

Dr. Ajit Kulkarni



Designation: Associate Professor

Email ID: ajit.kulkarni@dpu.edu.in

Qualification: Ph.D.

Area of Specialization: Medical Microbiology

Research Interest: Vaccine, Infectious diseases, Regenerative medicine, Microbiology, Virology, Immunology

EDUCATIONAL QUALIFICATIONS: Ph.D.

ACADEMIC AND RESEARCH EXPERIENCE: 19 years

Dr. D. Y. Patil Biotechnology & Bioinformatics Institute

Associate Professor

Responsibilities

- Teaching undergraduate & graduate students
- Coordinating industry collaborations

Solo Stem Cells Pvt. Ltd.

Lab Head

Responsibilities

- Supervise routine Laboratory operations of Stem cells & Regenerative medicines, protocol and SOP preparations.

StemRx Bioscience Solutions Pvt. Ltd.

Lab Head

Responsibilities

Pune

August 2024 – Till date

Pune

March 2024- May 2024

Mumbai

Nov 2022 to Feb 2024

- Supervise routine Laboratory operations of Stem cells & Regenerative medicines. Also supervise various research projects.

Nirav Biosolutions Pvt. Ltd.

Pune

Business Development Manager

Dec 2021-Oct 2022

Responsibilities

- To establish and develop relationships with customers, suppliers and other partners
- To generate new business opportunities (trading, lab services and student training) by technical /scientific discussion with customers to understand their needs and accordingly guide sales team.
- To lead a team of Sales executive, Customer Support and Lab Services

StemRx Bioscience Solutions Pvt. Ltd.

Mumbai

Lab Head

Mar 2021 to Nov 2021

Responsibilities

- Supervise routine Laboratory operations of Stem cells & Regenerative medicines. Also supervise various research projects.

TheraIndx Lifesciences Pvt. Ltd.

Bangalore

Senior Scientist-Molecular Biology

Sept 2019 – Dec 2020

Responsibilities

- Anticancer testing-cancer biomarkers and antivirals testing etc.
- Real-Time PCR and ELISA for cancer and other biomarkers and Influenza A-H1N1, human Beta Corona virus testing etc.
- Successfully completed various antiviral and anticancer projects.

Molbio Diagnostics Pvt. Ltd.,

Pune

Application Specialist-Support

October 2018 – August 2019

Responsibilities

- Demo, Installation, Training and Troubleshooting of Trueprep Real Time PCR device for Rest of Maharashtra region (W)

AbGenics Life Sciences Pvt. Ltd.,

Pune

Research Associate

Mar 2016– October 2018

Responsibilities

- Systematically supervising various projects on recombinant antibody engineering for cancer, infectious diseases, autoimmune diseases etc.
- Responsible for carrying out PBMC isolation, molecular assays- RNA isolation, cDNA preparation, PCR, Agarose gel electrophoresis, Restriction digestion, Cloning, transformation, transfection, bacteriophage panning, ELISA, Recombinant protein expression and manual purification by Ni NTA column, SDS-PAGE, Western Blot *in vitro* microbiological assays and cell culture-based assays
- Detailed documentation of data, research process & procedures for future references
- Diligently assisting in preparation of weekly, monthly progress reports and presentation to the Director
- Conscientiously served as a lead to junior team members and as a link to other teams by providing

assistance and training

Serum Institute of India Ltd

Officer -Quality Control

Pune

Oct 2007 – Jun 2010

Responsibilities

- Efficiently conducted QC testing of various vaccine products (from bulk to finished products) and water samples
- Effectively performed tests like ELISA, PCR, BET
- Systematically performed all work in a safe manner and maintain a clean and organized environment
- Worked in accordance with approved methods and SOPs while performing tests
- Actively worked in a team environment and participates in natural work groups and increase productivity

National AIDS Research Institute (NARI)

Lab Technician, Research Associate

Pune

July 2000– Oct 2007

Responsibilities

- Responsible for screening and Immunogenicity testing (ELISA, PBMC isolation, ELISPOT, CD4/CD8) of volunteers enrolled in Phase 1 HIV-1 vaccine trial, a collaborative research project between International AIDS Vaccine Initiative (IAVI), New York and NARI, Pune, India.
- Responsible for screening of Sexually Transmitted Diseases patients by Gram stain, rapid HIV ELISA, RPR, DGI, VDRL, bacterial culture in a collaborative research project between JHU, USA and NARI, Pune (HPTN, HVTN etc.)

RESEARCH PROJECTS

- **Ph.D. Project:** “Immunogenicity study of recombinant Dengue gene construct in mice”
Guide: Dr. (Mrs.) Ranjana A. Deshmukh, MD, Ph.D. (Visiting Research Scientist and Former Director, Haffkine Institute, Mumbai).
Co-Guide: Prof. (Dr.) Abhay Chowdhary, MD, DHA, DM Virology, FIMSA, FRSTMH Prof. & Head, Dept. of Microbiology, Sir JJ Hospital & Former Director, Haffkine Institute, Mumbai
- **M.Sc. Project:** “Incidence of Group-B Beta Haemolytic Streptococci in the vaginal flora of pregnant women and its transmission to the neonates”
Guide: Prof. (Dr.) (Miss) S. G. Pawar MD, DCP (Professor and Head, Dept. of Microbiology, Govt. Medical College, Miraj)

AWARDS AND ACHIEVEMENTS:

Received first place in merit for Medical Microbiology subject at Shivaji University during M.Sc. degree.

REVIEWER:

Reviewer for Scientific medical journals like Vaccine, Gavin publisher, IJRAR (International journal of Research and Analytical Reviews).

PUBLICATIONS:

1. Gangaraju B, Mahajan P, Subramanian S, **Kulkarni A**, Mahajan S. Lyophilized platelet-rich plasma for the management of thin endometrium and facilitation of in-vitro fertilization. JBRA Assist Reprod. 2022 Aug 1;26(3):303-309. doi: 10.5935/1518-0557.20220021. Epub ahead of print. PMID: 35916459.
2. Mahajan P, **Kulkarni A**, Waghdhare S, Mahajan S, Subramanian S. Exosomes: Next generation medicine. World J Adv Res Rev. 2022;16(1):102-110.
3. Mahajan P, **Kulkarni A**, Waghdhare S, Mahajan S, Subramanian S. Role of natural killer cell in health and disease: A review. Int J Res Anal Rev. 2022;9(2):521-528.
4. Mahajan P, **Kulkarni A**, Waghdhare S, Mahajan S. Natural killer cells: Development, maturation and increasing clinical application. Int J Creat Res Thoughts. 2022;10(1):189-195.
5. Mahajan P, **Kulkarni A**, Subramanian S, Mahajan S. Lyophilized platelet-rich plasma: Advantages and applications in COVID-19 patients. SRJ Clin Med Sci. 2021;1(3):5-10.
6. Mahajan P, **Kulkarni A**, Subramanian S, Mahajan S. Current perspectives of therapeutic applications of umbilical cord-derived mesenchymal stem cells in various diseases. Fut J Pharm Health Sci. 2021;1(4):65-72.
7. Waghdhare SS, Mahajan P, **Kulkarni A**. Umbilical cord mesenchymal stem cells derived exosomes, characterization and therapeutic application in translational medicine. Int J Res Eng Sci. 2021;9(10):42-65.
8. Mahajan P, **Kulkarni A**, Bandre A, Mahajan S, Subramanian S. Role of gut microbiota in autoimmune diseases: a review. J Vaccines Immunol. 2021;6:163. doi:10.29011/2575-789X.000163.
9. **Kulkarni A**, Bhat R, Malik M, Sane S, Kothari S, Vaidya S, Chowdhary A, Deshmukh RA. Neutralizing antibody response and efficacy of novel recombinant tetravalent dengue DNA vaccine comprising envelope domain III in mice. Iran J Med Sci. 2017;42(2):152-160.
10. **Kulkarni A**, Shinde P, Kothari S, Warke R, Chowdhary A, Deshmukh RA. A novel tetravalent recombinant envelope domain III vaccine against dengue: an in silico approach. Int J Pharm Sci Res. 2015;6(6):2441-2450. doi:10.13040/IJPSR.0975-8232.6(6).2441-50.
11. **Kulkarni A**, Sangar V, Kothari S, Mehta S, Dahake R, Mukherjee S, Chowdhary A, Deshmukh RA. Construction of envelope domain III based recombinant tetravalent dengue vaccine. Int J Pharm Sci Rev Res. 2014;26(2):44-49.
12. **Kulkarni A**, Pawar SG, Dharmadhikari CA, Kulkarni RD. Colonization of pregnant women and their newborn infants with group B Streptococci. Indian J Med Microbiol. 2001;19(2):97-100.

BOOK CHAPTERS:

MULTIVALENT RECOMBINANT DNA VACCINE CONSTRUCTION (in communication)

CERTIFICATIONS:

Post Graduate Diploma in Clinical Research & Data Management from Ruby Hall Clinic and PPCE, Pune in 2016

CONFERENCES (Abstracts/Oral/Poster):

- Sweta Kothari, Deepak Patil, **Ajit Kulkarni**, Kanchan Kathalay, Debarchana Saha and Abhay

Chowdhary "A preliminary study to assess the efficiency of different diagnostic tools for dengue virus infection" presented at National Virology Conference held at Vidya Pratishthan's School of Biotechnology, Baramati, India from 23rd January to 25th January 2012.

WORKSHOPS:

- Attended training session on DBT sponsored Techniques in Molecular Biology at Bhavan's Research Center, Mumbai
- Attended training session on Bacterial Ghost-based Vaccine Development at NIRRH, Mumbai
- Attended training session on PPD sponsored Good Clinical Laboratory Practice (GCLP) at NARI, Pune
- Attended training session on IAVI sponsored Good Clinical Laboratory Practice (GCLP) at Lusaka, Zambia
- Attended training session on JHU sponsored AIDS Vaccine Trials & Good Clinical Practice (GCP) at NARI, Pune
- Attended training session on PPD sponsored Good Clinical Practices (GCP) at NARI, Pune
- Attended training session on WHO sponsored Short-term training workshop on HIV/AIDS at NARI, Pune

BIOINFORMATICS AND BIOTECHNOLOGY SKILLS:

- Microbiology Assay : ELISA, Antimicrobial assay, Basic microbiological techniques,
- Molecular Assay : RNA isolation, cDNA preparation, PCR, Agarose gel electrophoresis, Real Time PCR, Plasmid isolation, RE digestion, Cloning, Transformation, SDS-PAGE, Western Blot, Transfection, Competent cells preparation, Recombinant protein expression and purification by Ni NTA column
- Cell Culture : Passage, Cryopreservation, and Maintenance (cancer cell lines, other cell lines and Stem cells)
- Virology Assay : Virus propagation, TCID₅₀, TCID₅₀ inhibition assay, MTT assay, HA and HAI assay
- Immunology Assay : PBMC isolation, ELISPOT, Flow cytometry- CD4/CD8, Stem cell markers, Indirect immunofluorescence assay
- Animal Handling : Mice- Intracerebral, intramuscular inoculation, LD₅₀
- Others : Bacterial Endotoxin Test, IQC, EQC, SOP preparation