

Syed M Faisal, PhD

Scientist D

National Institute of Animal Biotechnology (NIAB)

D. No. 1-121/1, 4th and 5th Floor

Axis Clinical Building, Opp. Talkie Town

Miyapur, Hyderabad-500 049

Telangana, India

Email: faisal@niab.org.in, smfaisal77@gmail.com**Education:**

2000-2006 **Ph.D. (Biotechnology)**, A.M. University, Aligarh, India
 1998-2000 **M.Sc. (Biotechnology)**, A.M. University, Aligarh, India
 1995-1998 **B.Sc. (Biochemistry)**, A.M. University, Aligarh, India

Post graduate Training and Research positions:

Jan 2017- Till date *Scientist D, National Institute of Animal Biotechnology, Hyderabad, India*
 Nov 2017- Till date *Adjunct Assistant Professor, Regional Center for Biotechnology, New Delhi*
 March 2014- Jan 2017 *Ramalingamswami Fellow, NIAB, Hyderabad, India*
 Aug 2013- March 2014 *Research Scientist, Carver College of Medicine, University of Iowa, Iowa city, USA*
 Oct 2008- Aug 2013 *Research Associate, College of Veterinary Medicine, Cornell University, Ithaca, NY, USA*
 Oct 2005-Sep 2008 *Postdoctoral Fellow, College of Veterinary Medicine, Cornell University, Ithaca, NY, USA*
 2003-2005 *Senior Research Fellow, Interdisciplinary Biotechnology Unit, A.M. University, Aligarh, India*
 2001-2003 *Junior Research Fellow, Interdisciplinary Biotechnology Unit, A.M. University, Aligarh, India*
 2000-2001 *Research Assistant, Interdisciplinary Biotechnology Unit, A.M. University, Aligarh, India*

Awards/ Achievements & Membership:

- National Eligibility Test-Junior Research Fellowship(NET-JRF, 200, 2002) by Council of Scientific and Industrial Research (CSIR), Government of India (2001-2003)
- Graduate Aptitude Test in Engineering (GATE) 2000
- Awarded Bharat Seva Trust scholarship at B.Sc. Level
- Maurice R Hillman early stage career investigation award semifinalist, 2009 (NFID, USA).
- Ramalingaswami Re-Entry Fellowship, DBT, Govt. of India, 2013
- Edward Jenner Vaccine Award, International Society of Vaccines, USA, 2014
- International Leptospirosis Society (ILS)- Travel award 2017
- Member of International Society for Vaccines (ISV)
- Member of American Society of Microbiology
- Member of International Leptospirosis Society (ILS)
- Member of Federation of Clinical and Immunological Society (FOCIS)
- Member of Association of Scientists of Indian Origin in America Inc. (ASIOA)

Peer-reviewed publications:**2017**

1. Ramakrishna Bulugonda, Kotha Anil Kumar, Gangappa D, Muralidhara Rao* **Syed M. Faisal*** Mangiferin from *Pueraria tuberosa* reduces inflammation via inactivation of NLRP3 inflammasome. ***Scientific Reports* 2017**, Feb 20;7: 42683. (***corresponding author**).
2. Mirza S. Baig, Kannan Muthu, **Syed M. Faisal**, Mansi Srivastava, Dongfang Liu. Heterotrimeric complex of p38 MAPK, PKC δ , and TIRAP is required for AP1 mediated inflammatory response. ***Int. Immunopharmacol.* 2017**, 48, July 2017, 211-218

2016

3. **Syed M. Faisal***, Vivek Verma, Subathra M, Anil K Sunkara, Sarwar Azam, Mohd Akif, Mirza S Baig, Chang YF, (2016). *Leptospira* surface protein Lsa21 induce proinflammatory cytokines by Toll like receptor 2 and 4 mediated signaling pathways. ***Scientific Reports* 2016**, Dec 20;6: 39530. (***corresponding author**).
4. Roy A, Srivastava M, Saqib U, Liu D, **Syed M. Faisal**, Baig MS. Potential therapeutic targets for inflammation in toll-like receptor 4 (TLR4)-mediated signaling pathways. ***Int. Immunopharmacol.* 2016** Aug 29;40:79-89.

2015

5. **Syed M. Faisal***, Joy Scaria and Yung Fu Chang. Immunostimulatory Fusogenic and Conventional Liposome Adjuvants Induce Qualitatively and Quantitatively Distinct Innate and Adaptive Immune Responses. ***Journal of Immune research*, 2015;2(2):1020** (***corresponding author**).
6. **Syed M. Faisal*** (2015) Liposome Adjuvants: Simultaneous Induction of Innate and Adaptive Immunity is Key to Success. ***J Vaccines Immun* 1(1): 011- 013** (***corresponding author**).

2014

7. Khan A, **Syed M Faisal**, Khan M A et. al. Resveratrol suppresses the proliferation of breast cancer cells by inhibiting fatty acid synthase signaling pathway ***Cancer Epidemiology***, 2014,38, 765-772.

2013

8. **Syed M. Faisal**, Chen JW, McDonough SP and Yung-Fu Chang. Evaluation of *Mycobacterium avium* subsp. *paratuberculosis* LeuD mutant as vaccine candidate against challenge in caprine model. ***Clinical Vaccine Immunology* 2013** Apr 20;4: 572-581
9. **Syed M. Faisal**, Yan F, McDonough SP and Yung-Fu Chang. Evaluation of immune response and protective efficacy of live attenuated salmonella vaccine expressing antigens of *Mycobacterium avium* subsp. *paratuberculosis* against Johne's disease in goat model. ***PLOS ONE* 2013**, Aug 9;8(8):e70171.

2012

10. **Syed M. Faisal***, Chandra S*, C JW, McDonough SP and Yung-Fu Chang. Immune response and protective efficacy of live attenuated *Salmonella* vaccine expressing antigens of *Mycobacterium avium* subsp. *paratuberculosis* against challenge in mice model. ***Vaccine* 2012** December 17; 31(1): 242–251 (*** authors share equal contribution**).

11. Chen JW, **Syed M. Faisal**, McDonough SP and Yung-Fu Chang. Immunogenicity and protective efficacy of the *Mycobacterium avium* subsp. paratuberculosis attenuated mutants against challenge in a mouse model" **Vaccine**, 2012 Apr 19;30(19):3015-25.

2011

12. Yang-guo Cao, **Syed M. Faisal**, McDonough SP and Yung-Fu Chang. Evaluation of novel fusion proteins derived from extracellular matrix binding domains of LigB as vaccine candidates against leptospirosis in a hamster model. **Vaccine**, 2011 Oct 6;29(43):7379-86.
13. **Syed M. Faisal**, Chen JW, McDonough SP and Yung-Fu Chang. Immunostimulatory and antigen delivery properties of liposomes made up of total polar lipids from non-pathogenic bacteria leads to efficient induction of both innate and adaptive immune response. **Vaccine** 2011;(29): 2381-2391.

2010

14. Weiwei Yan, **Syed M. Faisal**, Sean P. McDonough, and Yung-Fu Chang. Identification and characterization of OmpA-like proteins as novel vaccine candidates for Leptospirosis. **Vaccine** 2010. Mar 8;28(11):2277-2283.
15. Yan W, **Syed M. Faisal**, Divers T, McDonough SP, Akey B, Chang YF. Experimental *Leptospira interrogans* serovar Kennewicki infection of horses. **J. Vet. Int. Medicine**. 2010 Jul-Aug;24(4):912-7.

2009

16. **Syed M. Faisal**, WeiWei Yan, Sean P. McDonough, and Yung-Fu Chang. Immune response and prophylactic efficacy of smegmosomes in hamster model of leptospirosis. **Vaccine**. 2009 Oct 19;27(44):6129-36.
17. **Syed M. Faisal**, WeiWei Yan, Sean P. McDonough, and Yung-Fu Chang. Leptosome entrapped protective antigens conferred significantly higher level of protection than those delivered in conventional liposomes against hamster leptospirosis. **Vaccine**. 2009 Nov 5;27(47):6537-45.
18. **Syed M. Faisal**, WeiWei Yan, Sean P. McDonough, and Yung-Fu Chang. *Leptospira* immunoglobulin-like protein A variable region (LigAvar) incorporated in Liposomes and PLGA-Microspheres produces a robust immune response correlating to protective immunity. **Vaccine**. 2009, Jan 14;27(3):378-87.
19. Weiwei Yan, **Syed M. Faisal** and Yung-Fu Chang. Recombinant *Leptospira* Immunoglobulin-Like Protein B (rLigB) protect hamsters against lethal infection of *Leptospira interrogans* infection. **Microbes and Infection**, 2009. Feb;11(2):230-7.

2008

20. **Syed M. Faisal**, WeiWei Yan, Chia-Sui Chen, Raghavan UM Palaniappan, Sean P. McDonough, and Yung-Fu Chang. Evaluation of protective immunity of *Leptospira* immunoglobulin like protein A (LigA) DNA vaccine against challenge in hamsters. **Vaccine**. 2008 Jan 10;26(2):277-87.

2007

21. Yung-Fu Chang, Chia-Sui Chen, Raghavan U.M. Palaniappan, Hongxuan He, Sean P. McDonough, Steve C. Barr, Weiwei Yan, **Syed M. Faisal**, Ming-Jeng Pan and Chao-Fu Chang. Immunogenicity of the recombinant leptospiral putative outer membrane proteins as vaccine candidates. **Vaccine**, 2007 Nov 23;25(48):8190-7.

2006

22. Ahmad N, Deeba F, **Syed M. Faisal**, Khan A, Agrewala JN, Dwivedi V, Owais M. Role of fusogenic non-PC liposomes in elicitation of protective immune response against experimental murine salmonellosis. *Biochimie*. 2006 Oct;88(10):1391-400.
23. Ahmad N, Arif K, **Syed M. Faisal**, Neyaz MK, Tayyab S, Owais M. PLGA-microsphere mediated clearance of bilirubin in temporarily hyperbilirubinemic rats: an alternate strategy for the treatment of experimental jaundice. *Biochim Biophys Acta*. 2006 Feb;1760(2):227-32.
24. Khan MA, **Syed M. Faisal**, Mohammad O. Safety, efficacy and pharmacokinetics of tuftsin-loaded nystatin liposomes in murine model. *J Drug Target*. 2006 May;14(4):233-41.

2003

25. **Syed M. Faisal**, Masood A. Khan, TH. Nasti, N. Ahmad, Owais M. Antigen entrapped in escheriosomes leads to generation CD4+ helper and CD8+ cytotoxic T cell response. *Vaccine*, 2003 (21), 2383-2393.
26. **Syed M. Faisal***, Khan MA*, Nasti HT*, Saima K, Haq W, Shahbaz A, Owais M. Use of tuftsin bearing nystatin liposomes against an isolate of *Candida albicans* showing less in vivo susceptibility to amphotericin B. *J Drug Target*. 2003 Feb;11(2):93-9. (* authors share equal contribution)

2002

27. Masood AK, **Syed M. Faisal**, Mushahid MK, Nadeem A, Siddiqui MU, Owais M. Binding of bilirubin with albumin-coupled liposomes: implications in the treatment of jaundice. *Biochim Biophys Acta*. 2002 Aug 19;1564(1):219-26.
28. **Syed M. Faisal***, Masood AK*, Haq W, Owais M. Immunomodulator tuftsin augments anti-fungal activity of amphotericin B against experimental murine candidiasis. *J Drug Target*. 2002 May;10(3):185-92. (* authors share equal contribution).

Book Chapter:

29. **Syed M. Faisal**, Sean P. McDonough, and Yung-Fu Chang. Chapter 8. *Leptospira*: Strategies for evasion of host immunity and persistence. M.E. Embers (ed.), *The Pathogenic Spirochetes: Strategies for Evasion of Host Immunity and Persistence*, Springer Science, New York 2012.

Grants:

| S. No. | Title | Funding agency | Duration | Amount | Role | Status |
|--------|--|---------------------|---------------------|---|-----------------------------------|------------|
| 1 | Understanding the host immune response and molecular pathogenesis of <i>Leptospira interrogans</i> infection | DBT, Govt. of India | 5 years (2014-2019) | Rs 92.5 Lacs (Including salary support) | Principal Investigator(PI) | Sanctioned |
| 2 | Structural characterization and epitope mapping of multi-domains host interacting outer membrane proteins from <i>Leptospira</i> | DST, Govt. of India | 3 years (2017-2019) | Rs 63 lakhs | Co-Principal Investigator (Co-PI) | Sanctioned |
| 3 | Random and targeted mutagenesis of zoonotic pathogen <i>Leptospira interrogans</i> : in perspective of vaccine development | DBT, Govt. of India | 2 years (2017-2019) | Rs 50.4 lakhs | Principal Investigator(PI) | Sanctioned |

Consultant: “Immunoliposomes-Mediated Novel Gene Therapeutic Strategy for the Treatment of Lymphoma” funded to Dr Arif Khan (PI), Qassim University, SA.

Teaching experience:

- Actively involved in teaching M.Sc. Biotechnology students during Ph.D program.
- Guest Faculty (Biochemistry) at AKT College, A.M. University, Aligarh for period of one year.
- Actively involved in supervising undergraduate and graduate students during Post-doc at Cornell.
- Got opportunity to take classes of Immunology on behalf of my postdoc mentor at Cornell.
- Teaching PhD students for their course work at NIAB.

Research guidance at NIAB:

Subathra Murugan- Senior Research Fellow (October 2014- February 2016)

Vivek Varma- Senior Research Fellow (March 2016-Present)

Anil Kumar- Project Fellow (March 2016-March 2017)

Ajay Kumar- PhD Scholar (July 2016-Present)

Editorial board member:

Scientific Reports

PLOS ONE

Conferences/Symposium/Workshop:

1. **International Conference on “Current trend in Drug discovery research (CTDDR)”** at CDRI, Lucknow during Feb 2001 and presented poster entitled “Liposome mediated removal of bilirubin in Jaundiced rats”.
2. **9th Asia Pacific Congress in Clinical biochemistry, 2002 at New Delhi** during March 9-14 2002 and presented poster entitled “Binding of bilirubin with albumin coupled liposomes: Implications in the treatment of Jaundice”.
3. **YEAST-2003- an International meeting on yeast biology at IMTECH, Chandigarh** during Feb 20-22, 2003 and presented poster entitled “Reconstitution of *Candida albicans* antigens in fusogenic yeast lipid vesicles: Implication in vaccine development” and “Glyoxylate cycle enzymes as potential drug target for the treatment of intracellular infections”.
4. **2nd World congress on Biotechnological developments of Herbal Medicine** held at NBRI Lucknow (India) 2003. and presented poster “Antibacterial efficacy of *Withania somnifera* against *S. typhimurium* infection in BALB/c mice”.
5. **Sixth International Conference on “Liposome Advances: Progress in drug and vaccine delivery, 15-19 december 2003, School of pharmacy, University of London, London, UK** and presented poster entitled “ Fusogenic Liposomes: Potential as future vaccine candidates”.
6. **INDO-AUSTRALIAN Conference on Biotechnology in infectious diseases** held at MAHE, Manipal (India) 1-3 March, 2005 and presented poster entitled “ Role of escheriosomes as vaccine adjuvant against experimental murine salmonellosis”
7. International meeting on “**Molecular and Immunological Approaches to Vaccine Design**” at Cold Spring Harbor Laboratory, New York from Nov.29-Dec.2, 2007 and presented poster entitled “**DNA vaccine for Leptospirosis**”.
8. Eleventh International Conference on Vaccine Research at Baltimore, MD from May 5-7, 2008 and gave talk on “**Evaluation of immune response and protective efficacy of single dose**”

- poly(D,L-lactic-co-glycolic acid)Microspheres based vaccine against experimental hamster Leptospirosis”.**
9. 108th General Meeting of American Society of Microbiology at Boston, MA from June 1-5, 2008 and presented poster entitled “**Variable region of *Leptospira* immunoglobulin like protein A (LigAvar) incorporated in Liposome and PLGA-Microspheres produced robust immune response correlating to protective immunity against challenge in hamsters”.**
 10. Twelveth International Conference on Vaccine Research at Baltimore, MD from April 26-29, 2009 and presented poster “**Leptosomes: Immune response and prophylactic efficacy in hamster model of leptospirosis”**
 11. Federation of Clinical and Immunological Society (FOCIS) at San Francisco, CA from June 11-14, 2009 and presented poster “**Smegmosomes: Immune response and prophylactic efficacy in hamster model of leptospirosis”.**
 12. Federation of Clinical and Immunological Society (FOCIS) at Boston, MA from June 24-27, 2010. “**Non-pathogenic bacterial lipid liposomes are efficient adjuvant that induces both innate and adaptive immune responses”.**
 13. Workshop/training on “**Introduction to Microarray Data Analysis”** at J. Craig Venter Institute, Rockville, MD, USA from June 14-15, 2010.
 14. Fifteenth International Conference on Vaccine Research at Baltimore, MD from May 7-9, 2012 and gave talk on “**Immune response and protective efficacy of live attenuated *Salmonella* vaccine expressing antigens of *Mycobacterium avium* subsp. *paratuberculosis* against challenge in mice”**
 15. Invited to give talk on “**Vaccine Design: Innovative approaches and novel strategies”** at National Institute of Immunology, New Delhi on March 12, 2012
 16. Eighth Vaccine Congress at Philadelphia, PA from October 26-28, 2014 and presented poster entitled “**Immunostimulatory Fusogenic and Conventional Liposome Adjuvants Induce Distinct Differences in the Magnitude, Quality and Kinetics of Innate and Adaptive Immune Responses”**
 17. Participated in International conference on **Genome Architecture and Cell Fate Regulation** organized by University of Hyderabad and TIFR during 1-4th December, 2014.
 18. Member of organizing committee of International Conference on **Host-pathogen Interactions** organized by NIAB, Hyderabad during 12-15th July 2014.
 19. Jury Member in **BIOQUEST 2015** organized by School of Life Sciences, University of Hyderabad during 23-24 September, 2015.
 20. Invited to give talk on “**Beyond Empiricism: Vaccine Design through Innate and Adaptive Immunity Research”** at Interdisciplinary Biotechnology Unit, AMU Aligarh on 20th October, 2015.
 21. Invited as resource person in **Refresher Course in Life Sciences** organized by UGC at University of Hyderabad during 14-30 November, 2015 and gave lecture entitled “**Recent Advances in Vaccine Development: The Journey from Jenner to Genes”**
 22. Invited to give talk on “**Vaccines”** at Integral University, Lucknow on 31st March, 2016.
 23. Invited to give talk on “**Innate Immune response to *Leptospira* infection: Understanding is the key to developing improved vaccines”** at International Leptospirosis Society Meeting during Nov. 27 to Dec. 1, 2017 at Palmerston North, New Zealand.
 24. Workshop/training on “**Microbiology, Genomics and Epidemiology of *Leptospira*”** during Dec. 3 to Dec. 5, 2017 at Massey University, Palmerston North, New Zealand.
 25. Participated in International conference on Molecular Signaling organized by University of Hyderabad and NIAB during 8-10th February, 2018. and gave talk on “***Leptospira* subverts toll like receptor signaling to evade host innate immune response”.**