

Anmol Adhav

I am a structural biologist with experience in X-ray crystallography and cryoEM with a keen interest in combining techniques to study the structure and function of large and complex macromolecular assemblies. Over the course of my career, I have developed deep expertise in protein ligand complex structure determination and analysis. I am also proficient in using a variety of software tools for protein structure determination and analysis. I am highly motivated to contribute to a research team that is using structural biology and biochemistry to drive innovation in medicine and technology.

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Languages

English

Spanish (B1)

Marathi (Native)

Hindi (Native)

Societies

Spanish Society for

biochemistry and

molecular biology

(SEBBM)

National Academy of

Sciences India (NASI)

X (Twitter)

[@anmoladhav](https://twitter.com/anmoladhav)

Website

anmol-adhav.github.io

Academic Positions

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|---------------------------|---|---|
| 01.07.2024– Present | Postdoctoral researcher Structural and functional characterization of novel bacterial defence systems. Supervisor: Prof. Guillermo Montoya | Novo Nordisk Foundation Center for Protein Research |
| 01.06.2021– 15.06.2024 | Research assistant Continuing the PhD work and working on an EU project on SARS-CoV2 antivirals. Supervisor: Prof. Alberto Marina | Instituto de Biomedicina de Valencia IBV-CSIC |
| 01.06.2018– 31.05.2021 | Marie-Curie Early stage researcher Structure based design of antibiotics targeting the bacterial histidine kinases. Supervisor: Prof. Alberto Marina. Funded by the European Union's Horizon 2020 research No. 765147 | Instituto de Biomedicina de Valencia IBV-CSIC |
| 01.09.2017– 30.04.2018 | Research assistant Biophysical and biochemical characterization of lepidopteran trehalases. Supervisors: Dr. Rakesh Joshi. | Institute of Bioinformatics and Biotechnology University of Pune, India |

Education

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| 01.09.2018– 14.11.2024 | PhD Structural and functional characterisation of drug-histidine kinase complexes Supervisor: Prof. Alberto Marina. | University of Valencia |
| 11.09.2016– 30.08.2017 | MTech by Research Applications of trehalase inhibitors in <i>Helicoverpa armigera</i> control Supervisor: Dr. Rakesh Joshi. | Institute of Bioinformatics and Biotechnology University of Pune, India |
| 11.06.2011– 15.06.2016 | Integrated Master of Science (M.Sc) in biotechnology Dissertation: Structure and mechanism of trehalase from a Lepidopteran symbiotic bacteria Supervisors: Prof. Ashok Giri-National Chemical Laboratory, and Dr Rakesh Joshi. | Institute of Bioinformatics and Biotechnology University of Pune, India |

Grants/Funding

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| 08.01.19–10.01.19 | CCP4 Study Weekend, Nottingham, UK Attended in person the talks and the workshops emphasizing molecular replacement. Secured student burseries for attendance | STFC, UK |
| 01.06.18–31.05.21 | PhD Fellowship Marie-Curie Early stage researcher in the Innovative training network CARTNET (Combatting Antimicrobial Resistance Training Network) comprising of 13 PhD students located across Europe. | Instituto de Biomedicina de Valencia IBV-CSIC |

Industry Secondment

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| 13.05.19–21.06.19 | Training in computer aided drug design As part of the CARTNET, Oxford Drug Design hosted me as visiting researcher for training in drug design as part of my PhD project. Learned to use programs for drug design, molecular docking and entry level MD simulations | Oxford Drug Design, Oxford, UK |
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Conference and Presentations

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| 01.10.25 | cryoNET Symposium 2025 | Umeå |
| 11.06.25–13.06.25 | Danish Viruses of Microbes Network- symposium | Copenhagen, Denmark |
| 08.04.25–10.04.25 | EMBO workshop: The Immune System of Bacteria | Paris, France |
| 16.10.24 | cryoNET symposium 2024 Attended | Aarhus, Denmark |
| 20.11.23 – 22.11.23 | Scientific Meeting PTI-Global health Poster | Madrid, Spain |
| 16.10.23–17.10.23 | NeoHealth Prometeo project conference Attended | Valencia, Spain |
| 05.10.22–06.10.22 | Scientific meeting PTI-Global Health Poster | Valencia, Spain |
| 06.09.22–09.09.22 | 44th conference of the Spanish Society for biochemistry and molecular biology Poster | Malaga, Spain |
| 25.09.21–27.09.21 | CARTNET-Network update meeting and conference Talk | Valencia, Spain |
| 08.07.20 | CARTNET-ESR presentations Talk | Online symposium |
| 27.04.20–01.05.20 | CCP-EM spring symposium Attended | Online symposium |
| 11.11.19–12.11.19 | CARTNET-Network symposium and Training Talk | Palma de Mallorca, Spain |
| 17.10.19–18.10.19 | Looking for the molecular basis of biological processes and metabolic diseases Attended | Valencia, Spain |
| 02.08.19–03.08.19 | CARTNET ESR meeting to evaluate progress of the project Talk | Riga, Latvia |
| 14.01.19–18.01.19 | CARTNET project check meeting and workshop Talk | Warwick, UK |
| 08.01.19–10.01.19 | CCP4 Study weekend | Nottingham, UK |

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| 04.06.18 | CARTNET project Kick off meeting and training Talk | Copenhagen, Denmark |
| 08.12.17–10.12.17 | The National Academy of Sciences, India (NASI) 87th Annual Session and Symposium on Basic Research – It's role in National Development Talk | University of Pune, India |
| 19.01.16–21.01.16 | Accelerating Biology 2016: Decoding the deluge Attended | Centre for Development of Advanced Computing (C-DAC), Pune, India |
| 10.01.14–11.01.14 | National Symposium on Biomedicine: Unfolding the secretes from nature Attended and organized | University of Pune, India |

Relevant Training

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| 05.06.18-08.06.18 | CARTNET training event Drug discovery (industry translation), reporting, antibiotic discovery, genomics and training in science communication | Helsingør, Denmark |
| 08.01.19 | CCP4 Study weekend Talks and workshops with emphasis on molecular replacement. Lunchtime byte sessions on CCP4i2, Phaser, Refmac5, model building in coot, ARPwARP | Nottingham, UK |
| 14.01.19-17.01.19 | CARTNET workshop Impactful research, grant writing commercialization and start-up, mass spectrometry, bioinformatics, sequencing basics, training in Nanopore sequencing and analysis. Media training and research communication | University of Warwick, UK |
| 10.11.19-13.11.19 | CARTNET ESR Network Training session Training in open science, open access and open innovation. | Palma de Mallorca, Spain |
| 09.07.20 | CARTNET training and workshop on Entrepreneurship Training and workshop conducted by Oxford Drug Design, UK and Naicons, Italy supervisors | Online |
| 16.09.20 | ESR workshop on Grant Writing Training in Grant writing from University of Copenhagen Research support unit | Online |
| 30.11.20-11.12.20 | DLS-CCP4 Data Collection and Structure Solution Workshop Secured a place on this competitive two week long comprehensive training workshop on X-ray data collection to structure solution. Workshop included basic theory to practical experience. Also included introduction to various beamlines at Diamond Light Source synchrotron. Also worked with the experts on my own data to solve issues. | Online |
| 24.03.21 | ESR workshop on Open Access Training from University of Copenhagen Library Staff | Online |
| 14.04.21-16.04.21 | Training in effective writing Training on effective writing and structuring of thesis introduction. Abstract writing for paper and poster | Online |

Relevant Techniques

Protein Production: Cloning, expression and purification of proteins in bacterial cells. Purification of protein from insect/human cells.

Protein Characterization: Enzymatic assays, Protein stability determination using Thermal Shift assays, Circular Dichroism

Protein-protein/small molecule interaction: Measurement of binding affinities using Microscale Thermophoresis, Biolayer interferometry, Isothermal Titration calorimetry, Fluorescence assays. Electrophoretic mobility shift assays. Molecular docking.

Protein structure determination: Modelling using AlphaFold, RosettaFold. Structure determination by X-ray crystallography (Crystallization, X-ray diffraction, data processing, model building and validation). Data collection in synchrotron radiation facilities. Single particle cryo electron microscopy, Grid preparation using vitrobot for plunge freezing. Data collection from the grids and particle picking in Cryosparc, followed by model building. Coot, PyMOL and ChimeraX.

Protein-small molecule drug discovery: Fragment screening data analysis from XChem Platform (Diamond Light Source), PanDDA for identifying weak densities. Crystallography of small molecule-protein complexes. Soaking and co-crystallization of proteins.

Molecular microbiology: Growth curve assays in bacteria, bacteriophage infection assays to determine growth effects both in liquid culture and top agar-based assays. Determination of MIC in response to antibiotic/inhibitors.

Bioinformatics: Nucleic acid and protein sequence analysis (alignments, assembly and annotation), phylogenetics. Familiar with tools such as BLAST, ClustalW.

References:

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2. Prof. Alberto Marina
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3. Dr. Santiago Ramon Maiques
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