

Dr. Abdur Rub Mushtaq Ahmad;

PhD (Immunology & Microbiology)

Assistant Professor

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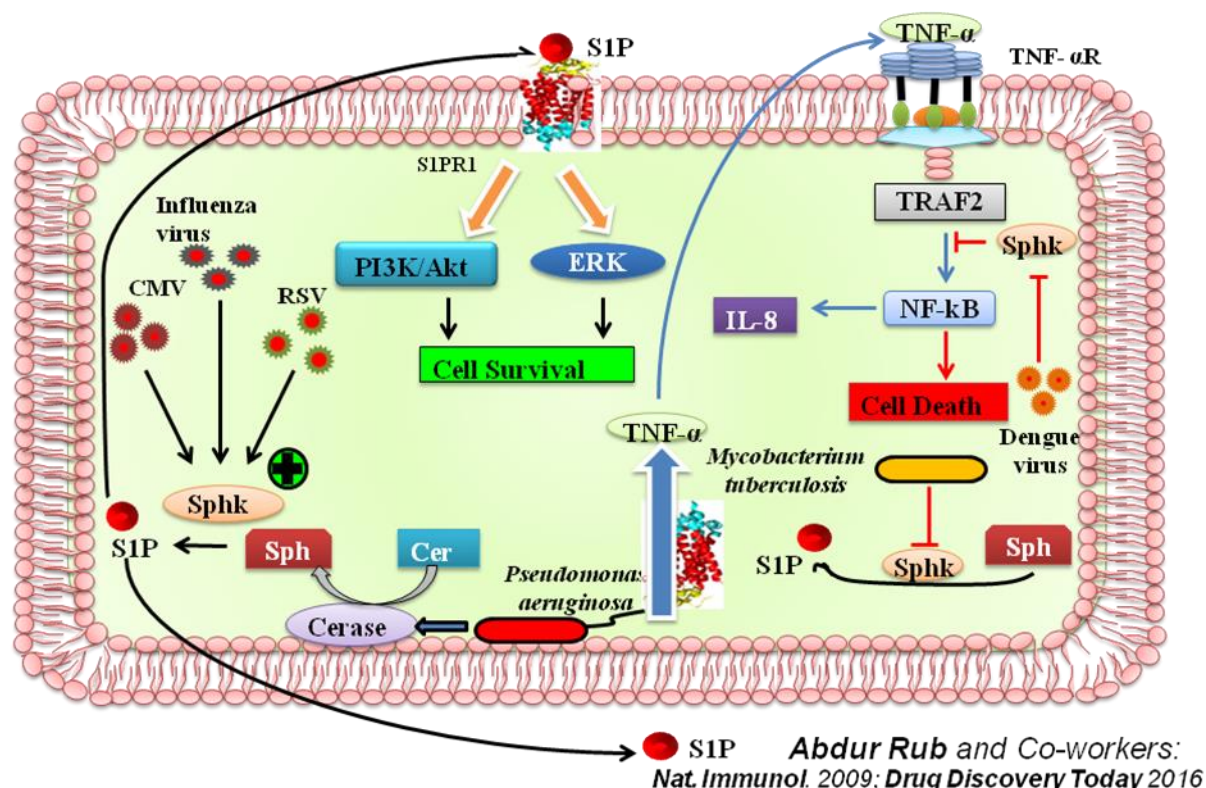
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Research Focus:

Pathogens and their hosts have had a two-way chat for millions years. This interaction has led to several measure/counter-measure reactions by the host and pathogen. The host immune system has developed numerous ways to neutralize and get rid of them. In turn, pathogens have also developed mechanisms to alter and evade the host immune response. *Leishmania*, a protozoan parasite, clearly manipulates the host to alter the immune responses. *Leishmania* causes leishmaniasis which is endemic in 89 countries including India, with a total of 12 million people infected worldwide and 350 million people at risk of infection. The molecular mechanisms and consequences of host immune evasion by *Leishmania* are poorly defined. I am trying to understand the role of lipids in *Leishmania*-host interaction and identifying the novel targets for the development of new and effective drugs to combat leishmaniasis and other infectious diseases.



Awards , Honours and Research Fellowships:

- Selected for **Young Investigator Meeting (YIM)** at Shrinagar by India Bioscience
- **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
- Screened for **Innovative Young Biotechnologist Award (IYBA)** by DBT Govt, India
- **CSIR-SRF** by Council of Scientific & Industrial Research (CSIR), India, 2007-2010
- **CSIR-JRF** by Council of Scientific & Industrial Research (CSIR), India, 2005-2007
- **National Eligibility Test (NET)** by University Grant Commission (UGC) India, 2004
- **Graduate Aptitude Test in Engineering (GATE)**, by IIT Delhi, India, 2004
- **National Merit Scholarship** from UP Board Allahabad, India, 1996-2001

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: 6.69*)

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 Jubilee 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

Courses/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, Cellular and Molecular Pathology (MDL485)

Courses/Subjects Teaching:

Medical Microbiology (MDL243)
Epidemiology (MDL412)
Epidemiology (MDL472)
Cellular and Molecular Pathology (MDL413)

TEACHING/RESEARCH EXPERIENCE

1. **Assistant Professor** at Deptt of Medical Lab, **Majmaah University, Al Majmaah, KSA** (May 2016 to Till Date)
2. **Assistant Professor** at Deptt of Biotechnology, Jamia Millia Islamia, New Delhi, India (12-10-2011 to April 2016)
3. **Assistant Professor** at Deptt. of Toxicology, Hamdard University, New Delhi and taught **Bio-Technology** to postgraduate students (04-08-2010 to 11-10-2011)
4. **Postdoc Fellow** at Immune Disease Institute, **Harvard University**, Boston, USA (14-04-2010 to 03-08-2010)
5. **Ph.D** from **National Centre for Cell Science**, Pune (2005-2010)
6. Junior Research Fellow at **National Centre for Biological Sciences (NCBS-TIFR)**, Bangalore

Research Projects Handled (as Principal Investigator)

S.No.	Title	Agency	Period	Grant/Amount Mobilized	PI/Co-PI ?
1.	Effect of cytokines on the expression of cholesterol biosynthetic genes and <i>Leishmania donovani</i> infection in macrophages	DST-SERB, Govt. India	2012-2015	25 Lakh	PI
2.	Role of small G-proteins in <i>Leishmania donovani</i> infection	INSA Govt. India	2013-2016	15 Lakh	PI
3.	Role of G protein coupled receptors (GPCRs) in regulation of macrophage function by <i>Leishmania donovani</i>	UGC-Start-UP grant Govt. India	2013-2015	6 Lakh	PI
4.	Role of sphingosine-1-phosphate in <i>Leishmania donovani</i> infection	ICMR Govt. India	-----	Approved	PI
5.	Screening of pro-apoptotic potential of medicinal plants on leishmania infected and uninfected macrophages	AYUSH-CCRUM, Govt. India	-----	Approved	PI