Bio-data

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Chief Scientist & Head

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Area of specialization:

- ✓ Molecular Biology & Omics Sciences
- ✓ Biotechnology & Bioinformatics
- ✓ Microbial metabolite & Nutraceuticals

Google:
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2. Overseas training received:

SN	Overseas programme	University/Institute	Duration
1	Group training course in Biotechnology	Japan International Cooperation Agency and Kobe University, JAPAN	March-July, 1998
2	German Academic Exchange Services (DAAD) Sandwich program PhD studies	University of Frankfurt/M GERMANY	June 2000-March2002
3	Indo-Italian POC fellowship programme of DST & MAE	University of Milano, Milan; ITALY	March-May 2006
4	DAAD re-invitation programme	University of Frankfurt/M GERMANY	July-Aug. 2007
5	CSIR-DAAD exchange of Academic programme	Karlsruhe Institute of Technology, Karlsruhe GERMANY	Oct-Dec. 2009
6	DST-JSPS exchange programme	University of Hokkaido, Hakodatte, JAPAN	Nov-Dec. 2010
7	INSA New Delhi and German Research Foundation (DFG)	University of Frankfurt/M GERMANY	July. 2012
8	Raman Research Fellow	University of Minnesota, St Paul; USA	Nov. 2012-Feb. 2013
9	CSIR-DAAD exchange of Academics	University of Frankfurt/M GERMANY	Sept. Oct. 2015
10	Short Term International Fellowship (DHR-ICMR fellowship)	Virginia Commonwealth University, USA	Jun – July 2025

3. Research Experience/Employment:

SN	Duration	Position held	Summary of the work
1	Jan. 1993 to Jan. 1994	Position held Junior & Senior Research Fellow	Molecular Characterization of somatic hybrids of Brassica by using 5S-18S rRNA, cox I & rbc L gene probe
2	Feb. 1994 to Feb. 1999	Scientist-B	Molecular cloning and characterization of antifungal proteins from sorghum a) Biotechnological approaches for the production of bacteriocin as a bio-preservatives b) Production and utilization of microbial catalase c) Rapid detection of Food-borne pathogens
3	Feb. 1999 to Feb. 2003	Scientist -C	Microbial production of PHA, screening and characterization of PHA producing bacteria by Molecular Biology techniques
4	Feb. 2003 to Feb. 2007	Scientist –E1	Probiotics from fermented food sources, Microbial enzymes, lipase and food borne pathogen detection using nano technology.
5	Feb.2007 to Feb 2012	Principal Scientist	Microbial enzymes such as fibrinolytic enzymes, functional food. Lactic fermentation of fish and leather waste. Antibiotic resistance in lactic acid bacteria, their transferability, genomics of lactobacilli and bifidobacteria,
6	Feb. 2012-to-feb 2017	Senior Principal Scientist	Aminoglycoside and vancomycin resistance in lactic acid bacteria, Evaluation of mode of action of antibiotics of bacilli; Bifidobacteria encapsulation, Lactobacillus fermentum, Lb plantarum and Bacillus licheniformis for probiotic functionalities.
7	Feb. 2017 till date	Chief Scientist	Genome editing in probiotic bacteria, mechanism of colistin resistance, Molecular studies on RNA inhibiting peptide antibiotics etc

4. Honours/Awards received:

1) Recipient of Junior Research Fellowship of IARI, New Delhi, Aug. 1991 to Aug. 1993
2) Recipient of Senior Research Fellowship of IARI, New Delhi, Sept. 1993 to Jan. 1994
3) Qualified Joint CSIR-UGC Junior research fellowship and National Eligibility Test exam in Life Sciences, held in June. 1993.
4) Recipient of fellowship of Japan International cooperation agency (JICA) for training in Biotechnology at Kobe University, Japan. March-July 1998
5) Awarded fellowship of German Academic Exchange Services (DAAD-2000/2001) for the partial fulfilment of Ph.D. research at Frankfurt/M University, Germany
6) Recipient of Indo-Italian POC fellowship of DST, Govt. of India 2005/7
7) Recognized as a guide for PhD in Biotechnology & Microbiology of the University of Mysore, Mysore as well as University of Mangalore, Mangalore, Karnataka
8) Awarded FAST-TRACK young Scientist project of DST, New Delhi. Nov. 2006
9) Recipient of DAAD re-invitation fellowship to visit Germany July-Aug. 2007.
10) Invited speaker at 5th Asia federation conference on lactic acid bacteria, National University of Singapore July 3-5, 2009.
11) Visiting researcher at the Karlsruhe Institute of Technology, Germany under CSIR-DAAD Scientific exchange programme 2009.
12) Invited speaker for plenary lecture at International symposium of lactic acid bacteria. Universiti Putra Malaysia. July 25-27, 2010.
13) Visited Japan (Hokkaido University, Hakodate) under DST-JSPS project (GAP-0366) Nov-Dec. 2010
14) Deputation to Germany under INSA-DFG Scientific exchange programme July-2012
15) Recipient of Raman Research Fellowship-2012/13 to undertake research at University of Minnesota, USA.
16) Deputation to Mauritius to deliver invited talk at BTBT2013 (travel grant from ICMR New Delhi), Nov. 2013.
17) Recipient of CSIR-CFTRI foundation day award-2013 for individual contribution in R & D among Group IV Scientists.
18) Awarded Laljee Godhoo Smarak Nidhi award of AFSTi-2013 for R & D contribution
19) Recipient of DAAD fellowship-2015 to visit Germany under bilateral programme.
20) Fellow, Indian Association of Applied Microbiologists (FIAAM-2016)
21) Fellow, Indian Academy of Microbiological Sciences (FIAMSc-2016)
22) Fellow, National Academy of Biological Sciences (FNABS-2016)
23) NABS best scientist award 2018

24) Editor, J Food Sci Technology (Springer) (2019 till 2024)

25) Best Scientist award of CSIR-CFTRI on foundation day 2019

26) Deputation to Indonesia to participate in 10th ACLAB, Aug. 2019, travel grant from DST New Delhi.

27) Senior Scientist Award of Microbiologist Society India (MSI) (national level) 2020

28) Convenor cum member, technical committee of FAD 15.1 Microbiology Bureau of Indian Standards, New Delhi, 2021

29) Fellow, Royal Society of Biology, London; UK 2021

30) Fellow, Biotech Research Society, India. 2021

31) Fellow, National Environmental Science Academy, New Delhi. 2021

32) Member, University of Mysore, Advisory Committee, Institute of Excellence. 2022

33) Member, BOS in Life Sciences, JSS Academy of higher Education, Mysore. 2022

34) Board member, Department of Biotechnology, University of Mysore.

35) Member, Board of Studies in Food Science Technology, St Joseph University, Bangalore. 2022.

36) Member, Board of Studies in Microbiology, St Philomena's College, Mysore.

37) Member, Scientific panel of FSSAI New Delhi, on Antibiotic residue 2020 till date

38) Fellow, Association of Food Scientists & Technologists (India), 2021

39) Fellow, Microbiologist Society India, 2022

40) Chairperson, Bureau of Indian standards FAD29 alcoholic drinks since July 2023

41) Dr. G. B. Manjrekar award (Biennial), AMI, 2023

42) First prize (Scientific staff) in essay writing competition on "India's wealth: millet challenges and opportunities for using in nutritious diet" conducted on 21/03/2023 a part of Celebration of International year of Millets (IYoM), CSIR-CFTRI, Mysuru

43) 2nd prize in National Nutrition week competition the theme Health diet going affordable for all. 1-7 Sept. 2023.

44) Excellence in Research Award, International Conference on Innovations on biotechnology research for sustainable bioresources and bioeconomy: challenges and practices, Sanjivani Arts, Commerce, and Science College, Kopargon, 15-16 Feb 2024.

45) Received the Best department award for the R&D activity (Institute level).

46) Awarded best paper for the paper 'Geetha, V., Chathur, K. N., Halami P M., & Sugesh Kumar, G. (2023). In vitro fermentation of glycosaminoglycans from mackerel fish waste and its role in modulating the antioxidant status and gut microbiota of high fat diet-fed C57BL/6 mice. Food & Function, 14(15), 7130-7145 (Institute level).

47) Short Term International Fellowship (DHR-ICMR fellowship) to VCU, Richmond; USA, June-July 2025

4.2 Awarded following prizes for the best papers:

1. **Five first prizes** for abstract F11 in the 4th IFCON-1998, FM 45 in the 5th IFCON 2003, FB11 in the 16th ICFOST 2004, FB-11 in the 6th IFCON 2008 and abstract FM-29 in the 6th IFCON 2008.
2. **Four best paper awards** for the Abstract No D-0404 in the 7th IFCON 2013, APPN AFB02 in BTBT2013, FB15 in ICFoST2014 and Foodomics'2016.
3. **Second** best paper award for the abstract OP4 at 11th NABS-2019
4. **Third prize** for Abstract M38 in the 15th ICFOST 2002 and Abstract OP1 of 11th NABS-2019
5. **First prize** for Abstract FHW-066 in the 9th IFCoN 2023
6. **First prize** for Abstract FM-009 in the 9th IFCoN 2023
7. **Second prize** for the paper BBN-0P-18 in the National conference on Trends in multidisciplinary research: challenges and application, organised by M S Ramaiah college of arts, Science and Commerce- Autonomous, Bengaluru, 2024
8. **Third prize** for the abstract on "Synbiotic Fortified Barnyard Millet Based Functional Beverage" at National Conference on "Trends in Multidisciplinary Research: Challenges and Applications" organised by M S Ramaiah College of Arts, Science and Commerce- Autonomous, Bengaluru, in collaboration with Department of Biotechnology, GOI and Microbiologists Society on May 15th and 16th 2024.
9. **Third prize** for Synbiotic Fortified Barnyard Millet Based Functional Beverage, t National Conference on "Trends in Multidisciplinary Research: Challenges and Applications" organised by M S Ramaiah College of Arts, Science and Commerce- Autonomous, Bengaluru, in collaboration with Department of Biotechnology, GOI and Microbiologists Society on May 15th and 16th 2024
10. Second Prize for Oral presentation on Evidences that B. subtilis SC3.7 produces sublichenin and subtilosin type of lantibiotcs at National Conference on "Trends in Multidisciplinary Research: Challenges and Applications" organised by M S Ramaiah College of Arts, Science and Commerce-Autonomous, Bengaluru, in collaboration with Department of Biotechnology, GOI and Microbiologists Society on May 15th and 16th 2024
11. First prize for "Microencapsulation of probiotics and dragon fruit bioactive in biopolymeric matrices under food engineering and rheology theme" at the international conference on Recent advances in food science and technology: A way forward organized by DSLD CHEFT, Devihososur-Haveri during 22-24 January 2025

5. Professional Affiliations:

Teaching:

- Faculty member for the training programme since 1996 till date
- Faulty member for MSc Food Technology since 2002 till date

Course coordinator for the following institute sponsored courses:

1) Course coordinator and faculty of the short-term course on "Molecular techniques in Microbiology" Sept. 2006 and June 2007.
2) Molecular Biology approaches for Microbiological Studies and Application, Institute's short-term training course, Sept 22-26, 2009.
3) Molecular Biology techniques in Microbiology, STC, CFTRI; Aug. 2010.
4) Molecular biology techniques in Microbiology during Oct 04-18, 2012.
5) 2013 Institute's training programme on 'Advance techniques in Molecular Biology'. Oct 08-19, 2013.
6) Advanced techniques in Mol. Biology 2014.
7) Advance Molecular Biology Techniques. Aug. 24-28, 2015.
8) Analytical methods in Microbiology. Aug. 2018 & Oct 2019.
9) Strategies for probiotic product development Jan. 2020. & 2022, 2024
10) Short term course on 'Development of pour over millet beverage and curd through probiotic bacteria' was conducted on Sep. 28-30th 2023 and 20-24 Nov. 2023. (No. of participants- 25 & 7, respectively)
11) Half day Symposium on Standardizing spirits: understanding Indian standards on alcoholic beverages, Sponsored by BIS, New Delhi. Feb. 27, 2025
12) Idli-Dosa batter demonstration 16-21, Jan, 2025 (No. of participants 54)

Course Director for the DBT Govt of India; New Delhi sponsored courses -

1) Molecular biology techniques in Microbiology, March 4-19, 2010.
2) Molecular biology techniques in Microbiology. Nov 16 -Dec. 02; 2011, &
3) Molecular biology techniques in Microbiology for lecturers Sept 2-19, 2014.

6. Research and Development work:

A. List of publications from the last 5 years

1. Sundararaman, A., Ray, M., Ravindra, P. V., & **Halami, P. M.*** (2020). Role of probiotics to combat viral infections with emphasis on COVID-19. *Applied Microbiology and Biotechnology, 104*, 8089–8104. https://doi.org/10.1007/s00253-020-10832-4 **IF: 5.0 | Citations: 224**

2. Mrityunjaya, M., Pavithra, V., Neelam, R., Janhavi, P., **Halami, P. M.**, & Ravindra, P. V. (2020). Immune-boosting, antioxidant and anti-inflammatory food supplements targeting pathogenesis of COVID-19. *Frontiers in Immunology, 11*, 570122. https://doi.org/10.3389/fimmu.2020.570122 **IF: 7.3 | Citations: 391**

3. Goel, A., **Halami, P. M.**, & Tamang, J. P. (2020). Genome analysis of *Lactobacillus plantarum* isolated from some Indian fermented foods for bacteriocin production and probiotic marker genes. *Frontiers in Microbiology, 11*, 40. https://doi.org /10.3389/fmicb.2020.00040 **IF: 5.2 | Citations: 115**

4. Thumu, S. C. R., & **Halami, P. M.*** (2020). *In vivo* safety assessment of *Lactobacillus fermentum* strains, evaluation of their cholesterol lowering ability and intestinal microbial modulation. *Journal of the Science of Food and Agriculture, 100*(2), 705–713. https://doi.org/10.1002/jsfa.10071 **IF: 1.4 | Citations: 38**

5. Palani Kumar, M. K., **Halami, P. M.**, & Serva Peddha, M. (2021). Effect of *Lactobacillus fermentum* MCC2760-based probiotic curd on hypercholesterolemic C57BL6 mice. *ACS Omega, 6*, 7701–7710. https://doi.org/10.1021/acsomega.1c00045 **IF: 4.1 | Citations: 27**

6. Rohith, H. S., & **Halami, P. M.*** (2021). *In vitro* validation studies for adhesion factor and adhesion efficiency of probiotic *Bacillus licheniformis* MCC 2514 and *Bifidobacterium breve* NCIM 5671 on HT-29 cell lines. *Archives of Microbiology, 203*, 2989–2998. https://doi.org/10.1007/s00203-021-02257-y **IF: 2.8 | Citations: 23**

7. Sundararaman, A., Bansal, K., Sidhic, J., Patil, P., & **Halami, P. M.*** (2021). Genome of *Bifidobacterium longum* NCIM 5672 provides insights into its acid-tolerance mechanism and probiotic properties. *Archives of Microbiology, 203*, 6109–6118. https://doi.org/10.1007/s00203-021-02573-3 **IF: 2.8 | Citations: 19**

8. Manjunath, A., Thumu, S. C. R., Kumar, S., & **Halami, P. M.*** (2021). Bacterial heteroresistance: An evolving novel way to combat antibiotics. *Biologia, 76*(10), 3029–3041. https://doi.org/10.1007/s11756-021-00820-y **IF: 1.5 | Citations: 4**

9. Sundararaman, A., & **Halami, P. M.*** (2021). Genome editing of probiotic bacteria: Present status and future prospects. *Biologia, 77*, 1831–1841. https://doi.org /10.1007/s11756-022-01049-z **IF: 1.5 | Citations: 13**

10. Sharma, B. R., Jayant, D., Rajshee, K., Singh, Y., & **Halami, P. M.*** (2021). Distribution and diversity of nisin producing LAB in fermented food. *Current Microbiology, 78*, 3430–3438. https://doi.org/10.1007/s00284-021-02593-8 **IF: 2.6 | Citations: 13**

11. Naushin, S., Sardana, V., Ujjainiya, R., Bhatheja, N., … Gupta, D., & **Halami, P. M.** (2021). Insights from a Pan India Sero-Epidemiological survey (Phenome-India Cohort) for SARS-CoV2. *eLife, 10*, e66537. https://doi.org/10.7554/eLife.66537 **IF: 7.7 | Citations: 34**

12. Sharma, B. R., **Halami, P. M.**, & Tamang, J. P. (2022). Novel pathways in bacteriocin synthesis by lactic acid bacteria with special reference to ethnic fermented foods. *Food Science and Biotechnology, 31*, 1–16. https://doi.org/10.1007/s10068-021-00986-w **IF: 2.9 | Citations: 40**

13. Archer, A. C., Muthukumar, S. P., & **Halami, P. M.*** (2021). *Lactobacillus fermentum* MCC2759 and MCC2760 alleviate inflammation and intestinal function in high-fat diet-fed and streptozotocin-induced diabetic rats. *Probiotics and Antimicrobial Proteins, 13*, 1068–1080. https://doi.org/10.1007/s12602-021-09744-0 **IF: 4.9 | Citations: 63**

14. Rohith, H. S., & **Halami, P. M.*** (2021). The combined effect of potential probiotic *Bacillus licheniformis* MCC 2514 and *Bifidobacterium breve* NCIM 5671 towards anti-inflammatory activity on HT-29 cell lines. *Probiotics and Antimicrobial Proteins, 15*, 351–362. https://doi.org/10.1007/s12602-021-09851-y **IF: 4.9 | Citations: 25**

15. Singh, P., Ujjainiya, R., Prakash, S., Naushin, S., … Gupta, D., & **Halami, P. M.** (2022). A machine learning-based approach to determine infection status in recipients of BBV152 (Covaxin) whole virion inactivated SARS-CoV-2 vaccine for serological surveys. *Computers in Biology and Medicine, 146*, 105419. https://doi.org/10.1016/j.compbiomed.2022.105419 **IF: 7.7 | Citations: 13**

16. Dindhoria, K., Kumar, S., Baliyan, N., Raphel, S., **Halami, P. M.***, & Kumar, R. (2022). *Bacillus licheniformis* MCC 2514 genome sequencing and functional annotation for providing genetic evidence for probiotic gut adhesion properties and its applicability as a biopreservative agent. *Gene, 840*, 146744. https://doi.org/10.1016/j.gene.2022.146744 **IF: 3.5 | Citations: 14**

17. Baruah, R., Ray, M., & **Halami, P. M.*** (2022). Preventive and therapeutic aspects of fermented foods. *Journal of Applied Microbiology, 132*(5), 3476–3489. https://doi.org/10.1111/jam.15444 **IF: 4.0 | Citations: 56**

18. Epparti, P., Eligar, S. M., Sattur, A. P., Kumar, B. G., & **Halami, P. M.*** (2022). Characterization of dual bacteriocins producing *Bacillus subtilis* SC3.7 isolated from fermented food. *LWT, 154*, 112854. https://doi.org/10.1016/j.lwt.2021.112854 **IF: 6.0| Citations: 22**

19. Ray, M., Manjunath, A., & **Halami, P. M.*** (2022). Prevalence of polymyxin resistance through the food chain: The global crisis. *The Journal of Antibiotics, 75*, 185–198. https://doi.org/10.1038/s41429-022-00502-0 **IF: 3.3 | Citations: 8**

20. Goel, A., & **Halami, P. M.*** (2023). Structural and biosynthetic diversity of plantaricins from *Lactiplantibacillus*. *Applied Microbiology and Biotechnology, 107*, 5635–5649. https://doi.org/10.1007/s00253-023-12692-0 **IF: 5.0 | Citations: 10**

21. Ray, M., Manjunath, A., & **Halami, P. M.*** (2023). Effect of probiotics as an immune modulator for the management of COVID-19. *Archives of Microbiology, 205*, 182. https://doi.org/10.1007/s00203-023-03504-0 **IF: 2.8 | Citations: 16**

22. Geetha, V., Chathur, K. N., Ramkumar, S., **Halami, P. M.**, & Suresh Kumar. (2023). *In vitro* fermentation of glycosaminoglycans from mackerel fish waste and its role in modulating the antioxidant status and gut microbiota of high-fat diet-fed C57BL/6 mice. *Food & Function, 14*(15), 7130–7145. https://doi.org/10.1039/D2FO03603G **IF:6.1 | Citations: 6**

23. Baruah, R., Kumar, P. P., Gangani, S., Prashanth, K. H., & **Halami, P. M.*** (2023). Structural characteristics and functional properties of a fucose containing prebiotic exopolysaccharide from *Bifidobacterium breve* NCIM 5671. *Journal of Applied Microbiology, 134*(11), lxad262. https://doi.org/10.1093/jambio/lxad262 **IF: 4.0 | Citations: 4**

24. Goel, A., Chauhan, A. S., & **Halami, P. M.*** (2023). *Lactiplantibacillus plantarum* MCC5231 enriched carrot (*Daucus carota*) nectar: A value-added beverage with enhanced vitamin A. *Journal of Food Measurement and Characterization, 17*, 6425–6439. https://doi.org/10.1007/s11694-023-02104-2 **IF: 3.4 | Citations: 5**

25. Nair, D., Zarei, M., **Halami, P. M.**, & Talahalli, R. (2023). *Lactobacillus fermentum* MCC2760 abrogates high-fat induced perturbations in the enterohepatic circulation of bile acids in rats. *Life Sciences, 320*, 121563. https://doi.org/10.1016/j.lfs.2023.121563 **IF: 6.1 | Citations: 8**

26. Rohith, H. S., Peddha, M. S., & **Halami, P. M.*** (2023). Probiotic *Bacillus licheniformis* MCC2514 and *Bifidobacterium breve* NCIM 5671 regulate GATA3 and Foxp3 expression in the elevated disease condition. *Probiotics and Antimicrobial Proteins, 16*, 894–910. https://doi.org/10.1007/s12602-023-10080-8 **IF: 4.9 | Citations: 7**

27. Ashwini, M., Ray, M., Sumana, K., & **Halami, P. M.** (2023). Prevalence of macrolide–lincosamide–streptogramin resistant lactic acid bacteria isolated from food sample. *Journal of Food Science and Technology, 60*(2), 630–642. https://doi.org/ 10.1007/s13197-022-05648-1 **IF: 3.1 | Citations: 5**

28. Achi, S. C., Chetana, R., Asha, M. R., Raphel, S., & **Halami, P. M.*** (2024). Dark chocolate: Delivery medium for probiotic *Bifidobacterium breve* NCIM 5671. *Journal of Food Science and Technology, 61*, 1411–1415. https://doi.org/10.1007/s13197-024-05958-6 **IF: 3.1 | Citations: 8**

29. Raphel, S., & **Halami, P. M.*** (2024). Genome mining of *Bacillus licheniformis* MCC2514 for the identification of lasso peptide biosynthetic gene cluster and its characterization. *Archives of Microbiology, 206*, 143. https://doi.org/10.1007/s00203-024-03877-w **IF: 2.8 | Citations: 4**

30. Peerzade, I. J., Mutturi, S., & **Halami, P. M.*** (2024). Improved production of RNA inhibiting antimicrobial peptide by *Bacillus licheniformis* MCC 2514 facilitated by a genetic algorithm optimized media. *Bioprocess and Biosystems Engineering, 47*, 683–685. https://doi.org/10.1007/s00449-024-02998-2 **IF: 3.8 | Citations: 2**

31. Tamang, J. P., Kharnaior, P., & **Halami, P. M.*** (2024). Lactic acid bacteria in some Indian fermented foods and their predictive functional profiles. *Brazilian Journal of Microbiology, 55*, 1745–1751. https://doi.org/10.1007/s42770-024-01251-y **IF: 2.2 | Citations: 3**

32. Ray, M., Ashwini, M., & **Halami, P. M.*** (2024). The occurrence of colistin resistance in potential lactic acid bacteria of food-producing animals in India. *Current Microbiology, 81*(9), 297. https://doi.org/10.1007/s00284-024-03826-2 **IF: 2.6 | Citations: 1**

33. Peerzade, I. J., Peddha, M. S., & **Halami, P. M.*** (2024). The lasso peptide produced by *Bacillus licheniformis* MCC 2514 demonstrates efficacy in treating *in vivo Salmonella typhimurium* infection. *International Journal of Biological Macromolecules, 281*, 136470. https://doi.org/10.1016/j.ijbiomac.2024.136470 **IF: 7.7 | Citations: 2**

34. Raphel, S., & **Halami, P. M.*** (2024). Bioactive compounds from food-grade *Bacillus*. *Journal of the Science of Food and Agriculture, 105*, 4085–4095. https://doi.org/10.1002/jsfa.13935 **IF: 3.3 | Citations: 7**

35. Keremane, V. R., Yashwanthkumar, M. H., Uppin, V., **Halami, P. M.**, & Talahalli, R. R. (2024). *Lactobacillus fermentum* MCC2760 attenuates heated oil-induced brain oxidative stress and inflammation via modulation of NRF2 and NF-κB in rats. *Molecular Nutrition & Food Research, 68*(23), 2400656. https://doi.org/10.1002/mnfr.202400656 **IF: 4.65 | Citations: 1**

36. Keremane, V., Kamala, H., **Halami, P. M.**, & Talahalli, R. (2025). *Lactobacillus fermentum* MCC2760 attenuates neurobehavioral alterations induced by oxidized oils in rats. *Metabolic Brain Disease, 40*(1), 41640. https://doi.org/10.1007/s11011-024-01509-2 **IF: –3.5**

37. Komatwar, K., Sundararaman, A., Raphel, S., & **Halami, P. M.** (2025). Whole genome analysis of *Limosilactobacillus fermentum* MCC0552 for probiotic functionalities and comparative genomic study with reference strains. *Probiotics and Antimicrobial Proteins*. https://doi.org/10.1007/s12602-025-10467-9 **IF: 4.9 | Citations: 1**

38. Rohith, H. S., Peerzade, J. I., Chauhan, A. S., & **Halami, P. M.*** (2025). Formulation and analysis of probiotic *Bacillus licheniformis* MCC 2514 infused osmo-dried carrot. *Journal of Food Science and Technology*. https://doi.org/10.1007/s13197-025-06245-8 **IF: 3.1**

39. Babu, N. S., **Halami, P. M.,** & Kudre, T. G. (2025). Production, purification and identification of novel antioxidant peptides from Piaractus brachypomus (red-bellied pacu) using *Pediococcus pentosaceus* fermentation. *Journal of the Science of Food and Agriculture*. **IF: 3.5**

40. Patil, S., Wen, F., Hanafiah, A., & **Halami, P. M.** (2025). Editorial: Targeted next-generation sequencing for pathogen and antimicrobial resistance (AMR) identification and profiling. *Frontiers in cellular and infection microbiology*, *15*, 1633941. https://doi.org/10.3389/fcimb.2025.1633941 **IF: 4.8**

41. Kaila, N. H., **Halami, P. M.,** Ramakrishna, C., Shivaramu, M. S., & Peddha, M. S. (2025) Physicochemical and functional characterization of pearl millet-based probiotic beverage for antiaging potential in *Caenorhabditis elegans*. *Foods*, *14*(20), 3460. https://doi.org/10.3390/foods14203460 **IF: 5.1**

42. Sengupta, S., …..**Halami P.M.,** et.al. (2025). Study research protocol for Phenome India-CSIR Health Cohort Knowledgebase: A prospective multi-modal follow-up study on a nationwide employee cohort. *Biology Methods and Protocols*, *10*(1). https://doi.org/10.1093/biomethods/bpaf061 **IF: 1.3**

B. Popular articles:

1) **Halami PM*** (2012) Food-grade lactics and *Bacillus* as probiotics in functional food; in the News- letter, Probiotic Association of India. Vol 1, Page 3.
2) Achi S and **Halami PM*** (2015). Bifidobacteria probiotics as preventive measure for rheumatoid arthritis: a hypothesis; in the News- letter, Probiotic Association of India. Vol 9, Page 3-5.
3) Archer AC and **Halami PM***. (2016). Probiotic functional food through native isolates of *Lactobacillus delbrueckii:* immunomodulatory potential. Ind Food Ind. 35: 31-33.
4) Rohith HS and **Halami PM***. (2017). Probiotic effectiveness for inflammatory bowel disease; in the News- letter, Probiotic Association of India. Vol 13, Page 12-16.
5) Achi S and **Halami PM***, (2019) Bifidobacteria supplementation through fermented foods in the newsletter, Probiotic Association of India, vol. 15 pg. 5-7.
6) Kharnaior, P., **Halami PM** and Tamang, J. P. (2020). Predictive Metabolic Pathways of Lactic Acid Bacterial Strains Isolated from Fermented Foods. bioRxiv. https://doi.org/10.1101/2020.07.01.181941.
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C. Papers published in Conference Proceedings & compendium

1) **Halami PM*** (2008). Novel nanomaterials from microbial sources, in the DST/CSIR/BRNS sponsored National conference on Nanomaterials proceedings. Karunya University, Coimbatore PP xi-xii.

2) Mhaskar PM, Bhilwadikar TR, Achi SC and **Halami PM*** (2017). Optimization of culture condition for fermentation of milk by *Bifidobacterium* spp. In the Conference proceedings, Life Science: Research, Practices and application for sustainable development, Macmillan Publisher ISBN 978-93870-0007-0. Page No. 427-431.

3) Archer AC, Muthu-Kumar SP and **Halami PM***. (2017*). Lactobacillus fermentum*: a potential probiotic with immune modulatory health benefits. In the Conference proceedings, Life Science: Research, Practices and application for sustainable development, Macmillan Publisher ISBN 978-93870-0007-0. Page No. 18--23.

4) Ravichandra H, Vendan ES, Vivek Babu CS and **Halami PM**. Biology of stored product insects and their Management. A Compendium, CSIR-CFTRI, Mysore; version 1.0; 2022.

5) Epparti, P., Vijaya Priya and **Halami PM.** (2024) Conference proceedings: Wonders of barnyard and kodo millets based probiotic formulations: a boon for metabolic syndrome, ICAR-Krishi Vigyan Kendra, Kolar ISBN Number 978-93-91146-84-9

6) **Halami P.M.,** (2025) Conference proceedings: Gut microbiota modulation through probiotics, prebiotics and postbiotics,- an innovative approach for healthy living, TCWCAS Tirpur ISBN 978-93-343-9502-2

D. Books edited

1) **Halami, P. M.,** & Sundararaman, A. (Eds.). (2024). Genome Editing in Bacteria (Part 1) Bentham Science Publishers, 200pg ISBN 9815165690, 9789815165692. Doi: 10.2174/9789815165678124010l

2) **Halami, P. M.,** & Sundararaman, A. (Eds.). (2024). Genome Editing in Bacteria (Part 2) Bentham Science Publishers, 329pg ISBN 9815223801, 9789815223804 Doi: 10.2174/9789815223798124010l

3) D Dhansekharan and **Halami PM** (Eds.). Postbiotics Health and Industry Elsevier ISBN: 9780443221880. Oct. 1, 2024

E. Book chapters contributed-

1) O'Sullivan DJ and **Halami PM**. (2013) Genomics of probiotics and prebiotics, a book chapter in Otles S (ed) Probiotics and prebiotics in Food, Nutrition and Health, CRC Press Taylor and Francis Gr Boca Raton Fl. Pp. no: 446-457.

2) Thumu SCR and **Halami PM*** (2015) Mechanism of cross resistance and inducible resistance to antibiotics by lactic acid bacteria, a book chapter in Current research in Biochemistry and Microbiology. Oxford Book Company ISBN 978-93-5030-212-5; Pp. no: 1-19.

3) Devi SM and **Halami PM*** (2015). Metabolic characteristics of lactic starters, a book chapter in Fermented Milk and Dairy Products. CRC press, ISBN: 978-4665-7767-8; Pp. no: 109-132 DOI: https://doi.org/10.1201/b18987

4) Vijayendra SVN and **Halami PM** (2015). Health benefits of fermented vegetable products. A book chapter in Health benefits of fermented foods and beverages. CRC press, ISBN 9781138894600; Pp. no: 325-339. DOI: https://doi.org/10.1201/b18279

5) Achi S and **Halami PM*** (2015). Antimicrobial peptides from Bacillus spp: use in antimicrobial packaging, a book chapter in Antimicrobial food packaging Academic press. ISBN 0128008105; Pp. no: 527-538. DOI: https://doi.org/10.1016/B978-0-12-800723-5.00043-7

6) Achi S and **Halami PM*** (2017). Bifidobacterial probiotics through fermented Foods. A book chapter in meta-genomics, a book chapter in Mining of Microbial wealth and metagenomics, Springer publisher; ISBN 978-981-10-5707-6; Pp. no: 267-286. DOI: https://doi.org/10.1007/978-981-10-5708-3_16

7) Devi SM and **Halami PM*** (2017). Probiotics from fermented foods, a book chapter in Mining of Microbial wealth and metagenomics, Springer publisher; ISBN 978-981-10-5707-6; Pp. no: 357-376. DOI: https://doi.org/10.1007/978-981-10-5708-3_20

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9) Vrinda Ramchandran, Bhaskar N and **Halami PM*** (2019) Lipase of Lactic Acid Bacteria: diversity and application, a book chapter in Microbes for sustainable development and Bioremediation. CRC press. ISBN. 9780367226008; Pp. no: 313-324. DOI: https://doi.org/10.1201/9780429275876

10) Jayant Dharana and **Halami PM*** (2020) Industrial perspective of food preservatives from microbial origin, a book chapter in Current Developments in Biotechnology and Bioengineering: Sustainable Bioresources for Emerging Bioeconomy. Elsevier publisher. ISBN: 9780444643094; Pp. no: 243-261. DOI: https://doi.org/10.1016 /B978-0-444-64309-4.00011-8

11) Devaraj Yogesh and **Halami PM*** (2020) Fibrinolytic enzymes in fermented food products, a book chapter Bioactive compounds in Fermented Foods: Health aspect. CRC press ISBN 9780367136000; Pp. no: 120-140. DOI: https://doi.org/10.1201 /9780429027413

12) Baruah Rwivoo, Appaiah KA Anu and **Halami PM*** (2020) Ethnic Fermented Foods and Beverages of Karnataka, a book chapter in History, Culture and Science of Ethnic Fermented Food and Alcoholic Beverages of India. Elsevier publisher Springer publisher ISBN 978-981-15-1485-2; Pp. no: 209-230. DOI: https://doi.org/10.1007/ 978-981-15-1486-9_9

13) Baruah R, Rajshree K. and **Halami PM*** (2021) Exopolysaccharides producing microorganism for functional food industry, a book chapter in Bioprocess technologies for production of nutraceuticals and functional food products. Elsevier. ISBN: 978-0-12-823506-5; Pp. no: 337-354. DOI: https://doi.org/10.1016/B978-0-12-823506-5.00016-3

14) Baruah R and **Halami PM*** (2021) Microbial gums: Current trends and application, a book chapter in Bioprospecting of microorganism based industrial molecules. Wiley. ISBN: 1119717249; pp. no. 31-46. 2021 DOI: https://doi.org/10.1002/ 97811197 17317.ch3

15) Aravind S., Shetty K, **Halami PM*** (2022). Role of probiotics in autoism spectrum disorders. , a book chapter in Microbiome, gut brain axis. ISBN 978-981-16-1625-9; Pp. no: 355-366.

16) Ray, M., Manjunath, A., Baruah, R., & **Halami, PM*** (2023). Enzymes from lactic acid bacteria for nutraceuticals production, a book chapter in Microbial enzymes in production of functional foods and nutraceuticals; Pp. no: 25-44. CRC Press. DOI: https://doi.org/10.1201/9781003311164

17) Warghane, A, Saini, R., Neena K. Dhiman, Khan, K. a Koche, M, Sharma, A, Gade, RM, **Halami PM,** and Das, A. (2023) Value-addition in citrus processing industry waste through enzyme technology, a book chapter in Value-Addition in Agri-food industry waste through enzyme technology; Pp. no: 177-190. Academic Press. DOI: 10.1016/b978-0-323-89928-4.00024-9

18) Steji R and **Halami PM***. Genome editing in *Bacillus licheniformis*: Current Approaches and Applications, a book chapter in *Genome Editing in Bacteria (part 1)*, 2024, 156-174 DOI: 10.2174/9789815165678124010011

19) Bathula S and **Halami PM***. Genome editing in Cyanobacteria, a book chapter *Genome Editing in Bacteria (part 2)* , 2024, 262-299 DOI: 10.2174/97898152237981240100 11

20) Aravind S and **Halami PM***. Metabolic engineering of *Bifidobacterium* sp. Using genome editing techniques, a book chapter *Genome Editing in Bacteria*, 2024, 88-105 DOI: 10.2174/9789815165678124010008

21) Peerzade, I. J., Kudre, T., & **Halami, P. M.** (2024). Poultry and Meat Processing. In *Frontiers in Food Biotechnology* (pp. 427-444). Singapore: Springer Nature Singapore. DOI: https://doi.org/10.1007/978-981-97-3261-6_23

22) Kumar N, Vijayalakshmi, & **Halami, P. M.** (2025). Nutrigenomics and Gut Microbiome, a book chapter in Nanomedicine and Nutrigenomics-pioneering the future of health, Academic Press, pp400, ISBN 0443267626, 9780443267628

7. Details of Technology Transferred/Developed

- **Bifidocurd:** Bifidocurd is a probiotic curd prepared by fermenting milk exclusively using bifidobacteria as a starter culture. This health promoting bacteria can replenish bifidobacterial count in colon and provide microbial homeostasis. It is a unique probiotic product prepared using market milk, and is enriched with sole bifidobacteria, that possess additional starter culture property. High viability is ensured satisfying the Minimum Biological Value (MBV) for probiotic product. (289th PDRU meeting 18/01/2018; CFTRI Ref No. TTBD/PDRU/CFL-34/SVR/ 2018 dated 28/03/2018) (Technology Transferred).
- **Bifidobacteria enriched soya curd:** Soya curd is a unique product prepared using single bifidobacterial culture. It is a food supplement containing viable count of >10^7 CFU/gm of a saccharolytic bifidobacterial pure culture exhibiting several health benefits. It is prepared by fermenting soya milk exclusively with bifidobacteria and replenishes the bifidobacterial count in the colon along-with nutritional benefits of soyabean (289th PDRU meeting 18/01/2018; CFTRI Ref No. TTBD/PDRU/CFL-34/SVR/ 2018 dated 28/03/2018).

Figure: Pictorial representation of native isolate of probiotic bifidobacteria and the fermented product developed as a part of translational research.

- **Probiotic carrot nector:** *Lactobacillus plantarum* MCC5231 was incorporated carrot nector exhibiting anti-obesity properties and the product having rich in vitamin A. Probiotic carrot-based nectar is a unique product which has been developed using carotene rich carrot. The product developed was found to be excellent in all of the tested parameters. Viability studies showed a great log count after product formulation, and during storage at two different temperatures. An overall sensory score was 8.4 and its sensory quality is tremendous. The proximate studies present those components in probiotic carrot-based nectar development comes within the range of BIS specifications (Technology Transferred)

8. Details of execution of major research project as Principal Investigator:

S. N	Title of the project	Amount (Rs in lakhs)	funding agency	Date	
				From	To
1	Molecular characterization of novel bacteriocin producing bacterial strains and development of applications for food-bio preservation process	3.5	DBT, New Delhi	2006	2009
2	Molecular characterization of Pediocin PA-1 producing lactic acid bacteria and their application in biopreservation	7.05	DBT, New Delhi	2007	2010
3	Screening & evaluation of different lactic acid bacterial cultures for their proteolytic and fermentation ability for further application in lipid recovery	21.0	DBT, New Delhi	2008	2011
4	Diversity and Genetic relatedness of lactic acid bacteria in fermented vegetables of North-East India	29.0	DBT, New Delhi	2011	2014
5	Rapid detection of probiotic lactic acid bacteria and their suitability in vivo system	15	ICMR, New Delhi	2012	2015
6	Characterization and genes in Lactic Acid transferability of Antibiotic resistance Bacteria from poultry and meat products	27	ICMR, New Delhi	2012	2016
7	Novel pathway specific reporter assays for the characterization of anti-microbial compound produced by food-fermenting bacteria	26	DBT, New Delhi	2016	2019
8	Gene organization, mechanism of action and food application of novel RNA biosynthesis inhibiting peptide antibiotics of probiotic bacteria	34	DST New Delhi	2017	2021
9	Translation of pre-clinically tested probiotic formulation to human population with emphasis on immune-modulation and gut microflora	30	CSIR- New Delhi	2018	2020
10	Establishment of a new Covid testing laboratory and development of innovative techniques/protocols for the detection of Covid virus	100	CSIR- New Delhi	2020	2021

S. N	Title of the project	Amount (Rs in lakhs)	funding agency	Date	
				From	To
11	Supporting COVID testing centre set up by CSIR-CFTRI along with Karnataka Government (Project Coordinator	50	RBI Mysore	2020	2021
12	Scale up studies on immunity boosting shelf-stable probiotic curd enriched with bifidobacteria	02	Institute project	2020	2022
13	Covid-19 sample testing project	50	CSIR- New Delhi	2021	2022
14	Phenome India- long term longitudinal observational cohort study of health outcome	2.5	Institute	2021	2022
15	Development and validation of gerobiotic enriched millet beverage and curd	66	CSIR, New Delhi	2023	2025
16	Study of neutral spirits for alcoholic drinks for their quality and safety parameters	9	FAD	2024	2025
17	Phenome India CSIR-health cohort knowledge base; CSIR New Delhi (HCP 0047)	100	CSIR, New Delhi	2022	2027
18	Post-biotics for gut microbiome eubiosis in different terrain DRDO-DFRL Mysore.	49	DRDO	2023	2026

Details of execution of major research project as Co-PI/member

SN	Title of the project and role	Funding agency	Amount (Rs in lakhs)	Duration
1	Microbial synthesis of polyhydroxyalkanoate copolymer (member)	DBT, New Delhi	24	March 2006
2	Bioactive molecules from sea weeds: antioxidative, antimicrobial, antihypertensive and anti-cancerous properties of polyphenols and polysaccharides (Co-PI)	DST-JSPS	-	2009 -J2011
3	Health promoting Exopolysaccharide producing Lactic acid bacteria from indigenous fermented foods: Application in the management of gastrointestinal health (Co-PI)	DBT, New Delhi	47	2012- 2016
4	Shelf life studies of aseptically packed tea extract for M/s Tata Global Beverages ltd Munnar, Kerala (team member of the project)	SSP-254	05	2018 - 2020
5	Development of synbiotic fruit beverage for healthy aging (member)	Institute	01	2021 - 2022
6	Targeting improved gut health with underutilized Indian berries/pseudo berries as source of prebiotics and nutraceuticals (member)	DBT, New Delhi	-	2021-2024
7	Identification of potential location across India for seaweed cultivation (IPL-ISeaC) (HCP0024) (member)	CSIR, New Delhi	-	2025-2028

9. Research Supervised:

9.1 PhD:

a) In the field of Biotechnology

SN	Thesis title	Year of award/ Name of the candidate
1	Molecular Characterization of Enterococcus faecium MTCC 5153 for probiotic properties.	2012/ Dr V Badarinath
2	Biotechnological studies on phytate degrading lactic acid bacteria: screening, isolation, characterization and application	2012/ Dr. P Raghavendra
3	Antibacterial peptides of Bacillus species active against food borne pathogens	2013/ Dr. Nithya Vadakedath
4	Molecular genetic studies of pediocin like bacteriocin in Pediococcus, Lactobacillus and Enterococcus	2013/ Dr. Sundru Manjulata Devi
5	Characterization of lipase from lactic acid bacteria isolated from fish processing waste	2015/ Dr. Vrinda Ramakrishnan
6	Studies on erythromycin resistance in lactic acid bacteria in fermented foods	2015/ Dr. Surya Chandra Rao Thumu
7	Efficacy of probiotic bacteria in alleviating T helper cell associated immune response	2022 / Dr. Rohith HS
8	Genetic and molecular evidence of plantaricin produced by Lactobacillus plantarum isolated from fermented milk & their probiotic properties	2023/Dr. Aditi Goel
9	Studies on production, purification and properties of novel peptide antibiotics of probiotic bacteria	2025/ Ms. Ishrat Jahan Peerzade (Submitted)

b) In the field of Microbiology

SN	Thesis title	Year of award/ Name of the candidate
10	Characterization of leukotoxin producing Staphylococcus aureus and development of antibody-based method for leukotoxin detection in bovine milk samples	2015/ Dr. Padmaja RJ
11	Characterization of fibrinolytic enzyme of Bacillus species isolated from food source	2018/ Dr. Yogesh D
12	Molecular assessment of aminoglycoside resistance in Enterococcus sp.	2018/ Dr. Jaimee George
13	Immunomodulatory effects of Lactobacillus spp. from dairy and human origin	2018 / Dr. Ann Archer Catherine

c) In the field of Biological Sciences

SN	Thesis title	Year of award/ Name of the candidate
14	Effect of bifidobacterial probiotics on alleviation of inflammation.	2020 / Dr. Sajan C Achi
15	Evaluation of structural and functional properties of subtilin-like lantibiotics produced by Bacillus species	2022/Dr. Pramila Epparti&
16	Identification of the biosynthetic gene involved in the peptide antibiotic production by Bacillus licheniformis MCC 2514 and its mechanism of action	2025/ Dr. Steji Raphel

9.2 PDF:

SN	Name of the candidate & duration	Title of the work	Name of the program
1	Dr Shobha Rani P, 2011	Molecular characterization of bioactive compounds obtained from lactic acid bacterial fermented sea weed	CSIR-RA
2	Dr Shobha Rani P, 2012-2015	Development and application of Bacillus sp as a probiotics	SERB-DST FAST track project
3	Dr Manjulata Devi S, 2014-2017	Detection and expression of immune-modulatory and probiotic genetic loci among Lactobacillus sp.	SERB-DST Young Scientist project
4	Dr. Aravind Sundararaman; Sept 2018 - 2022	Recombinering of bifidobacteria using CRISPR Cas9	CSIR Nehru post doc fellow
5	Dr. Rwivoo BARUA; April 2019 - 2022	Elucidation of structural and functional properties of heteropolysaccharide from probiotic Bifidobacterium breve NCIM 5671	CSIR-RA
6	Dr. Mousumi Ray; Sept 2019 - 2022	Elucidation of molecular mechanism of colistin resistance among food- borne pathogens and food bacteria	ICMR RA

9.3 Overseas researchers trained

SN	Name of the candidate & duration	Title of the work	Name of the program
1	Ms Seyi Amole Damilola Omobowale (Nigeria); Nov. 2014-Jan. 2015	Studies on production and characterization of emetic toxin by Bacillus cereus in cooked rice.	INSA-JRD TATA Fellow
2	Dr. Obakpororo Ejiro Agbagwa (Nigeria); Jan 2015 – April 2015	Detection and identification of antibiotic reside and Bacillus sp in honey	JNCSR fellowship

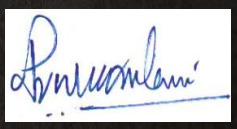
9.4 Dissertation:

Total number of post-graduation dissertations supervised	:	100
B.Tech	:	7
M.Tech	:	8
B.Sc	:	1
M.Sc	:	84

Invited talk at conferences/symposium		
National	:	97
International	:	24

Paper presented in conferences/symposium		
National	:	99
International	:	99

I hereby declare that the information furnished as above is true to the best of my knowledge and belief



Dated: 30/12/2025
Place: CFTRI Mysore

Prakash M HALAMI