

CURRICULUM VITAE

PERSONAL DETAIL:

NAME: **Dr. Rana Adhikary**
 FATHER'S NAME: **Utpal Adhikary**
 DATE OF BIRTH: **10th April, 1989**
 NATIONALITY: **Indian**
 RELIGION: **Hinduism**
 CASTE CATEGORY: **General**



CONTACT DETAIL:

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 Dist. Hooghly, West Bengal, PIN- 712232**
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ACADEMIC DETAIL:

DEGREE/ EXMAINATION	BOARD/ UNIVERSITY	YEAR	TOTAL MARKS/ % OF MARKS	DIV.
Secondary examination (10 th level)	WBBSE	2005	561/800 (70.13%)	1 st
Higher Secondary examination (10+2 level)	WBCHSE	2007	334/500 (66.8%)	1 st
Graduation (B.Sc. Honours in Physiology)*	University of Calcutta	2010	524/800 (65.5%)	1 st
Post-graduation (M.Sc. in Human Physiology)**	University of Calcutta	2012	678/1000 (67.8%)	1 st
Ph.D. (Sc.)**	University of Calcutta	2019	NA	NA

*Ranked 1st in Raja Peary Mohan College and held University Rank.

**Completed post-graduation (M.Sc.) in Human Physiology from Department of Physiology, University of Calcutta with Specialization in *Immunology and Microbiology*; and also performed a project work entitled "*Characterization of a clinical isolate of Streptococcus pneumoniae*".

AREA OF SPECIALIZATION:

Immunology & Microbiology

AWARDS AND ACHIEVEMENTS:

- **CSIR-UGC NET:** **AIR-025 in December 2015 (97.57 percentile)**
AIR-045 in June 2016 (97.03 percentile)
- **IIT- GATE, 2013:** **AIR-562 (95.65 percentile); Biochemistry and Microbiology**

TEACHING EXPERIENCE:

Sl No.	POSITION HELD	INSTITUTION (College/University)	DURATION
1.	Guest lecturer	St. Paul's Cathedral Mission College (University of Calcutta)	Sep, 2016 to Dec, 2018 (2 years 4 months)
2.	Guest lecturer	Prasanta Chandra Mahalanobis Mahavidyalaya (West Bengal State University)	Jul, 2017 to Dec, 2018 (1 year 6 months)
3.	Guest lecturer	Bhairab Ganguly College (West Bengal State University)	Sep, 2018 to Dec, 2018 (4 months)
4.	Contractual Whole Time Teacher	St. Paul's Cathedral Mission College (University of Calcutta)	Jan, 2019 to Jan, 2020 (1 year)
5.	State Aided College Teacher (Category I)	St. Paul's Cathedral Mission College (University of Calcutta)	Jan, 2020 to Present (4 years 8 months)

TEACHING SKILLS:

- ❖ Expertised in basic components of biological science (theory and practical based experiments)
- ❖ Expertised in teaching modern physiology, i.e., cellular and molecular explanation of all physiological phenomenon
- ❖ Special expertise in teaching Immunology, Cell biology, Proteomics and Genomics.

RESEARCH EXPERIENCE:

Three years of research experience in Immunology laboratory, Department of Physiology, University of Calcutta, under a research project, entitled – *“Studies on the anti-inflammatory, anti-oxidant, immunomodulatory, anti-microbial and anti-arthritis properties of some common indigenous Indian medicinal plants”*, sponsored by Department of Science and Technology (DST), Govt. of West Bengal from 3rd July, 2013 to 2nd July, 2016.

BROAD AREA OF RESEARCH EXPOSURE:

- ❖ Infectious diseases, i.e. pneumonia, and endotoxemic shock.
- ❖ Signaling associated with phagocytosis and intracellular survival of bacteria.
- ❖ Effects of melatonin and different photoperiods on septic diseases.
- ❖ Rheumatoid and septic arthritis in murine models.
- ❖ Effect of receptor neutralization on inflammatory diseases.
- ❖ Natural products from medicinal plants (flavonoid glycoside) in inflammatory diseases and arthritis.

EXPERIMENTAL SKILLS:

- ❖ Protein extraction from cells and tissues, purification, protein estimation, SDS-PAGE, Immunoblotting, Activity gel assay and ELISA.
- ❖ DNA and RNA extraction from prokaryotes and eukaryotes, DNA and RNA purification and quantitation, PCR and agarose gel electrophoresis.

- ❖ Immunological techniques, *i.e.* determination of antibody titer, DTH response, PFC, antigen-antibody reactions by precipitation, agglutination and hemagglutination, ELISA and others.
- ❖ Microbiological techniques, *i.e.* bacterial staining, spore staining, characterization of the microbial organisms, testing of antibiotic susceptibilities, MIC, MBC, checkerboard assay and DAD.
- ❖ Clinical biochemistry parameter assessments, determination and quantitation of antioxidants and pro-oxidants, enzyme kinetics and determination of K_m , effect of pH and temperature on enzyme kinetics.
- ❖ Basic histological and haematological techniques, Preparation and staining of blood film, identification of blood corpuscles, separation of lymphocytes, monocytes and neutrophils, DC of WBC, TC of RBC and WBC, Hemoglobin estimation, Blood group determination.
- ❖ Testing and analysis of natural drugs (plant extracts), and *in vivo* as well as *in vitro* application of such drugs. Analysis of anti-oxidant, anti-inflammatory, anti-microbial and immunomodulatory actions of such drugs.
- ❖ Basic skills in animal handling (rodents, e.g. mice), force feeding (*p.o.*), intravenous (*i.v.*) and intraperitoneal (*i.p.*) treatments, animal sacrifice and collection of different tissues.

INSTRUMENTS OPERATED AND HANDLED:

- Laminar air flow, bio-safety cabinet, and CO₂ incubator
- Phase contrast microscope
- GENEI agarose gel system and UV illuminator
- PCR system 9700 Thermocycler (Bio-Rad, MJ-Mini thermocycler)
- Bio-Rad Microplate reader
- Bio-Rad Mini-PROTEAN tetra gel, Trans-blot system and Gel documentation system
- Dual beam UV-1800 UV-VIS spectrophotometer (Shimadzu, Kyoto, Japan)
- Bio-Rad Spectrophotometer and Photoelectric colorimeter

CAREER SUMMARY TO DATE:

- Appointed as *State Aided College Teacher* in St. Paul's Cathedral Mission College in January, 2020
- Awarded *Ph.D. (Science)* from University of Calcutta in Physiology on June, 2019
- Appointed as *contractual full time assistant professor* in St. Paul's Cathedral Mission College in January, 2019 and left job at Bhairab Ganguly College and Prasanta Chandra Mahalanobis College
- Appointed as a *guest lecturer* in Bhairab Ganguly College in September, 2018
- Submitted *Ph.D. thesis* on May, 2018
- Appointed as a *contractual lecturer* in Prasanta Chandra Mahalanobis Mahavidyalaya in October, 2017 and refused the offer
- Joined as *guest lecturer* in Prasanta Chandra Mahalanobis Mahavidyalaya in August, 2017
- Joined as *guest lecturer* in St. Paul's Cathedral Mission College in September, 2016 upon termination of the DST, Govt. of West Bengal project
- Awarded *CSIR-UGC NET*, rank-045 in June, 2016 and rank-025 in December, 2015
- Registered for Ph.D. (Science) from University of Calcutta, in September, 2014
- Appointed as *Junior Research Fellow* under a DST, Govt. of West Bengal research project (three years) in July, 2013
- Awarded *GATE (Life Sc.)*, rank-562 in March, 2013
- Awarded *M.Sc. (Human Physiology with specialization in Immunology and Microbiology)* in 2012
- Awarded *B.Sc. (Physiology)* in 2010

SEMINARS AND CONFERENCES:

- Participated in Author Workshop jointly organized by Springer and University of Calcutta on November 20, 2014.
- Presented article on “A review on recent advances in human embryonic stem cell research: Advantages and disadvantages”, in a UGC-DSA funded seminar on *Emerging Trends in Biological Research in India* held on March 6, 2012.

RESEARCH PUBLICATIONS:

1. Anti-inflammatory effects of *Adhatoda vasica*, *Emblca officinalis* and *Clitoria ternatea*: a comparative study. Rana Adhikary and Biswadev Bishayi, *World Journal of Pharmacy and Pharmaceutical Sciences*, 2019. Vol. 8, Issue 5: 1577-99.
2. Anti-arthritic effects of *Adhatoda vasica*, *Emblca officinalis* and *Clitoria ternatea* via downregulation of synovial MMP-2 activity: a comparative study. Rana Adhikary and Biswadev Bishayi, *European Journal of Pharmaceutical and Medical Research*, 2019. Vol. 6, Issue 5: 532-545.
3. Tumor necrosis factor receptor 1 (TNFR1) neutralization ameliorated carrageenan-induced inflammation in mice supplemented with herbal antioxidants. Rana Adhikary, Ajeya Nandi, Sahin Sultana and Biswadev Bishayi, *International Journal of Pharmaceutical Sciences and Research*, 2018. Vol.9, Issue 7: 1000-17. [Impact factor: 0.59; ; ISSN: 2320-5148]
4. *Clitoria ternatea* flower petals: Effect on TNFR1 neutralization via downregulation of synovial matrix metalloproteases. Rana Adhikary, Sahin Sultana and Biswadev Bishayi, *Journal of Ethnopharmacology*, 2018. Vol. 218, 209-22.
5. Protective effects of methanolic extract of *Adhatoda vasica* Nees leaf in collagen-induced arthritis by modulation of synovial toll-like receptor-2 expression and release of pro-inflammatory mediators. Rana Adhikary, Arnab Majhi, Sayantika Mahanti and Biswadev Bishayi, *Journal of Nutrition and Intermediary Metabolism*, 2015. Vol.1, Issue 3: 1-11.
6. Immunomodulatory and anti-oxidant properties of methanolic extract of *Adhatoda vasica* Nees leaf after particulate antigen stimulation in mice. Rana Adhikary, Arnab Majhi, Sayantika Mahanti and Biswadev Bishayi; *Journal of Pharmacy Research*, 2014. Vol.8, Issue 10: 1520-37.
7. Altered expression of CXCR1 (IL-8R) in macrophages utilizing cell surface TNFR1 and IL-1 receptor during *Staphylococcus aureus* infection. Biswadev Bishayi, Rana Adhikary, Sahin Sultana and Ajeya Nandi; *Microbial Pathogenesis*, 2017.
8. Neutralization of MMP-2 and TNFR1 regulated the severity of *S. aureus*-induced septic arthritis by differential alteration of local and systemic proinflammatory cytokines in mice. Sahin Sultana, Rana Adhikary, and Biswadev Bishayi; *Inflammation*, 2017.
9. Beneficial effects of exogenous melatonin in acute *Staphylococcus aureus* and *Escherichia coli* infection-induced inflammation and associated behavioral response in mice after exposure to short photoperiod. Biswadev Bishayi, Rana Adhikary, Ajeya Nandi and Sahin Sultana; *Inflammation*, 2016. Vol. 39, Issue 6: 2072-93.
10. Neutralization of MMP-2 protects *Staphylococcus aureus* infection induced septic arthritis in mice and regulates the levels of cytokines. Sahin Sultana, Rana Adhikary, Ajeya Nandi and Biswadev Bishayi; *Microbial Pathogenesis*, 2016. Vol. 99, 148-61.
11. Levofloxacin - ceftriaxone combination attenuates lung inflammation in a mouse model of bacteremic pneumonia caused by multidrug resistant *Streptococcus pneumoniae* via inhibition of cytolytic activities of pneumolysin and autolysin. Arnab Majhi, Rana Adhikary, Aritra Bhattacharya, Sayantika Mahanti and Biswadev Bishayi; *Antimicrobial Agents and Chemotherapy*, 2014. Vol. 58, Issue 9: 5164-80.

12. Exogenous interleukin-10 and ciprofloxacin treatment reduces inflammation and helps to improve cognitive behaviour in acute and chronic restraint stressed mice infected with *Escherichia coli*. Sayantika Mahanti, Arnab Majhi, Rana Adhikary, Sourish Ghosh, Anirban Basu and Biswadev Bishayi; *Indian Journal of Biochemistry and Biophysics*, 2017. Vol. 54: 241-57.
13. In vitro susceptibility of a penicillin-resistant and tolerable isolate of *Streptococcus pneumoniae* to combination therapy. Arnab Majhi, Ajeya Nandi Rana Adhikary, Sayantika Mahanti and Biswadev Bishayi; *Journal of Infection in Developing Countries*, 2015. Vol. 9, Issue 7: 702-9.
14. Combination therapy with ampicillin and azithromycin in an experimental pneumococcal pneumonia is bactericidal and effective in down regulating inflammation in mice. Arnab Majhi, Kiran Kundu, Rana Adhikary, Madhubanti Banerjee, Sayantika Mahanti, Anirban Basu and Biswadev Bishayi; *Journal of Inflammation*, 2014. Vol. 11, Issue 5.
15. Expression of CXCR1 (IL-8 receptor A) in splenic, peritoneal macrophages and resident bone marrow cells after acute live or heat killed *Staphylococcus aureus* stimulation in mice. Biswadev Bishayi, Ajeya Nandi, Rajen Dey, Rana Adhikary; *Microbial Pathogenesis*, 2017. Vol. 109, 131-150.
16. Effect of exogenous MCP-1 on TLR-2 neutralized murine macrophages and possible mechanisms of CCR-2/TLR-2 and MCP-1 signalling during *Staphylococcus aureus* infection. Biswadev Bishayi, Debasish Bandyopadhyay, Arnab Majhi and Rana Adhikary; *Immunobiology*, 2015, Vol. 220, Issue 3: 350-62.
17. Expression of CXCR1 (Interleukin-8 receptor) in murine macrophages after *Staphylococcus aureus* infection and its possible implication on intracellular survival correlating with cytokines and bacterial anti-oxidant enzymes. Biswadev Bishayi, Debasish Bandyopadhyay, Arnab Majhi and Rana Adhikary; *Inflammation*, 2014. Vol. 38, Issue 2: 812-27.
18. Possible role of Toll-like receptor-2 in the intracellular survival of *Staphylococcus aureus* in murine peritoneal macrophages: Involvement of cytokines and anti-oxidant enzymes. Biswadev Bishayi, Debasish Bandyopadhyay, Arnab Majhi and Rana Adhikary; *Scandinavian Journal of Immunology*, 2014. Vol. 80, Issue 2: 127-43.

DECLARATION:

I, **RANA ADHIKARY**, hereby declare that all statements made and informations furnished in this application are true and complete to the best of my knowledge and belief. I also declare that I have not concealed any material information which may debar my candidature for the position applied for. In the event of suppression or distortion of any fact or educational qualification, etc. made in my application form, I understand that I will be denied selection and if already selected to the said position my services will be cancelled/ terminated forthwith.
