

**BIOGRAPHICAL SKETCH**

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NAME: Mayurika Lahiri, PhD

eRA COMMONS USER NAME (credential, e.g., agency login): LahiriM

POSITION TITLE: Associate Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Presidency College, University of Calcutta, India	B.Sc. (Hons.)	05/1996	Botany, Zoology, Chemistry
Division of Biomedical Sciences, Sheffield Hallam University, UK	M.Sc.	05/1998	Pharmacology and Biotechnology
University of Wolverhampton, UK	Ph.D.	02/2002	Cancer Biology
Beatson Institute for Cancer Research, University of Glasgow, UK.	Research Assistant	02/2002	Yeast genetics
Tufts University, MA, USA	Postdoctoral Research Associate	02/2006	CAG expansions
Department of Medicine, Harvard Medical School and Massachusetts General Hospital Cancer Center, MA, USA.	Postdoctoral Fellow	08/2007	Cell cycle checkpoints

**A. Personal Statement**

I joined IISER Pune as an Assistant Professor in 2008 when the institute was being set up. Since then I have been involved in the design and functioning of the laboratories in biology and the mammalian cell culture facility and have also established the day care facility at IISER Pune. I am currently the Presiding Officer of the Internal Committee (Prevention of Sexual Harassment at the Workplace) and a member of the Faculty Screening Committee in the Biology department. I am also working on the development of Centre for Translational Cancer Research (CTCR), which is the clinical collaborative effort of IISER Pune and Prashanti Cancer Care Mission (PCCM).

The research work in my laboratory has been focused on exploring the role of genome instability in breast cancer initiation, progression and pathogenesis using the 3D breast acinar model. Our work on the process of cellular transformation of breast epithelial cells mediated by DNA damage or lipid mediators in the microenvironment has culminated in many peer-reviewed publications.

**B. Positions and Honors****Positions Held**

2015 - Present	Associate Professor, IISER, Pune, India
2008 - 2015	Assistant Professor, IISER, Pune, India

**Committees**

2022 – ongoing	Executive Committee Member (West), Indian Association for Cancer Research
2018 - Present	Presiding Officer, Internal Committee (Prevention of Sexual Harassment)
2018 - Present	Biology Faculty Screening Committee

2017 - 2018	Chairperson, First year Semester Committee
2014 - 2018	Chairperson, Women's Cell at IISER Pune
2014 - Present	Chairperson, IISER Daycare Committee
2010 - 2015	Member of 5 <sup>th</sup> year Masters project committee (Biology)
2012 - 2014	Coordinator for IISER-Goettingen Exchange Program
2009 - 2011	Member of IISER Stores and Purchase Committee
2008 - 2009	Member of IISER Tender Opening Committee

## Honors

2015 Faculty Appreciation Award, IISER Pune

## Professional Membership:

Member of Indian Society of Cell Biology, Life  
 Member of Indian Association for Cancer Research, Life  
 Member of the British Association for Cancer Research, 1998 - 2001  
 Member of the Genetics Society of America, 2002 - 2005  
 Member of American Association for Advancement of Science, 2005

## Grant reviewer:

1. The Wellcome Trust/DBT India Alliance Fellowship
2. Department of Science and Technology (Government of India)
3. Department of Biotechnology (Government of India)
4. Biotechnology Ignition Grant (BIG) Scheme launched by the Department of Biotechnology (DBT) and Biotechnology Industrial Research and Assistance Council

## Editorial Board Member / Review Editor:

1. Experimental and Therapeutic Medicine (Spandidos Publications)
2. Frontiers in Genetics (Frontiers)

## C. Contributions to Science:

1. Three dimensional (3D) models of breast cancer are emerging as better predictors of pathogenesis and treatment compared to studies on two dimensional (2D) cultures. Using these 3D breast acinar cultures as a model system, my group has explored the effect of DNA damage caused by alkylating agents such as N-nitroso-N-ethylurea (NEU) and N-methyl nitrosourea. Our studies demonstrate the ability of these agents to bring about the transformation of a non-tumorigenic breast epithelial cell line and also identify the probable mechanisms driving the transformation. Current projects in the lab are aimed at elucidating the proteins that may play a key role in breast tumorigenesis, the effect of the microenvironment on breast epithelial cells and the cytoskeletal changes that may accompany DNA damage response and facilitate transformation.

- Chakravarty, V.\*, Anandi, L.\*, KA Ashiq \*, K. Abhijith, Umesh R and Lahiri, M. (2021) Prolonged exposure to Platelet Activating Factor transforms breast epithelial cells. **Front. Genet.** doi: 10.3389/fgene.2021.634938. (\* equal contribution)
- Anandi, L., Chakravarty\*, V. Ashiq KA\*, Bodakuntla S and Lahiri, M. (2017) DNA-PK plays a central role in transformation of breast epithelial cells following alkylation damage. **Journal of Cell Sciences**; 130 (21): 3749–3763. doi: 10.1242/jcs.203034. (\*equal contribution)  
 Journal Cover: <http://jcs.biologists.org/content/130/21.cover-expansion>  
 First Author: <http://jcs.biologists.org/content/130/21/3605>
- Anandi, VL., Ashiq, KA\*, Nitheesh, K\*. and Lahiri, M. (2016) Platelet Activating Factor promotes motility in breast cancer cells and disrupts non-transformed breast acinar structures. **Oncology Reports** 35 (1): 179-88. doi: 10.3892/or.2015.4387 (\* equal contribution)
- Bodakuntla, S., Anandi VL., Sural, S., Trivedi, P and Lahiri, M. (2014) N-nitroso-N-ethylurea activates DNA damage surveillance pathways and induces transformation in mammalian cells. **BMC Cancer** 14 (1): 287. doi:10.1186/1471-2407-14-287.

2. In collaboration with the chemistry department we are also exploring the anti-tumor activities of the chemical agents on the breast acinar model, specifically investigating how apoptosis is triggered in the cells.

- Malla JA, Sharma VK, Lahiri M, Talukdar P (2020) Esterase Activatable Synthetic M+/Cl<sup>-</sup> Channel Induces Apoptosis and Disrupts Autophagy in Cancer Cells. **Chemistry - A European Journal** doi.org/10.1002/chem.202002964.
- Malla JA, Umesh RM, Yousf S, Mane S, Sharma S, Lahiri M, Talukdar P (2020) A glutathione activatable ion channel induces apoptosis in cancer cells by depleting intracellular glutathione levels. **Angewandte Chemie** doi: <https://doi.org/10.1002/anie.202000961>.
- Palvai, S\*, Libi Anandi\*, Sarkar, S.; Augustus, M.; Roy.; Lahiri, M.# and Basu, S.# (2017) Drug-Triggered Self-Assembly of Linear Polymer into Nanoparticles for Simultaneous Delivery of Hydrophobic and Hydrophilic Drugs in Breast Cancer Cells. **ACS Omega** 2: 8730 - 40. (\* equal contribution; # corresponding authors).
- Saha, T., Gautam, A., Mukherjee, A., Lahiri, M and Talukdar, P (2016) Chloride Transport through Supramolecular Barrel-Rosette Ion Channels: Lipophilic Control and Apoptosis-Inducing Activity **Journal of American Chemical Society** DOI: 10.1021/jacs.6b10379

3. Ongoing work in the lab is also exploring the anti-tumor effect of two plant extracts provided by the Ayurved department at Savitribai Phule Pune University. The work in the lab thus explores the basis of transformation in the context of breast cancer and may facilitate the identification of therapeutic targets for breast cancer treatment.

#### Research Publications:

The full list of my published work can be found in the URL below:

<https://www.ncbi.nlm.nih.gov/myncbi/mayurika.lahiri.3/bibliography/public/>

#### D. Research Support and/or Scholastic Performance

##### Active:

- |   |             |
|---|-------------|
| 1. GenomeIndia                                | 2020-2023   |
| Cataloguing the Genetic Variation in Indians. |             |
| Role: PI                                      |             |
| 2. DST Indo-Russian grant                     | 2020 - 2023 |
| Role: Co-PI                                   |             |