

CHAPTER 61

ZOOLOGY

Doctoral Theses

698. BENERJEE (Chaitali)
Head Kidney Macrophages of Catfish as a Model to Study Aeromonas Hydrophila Pathogenesis at the Cellular Level.
Supervisor : Dr. Shibnath Mazumder
Th 20899

Contents

1. Introduction 2. Review of literature 3. Materials and methods
4. Results 5. Discussion 6. Conclusion and future directions 7.
References 8. Publications.

699. DUA (Ankita)
Sequencing and Comparative Genomics of Proteobacterial Strains Agrobacterium sp. UHFBA-218 and Acinetobacter sp. HA.
Supervisor : Prof. Rup Lal
Th 21244

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1. Introduction 2. Review of literature 3. Materials and methods
4. Results and discussion 5. References and appendices.

700. DWIVEDI (Vatsala)
Genome Analysis and Enzymatic Potential of Thermus sp. Strain RL Isolated from a Hot Water Spring Located Atop the Himalayan Ranges at Manikaran, India.
Supervisor : Prof. Rup Lal
Th 21317

Contents

1. Isolation and characterization of thermus sp. strain RL,

isolated from a hot water spring located atop the Himalayan ranges at Manikaran, India. 2.. Draft Genome sequence of *Thermus* sp.strain RL by using new generation sequencing technology. 3. Comparative genomics of the bacterial strains of the genus *Thermus*. 4. Cloning, expression and purification of thermostable DNA polymerase in *E.coli* based on sequence retrieved from *Thermus* sp.RL. Appendices and List of Publication.

701. HANDA (Jaya)
Evolution of Accessory Gland Proteins in *Drosophila Melanogaster* Populations Simultaneously selected for Two Divergent Life-History Traits.
 Supervisor : Dr. Mallikarjun N. Shakarad
Th 20903

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1. Introduction 2. Material and methods 3. Evolution of reproductive traits and adult longevity 4. Static allometry: The scaling of somatic and reproductive organs 5. The evolution of accessory gland proteins 6. References.

702. MAHENDRAN.C
Identification and Characterization of miRNAs and their Targets in *Spodoptera spp.*
 Supervisors : Dr. A.K. Singh and Dr. Raj. K.Bhatnagar
Th 21300

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1. Introduction 2. Historical resume. 3. Identification of miRNAs from *spodoptera Frugiperda* 4. Validation of miRNA expression in *S.frugiperda* Cells (Sf21) and *S.litura* 5. Prediction of targets genes for the experimentally validated miRNAs 6. Validation of the target genes in *S. frugiperda* (Sf21) cells for a few selected miRNAs 7. Role of RNA interference pathway in viral pathogenesis. Summary, References, Publications and Appendices.

703. MATHUR (Amitabh)
Differential Expression, Localization and Hormonal Regulation of GDNF/GFR α -1 and SCF/c-KIT in Testis of the Wall Lizard *Hemidactylus Flaviviridis*.
 Supervisor : Prof. Umesh Rai
Th 20908

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1. Introduction. 2. Differential expression and cellular localization of GDNF and its receptor GFR α -1 in the testis of wall lizard Hemidactylus flaviviridis. 3. Expression of SCF/ c-kit in testis of the wall lizard during different reproductive phases 4. In vivo effects of gonadotropin and sex steroids on mRNA expression of GDNF/GFR α -1 and SCF/c-KIT in the Testis of seasonally breeding wall lizard, Hemidactylus flaviviridis. 5. Summary and Appendix.

704. MD. NAJMUL ISLAM
Pharmacodynamics of Systemically Administered pH Sensitive Biopolymeric Nanoparticles carrying Doxorubicin for Cancer Therapeutics.
 Supervisor : Dr. Anita Kamra Verma
Th 20902

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1. Introduction 2. Historical resume 3. Materials and methods 4. Preparation and physical characterization of gelatin nanoparticles 5. To study the release kinetics of gelatin nanoparticles 6. In vitro cytotoxicity, cellular uptake and immunocytochemistry 7. Pharmacokinetics and biodistribution 8. Tumour regression 9. Discussion, summary and references.

705. PANDEY (Ramendra Pati)
Understanding the Immune Response and Oxidative Stress by Secretory Proteins of Mycobacterium Tuberculosis Encapsulated in Chitosan Nanoparticles in Murine Model.
 Supervisor : Dr. Anita Kamra Verma
Th 20906

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1. Introduction 2. Historical resume 3. Materials and Methods 4. Preparation and Physical Characterization of Chitosan Nanoparticles 5. To study the release kinetics and assess the cytotoxicity of Chitosan Nanoparticles: in -vitro cytotoxicity, haemolysis and Biodistribution 6. Effect of secretory proteins and Nanoparticles on the Cytokine profile 7. Oxidative Stress induced by Secretory proteins and nanoparticles 8. Protection Studies. 9. Discussion, Summary and References.

706. RANA (Vipin Singh)
Identification of Receptor Candidates of Begomovirus in Bemisia Tabaci.
 Supervisors : Dr. Rajagopal Raman and
 Dr. Nirupam Roy Choudhury
Th 20901

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1. Introduction 2. Review of literature 3. Materials and methods
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 list of publications.

707. RAWAL (Leena)
Molecular Mining of Repeat Tagged Transcribing Genes in Water Buffalo Bubalus Bubalis.
 Supervisors : Prof. Neeta Sehgal and Dr. Sher Ali
Th 20907

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1. Review of literature 2. Introduction 3. Materials and methods 4.
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708. SANGWAN (Naseer)
Community Genomic Analysis of Extreme Environments : Manikaran Hot Springs and Hexachlorocyclohexane (HCH) Dumpsite.
 Supervisor : Prof. Rup Lal
Th 21299

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1. Community genomics of sediments from Manikaran
 Hotsprings. 2. Community Genomics of microbial mats from
 Manikaran Hotsprings. 3. Gene Centric Analysis and Pan-genome
 insights across increasing HCH gradient. 4. Reconstructing an
 ancestral genotype of two HCH degrading Sphingobium Sub-Species
 using Community Genomics data. Appendix and List of Publications.

709. SAXENA (Anjali)
Modification of Rifamycin Polyketide Synthase Gene Cluster in Amycolatopsis Mediterranei S699 & Genome Analysis of Antibiotic Producer Amycolatopsis Rifamycinica 46095.
 Supervisor : Prof. Rup Lal
Th 21209

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1. Acyltransferase (AT) domain swapping of 8th module (AT8) in rifamycin polyketide synthase gene cluster of *Amycolatopsis mediterranei* S699 2. Inactivation of Dehydratase (DH) domain of 10th module (DH10) in rifamycin polyketide synthase gene cluster of *A. mediterranei* S699 3. Draft genome sequence of rifamycin producer *Amycolatopsis rifamycinica* 46095 4. Comparative genomic analysis of rifamycin producers *Amycolatopsis mediterranei* QS699, *A. mediterranei* U32, *A. mediterranei* RB and *A. rifamycinica* 46095. Appendix.

710. SHARMA (Manish)
Anti-Plasmodial effect of Synthetic Compounds Alone or in Combination with Artemisinin.
 Supervisor : Prof. Ashok K. Singh
Th 20905

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1. Introduction to malaria parasite 2. Review of literature 3. Aims and objectives 4. Materials and methods 5. Result 6. Discussion 7. References and publications.

711. SHARMA (Ranju)
Microbial Diversity and Enzymes's Activity of Yamuna River Soil from Delhi-NCR, India.
 Supervisor : Prof. Dr. Dileep K. Singh
Th 20904

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1. Introduction 2. Review of literature 3. Physico-chemical properties and enzymes activity of soil 4. Microbial diversity of 16S rDNA. 5. Microbial diversity of nifH Gene 6. Microcosm study 7 Conclusion 8. References.

712. SINGH (Amit Kumar)
Taxonomical Characterization of Bacterial Strains of the Genus *Pontibacter* Isolated from the Hexachlorocyclohexane (HCH) Contaminated Pond Sediment and Genome Analysis of HCH Degrading *Sphingobium Quisquiliarum* P25^T.
 Supervisor : Prof. Rup Lal
Th 21316

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1. Introduction 2. Taxonomical characterization of pontibacter ramchanderi sp.nov., isolated from Hexachlorocyclohexane (HCH) contaminated pond sediment located in the vicinity of a lindane production unit. 3. Taxonomical characterization of Pontibacter indicus sp.nov., isolated from Hexachlorocyclohexane (HCH) contaminated soil. 4. Taxonomical characterization of Pontibacter chinhatensis sp.nov., isolated from pond sediment containing discarded waste of Hexachlorocyclohexane (HCH) isomers. 5. Genome analysis of Hexachlorocyclohexane (HCH) degrading bacterium Sphingobium quisquiliarum P25^T. 6. Appendices and list of publications.

713. TENZIN NYIBUM BHUTIA
Biological Activity of Dolichos Biflorus Linn. (Fabaceae) Seeds Against Gram podborer Helicoverpa armigera (Hubner) (Lepidoptera : Noctuidae)
 Supervisor : Prof. A.K. Singh
Th 20898

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1. Introduction. 2. Historical resume. 3. Materials and methods. 4. Effect of horse gram seeds on biology of Helicoverpa armigera. 5. Isolation, purification and characterization of proteinase inhibitors from horse gram seeds. 6. Effect of horse gram proteinase inhibitors on biology of Helicoverpa armigera. 7. Discussion, Summary and References.

714. VIBHUTI (Archna)
Cytotoxic and Radio Sensitizing Effects of Glycolytic inhibitor 2-DG(2-deoxy-D-glucose) in Isogenic Cell Lines varying in their P53 Status.
 Supervisors : Prof. K. Muralidhar and Dr. B.S. Dwarakanath
Th 20900

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1. Introduction 2. Materials and methods. 3 Results and discussion 4. Discussion 5. Summary, conclusion and bibliography.

715. VIKAS KUMAR
Designing of Novel Heterocyclic scaffolds as Potential Therapeutic Agents Against Neurodegenerative Disorders : A Computational Approach
Supervisors : Dr. Anjani K. Tiwari and Dr. Neeta Sehgal
Th 20897

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1. Review of literature 2. Introduction 3. Computational methods
4. Results and discussion 4. Summary 5. References 6. Appendix
and publications.

716. WARIKOO (Radhika)
Studies on the Efficacy of Mexican Prickly Poppy, Argemone Mexicana (Papaveraceae) as the Potential Control agent of an Indian Strain of Dengue vector, Aedes Aegypti L. (Diptera: Culicidae)
Supervisor : Dr. Sarita Kumar
Th 21350

Contents

1. Review of Literature 2. Materials and methodology. 3. Impact of the argemone mexicana extracts on the survival, morphology and behaviour of aedes aegypti. 4. Impact of argemone mexicana extracts on the growth, development and genomic DNA of aedes aegypti. 5. Synergistic efficacy of piperonyl butoxide (PBO) on the larvicidal potential of the argemone mexicana extracts. 6. Identification of phyto-components in the argemone mexicana extracts using FTIR and GC-MS spectral analysis. 7. Discussion. 8. Summary. Literature cited and annexure-research publication.