

Curriculum vitae Vipul Panchal

PERSONAL INFORMATION

*Family name, First name:	Panchal, Vipul		
*Date of birth:	17.08.1987	*Sex:	Male
*Nationality:	India		
Researcher unique identifier	ORCID-ID: 0000-0001-9776-1102		
URL for personal website:	https://www.uib.no/en/persons/Vipul.Navinchandra.Panchal		
Research keyword	RNA focused drug discovery, AMR, Assay development, Structure based drug design, RNA Biology		

PERSONAL STATEMENT

My immediate research goal is to investigate microbial transcriptome to identify druggable (small molecule binding) mRNA targets and exploit its structure elements for a novel class of antibiotics. This approach has immense potential to bring paradigm shift in the target focused approaches for the discovery of novel antimicrobials and have over-reaching implications to human metabolic and genetic disorders. Further, underlying approaches and outcome of the projects have direct translational values in terms of possible patents for methodology as well as identifying a novel antimicrobial compound scaffold to fight antimicrobial resistance (AMR).

In last 4 years, I have made fundamental contribution to the mRNA focused therapeutics by, 1) developing RNA focused novel high-throughput assays for compounds screening and fragment-based lead discovery, and 2) deducing molecular players driving selectivity and high affinity of RNA targets for small molecule ligands (A detailed overview of my technical expertise is listed below). Publications from these projects are currently under preparation and I expect to communicate them in 2024. Additionally, I have secured various grants (individual and in-collaboration) and have build a network of multidisciplinary experts across countries (chemical biology- CZ-openscreen in **Czechia**, *Mtb* pathogenesis- UCL in **UK**, organic chemist- Latvian Institute of Organic Synthesis in **Latvia**, medicinal chemist and computational biologist- UiB in **Norway**, and RNA biology- USherbrooke in **Canada**. This will allow me to draw their expertise as and when needed and also places me in a unique position to secure various international bilateral grants.

Lastly, I would like to emphasis that due to multinational nature of my postdoctoral project, the **Covid-19-related closure of international borders, nationwide lockdowns, and restrictions in these countries led to sever delays on the project deliverables in the period from 03/2020 to 08/2021.**

EDUCATION

	Grade	Name of faculty/department, name of university/institution, country
2018	Distinction	Respiratory disease and Biology, CSIR-Institute of Genomics and Integrative Biology, India
2010	First	M.Sc. in Biochemistry, Department of Biochemistry, Faculty of Sciences, The Maharaja Sayajirao University of Baroda, India
2008	First	B.Sc. in chemistry (Hons), Department of Chemistry, Faculty of Sciences, The Maharaja Sayajirao University of Baroda, India

POSITIONS

Current Position

	Job title, name of employer/country, project, expertise
Permanent since 07/2023	Position: Researcher (equiv. to Asst. Prof.), University of Bergen, Norway Project: Paving the way for rational RNA-ligand design Expertise: RNA focused structure-activity relationship, Evaluating conventional biophysical methods for RNA-small molecule interactions, RNA structure biology

Previous positions

	Job title, name of employer/country, project, expertise
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2019-2022	Position: Postdoctoral Fellow, University of Bergen, Norway Project: Exploration of the TPP riboswitch as a new target for antibiotics Expertise: Developing a novel high-throughput assay for RNA focused compound screening, RNA focused structure-activity relationship
2018-2019	Position: Senior research fellow, Institute of life sciences, Bhubaneswar, India Project: Structural characterization of White Spot Syndrome Viral enzymes involved in nucleotide synthesis Expertise: Expression and purification of Viral enzymes, co-crystallization with nucleoside analogs, Protein structure biology
2012-2013	Position: Project assistant, CSIR-Institute of Genomics and Integrative Biology, New Delhi, India Project: Characterization of the mycobacterial membrane protein, large (MmpL) family of proteins Expertise: Molecular cloning, Gene deletion in non-pathogenic strains of <i>Mtb</i>
2011-2011	Position: Junior Research Fellow, Institute of advanced Research, Gandhinagar, India

AWARDS AND ACHIEVEMENTS

	Name of institution/country
2024	Selected as the ERC-StG candidate for the University of Bergen, Norway
2015/2018	Senior Research Fellowship - (National Eligibility Test), India
2011/2014	Junior Research Fellowship - (National Eligibility Test), India
2010	GATE-2010, All India rank: 228

Grants

Duration	Amount (~ INR)	Title of the grant, Project Leader(s), Name of funding agency, Grant ID, Place
03/2024-06/2025	800,000	Method development for Fragment based ligand discovery of RNA drug targets using biophysical assays PI: Vipul Panchal L. Meltzer's University Fund - Research funds Place: Norway
03/2024-06/2025	659620	Development of the biophysical assays for the fragment-based lead discovery of antibacterial RNA drug targets PI: Vipul Panchal Medical research Grant, University of Bergen Place: Norway
2023-2024	Access to the NMR facility	Fragment-based drug discovery for antibacterial RNA targets Vipul Panchal, Sebastial Bothe, Ruth Brenk Instruct-ERIC, HORIZON EUROPE PID: 26238 Place: Germany
2022	155,000	Screening a compound library against antibacterial mRNA drug target- TPP riboswitch Vipul Panchal BioCat Research visit Grant, Norwegian Graduate School in Biocatalysis 8400027975 Place: Czechia
2021	155,000	Evaluating the performance of a HTS assay for compound screening against TPP riboswitch Vipul Panchal 84000XXXXX BioCat Research visit Grant, Norwegian Graduate School in Biocatalysis Place: Czechia
2020	3,000,000	Developing a novel activity-based assay for TPP riboswitch effector ligands Vipul Panchal, Ruth Brenk 297192 Research Stays Abroad, The Research council of Norway Place: Canada

MOBILITY (Research stays abroad lasting more than six months)

	Name of faculty/department/centre, name of university/institution/country
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11/2020-08/2021	Petr Bartunek, CZ-openscreen, Institute of Molecular Genetics, Czechia
03/2020-11/2020	Prof. Lafontaine, Department of Biology, Faculty of Sciences, University of Sherbrooke, Canada

SUPERVISION OF GRADUATE STUDENTS AND RESEARCH FELLOWS

	No. of	Master's students/ Ph.D./Postdocs	Name of faculty/department/centre, name of university/ institution/ country
2021-ongoing	2	Ph.D.	Prof. Brenk, The Department of Biomedicine, Faculty of Medicine, University of Bergen, Norway
2024	2	Master's student	Prof. Brenk, The Department of Biomedicine, Faculty of Medicine, University of Bergen, Norway
2012-2017	2	Master's student	Vivek Rao, Infectious disease biology, CSIR-Institute of Genomics and Integrative Biology, India

INSTITUTIONAL RESPONSIBILITIES

	Name of university/institution/country
2021	Member of the BioCat scientific committee; Reviewer, Norwegian Graduate School in Biocatalysis, Norway

MEMBERSHIPS OF ACADEMIES / SCIENTIFIC SOCIETIES / NETWORKS (if applicable)

	Name of academies, scientific societies, networks
2022 onwards	Member, RNA Society, USA
2019 onwards	BioCat, Norwegian Graduate School in Biocatalysis, Norway

EARLY ACHIEVEMENTS TRACK RECORD

In total: 8 papers, Google Scholar h-index: 5

5 Key publications from last five years (* for role as corresponding author)

1. Sudarshan Shantinath Patil, **Vipul Navinchandra Panchal**, Trude Kvalnes Røstbø, Sofya Romanyuk, Hanne Hollås, Ruth Brenk, Ann Kari Grindheim and Anni Vedeler. RNA-binding is an ancient trait of the Annexin family. *Front. Cell Dev. Biol.*, 11 (2023), **Cited: 0**
2. Kasper P. Lundquist and **Vipul Panchal** and Charlotte H. Gotfredsen and Ruth Brenk and Mads H. Clausen*. Fragment-Based Drug Discovery for RNA Targets. *ChemMedChem*. 16: 2588—2603 (2021). **Cited: 11**
3. **Vipul Panchal*** and Ruth Brenk. Riboswitches as Drug Targets for Antibiotics. *Antibiotics*. 10: 45 (2021), **Cited: 61**
4. **Vipul Panchal**, Nidhi Jatana, Anchal Malik, Bhupesh Taneja, Ravikant Pal, Apoorva Bhatt, Gurdyal S Besra, Lipi Thukral, Sarika Chaudhary, Vivek Rao. A novel mutation alters the stability of PapA2 resulting in the complete abrogation of sulfolipids in clinical mycobacterial strains. *Faseb Bioadvances* 1 (5), 306-319 (2019), **Cited: 7**
5. Ankur Bothra, Prabhakar Arumugam, **Vipul Panchal**, Dilip Menon, Sonali Srivastava, Deepthi Shankaran, Ananya Nandy, Neetika Jaisinghani, Archana Singh, Rajesh S. Gokhale, Sheetal Gandotra & Vivek Rao. Phospholipid homeostasis, membrane tenacity and survival of Mtb in lipid rich conditions is determined by MmpL11 function. *Scientific reports* 8 (1), 1-14 (2018), **Cited: 30**

Examples of leadership/participation in industrial or public innovation or design and/or highlights from research or innovation with societal impact.

As an active participant in The Joint Programming Initiative on Antimicrobial Resistance (JPIAMR) project-Explore, I have developed and innovative high-throughput assay that probes compounds modulating the regulatory activity of the novel antibacterial drug target- TPP riboswitch. As the TPP riboswitch is found in all human pathogens, novel ligands identified using this assay will directly lead to a drug-like compound, which in turn could potentially be developed into a new broad-spectrum antibiotic drug against the WHO priority list of pathogens acronym as ESKAPE. This directly contributes to the UN Sustainable Development Goal-3 of human health and well-being.

Invited presentations to peer-reviewed national or international conferences and/or international advanced schools

Conferences

- Bruna Schuck de Azevedo, **Vipul Panchal**, Ruth Brenk. Structure-based drug design of *Pseudomonas aeruginosa*'s 1-deoxy-D-xylulose 5-phosphate reductoisomerase inhibitor. BioCat conference-**2022**, Norway
- **Panchal, V. N.**, Bothra, A., Chaudhary, S., & Rao, V. Molecular basis for missense-mutation induced functional loss in Mtb PapA2, 24th Congress and General Assembly of the International Union of Crystallography, **IUCR-2017**, Hyderabad, **India**.
- A Bothra, A Prabhakar, **V Panchal**. "Mmpl family of genes regulate the biogenesis and maintenance of cell wall glycolipids the potent virulent factors for *M. tuberculosis* pathogenesis" at Keystone symposium (2015), Colorado, **United States**

Invited presentations

- **Vipul Panchal**. JPIAMR Therapeutics Workshop – Feeding the AMR Therapeutics Pipeline. April 20-22, 2021, Virtual event.

Experiences from major research communication, dissemination or outreach activities and/or invited presentations in public conferences

Communication and Dissemination

- JPIAMR Therapeutics Workshop-**2021**, Feeding the AMR Therapeutics Pipeline. Virtual event.
- Drug discovery get together (**2023**), EITRI Medical Incubator, Department of Biomedicine, University of Bergen, **Norway**

Outreach activities

Event	Subject	Target Audience
Alumini talk- 2022	RNA-focused drug discovery	Masters' students, Department of Biochemistry, The M. S. University of Baroda, Gujarat, India
ILS Open Day & Science Festival- 2019	Protein-crystallography and structure biology	Upper secondary schools, Bhubaneswar, Orisa, India
Science Outreach IGIB- 2017	Demonstration of crystallography	lower secondary and upper secondary schools, New Delhi, India
Science Outreach IGIB- 2016	Visualization of the microbial world using microscopy	lower secondary and upper secondary schools, New Delhi, India
Science Outreach IGIB- 2013	Nucleic acid isolation	lower secondary and upper secondary schools, New Delhi, India