Akshay Uttarkar

Research Associate

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India, Bangalore

I am working as a research associate for about 6 years in the field computational biology. I am working in the field of Quantum computing and peptide folding.

I have an interested in integration of quantum physics and protein chemistry. I am currently looking forward to expand my horizon on quantum computing and in search interdisciplinary research opportunities which can lead of better outcomes.

Experience

May 2023 - Now

Research Associate

Vidya Lab / India, Bangalore

As a Research Associate at Vidya Lab in India, I was responsible for analyzing and interpreting data to identify potential research opportunities. My role also included leading research projects, actively engaging with stakeholders and partners, and designing research protocols. During my tenure, I was able to develop and implement innovative approaches to data analysis, resulting in improved research outcomes.

November 2019 - April 2023

Senior Research fellow

Vidya Lab / India, Bangalore

Research Responsibilities and Achievements

1. Research collaboration work with Reckitt Benckiser Health, USA.
2. Active collaboration with Institute if Molecular Medicine, ACU on repurposing of drugs against triple negative breast cancer and anti-covid drugs.
3. Actively involved in working on drug re-purposing involving NF-kB pathway with Bangalore Bioinnovation Centre.
4. Design of drug molecule via enumeration as a potential antagonist for cardiomyocyte death which is under validation by LiveOn Biolabs
5. Development of a pymol plugin named as PICv, free available in Pymolwiki
6. Co-authorship in 9 publication in impactful and well indexed journals.
7. Lead and successfully mentored 13 groups of interns on various projects during a 4 week internship program.
8. Submission of research proposals in Solo for BIRAC and DBT along with Collaborative research proposals with IIHR and GKVK to

Education

Undergraduate

2010 - 2014

PES Institute of Technology

India, Bangalore

Post Graduate

2015 - 2017

R V College of Engineering

India, Bangalore

Skills

- Scientific Research
- Project Management
- Computational Biology
- Research Design
- Communication Skills
- Critical Thinking

Courses

9. NPBM and DST-SERB respectively.

Non-research achievements

1. Successfully lead team to organize and carry out DST-INSPIRE funded 5 day boot camp for 250+ pre-university students.
2. Organizing a 5 day online webinar and hackathon event titled " Drug discovery Today" with Narayana Health Limited

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November 2017 - October 2019

Junior Research Fellow

Vidya Lab / India, Bangalore

Contribution to Funded Research Projects

1. Functional characterization of oxidative stress responsive transcription factors from rice by adopting chemical genomics approach as an alternate option. (A DST-SERB funded project in collaboration with Department of Crop-physiology, GKVK)

2. Assessment of SNP variation in silk worm (Bombyxmori) by RAD sequencing and genome wide association mapping of important commercial traits. (A DBT funded project in collaboration with CSRTI, Mysuru)

Contribution to Collaborative Research Projects

1. ML based algorithm for clustering of protein-protein interactions and visualization (International collaboration with Protein Data Bank in Europe, Cambridge, UK)

2. Design and development of Rapid test kits to detect food borne pathogens (Collaboration with Dextrose Technologies Pvt Ltd).

3. Involved with GKVK on 4 research projects in developing proof-of-principle involving docking and simulation studies which can be applied for grants.

Research responsibilities and achievements

1. Lead research scholar in the lab leading various in-house projects and collaborations with various research institutes and biotech companies.
2. Lead Successful collaboration with Government Homeopathic College, Bangalore in obtaining research funds worth 18.6 lakhs from RGUHS.
3. Handling of accounts for 3 funded projects (2 DBT and 1 AICTE) and well versed in drafting UC - SOI for the same.
4. Mentoring undergraduate and post graduate students on various in-house and collaborative projects.
5. I have gained a lot of experience in working with various research teams across domains of biotechnology.
6. As a part of collaborative process I have developed inter-personal skills of team work, leading research projects and art of drafting research proposals

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December 2016 - October 2017

Project Assistant

UT Lab, Indian Institute of Science / India, Bangalore

Research Responsibility and Achievements

1. Involved in 2 in-house core R&D projects with PhD students. (NGS analysis and Development of Disease progression algorithm)
2. Co-authored in 1 publication
3. Gained experience in deriving optimal research methodology and manuscript writing

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Introduction to Quantum Information

2023

Korea Advanced Institute of Science and Technology(KAIST)

Links

https://scholar.google.com/citations?user=NQkXE6sAAAAJ&hl=en

August 2016 - November 2016

Research Intern

Micro Labs Pvt Ltd / India, Bangalore

Responsibilities

1. Intern at Analytical R&D lab
2. Gained experience in wet lab validation techniques (Assay, water content, FTIR, HPLC etc.,) for intermediate and final compounds as lead drug molecules

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November 2014 - August 2015

Research Assistant

Shreedhar Bhat's Laboratory / India, Bangalore

Responsibilities

1. Design and testing of primers for PCR studies to detect plant pathogens.
2. Experienced in design and implementation of RAPD and RFLP experiments.
3. Working of protein extraction and blotting techniques.
4. Mentoring to Under Graduate interns of various projects

Web of Science™

Web of Science CV
Prepared on October 30th 2023

Akshay Uttarkar

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Web of Science ResearcherID: GPX-7598-2022
ORCiD: 0000-0001-9326-1426

Publication Metrics

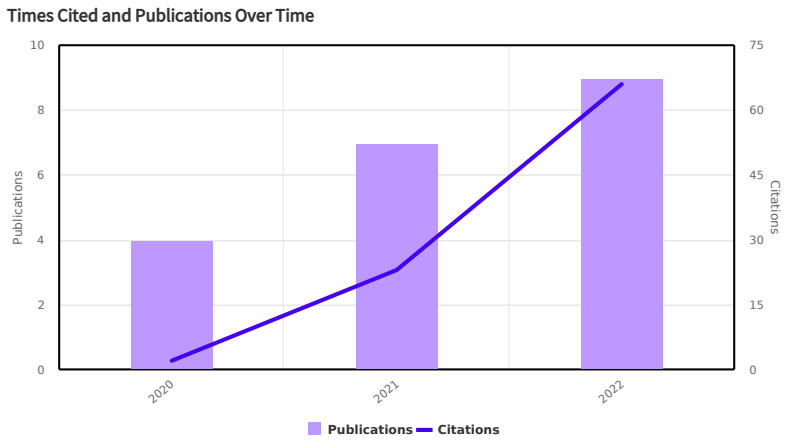
For manuscripts published from date range October 2018 - October 2023

9	180
H-index	Sum of Times Cited
35	28
Total Publications	Web of Science Core Collection Publications

For all time

9	180
H-index	Sum of Times Cited
38	28
Total Publications	Web of Science Core Collection Publications

Publication Impact Over Time



Publishing Summary

For manuscripts published from date range October 2018 - October 2023

(3) Journal of Biomolecular Structur...	(3) Infection, Genetics and Evolution
(3) Computers in Biology and Medici...	(3) Protocols.io
(2) ACS Omega	(2) Structural Chemistry
(2) Molecules	(1) Molecular Biotechnology
(1) CORONAVIRUSES	(1) BioRxiv
(1) Russian Journal of Bioorganic Ch...	(1) Research Square
(1) Rice Science	(1) The FEBS Journal
(1) Current Genomics	(1) Molecular Simulation
(1) Bioinformation	(1) Proteins: Structure, Function, and...
(1) Microorganisms	(1) Plant Biotechnology Reports
(1) Anti-Cancer Agents in Medicinal ...	(1) Current Issues in Molecular Biolo...
(1) Plos One	(1) International Journal of Biologica...

Publications

For manuscripts published from date range October 2018 - October 2023 (35)	Times Cited (All time)
Structural and molecular basis of the interaction mechanism of selected drugs towards multiple targets of SARS-CoV-2 by molecular docking and dynamic simulation studies- deciphering the scope of repurposed drugs Published: Nov 2020 in Computers in Biology and Medicine DOI: 10.1016/J.COMPBIOMED.2020.104054 Web of Science accession number: WOS:000582723600040	22

Carbon fullerene and nanotube are probable binders to multiple targets of SARS-CoV-2: Insights from computational modeling and molecular dynamic simulation studies Published: Dec 2021 in Infection, Genetics and Evolution DOI: 10.1016/J.MEEGID.2021.105155 Web of Science accession number: WOS:000740105300001	17
Structural insights on the interaction potential of natural leads against major protein targets of SARS-CoV-2: Molecular modelling, docking and dynamic simulation studies Published: May 2021 in Computers in Biology and Medicine DOI: 10.1016/J.COMPBIOMED.2021.104325 Web of Science accession number: WOS:000649713700006	14
Coumarin derivative as a potent drug candidate against triple negative breast cancer targeting the frizzled receptor of wingless-related integration site signaling pathway Published: 2021 in Journal of Biomolecular Structure and Dynamics DOI: 10.1080/07391102.2021.2022536 Web of Science accession number: WOS:000739207200001	14
Molecular dynamics simulation and docking analysis of NF-κB protein binding with sulindac acid Published: Mar 2022 in Bioinformation DOI: 10.6026/97320630018170 Web of Science accession number: WOS:000814086200008	13
Response regulator GacA and transcriptional activator RhlR proteins involved in biofilm formation of Pseudomonas aeruginosa are prospective targets for natural lead molecules: Computational modelling, molecular docking and dynamic simulation studies Published: Nov 2020 in Infection, Genetics and Evolution DOI: 10.1016/J.MEEGID.2020.104448 Web of Science accession number: WOS:000593915100019	13
Natural epiestriol-16 act as potential lead molecule against prospective molecular targets of multidrug resistant Acinetobacter baumannii-Insight from in silico modelling and in vitro investigations Published: Aug 2020 in Infection, Genetics and Evolution DOI: 10.1016/J.MEEGID.2020.104314 Web of Science accession number: WOS:000571457700017	12
Novel small molecules targeting bZIP23 TF improve stomatal conductance and photosynthesis under mild drought stress by regulating ABA Published: Oct 2022 in The FEBS Journal DOI: 10.1111/FEBS.16461 Web of Science accession number: WOS:000789118000001	10

Spiro Benzodiazepine Substituted Fluorocoumarins as Potent Anti-Anxiety Agents Published: Mar 2021 in Russian Journal of Bioorganic Chemistry DOI: 10.1134/S1068162021020199 Web of Science accession number: WOS:000644646500006	9
Mitogen activated protein kinase-1 and cell division control protein-42 are putative targets for the binding of novel natural lead molecules: a therapeutic intervention against Candida albicans Published: Oct 2020 in Journal of Biomolecular Structure and Dynamics DOI: 10.1080/07391102.2019.1682053 Web of Science accession number: WOS:000493140900001	8
Molecular Docking and Interaction Studies of Identified Abscisic Acid Receptors in Oryza sativa: An In-Silico Perspective on Comprehending Stress Tolerance Mechanisms Published: Dec 2021 in Current Genomics DOI: 10.2174/1389202923666211222161006 Web of Science accession number: WOS:000740853100005	7
Scope of repurposed drugs against the potential targets of the latest variants of SARS-CoV-2 Published: Oct 2022 in Structural Chemistry DOI: 10.1007/S11224-022-02020-Z Web of Science accession number: WOS:000835564700001	6
Understanding the Xylooligosaccharides Utilization Mechanism of Lactobacillus brevis and Bifidobacterium adolescentis: Proteins Involved and Their Conformational Stabilities for Effectual Binding Published: Jan 2022 in Molecular Biotechnology DOI: 10.1007/S12033-021-00392-X Web of Science accession number: WOS:000698158600001	6
Stress-Induced Detoxification Enzymes in Rice Have Broad Substrate Affinity Published: Feb 2021 in ACS Omega DOI: 10.1021/ACSOMEGA.0C05961 Web of Science accession number: WOS:000618087400098	6
Design of Novel Coumarin Derivatives as NUDT5 Antagonists That Act by Restricting ATP Synthesis in Breast Cancer Cells Published: Jan 2023 in Molecules DOI: 10.3390/MOLECULES28010089 Web of Science accession number: WOS:000909620900001	5
Mycobacterium Time-Series Genome Analysis Identifies AAC2 ' as a Potential Drug Target with Naloxone Showing Potential Bait Drug Synergism Published: Oct 2022 in Molecules DOI: 10.3390/MOLECULES27196150 Web of Science accession number: WOS:000867946100001	5

Brefeldin A variant via combinatorial screening acts as an effective antagonist inducing structural modification in EPAC2 Published: Nov 2022 in Molecular Simulation DOI: 10.1080/08927022.2022.2110271 Web of Science accession number: WOS:000840372300001	4
Carbon fullerene acts as potential lead molecule against prospective molecular targets of biofilm-producing multidrug-resistant Acinetobacter baumanni and Pseudomonas aerugenosa: computational modeling and MD simulation studies Published: Feb 2021 in Journal of Biomolecular Structure and Dynamics DOI: 10.1080/07391102.2020.1726821 Web of Science accession number: WOS:000515050100001	4
Novel 1,2,5-Trisubstituted Benzimidazoles Potentiate Apoptosis by Mitochondrial Dysfunction in Panel of Cancer Cells Published: Dec 2022 in ACS Omega DOI: 10.1021/ACSOMEGA.2C06057 Web of Science accession number: WOS:000893689300001	2
Insights on Novel Effectors and Characterization of Metacaspase (RS107_6) as a Potential Cell Death-Inducing Protein in Rhizoctonia solani Published: Apr 2023 in Microorganisms DOI: 10.3390/MICROORGANISMS11040920 Web of Science accession number: WOS:000979511200001	1
Computational design of prospective molecular targets for Burkholderia cepacia complex by molecular docking and dynamic simulation studies Published: Jan 2023 in Proteins: Structure, Function, and Bioinformatics DOI: 10.1002/PROT.26462 Web of Science accession number: WOS:000915361100001	1
A Simple and Rapid Oxidative Stress Screening Method of Small Molecules for Functional Studies of Transcription Factor Published: Sep 2022 in Rice Science DOI: 10.1016/J.RSCI.2022.07.002 Web of Science accession number: WOS:000861260700002	1
BRCA1/TP53 tumor proteins inhibited by novel analogues of curcumin - Insight from computational modelling, dynamic simulation and experimental validation Published: Sep 2023 in International Journal of Biological Macromolecules DOI: 10.1016/J.IJBIOMAC.2023.126989 Web of Science accession number: MEDLINE:37739292	0
Protocol for the development of coarse-grained structures for macromolecular simulation using GROMACS Published: Aug 2023 in Plos One DOI: 10.1371/JOURNAL.PONE.0288264 Web of Science accession number: WOS:001043333000102	0

De Novo Design of Anti-COVID Drugs Using Machine Learning-Based Equivariant Diffusion Model Targeting the Spike Protein Published: May 2023 in Current Issues in Molecular Biology DOI: 10.3390/CIMB45050271 Web of Science accession number: WOS:001020392100001	0
Design of Novel Imidazopyrazine Derivative against Breast Cancer via Targeted NPY1R Antagonist Published: May 2023 in Anti-Cancer Agents in Medicinal Chemistry DOI: 10.2174/1871520623666230505100031 Web of Science accession number: WOS:001064314200010	0
Carboxymuconolactone decarboxylase is a prospective molecular target for multi-drug resistant Acinetobacter baumannii-computational modeling, molecular docking and dynamic simulation studies Published: May 2023 in Computers in Biology and Medicine DOI: 10.1016/J.COMPBIOMED.2023.106793 Web of Science accession number: WOS:000958546900001	0
Transcription factors controlling the expression of oxidative stress associated genes in rice (Oryza sativa L.) Published: Feb 2023 in Plant Biotechnology Reports DOI: 10.1007/S11816-023-00819-8 Web of Science accession number: WOS:000930118100001	0
Scope of repurposed drugs against the potential targets of the latest variants of SARS-CoV-2 (vol 33, pg 1585, 2022) Published: Dec 2022 in Structural Chemistry DOI: 10.1007/S11224-022-02045-4 Web of Science accession number: WOS:000847962200001	0
Protocol for the development of coarse-grained structures for macromolecular simulation using GROMACS v1 Published: Feb 2023 in Protocols.io DOI: 10.17504/PROTOCOLS.IO.KXYGX92RDG8J/V1	Not indexed in the Web of Science
High Throughput Ligand Interaction Profiler v1 Published: Jan 2023 in Protocols.io DOI: 10.17504/PROTOCOLS.IO.4R3L27NJQG1Y/V1	Not indexed in the Web of Science
Well-tempered Metadynamics protocol v2 Published: Feb 2022 in Protocols.io DOI: 10.17504/PROTOCOLS.IO.B5FYQ3PW	Not indexed in the Web of Science
Study of SARS-nCoV2 Indian Isolates Gaining Insights into Mutation Frequencies, Protein Stability and Prospective Effect on Pathogenicity Published: Oct 2021 in CORONAVIRUSES DOI: 10.2174/2666796702666210118155636	Not indexed in the Web of Science

Molecular dynamics simulation and docking studies reveal NF-κB as a promising therapeutic drug target for COVID-19

Not indexed in the Web of Science

Published: May 2021 in Research Square
DOI: 10.21203/RS.3.RS-469785/V2

Re-profiling of natural inhibitor via combinatorial drug screening: Brefeldin A variant design as an effective antagonist leading to EPAC2 structure modification and antibody design for identification

Not indexed in the Web of Science

Published: Apr 2021 in BioRxiv
DOI: 10.1101/2021.03.31.437986