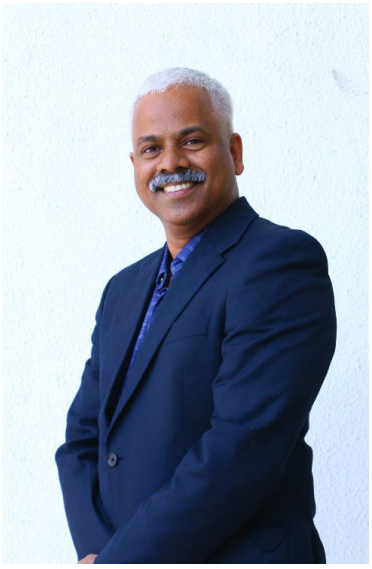
Dr. Bipinraj N. K.

k.bipinraj@bharatividyapeeth.edu / bipinrajnk@gmail.com



Name and designation	**Dr. Bipinraj NK, Assistant Professor**, Rajiv Gandhi Institute of IT & Biotechnology, Pune
Educational qualifications	**Ph.D. in Microbiology 2006** **CSIR NET** M.Sc. in Biotechnology (69%) 1999 B.Sc. in Botany (73%) 1997
Teaching experience	From Sep. 2005 till date Microbiology (PG) Fermentation Technology (PG) Nano-Biotechnology (PG) Applied Biotechnology(UG) Genetics (UG)
Research Project	**Major Research Project:** **DBT-BUILDER-University of Bharati Vidyapeeth (Deemed to be University) Rajiv Gandhi Institute of IT and Biotechnology Interdisciplinary Life Science Programme for Advance Research and Education (Co PI)** **Purification and characterization of anti-candida molecules from Bacillus sp isolated from vada batter, Funded By DST, New Delhi (35 L)** **Minor Research Project: Isolation of pathogenic candida albicans and its inhibition using probiotic bacteria (BVDU, Rs. 0.5 L)** **In vivo studies on essential fatty acid producing probiotic picroorganisms (BVDU, Rs. 0.6 L)**
Research Experience	**Probiotics and prebiotics** (Exploration of different sources for probiotics and its medical and agricultural application) **Medical Microbiology** (Control of pathogenic candida using probiotics) **Nano-biotechnology** (Bio-Nano integrated system for control of pathogenic *Candida albicans* , synthesis of gold nanoparticles from gold cyanide waste) **Food microbiology** (Control of food pathogen by bacteriocins producing bacteria, Isolation of probiotic bacteria from Yak milk) **Environmental Microbiology** (Removal of metal cyanides using bacteria) **Plant microbe interaction** (Antimicrobial activity of herbal extracts) **Environmental Biotechnology** (Waste water treatment using plant extracts) **Agricultural Microbiology** (Isolation of Trichoderma- a Biopesticide, Control of Xanthomonas by plant extracts) Control of Xanthomonas pathogen using plant extracts
Publications	37

Administrative experience	**Member of Faculty of Science: Bharati Vidyapeeth Deemed University** **In-charge:** Technical Cell, Rajiv Gandhi Institute of IT & Biotechnology **NAAC coordination** of Rajiv Gandhi Institute of IT & Biotechnology **Member of Faculty of Science (2014)** **Member of BOS** Member of Syllabus designing/revision committee Member of various administrative bodies
Ph.D Completed under the guidance	**1 Awarded, 1 Submitted** **3 (Ongoing)**

Latest Publications

Understanding the Correlation of Diet, Immunity, and Probiotics: A Credible Implication in SARS-CoV2 Infection (Review, In press)	Biosciences Biotechnology Research Asia					2022
Media standardization and partial purification of anti-candida compound of probiotics cultures (In Press)	Biosciences Biotechnology Research Asia					2022
Probiotic Characterization of Cholesterol-Lowering Saccharomyces cerevisiae Isolated from Frass of *Pyrrharctia isabella* Caterpillars	Applied Food Biotechnology	8	3	189-199	2021	
Isolation of Lactobacillus from donkey dung and its probiotic characterization	Korean Journal of Microbiology	56	2	160-169	2020	
Probiotic characterization and cholesterol assimilation ability of Pichia kudriavzevii isolated from the gut of the edible freshwater snail "*Pila globosa*".	Egyptian Journal of Aquatic Biology & Fisheries	24	7	23-39	2020	
Probiotic Characterization of Anti-candida Bacillus	Research Journal of Biotechnology	15	11	22-29	2020	
Isolation and identification of Saccharomyces cerevisiae from caterpillar frass and their probiotic characterization	Biosciences Biotechnology research Asia	16	1	179-186	2019	
Isolation and Identification of Actinomycetes with Anticandida Activity from Mangrove Soil	Biosciences Biotechnology Research Asia	16	3	611-615	2019	
Effect of edaphic factors on major secondary metabolites of	International Journal of	10	7	3386-3394	2019	

Tinospora Cordifolia and neem guduchi with respect to their immunomodulatory effect	Pharmaceutical Sciences and Research				
Bacillus Tequlensis: a potential inhibitor of drug resistant non albicans candida species with cell surface properties	World journal of pharmacy and pharmaceutical sciences	8	11	1306-1321	2019
Anti-bacterial activity of homoeopathic medicine Sulphanilamide against *Staphylococcus epidermidis* in-vitro	International Journal of Health Sciences & Research	9	12	44-48	2019
An in-vitro Study to Evaluate the Anti-Bacterial Activity of *Rauvolfia serpentina* against Escherichia coli	International Journal of Health Sciences and Research	9	12	39-43	2019
Probiotic Characteristics of Anti-Candida Bacillus Tequilensis Isolated From Sheep Milk and Buffalo Colostrums	International Journal of Health Sciences and Research	8	8	254-260	2018
In vitro evaluation for antidandruff activity of selected homoeopathic medicines against *Pityrosporum Ovale*	International Journal of Research and Analytical Reviews	5	3	680-683	2018
In-vitro study for the anti–candida activity of Homoeopathic medicines against Candida albicans	Int J Health Sci Res	8	9	57-61	2018
In-vitro study for anti-fungal activity of Homoeopathic Medicines against plant fungus *Ashbya gossypii*	International Journal of Research and Analytical Reviews	5	4	466-470	2018
In-vitro studies for anti-fungal activity of Homoeopathic Medicines against plant fungus *Aspergillus niger*	IJRAR-International Journal of Research and Analytical Reviews	5	4	510-515	2018
In vitro studies for anti-fungal activity of Homoeopathic medicines against plant fungus *Gibberella fujikuroi*.	International Journal of Research and Analytical Reviews	5	4	559-604	2018
A study on Isolation of *Bacillus Tequilensis* and its Antimicrobial Activity	International Journal of Creative Research Thoughts	6	1	127-132	2018

Sequences Submitted

Saccharomyces cerevisiae CP-I rRNA-ITS gene, partial sequence. In: Saccharomyces cerevisiae CP I [Internet]. India: DNA Data Bank of Japan (DDBJ)	DNA Data Bank of Japan (DDBJ); 2020 February. DDBJ/EMBL/GenBank: LC528139.	2020
Bacillus subtilis strain RSMAB1 16S ribosomal RNA gene, partial sequence. In: Bacillus subtilis RSMAB1 [Internet]. India: National Center for Biotechnology Information (NCBI); 2020February. Availablefrom: https://www.ncbi.nlm.nih.gov/nuccore/MW368768	https://www.ncbi.nlm.nih.gov/nuccore/MW368768.1. NCBI:Gene: MW368768.1.	2020
Enterococcus faecium strain BMM3 16S ribosomal RNA gene, partial sequence. In: Enterococcus faecium BMM3 [Internet]. India: National Center for Biotechnology Information (NCBI); 2020 February. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MW36	https://www.ncbi.nlm.nih.gov/nuccore/MW368767.1. NCBI:Gene: MW368767.1.	2020
Staphylococcus succinus strain WC 16S ribosomal RNA gene, partial sequence. In: Staphylococcus succinus WC [Internet]. India: National Center for Biotechnology Information (NCBI); 2020 February. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MW	https://www.ncbi.nlm.nih.gov/nuccore/MW368766.1. NCBI:Gene: MW368766.1.	2020
Pichia kudriavzevii S-I rRNA-ITS gene, partial sequence. In: Pichia kudriavzevii S-I [Internet]. India: DNA Data Bank of Japan (DDBJ); 2020 February. DDBJ/EMBL/GenBank: LC528140.	DDBJ/EMBL/GenBank: LC528140	2020
Candida albicans CA14 rRNA-ITS gene, partial sequence. In: Candida albicans CA14 [Internet]. India: DNA Data Bank of Japan (DDBJ); 2020 February. DDBJ/EMBL/GenBank: LC528141.	DDBJ/EMBL/GenBank: LC528141.	2020

Saccharomyces cerevisiae MD rRNA-ITS gene, partial sequence. In: Saccharomyces cerevisiae MD [Internet]. India: DNA Data Bank of Japan (DDBJ); 2020 February. DDBJ/EMBL/GenBank: LC528142.	DDBJ/EMBL/GenBank: LC528142.	2020
Rhodotorula mucilaginosa ROC-I rRNA-ITS gene, partial sequence. In: Rhodotorula mucilaginosa ROCI [Internet]. India: DNA Data Bank of Japan (DDBJ); 2020 February. DDBJ/EMBL/GenBank: LC528143.	DDBJ/EMBL/GenBank: LC528143.	2020
Bacillus subtilis strain B27 16S ribosomal RNA gene, partial sequence. In: Bacillus subtilis B27 [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MK611558.1. NCB	: https://www.ncbi.nlm.nih.gov/nuccore/MK611558.1. NCBI: Gene: MK611558.1.	2019
Bacillus tequilensis strain B3 16S ribosomal RNA gene, partial sequence. In: Bacillus tequilensis B3 [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MK611557.1	https://www.ncbi.nlm.nih.gov/nuccore/MK611557.1. NCBI:Gene: MK611557.1.	2019
Bacillus tequilensis strain B9 16S ribosomal RNA gene, partial sequence. In: Bacillus tequilensis B9 [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MK611555.1.	https://www.ncbi.nlm.nih.gov/nuccore/MK611555.1. NCBI:Gene: MK611555.1	2019
Bacillus tequilensis strain B19 16S ribosomal RNA gene, partial sequence. In: Bacillus tequilensis B19 [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MK611554.	https://www.ncbi.nlm.nih.gov/nuccore/MK611554.1. NCBI:Gene: MK611554.1.	2019

Streptomyces viridochromogenes strain MB 16S ribosomal RNA gene, partial sequence. In: Streptomyces viridochromogenes strain MB [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.	https://www.ncbi.nlm.nih.gov/nuccore/MK611553.1. NCBI:Gene: MK611553.1.	2019
Bacillus tequilensis strain FS 16S ribosomal RNA gene, partial sequence. In: Bacillus tequilensis FS [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MK615611.1.	https://www.ncbi.nlm.nih.gov/nuccore/MK615611.1. NCBI:Gene: MK615611.1.	2019
Bacillus tequilensis strain FW 16S ribosomal RNA gene, partial sequence. In: Bacillus tequilensis FW [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MK615610.1.	https://www.ncbi.nlm.nih.gov/nuccore/MK615610.1. NCBI:Gene: MK615610.1.	2019
Bacillus tequilensis strain SHW 16S ribosomal RNA gene, partial sequence. In: Bacillus tequilensis SHW [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MK615609.	https://www.ncbi.nlm.nih.gov/nuccore/MK615609.1. NCBI:Gene: MK615609.1.	2019
Bacillus tequilensis strain COBT 16S ribosomal RNA gene, partial sequence. In: Bacillus tequilensis COBT [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MK61560	https://www.ncbi.nlm.nih.gov/nuccore/MK615608.1. NCBI:Gene: MK615608.1.	2019
Bacillus tequilensis strain JF14+1 16S ribosomal RNA gene, partial sequence. In: Bacillus tequilensis JF14+1 [Internet]. India: National	https://www.ncbi.nlm.nih.gov/nuccore/MK615607.1. NCBI:Gene: MK615607.1.	2019

Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MK6		
Bacillus tequilensis strain JF5 16S ribosomal RNA gene, partial sequence. In: Bacillus tequilensis JF5 [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MK615606.	https://www.ncbi.nlm.nih.gov/nuccore/MK615606.1. NCBI:Gene: MK615606.1.	2019
Bacillus tequilensis strain MP15(2) 16S ribosomal RNA gene, partial sequence. In: Bacillus tequilensis MP15(2) [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/M	https://www.ncbi.nlm.nih.gov/nuccore/MK615605.1. NCBI:Gene: MK615605.1.	2019
Bacillus tequilensis strain Ba5 16S ribosomal RNA gene, partial sequence. In: Bacillus tequilensis Ba5 [Internet]. India: National Center for Biotechnology Information (NCBI); 2019 March. Available from: https://www.ncbi.nlm.nih.gov/nuccore/MK615604.	https://www.ncbi.nlm.nih.gov/nuccore/MK615604.1. NCBI:Gene: MK615604.1.	2019
Cultured Prokaryotic 16S rRNA / CULTURE ISOLATED FROM DONKEY DUNG. In: Lactobacillus plantarum [Internet]. India: National Center for Biotechnology Information (NCBI); 2019March. Available.from: https://submit.ncbi.nlm.nih.gov/subs/genbank/SUB5294299	https://submit.ncbi.nlm.nih.gov/subs/genbank/SUB5294299/overview. NCBI:Gene: MK608674.	2019

- **Research experience: 18 years**

1. **Assistant Professor**
   Rajiv Gandhi Institute for Information Technology and Biotechnology,
   Bharati Vidyapeeth Deemed University

From November, 2005- till date

Current research work

a) Formulation of synbiotic based product
b) Probiotic characterization of various bacteria and yeast isolated from different habitats.
c) Prebiotic characterization of traditional food material.
d) Control of pathogenic candida using probiotic bacteria isolated from food sources
e) Inhibition of *Candida albicans* using a bio-nano approach

Carried out following research projects

a) Characterization of anti-candida probiotics
b) Anticandidal activity of probiotics isolated from different food sources
c) Inhibition of pathogenic candida using various nanoparticles
d) Antimicrobial activities of selected medicinal and mangrove plants
e) Inhibition of *Clostridium* sp by bacteriocins
f) Control of plant pathogens (*Xanthomonas axonopodis* pv *punicae*) using plant extracts and microbes
g) Studies on plant growth promoting bacteria in saline conditions
h) Molecular profiling of strawberry cultivars grown in Maharashtra
i) Bioprospecting of ethnobotanically important plants

2. Senior Research Fellow

Council for Scientific and Industrial Research (CSIR), India.
Agharkar Research Institute, Pune, India
From 2002 to 2005

Carried out following research

a) Conversion of gold cyanide to gold nanoparticles by cyanide degrading bacteria.
b) Purified thiocyanate degrading enzyme from *Pseudomonas* sp.
c) Characterized a bacterial consortium degrading thiocyanate and cyanides under saline alkaline conditions.

The above work was published in the Proceedings of International Bio-hydrometallurgy Symposium (Elsivier), Amsterdam.2004

3. Junior Research Fellow

Council for Scientific and Industrial Research (CSIR), India.
Agharkar Research Institute, Pune, India
From 2000 to 2002

Carried out following research

a) Worked on removal of cyanide, metal cyanide, thiocyante and heavy metals from industrial effluents using free, immobilized cells and biological reactors cyanides under saline alkaline conditions.

The above work was presented at the XII International Bioremediation and Bio Degradation Symposium (Biosorption and Bioremediation III), Prague.2002

4. Project Trainee

Rajiv Gandhi Center for Biotechnology, Thiruvananthapuram, India

Carried out following research

a) Identified diversity in two ethnic groups of Kerala using microsatellite markers.
b) Trained in human chromosomal DNA isolation, plasmid isolation, purification of proteins and production of polyclonal antisera.

Co-curricular activities organized at RGITBT

a) Organized entrepreneurship Camp
b) Conducted Journal Club for M.Sc. students
c) Organized CSIR-NET coaching for M.Sc. students
d) Conducted JNU NET preparation classes for B.Sc. students
e) Saturday Scientific movie shows
f) Organized field and industrial visit