

VINAY PATHAK

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Seeking a challenging assignment as an Assistant/Associate Professor with a reputed organization wherein I can utilize my experience and knowledge gained in academia and research.

PROFILE SNAPSHOT

- **Ph.D. (prethesis submitted) with more than 9 years of research and teaching experience in India and abroad.**
- Experienced in cell culturing, enzyme activity and analytical assays like ELISA, SDS-PAGE, Western-blotting, Polymerase chain reaction, Electron paramagnetic resonance spectroscopy, HPLC, CCD, etc.
- Rich experience in standardizing protocols, streamlining procedures and enhancing research performance.
- Worked independently and as part of a team to achieve research goals.
- Skilled in operation, calibration, and maintenance of highly sophisticated equipment and systems.
- Excelled at working in an environment requiring problem resolution, with proven effectiveness in multitasking in a competitive, high-impact, and fast-paced environment while juggling multiple priorities simultaneously with good judgment.
- Highly motivated with demonstrated people management skills, and ability to communicate effectively as well as build relationships at all organizational levels.

CORE SKILLS

✓ Research & Development	✓ Analysis & Report Preparation	✓ Customer Handling Skills
✓ Protocol Development & Standardization	✓ Documentation	✓ Incident Management
✓ Sample Collection	✓ Record Maintenance	✓ Liaison & Coordination
✓ Testing & Experimentation	✓ Workplace Safety & Cleanliness	✓ Team Management

ACADEMIC CREDENTIALS

Ph.D. Student, Teerthanker Mahaveer University, Moradabad, India | September 2021 – Till date

Thesis title: Measurement of reactive oxygen species and effect of antioxidants on patients with pulmonary diseases

- Measurement of reactive oxygen species using Electron Paramagnetic Resonance Spectroscopy.
- Assessment of biomolecule oxidation using ELISA.
- Effect of various scavengers and antioxidants on reactive oxygen species formation and biomolecule oxidation.

Ph.D. Student, Palacky University, Olomouc, Czech Republic | October 2013 – February 2019 (Incomplete)

Thesis title: Mechanisms of Production and Scavenging of reactive oxygen species

- Measurement of reactive oxygen species using Electron Paramagnetic Resonance Spectroscopy and Confocal microscopy.
- Assessment of biomolecule oxidation using SDS- PAGE and Western blotting.
- Effect of various scavengers and antioxidants on reactive oxygen species formation and biomolecule oxidation.

Master of Science in Biochemistry from Hemwati Nandan Bahuguna Garhwal University, India | August 2007 – July 2009

Thesis title: Development of peptide-based immunogen against Yersinia pestis

- Synthesis of a 17 amino acid long peptide by solid-phase peptide synthesis (SPPS).
- Immunization of mice by intranasal route, collection of sera and estimation of antibody titer by ELISA.
- Isolation and culture of spleen cells for observing T-cell proliferation.

TEACHING AND RESEARCH EXPERIENCE

Teerthanker Mahaveer University, Moradabad, India | November 2021 – To date

Research Fellow/Lecturer

Description: Currently working as a Lecturer at the Department of Medical Laboratory Techniques, College of Paramedical Sciences, Teerthanker Mahaveer University, Moradabad, India, and teaching Bachelor and Master students assigned to me besides my research work.

Palacky University, Olomouc, Czech Republic | October 2013 – February 2019

Ph.D. Student/ Scientist

Research Title: Mechanisms of Production and Scavenging of reactive oxygen species

Description: The main tasks performed in this study were- measurement of reactive oxygen species using EPR and Confocal microscopy, assessment of biomolecule oxidation and effect of various scavengers and antioxidants on reactive oxygen species formation, and biomolecule oxidation using SDS-PAGE, Western-blotting, HPLC, CCD, etc.

- Standardized experimental methods and prepared protocols.
- Planned and performed routine scientific experiments in the laboratory.

- Analyzed data, prepared results, and wrote manuscripts.
- Supervised bachelor and master students and helped them plan their experiments and write their thesis.

Highlights:

- Introduced new techniques and standardized new protocols in the department which helped fellow researchers to obtain new findings in their research area.
- Published a good-quality research article based on my findings.

All India Institute of Medical Sciences, New Delhi, India | October 2012 – July 2013

Senior Research Fellow

Research Title: Study of sperm molecular factors in idiopathic recurrent spontaneous abortions

Description: Main tasks performed in this study were- confirmation of Yq micro-deletion in sperm DNA using PCR, measurement of sperm DNA strand breaks using FACS, and estimation of 8-hydroxy-2-deoxyguanosine in semen using ELISA.

- Collected samples from patients and maintained storage.
- Performed tests and experiments on collected samples.
- Analyzed results and prepared reports.
- Documented details of work carried out in an accurate and timely manner.
- Maintained a patient logbook/records.
- Completed patient history forms, reviewed medical records, and obtained relevant clinical information for inclusion in the report.
- Maintained the work area clean and sterile and ensured strict adherence to the prescribed biosafety procedures.
- Followed up on patient samples pending list, ensured timely and correct documentation of logbooks.
- Successful in publishing two co-author articles from this study.

Institute of Liver and Biliary Sciences, New Delhi, India | April 2011 – October 2012

Junior Research Fellow

Research Title: Role of bone-marrow derived angiogenic cells in chronic liver diseases

Description: The study involved the creation of chronic liver disease condition in mice by injecting CCl₄ by intraperitoneal route, injection of bone marrow-derived circulating angiogenic cells into the femur of diseased mice, and detection of circulating angiogenic cells in the liver of diseased mice using Immunohistochemistry and FACS.

- Performed experiments on animal models (mice).
- Collected blood and other organs for further experiments.
- Conducted experiments, and wrote reports, procedures, and protocols.
- Maintained logs of all research data and discovery.
- Ensured adherence to all internal policies and procedures, as well as external quality standards.

Doon P.G. Paramedical College and Hospital, Dehradun, India | May 2010 – April 2011

Lecturer

Description: Worked as a Lecturer at the Department of Biochemistry, Doon P.G. Paramedical College and Hospital (Affiliated to Hemwati Nandan Bahuguna Garhwal University, a Central University) Dehradun, India, and taught assigned subjects to Bachelor and Master students.

- Gave lectures mostly in form of power-point presentations and also shared the presentations with the students.
- Prepared question papers for internal evaluations and also evaluated the answer-sheets.
- Conducted practical sessions and also checked the practical record books of the students.

All India Institute of Medical Sciences, New Delhi, India | February 2010 – May 2010

Laboratory Technician

Research Title: Efficacy and Safety of immunomodulator mycobacterium w (MW) as an adjunct therapy in pulmonary tuberculosis

Description: The main tasks performed in this study were- culture (solid and liquid) of samples collected from the patient to detect the presence of *mycobacterium*, microscopic investigation to determine the level of infection, and report preparation.

- Collected samples from patients and maintained storage.
- Performed tests and experiments on collected samples.
- Analyzed results and prepared reports.
- Maintained a patient logbook/records.

All India Institute of Medical Sciences, New Delhi, India | September 2009 – December 2009

Research Trainee

Research Title: Development of multiple antigenic peptide (MAP) as a vaccine target against *Yersinia pestis*

Description: The study involved the Synthesis of a multiple antigenic peptide by solid-phase peptide synthesis (SPPS), Immunization of mice by the intranasal route, collection of sera and estimation of antibody titer by ELISA.

- Performed experiments on animal models (mice).
- Collected blood and other organs for further experiments.
- Conducted experiments, and wrote reports, procedures, and protocols.
- Maintained logs of all research data and discovery.
- Ensured adherence to all internal policies and procedures, as well as external quality standards.

TECHNICAL EXPERTISE

- ELISA, SDS-PAGE, Western-blotting, Polymerase chain reaction, Electron paramagnetic resonance spectroscopy, etc.
- MS Office and programs for numerical analysis of data and scientific graphs

PUBLICATIONS AND BOOK CHAPTERS

- Role of Hydroxyl Radical in the Progression of Chronic Obstructive Pulmonary Disease, **Vinay Pathak**, Navneet Kumar, Pradeep Nirala, Indian Journal of Respiratory Care, 2024 (in process)
- Lycopene Protects Lungs from Hydroxyl Radical-caused Oxidative Damage in Chronic Obstructive Pulmonary Disease Patients, **Vinay Pathak**, Navneet Kumar, Pradeep Nirala, Current Science, 2024 (in process)
- Occurrence of Thrombosis and Thrombocytopenia in Females During Perimenopause Post-COVID-19 Vaccination, Ruchi Kant, **Vinay Pathak**, Eurasian Journal of Medicine, 2024 (in process)
- Medical Benefits and Side-effects of Lepidium meyenii Root, Deepak Kumar Verma, **Vinay Pathak**, Sapna Yadav, Sadiya Sameer, Navneet Kumar, Aashna Sinha et al. Medicinal Roots and Tubers for Pharmaceutical and Commercial Applications, CRC Press (Taylor & Francis), 2024, 1st ed., eISBN: ISBN9781003295037, <https://doi.org/10.1201/b22924>
- Impact of reactive oxygen species on the progression of human diseases by damaging biomolecules, **Vinay Pathak**, Ruchi Kant, Navneet Kumar, Biomedicine, 2023; 43(3): 821-824, DOI: <https://doi.org/10.51248/v43i3.2439>
- Changes in biochemical, immunological and inflammatory parameters in hyper and hypothyroidism: A systematic review, Shikha Paliwal, **Vinay Pathak**, Ruchi Kant, Biomedicine: 2022; 42(5): 877-880, DOI: <https://doi.org/10.51248/v42i5.1755>
- Formation of singlet oxygen by decomposition of protein hydroperoxide in photosystem II, **Vinay Pathak**, Ankush Prasad, Pavel Pospisil, PLoS ONE, 2017, 12(7): e0181732, <https://doi.org/10.1371/journal.pone.0181732>
- Oxidative stress: Role in maintenance of telomere integrity, Mishra Swetasmita, **Pathak Vinay**, Singh Gurbinder, Singh Neeta, Malhotra Neena, Kumar Rajeev, Dada Rima, Journal of the Anatomical Society of India, 64S (2015) S37–S62
- Oxidative Damage to Sperm DNA: Clinical Implications, Swetasmita Mishra, Kranthi V, Rajeev Kumar, Neena Malhotra, Kuldeep Mohanty, **Vinay Pathak** and Rima Dada, Andrology, 2014, 3:1, DOI: 10.4172/2167-0250.1000116

CONFERENCES & SEMINARS

- A spin-trapping based detection of reactive oxygen species in patients with pulmonary diseases using electron paramagnetic resonance spectroscopy, Meerut, India 2023 - Oral presentation
- Measurement of reactive oxygen species and biomolecule oxidation in patients with pulmonary diseases, Dehradun, India 2022 – Oral presentation
- Formation of singlet oxygen by decomposition of protein hydroperoxide in photosystem II, Olomouc, Czech Republic, 2017 – Oral presentation
- New aspects of biomolecule protection by zeaxanthin in Arabidopsis thaliana, Olomouc, Czech Republic, 2016 – Oral presentation
- Zeaxanthin directly scavenges carbon-centered radicals and provides protection against photooxidative stress, Olomouc, Czech Republic, 2015, Plant Biotechnology: Green for good III (G4G III) conference- poster presentation
- Mechanism of production and scavenging of singlet oxygen and carbon-centered radical in different isolated systems of higher plants, Olomouc, Czech Republic, 2015 – Oral presentation
- Protective role of zeaxanthin in lipid peroxidation under high light stress in Arabidopsis thaliana, Toledo, Spain, 2014 - Poster presentation in Oxidative stress conference
- Production of singlet oxygen and carbon-centered radical in Photosystem II of higher plants using EPR spin-trapping technique, Olomouc, Czech Republic, 2014 – Oral presentation
- Regenerative Medicine in Liver Disease, New Delhi, India, 2013 – Indo-German workshop participation
- Free Radicals in Biology and Medicine, New Delhi, India, 2008 – Society for Free Radicals Conference participation
- Advantages of Real-Time Polymerase Chain Reaction, New Delhi, India, 2007 –workshop participation