PERSONAL INFORMATION

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OBJECTIVE

Study of Cell signaling biochemical pathways related to host immune response during infection, inflammation and cellular oxidative stress.

RESEARCH EXPERIENCE

2017 -2024: Freelancing on research with Faculties of various Institutes.

Wrote Book Chapters of the Springer Nature 'Practical Approach to mammalian cell and organ culture' Volume 1 and Volume 2.

2015 - 2016 (PGIMER, Chandigarh): As Freelance Researcher submitted another grant to DST on `Role of β 1 integrins on CCN protein mediated regulation of invasion and metastasis in lung cancer cells' for evaluation.

2011 – **2014** (**PGIMER**, **Department of Immunopathology**, **Chandigarh**): Principal investigator in DST woman Scientist (WOS A) scheme working on 'Role of β 1 integrins in the *Leishmania* macrophage interaction in the experimental visceral leishmaniasis'.

2009 - 2011 April (IISER, Mohali):

Research Associate Scientist working on role of beta1 integrin in host parasite interaction in experimental visceral leishmaniasis.

2003 – 2006 (University of Utah, USA):

Postdoctoral studies on investigation of the molecular mechanism of TNF alpha and RAGE mediated pulmonary inflammation.

1998 – 2002 (University of California, Los Angeles, USA):

Postdoctoral research on the investigation of the ras mediated signaling pathways related to beta1 integrin activation on the apical surface of arterial endothelial cell surface in atherosclerosis.

1990 - 1998 (Indian Institute of Chemical Biology, Calcutta, India):

PhD done on the thesis title of 'Use of Attenuated Parasites --- An Approach to Develop Anti-leishmanial Vaccine'. An attenuated strain of Leishmania parasite characterized and further used as potential immunoprophylactic and immunotherapeutic agent in experimental visceral leishmaniasis.

TEACHING EXPERIENCE

PGIMER, Chandigarh: I mentored the Ph.D. students in their respective research studies.

IISER, Mohali: I took regular Biochemistry and Immunology tutorials classes in UG and PG level and mentored the graduate students in their respective research projects.

IICB: During the graduation, I mentored the MSc. Students in their respective summer projects.

EDUCATION

1997: Awarded Ph.D. in Life Science (Indian Institute of Chemical Biology, Calcutta, India) from Jadavpur University

1990: M.Sc. in Biochemistry (University of Calcutta, India), specialization in Neurobiochemistry.

1987: B.Sc. in Chemistry (University of Calcutta, India), Physics, Mathematics, specialization in Biochemistry.

PROFESSIONAL MEMBERSHIPS

Life Member of Society of Biological Chemists, India. Life Member of Society of Cell Biology, India Life Member of Indian Immunological Society, India. Guest reviewer of American Journal of Resp. Crit. Care Medicine.

GRANTS RECEIVED & COMPLETED:

Principal investigator in DST woman Scientist program (WOSA) on the project 'Role of β 1 integrins in the *Leishmania* macrophage interaction in the experimental visceral leishmaniasis' awarded by **Department of Science and Technology (DST)**, India, 22.10 lakhs from 2011-2014 (completed)

AWARDS RECEIVED

2011: Awarded Woman Scientist (WOSA) Fellowship from Department of Science and Technology (DST), India

2003 – 2008: Awarded Postdoctoral Fellow in University of Utah, USA.

1999 – 2002: Awarded Postdoctoral Fellow in University of California, Los Angeles, USA.

1997: Awarded poster award in the Meeting of Indian Immunological Society, Calcutta.

1995-1998: Awarded Research Associateship from Department of Biotechnology (DBT), India.

1992 - 1995: Awarded Senior Research Fellowship from Council of Scientific and Industrial Research (CSIR) India.

1990 - 1992: Awarded Junior Research Fellowship from Council of Scientific and Industrial Research (CSIR) India.

1982 - 1989: Awarded National Scholarship from Government of India.

PhD. DISSERTATIONS

Ph. D. Thesis title 'Use of Attenuated Parasites --- An Approach to Develop Antileishmanial Vaccine' submitted by Srirupa Mukhopadhyay, IICB, Calcutta. Awarded in 1997 by Jadavpur University.

PUBLICATIONS

Book and Book Chapter:

1. Mukherjee TK, Malik P, S Mukherjee (Mukhopadhyay) Writers and Editors of 'Practical Approach to mammalian cell and organ Culture'. Vol 1 and Vol 2. Springer Nature, March 2023. ISBN 978-981-19-1730-1.

2. **Mukhopadhyay S**, Malik P, Arora SK, Mukherjee TK. Role of β 1 integrins in the complication and drug resistance against lung cancer: Targeting β 1 integrins to eradicate lung cancer. Molecular mechanism of tumor cell resistance to chemotherapy. Chapter 7: Editor in Chief Benjamin Bonavida, UCLA. **Springer Publications**, 2013. (Series title 11727)

Published Manuscripts:

- Mukhopadhyay S, Rajendra Kumar, Sukhdeep Kumar, TK Mukherjee. Role of β1 integrins in murine macrophages infected with Leishmania donovani: A paradigm for dissemination of infection in experimental visceral leishmaniasis. 2021 (Manuscript in preparation in J Exp Med).
- Mukhopadhyay S, Malik P Arora SK and TK Mukherjee. Intercellular adhesion molecule-1 as a drug target against asthma and rhinitis. Respirology. 2014. 19:508 513. Impact factor = 3.495

- **3.** Mukherjee TK, Paul K, **Mukhopadhyay S**. Cell signaling molecules as drug targets in lung cancer: An overview. **Current Opinion in Pulmonary Medicine**. Special edition. 2011, 17(4): 286-91. **Impact factor = 3.075**
- 4. Sukhdeep kumar, Kusum lata, **Mukhopadhyay S**, TK Mukherjee. Role of estrogen receptors in pro-oxidative and anti-oxidative actions of estrogens: A perspective, 2010, **BBA (General)**. 1800. 1127-1133.
- Mukherjee T, Mukhopadhyay S, Hoidal JR. Role of Receptor for advanced glycation end (RAGE) products in pulmonary health and pathophysiology. July 11, 2008, Respir Physiol Neurobiol. Impact factor = 2.0
- 6. Mukherjee TK, Mishra AK, **Mukhopadhyay S** and Hoidal JR. High concentration of antioxidants N-acetylcysteine and mitoquinone-q induces intercellular adhesion molecule 1 and oxidative stress by increasing intracellular glutathione. 2007, **Journal of Immunology**, 178: 1835-1844. **Impact factor = 6.0**
- 7. Mukhopadhyay S, Hoidal JR. and Mukherjee T. Role of $TNF\alpha$ in pulmonary pathophysiology. Respiratory Research, 2006, 7: 125. Impact factor = 3.9
- Mukhopadhyay S and Mukherjee T. Bridging advanced glycation end product, receptor for advanced glycation end product and nitric oxide with hormonal replacement/estrogen therapy in healthy versus diabetic postmenopausal women: A perspective. BBA (Molecular Cell Research), 2005, 1745:145-155. Impact factor = 5.275
- Mukherjee TK, Mukhopadhyay S and Hoidal JR. The role of reactive oxygen species in TNF-alpha dependent expression of the receptor for advanced glycation end products in human umbilical vein endothelial cells. 2005. BBA (Molecular Cell Research) 2005, 1744: 213-233. Impact factor = 5.275
- Amy L. Cole, Srirupa Mukhopadhyay, Judith A. Berliner and Devendra K. Vora. Oxidized phospholipid–induced endothelial cell/monocyte interaction is mediated by a cAMPdependent R-Ras/PI3-kinase pathway. Arterioscler Thromb Vasc Biol. 2003 Aug 1; 23 (8):1384-90. Impact factor = 6.9
- 11. Srirupa Mukhopadhyay, Sandip Bhattacharyya, Ramdhan Majhi, Tripti De, Khudiram Naskar, Subrata Majumder and Syamal Roy. Use of an attenuated leishmanial parasite as an immunoprophylactic and immunotherapeutic agent against murine visceral leishmaniasis. Clin Vac Immunol 2000, 7(2):233-240. Impact factor = 2.598
- Srirupa Mukhopadhyay, Pradip Sen, Sandip Bhattacharyya, Subrata Majumder and Syamal Roy. Immunoprophylaxis and immunotherapy against experimental visceral leishmaniasis. Vaccine 1999, 17(3):291-300. Impact factor = 3.3
- Srirupa Mukhopadhyay, Pradip Sen, Hemanta K. Majumder and Syamal Roy. Reduced expression of lipophosphoglycan (LPG) and kinetoplastid membrane protein -11 in Leishmania donovani promastigotes in axenic culture. J. Parasitology 1998, 84 (3): 644-647. Impact factor = 1.2.

WORKSHOP AND CONFERENCES ATTENDED:

- 1. Participated in The 24th Annual Conference of Indian Immunology Society and Symposium on "Immunomodulation in Health and Diseases" held at Science City, Calcutta, India during 22nd to 24th December, 1997.
- Participated and presented the research work entitled "NDGA attenuates TNFα induced signaling by Focal adhesion kinase" in International Conference on Frontiers in Biological Sciences (InCoFIBS -2010) held at Department of Life Sciences, NIT, Rourkela, Odisha, India during 01-03 October, 2010.
- Participated as delegate in FIMSA, 5th Congress of the Federation of Immunological Societies of Asia Oceania in Hotel Le Meridien, New Delhi, India during March 14 -17, 2012
- Participated in CME cum Advanced Workshop on Applications of Real-Time PCR in Diagnostics & Clinical Research held in Department of Immunopathology, PGIMER, Chandigarh, India during 29th & 30th September, 2012.
- 5. Participated in **Golden Jubilee Celebrations of CME in Immunology for Clinicians** held in Department of Immunopathology, PGIMER, Chandigarh, India on 6th April, 2013.
- Participated as workshop delegate in TCS Symposium cum Workshop of Flow Cytometry in Clinical Research held in Department of Immunopathology, PGIMER, Chandigarh, India during 21st to 23rd July, 2013.
- Participated as delegate in TCS Symposium on Stem cells in Health & Disease by The cytometry Society held in Department of Translational and regenerative Medicine, PGIMER, Chandigarh, India during 8th April, 2014.
- Participated as delegate in 1st Conference of North-West Chapter of Indian Academy of Tropical Parasitology (IATP) on "Food borne & Zoonotic Parasitic Diseases of Human Importance" held in Department of Medical Parasitology, PGIMER, Chandigarh, India during 26th April, 2014.

REFERENCES

Dr. Sankar Kumar Ghosh Professor, Department of Biotechnology, Assam University, Shilchar. M- 9435372338 / 6291622338 Email: drsankarghosh@gmail.com Dr. Rakesh Sehgal, Ex Professor Dept of Parasitology, PGIMER, Chandigarh 160012. Phone: 9814001001/9779001001. Email:sehgalpgi@gmail.com rakesh.sehgal@rediffmail.com

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