

## CURRICULUM VITAE

**Dr. Baljinder Kaur,**

Professor,

Department of Biotechnology & Food

Technology,

Punjabi University, Patiala-147002,

Punjab, India.

Mobile No.: +91-9915170148

Email Ids: [baljinderkaur@pbi.ac.in](mailto:baljinderkaur@pbi.ac.in)  
[baljinderbt@hotmail.com](mailto:baljinderbt@hotmail.com)



**Academic Qualifications:** M.Sc. and Ph.D. in Biotechnology

### Area of Specialisation

- 1) Genetic and Metabolic Engineering:** The main goal of my research activities is to harness the huge catalytic potential of probiotic Lactic Acid Bacteria for assisting complex phenolic biotransformations, and for producing food additives like L-alanine, vanillin and antagonistic bacteriocins. Using novel approaches of systems metabolic engineering, recombinant strains of *Pediococcus acidilactici* BD16 and *Escherichia coli* have been developed for augmenting microbial product development, and enhancing nutritional, sensory and therapeutic attributes of fermented foods and beverages like buttermilk, soymilk and wine. Owing to poor commercial availability of the expression vectors for food grade GRAS organisms, an attempt has been made to develop a shuttle vector pPBT-GFP.
- 2) Metagenomics:** Metagenomics approach was applied to study the impact of anthropogenic pressures on biochemical and biological characteristics of Dal Lake waters. In addition, the metagenomics approach is being applied to study metagenomic alterations in women with Bacterial Vaginosis following treatment with antibiotics and probiotics that would help to elucidate pathophysiology of the disease as well as efficiency of various therapeutic interventions.
- 3) Metabolomics:** Metabolomics approach was applied to study pathogen related metabolic perturbations in Human Peptic Ulcer Disease and remission using probiotic interventions. Using GC/MS based metabolomic fingerprinting, the phytoconstitution of some medicinally important plants has been revealed.

<b>Employment History</b>			
1	Punjabi University, Patiala	31-07-2019 -till date	Professor in “Biotechnology”
2	Punjabi University, Patiala	31-07-2016 to 30-07-2019	Associate Prof. in “Biotechnology”
3	Punjabi University, Patiala	07-12-2006 to 30-07-2016	Assistant Prof. in “Biotechnology”
4	Dolphin (PG) College of Life Sciences, Chunni Kalan, Mohali	04-07-2006 to 06-12-2006	Lecturer in “Biotechnology”
5	Ambala College of Engineering and Applied Research, Ambala Cantt.	31-07-2004 to 03-07-2006	Lecturer in “Biotechnology Engineering”

#### **Research Aptitude**

Total Number of Citations on Google Scholar : 1226

h-index : 20

i10 index : 36

Number of Research/Review Articles Published: 65

Number of Book Chapters Published: 6

Number of Published Articles in Conference Proceedings: 4

<https://scholar.google.com/citations?user=cLBb8WAAAAAJ&hl=en>

### ***Industrial Collaboration***

***Signed NDA with Puratos, Belgium***

***to work on***

***“Fermented Food Applications”***

***with effect from 9<sup>th</sup> August, 2023.***

### Research projects completed: 03

#### 1. UGC Funded- As Principal Investigator

Metabolic engineering of a lactic acid bacterial isolate for biotransformation of ferulic acid to vanillin (Rs. 12.1 lacs). 2011-2014

#### 2. DST Funded - As Co-Investigator

Expression vectors for food grade lactic acid bacteria (Rs. 32.10 lacs). 2011-2014

#### 3. Institutional - As Co-Investigator

Collaborative research project of Women's Studies Centre and Department of Biotechnology, Punjabi University, Patiala on "Amelioration of iron deficiency: Functional probiotic formulation for adult anemic women" from 2013 to 2014.

### Research Guidance

#### Ph.D. degree awarded/completed : 08

- 1) **Bharti Mittu** : A study on Anti-*Gardnerella vaginalis* bacteriocin producing human vaginal LAB Isolate (D.O.A.: 19-11-2014)
- 2) **DebKumar Chakraborty** : Metabolic engineering of lactic acid bacteria for production of vanillin- **UGC-BSR fellow** (D.O.A.: 12-02-2015)
- 3) **NeenaGarg** : Characterization and therapeutic potential of anti-*Helicobacter pylori* bacteriocin of a lactic acid bacterial isolate (D.O.A.:12-02-2015)
- 4) **Rajinder Kaur** : Characterization and invitro therapeutic potential of arginine deiminase of bacterial isolate - **UGC fellow** (D.O.A.: 21-09-2015)
- 5) **Navneet Kaur** : Molecular and photochemical characterization of *Phyllanthus niruri* Linn. from Punjab in relation to prevention of *Helicobacter pylori* induced peptic ulcer disease (D.O.A.: 24-05-2018).
- 6) **TawseefAhmad** : Metagenomic and functional characterization of Dal Lake microbiota (D.O.A.: 26-05-2022).
- 7) **Gaganjot** : Metabolomic fingerprinting for identification of *Helicobacter pylori* induced peptic ulcer disease related perturbation and remission using probiotic intervention - **UGC-MANF-SRF** (D.O.A.: 11-03-2022).
- 8) **Anshula Sharma**:Metabolic engineering of *Pediococcus acidilactici* BD16 for heterologous production of L-alanine- **ICMR-SRF** (D.O.A.: 01-12-2022).

**Registered for Ph. D. degree: 02 registered + 02 enrolled**

- 1) **Priya Daroch:** Alterations in vaginal metagenomic profile among women with bacterial vaginosis following treatment with antibiotics and probiotics (**D.O.R.: 20.12. 2019**).
- 2) **Asif Gawhari:** Phenolic characterization of *Silybum marianum* using bio-analytical techniques and *in vitro* study of its hepatoprotective role. (**D.O.R.: 28.11.2022**); **ICCR-SSS for Afghan nationals.**
- 3) **Raman Kumar (enrolled)**
- 4) **Nidhi Guleria (enrolled)**

**List of Publications**

1. **Kaur, Baljinder,** Balvir Kumar, Geetika Sirhindi, Nidhi Guleria, and Jashandeep Kaur. (2023) Phenolic Biotransformations in Wheatgrass Juice after Primary and Secondary Fermentation. *Foods*. 12, no. 8: 1624. <https://doi.org/10.3390/foods12081624>. **I.F. 5.561**
2. **Kaur Baljinder,** Sohrabi Yahya, Achreja Abhinav, Lisanti Michael P., Martinez-Utschoorn Ubaldo Emilio (2023) Editorial: Hallmark of cancer: Reprogramming of cellular metabolism. *Frontiers in Oncology*. 12 (<https://www.frontiersin.org/articles/10.3389/fonc.2022.1126913>). **I.F. 6.244**
3. D Salaria, R Rolta, J Mehta, O Awofisayo, OA Fadare, **B Kaur,** B Kumar (2022) Phytoconstituents of traditional Himalayan Herbs as potential inhibitors of Human Papillomavirus (HPV-18) for cervical cancer treatment: An *In silico* Approach. *Plos One*. 17 (3), e0265420. **I.F. 3.752.**
4. **B Kaur,** R Rolta, D Salaria, B Kumar, OA Fadare, RA da Costa, A Ahmad, (2022) An *In Silico* Investigation to Explore Anti-Cancer Potential of *Foeniculum vulgare* Mill. Phytoconstituents for the Management of Human Breast Cancer. *Molecules*. 27 (13), 4077 **I.F. 4.927.**
5. Anshula Sharma, Vikrant Mehta, Suman Rani, Masafumi Noda, Masanori Sugiyama, Harish Chander and **Baljinder Kaur\*** (2022). Biomedical applications of L-alanine produced by *Pediococcus acidilactici* BD16 (*alaD*<sup>+</sup>). *Applied Microbiology and Biotechnology*. 106, 2811. **I.F. 5.56.**
6. Anshula Sharma, Masafumi Noda, Masanori Sugiyama, Balvir Kumar and **Baljinder Kaur\*** (2021). Application of *Pediococcus acidilactici* BD16 (*alaD*<sup>+</sup>) expressing L-

alanine dehydrogenase enzyme as a starter culture candidate for secondary wine fermentation. *Biotechnology and Biotechnological Equipmen.*, 35(1): 1643–1661. **I.F. 1.63.**

7. Anshula Sharma, Masafumi Noda, Masanori Sugiyama, **Baljinder Kaur\*** and Ajaz Ahmad\* (2021). Optimization of L-alanine production in the recombinant *Pediococcus acidilactici* BD16 (*alaD*<sup>+</sup>). *Biochemical Engineering Journal*. 177(108241):1-12. **I.F. 3.98.**
8. Anshula Sharma, Masafumi Noda, Masanori Sugiyama, **Baljinder Kaur\*** and Ajaz Ahmad\* (2021). Metabolic engineering of *Pediococcus acidilactici* BD16 for heterologous expression of synthetic *alaD* gene cassette and L-alanine production in the recombinant strain using fed-batch fermentation. *Foods*. 10,1964: 1-16. **IF 5.56.**
9. Anshula Sharma, Masafumi Noda, Masanori Sugiyama, Ajaz Ahmad and **Baljinder Kaur\*** (2021). Production of functional buttermilk and soymilk using *Pediococcus acidilactici* BD16 (*alaD*<sup>+</sup>). *Molecules*. 26, 4671, 1-25. **IF 4.927.**
10. Gaganjot Gupta, Deepak Bansal, Anshula Sharma, Tawseef Ahmad, Atul Sachdev, Ajaz Ahmad, Hamed A. El-Serehy, **Baljinder Kaur\*** (2021). GC/MS-based differential metabolic profiling of human peptic ulcer disease to study *Helicobacter pylori*-induced metabolic perturbations. *Biocell*. 45(3). Doi: 10.32604/biocell.2021.015411. **IF 1.254.**
11. Gaganjot Gupta, Deepak Bansal, Anshula Sharma, Tawseef Ahmad, AtulSachdev and **Baljinder Kaur\*** (2020). *In-vitro* evaluation of anti-*Helicobacter pylori* activity of commercially available probiotics. *International Journal of Pharmaceutical Sciences and Research*. 11(11): 5890-97. <http://doi:10.13040/IJPSR.0975-8232>.
12. Tawseef Ahmad, Gaganjot Gupta, Anshula Sharma, **Baljinder Kaur\***, Abdulaziz Abdullah Alsahliand, Parvaiz Ahmad\* (2020). Multivariate statistical approach to study spatiotemporal variations in water quality of a himalayan urban fresh water lake. *Water*. 12, 2365; <http://doi:10.3390/w12092365>. **IF 3.103.**
13. Tawseef Ahmad, Anshula Sharma, Gaganjot Gupta, Sheikh Mansoor, Sumira Jan, **Baljinder Kaur\***, Bilal Ahmad Paray, Ajaz Ahmad\* (2020). Response surface optimization of cellulase production from *Aneurinibacillus aneurinilyticus* BKT-9: An isolate of urban himalayan freshwater. *Saudi Journal of Biological Sciences*. 27(9): 2333-2343. **IF 4.219.**
14. Anshula Sharma, Gaganjot Gupta, Tawseef Ahmad, **Baljinder Kaur\***, Khalid Rehman Hakeem\* (2020). Tailoring cellular metabolism in lactic acid bacteria through metabolic engineering. *Journal of Microbiological Methods*. 170:105862. **IF 2.363.**

15. Anshula Sharma, Gaganjot Gupta, Tawseef Ahmad, Sheikh Mansoor\* and **Baljinder Kaur\*** (2021). Enzyme engineering: Current trends and future perspectives. *Food Reviews International*. 37:2, 121-154. [http:// doi:10.1080/87559129.2019.1695835](http://doi:10.1080/87559129.2019.1695835). **IF 6.478**.
16. Tejinder Kaur\*, Praveen P. Balgir and **Baljinder Kaur** (2019). Construction of a shuttle expression vector for lactic acid bacteria. *Journal of Genetic Engineering and Biotechnology*. 17, 10. <https://doi.org/10.1186/s43141-019-0013-4>.
17. Kewal Krishan, **Baljinder Kaur\*** and Anshula Sharma (2017). India's preparedness against bio-terrorism: Biodefense strategies and policy measures. *Current Science*. 113 (9): 1675-1682. **IF 1.102**.
18. Debkumar Chakraborty, Ammaiappan Selvam, **Baljinder Kaur\***, Jonathan Woon Chung Wong, Obulisamy Parthiba Karthikeyan (2017). Application of recombinant *Pediococcus acidilactici* BD16 (*fcs+/ech+*) for bioconversion of agrowaste to vanillin. *Applied Microbiology and Biotechnology*. 101(14):5615-5626. [http:doi:10.1007/s00253-017-8283-8](http://doi:10.1007/s00253-017-8283-8). **IF 5.56**.
19. Debkumar Chakraborty, **Baljinder Kaur**, Karthikeyan Obulisamy, Ammaiappan Selvam and Jonathan W.C. Wong (2017). Agrowaste to vanillin conversion by a natural *Pediococcus acidilactici* strain BD16. *Environmental Technology*. 38(13-14):1823-1834. **IF 3.247**.
20. Navneet Kaur, **Baljinder Kaur\*** and Geetika Sirhindi (2017). Phytochemistry and pharmacology of *Phyllanthus niruri* L. - A Review. *Phytotherapy Research*. 980-1004. **IF5.878**.
21. Debkumar Chakraborty, Gaganjot Gupta and **Baljinder Kaur\*** (2016). Metabolic engineering of *E.coli* Top 10 for production of vanillin through FA catabolic pathway and bioprocess optimization using RSM. *Protein Expression Purification*. 128:123-133. **IF 1.65**.
22. **Baljinder Kaur** and Navneet Kaur (2016). Metabolic fingerprinting of different populations of *Phyllanthus niruri* L. from Punjab using electro spray ionization mass spectrometry (ESI-MS). *Medicinal Chemistry Research*. 25:2798-2821. **IF 1.965**.
23. **Baljinder Kaur**, Navneet Kaur and Vikas Gautam (2016). Evaluation of Anti-*Helicobacter pylori* (DSMZ 10242) activity and qualitative analysis of quercetin by HPLC in *Phyllanthus niruri* Linn. *World Journal of Pharmacy and Pharmaceutical Sciences*, 1691-1706. **IF 7.632**.

24. **Baljinder Kaur\*** and Rajinder Kaur (2015). Purification of a dimeric arginine deiminase from *Enterococcus faecium* GR7 and study of its anti-cancerous activity. *Protein Expression Purification*. <http://doi:10.1016/j.pep.2015.09.011>. **IF 1.65.**
25. **Baljinder Kaur**, Balvir Kumar, Gaganjot Kaur, Debkumar Chakraborty, Kiranjeet Kaur (2015). Application of recombinant *Pediococcus acidilactici* BD16 (*fcs<sup>+</sup>/ech<sup>+</sup>*) in malolactic fermentation. *Applied Microbiology and Biotechnology*. <http://doi:10.1007/s00253-015-6413-8>. **IF 5.56.**
26. **Baljinder Kaur**, Balvir Kumar, Neena Garg, Navneet Kaur (2015). Statistical optimization of conditions for decolorization of synthetic dyes by *Cordyceps militaris* MTCC 3936 Using RSM. *BioMed Research International*. <http://dx.doi.org/10.1155/2015/536745>. **IF3.411.**
27. Praveen P. Balgir, **Baljinder Kaur** and Tejinder Kaur (2015) Gut microbiome dysbiosis in metabolic disorders. Implications for probiotics as prospective investigational new drugs. *Journal of Gastrointestinal Infections*. 5:1.
28. Bharti Mittu, **Baljinder Kaur** and Praveen P. Balgir (2015) Bacterial vaginosis. *Clinical Microbiology*, 4:3.
29. **Baljinder Kaur** and Rajinder Kaur (2014). Isolation, identification and genetic organization of the ADI operon in *Enterococcus faecium* GR7. *Annals of Microbiology*. <http://doi:10.1007/s13213-014-0981-1>. **IF2.11.**
30. **Baljinder Kaur**, Debkumar Chakraborty, Balvir Kumar (2014). Metabolic engineering of *Pediococcus acidilactici* BD16 for production of vanillin through ferulic acid catabolic pathway and process optimization using response surface methodology. *Applied Microbiology and Biotechnology*. <http://doi:10.1007/s00253-014-5950-x>. **IF 5.56.**
31. **Baljinder Kaur**, Balvir Kumar, Navneet Kaur, Geetika Sirhindi, Om Silakari, Neena Garg, Parminder Kaur (2014). Role of *Lactobacillus fermentum* as starter culture for malolactic fermentation to improve quality of white wines. *World Journal of Pharmacy and Pharmaceutical Sciences*. 3(3): 1687-1712.
32. **Baljinder Kaur**, Balvir Kumar, Navneet Kaur and Neena Garg (2014). Physico-chemical and Sensory characterization of red wines from Black grapes (*Vitis vinifera*) and Rose petals (*Rosa centifolia*) during dry and activated yeast based fermentation. *World Journal of Pharmacy and Pharmaceutical Sciences*. 3(3): 892-904.
33. Praveen P. Balgir, **Baljinder Kaur**, Tejinder Kaur, Natisha Daroch and Gurpreet Kaur (2014). Assessment of *in vitro* adhesion and *in vivo* colonization of *Pediococcus acidilactici* MTCC 5101 in human gut. *PAI newsletter*, vol. 1(6): 3-4.

34. Praveen P. Balgir, **Baljinder Kaur** and Tejinder Kaur (2014). A preliminary clinical evaluation of probiotic *Pediococcus acidilactici* MTCC5101 and *Bacillus coagulans* MTCC492 on young anemic women. *International Journal of Fermented Foods*. 3(1):45-59.
35. **Baljinder Kaur\*** and Debkumar Chakraborty (2013). Statistical media and process optimization for biotransformation of rice bran to vanillin using *Pediococcus acidilactici*. *Indian Journal of Experimental Biology*.51: 935-943. **IF 0.783**.
36. **Baljinder Kaur**, Neena Garg, Atul Sachdev, Balvir Kumar (2014). Effect of the oral intake of probiotic *Pediococcus acidilactici* BA28 on *Helicobacter pylori* causing Peptic Ulcer in C57BL/6 mice models. *Applied Biochemistry and Biotechnology*. 172: 973-983. **<http://doi:10.1007/s12010-013-0585-4>**. **IF2.92**.
37. **Baljinder Kaur\*** and Rajinder Kaur (2013). Application of response surface methodology for optimizing arginine deiminase production medium for *Enterococcus faecium* sp. GR7. *The Scientific World Journal*. **<http://doi: 10.1155/2013/892587>**. **IF:1.625**.
38. **Baljinder Kaur\***, Praveen P. Balgir, Bharti Mittu, Ashish Chauhan and Balvir Kumar (2013). Purification and physico-chemical characterization of anti-*Gardnerella vaginalis* bacteriocin HV6b produced by *Lactobacillus fermentum* isolate from human vaginal ecosystem. *American Journal of Biochemistry and Molecular Biology*. 3(1):91-100. **<http://doi: 10:3923/ajbmb.2013.91.100>**. **IF 0.167**.
39. Praveen P. Balgir, **Baljinder Kaur\***, Tejinder Kaur, Natisha and Gurpreet Kaur (2013). *In vitro* and *in vivo* survival and colonic adhesion of *Pediococcus acidilactici* MTCC5101 in human gut. *Biomed Research International*. **<http://dx.doi.org/10.1155/2013/ 583850>**. **IF 3.411**.
40. **Baljinder Kaur\***, Debkumar Chakraborty and Balvir Kumar (2013). Phenolic biotransformations during conversion of ferulic acid to vanillin by lactic acid bacteria. *Biomed Research International*. **<http://dx.doi.org/10.1155/2013/590359>**. **IF 3.411**.
41. **Baljinder Kaur\***, Praveen P. Balgir, Bharti Mittu, Balvir Kumar and Neena Garg (2013). Biomedical applications of fermenticin HV6b isolated from *Lactobacillus fermentum* HV6b MTCC10770. *Biomed Research International*. **<http://doi.org/10.1155/2013/168438>**. **IF 3.411**.
42. **Baljinder Kaur\***, Praveen P. Balgir, Bharti Mittu, Ashish Chauhan, Balvir Kumar and Neena Garg (2013). Antimicrobial spectrum of anti-*Gardnerella vaginalis* bacteriocin producing *Lactobacillus fermentum* HV6b against bacterial vaginosis associated



organisms. *American Journal of Drug Discovery and Development*. 2150-427X. <http://doi:10.3923/ajdd.2013.IF.0.108>.

43. **Baljinder Kaur\***, Debkumar Chakraborty, Gundeep Kaur and Gaganjot Kaur (2013). Biotransformation of rice bran to ferulic acid by pediococcal isolates. *Applied Biochemistry and Biotechnology*. <http://doi:10.1007/s12010-013-0223-1>. **IF 2.92**.
44. **Baljinder Kaur\*** and Neena Garg (2013). Characteristics of bacteriocin BA28 produced by *Pediococcus acidilactici* BA28. *Mintage Journal of Pharmaceutical and Medical Sciences*. 17-20. **IF 0.876**.
45. **Baljinder Kaur\***, Neena Garg and Atul Sachdev (2013). Optimization of bacteriocin production in *Pediococcus acidilactici* BA28 using response surface methodology. *Asian Journal of Pharmaceutical and Clinical Research*. 1(2): 1-5. **IF 0.53**.
46. **Baljinder Kaur\*** and Debkumar Chakraborty (2013). Biotechnological and molecular approaches for vanillin production: a review. *Applied Biochemistry and Biotechnology*. 01/2013. <http://doi:10.1007/s12010-012-0066-1>. **IF 2.92**.
47. **Baljinder Kaur\***, Neena Garg, Atul Sachdev, Balvir Kumar, Bharti Mittu and Ashish Chauhan (2012). Isolation and molecular characterization of anti-*Helicobacter pylori* bacteriocin producing *Pediococcus acidilactici* BA28. *Open Access Scientific Reports*. 1:323. <http://doi:10.4172/scientific-reports.323>.
48. Balvir Kumar\*, Praveen P. Balgir, **Baljinder Kaur**, Bharti Mittu and Ashish Chauhan (2012). In vitro cytotoxicity of native and rec-pediocin CP2 against cancer cell lines: A comparative study. *Pharmaceutica Analytica Acta*, 3(8). <http://doi:10.4172/2153-2435.1000183>. **IF 0.898**.
49. Balvir Kumar\*, Praveen P. Balgir and **Baljinder Kaur** (2012). Assessment of stability and biopreservative effect of recombinant pediocin CP2. *International Journal of Food and Fermentation Technology*. 2(2): 149-156.
50. **Baljinder Kaur\*** and Rajinder Kaur (2012). Statistical screening of media components for the production of arginine deiminase by *Weissella confusa* GR7. *International Journal of Food and Fermentation Technology*. 2(1): 71-79.
51. Balvir Kumar\*, Praveen P. Balgir, **Baljinder Kaur**, Bharti Mittu and Neena Garg (2012). Antimicrobial and spermicidal activity of native and recombinant pediocin CP2: a comparative evaluation. *Archives of Clinical Microbiology*, 3(3:4). <http://doi:10.3823/254>.
52. **Baljinder Kaur\***, Praveen P. Balgir, , Bharti Mittu, Harinder Singh, Balvir Kumar and Neena Garg(2012). Comparison of antimicrobial susceptibility of bacteriocins from lactic

acid bacteria with various antibiotics against *Gardnerella vaginalis*. *Asian Journal of Pharmaceutical and Clinical Research*. 5 (3):179-181. **IF 0.53**.

53. Balvir Kumar\*, Praveen P. Balgir and **Baljinder Kaur** (2012). Cloning and expression of rec-pediocin CP-2 in *Escherichia coli* using *OmpA* and *TAP* gene fusion approach. *International Journal of Food and Fermentation Technology*. 2(3):27-36.
54. **Baljinder Kaur\*** and Neena Garg (2012). Statistical optimization of ferulic acid esterase in *Aspergillus niger* isolate using response surface methodology. *Indian Journal of Applied Research*. 1(4): 1-6.
55. **Baljinder Kaur\***, Praveen P. Balgir, Bharti Mittu, Ashish Chauhan, Balvir Kumar and Neena Garg (2012). Isolation and in vitro characterization of anti-*Gardnerella vaginalis* bacteriocin producing *Lactobacillus fermentum* HV6b isolated from human vaginal ecosystem. *International Journal of Fundamental and Applied Sciences*. 1(3): 41-50.
56. Balvir Kumar, Praveen P. Balgir, **Baljinder Kaur\*** and Neena Garg (2011). Cloning and expression of bacteriocins of *Pediococcus* spp.: A review. *Archives of Clinical Microbiology*. 2(3:4). <http://doi:10:3823/231>.
57. **Baljinder Kaur\***, Praveen P. Balgir, Balvir Kumar and Neena Garg (2010). *Helicobacter pylori* infection: efficacy of probiotics and role of genome wide association studies. *Archives of Clinical Microbiology*. 1(4:3). <http://doi:10:3823/216>.
58. Praveen P. Balgir, Puja Bhatia and **Baljinder Kaur\*** (2010). Sequence analysis and homology modeling to assess structure-function relationship of pediocin CP2 of *Pediococcus acidilactici* MTCC 5101. *Indian Journal of Biotechnology*, 9: 431-434. **IF 0.414**.
59. **Baljinder Kaur\***, Balvir Kumar, Praveen P. Balgir and Puja Bhatia (2009). Comparative evaluation of media for pediocin production by *Pediococcus acidilactici* CP2 isolate. *International Journal of Probiotics and Prebiotics*. 4(4):233-240.
60. **Baljinder Kaur\***, Deb Chakraborty and Harinder Kaur (2009). Production and evaluation of physicochemical properties of red pigment from *Monascus purpureus* MTCC 410. *The Internet Journal of Microbiology*. 7(1).
61. **Baljinder Kaur\***, Deb Chakraborty and Harinder Kaur (2009). Production and stability analysis of yellowish pink pigments from *Rhodotorula rubra* MTCC 1446. *The Internet Journal of Microbiology*. 7(1).
62. **Baljinder Kaur\*** and Praveen P. Balgir (2008). Biopreservative potential of a broad-range pediocin CP2 obtained from *Pediococcus acidilactici* MTCC 5101. *Asian Journal of Microbiology, Biotechnology and Environmental Sciences*. 10(2): 439-444. **IF 0.154**.

63. **Baljinder Kaur\*** and Praveen P. Balgir (2007). Pediocin CP2 gene localization to plasmid pCP289 of *Pediococcus acidilactici* MTCC 5101. *The Internet Journal of Microbiology*. Vol. 3, No.2.
64. **Baljinder Kaur\*** and Praveen P. Balgir, (2004). Purification, characterization and antimicrobial range of bacteriocin obtained from an isolate of *Pediococcus* sp. *Journal of Punjab Academy of Sciences*. 1 (2), pp. 139-144.
65. Praveen P. Balgir, **Baljinder Kaur\*** and Parwinder P. Singh (2000). Anti-listerial microbial isolates from natural sources and their biopreservative potential. *Journal of Punjab Academy of Sciences*. 2 (1), pp. 23-25.

### **Books/Book Chapters**

1. Anshula Sharma, Gaganjot Gupta, Tawseef Ahmad, Kewal Krishan and **Baljinder Kaur\*** (2020). Next generation agents (synthetic agents): Emerging threats and challenges in detection, protection and decontamination. *In : Handbook on Biological Warfare Preparedness*, Elsevier Publications, pp: 217-256.
  2. Anshula Sharma, Ram Sarup Singh, Gaganjot Gupta, Tawseef Ahmad and **Baljinder Kaur\*** (2019). Metabolic engineering of enzyme-regulated bioprocesses. *In: Advances in Enzyme Technology*; Elsevier Publications, pp: 293-323.
  3. Tawseef Ahmad, Ram Sarup Singh, Gaganjot Gupta, Anshula Sharma and **Baljinder Kaur\*** (2019). Metagenomics in the search for industrial enzymes. *In: Advances in Enzyme Technology*; Elsevier Publications, pp: 419-451.
  4. **Baljinder Kaur\*** and Gaganjot Kaur (2016). Amelioration of *Helicobacter pylori* induced PUD by probiotic lactic acid bacteria. In: "Probiotics, prebiotics, and synbiotics- Bioactive foods in health promotion" Edited by R.R. Watson and V.R. Preedy, pp. 865-896. Elsevier Inc., USA. **ISBN No. 978-0-12-802189-7.**
  5. Harminder Kaur Dhillon and **Baljinder Kaur\*** (2014). Biotransformation of ferulic acid to vanillin by *Streptomyces* species. Lap Lambert Academic Publishing, Published on: 10-4-2014, Website: <https://www.lap-publishing.com/>. **ISBN: 978-3-659-22751-6.**
  6. Praveen P. Balgir and **Baljinder Kaur** (2005). Probiotic Functional Foods-New Concepts in Nutrition And Health. In: P.C. Trivedi (ed.) "*Advances in Biotechnology*", Agrobios (India), Jodhpur, India, pp. 147-174.
-

## Conference Proceedings

1. **Baljinder Kaur** and Neena Garg (2013). Health care applications of bacteriocin producing lactic acid bacterial isolates. Proceedings of International Conference on Women, Peace and Security, held at Punjabi University, Patiala (26<sup>th</sup> and 27<sup>th</sup> Oct 2012).
2. Praveen P. Balgir, **Baljinder Kaur** and Tejinder Kaur (2013). Role of probiotic fortified foods in health security of women. Proceedings of International Conference on Women, Peace and Security, held at Punjabi University, Patiala (26<sup>th</sup> and 27<sup>th</sup> Oct 2012).
3. **Baljinder Kaur**, Tejinder Kaur and Praveen P. Balgir (2012). Role of probiotic in reading post-partum obesity in women. Proceedings of International Conference on Mainstreaming Gender-issues and Challenges, held at Punjabi University, Patiala (2<sup>5th</sup> and 2<sup>6th</sup> Nov 2011).
4. Rajinder Kaur and **Baljinder Kaur** (2012). Beneficial bacteria: Probiotics and Cancer. Proceedings of International Conference on Mainstreaming Gender-issues and challenges, held at Punjabi University, Patiala (25<sup>th</sup> and 26<sup>th</sup> Nov 2011).

---

## List of Wokshops/Programmes Attended

1. The workshop on “Basics of Bio-informatics” held on 28-29<sup>th</sup> January, 2005 at Panjab University, Chandigarh.
2. Two days 3<sup>rd</sup> national workshop on “Reorientation in Life Sciences” organized by Dolphin (PG) college of Life Sciences, Chunni-Kalan and Indian Association of Biology Teachers (Colleges), Patiala, held on January 20-21, 2007.
3. UGC-sponsored orientation programme on “Pedagogical Issues in Teaching” held at Punjabi University, Patiala, from 06-07-2009 to 01-08-2009.
4. UGC-sponsored refresher course on “Life sciences (Biotechnology)” held at Punjabi University, Patiala, from 08-10-2010 to 28-10-2010.
5. Workshop cum Training Programme on “Bioinformatics: A Tool for Analyzing Genome and their Phylogenetic Relationship” organized by Bioinformatics Centre, Himachal Pradesh University, Shimla from September 13-17, 2010.
6. DBT & UGC sponsored national seminar on “Biotech Vistas-2011” organized by Department of Biotechnology, Punjabi University, Patiala, held on March 2-3, 2011.
7. UGC-sponsored refresher course on “Life sciences (Botany, Biotechnology, Human Biology, Bio-chemistry, Microbiology and Zoology)” held at Punjabi University, Patiala, from 04-12-2010 to 24-12-2012.

8. One day workshop on “Practical aspects on the importance of patents in research (PAIPR-2013)” held on February 12, 2013 organized by Intellectual Property Rights Cell (IPR-Cell) Punjabi University, Patiala and PSCST-Chandigarh.
  9. State Level Workshop on “Save Our Planet Earth” organized by Women’s Study Centre, Punjabi University, Patiala, held on November 20, 2013.
  10. 2<sup>nd</sup> International Workshop on Micronutrients and Child Health (MCHWS 2014) held on November 3-7, 2014, organized by Human Nutrition Unit, AIIMS, New Delhi.  
**Poster Entitled:** Amelioration of micronutrient deficiency by probiotic intervention in *Helicobacter pylori* infected children.
  11. Indo-UK Workshop on "Sustainable Polymer Applications" organized by Department of Biotechnology, Thapar University, Patiala from 8<sup>th</sup>-9<sup>th</sup> December, 2015.
  12. UGC-sponsored Workshop/Short term course on "Relevance of Research in society" organized by UGC-Human Resource Development Centre, Punjabi University, Patiala from 22<sup>nd</sup>-28<sup>th</sup> December, 2015.
  13. One day workshop on “New Age Teaching: Teachers Need to Unlearn” held at Punjabi University, Patiala on 22<sup>nd</sup> February, 2018.
  14. Entrepreneurship development program on 15 days e-learning EDP conducted by NIESBUD, Ministry of Skill Development and Entrepreneurship, Govt. of India from 26<sup>th</sup> February, 2018 to 12<sup>th</sup> March, 2018 in Patiala District of Punjab.
  15. Participated in “Export Import Management Program” on 27<sup>th</sup> October, 2018 organized by NEDC, conducted at Punjabi University, Patiala.
  16. Entrepreneurship development program on 15 days e-learning EDP conducted by NIESBUD, Ministry of Skill Development and Entrepreneurship, Govt. of India from 26<sup>th</sup> October, 2018 to 9<sup>th</sup> November, 2018 in Patiala District of Punjab.
  17. DST and ACS workshop:INST, Mohali, organized jointly by DST, Govt. of India and American Chemical Society, on November 20, 2019.
- 

#### **List of Conferences/Seminar/Symposia Attended**

1. National symposium “MED BIOTECH 2005” organized by Department of Biotechnology, Punjabi University, Patiala, on 2-3<sup>rd</sup> February, 2005.
2. 28<sup>th</sup> Annual Conference of Society of Toxicology and International symposium on “Monitoring and Modulating Global Resources of Environmental and Food Contaminants: nature versus chemicals” organized by Department of Pharmacology and Toxicology, College of Veterinary Science, GADVASU, Ludhiana on 16-18<sup>th</sup> October, 2008.

3. National symposium on Biotech 2009: Present and Future Perspectives, organized by Department of Biotechnology, Punjabi University, Patiala on March 19-20, 2009.
4. International symposium on “Cancer Chemoprevention and Translational research, held at School of Life Sciences, Jawaharlal Nehru University, New Delhi, India on December 21, 2009.
5. National seminar on “Bioengineered Foods: Strategies and Perspective” held at SLIET longowal during 20-21th November, 2009.
6. International conference on “Understanding and Managing pathogenic Microbes” organized by IMTECH, Chandigarh on 22-24 January, 2010.
7. International conference on “Women and Child Issues: National and International Perspectives” held at Punjabi University, Patiala on February 11-12, 2011.
8. DBT & UGC sponsored national seminar on “Biotech vistas-2011” organized by Department of Biotechnology, Punjabi University, Patiala, 2-3 March, 2011.
9. International conference on “Mainstreaming Gender: Issues and Challenges” held at Punjabi University, Patiala on November 25-26, 2011.  
**Paper:** Role of Probiotics in Post-partum obesity in women.
10. National seminar on “Genetically Modified Foods: Current Scenario” held from January 19-20, 2012 at Department of Biotechnology, Punjabi University, Patiala.
11. National Conference on “Applied Biosciences Prospectives and Challenges:ABPC-2012” organized by Mata Gujri College, Fatehgarh Sahib, February 3-4, 2012.  
**Paper:** Probiotic *Lactobacillus fermentum* HV6b: A novel therapeutic for bacterial vaginosis”.
12. 1st Annual Conference of “Probiotic Association of India” and International Conference on “Probiotics for Human Health: New Innovations and Emerging Trends”, held at India Habitat Centre, New Delhi, from August 27-28, 2012.
13. International Conference on “Women Peace and Security” organized by Women’s Study Centre, Punjabi University, Patiala on October 26-27, 2012.  
**Paper:** Application of Bacteriocin producing lactic acid bacterial isolates-towards health/security.
14. International Conference on “Industrial Biotechnology-ICIB”, organized by Department of Biotechnology, Punjabi University, Patiala on November 21-23, 2012.
15. 5th International conference on "Women and Development"organized by Women’s Study Centre, Punjabi University, Patiala, from November 22-23, 2013.  
**Paper:** Improvement of reproductive health by probiotic *Lactobacillus fermentum* HV6b

**Paper:** Role of Probiotic *Pediococcus acidilactici* in treatment of peptic ulcer disease

**Paper:** Role of probiotic fortified foods in prevention of anemia among adolescent girls

**Paper:** Importance of reproductive health in women by *Phyllanthus niruri* Linn.

16. National symposium on “Emerging Trends in Botanical Sciences” organized by Department of Botany, Punjabi University, Patiala, from February 17-18, 2014.

17. 4<sup>th</sup> Biennial conference of Gastrointestinal Infection Society of India “GISICON 2014” organized by Department General Medicine and Microbiology, GMCH, Sector 32, Chandigarh from April 11-12, 2014.

**Paper:** Effect of the oral intake of *Pediococcus acidilactici* BA28 on *Helicobacter pylori* induced peptic ulcers in C57BL/6 mice model.

18. 7th International conference on "Empowering Women, Empowering Humanity" organized by Women's Studies Centre, Punjabi University, Patiala from December 11-12, 2015.

**Paper Entitled:** Gynecological Health and Probiotics

---

### List of Master’s project work guided

Sr. No.	YEAR	NAME OF THE STUDENT	RESEARCH TOPIC
1.	2006-07	Romika	Molecular weight and restriction pattern analysis of pCP289 isolated from <i>P. acidilactici</i> MTCC5101
2.	2006-07	Mashal	Biopermeabilization and antimicrobial applications of purified pediocin CP2 produced from <i>P. acidilactici</i> MTCC5101
3.	2007-08	Priyanka Kataria	Synergistic effect of pediocin in combination with chemical preservatives against <i>Listeria monocytogenes</i> and <i>Pediococcus</i> sp.
4.	2007-08	Harpreet Kaur	Role of acetic acid in induction of class IIa pediocin in <i>Pediococcus acidilactici</i> MTCC 5101.
5.	2008-09	Navneet Kaur	Media optimization and partial characterization of pigments produced by natural fungal isolates
6.	2008-09	Jaspreet Kaur	Isolation and antimicrobial spectrum of bacteriocins produced by natural <i>Pediococcus acidilactici</i> isolates
7.	2008-09	Randhir Singh	Assessment of chemical and microbiological quality of plain and fruit fortified yogurts
8.	2008-09	Rajni	Quality evaluation and shelf life assessment of fruit fortified yogurt drinks
9.	2008-09	Veerpaul Kaur	Biodegradation of textile dyes by natural microbial isolates
10.	2008-09	Dharam Singh	Natural adsorbents for removal of textile dyes from aqueous solutions
11.	2008-09	Kulwinder Kaur	Morphological characterization and study of ferulic acid

			esterase (FAE) activity of natural <i>Aspergillus</i> isolates
12.	2008-09	Neena Garg	Production studies on ferulic acid esterase (FAE) activity of natural <i>Aspergillus</i> isolates
13.	2009-10	Navneet Kaur	Statistical optimization of medium for the production of extracellular arginine deiminase (ADI) in a microbial isolate by response surface methodology
14.	2009-10	Harminder Kaur Dhillon	Isolation and partial characterization of FAE+ <i>Streptomyces</i> species for biotransformation of ferulic acid to vanillin
15.	2009-10	Pawandeep Kaur Dhillon	Production and partial characterization of pigments produced by fungal isolate YP2
16.	2009-10	Anu Aggarwal	Morphological and biochemical characterization of <i>Streptomyces</i> isolates and study of their antimicrobial spectrum
17.	2009-10	Preetinder Singh	Production, purification and antimicrobial spectrum of bacteriocins produced by lactic acid bacteria
18.	2010-11	ArunBhushan Bali	Study of biopreservative potential of pediocin CP2 produced by <i>Pediococcus acidilactici</i> MTCC 5101
19.	2010-11	Amandeep Kaur	Insilico analysis and designing of PCR primers for ech and fcs gene cassette of <i>Amycolaptosis sacchari</i> MTCC 4017 and their validation by PCR
20.	2010-11	Jasmine Kaur	Effect of various substrates, nitrogen sources and culture conditions on pigment production in <i>Monascus</i> species
21.	2010-11	Pawanjot Kaur Hayer	Statistical optimization of critical culture conditions for production of bacterial arginine deaminase using response surface methodology
22.	2010-11	Mohd. Zishan	Insilico analysis of human enterokinase cDNA and its cloning in <i>E. coli</i> DH5 $\alpha$
23.	2011-12	Rattandeep Kaur	Identification and amplification of <i>vdh</i> homologs in <i>Pediococcus</i> isolate GD-1
24.	2011-12	Gagandeep Kaur Sidhu	Sequence analysis, primer designing and amplification of <i>arcA</i> gene of lactic acid bacterial isolate GR
25.	2011-12	Divya	Preparation and quality analysis of fruit fortified yoghurt drinks
26.	2011-12	Anu	Assessment of stability and biopreservative potential of partially purified bacteriocin produced by <i>Pediococcus</i> sp. BA28
27.	2011-12	Amanjeet Kaur	Statistical optimization of bacteriocin production by <i>Pediococcus acidilactici</i> CP2 using response surface methodology
28.	2011-12	Diljot Kaur Kang	Preparation and quality evaluation of fruit fortified drinkable yoghurts
29.	2011-12	Navreet Kaur	Preparation, clarification and quality evaluation of various fruit wines
30.	2012-13	Dalzinder Kaur	Statistical optimization of process variables for enhancing biomass production and arginine deiminase production in bacterial isolate GR6
31.	2012-13	Shelly Saini	Studies on effect of edible coatings on physiochemical and microbiological properties of white button mushrooms and enhancement of their shelf life



32.	2012-13	Parvinder Kaur	Influence of malolactic fermentation on sensory, physiochemical and microbiological properties of white wine
33.	2012-13	Manjot Kaur	Assessment and optimization of textile dye decolorization properties of white rot fungi using response surface methodology
34.	2012-13	Manpreet Kaur Brar	Study of sensory attributes, physico-chemical and microbiological properties of red wine.
35.	2013-14	Kiranjeeet Kaur	Production and malo-lactic fermentation of wines and comparison of wine phenolics by ESI mass spectral analysis
36.	2013-14	Amritpal Kaur	Phenolic characterization of <i>Phyllanthus niruri</i> Linn. by biochemical and ESI analysis
37.	2013-14	Ramandeep Kaur	Biochemical analysis of sugarcane wine and optimization of vinegar production using response surface methodology
38.	2013-14	Gurjinder Kaur	Biochemical analysis of red beet wine and optimization of vinegar production using response surface methodology
39.	2013-14	Arshdeep Kaur	Genetic and phenolic characterization of <i>Phyllanthus niruri</i> Linn.
40.	2014-15	Pratibha	Production optimization of bacterial naringinases and their application in enzymatic debittering of citrus juices and wine
41.	2014-15	Hardeep Kaur	Production optimization of bacterial limonoidglucosyl transferases and their application in enzymatic debittering of citrus juices and wine
42.	2014-15	Amandeep Kaur	Production optimization of bacterial limonoid dehydrogenases and their application in enzymatic debittering of citrus juices and wine
43.	2014-15	Monika Bhambla	Biochemical characterization of Kiwi wine before and after malo-lactic fermentation using mass spectroscopy
44.	2015-16	Amandeep Kaur	Identification of metabolic perturbation induced by metal exposure in lactic acid bacteria
45.	2015-16	Ramandeep Kaur	Statistical optimization of naringinase production in bacterial isolate
46.	2015-16	Hardeep Kaur	Statistical optimization of limonoidglucosyl transferase production in bacterial isolate
47.	2015-16	Ravi Raushan	Identification of metabolic perturbation induced by heat and cold stresses in lactic acid bacteria
48.	2015-16	Baltej Singh	Identification of metabolic perturbation induced under salt stress conditions in lactic acid bacteria
49.	2016-17	Kiranbir Kaur	Phytochemical profiling of Hydroalcoholic extract of <i>C. sativa</i> L. using GC-MS
50.	2016-17	SakshiKakkar	GC-MS based characterization of hydro-alcoholic extracts of <i>Foeniculum vulgare</i> L.
51.	2016-17	Snehpreet Kaur	Phytochemical analysis of hydroalcoholic extract of <i>T. foenum-graecum</i>
52.	2016-17	Shivani Yadav	GC-MS based characterization of hydroalcoholic extract of <i>Ocimum sanctum</i>
53.	2017-18	Bhawna	Isolation, Screening of pectinase producing bacterial isolates from environmental sources and optimization of enzyme by one factor analysis
54.	2017-18	Diksha Kapil	Comparative analysis of metabolomic profiles and anti-

			microbial activities of commercially available probiotics
55.	2017-18	Navneet Kaur	Comparative analysis of metabolomic profiles and anti-microbial activities of commercially available probiotics
56.	2017-18	Parul	Partial biochemical characterization and comparative metabolic profiling of leaf and seed extracts of <i>Murraya koenigii</i>
57.	2017-18	Sakshi Dadwal	Isolation and screening of lipase producing bacterial isolates from environmental sources and optimization of enzyme by one factor analysis
58.	2017-18	Sinthia Mangi	Partial biochemical characterization and comparative metabolic profiling of leaf and seed extracts of <i>Murraya koenigii</i>
59.	2018-19	Pawan Kumar	GC-MS based comparative characterization of hydroalcoholic leaf and seed extracts of <i>Carica papaya</i>
60.	2018-19	Rhythm	Study of L-alanine production in recombinant <i>Enterococcus faecalis</i> MTCC 9845
61.	2018-19	Nymphe	GC-MS based comparative characterization of hydroalcoholic leaf and seed extracts of <i>Carica papaya</i>
62.	2018-19	Navjot Kaur	GC-MS based comparative characterization of stem and leaf hydroalcoholic extracts of <i>Tinospora cordifolia</i>
63.	2018-19	Ravneet Kaur	Application of recombinant <i>Lactobacillus brevis</i> MTCC 1750 for in situ alanine production in rose and grape wines
64.	2018-19	Vikramjeet Singh	Application of recombinant <i>Lactobacillus brevis</i> MTCC1750 for in situ alanine production in kiwi wine
65.	2019-20	Benaf	Lactic acid bacteria as potential candidates for metabolic engineering and amino acid production
66.	2019-20	Daljeet	
67.	2019-20	Jaipreet	L-alanine: Properties, chemical, enzymatic and microbial synthesis in <i>Escherichia coli</i>
68.	2019-20	Inderpreet Kaur	
69.	2019-20	Gurpreet Singh	L-alanine: Synthesis, therapeutic properties and potential in the inhibition of kidney stone formation
70.	2020-21	Beant Kaur	Statistical optimization of L-alanine production in recombinant <i>E. coli</i> BL21(DE3) ( <i>alaD</i> +) )
71.	2020-21	ShyamanandaThongam	Preparation of functional buttermilk and soymilk using <i>Lactobacillus fermentum</i> HV6b ( <i>alaD</i> +) and their characterization by untargetted GC-MS based metabolomics approach
72.	2020-21	Mansi Shahi	
73.	2020-21	Sukhpreet Kaur	Preparation of fermented apple and pineapple juices using <i>Lactobacillus fermentum</i> HV6b ( <i>alaD</i> +) and their characterization by untargetted GC-MS based metabolomics approach
74.	2020-21	Gagandeep Kaur	
75.	2020-21	Neelam	Preparation of fermented pomegranate and guava juices using <i>Lactobacillus fermentum</i> HV6b ( <i>alaD</i> +) and their characterization by untargetted GC-MS based metabolomics approach
76.	2020-21	Sneha Thakur	
77.	2021-22	Navdeep Kaur	Phenolic biotransformations in Dragon Fruit – Wild Rose

78.	2021-22	Rimsha Thakur	wine after primary and secondary fermentation
79.	2021-22	Money Kumra	Phenolic biotransformations in Dragon Fruit wine after primary and secondary fermentation
80.	2021-22	Manpreet Kaur	
81.	2021-22	Nidhi Guleria	Phenolic biotransformations in wine prepared using Wheat grass after primary and secondary fermentation
82.	2021-22	Jashandeep Kaur	
83.	2021-22	Raman Kumar	Microbial production of vanillin and other phenolics on Bagasse supplemented media
84.	2021-22	Rama Kumari	
85.	2022-23	Saloni Salhotra	Phenolic characterization of herbal wine after primary and secondary fermentation
86.	2022-23	Raviinder Singh	Phenolic characterization of figs fruit wine after primary and secondary fermentation
87.	2022-23	Gaganpreet Kaur	
88.	2022-23	Parmjit Kaur	Phenolic derivatization during microbial production of vanillin using oats powder hydrolysates (OPH) and rice bran hydrolysates (RBH)
89.	2022-23	Anchali Devi	
90.	2022-23	Gurpreet Kaur	Phenolic characterization of dates fruit wine after primary and secondary fermentation
91.	2022-23	Kuldeep Singh	
92.	2022-23	Radhika	Selection of microorganisms for the production of vanillin in different substrates hydrolysates
93.	2022-23	Muskan Mahajan	