

DR. ABDUL HAQUE
PRINCIPAL SCIENTIST, HEALTH
BIOTECHNOLOGY DIVISION, NIBGE,
FAISALABAD, PAKISTAN



Specialities:

Vaccine research especially conjugate vaccines for typhoid and other capsular pathogens, Molecular studies on intestinal pathogens especially Salmonella typhi, Salmonella paratyphi A, B, Escherichia coli and rotaviruses, bacterial characterization, bacterial virulence factors, monoclonal antibodies, tissue culture techniques, and protein purification.

Impact Factor: 31

International Publications: 16

Local Publications: 13

Citation Index: 32

5th most productive Health Scientist in Pakistan according to Pakistan Council of Science and Technology (2004)

Reviewer (Journals):

1. Clinical Infectious Diseases, USA (IF 5.4)
2. Journal of Infection in Developing Countries, Italy
3. Annals of Saudi Medicine, Saudi Arabia
4. Pakistan Journal of Medical Sciences, Pakistan

Personal Data:

Name: Abdul Haque

Date of birth: 25th April, 1953.

Postal Address: Dr. Abdul Haque, Principal Scientist, Health Biotechnology Division, National Institute for Biotechnology and Genetic Engineering (NIBGE), P.O.Box: 577, Jhang Road, Faisalabad, Pakistan.

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Qualifications:

1. Ph.D. (Med. Microbiology and Molecular Biology), Osaka University, Japan (1994)
2. Postdoctorate (Med. Microbiology and Molecular Biology), Osaka University, Japan(1994-1995).

Achievement Awards:

1. *Awarded a Gold Medal by PAEC/NIBGE for being the best scientist of the year 2001.*

Academic Awards:

1. Awarded Monbusho scholarship for higher education from 1988 to 199 by Japanese Ministry for Science and Education. Worked for doctorate under supervision of Prof. Dr. Morihiro Matsuda, Head, Department of Bacterial Toxinology, Research Institute for Microbial Diseases, Osaka University, Japan.
2. Awarded Taniguchi post-doctoral scholarship from 1993 to 1995 by Osaka National University, Japan. Worked under supervision of Prof. Dr. Morihiro Matsuda, Head, Department of Bacterial Toxinology, Research Institute for Microbial Diseases, Osaka University, Japan.

Distinctions:

1. Stood second in University in B. Sc.(Med. Tech.)
2. Stood second in University in M. Sc.
3. Throughout First Division.
4. World record holder in TOEFL (1984; score: 640)

Professional Experience:

1. Served as Lecturer in Microbiology at Punjab Medical College, Faisalabad from 23rd November, 1979 to 17th September, 1995
2. Served as Senior Scientific Officer at National Institute for Biotechnology and

Genetic Engineering, Faisalabad from 18th September 1995 to 31st November, 2001.

3. Serving as Principal Scientist at National Institute for Biotechnology and Genetic Engineering, Faisalabad since 1st December, 2001.

Professional awards:

1. Awarded an IAEA Fellowship (1st October to 31st December 2002) for research in Center of Molecular Microbiology and Infection, Imperial College, London, the leading typhoid research institute in world.
2. Awarded International Vaccine Institute scholarship to attend 6th International Advance Course on Vaccinology in Asia-Pacific region at Seoul, Korea from 15-20 May, 2006

Committee membership:

1. *Member, National Vaccine Development and Production Task Force (VDTF), Pakistan*
2. *Member Peer Review Committee, National Testing Service, Pakistan*
3. *Member, Board of Studies, Kohat University, Pakistan*

Administrative Responsibilities:

1. Co-organizer of “**Fifth International Symposium on Typhoid Fever & other Salmonellosis**”, held at Aga Khan University, Karachi (4-7th February, 2002)

Projects awarded:

1. Development of Multiple PCR for diagnosis of *Salmonella typhi* and its drug resistance (funded by PSF worth 1 million)
2. Molecular typing of rotavirus infection in local population and development of a relevant multiplex PCR diagnostic procedure (Higher Education Commission worth 2.5 million)

Projects submitted:

1. Preparation of conjugate vaccine for *Salmonella typhi* and *Salmonella paratyphi* A (Ministry of Science and Technology worth 35 million)

Process development:

First to develop a PCR for diagnosis of typhoid anywhere in the world that can be directly applicable on patient blood.

Research Supervision:

Ph.D (Completed):

1. Abida Raza: Thesis title “Characterization of biofilm produced by clinical isolates of *Salmonella typhi*”
2. Asma Haque: Thesis title “Molecular detection of *Salmonella typhi* strains and their drug resistance pattern”
3. Yasra Sarwar (HEC scholar): Thesis title “Detection, and molecular analysis of local Vi negative strains of *Salmonella typhi*.”

Ph. D. (under supervision):

1. Aamir Ali (HEC scholar) for his thesis “Preparation of multiple conjugates (LPS-protein) for immunization against typhoidal diseases”.
2. Ayesha Tariq for her thesis “Molecular characterization of local isolates of rotaviruses from clinical samples”.
3. Saira Bashir for her thesis “Molecular characterization of human extraintestinal *Escherichia coli* isolates from Pakistan.”
4. Mashkooor Mohsin (HEC scholar) for his thesis “Isolation and characterization of shiga toxin producing *E. coli* strains in intestinal and extra intestinal isolates from local population”.
5. Salmaan Sharif for his thesis “Genetic characterization of sabin like polio viruses isolated from acute flaccid paralysis cases in Pakistan / Afghanistan
6. Amna Afzal (HEC scholar) for her thesis “Role of plasmids and integrons in drug resistance of *Salmonella typhi*”

Distinctions of Ph. D. students:

1. Abida Raza selected for meeting with Nobel Laureats in Germany in 2003

2. Yasra Sarwar awarded HEC overseas scholarship for 6 months in 2006
3. Aamir Ali awarded HEC overseas scholarship for 6 months in 2006
4. Asma Haque awarded HEC overseas scholarship for 6 months in 2006

M. Phil (Completed):

1. Abida Raza: Thesis title “Relationship between virulence and drug resistance among *Salmonella typhi* strains as assessed by *in vitro* biofilm production”(2000).
2. Sadia Khurshid: Thesis title “Discrimination of *Salmonella typhi* and related bacteria by PCR-ribotyping” (2001).
3. Samina Bashir: Thesis title “Incidence of typhoid in cases of Hepatitis C (2002).”
4. Syed Shakil Abbas: Thesis title “Determination of typhoid carriers in normal human population by PCR (2002).
5. Yasra Sarwar Thesis title: “Prevalence of Vi negative strains in Pakistani isolates of *Salmonella typhi*”(2003).
6. Hafsa Aziz: Thesis title “Relative efficacy of *fliC* gene and Vi-gene based methods for the diagnosis of suspected cases of typhoid”(2003)
7. Asma Haque: Thesis title “ Phytochemistr and inhibitory effect of *Acacia arabica*, *Eucalyptus camaldulensis* and *Commiphora mukul* on oral bacterial population”(2001).
8. Zahida Parveen: Thesis title “preparation and evaluation of a herbal mouth wash.”(2001)
9. Amir Ali: Thesis title “ Discrimination of *Salmonella* species by multiplex PCR (2004)
10. Mamoona Naz: Thesis title “Isolation and characterization of hemolysin produced by *Escherichia coli* causing urinary tract and wound infections”(2004)
11. Hajra Saadia: Thesis title “ Detection of *Escherichia coli* virulence genes in clinical samples using multiplex PCR” (2004).
12. Saira Bashir: Thesis title “Identification of integrons and drug resistance genes in the clinical isolates of Extraintestinal *E.coli*.”(2005)

13. Mehwish Jamil: Thesis title “Molecular ribotyping of clinical isolates of enteric bacteria by PCR” (2006)
14. Aasia Bashir: Thesis title “Molecular analysis of genetic elements causing drug resistance in clinical isolates of MDR *Salmonella typhi*.” (2006)

M. Phil. (under supervision):

Azeem Saeed for his thesis “ Molecular analysis of drug resistance of *E.coli* isolated from wound infections”

M. Sc. (completed):

1. Asma Haque: Thesis title “Phytochemical and microbiological screening of indigenous plants”(1998)
2. Farukh Jabeen: Thesis title entitled “Phytochemical screening and antimicrobial activities of *Solanum nigrum* (Mako), *Zingiber zerumbet* (Kachure) and *Rubia cardifolia* (Majith)”(1998).
3. Aasia Bashir: Thesis title “Comparison of PCRs targeting 5S-23S spacer region and fliC gene for detection of *Salmonella typhi*”(2003).
4. Mehwish Jamil: Thesis title entitled “Effect of continuous culture on activation of Vi operon in stored Vi negative strains of *Salmonella typhi*” (2003).

Teaching activities:

1. Teaching Applied Medical Biotechnology and Fundamentals of Medical Biotechnology to M. Phil students at NIBGE, Faisalabad for last ten years (1996-2006).
2. Taught Medical Microbiology to medical students at Punjab Medical College, Faisalabad for sixteen years (1979-1995).

International Publications:

Journals:

1. Sugimoto, N., A. Haque, A. Miyamoto, T. Okabe, Y. Horiguchi, and M.

- Matsuda.** 1991. Botulinolysin: Purification and it's action. **Jpn. J. Med. Sci. Biol.** 44: 248-251.
2. **Haque, A., N. Sugimoto, Y. Horiguchi, T. Okabe, T. Miyata, S. Iwanaga, and M. Matsuda.** 1992. Production, purification and characterization of botulinolysin, a thiol-activated hemolysin of *Clostridium botulinum*.. **Inf. And Immun.** 60: 71-78. **IF 4.212**
 3. **Matsuda, M., N. Sugimoto, A. Haque, and Y. Horiguchi.** 1993. Target(s) of lethal action of botulinolysin and tetanolysin, thiol-activated cytotoxins of *Clostridium botulinum* and *Clostridium tetani*. **Med. Micro. And Immun.** 182: 201-205. **IF 1.793**
 4. **Mitsuyama, M., T. Gonge, A. Haque, and M. Matsuda.** 1994. Induction of Interleukin 1 in peritoneal macrophages by botulinolysin and listeriolysin. **Jpn. J. Bacteriol.** 49: 1-5.
 5. **Matsuda, M., A. Haque, T. Senda, Y. Horiguchi, and N. Sugimoto.** 1995. The mechanism of action of botulinolysin, a thiol-activated cytolysin of *Clostridium botulinum*. **Toxicon.** 33: 271. **IF 2.509**
 6. **Sugimoto, N., A. Haque, Y. Horiguchi, and M. Matsuda.** 1995. Coronary vasoconstriction is the most common cause of death of rats intoxicated with botulinolysin, a hemolysin produced by *Clostridium botulinum*. **Toxicon.** 33: 1215-1230. **IF 2.509**
 7. **Matsuda, M., A Haque, and N. Sugimoto.** 1996. Steps in the large pore-formation by botulinolysin, a thiol-activated cytotoxin of *Clostridium botulinum*. **Med. Microbiol. Immunol.** 185: 114. **IF 1.793**
 8. **Matsuda, M., A. Haque, and N. Sugimoto.** 1996. Brief exposure to a sublethal concentration of botulinolysin, a thiol-actviated cytotoxin of *Clstroidium botulinum* induces differentiation in HL60 cells. **Med. Microbiol. Immunol.** 185: 115-117. **IF 1.793**
 9. **Sugimoto, N., A. Haque, Y. Horiguchi, and M. Matsuda.** 1997. Botulinolysin, a thiol-activated hemolysin produced by *Clostridium botulinum*, inhibits endothelium-dependent relaxation of rat aortic ring. **Toxicon.** 35: 265-270. **IF 2.509**
 10. **Sekiya, K., H. Danbara, Y. Futaesaku, A. Haque, N. Sugimoto, and M. Matsuda.** 1998. Formation of ring-shaped structures on erythrocyte membranes after treatment with botulinolysin, a thiol-activated hemolysin from *Clstroidium botulinum*. **Inf. And Immun.** 66: 2987-2990. **IF 4.212**

11. **Haque, A., J. Ahmed, and J. A. Qureshi.** 1999. Early detection of typhoid by PCR. **Ann. Sau. Med.** 19: 337-341. **IF 0.088**
12. **Haque, A., A. Naeem, A. Peerzada, A. Raza, S. Bashir, and G. Abbas.** 2001. Utility of PCR in diagnosis of problematic cases of typhoid. **Jap. J. Inf. Dis.** 54 (6): 237-239. **IF 0.628**
13. **Baker, S., Y. Sarwar, H. Aziz, A. Haque, A. Ali, G. Dougan, J Wain, and A, Haque.** 2005. The detection of Vi negative Salmonella enterica serovar Typhi in the peripheral blood of typhoid patients in the Faisalabad region of Pakistan. **J. Clin. Microbiol.** 43 (9): 4418-4425. **IF 3.5**
14. **Haque, A., A. Haque, Y. Sarwar, and A. Ali.** 2006. Multiplex PCR for drug resistance against standard antityphoid drugs in blood samples of typhoid patients. **FEBS Journal (Formerly European Journal of Biochemistry)** 273: sp 33-34. **IF 3.5**
15. **Mashkooor. M. , A. Hussain , M. A. Butt, S. Bashir , A. Tariq , S. Babar , A. Ali, A. Haque, Y. Sarwar, and A. Haque.** 2007. Prevalence of Shiga Toxin-Producing *Escherichia coli* in diarrheal patients in Faisalabad region of Pakistan as determined by multiplex PCR. **Journal of Infection in Developing Countries** 1(2): 164-169.
16. **Aamir Ali, Abdul Haque , Asma Haque, Yasra Sarwar, Mashkooor Mohsin, Saira Bashir, and Ayesha Tariq.** 2008. Multiplex PCR for differential diagnosis of emerging typhoidal pathogens directly from blood samples. Accepted for publication in **Epidemiology and Infection.** **IF 1.9**

Book (citation):

1. **Alouf, J. E. and J. H. Freer.** 1999. **The comprehensive sourcebook of bacterial protein toxins.** 2nd Edition. Academic Press, London. Pages 447-456

International Presentations:

(Invited speaker)

1. **Haque, A., A. Raza, S. Khurshid, and J. A. Qureshi.** 2000. Molecular studies on *Salmonella typhi* strains isolated from Pakistan. **Sixth Asian Conference of Clinical Pathologists** held at Pusan, Korea from 10th-14th October, 2000.

2. **Haque, A.** 2002. PCR_based diagnosis of typhoid: the Pakistan experience. **Fifth International Symposium on Typhoid Fever & other Salmonellosis.** Karachi, Pakistan from 4th-7th February.
3. **Haque, A.** 2003. Conjugate vaccines in childhood: some recent advances. Seminar on Vaccine development, production and utilization in developing countries: issues, prospects and implications for Pakistan. August 8-10, 2003, Karachi, Pakistan
4. **Haque, A.** and A. Ali 2004. Development of a multiplex PCR for detection of *Salmonella typhi* and related pathogens. World Conference on Dosing of Antiinfectives, September 9-11, Nerumberg, Germany.
5. **Haque, A** 2005. Role of conjugate vaccines in combating infections caused by bacteria producing lypopolysaccharide antigens. Fifth International Biennial Conference of Pakistan Society for Microbiology, January 10-15, 2005, Karachi, Pakistan.
6. **Haque, A.** 2005. Emergence of Vi negative strains of *S. Typhi* and Their Importance in Vaccine Development. 18th FABOMB Symposium. Genomics and Proteomics in Health and Agriculture, November 20- 23, Lahore, Pakistan.
7. **Haque A.** 2006. Vaccines: modern trends, prospects and pitfalls. 1st International Conference on Biotechnology and Informatics, 1, Balochistan University of Information Technology and Management Sciences, 10-12th April, Quetta, Pakistan .
8. **Haque A.** 2006. Modern Vaccines: Development and Challenges. 1st Egyptian-Jordanian Conference under the theme of Biotechnology and Sustainable Development: Current Status and Future Scenarios 11th to 14th December, 2006, Cairo, Egypt.
9. **Haque A.**2007. New Generation conjugate salmonella vaccine. International Workshop on Vaccines at COMSTECH, Islamabad held from 3-9th September, 2007.

International Presentations:

1. **Haque, A.** 1991. A new toxin (thiol-activated hemolysin) of *Clostridium botulinum*. Presented at 3rd International Conference of Pakistan Association of Pathologists, 22-25 November, Lahore.
2. **Haque, A., Y. Horiguchi, N. Sugimoto, and N. Matsuda.** 1993. Cytotoxicity of

botulinolysin. Presented at Meeting of Japanese Society of Bacteriology, 16-17 November, Nara, Japan.

3. **Matsuda, M., A. Haque, N. Sugimoto, Y. Horiguchi, and T. Senda.** 1993. The biological effects of *Clostridial* pore-forming toxins. Presented at 10th FAOB symposium on Protein Research, 8-10 December, Taipei, Taiwan.
4. **Matsuda, M., A. Haque, and N. Sugimoto.** Brief exposure to sublethal dose of botulinolysin induced differentiation in HL60 cells. International Workshop on pore-forming toxins, 22-23 September, 1993 Mainz, Germany.
5. **S. Bashir, A. Raza and A. Haque.** 2002. Incidence of typhoid markers in cases of Hepatitis C. **Fifth International Symposium on Typhoid Fever & other Salmonellosis.** Karachi, Pakistan from 4th-7th February.
6. **Raza, A., S. Bashir, and A. Haque.** 2002. Difference in drug resistance patterns of *Salmonella typhi* PCR tibotypes isolated from Paksitan.. **Fifth International Symposium on Typhoid Fever & other Salmonellosis.** Karachi, Pakistan from 4th-7th February.

Book Authorship:

1. Abida Raza, **A. Haque** & Javed A. Qureshi: Chapter 16, Polymerase Chain Reaction. Clinical Biochemistry. 2003. Published by Career Book Publishers, 22-Urdu Bazar, Lahore

National Publications:

1. **Haque, A., and R. A. Cheema.** 1980. Bacterial infections of urinary tract. **The Bulletin.** 4: 19-23.
2. **Chaudhary, F. M., A. Haque, N. A. Chaudhary, and F. Mahmood.** 1986. Isolation of *Salmonella* organsims from stool culture of apparently healthy persons. **Pak. J. Med. Res.** 25: 182-185.
3. **Haque, A., R. Tabassum, and J. A. Qureshi.** 1996. An overview of modern methods of diagnosis of tuberculosis. **Doctor Intl.** 18: 6.
4. **Haque, A.** 1997. Polymerase Chain Reaction (PCR): A Review. **The Professional.**

- 4: 105-109.
5. **Haque, A.** 1998. Cloning: progress or controversy. **The Professional.** 5: 115-117
 6. **Qureshi, J. A., W. A. Shah, R. Tabassum, A. Haque, Z. Yasin, and N. Ahmad.** 1998. Disease, DNA and diagnosis: Principles of molecular tests in infectious Diseases. **Inf. Dis. J.** 5: 38-40.
 7. **Haque, A., and N. Ahmed.** 2000. DNA vaccines. An overview. **The Professional.** 7 (3): 260-263.
 8. **Raza. A., Haque, A., and J. A. Qureshi.** 2000. Evaluation of PCR and Typhidot for early diagnosis of typhoid. **The Professional.** 8(3): 301-305.
 9. **Haque, A.** 2003. Stem Cells. **The Professional.** 10: 2-5.
 10. **Raza, A., A. Haque, S. Khurshid, J. a. Qureshi, A. Jamil, and M. A. Sheikh.** 2003. In vitro relationship between different levels of virulence and antibiotic resistance. **Inter. J. of Agri. and Biol.** 5: 2003
 11. **Samina B., A. Haque, N. Ahmed, A. Raza , A. Haque , Y. Sarwar , A. Ali, S. Bashir, M. Ahmed, I. Ahmed, and J. Ahmed .** 2005. Significant incidence of typhoid in Hepatitis C patients. **The Professional.** 12:287-294
 12. **Haque, A. , A. Haque, Y. Sarwar, A. Ali, S. Bashir, A. Tariq , and Mohsin.** 2005. Identification of drug resistance genes in clinical isolates of *Salmonella typhi* for development of diagnostic multiplex PCR. **Pakistan Journal of Medical Sciences.** 21: 402-407.
 13. **Mehwish Jamil, Saira Bashir, Mashkooor Mohsin, Ayesha Tariq, Aasia Bashir, Asma Haque , Yasra Sarwar , Aamir Ali, and Abdul Haque.** 2007. Differentiation of common gram negative pathogens by PCR-ribotyping. **Pakistan Journal of Medical Sciences.** 23:233-237.

National Presentations:

(Invited speaker)

1. **Haque, A.** 2001. Stem cell research and ethical issues. Presented at COMSTECH forum, Islamabad on 28th August, 2001.
2. **Haque, A.** 2005. Development of Multiplex PCR for Diagnosis of *Salmonella typhi* and detection of Drug Resistance. First National Conference on Health

Biotechnology, 27-28th January, Lahore.

3. **Haque A.** 2005. Use of Multiplex PCR for diagnosis of drug resistance. Seminar on Therapeutic Agents and Diagnostic Kits. 14-16th February, Lahore.
4. **Haque A.** 2006. Review of conjugate vaccines used against capsular bacterial pathogens. National Workshop on Biotechnology Training Activities in Allergy Vaccine Development in Pakistan, June 3-8, Dr. Panjwani Center for Molecular Medicine and Drug Research, University of Karachi, Karachi.
5. **Haque A.** 2006. Immune response against vaccines. National Workshop on Biotechnology Training Activities in Allergy Vaccine Development in Pakistan, June 3-8, Dr. Panjwani Center for Molecular Medicine and Drug Research, University of Karachi, Karachi.
6. **Haque A.** 2006. Review of conjugate vaccines used against capsular bacterial pathogens. National Workshop on Biotechnology Training Activities in Allergy Vaccine Development in Pakistan, Dr. Panjwani Center for Molecular Medicine and Drug Research, Karachi University, 3rd to 8th June, 2006, Karachi, Pakistan.
7. **Haque A.** 2006. Immune response against vaccines. National Workshop on Biotechnology Training Activities in Allergy Vaccine Development in Pakistan, Dr. Panjwani Center for Molecular Medicine and Drug Research, Karachi University, 3rd to 8th June, 2006, Karachi, Pakistan
8. **Haque A.** 2007. Therapeutic Vaccines: An Overview. Sixth International Biennial Conference of Microbiology, 18-21 March National Library of Pakistan, Islamabad.

National Presentations:

1. **Haque, A., F. M. Chaudhary, and N. A. Chaudhary.** 1987. Significance of coagulase negative *staphylococci* in clinical infections. Presented at 14th Annual PMA Faisalabad Conference, 5-6 February, Faisalabad.
2. **Haque, A.** 1997. Effect of different body fluids on PCR for *Mycobacterium tuberculosis*. Presented at 5th Annual Conference of Faisalabad Medical Society, 20-21 February, Faisalabad.
3. **Haque, A., and J. A. Qureshi.** 1997. Advantage of using blood for PCR-based diagnosis of pulmonary tuberculosis. Presented at Second International Conference of Paksitan Society for Microbiology, 24-26 Septemeber, Bhurban.
4. **Haque, A., and J. A. Qureshi.** 1997. PCR-based diagnosis of problematic cases of typhoid. Presented at 21st National conference of Pathologists,

14-16 November, Faisalabad.

5. **Haque, A., A. Raza, and J. A. Qureshi.** 1999. Early diagnosis of typhoid by PCR. Presented at Infectious Diseases Conference, 20-21 September, Aga Khan University, Karachi.

6. **Raza, A., A. Haque, and J. A. Qureshi.** 2000. In vitro relationship between drug resistance and antibiotic sensitivity in *Salmonella typhi*. Presented at Third International Conference of Pakistan Society of Microbiology, 28-30th March, Lahore.