the Journal. (Each printed page will approximately contain 800 words).

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For more details see Instructions to Authors in our website www.ijbap.weebly.com

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On The Occasion of Third Issue

Dear colleagues, I am very happy to put this third annual issue of our Physiology Journal in your hand.

First, I would like to thank Dr. Hemant Mehta and his Team for the outstanding work they have done over the last 2 years. We hope to build on their success to make our journal even better and continue to publish the very best papers in Physiology. We have an exciting new group of Editors that are now hard at work assigning manuscripts and have been delighted in the number of manuscripts that have been submitted so far. We have also assembled a vibrant editorial board, including members from various parts of world, who have been charged with providing concise and timely reviews of your papers. Our goal is to create a new forum for exchange of information on all aspects of Physiology and Education. One of the key objectives of research should be its usability and application. This journal attempts to document and spark a debate on the research focused on Physiology and its research.

Editing such journal is really enriching experience for me and has provided lots of opportunity to learn new things and also made me aware of existing scenario of research and infrastructure of Physiology in our country. Responsibility of our journal should not be limited to discussion of research articles of Physiology but also include promotion of education and research activity in their subject. So Journal should be a medium of change by actively participating into policy making through publishing related articles from learned members of society. With this in mind we invite our erudite members to provide article related to current scenario of Physiology education and research along with its pros and cons and constructive suggestions to improve the same.

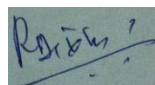
In this age of increasing research with use of technological advancement, the need for a dedicated journal on basic subjects like Physiology has long been felt. While such journals are available internationally and quite a few nationally, the intention of starting this new "International journal of Basic and Applied Physiology" was to provide platform for Indian physiologists to publish their research work for physiology fraternity in India and abroad and to provide information about the research work going on in countries outside India.

So many non-invasive and invasive instruments are available in the market to measure physiological parameters, that there is a need to increase accuracy and reproducibility of this instruments so as to utilize them in routine clinical practice and also for large scale screening purposes as a preventive measure. There is lot of scope of research in validating such tests and also developing better algorithm and equations to interpret and make them more meaningful.

On behalf of the entire editorial team, please let me convey my sincere gratitude to all of our many authors and reviewers who have submitted papers and/or provided valuable service as a reviewer for IJBAP. Our editorial board and the many ad hoc reviewers have spent countless hours reviewing manuscripts for the journal over the past year, and we continue to excel as a direct result of your efforts. I will try to be brief, but this is a particularly exciting time, and I thought you might appreciate an update on the "State of the Journal."

We appreciate the time and efforts put in by the members of the expert panel for this journal. It is their effort that we are able to talk to you directly on this platform today. We also thank our contributors on this occasion.

As always, please send us your suggestions on how to improve our journal. We are committed to make International Journal of Basic & Applied Physiology the top in the Physiology Research!



Chief Editor
Raghendra Dixit,
Dean,
GMC, Surat

Forward.....

Respected Senior Physiologists and Dear young colleagues,

Season's greetings to you all.

We as an organization of "Society of Basic and Applied Physiology" are slowly but firmly going ahead towards developing a good platform for young physiologists. Following are the activities of society of basic and applied physiology:

- 1) Our society has been registered. Registration No.: F/17129/Ahmedabad
- 2) The society motivates various colleges and collaborates with colleges to organize "International Conference on Basic & Applied Physiology" every year.
- 3) The society is publishing its prime publication "International Journal of Basic & Applied Physiology" annually every year at the time of ICON BAP conference.
- 4) Regarding the interests of Physiologists: We have written a detailed letter to central health minister and prime minister explaining the importance of basic subject "Physiology" demanding increase in Posts of Physiologists in department of physiology in all medical colleges of India (as it is reduced by MCI). We all have to unite for this essential cause.
- 5) Promoting development of "Clinical Physiology and Applied Physiology".

Because we want more and more diversification and we want to create new opportunities for physiologists. There are many new areas which are explored until now and we can create a new clinical space for physiologists like,

- 1) Health Check up specialist
- 2) Electrophysiology
- 3) Endocrinology
- 4) Hypnotherapy
- 5) Obesity management by non invasive methods
- 6) Non invasive cardiology like use of ECCP Machine & Rehabilitation
- 7) Reproductive physiology
- 8) Immunology & Allergy specialist
- 9) Haematologists
- 10) Space medicine
- 11) Marine medicine
- 12) High altitude specialist
- 13) Sports medicine

So if we catch this golden opportunity, we can become super specialist and we can start super specialist courses in physiology department itself! Several institutes can develop from physiology department! I request you all to become member of society and motivate these activities. Only organised efforts can yield results!!

Thank you all.



Dr. J. M. Jadeja
President,
Society of Basic and Applied Physiology

About Society of Basic & Applied Physiology

Regd. No: F/17129/Ahmedabad. Dt. 04/09/2013.

Society of Basic & Applied Physiology is a non-profit private organization having its office located at Department of Physiology, B J Medical College, Ahmedabad, Gujarat, India. This is the first ever Association representing Only Medical Physiologists in India.

Society of Basic & Applied Physiology is dedicated to publish research in all field of Physiology. Their main mission is to enable those who seek the relevant research information on Physiology and make them available in different formats. A long term objective is to provide high quality, accurate and required information to enhance research and innovative concepts in scholarly publishing. Society strictly follows Honesty, Sincerity and ethics.

Activities of Society

Society regularly organizes International Conference every year since 2012 to promote research work of young Physiologists.

Society publishes International Journal of Basic & Applied Physiology to provide platform for Indian as well as International physiologists to publish their research work for physiology fraternity in India and abroad and to provide information about the research work going on internationally.

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Tucson, AZ 85724, USA,

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RESEARCH INTEREST: Ion transport in pulmonary & ocular hypertension is the broad area of specialization. Focused on neuroprotection, visual restoration and elevated IOP reduction. Major areas of interest include cellular sodium & calcium homeostasis by sodium and calcium pump, calcium signaling mechanism involving TRPV4, connexin and pannexin channels.

ACADEMIC QUALIFICATIONS

Aug 2006-May 2012	University of Arizona , Tucson, AZ, USA Postdoctoral Research Associate, Physiology and Ophthalmology
Jan 2006-Aug 2006	University of Louisville , Louisville, KY, USA Postdoctoral Research Associate, Ophthalmology
Jan 2000-Dec 2005	University of Kalyani , India Ph.D., Biochemistry
Sept 1996-July 1998	University of Calcutta , India M.Sc., Biochemistry

PROFESSIONAL EXPERIENCE

May 2012-present	University of Arizona, Tucson, AZ, USA Assistant Research Scientist <ul style="list-style-type: none">• Key investigator in projects related to initiation and progression mechanisms of two important blinding diseases, glaucoma and cataract. Use whole eye organ culture (<i>ex vivo</i>) and cellular (<i>in vitro</i>) models to study protein phosphorylation dependent cross-talk and signal transduction exploiting cell-molecular biology and biochemical approaches.
Aug 2006-May 2012	University of Arizona , Tucson, AZ, USA Postdoctoral Research Associate <ul style="list-style-type: none">• Developed a fluorimetric assay for hemichannel activity in organ cultured intact lens based on propidium iodide (PI) uptake.• Standardized large platform immuno-assays for validating primary antibodies, drugs and siRNAs based on In Cell (IC) and On Cell (OC) westerns.• Established two experimental methods for challenging optic nerve head astrocytes with controlled increased hydrostatic pressure to mimic (<i>in vitro</i>) acute hypertensive glaucoma.• Elucidated the role of $\alpha 2$ subunit of sodium potassium ATPases in regulating pH homeostasis in optic nerve cells and worked on apoptosis and pH regulation in esophageal cancer.
Jan 2006-Aug 2006	University of Louisville , Louisville, KY, USA Postdoctoral Research Associate <ul style="list-style-type: none">• Elucidated the role of sodium hydrogen exchangers (NHEs) in pH regulation in optic nerve cells which has been implicated in glaucoma and cataract.

Jan 2000-Dec 2005

University of Kalyani, West Bengal, India

Senior Research Fellow

- Examined the role of calcium, calcium ATPases and sodium calcium exchangers in pulmonary arterial hypertension.
- Purified and characterized matrix metalloproteases (MMP1/2) and their endogenous inhibitors (TIMP1/2) from pulmonary arterial smooth muscle tissue.
- Successful in reconstituting purified Ca^{2+} -ATPase protein in defined compositions of proteoliposomes to study and characterize *in vitro* Ca^{2+} -ATPase function

TECHNICAL SKILLS

Whole eye perfusion and *ex vivo* lens culture

- *In vitro* whole eye perfusion for studying aqueous humor kinetics and drug transport. Experienced in establishing and maintaining intact ocular lens organ culture model for *ex vivo* studies.

Mammalian cell culture

- Experienced in establishing mammalian primary cell culture models, including isolation and maintenance of porcine non pigmented ciliary epithelium (NPE), lens epithelium and rat optic nerve head astrocytes (primary glial culture). Substantial experience in microbial culture and sterile aseptic techniques.

Histology and microscopy

- Histological analysis of tissues and cultured cells by immunostaining.
- Confocal microscopy (Zeiss LSM510, Leica SP5-II), immunofluorescence and epifluorescence ratiometry imaging of intracellular pH, calcium and sodium using BCECF, Fura-2 and SBFI, Cell based quantitative Reactive Oxygen Species (ROS) assay using DCF.

Analytical techniques

- Analytical techniques and instrumentations including atomic absorption spectrophotometry (AAAnalyst 100, Perkin Elmer), Circular Dichroism spectrometry (Jasco J-1000), SDS-PAGE, western blot (Li-Cor Odyssey), immunoprecipitation, cell surface biotinylation, membrane protein cross linking, protein deglycosylation/conjugation, ELISA, In Cell and On Cell WB for high throughput antibody/siRNA /drug and small molecule screening.

Molecular biology

- Broad experience in the areas of molecular biology such as DNA/RNA isolation and purification, PCR, RTqPCR (Bio-Rad CFX96) and transfection/gene knockdown (siRNA).

Protein purification

- Protein purification techniques including ion exchange, gel filtration, affinity chromatography.

Electrophysiology

- Experienced in electrophysiology techniques. Examples include trans-epithelial electrical studies (Millicell ERS-2 Volt-Ohm Meter, Millipore) with cultured cells grown on permeable support and with dual voltage/current clamp (DVC-1000, WPI) tissues mounted in the Ussing chamber.

Radio isotope handling

- Used radioisotopes (^3H , ^{86}Rb , ^{125}I , ^{32}P) for cell based assays of cyclic nucleotides (cAMP and cGMP) and sodium pump (Na,K-ATPase).

Animal handling

- Experienced in rabbit model for immunizing and raising immune serum. Used experimental small animal models (rat and mouse), performed peritoneal drug injection to induce fibroblast differentiation and isolated pulmonary artery smooth muscle cells for determining oxidative stress, cellular calcium mobilization and matrix metalloproteinase (MMP) activation.

Computer literacy

- Proficient in MS office (Word, Excel, and PowerPoint), image analysis soft wares based on Adobe Photoshop and Image J, and statistical soft wares Stat View, Graph Pad Prism.

AWARD

“Special Recognition” by the Cell and Molecular Physiology Section, American Physiological Society (APS) in Experimental Biology Annual Meeting 2012, San Diego, CA, for contribution on TRPV4 ion channel research in lens transparency.

SUPERVISORIAL EXPERIENCE

- Trained 8 members in the research group (1 postdoc, 6 grads/undergrads and 1 technician).

PUBLICATIONS

Full research Articles: 28, Review articles: 7, Book Chapter: 2, H-Index: 12. Total citations: 1816 as of 15 Dec 2014. Detailed citations can be found at

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

Original Research Articles

Ocular ion transport related to glaucoma and cataract

1. M. Shahidullah, A. Mandal, G. Wei, L.R. Levin, J. Buck and N.A. Delamere (2014). Nonpigmented Ciliary Epithelial Cells Respond to Acetazolamide by a Soluble Adenylyl Cyclase Mechanism. ***Invest Ophthalmol Vis Sci***, 55(1):187-97.
2. M. Shahidullah, **A. Mandal**, G. Wei and N.A. Delamere (2014). Nitric Oxide Regulation of Na,K-ATPase Activity in Ocular Ciliary Epithelium Involves Src Family Kinase. ***J Cell Physiol***, 229(3):343-52.
3. M. Shahidullah, **A. Mandal**, and N.A. Delamere (2012). TRPV4 in porcine lens epithelium regulates hemichannel-mediated ATP release and Na,K-ATPase activity. ***Am J Physiol Cell Physiol***, 302(12):C1751-61.
4. M. Shahidullah, **A. Mandal**, C. Beimgraben and N.A. Delamere (2012). Hyposmotic stress causes ATP release and stimulates Na, K-ATPase activity in porcine lens. ***J Cell Physiol***, 227(4):1428-37.
5. **A. Mandal**, M. Shahidullah, C. Beimgraben and N.A. Delamere (2011). The effect of endothelin-1 on Src-family tyrosine kinases and Na,K-ATPase activity in porcine lens epithelium. ***J Cell Physiol***, 226(10):2555-61.
6. **A. Mandal**, M. Shahidullah, N.A. Delamere (2010). Hydrostatic pressure induced release of stored calcium in cultured rat optic nerve head astrocytes. ***Invest Ophthalmol Vis Sci***, 51(6):3129-38.
7. **A. Mandal**, M. Shahidullah, N. A. Delamere and M.A. Terán (2009) Elevated hydrostatic pressure activates sodium-hydrogen exchanger-1 in rat optic nerve head astrocytes, ***Am J Physiol Cell Physiol***, 297(1):C111-20.
8. M. Shahidullah, **A. Mandal**, N.A. Delamere (2009). Responses of sodium-hydrogen exchange to nitric oxide in porcine cultured nonpigmented ciliary epithelium, ***Invest Ophthalmol Vis Sci***, 50(12):5851-8.
9. **A. Mandal**, N.A. Delamere, M. Shahidullah (2008) Ouabain-induced stimulation of sodium-hydrogen exchange in rat optic nerve astrocytes, ***Am J Physiol Cell Physiol***, 295, C110-11.

Renal ion transport

10. K. Holthouser*, **A. Mandal***, M.L. Merchant, J. Schelling, N.A. Delamere, R.R. Valdes Jr., S.C. Tyagi, E.D. Lederer, S.J. Khundmiri (2010). Ouabain stimulates Na,K-ATPase through sodium hydrogen exchanger-1 (NHE-1) dependent mechanism in human kidney proximal tubule cells. ***Am J Physiol Renal Physiol***, 299 (1), F77-90 (* **Joint first author**)

Ion transport in esophageal cancer

11. A. Goldman, H.D.R. Chen, M.R. Khan, H. Rosely, K.A. Hill, M. Shahidullah, **A. Mandal**, N.A. Delamere and K. Dvorak (2011). The Na^+/H^+ exchanger controls deoxycholic acid induced apoptosis by a H^+ -activated Na^+ -dependent ionic shift in esophageal cells. **PLoS One**, 6(8):e23835.

Pulmonary arterial hypertension, tissue remodeling and protein purification-characterization

12. S. Chakraborti, S. Roy, **A. Mandal**, K. Dey, A. Chowdhury, S. Shaikh, T. Chakraborti (2013). Role of $\text{PKC}\alpha$ -p38MAPK-G α axis in NADPH oxidase derived $\text{O}_2^{\cdot-}$ -mediated activation of cPLA₂ under U46619 stimulation in pulmonary artery smooth muscle cells. **Arch Biochem Biophys**, 540(1-2):133-44.
13. S. Chakraborti, S. Roy, A. Chowdhury, **A. Mandal**, T. Chakraborti (2013). Role of $\text{PKC}\alpha$ -p(38)MAPK-G(i) α axis in peroxynitrite-mediated inhibition of β -adrenergic response in pulmonary artery smooth muscle cells. **Cell Signal**, 25, 512-526.
14. S. Chakraborti, S. Roy, **A. Mandal**, K. Dey, A. Chowdhury, S. Shaikh, T. Chakraborti (2012). Role of $\text{PKC}\alpha$ -p(38)MAPK-G α axis in NADPH oxidase derived $\text{O}_2^{\cdot-}$ -mediated activation of cPLA₂ under U46619 stimulation in pulmonary artery smooth muscle cells. **Arch Biochem Biophys**, 523(2):169-80.
15. B. Ghosh, P. Kar, **A. Mandal**, K. Dey, T. Chakraborti, S. Chakraborti (2009). Ca^{2+} influx mechanisms in caveolae vesicles of pulmonary smooth muscle plasma membrane under inhibition of $\alpha 2\beta 1$ isozyme of Na^+/K^+ -ATPase by ouabain, **Life Sciences**, 84(5-6):139-148.
16. **A. Mandal**, S. Das, T. Chakraborti, P. Kar, B. Ghosh, S. Chakraborti (2006). Solubilization, purification and reconstitution of Ca^{2+} -ATPase from bovine pulmonary artery smooth muscle microsomes by different detergents: Preservation of native structure and function of the enzyme by DHPC, **Biochim Biophys Acta**, 1760, 20-31.
17. **A. Mandal**, T. Chakraborti, R. Choudhury, B. Ghosh, A.N. Ghosh, S. Das, and S. Chakraborti (2005). Role of MMP-2 in inhibiting Na^+ dependent Ca^{2+} uptake by H_2O_2 in microsomes isolated from pulmonary smooth muscle, **Mol Cell Biochem**, 270, 79-87.
18. **A. Mandal**, T. Chakraborti, R. Choudhury, B. Ghosh and S. Chakraborti (2005). Role of MMP-2 in oxidant-mediated regulation of Ca^{2+} uptake in microsomes of bovine pulmonary artery smooth muscle, **Ind J Biochem. Biophys**, 42, 19-27.
19. S. Chakraborti, **A. Mandal**, S. Das and T. Chakraborti (2005). Role of MMP-2 in $\text{PKC}\delta$ -mediated inhibition of Na^+ dependent Ca^{2+} uptake in microsomes of pulmonary smooth muscle: Involvement of a pertussis toxin sensitive protein, **Mol Cell Biochem**, 280, 107-117.
20. S. Das, M. Mandal, T. Chakraborti, **A. Mandal**, S. Chakraborti (2004). Isolation of MMP-2 from MMP-2/TIMP-2 complex: characterization of the complex and the free enzyme in pulmonary vascular smooth muscle plasma membrane, **Biochim Biophys Acta**, 1674, 158-174.
21. S. Das, M. Mandal, **A. Mandal**, T. Chakraborti, S. Chakraborti (2004). Identification, purification and characterization of matrix metalloproteinase-2 in bovine pulmonary artery smooth muscle plasma membrane, **Mol Cell Biochem**, 258, 73-89.
22. S. Chakraborti, **A. Mandal**, S. Das and T. Chakraborti (2004). Inhibition of $\text{Na}^+/\text{Ca}^{2+}$ exchanger by peroxynitrite in microsomes of pulmonary smooth muscle: Role of matrix metalloproteinase-2, **Biochim Biophys Acta**, 1671, 70-78.
23. **A. Mandal**, T. Chakraborti, S. Das, B. Ghosh, A.N. Ghosh and S. Chakraborti (2004). Matrix Metalloproteinase-2 Mediated Inhibition of Na^+ Dependent Ca^{2+} Uptake by Superoxide Radical ($\text{O}_2^{\cdot-}$) in Microsomes of Pulmonary Smooth Muscle, **IUBMB Life**, 56, 267-276.
24. M. Mandal, S. Das, T. Chakraborti, **A. Mandal** and S. Chakraborti (2003). Role of the matrix metalloproteinase-2 in the oxidant activation of Ca^{2+} -ATPase by hydrogen peroxide in pulmonary vascular smooth muscle plasma membrane, **J Biosci**, 28, 213-219.

25. M. Mandal, S. Das, T. Chakraborti, **A. Mandal** and S. Chakraborti (2003) Identification, purification and partial characterization of tissue inhibitor of matrix metalloproteinase-1 (TIMP-1) in bovine pulmonary artery smooth muscle, **Mol Cell Biochem**, 254, 145-155.
26. M. Mandal, **A. Mandal**, S. Das, T. Chakraborti and S. Chakraborti (2003) Identification, purification and partial characterization of tissue inhibitor of matrix metalloproteinase-2 in bovine pulmonary artery smooth muscle, **Mol Cell Biochem**, 254, 275-287.
27. S. Das, T. Chakraborti, M. Mandal, **A. Mandal** and S. Chakraborti (2002) Role of a membrane associated Ca^{2+} dependent matrix metalloprotease in the activation of Ca^{2+} -ATPase by tertiary butylhydroperoxide, **Mol Cell Biochem**, 237, 85-93.
28. T. Chakraborti, S. Das, M. Mandal, **A. Mandal** and S. Chakraborti (2002) Role of Ca^{2+} dependent matrix metalloprotease-2 in stimulating Ca^{2+} -ATPase activity under peroxynitrite treatment in bovine pulmonary artery smooth muscle membrane, **IUBMB Life**, 53, 1-7.

Review articles

29. Chakraborti S, Chowdhury A, Alam MN, Sarkar J, **Mandal A**, Pramanik A, Chakraborti T (2014). Vascular aneurysms: A Perspective. **Ind J Biochem. Biophys** (*In Press*)
30. A. K Banerjee, **A. Mandal**, D. Chanda and S. Chakraborti (2003) Oxidant, antioxidant and Physical Exercise, **Mol Cell Biochem**, 253, 307-312.
31. S. Chakraborti, M. Mandal, S. Das, **A. Mandal** and T. Chakraborti (2003) Regulation of matrix metalloproteinases: An overview, **Mol Cell Biochem**, 253, 269-285.
32. S. Das, M. Mandal, T. Chakraborti, **A. Mandal** and S. Chakraborti (2003) Structure and evolutionary aspects of matrix metalloproteinases: A brief overview, **Mol Cell Biochem**, 253, 31-40.
33. M. Mandal, **A. Mandal**, S. Das, T. Chakraborti, and S. Chakraborti (2003) Clinical Implications of Matrix metalloproteinases, **Mol Cell Biochem**, 252, 305-329.
34. T. Chakraborti, M. Mandal, S. Das, **A. Mandal**, S. N. Ghosh and S. Chakraborti (2002) Protective Role of Magnesium in Cardiovascular Diseases : A Review, **Mol Cell Biochem**, 238, 163-179.
35. T. Chakraborti, **A. Mandal**, M. Mandal, S. Das and S. Chakraborti (2000) Complement activation in heart diseases: Role of oxidants, **Cell Signal**, 12, 607-617.

Book chapter

36. S. Chakraborti, S. Das, M. Mandal, **A. Mandal** and S. Chakraborti (2002), Ca^{2+} dynamics under oxidant stress in the cardiovascular system, **Molecular and cellular responses to stress, Vol 2, New York, Elsevier Science**, 213-224.
37. **Mandal A**, Chakraborti S (2015), Calcium ATPases as key regulators of cellular calcium handling in pulmonary vasculature under oxidative stress, **Regulation of ATPases**, Eds Chakraborti S, Dhalla NS, Springer (Invited book chapter)

PRESENTATIONS AND CONFERENCES

1. **A. Mandal**, M Shahidullah, and NA. Delamere. AZPS 6th Annual Meeting, October 24-25, 2014, held at the University of Arizona, Tucson, AZ, USA. Calcium entry via connexin hemichannels in lens epithelium.
2. M. Shahidullah, **A. Mandal**, and NA. Delamere. AZPS 6th Annual Meeting, October 24-25, 2014, held at the University of Arizona, Tucson, AZ, USA. Trpv4 Channels Enable Lens Epithelium to Sense and Respond to Remote Stimuli in the Fiber Mass.
3. **Mandal A**, Shahidullah M, and Delamere NA. AZPS 6th Annual Meeting, November 01-02, 2013, held at the University of Arizona, Phoenix, AZ, USA. Title: TRPV4 in Porcine Lens Epithelium Regulates Hyposmotic Stress-Induced ATP release and NA,K-ATPase Activity.

4. M. Shahidullah, **A. Mandal**, G. Wei and N.A. Delamere. NO Activates Src Family Kinase and Inhibits Na,K-ATPase Activity in Nonpigmented Ciliary Epithelium. ARVO 2013 Annual Meeting held on 5-9 May at Seattle, Washington, USA.
5. **A. Mandal**, M. Shahidullah and N.A. Delamere. Hyposmotic Stress Induced Cytoplasmic Calcium Increase involves TRPV4 and Src Family Kinase Activation. Oral presentation in Experimental Biology Annual Meeting, 21-25 April, 2012 in San Diego, CA, USA.
6. **A. Mandal**, M. Shahidullah and N.A. Delamere. Acetazolamide Increases cAMP in Cultured Porcine Nonpigmented Ciliary Epithelium and Elicits Subcellular Translocation of H⁺-ATPase. ARVO 2012 Annual Meeting held on 6-10 May at Fort Lauderdale, FL, USA).
7. N.A. Delamere, **A. Mandal** and M. Shahidullah. DIDS causes Src-dependent inhibition of Na,K-ATPase in the ciliary epithelium and slows aqueous humor secretion by the intact porcine eye. Experimental Biology Annual Meeting, 21-25 April, 2012 in San Diego, CA, USA.
8. M. Shahidullah **A. Mandal** and N.A. Delamere. TRPV4 in Porcine Lens Epithelium Regulates Hyposmotic Stress-Induced ATP Release and Na,K-ATPase Activity. Experimental Biology Annual Meeting, 21-25 April, 2012 in San Diego, CA, USA.
9. **A. Mandal**, M. Shahidullah and N.A. Delamere. Hyposmotic stress causes a cytoplasmic calcium increase in cultured lens epithelium by a mechanism involving P2-purinoreceptors and Src family tyrosine kinase. Delamere. ARVO 2011 Annual Meeting held on 1-5 May at Fort Lauderdale, FL, USA).
10. **A. Mandal**, M. Shahidullah and N.A. Delamere. Hyposmotic stress causes a cytoplasmic calcium increase in cultured lens epithelium by a mechanism involving P2-purinoreceptors and Src family tyrosine kinase. Delamere. ARVO 2011 Annual Meeting held on 1-5 May at Fort Lauderdale, FL, USA).
11. M. Shahidullah, **A. Mandal**, and N.A. Delamere. Hyposmotic stress causes ATP release and stimulates Na,K-ATPase activity in porcine lens. ARVO 2011 Annual Meeting held on 1-5 May at Fort Lauderdale, FL, USA).
12. **A. Mandal**, M.S. Stepia, M. Shahidullah, C. Beimgraben and N.A. Delamere. AHSC Frontiers in Biomedical Research, October 7, 2009, held at the University of Arizona, Tucson, AZ USA. Title: The effect of endothelin-1 on Src-family tyrosine kinases and Na,K-ATPase activity in porcine lens epithelium. Abstract # 40
13. SJ Khundmiri, K Holthouser, **A. Mandal**, ML Merchant, J Schelling, NA Delamere and ED Lederer. Experimental Biology (APS) Annual Meeting, April 24-28, 2010 held at Anaheim, CA, USA. Title: Low dose ouabain regulation of Na,K-ATPase requires NHE-1 scaffolding properties. Abstract # 798.5
14. J Parks, M Barati, SA sayler, **A. Mandal**, JD Klein and SJ Khundmiri. Experimental Biology (APS) Annual Meeting, April 24-28, 2010 held at Anaheim, CA, USA. Title: Evidence for aldosterone-mediated regulation of Na,K-ATPase in kidney proximal tubules. Abstract # 606.25
15. **A. Mandal**, M. Shahidullah, C. Beimgraben, N.A. Delamere. Presented at the ARVO Annual Meeting, May 2-6, 2010 held at Fort Lauderdale, FL, USA. Title: Endothelin-1 Inhibits Na,K-ATPase Activity Through a Src Family Kinase Mediated Mechanism in Porcine Lens Epithelium.
16. **A. Mandal**, M. Shahidullah, C. Beimgraben and N.A. Delamere. AZPS 2nd Annual Meeting, November 21-22, 2009, held at the University of Arizona, Tucson, AZ, USA. Title: Endothelin-1 inhibits Na,K-ATPase through a Src Family Kinase (SFK) mediated mechanism in porcine lens epithelium.
17. **A. Mandal**, M. Shahidullah and N.A. Delamere. AHSC Frontiers in Biomedical Research, October 7, 2009, held at the University of Arizona, Tucson, AZ USA. Title: Increased hydrostatic pressure causes release of stored calcium by cultured rat optic nerve head astrocytes.
18. **A. Mandal**, M. Shahidullah and N.A. Delamere. ARVO Annual Meeting, May 3-7, 2009 held at Fort Lauderdale, FL, USA. Title: Hydrostatic Pressure Causes Ryanodine Receptor-Mediated Calcium Release in Cultured Rat Optic Nerve Astrocytes.

19. **A. Mandal**, M. Shahidullah, N.A. Delamere and M.A Terán. Experimental Biology (APS) Annual Meeting, April 18-22, 2009 held at New Orleans, LA, USA. Title: Elevated Hydrostatic Pressure Activates Sodium-Hydrogen Exchanger-1 in Rat Optic Nerve Head Astrocytes.
20. K. A. Holthouser, **A. Mandal**, M. L. Merchant, J. Schelling, N.A. Delamere, R R. Valdes Jr., S.C. Tyagi, E. D. Lederer and S.J. Khundmiri. Experimental Biology (APS) Annual Meeting, April 18-22, 2009 held at New Orleans, LA, USA. Title: Low dose ouabain regulation of Na,K ATPase requires NHE-1 scaffolding properties.
21. **A. Mandal**, M. Shahidullah and N.A. Delamere. AZPS Inaugural Meeting, November 7-8, 2008, held at the University of Arizona, Tucson, AZ, USA. Title: Pressure-induced stimulation of sodium-hydrogen exchanger 1 (NHE1) in cultured rat optic nerve astrocytes.
22. K. Holthouser, **A. Mandal**, N.A Delamere, E. Lederer and S.J. Khundmiri. 43rd Annual Biological Transport Meeting (Affiliated with American Physiological Society) June 15 – June 18, 2008 Lake Cumberland, Jamestown, KY, USA. Low dose ouabain increases Na,K-ATPase activity in rat kidney basolateral membranes.
23. M Shahidullah, **A. Mandal** and N.A. Delamere. AHSC Frontiers in Biomedical Research, October 15, 2008, held at the University of Arizona, Tucson, AZ, USA. Title: Differential handling of pH swings by the porcine ocular nonpigmented ciliary epithelium.
24. **A. Mandal**, M. Shahidullah and N.A. Delamere. ARVO Annual Meeting, April 27, 2008-May 1, 2008 held at Fort Lauderdale, FL, USA. Title: Ouabain stimulation of sodium-hydrogen exchange in rat optic nerve astrocytes involves calcium entry.
25. **A. Mandal**, M. Shahidullah and N.A. Delamere. Experimental Biology (APS) Annual Meeting, April 4-9, 2008 held at San Diego, CA, USA. Title: Inhibition of capacitative calcium entry suppresses ouabain-induced stimulation of sodium-hydrogen exchange in rat optic nerve astrocytes.
26. **A. Mandal**, M. Shahidullah and N.A. Delamere. ARVO Annual Meeting, May 6 -10, 2007 held at Fort Lauderdale, FL, USA. Title: Effect of ouabain on pH recovery in cultured rat optic nerve astrocytes.
27. S. Das, **A. Mandal** and S. Chakraborti. National Seminar on “Recent Advances in Stress Physiology, Toxicology and Immunology”, organized by University of Kalyani on November 27-28, 2003. Role of oxidants and sulphydryl modifying agents on MMP-2 and MMP-2/TIMP-2 complex in pulmonary vascular smooth muscle membrane.
28. M. Mandal, T. Chakraborti, S. Das, **A. Mandal** and S. Chakraborti. National Seminar on “Recent Advances in Molecular Physiology”, organized by University of Kalyani on 4-6 February, 2002. Role of a Ca^{2+} dependent matrix metalloprotease in stimulating Ca^{2+} -ATPase activity under peroxynitrite treatment in bovine pulmonary artery smooth muscle membrane.
29. S. Das, T. Chakraborti, M. Mandal, **A. Mandal** and S. Chakraborti. National Seminar on “Recent Advances in Molecular Physiology”, organized by University of Kalyani on 4-6 February, 2002. Role of Ca^{2+} dependent matrix metalloprotease-2 in the oxidant activation of Ca^{2+} -ATPase by hydrogen peroxide in pulmonary smooth muscle membrane.

SELECTED TALKS (INVITED)

1. Experimental Biology 2012 Annual Meeting, 21-25 April at San Diego, California, USA. (**Awarded Special Recognition**)
2. IIT Hyderabad, Hyderabad, India on 9th Feb 2012.
3. Singapore Eye Research Institute (SERI) in Singapore on 19th Jan 2012.
4. LV Prasad Eye Institute, Hyderabad, India on 8th April 2010.
5. Institute of Genomics and Integrative Biology (IGIB), New Delhi, India on 7th April 2010.
6. International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi, India on 6th April 2010.
7. Indian Institute of Science Education and Research Mohali (IISER Mohali), Chandigarh, India on 5th April 2010.

8. Aravind Medical Research Foundation, Aravind Eye Hospital, Madurai, India on 31st March 2010.
9. Department of Biochemistry and Biophysics, University of Kalyani, Kalyani 741235, India on 9th June 2009.

FREQUENT JOURNAL REVIEWER

- Experimental Eye Research (Elsevier Sciences, USA)
- Molecular Vision, USA
- J Glaucoma (Lippincott Williams Wilkins, USA)
- Eur J Ophthalmol (Italy)
- Mol. Cell. Biochem. (Springer)
- J. Biochem. (Oxford University Press)
- Biomacromolecules (American Chemical Society, USA)
- Anal Chem (American Chemical Society, USA)
- Biochemistry Insights (Libertas Academica, NZ)
- Journal of Athletic Medicine, USA
- Am. J. Biochem., USA
- J Material Chem. B (Royal Soc. Chem., Lond)
- Integrative Biol. (Royal Soc. Chem., Lond)
- RSC Advances (Royal Soc. Chem., Lond)

EDITORIAL BOARD MEMBER

- American Journal of Biochemistry, USA (Oct 2011-)
- International Journal of Basic and Applied Physiology, India (Dec 2012-)
- SIES Journal of Pharma Bio Management, India (Jan 2013-)
- Frontiers in Biological Chemistry, USA (Oct 2013-)

PROFESSIONAL AFFILIATIONS

- The Association for Research in Vision and Ophthalmology (ARVO), USA
- The American Physiological Society (APS), USA
- The Arizona Physiological Society (AZPS), USA
- American Association for the Advancement of Science (AAAS)