
BIOGRAPHICAL SKETCH

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NAME: INDRANIL CHATTOPADHYAY

POSITION TITLE: Assistant 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
University of Calcutta	B. Sc.	1995	Zoology, Botany, Chemistry
Visva-Bharati	M. Sc.	1997	Zoology
Birla Institute of Technology & Science, Pilani	Ph.D.	2009	Cancer Genetics
Roswell Park Cancer Institute, Buffalo, NY, USA	Post-Doctoral Studies	2013	Cancer Genetics

A. Personal Statement

I obtained masters degree in Zoology from Visva-Bharati University, West Bengal and doctoral degreee (PhD) in Cancer Genetics from Birla Institute of Technology & Science, Pilani India. I have been serving in Central University of Tamil Nadu since May2013, prior to this I was working as Post-Doctoral fellow at Roswell Park Cancer Institute, Buffalo, NY, USA from 1stMay2010 till April 2013 in the areas of cancer genomics. My specializations include environmental and industrial metagenomics, cancer genomics and metagenomics. About 16 years of research experience, so far been involved in over three research and consultancy projects in various capacities as principal investigator, and co-principal investigator. My special interest is to carry out to develop non-invasive biomarkers for cancer. My future plans are to continue on non-invasive biomarkers development, microbial diversity, biofilm formation, anti-microbial resistance gene and strain profile in polluted environment that are likely to bring changes in policy that have an impact in reducing health burden of my Country and my Globe.

Research Area:

1. Metagenomics
2. Antimicrobial resistance
3. Cancer Genomics
4. Environmental Microbiology
5. Evolutionary Genetics

Teaching Experiences at PG level:

1. Bioinformatics
2. Genetics
3. Cell biology
4. Cancer Biology
5. Metagenomics
6. Ecology & Evolution

B. Positions and Honors

Positions and Employment

2013-till date Assistant Professor, Dept. of Life Sciences, Central University of Tamil Nadu

Honors & Awards

1. International Cancer Technology Transfer Fellowship by UICC in 2007 at Peter Mac Callum Cancer Institute; Melbourne; Australia
2. INSA Visiting Scientist Fellowship 2017-18
3. DBT Visiting Research Fellowship 2017-18 at North-East.
4. INSA Summer Research Fellowship 2016

Technical Expertise

- Microarray technology (cDNA/ Oligonucleotide array) for gene expression, & copy number analysis and methylation study
- Next Generation Sequencing (RNA & Chip Sequencing Library preparation, Captured Array Sequencing Library Preparation, DNA sequencing, Metagenomics approaches)
- Automated DNA sequencing, Real-Time PCR
- Bioinformatics (Web-based Free & Commercially Available Software) & Biostatistics
- Laboratory Animal Handling (Mouse Handling: Tumor Xenograft Development)
- Cell Culture & Basic Molecular Biology
- RNAi Technology (shRNA transfection by retroviral method)
- Isolation and Characterization of Exosome from Liquid Biopsy and Cell culture Media

Research Guidance and Evaluation:

- Currently supervising **04** students for Ph.D. in Life Sciences Disciplines of Dept. of Life Sciences, Central University of Tamil Nadu. **One student was awarded for the Ph.D. degree. Thirteen IMSc students Project thesis were supervised.**

Membership of Professional Societies:

1. Life member of Environmental mutagen society of India (EMSI, India)
2. Life member of Society of Biological Chemistry (SBC); India
3. Life member of Indian Association of Cancer Research (IACR)
4. Life Member of UICC (International Union against Cancer)
5. Life member of Human Genome Organization (HUGO)

C. Contributions to Science

Publications : 41

Book Chapters : 17

International Conference Proceedings as an Invited Speaker: 15

Citations : 1324

h-index : 21

i10-index : 31

Research Publications in peer reviewed journals:

1. Datta M, Rajeev A, **Chattopadhyay I**. Application of antimicrobial peptides as next-generation therapeutics in the biomedical world. **Biotechnol Genet Eng Rev**. 2023 Apr 10:1-39. doi: 10.1080/02648725.2023.2199572
2. Kavitha S, Yukesh Kannah Ravi, Gunasekaran M, **Indranil Chattopadhyay**, Sivashanmugam Palani, Vinod Kumar, Gopalakrishnan Kumar, and Rajesh Banu Jeyakumar. Development of an Integrated Biorefinery System for Bioconversion of Lignocellulosic Biomass to Polyhydroxyalkanoates and Biohydrogen. **ACS Sustainable Chemistry & Engineering** Article ASAP. DOI: 10.1021/acssuschemeng.2c06350
3. Hazarika P, **Chattopadhyay I**, Umpo M, Choudhury Y, Sharma I. Elucidating the gut microbiome alterations of tribal community of Arunachal Pradesh: perspectives on their lifestyle or food habits. *Sci Rep*. 2022 Oct 31; 12(1):18296. doi: 10.1038/s41598-022-23124-w.

4. Hazarika P, **Chattopadhyay I**, Umpo M, Choudhury Y, Sharma I. Studies on antimicrobial stress with reference to biofilm formation of faecal microbial communities from Apatani tribe of Arunachal Pradesh. *Indian J Med Microbiol.* 2022 Oct 13:S0255-0857(22)00184-0. doi: 10.1016/j.ijmmb.2022.09.011
5. Yong YK, Wong WF, Vignesh R, **Chattopadhyay I**, Velu V, Tan HY, Zhang Y, Larsson M, Shankar EM. Dengue Infection - Recent Advances in Disease Pathogenesis in the Era of COVID-19. *Front Immunol.* 2022 Jul 6; 13:889196. doi: 10.3389/fimmu.2022.889196.
6. **Chattopadhyay I**, Lu W, Manikam R, Malarvili MB, Ambati RR, Gundamaraju R. Can metagenomics unravel the impact of oral bacteriome in human diseases? *Biotechnol Genet Eng Rev.* 2022 Jul 21:1-33. doi: 10.1080/02648725.2022.2102877.
7. Gundamaraju R, Lu W, Paul MK, Jha NK, Gupta PK, Ojha S, **Chattopadhyay I**, Rao PV, Ghavami S. Autophagy and EMT in cancer and metastasis: Who controls whom? *Biochim Biophys Acta Mol Basis Dis.* 2022 May 6:166431. doi: 10.1016/j.bbadis.2022.166431.
8. **Chattopadhyay I**, J RB, Usman TMM, Varjani S. Exploring the role of microbial biofilm for industrial effluents treatment. *Bioengineered.* 2022 Mar; 13(3):6420-6440. doi: 10.1080/21655979.2022.2044250.
9. Roy P, Sarma A, Katak AC, Rai AK, **Chattopadhyay I**. Salivary microbial dysbiosis may predict lung adenocarcinoma: A pilot study. *Indian J Pathol Microbiol* 2022; 65:123-8.
10. **Chattopadhyay I**, Gundamaraju R, Jha NK, Gupta PK, Dey A, Mandal CC, Ford BM. Interplay between Dysbiosis of Gut Microbiome, Lipid Metabolism, and Tumorigenesis: Can Gut Dysbiosis Stand as a Prognostic Marker in Cancer? *Dis Markers.* 2022 Feb 8; 2022:2941248. doi: 10.1155/2022/2941248.
11. **Indranil Chattopadhyay**, Role of microbiome and biofilm in environmental plastic degradation, Biocatalysis and Agricultural Biotechnology, Volume 39,2022,102263,ISSN 1878-8181,https://doi.org/10.1016/j.bcab.2021.102263.
12. **Chattopadhyay I**, Ambati R, Gundamaraju R. Exploring the Crosstalk between Inflammation and Epithelial-Mesenchymal Transition in Cancer. *Mediators Inflamm.* 2021 Jun 14; 2021:9918379. doi: 10.1155/2021/9918379.
13. Banu JR, Kumar G, **Chattopadhyay I**. Management of microbial enzymes for biofuels and biogas production by using metagenomic and genome editing approaches. *3 Biotech.* 2021 Oct; 11(10):429. doi: 10.1007/s13205-021-02962-x.
14. **Chattopadhyay I**, Dhar R, Pethusamy K, Seethy A, Srivastava T, Sah R, Sharma J, Karmakar S. Exploring the Role of Gut Microbiome in Colon Cancer. *Appl Biochem Biotechnol.* 2021 Jun; 193(6):1780-1799. doi: 10.1007/s12010-021-03498-9. Epub ahead of print. PMID: 33492552
15. Kulkarni P, Devkumar P, **Chattopadhyay I**. Could dysbiosis of inflammatory and anti-inflammatory gut bacteria have an implication in the development of type 2 diabetes? A pilot investigation. *BMC Res Notes.* 2021 Feb 6; 14(1):52. doi: 10.1186/s13104-021-05466-2.
16. Hazarika P, **Chattopadhyay I**, Umpo M, Choudhury Y, Sharma I. Phylogeny, Biofilm Production, and Antimicrobial Properties of Fecal Microbial Communities of Adi Tribes of Arunachal Pradesh, India. *Appl Biochem Biotechnol.* 2021 Jun; 193(6):1675-1687. doi: 10.1007/s12010-021-03535-7.
17. Seethy A, Pethusamy K, **Chattopadhyay I**, Sah R, Chopra A, Dhar R, Karmakar S. TETology: Epigenetic Mastermind in Action. *Appl Biochem Biotechnol.* 2021 Mar 10. doi: 10.1007/s12010-021-03537-5.
18. **Chattopadhyay I**, Shankar EM. SARS-CoV-2-Indigenous Microbiota Nexus: Does Gut Microbiota Contribute to Inflammation and Disease Severity in COVID-19? *Front Cell Infect Microbiol.* 2021 Mar 11; 11:590874. doi: 10.3389/fcimb.2021.590874.
19. **Chattopadhyay I**, Nandi D, Nag A. The pint- sized powerhouse: Illuminating the mighty role of the gut microbiome in improving the outcome of anti- cancer therapy. *Semin Cancer Biol.* 2021 May; 70:98-111.
20. Rai AK, Panda M, Das AK, Rahman T, Das R, Das K, Sarma A, Katak AC, **Chattopadhyay I**. Dysbiosis of salivary microbiome and cytokines influence oral

- squamous cell carcinoma through inflammation. *Arch Microbiol.* 2021 Jan;203(1):137-152
21. Das A, Haque I, Ray P, Ghosh A, Dutta D, Quadir M, De A, Gunewardena S, **Chatterjee I**, Banerjee S, Weir S, Banerjee SK. CCN5 activation by free or encapsulated EGCG is required to render triple-negative breast cancer cell viability and tumor progression. *Pharmacol Res Perspect.* 2021 Apr; 9(2):e00753. doi: 10.1002/prp2.753.
 22. Panda M, Rai AK, Rahman T, Das A, Das R, Sarma A, Kataki AC, **Chattopadhyay I**. Alterations of salivary microbial community associated with oropharyngeal and hypopharyngeal squamous cell carcinoma patients. *Arch Microbiol.* 2020 May; 202(4):785-805.
 23. **Chattopadhyay I**, Verma M, Panda M. Role of Oral Microbiome Signatures in Diagnosis and Prognosis of Oral Cancer. *Technol Cancer Res Treat.* 2019;18:1533033819867354
 24. **Chattopadhyay I**, Panda M. Recent Trends of Saliva Omics Biomarkers for the Diagnosis and Treatment of Oral Cancer. *J Oral Biosci.* 2019 Mar 22. pii: S1349-0079(18)30160-9. doi:10.1016/j.job.2019.03.002, ISSN: 1349-0079
 25. Yong YK, Saeidi A, Tan HY, Rosmawati M, Enström PF, Al Batran R, Vasuki V, **Chattopadhyay I**, Murugesan A, Vignesh R, Kamarulzaman A, Rajarajeswaran J, Ansari AW, Vadivelu J, Velu V, Ussher JE, Larsson M, Shankar EM. (2018) Hyper-expression of PD-1 is associated with the levels of exhausted and dysfunctional phenotypes of circulating CD161++TCR iVα7.2+ mucosal-associated invariant T (MAIT) cells in chronic hepatitis B virus infection. *Frontiers in Immunology* 2018 Mar 19;9:472
 26. Baba AB, Nivetha R, **Chattopadhyay I**, Nagini S. (2017) Blueberry and malvidin inhibit cell cycle progression and induce mitochondrial-mediated apoptosis by abrogating the JAK/STAT-3 signaling pathway. *Food and Chemical Toxicology* 109(1):534-543.
 27. **Chattopadhyay I**, Wang J, Qin M, Gao L, Holtz R, Vessella RL, Leach RW, Gelman IH. (2017) Src promotes castration-recurrent prostate cancer through androgen receptor-dependent canonical and non-canonical transcriptional signatures. *Oncotarget* 8(6):10324-10347.
 28. Singh V, Singh LC, Vasudevan M, **Chattopadhyay I**, Borthakar BB, Rai AK, Phukan RK, Sharma J, Mahanta J, Kataki AC, Kapur S, Saxena S. (2015) Esophageal cancer epigenomics and integrome analysis of genome-wide methylation and expression in high risk Northeast Indian population. *OMICS* 19(11):688-699.
 29. Sharma A, Pandey A, Sharma S, **Chatterjee I**, Mehrotra R, Sehgal A, Sharma JK. (2014) Genetic polymorphism of glutathione S-transferase P1 (GSTP1) in Delhi population and comparison with other global populations. *Meta Gene* 20(2):134-142.
 30. Yadav DS, **Chattopadhyay I**, Verma A, Devi TR, Singh LC, Sharma JD, Kataki AC, Saxena S, Kapur S. (2014) A pilot study evaluating genetic alterations that drive tobacco- and betel quid-associated oral cancer in Northeast India. *Tumour Biology* 35(9):9317-9330.
 31. Sharma A, Das BC, Sehgal A, Mehrotra R, Kar P, Sardana S, Phukan R, Mahanta J, Purkayastha J, Saxena S, Kapur S, **Chatterjee I**, Sharma JK. GSTM1 and GSTT1 polymorphism and susceptibility to esophageal cancer in high- and low-risk regions of India. *Tumour Biol.* 2013 Oct;34(5):3249-57
 32. Ihsan R, **Chattopadhyay I**, Phukan R, Mishra AK, Purkayastha J, Sharma J, Zomawia E, Verma Y, Mahanta J, Saxena S, Kapur S. Role of epoxide hydrolase 1 gene polymorphisms in esophageal cancer in a high-risk area in India. *J Gastroenterol Hepatol.* 2010 Aug; 25(8):1456-62.
 33. **Chattopadhyay I**, Singh A, Phukan R, Purkayastha J, Kataki A, Mahanta J, Saxena S, Kapur S. Genome-wide analysis of chromosomal alterations in patients with esophageal squamous cell carcinoma exposed to tobacco and betel quid from high-risk area in India. *Mutat Res.* 2010 Feb; 696(2):130-8.
 34. Thoudam RD, Yadav DS, Mishra AK, Kaushal M, Ihsan R, **Chattopadhyay I**, Chauhan PS, Sarma J, Zomawia E, Verma Y, Nandkumar A, Mahanta J, Phukan R,

- Kapur S, Saxena S. Distribution of glutathione S-transferase T1 and M1 genes polymorphisms in North East Indians: a potential report. *Genet Test Mol Biomarkers*. 2010 Apr; 14(2):163-9.
35. Kaushal M, **Chattopadhyay I**, Phukan R, Purkayastha J, Mahanta J, Kapur S, Saxena S. Contribution of germ line BRCA2 sequence alterations to risk of familial esophageal cancer in a high-risk area of India. *Dis Esophagus*. 2010 Jan; 23(1):71-5.
 36. Singh A, Kapur S, **Chattopadhyay I**, Purkayastha J, Sharma J, Mishra A, Hewitt SM, Saxena S. Cytokeratin immunoexpression in esophageal squamous cell carcinoma of high-risk population in Northeast India. *Appl Immunohistochem Mol Morphol*. 2009 Oct; 17(5):419-24.
 37. **Chattopadhyay I**, Phukan R, Singh A, Vasudevan M, Purkayastha J, Hewitt Katakaki A, Mahanta J, Kapur S, Saxena S. Molecular profiling to identify molecular mechanism in esophageal cancer with familial clustering. *Oncol Rep*. 2009 May; 21(5):1135-46.
 38. **Chattopadhyay I**, Kapur S, Purkayastha J, Phukan R, Katakaki A, Mahanta J, Saxena S. Gene expression profile of esophageal cancer in North East India by cDNA microarray analysis. *World J Gastroenterol*. 2007 Mar 7; 13(9):1438-44.
 39. Nagini S, Kranthi K, Kishore T, **Chattopadhyay I**. (2017) NF- κ B Inhibitors in head and neck cancer. *Letters in Drug Design and Discovery* 14(5):619-633. ISSN: 1875-628X (Online) ISSN: 1570-1808 (Print).
 40. **Chattopadhyay I**. (2017) Application of radiogenomics in radiation oncology. *Journal of Radiation Cancer Research* 8:74-76.
 41. Anupam Sarma, Amal Chandra Katakaki, Avdhesh Kumar Rai, Munlima Hazarika, Partha Sarathi Roy, Manoj Kalita, Manab Deka, **Indranil Chattopadhyay**. Promoter Hypermethylation of ATG16L2, TFAP2A, EBF2, Calcitonin, ABL1 Kinase Domain T315I Mutation Association with Imatinib Therapy Resistance and Median Survival in CML Patients of North-East India. *Asian Pacific Journal of Cancer Care* 8 (1), 35-42. DOI:10.31557/APJCC.2023.8.1.35

Chapters in Book by International Publishers:

1. Evaluation of Environmental Contaminants and Natural Products: A Human Health Perspective/ Environmental Pollutants and Risk of Cancer - Pp. 24-46 (23): **Indranil Chattopadhyay**; 2019, DOI: 10.2174/97898114109631190101 Bentham Science Publishers, SINGAPORE. ISBN: 978-981-14-1095-6
2. **Chattopadhyay I**. (2020) Role of Nutrigenetics and Nutrigenomics in Cancer Chemoprevention. In: Kumar M., Sharma A., Kumar P. (eds) *Pharmacotherapeutic Botanicals for Cancer Chemoprevention*. Springer, Singapore. https://doi.org/10.1007/978-981-15-5999-0_7. Online ISBN: 978-981-15-5999-0
3. Thimmulappa RK, **Chattopadhyay I**, Rajasekaran S. Oxidative Stress Mechanisms in the Pathogenesis of Environmental Lung Diseases. *Oxidative Stress in Lung Diseases*. 2019; 103-137. Published 2019 Jul 25. doi:10.1007/978-981-32-9366-3_5. ISBN: 978-981-329-368-7.
4. **Chattopadhyay I**. (2020) Microbial Pathogenesis and Antimicrobial Drug Resistance. In: Siddhardha B., Dyavaiah M., Syed A. (eds) *Model Organisms for Microbial Pathogenesis, Biofilm Formation and Antimicrobial Drug Discovery*. Springer, Singapore. https://doi.org/10.1007/978-981-15-1695-5_6. ISBN: 978-981-15-1697-9
5. **Chattopadhyay I**. (2020) Cell Lines as In Vitro Model for Studying Microbial Pathogenesis. In: Siddhardha B., Dyavaiah M., Syed A. (eds) *Model Organisms for Microbial Pathogenesis, Biofilm Formation and Antimicrobial Drug Discovery*. Springer, Singapore. https://doi.org/10.1007/978-981-15-1695-5_19.
6. Application of Circulating Cell-free DNA for Personalized Cancer Therapy. I **Chattopadhyay**. *Precision Medicine in Oncology*, 83-97. <https://doi.org/10.1002/9781119432487.ch3>.
7. **Chattopadhyay I**. (2020) Application of Nanoparticles in Drug Delivery. In: Siddhardha B., Dyavaiah M., Kasinathan K. (eds) *Model Organisms to Study Biological Activities and Toxicity of Nanoparticles*. Springer, Singapore. https://doi.org/10.1007/978-981-15-1702-0_3. Online ISBN: 978-981-15-1702-0

8. **Indranil Chattopadhyay**, Microbial community genetics, transcriptomics, proteomics, and metabolomics, Editor(s): Maulin Shah, Susana Rodriguez-Couto, Microbial Ecology of Wastewater Treatment Plants, Elsevier, 2021, Pages 511-522, ISBN 9780128225035, <https://doi.org/10.1016/B978-0-12-822503-5.00025-4>.
9. **Indranil Chattopadhyay**, Antibiotic-resistant bacteria and antibiotic resistance genes profile in wastewater treatment plants by using genomic approaches, Editor(s): Maulin P. Shah, Susana Rodriguez-Couto, Wastewater Treatment Reactors, Elsevier, 2021, Pages 567-582, ISBN 9780128239919, <https://doi.org/10.1016/B978-0-12-823991-9.00008-3>.
10. Muhilan BM and **Indranil Chattopadhyay**, Microbial Enzymes and their Role in the Bioremediation of Environmental Pollutants: Prospects and Challenges; Microbial Remediation of Azo Dyes with Prokaryotes, Edited By Maulin P Shah, DOI: 10.1201/9781003130932-20; CRC Press; eBook ISBN: 9781003130932.
11. **Chattopadhyay I.** (2022) Therapeutic Application of Microbial Metabolites in Free Radical Induced Tumorigenesis. In: Chakraborti S. (eds) Handbook of Oxidative Stress in Cancer: Therapeutic Aspects. Springer, Singapore. https://doi.org/10.1007/978-981-16-1247-3_7-1. Online ISBN: 978-981-16-1247-3
12. **Chattopadhyay I.** (2022) Role of ROS-Mediated Epigenetic Alterations in the Development of Solid Tumor. In: Chakraborti S. (eds) Handbook of Oxidative Stress in Cancer: Therapeutic Aspects. Springer, Singapore. https://doi.org/10.1007/978-981-16-1247-3_81-1. Online ISBN: 978-981-16-1247-3
13. B.M. Muhilan, **Indranil Chattopadhyay**, Chapter 16 - Exploring the role of soil microbiome in global climatic changes, Editor(s): Ajay Kumar, Joginder Singh, Luiz Fernando Romanholo Ferreira, Microbiome Under Changing Climate, Woodhead Publishing, 2022, Pages 353-370, ISBN 9780323905718, <https://doi.org/10.1016/B978-0-323-90571-8.00016-X>.
14. Kouselya, M., Muhilan, B. M. and **Chattopadhyay, Indranil**. "Omics approaches for characterization of environmental microorganisms". *Environmental Microbiology: Emerging Technologies*, edited by Maulin Shah, Berlin, Boston: De Gruyter, 2022, pp. 1-32. <https://doi.org/10.1515/9783110727227-001>
15. Suganya, K., Babu, S., **Chattopadhyay, I.** (2022). Engineering and studying syngeneic animal tumors and large animal endogenous tumor models. In: Pathak, S., Banerjee, A., Bisgin, A. (eds) Handbook of Animal Models and its Uses in Cancer Research. Springer, Singapore. https://doi.org/10.1007/978-981-19-1282-5_25-1. Online ISBN 978-981-19-1282-5
16. Nidhin, I.K. and **Chattopadhyay, I.**, 2022. 2 Emerging technologies in environmental microbiology. *Environmental Microbiology: Emerging Technologies*, p.33. Walter de Gruyter GmbH & Co KG.
17. Ramachandran Vignesh, Pitchaipillai S. Ganesh, Sathish Sankar, **Indranil Chattopadhyay**, Yean K. Yong, Marie Larsson, and Esaki M. Shankar (2023). Gut Microbiota Peculiarities in Aged HIV-Infected Individuals: Molecular Understanding and Therapeutic Perspectives. In: Marotta, F. (eds) Gut Microbiota in Aging and Chronic Diseases. Healthy Ageing and Longevity, vol 17. Springer, Cham. https://doi.org/10.1007/978-3-031-14023-5_20.

Research Projects:

Sr. No.	Title	Sponsor
1.	Role of transcriptional program of wild type and mutated androgen receptor in prostate cancer	UGC, New Delhi
2.	Determine salivary microbiome signatures in tobacco and betel quid associated oral cancer of North- East India	DBT, New Delhi
3	Determination of Salivary methylome Signatures to develop Diagnostic biomarkers for oral cancer in North East India	SERB, New Delhi

Sr. No.	Title	Sponsor
4	Antimicrobial resistance surveillance of Tamil Nadu (India) surface waters	Edinburgh Napier University
5	Application of soil microbiome alterations in climatic changes in Cauvery delta area with respect to oil leak from Oil and Natural Gas Corporation (ONGC) pipeline	UGC Stride
6	Assessing the Combined Impact of Probiotic Lactobacillus sp and Antimicrobial Peptides on Carcinogenic Multi-species Oral Biofilm	ICMR
7	Evaluation of Antibiofilm Efficacy and Mechanism of Action of Biosurfactants against Oral Biofilm formation by Porphyromonas gingivalis and Fusobacterium nucleatum and their Inflammatory Potentials in Oral Epithelial Cells	ICMR

D. Additional Information: Research Support and/or Scholastic Performance

Reviewer for Journals:

1. BMC Cancer
2. Plos One
3. Cancer Management and Research
4. Journal of Biochemical and Molecular Toxicology
5. Frontiers in Microbiology
6. Frontiers in Genetics
7. Archives of Oral Biology
8. Public Health
9. Journal of Thermal Biology
10. Microbial Pathogenesis

E. content development:

<ul style="list-style-type: none"> • e-Content (developed in 4 quadrants) per module 	<ul style="list-style-type: none"> • PGPathshala-Biophysics 	<ul style="list-style-type: none"> • PG
<ul style="list-style-type: none"> • Paper 11 : Cellular And Molecular Biophysics • Module 28 : Concept of Gene and Chromosomal Organization • MODULE 26: SIGNAL TRANSDUCTION PATHWAYS IN DEVELOPMENT AND DISEASE 	<ul style="list-style-type: none"> • PGPathshala-Biophysics 	<ul style="list-style-type: none"> • PG