

KRISHNAKANT GUPTA

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PROFILE

A dynamic and highly motivated **Research Personal** with **more than five year'** rich exposure in the field of Bioinformatics, Genomics, Proteomics, Protein purification.

AREA OF INTERESTS.

Protein purification, Bioinformatics, Genomics, Epitope designing, QSAR model, drug likeliness predictions, Molecular docking, Molecular Biology and Protein-Protein interactions and protein crystallography and structure analysis.

EDUCATION

- **RUSA 2.0 Post doctoral fellowship at Alagappa University 2019** (Availed fellowship one month)
- **PhD in Bioinformatics, Pondicherry University, 2018**
- **M.Sc. in Bioinformatics, School Of Biotechnology, Devi Ahilya University, Indore, India, 82.16%, 2012**
- **B.Sc. in Bioinformatics, Softvision college, Indore, India, 65% 2010**
- **12th Kendriya Vidyalaya chirimiri, CBSE Board , India, 74.4%, 2007**
- **10th Kendriya Vidyalaya chirimiri, CBSE Board , India, 68.2%, 2005**

M.Sc. PROJECT:

QSAR studies of gallic acid derivatives and molecular docking of BACE1 enzyme- A potent target for Alzheimer disease at Eminent biosciences, Indore, under the guidance of Mukesh Yadav & Anuraj Nayariseri.

APPOINTMENTS

- 1. Project Student: IIOAB, India.**

2. Selected for DBT Sponsered BIITP 2012-2013 in NTHRYS BIOTECH LABS, HYDERABAD.
3. Selected for PhD (July 2013) in Centre for Bioinformatics, Pondicherry University.
4. Qualified GATE 2013, CSIR NET JUNE 2018 (AIR 16), DBT JRF 2016, TNSET 2017, SLET NE 2017 and CGSET 2017.
5. Appointed as JRF at MBU, IISc from 01.04.2018 – 31-07-2018

WORKED IN PROJECTS:

- *In silico* subtractive genomics for pathogen's drug and vaccine target identification (*IIOAB, India*)
- Antibacterial vaccine and drug designing (*IIOAB, India*)
- Omics based cancer biomarkers development (*IIOAB, India*)
- *Corynebacterium pseudotuberculosis* genome sequencing and annotation (*IIOAB, India*)
- Development of Protein-Protein interaction between host-pathogen (*IIOAB, India*)

PHD THESIS TITLE

Purification, Characterization and Inhibition studies of lipase from *Acinetobacter radioresistens* PR8.

TOTAL PUBLICATIONS (15):

1. **Gupta KK**, Singh SK. CDK5: A main culprit in neurodegeneration. International Journal of Neuroscience. 2019 129 (Accepted)
2. **Gupta KK**, Khan Md A, Singh SK. Constitutive inflammatory cytokine storm: A major threat to human health. Journal of interferon & Cytokine Research. 2019 (Accepted)
3. **Gupta KK**, Jagtap S, Priya R, Ramadas K. Purification, characterization of alkaline cold active lipase from *Acinetobacter radioresistens* PR8 and development of a new zymography method for lipase detection. **Protein Pept Lett**. 2018 Sep 4.
4. **Gupta KK**, Mandal R, Jagtap S, Krishna R. Glucovanillin: A potent inhibitor of lipase from *Acinetobacter radioresistens*. **Informatics in Medicine Unlocked**. 2018;10: 126-133
5. **Gupta KK**, Nigam A, Jagtap S, Krishna R. Scale-up and inhibitory studies on productivity of lipase from *Acinetobacter radioresistens* PR8. **J Biosci Bioeng**. 2017 Aug; 124(2):150-155.
6. **Gupta KK**, Sethi G, Jayaraman M. Molecular docking and simulation studies of gustatory receptor of *Aedes aegypti*: A potent drug target to distract host-seeking behaviour in mosquitoes. **J Vector Borne Dis**. 2016 Apr- Jun;53(2):179-84.
7. **Gupta KK**, Rahangdale S, Barh D. An Integrative Bioinformatics Approach for Identification of Biomarkers in Myocardial Infarction. Precision medicine in cardiology. 2016, 1(1), 8-12
8. Rao BS, **Gupta KK**, Karanam P, Peruri A. Alzheimer disease: An interactome of many diseases. **Ann Indian Acad Neurol**. 2014 Jan;17(1):48-54.

9. Balaji SR, **Gupta KK**, Anusha P and Raveena P. Molecular Docking Studies of Wide Spectrum Targets in *Staphylococcus aureus* - An Aim towards Finding Potent Inhibitors. **Adv Tech Biol Med.** 2014, 2:1
10. **Gupta KK**. Qsar Studies on Gallic Acid Derivatives and Molecular Docking Studies of Bace1 Enzyme – A Potent Target of Alzheimer Disease. **BIOEJ.** 2014 July; 1(1)
11. Barh D, **Gupta K**, Jain N, Khatri G, León-Sicairens N, Canizalez-Roman A, Tiwari S, Verma A, Rahangdale S, Shah Hassan S, dos Santos AR, Ali A, Guimarães LC, Thiago Jucá Ramos R, Devarapalli P, Barve N, Bakhtiar M, Kumavath R, Ghosh P, Miyoshi A, Silva A, Kumar A, Misra AN, Blum K, Baumbach J, Azevedo V. Conserved host-pathogen PPIs. Globally conserved inter-species bacterial PPIs based conserved host-pathogen interactome derived novel target in *C. pseudotuberculosis*, *C. diphtheriae*, *M. tuberculosis*, *C. ulcerans*, *Y. pestis*, and *E. coli* targeted by Piper betel compounds. **Integr Biol (Camb).** 2013 Mar;5(3):495-509.
12. Rao BS, **Gupta KK**, Kumari S, Gupta A, Pujitha K. Conserved HIV Wide Spectrum Antipeptides-A Hope for HIV Treatment. **Adv Tech Biol Med.** 2013, 1:1
13. Barh D, Barve N, **Gupta K**, Chandra S, Jain N, Tiwari S, Leon-Sicairens N, Canizalez-Roman A, dos Santos AR, Hassan SS, Almeida S, Ramos RT, de Abreu VA, Carneiro AR, Soares Sde C, Castro TL, Miyoshi A, Silva A, Kumar A, Misra AN, Blum K, Braverman ER, Azevedo V. Exoproteome and secretome derived broad spectrum novel drug and vaccine candidates in *Vibrio cholerae* targeted by Piper betel derived compounds. **PLoS One.** 2013;8(1):e52773.
14. Barh D, **Gupta K**, Khatri G, Rahangdale S, Verma A. An Integrative Omics Strategy for Identification of Skin Cancer Biomarkers. **Eur. J. Cancer.** 2012 Nov; 48, (6): 79
15. Hollmann A, Saviello M, Delfederico L, Saraiva TD, Barh D, Jain N, Tiwari S, Chandra S, **Gupta K**, Zambare V, Kumar A, Christopher L, Misra AN, Kumavath RN, Azevedo V, Semorile L, Miyoshi A. Tight controlled expression and secretion of *Lactobacillus brevis* SlpA in *Lactococcus lactis*. **Biotechnol Lett.** 2012 Jul;34(7):1275-81.

GENOME SEQUENCES

1. Silva A, Cerdeira L, Bol E, Barbosa MS, Muller B, Helden PV, Santos A R, Ramos RTJ, Carneiro A R, Guimaraes LC, Aburjaile F F, Padua UD, Arbosa E, Fiaux KK, Diniz CAA, Soares SC, Pinto AC, Almeida SS, Abreu VAC, Hassan SS, Khatri G, Rahangdale S, **Gupta K**, Verma A, Ghosh P, Zambare V, Kumavath RN, Barh D, Miyoshi A, Schneider MPC, and Azevedo V. *Corynebacterium pseudotuberculosis* P54B96, complete genome. **GenBank: CP003385.1**
2. Silva A, Lopes T, Ramos RTJ, Carneiro AR, Barbosa MS, Santos AR, Guimaraes LC, Aburjaile FF, Padua Ud, Barbosa E, Fiaux KK, Diniz CA, Soares SC, Pinto AC, Almeida SS, Abreu VAC, Hassan SS, Khatri G, Rahangdale S, **Gupta K**, Verma A, Kumavath RN, Ghosh P, Zambare V, Barh D, Miyoshi A, Schneider MPC, and Azevedo V. *Corynebacterium pseudotuberculosis* 267, complete genome. **GenBank: CP003407.1**
3. Jagtap, S., R.P. and **Gupta, K.K.** *Acinetobacter radioresistens* strain PR8_F 16S ribosomal RNA gene, partial sequence. **ACCESSION MF073322.**

BIOINFORMATICS SKILLS (DRY LAB):

- **Techniques:** Basic Sequence Alignment, Primer Designing, Network Analysis, Phylogenetic Analysis, Prediction of Protein Structure and Function, Modeling, Docking, QSAR, PPI development, GO annotation based filtering of genes.
- **Tools:** BLAST, FASTA, CLUSTAL-W2, CLUSTAL X2, MUSCLE, Primer-3, Modeller, Osprey, ViSENT, Swiss PDB model, Swiss model,CCDC GOLD(4.1.2), Molegro virtual docker(MVD), and microarray data analyzer (Affymetrix), BCpred, Propred I, properd, T epitope designer, Pepitope, MarvinSketch, OSIRIS Property explorer, Toxpredict.
- **Databases:** DEG (Database of essential genes), KEGG (Kyoto encyclopedia of gene and genomics), NCBI, SGD, DAVID, Toppgene suite, swiss prot, PDB, NEXTprot, Jena protein protein interaction databases, PHIDIAS, PATRIC, Directory of *insilico* drug design tools.

ANALYTICAL SKILL (WET LAB):

- Immunology: Western blotting, Radial Immunodiffusion, ELISA
- Molecular biology – SDS-PAGE, Agarose Gel Electrophoresis, Centrifugation, Preparation of master & replica plates, PCR, DNA Isolation from Plant cells, animal tissues and blood.
- Biochemistry – Spectrophotometry, colorimetry (Quantitative estimation of carbohydrates, proteins, nucleic acids), Studying effect of pH, temperature, heavy metals on enzyme activity.
- Separation Techniques – Paper Chromatography, Thin layer chromatography, Gel Filtration chromatography, Protein crystallography.

COMPUTER SKILLS:

- Sound knowledge of MS Word, MS Excel, MS Power Point, Internet and other applications.
- Operating System :- Microsoft Window 2000, XP,XP-2, Vista, Window 7.
- Programming Language: - C, C++, PHP, JAVA (Basic).
- Internet basics and Web Based Programming (PERL &HTML).
- Database Management System (DBMS).

SEMINARS ATTENDED:

1. Actively Participated in workshop on “**Human Gene Amplification & Bioinformatics**”, A Hands on training on **PCR** technology from 26th , 27th ,28th February 2011 Conducted by **Graduate School of Business and Eminent Biosciences Indore.**
2. Actively Participated in workshop on “**Awareness workshop on Intellectual Property Rights**” on 3rd , September 2016 Conducted by **Patent facilitation cell of Pondicherry University.**
3. Actively Participated in workshop on “**Computational approaches to Drug Discovery**” from December 13-19, 2017 at **Centre of Bioinformatics, Pondicherry University.**
4. Attended seminar on “**Drug Discovery – Role of Bioinformatics**” from August 21-26, 2017 at **Centre of Bioinformatics, Pondicherry University.**
5. Attended symposium on “**Innovations and advances in Science & Technology**” on February 27, 2014 at **Centre of Bioinformatics, Pondicherry University.**
6. Attended symposium on “**Innovations and advances in Science & Technology**” on February 27, 2014 at **Centre of Bioinformatics, Pondicherry University.**
7. Actively Participated in workshop on “**Molecular Modeling and Drug Design**” on January 25-26, 2014 at **Centre of Bioinformatics, Pondicherry University.**

8. Attended national seminar on “**Recent Trends in Macromolecular Crystallography**” on March 12-13, 2014 at **Centre of Bioinformatics, Pondicherry University**.
9. Actively Participation in Bioinformatics Workshop on “**Computational Biology & Molecular Dynamics**”
from 20th January -22th January, 2011 organized by the **School of Biotechnology, D.A.V.V.,Indore**.
10. Presented two posters at **JNU (ICETB 2014)**, New Delhi and **Alagappa University (SBCADD 2015)**, Tamilnadu, INDIA.
11. Attended workshop on **PXRD in pharmaceutical and material industry**, 26 June 2018 at NIMHANS, Bengaluru.
12. Selected for workshop entitled “**Analysis of genome scale data from bulk and single cell sequencing**” from 19 Nov 2018 to 23 Nov 2018 conducted by EMBL-NIBMG and sponsored by DBT, India.

REFERENCES:

1. **Dr Krishna Ramadas, Associate Professor (PhD Guide)**, Centre for Bioinformatics, Pondicherry University, Pondicherry – 605014, E-Mail: ramadaskr@gmail.com
2. **Dr Basant Kumar Tiwary, Professor**, Centre for Bioinformatics, Pondicherry University, Pondicherry – 605014, E-Mail: basant68@gmail.com
3. **Dr Anshul Nigam**, Senior Assistant Professor, Amity University, Mumbai - - 410206, E-Mail: anshulnigam2006@gmail.com