Dr. Abdur Rub

Associate Professor,
Deptt of Biotechnology,
Jamia Millia Islamia, New Delhi-110025
Email Id: arub@jmi.ac.in; abdurrub81@gmail.com

COURSES OFFERED

Immunology, Molecular Biology and Cell Biology at graduate and postgraduate level

RESEARCH FOCUS

Dr. Abdur Rub has completed his doctoral degree from National Centre for Cell Science, Pune, India and later on moved to Immune Disease Institute, Harvard Medical School, Harvard University, Boston, MA, USA for his postdoctoral studies. For last several years the research of his group is revolving around the immune evasion mechanism of *Leishmania*, a protozoan parasite and causative agent of leishmaniasis. Currently, his lab is trying to understand the involvement of lipids during *Leishmania donovani* infection and to identify the novel & effective molecules against leishmaniasis.

ACADEMIC QUALIFICATIONS:

- **Doctor of Philosophy (Ph.D.)** in Biotechnology from National Centre for Cell Science, Pune, India, in **2010**
- **Master of Science (M.Sc)** in Biotechnology, from Department of Biotechnology, Hamdard University, New Delhi, India, in **2004**
- **Bachelor of Science (B.Sc)** in Chemistry (Hons) from Aligarh Muslim University, Aligarh, India in **2001** (Sept. 2004-Feb. 2005)

TEACHING, POSTDOC AND RESEARCH EXPERIENCE

- **Associate Professor** at Deptt of Biotechnology, Jamia Millia Islamia, New Delhi, India (2022-till date)
- **Assistant Professor** at Deptt of Biotechnology, Jamia Millia Islamia, New Delhi, India (2011-2022)
- **Assistant Professor** at Deptt. of Toxicology, Hamdard University, New Delhi (2010-2011)
- **Postdoc Fellow** at Immune Disease Institute, **Harvard University**, Boston, USA (2010)
- Junior Research Fellow (2005-2008) at **NCCS**, Pune
- Senior Research Fellow (2008-2010) at **NCCS**, Pune
- Junior Research Fellow at **National Centre for Biological Sciences** (NCBS-TIFR), Bangalore

SELECTED PUBLICATIONS

1. **Abdur Rub,** Dey, R., Jadhav, M., Kamat R., Majumdar, S,. Mukhopadhyay, R & Saha, B. Cholesterol depletion associated with *Leishmania major* infection alters macrophage CD40 signalosome composition and effector function. ***Nature Immunology 2009; 10(3):273-280.*** It has been selected for Faculty of 1000 Biology ***("Evaluated by Faculty of 1000 biology; F1000***") ***http://f1000.com/prime/1157067*** ***(Impact factor: ~20)***
2. Majumder S, Dey R, Bhattacharjee S, **Rub A,** Gupta G, Bhattacharyya Majumdar S, Saha B, Majumdar S. *Leishmania*-induced biphasic ceramide generation in macrophages is crucial for uptake and survival of the parasite. ***J Infect Dis. 2012;205(10):1607-16. (Impact factor: ~6)***
3. **Abdur Rub,** Mohd Arish, Syed Akhtar Husain, Niyaz Ahmed, Yusuf Akhter. Host-lipidome as a potential target of protozoan parasites. ***Microbes Infect. 2013 Sep-Oct;15(10-11):649-60. (Impact factor: ~3)***
4. Aarti Rana, **Abdur Rub,** Yusuf Akhter, Proteome-scale identification of outer membrane proteins in Mycobacterium avium subspecies paratuberculosis using a structure based combined hierarchical approach. ***Mol. BioSyst., 2014,10, 2329-2337. (Impact factor: ~3)***
5. Rana A, Ahmed M, **Abdur Rub,** Akhter Y.A tug-of-war between the host and the pathogen generates strategic hotspots for the development of novel therapeutic interventions against infectious diseases. **Virulence. 2015 Aug 18;6(6):566-80**. ***(Impact factor: ~5)***
6. Rana A, Kumar D, **Abdur Rub,** Akhter Y. Proteome-scale identification and characterization of mitochondria targeting proteins of Mycobacterium avium subspecies paratuberculosis: Potential virulence factors modulating host mitochondrial function. **Mitochondrion. 2015 Jul;23:42-54**. ***(Impact factor: ~3)***
7. Aarti Rana, **Abdur Rub**, Yusuf Akhter, Proteome-wide B and T cell epitope repertoires in outer membrane proteins of Mycobacterium avium subsp. paratuberculosis have vaccine and diagnostic relevance: a holistic approach. ***J Mol Recognit. 2015 Feb(Impact factor: ~2)***
8. Mohd Arish, Atahar Husein, Mohammad Kashif, Padmani Sandhu, Seyed E. Hasnain, Yusuf Akhter, **Abdur Rub**, Orchestration of membrane receptor signaling by membrane lipids. ***Biochimie. 2015 Jun; 113:111-124. (Impact factor: 3.1)***
9. Mohd Arish, Atahar Husein, Mohammad Kashif, Mohammed Saleem, Yusuf Akhter, **Abdur Rub**, Sphingosine-1-phosphate signaling: unraveling its role as a drug target against infectious diseases, ***Drug Discov Today. 2016 Jan;21(1):133-42.*** pii: S1359-6446(15)00369-4. doi: 10.1016/j.drudis.2015.09.013. [Epub ahead of print] ***(Impact factor: 6.8)***

10. Kashif M, Manna PP, Akhter Y, Alaidarous M, **Abdur Rub**, Screening of Novel Inhibitors Against Leishmania donovani Calcium ion Channel to Fight Leishmaniasis. ***Infect Disord Drug Targets. 2017;17(2):120-129.***

11. Masood MM, Hasan P, Tabrez S, Ahmad MB, Yadava U, Daniliuc CG, Sonawane YA, Azam A, **Abdur Rub**, Abid M. Anti-leishmanial and cytotoxic activities of amino acid-triazole hybrids: Synthesis, biological evaluation, molecular docking and in silico physico-chemical properties. ***Bioorg Med Chem Lett. 2017 May 1;27(9):1886-1891. (Impact factor: ~3)***

12. Arish M, Alaidarous M, Ali R, Akhter Y, **Abdur Rub**, Implication of sphingosine-1-phosphate signaling in diseases: molecular mechanism and therapeutic strategies. ***J Recept Signal Transduct Res. 2017 Oct;37(5):437-446. (Impact factor: 1.2)***

13. Riaz U, Jadoun S, Kumar P, Arish M, **Abdur Rub**, Ashraf SM. Influence of Luminol Doping of Poly(o-phenylenediamine) on the Spectral, Morphological, and Fluorescent properties: A Potential Fluorescent Marker for Early detection and Diagnosis of Leishmania donovani. ***ACS Appl Mater Interfaces. 2017 Sep 27;9(38):33159-33168. (Impact factor: 7.5)***

14. Kashif M, Tabrez S, Husein A, Arish M, Kalaiarasan P, Manna PP, Subbarao N, Akhter Y, **Abdur Rub**, Identification of novel inhibitors against UDP-galactopyranose mutase to combat leishmaniasis. ***J Cell Biochem. 2018 Mar;119(3):2653-2665. (Impact factor: ~3)***

15. Radha N Chaturvedi, Mohd Arish, Mohammad Kashif, Varinder Kumar, Krishnaiah Pendem, **Abdur Rub**, Sunita Malhotra, Synthesis, Biological Evaluation, Molecular Docking and DFT Study of Potent Antileishmanial Agents Based on the Thiazolo [3, 2-a] pyrimidine Chemical Scaffold ***ChemistrySelect 2018, March 14,*** *3 (10), 2756-2762* ***(ISI)***

16. Husein A, Jamal A, Ahmed MZ, Arish M, Ali R, Tabrez S, Rasool F, **Abdur Rub.** Leishmania donovani infection differentially regulates small G-proteins. ***J Cell Biochem. 2018*** Jun 26. doi: 10.1002/jcb.27186. ***(Impact factor: ~3)***

17. Arish M, Husein A, Ali R, Tabrez S, Naz F, Ahmed MZ, **Abdur Rub.** Sphingosine-1-phosphate signaling in Leishmania donovani infection in macrophages ***PLoS Negl Trop Dis. 2018*** Aug 17;12(8):e0006647. ***(Impact factor: 4.3)***

18. Abdur Rub, Shaker K, Kashif M, Arish M, Dukhyil AAB, Alshehri BM, Alaidarous MA, Banawas S, Amir K. Repurposing glyburide as antileishmanial agent to fight against leishmaniasis. ***Protein Pept Lett. 2019 Feb 28***. ***(Impact factor: ~1.03)***

19. Kashif M, Hira SK, Upadhyaya A, Gupta U, Singh R, Paladhi A, Khan FI, **Abdur Rub,** Manna PP; In silico studies and evaluation of antiparasitic role of a novel pyruvate phosphate dikinase

inhibitor in *Leishmania donovani* infected macrophages. ***Int J Antimicrob Agents. 2019*** Apr;53(4):508-514. ***(Impact factor: 4.615)***

20. Khan S, Imran A, Malik A, Chaudhary AA, **Abdur Rub**, Jan AT, Syed JB, Rolfo C. Bacterial imbalance and gut pathologies: Association and contribution of *E. coli* in inflammatory bowel disease. ***Crit Rev Clin Lab Sci. 2019*** Jan;56(1):1-17. ***(Impact factor: 4.817)***

21. Singh N, Riaz U*, Arish M, Kumar P and **Abdur Rub*** Experimental and Theoretical Studies of Novel Azo Benzene Functionalized Conjugated Polymers: In-vitro Antileishmanial Activity and Bioimaging ***Sci. Report-2020 (Impact factor: 3.998)***

22. Jha MK, Sarode AY, Bodhale N, Mukherjee D, Pandey SP, Srivastava N, **Abdur Rub**, Silvestre R, Sarkar A, Saha B. Development and Characterization of an Avirulent *Leishmania major* Strain. ***J Immunol. 2020*** May 15;204(10):2734-2753. doi: 10.4049/jimmunol.1901362. Epub 2020 Apr 3. PMID: 32245818. ***(Impact factor: 4.886)***

23. Tabrez S, Rahman F, Ali R, Alouffi AS, Akand SK, Alshehri BM, Alshammari FA, Alam A, Alaidarous MA, Banawas S, Bin Dukhyil AA, **Abdur Rub**; Cynaroside inhibits *Leishmania donovani* UDP-galactopyranose mutase and induces reactive oxygen species to exert antileishmanial response**.** ***Biosci Rep* 29 *January 2021***; 41 (1): BSR20203857. doi: https://doi.org/10.1042/BSR20203857 ***(Impact factor: 2.942)***

24. Tabrez S, Rahman F, Ali R, Alouffi AS, Alshehri BM, Alshammari FA, Alaidarous MA, Banawas S, Bin Dukhyil AA, **Abdur Rub**. Assessment of the Antileishmanial Potential of *Cassia fistula* Leaf Extract. ***ACS Omega. 2021*** Jan 11;6(3):2318-2327. doi: 10.1021/acsomega.0c05629. PMID: 33521470; PMCID: PMC7841934. ***(Impact factor: 2.87)***

25. Rahman F, Tabrez S, Ali R, Alqahtani AS, Ahmed MZ, **Abdur Rub** . Molecular docking analysis of rutin reveals possible inhibition of SARS-CoV-2 vital proteins. ***J Tradit Complement Med. 2021*** Mar;11(2):173-179. doi: 10.1016/j.jtcme.2021.01.006. Epub 2021 Jan 22. PMID: 33520682; PMCID: PMC7825826. ***(Impact factor: 3.08)***

26. Rahman F, Tabrez S, Ali R, Akand SK, Alaidarous MA, Alsaweed M, Alshehri BM, Banawas S, **Abdur Rub**, Bin Dukhyil AA Identification of potential inhibitors for Sterol C-24 reductase of Leishmania donovani through virtual screening of natural compounds **Biocell** 2021; 45(6): 1601-1610. doi:10.32604/biocell.2021.016682 ***(Impact factor: 1.254)***

27. Ali R, Tabrez S, Rahman F, Alouffi AS, Alshehri BM, Alshehri FAA, Alaidarous MA, Banawas S, Bin Dukhyil AA, **Abdur Rub** Antileishmanial Evaluation of Bark Methanolic Extract of *Acacia nilotica*: *In Vitro* and *In Silico* Studies **ACS Omega** 2021 Mar 18;6(12):8548-8560. doi: 10.1021/acsomega.1c00366. ***(Impact factor: 2.87)***

28. Singh N, Ali R, Ashraf SM, **Abdur Rub**, Riaz U Experimental and computational studies of novel Sudan-I dye modified conjugated oligomers: Efficient 1O2 generation and antileishmanial

characteristics **Materials Science and Engineering: B** 2021 Mar 265 (114993) https://doi.org/10.1016/j.mseb.2020.114993 ***(Impact factor: 4.051)***

29. Tabrez S, Rahman F, Ali R, Akand SK, Alaidarous MA, Banawas S, Bin Dukhyil AA, **Abdur Rub** Hesperidin Targets *Leishmania donovani* Sterol C-24 Reductase to Fight against Leishmaniasis **ACS Omega** 2021 Mar 16;6(12):8112-8118. doi: 10.1021/acsomega.0c05858. ***(Impact factor: 2.87)***

30. Tabrez S, Rahman F, Ali R, Akand SK, Alaidarous MA, Alshehri BM, Banawas S, Bin Dukhyil AA, **Abdur Rub** Targeting sterol alpha-14 demethylase of Leishmania donovani to fight against leishmaniasis **J Cell Biochem** . 2021 Apr 4. doi: 10.1002/jcb.29922. ***(Impact factor: 4.429)***

31. Tabrez S, Rahman F, Ali R, Muhammad F, Alshehri BM, Alaidarous MA, Banawas S, Bin Dukhyil AA, **Abdur Rub** Repurposing of FDA-approved drugs as inhibitors of sterol C-24 methyltransferase of Leishmania donovani to fight against leishmaniasis **Drug Dev Res** 2021 Apr 30. doi: 10.1002/ddr.21820. ***(Impact factor: 4.360)***

32. Rahman F, Tabrez S, Ali R, Akand SK, Zahid M, Alaidarous MA, Alsaweed M, Alshehri BM, Banawas S, Bin Dukhyil AA, **Abdur Rub** Virtual screening of natural compounds for potential inhibitors of Sterol C-24 methyltransferase of Leishmania donovani to overcome leishmaniasis **J Cell Biochem 2021** May 6. doi: 10.1002/jcb.29944. ***(Impact factor: 4.429)***

33. Sajad Hussain Dar, Istikhar A Ansari, Shams Tabrez, Manish Rana, Mohammad Usman, Shafi Ul Islam, **Abdur Rub** Synthesis, crystal structures, biological and thermal decomposition evaluation of homo and heteroleptic Zn (Ⅱ) dithiocarbamate complexes and use of Zn (Ⅱ) dithiocarbamate to prepare zinc sulfide nanoparticles **Polyhedron 2021** Nov 208 https://doi.org/10.1016/j.poly.2021.115424. ***(Impact factor: 3.052)***

34. Ali R, Islamuddin M, Tabrez S, Alsaweed M, Alaidarous MA, Alshehri BM, Banawas S, Bin Dukhyil AA, **Abdur Rub** Embilica officinalis L. inhibits the growth and proliferation of Leishmania donovani through the induction of ultrastructural changes, mitochondrial dysfunction, oxidative stress and apoptosis-like cell death **Biomed Pharmacother 2021** Nov;143:112156 doi: 10.1016/j.biopha.2021.112156. Epub 2021 Oct 5. ***(Impact factor: 6.529)***

35. Ali R, Tabrez S, Akand SK, Rahman F, Husein A, Arish M, Alqahtani AS, Ahmed MZ, Husain M, **Abdur Rub** Sesamol Induces Apoptosis-Like Cell Death in Leishmania donovani **Front. Cell. Infect. Microbiol.**2021 Oct; 11, 1053. doi:10.3389/fcimb.2021.749420 ***(Impact factor: 5.293)***

36. Karim M, Singh G, Thakur S, Rana A, **Abdur Rub**, Akhter Y. Evaluating complete surface-associated and secretory proteome of Leishmania donovani for discovering novel vaccines and diagnostic targets. **Arch Microbiol. 2022** Sep 7;204(10):604.

37. Rahman F, Ali R, Tabrez S, Mobeen A, Akand SK, Arish M, AlAsmari AF, Ali N, **Abdur Rub** Exploration of potential inhibitors for autophagy-related protein 8 as antileishmanial agents. ***Chem Biol Drug Des. 2022*** Jun;99(6):816-827.

AWARDS, HONOURS AND RESEARCH FELLOWSHIPS

- Selected to attend **7th Young Investigator Meeting (YIM)-2015*;*** on 27th March**, Srinagar, India**
- **SERB-DST-2013** Young Scientist Award by Deptt. of Science and Technology, India
- **INSA Medal** for **Young Scientists –2012** by Indian National Science Academy, India
- **Junior Research Fellowship and Senior Research Fellowship from Council of Scientific & Industrial Research (CSIR), Govt. of India** (2005-2010)
- **National Eligibility Test (NET) by University Grant Commission (UGC), India.** (Dec. 2004)
- **Graduate Aptitude Test in Engineering** (GATE), Feb. 2004
- **National Merit Scholarship** from UP Board Allahabad (1996-2001)

ONGOING/COMPLETED PROJECTS

S.No.	Title	Agency	Period	Grant/Amount Mobilized	PI/Co-PI and Status
1.	Screening of pro-apoptotic potential of medicinal plants on leishmania infected and uninfected macrophages	AYUSH-CCRUM Govt India	2017-2020	64 Lakh	PI/ **Running**
2.	Effect of cytokines on the expression of cholesterol biosynthetic genes and Leishmania donovani infection in macrophages	DST-SERB, Govt India	2012-2015	25 Lakh	PI/ **Completed**
3.	Role of small G-proteins in *Leishmania donovani* infection	INSA	2013-2016	15 Lakh	PI **Completed**
4.	Role of G protein coupled receptors (GPCRs) in regulation of macrophage function by *Leishmania donovani*	UGC-Start-UP grant, Govt India	2013-2015	5, 40,000/-	PI **Completed**
5.	Role of sphingosine-1-phosphate in *Leishmania donovani* infection	ICMR Govt India	2015-2017	~40 Lakh (Approved)	PI/ **Approved**
6.	Identification of novel inhibitors against UDP-galactopyranose mutase to combat leishmaniasis.	Deanship of Research, Majmaah University, Al Majmaah, KSA	1438-1439	12000 SAR	PI/ **Completed**
6	Targeting polyamine pathway to develop new drug to combat Leishmaniasis	Deanship of Research, Majmaah	1439-1440	12000 SAR	PI/ **Completed**

		University, Al Majmaah, KSA			

PhD, POSTDOC FELLOWS GUIDED/GUIDING

S.No.	Name of PhD/Project Students and Postdoc	Fellowships (Funding Agency)	PhD Thesis Status
1.	Mr. Fazlur Rahman	UGC-Non-NET Fellow	Ongoing
2	Mr. Sajjadul Kadir Akand	UGC-Non-NET Fellow	Ongoing
3	Mohd Ahmad	UGC-Non-NET Fellow	Ongoing
4	Areeba Rahman	UGC-Non-NET Fellow	Ongoing
5	Dr. Rahat Ali	ICMR-Research Associate	Pursuing- Postdoc
6	Mr. Shams Tabrez	UGC-NET-Senior Research Fellow	**PhD Awarded**
7	Mr. Rahat Ali	UGC-Non-NET Fellow	**PhD Awarded**
8	Mr. Atahar Husain	ICMR- Senior Research Fellow	**PhD Awarded**
9	Mr. Mohd Arish	ICMR- Senior Research Fellow	**PhD Awarded**
10	Mr. Md. Kalamuddin		**PhD Awarded**
11	Mr. Mohd Kashif	ICMR- Senior Research Fellow	Project Fellow
12	Dr. Atahar Husain	AYUSH	Postdoc-Alumni
13	Dr. Ajmal	--	Postdoc-Alumni
14	Dr. Mohd Khubaib	DBT-RA Fellow Govt India,	Postdoc- Alumni

CONFERENCES/INVITED LECTURES/SEMINARS

- Presented Poster entitled "Homology Modelling of UDP-galactopyranose mutase (UGM) from Leishmania major and molecular docking for investigation of new anti-leishmanial drugs" in National Symposium on Biophysics and Golden Jublee Meeting of Indian Biophysical Society organized by CIRBSc, Jamia Millia Islamia, New Delhi-25 on Feb 14-17, 2015.

- Participated in 108th four-week UGC sponsored orientation programme on 09 April to 09 May, 2014 and obtained grade A from Academic Staff College at Jamia Millia Islamia, New Delhi

- Delivered a lecture : "Orchestration of membrane receptor signalling by lipids and its significance in host pathogen interaction" on 13 May, 2014 (4th 3-Week refresher Course in Basic Sciences) from UGC-Academic Staff College at Jamia Millia Islamia, New Delhi

- Delivered a lecture : "Role of lipids raft in CD40 signalling in Macrophages" on 17 May, 2014 from Faculty of Education at Jamia Millia Islamia, New Delhi

- Poster presentation on November 15-17, 2011 from International Interdisciplinary science Conference (I-ISC 2011) on Bioinformatics: An International between Computer Science and Biology at Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi

- Poster presentation on December 16-18, 2013 from National conference on Recent Trends in Protein Structural Biology at Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi

Subjects Taught:

At Post Graduate & Ph.D level:
Immunology, Molecular Genetics, Modern Biology Experimental Techniques, Molecular Toxicology, Methods in Toxicology

At Under Graduate level:
Immunology, Animal Biotechnology & Animal Cell Culture, Immunology & Microbiology, Animal diversity,

NATIONAL/INTERNATIONAL SOCIETY MEMBER

Life member of Indian Immunology Society
Life member of Indian Society of Cell Biology

(Abdur Rub)