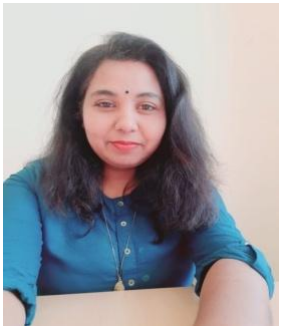
CURRICULUM VITAE

Name of faculty member Dr. Monu Bala
Date of Birth: 26-08-1982
Designation: Assistant Professor
Qualification: M.Sc. Zoology Ph.D
E-mail: monubala4@gmail.com
College G. P.G.C Syalde Almora



Research interest /Specializations

Next Generation Sequencing, Microbial Genomics, Microbial Ecology, Enzyme Technology.

Academic Qualifications:

August 2008 – August 2014	**:**	Ph.D. in Biotechnology (Specialization in Microbiology) thesis submitted, under the guidance of Dr. S. Mayilraj, Principal scientist, Microbial Type Culture Collection, Institute of Microbial Technology, Chandigarh, India.
Ph.D. thesis title	**:**	Exploration and exploitation of marine *Actinobacteria* with special reference to cholesterol oxidase .
June 2003 – June 2005	**:**	M.Sc. in Zoology, Kumaun University, First Class (64%).
June 2000 – June 2003	**:**	B.Sc. in Zoology, Botany, Chemistry, Kumaun University, First Class (60%).

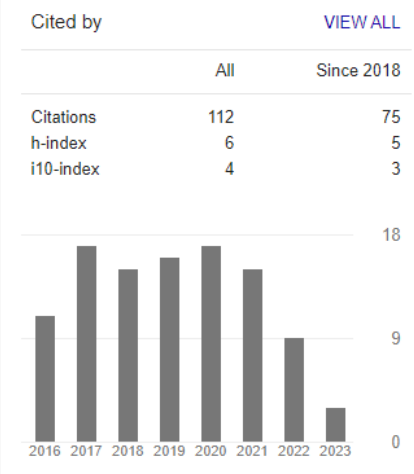
Awards and Fellowships:

June 2006	**:**	Qualified CSIR-UGC National eligibility Test (NET) for Lecturership.
December 2007	**:**	Qualified CSIR-UGC Junior Research Fellowship

Teaching Experience	05 years as contract faculty, 3 years as Regular faculty

Publications

Research Publications:



	TITLE	YB DETIC	YEAR
☐	Taxonomic description and genome sequence of *Bacillus campisalis* sp. nov., a member of the genus *Bacillus* isolated from a solar saltern RM Kumar, G Kaur, A Kumar, M Bala, NK Singh, N Kaur, N Kumar, ... International journal of systematic and evolutionary microbiology 65 (Pt_10 …	26	2015
☐	Isolation and characterization of a novel Gram-negative bacterium *Chromobacterium alkanivorans* sp. nov., strain IITR-71^T degrading halogenated alkanes A Bajaj, A Kumar, S Yadav, G Kaur, M Bala, NK Singh, R Mathan Kumar, ... International journal of systematic and evolutionary microbiology 66 (12 …	21	2016
☐	*Kocuria sediminis* sp. nov., isolated from a marine sediment sample M Bala, C Kaur, I Kaur, F Khan, S Mayilraj Antonie Van Leeuwenhoek 101, 469-478	20	2012
☐	*Bacillus mesophilum* sp. nov., strain IITR-54^T, a novel 4-chlorobiphenyl dechlorinating bacterium N Manickam, NK Singh, A Bajaj, RM Kumar, G Kaur, N Kaur, M Bala, ... Archives of microbiology 196, 517-523	16	2014
☐	Taxonomic description and genome sequence of *Salinicoccus sediminis* sp. nov., a halotolerant bacterium isolated from marine sediment RM Kumar, G Kaur, N Kumar, A Kumar, NK Singh, M Bala, N Kaur, ... International Journal of Systematic and Evolutionary Microbiology 65 (Pt_11 …	9	2015

☐	Draft Genome Sequence of Amycolatopsis decaplanina Strain DSM 44594^{T} N Kaur, S Kumar, M Bala, GPS Raghava, S Mayilraj Genome announcements 1 (2), e00138-13	6	2013
☐	Agromyces arachidis sp. nov. isolated from a peanut (Arachis hypogaea) crop field C Kaur, AK Pinnaka, NK Singh, M Bala, S Mayilraj International journal of microbiology 2013	6	2013
☐	Draft genome sequence of Rhodococcus triatomae strain BKS 15-14 S Kumar, M Bala, GPS Raghava, S Mayilraj Genome announcements 1 (2), e00129-13	4	2013
☐	Draft genome sequence of Rhodococcus qingshengii strain BKS 20-40 M Bala, S Kumar, GPS Raghava, S Mayilraj Genome announcements 1 (2), e00128-13	2	2013
☐	Draft genome sequence of Rhodococcus ruber strain BKS 20-38 M Bala, S Kumar, GPS Raghava, S Mayilraj Genome announcements 1 (2), e00139-13	2	2013
☐	Earthworm Gut Microbiome: The Uncharted Microbiome R Miglani, N Parveen, SS Bisht, AK Panda, M Bala, J Upadhyay, A Kumar, ... Metagenomics and Microbial Ecology, 91-104		2021
☐	Exploration and exploitation of Marine Actinobacteria with special reference to cholesterol oxidase M Bala CSIR-IMTECH, Chandigarh/Jawaharlal Nehru University, New Delhi		2014
☐	Research Article Agromyces arachidis sp. nov. Isolated from a Peanut (Arachis hypogaea) Crop Field C Kaur, AK Pinnaka, NK Singh, M Bala, S Mayilraj		2013

Scientific Workshops/Trainings/Conference:

International conference on **"Open Source for Computer-Aided Translational Medicine (OSCAT-2012)"** at Institute of Microbial Technology, Chandigarh, India (22-25 Feb 2012).

International conference on **"Open Source for Computer Aided Drug Discovery (OSCADD-2009)"** at Institute of Microbial Technology, Chandigarh, India (March 22-26, 2009).

A national workshop on **"*In silico* approaches for Designing Bioactive Peptides"** at Institute of Microbial Technology, Chandigarh, India (October 18-21, 2011).

Short term projects:

August 2008 to June 2010 : Six months project entitled **"Dye degradation by using Laccase enzyme system"** at Institute of Microbial technology.

Specialized skills:

Soft skills

Scientific project proposal writing for funding agency (DBT, DST, UGC, and MOEF), Lab management, Mentoring Post graduate students, Organising laboratory practical's for students, working with statistical tools, Microsoft Office, EndNote, Adobe Photoshop.

Technical skills

Isolation and Identification of Bacteria from Soil/Insect/Water: Isolation of microorganisms; DNA isolation; identification of the organism by sequencing 16SrRNA gene.

Genomic DNA isolation from bacterial cultures/problem soils: Genomic DNA isolation; Purification using DNA binding columns / Soil DNA isolation for PCR/ Metagenome analysis; Purification techniques through columns, to eliminate Humic acid substances.

Polymerase Chain Reaction and Primer designing of known/novel genes: Multiplex PCR, RT- PCR, Box, REP and ERIC-PCR etc.; Primer designing.

Gene / PCR cloning and library construction: Restriction Digestion; Amplified Ribosomal DNA Restriction Analysis (ARDRA); Vector preparation (T-A cloning); Ligation; Heat-shock transformation/Electro-transformation; Screening of transformants.

Phylogenetic analysis of DNA sequences: Sequence analysis by DNASTAR lagergene software; BLAST; Multiple alignment (ClustalW); Phylogenetic tree construction (PHYLIP, MEGA, UPGMA, etc.); Evolutionary distance calculations.

RAPD for diversity studies: Randomly Amplified Polymorphic DNA identification to study diversity of populations; Phylogenetic positioning.

Chemotaxonomic experiments for novel species identification: G+C % mol content; Peptidoglycan; FAME analysis; Isoprenoid quinones; cell wall sugars, DNA-DNA hybridization etc. (Under standardization in lab).

Enzyme assays: Screening of industrially important enzymes from microbial cultures; Plate assay, crude enzyme activity, specific activity.

Gene Expression Studies: Isolation of total RNA and cDNA synthesis; Real Time PCR-based gene expression profiling

Protein Purification: Using various chromatographic techniques; ion exchange, affinity chromatography; size exclusion chromatography.

Next generation sequencing: Microbes genome assembly using various platform Like velvet, annotation and SNP analysis.

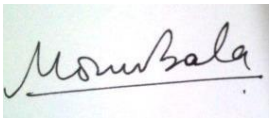
Comparative genomic Analysis: To compare multiple genome through WebACT, Mauve, Syntenic plot, mGenome subtractor software and using IMG tools.

Referees

Dr. S. MAYILRAJ
Principal Scientist
Microbial Type Culture Collection
Institute of Microbial Technology
Sector 39-A, Chandigarh-160 036
India.
Email: mayil@imtech.res.in
Mob No: +91-9417033340

Dr. G.S. PRASAD
Senior Principal Scientist
Microbial Type Culture Collection
Institute of Microbial Technology
Sector 39-A, Chandigarh-160 036
India.
Email: prasad@imtech.res.in
Tel No: +91-01726665152

I declare that the foregoing information is correct and complete to the best of my knowledge and belief and nothing has been concealed or distorted.



(Monu Bala)