

Publications(i) Textbook

Khan MA (2011) "Tetracyclines and Macromolecule" LAP LAMBERT Academic Publishing GmbH & Co. KG, Germany (ISBN: 978-3-8443-9322-4).

Book Chapter

Khan MA (2014) in "RNA- Nanotechnology" PAN Stanford Publishing Pvt. Ltd. Singapore. ISBN: 9789814411646 (Hardcover), 9789814411653 (eBook). <http://www.panstanford.com>.

(ii) Peer-Reviewed Journal Articles

1. Khan MA, Mohammad T, Malik A, Hassan MI, and Domashevskiy AV (2023) Iron response elements (IREs)-mRNA of Alzheimer's amyloid precursor protein binding to iron regulatory protein (IRP1): a combined molecular docking and spectroscopic approach. *Scientific Reports*, 13: 5073. doi: 10.1038/s41598-023-32073-x.
2. Khan MA, Malik A, and Domashevskiy AV (2023) Translational control of the Alzheimer's amyloid precursor protein mRNA by iron regulatory protein (IRP1). *International Journal of Molecular Sciences* (Submitted).
3. Khan MA, Yamak S. and Miyoshi H (2023) Poly(A)-binding protein promotes VPg-dependent translation of potyvirus through enhanced binding of phosphorylated eIFiso4Fp and eIFiso4Fp-eIF4F. (PLOS ONE Under revision).
4. Khan, MA, (2022) Ferritin iron responsive elements (IREs) mRNA interacts with eIF4G and activates in vitro translation. *Frontiers in Biosciences-Elite* 14(3):17. <https://doi.org/10.31083/j.fbe1403017>.
5. Khan MA and Domashevskiy AV (2021) Iron enhances the binding rates and protein synthesis of iron responsive elements (IREs) mRNA with translation initiation factor eIF4F. *PLOS One*, 16(4): e0250374, 1-20.
6. Khan MA, Akif M, Kumar, P., and Miyoshi H (2021) Phosphorylation of eukaryotic initiation factor eIFiso4E enhances the binding rates to VPg of turnip mosaic virus. *PLOS One*, 16(11) e0259688. <https://doi.org/10.1371/journal.pone.0259688>.
7. Khan MA, Malik A, Domashevskiy AV, San A and Khan JM (2020) Interaction of ferritin iron responsive element (IRE) mRNA with translation initiation factor eIF4F. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 243, 118776. <https://doi.org/10.1016/j.saa.2020.118776>.
8. Khan JM, Malik A, Khan MA, Sharma P and Sen P (2020) Pre-micellar concentrations of sodium dodecyl-benzene sulphonate induce amyloid like fibril formation in myoglobin at pH 4.5. *Journal of Colloids and Surfaces A: Physicochemical and Engineering Aspects*. 586, 124240.
9. Khan MA (2020) Analysis of ion and pH effects on iron response element (IRE) mRNA iron regulatory protein (IRP1) interactions. *Current Chemical Biology*. Volume 14, No. 2. doi: 10.2174/2212796814999200604121937.
10. Khan MA and Goss DJ (2019) Poly(A) binding protein enhances the binding affinity of potyvirus VPg to eukaryotic initiation factor eIF4F and activates in vitro translation. *Int J Biol Macromol*. Jan; 121: 947-955, doi: 10.1016/j.ijbiomac.2018.10.135.
11. Khan MA (2019) Phosphorylation of translation initiation factor eIFiso4E promotes translation through enhanced binding of potyvirus VPg. *The Journal of Biochemistry* (Oxford Press). Feb 1; 165(2): 167-176. doi: 10.1093/jb/mvy091.
12. Khan MA and Goss DJ (2018) Kinetic analyses of phosphorylated and non-phosphorylated eIFiso4E binding to mRNA cap analogues. *Int. J. Biol Macromol*. 106, 387-395.
13. Khan MA, Walden WE, Theil EC and Goss DJ (2017) Thermodynamic and kinetic analyses of iron response element (IRE)-mRNA binding to iron regulatory protein, IRP1. *Scientific Report*, 7(1): 8532. Doi: 10.1038/s41598-017-09093-5.
14. Khan MA (2016) Iron balancing mechanism: iron regulatory element (IRE)-messenger RNA metal sensing. *BAOJ Biotechnology*, Review Article, 2(3) 1-11.
15. Khan MA, Ma J, Walden WE, Merrick WC, Theil EC and Goss DJ (2014). Rapid Kinetics of Iron Responsive Element (IRE) RNA/Iron Regulatory Protein1 and IRE-RNA/eIF4F

- Complexes Respond Differently to Metal Ions. *Nucleic Acid Research*, 42(10) 6567-6577.
16. Ma J, Haldar S, Khan MA, Sharma S, Merrick WC, Theil EC and Goss DJ (2012). Fe<sup>2+</sup> binds iron responsive element-RNA, selectively changing protein-binding affinities and regulating mRNA repression and activation. *Proceedings of the National Academy of Sciences (PNAS) USA* 109(22) 8417-8422.
  17. Khan MA and Goss DJ (2012) Poly(A)-binding protein increases the binding affinity and kinetic rates of viral protein linked to genome (VPg) interaction with translation initiation factors eIFiso4F and eIFiso4F-4B complex. *Biochemistry* 51(7), 1388-95.
  18. Ecevit O, Khan MA and Goss DJ (2010) Kinetic analysis of B/HLH/Z transcription factors c-Myc/Max/Mad with cognate DNA. *Biochemistry* 49(12): 2627-35.
  19. Yumak H, Khan MA and Goss DJ (2010). Poly(A)-tail affects Equilibrium and Thermodynamic Behavior of Tobacco Etch Virus mRNA with Translation Initiation factors eIF4F, eIF4B and PABP. *Gene Regulatory Mechanisms-BBA* 1799(9), 653-658.
  20. Khan MA, Walden WE, Goss DJ and Theil EC (2009) Direct Fe<sup>2+</sup> Sensing by Iron Responsive Messenger RNA•Repressor Complexes Weakens Binding. *J. Biol. Chem.* 284(44), 30122-30128.
  21. Khan MA, Yumak H and Goss DJ (2009). Kinetic Mechanism for the Binding of eIF4F and tobacco etch virus Internal Ribosome Entry Site RNA: Effects of eIF4B and Poly A Binding Protein. *J. Biol. Chem.* 284(51), 35461-70.
  22. Baldwin A., Khan MA, Tumer NE, Goss DJ and Friedland DE (2009) Characterization of pokeweed antiviral protein binding to mRNA cap analogs: competition with nucleotides and enhancement by translation initiation factor iso4G. *Gene Regulatory Mechanisms-BBA*, 1789, 109-116.
  23. Khan MA, Miyoshi H, Gallie DR and Goss DJ (2008) Potyvirus genome-linked protein, VPg, directly affects wheat germ *in vitro* translation: Interactions with translation initiation factors eIF4F and eIFiso4F. *J. Biol. Chem*, 283(3), 1340-1349.
  24. Khan MA, Yumak H, Gallie DR and Goss DJ (2008). Effects of poly(A)-binding protein on the interactions of translation initiation factor eIF4F and eIF4F-4B with internal ribosome entry site (IRES) of tobacco etch virus RNA. *Gene Regulatory Mechanisms-BBA*, 1779, 622-627.
  25. Khan MA, Miyoshi H, Ray S, Natsuaki T, Suehiro N and Goss DJ (2006) Interaction of Genome-linked Protein (VPg) of Turnip Mosaic Virus (TuMV) with Translation Initiation Factors eIFiso4E and eIFiso4F. *J. Biol. Chem.* 281 (38), 28002-28010.
  26. Ray S, Yumak H, Domashevskiy A, Khan MA, Gallie DR and Goss DJ (2006). Tobacco etch virus mRNA preferentially binds eukaryotic initiation factor (eIF)4G rather than (eIF)iso4G. *J. Biol. Chem.* 281 (47), 35826-35834.
  27. Khan MA and Goss DJ (2005) Translation Initiation factor (eIF) 4B affects the Rates of binding of the mRNA m<sup>7</sup>G cap analogue to eIFiso4F and eIFiso4F.PABP. *Biochemistry* 44, 4510-4516.
  28. Khan MA and Goss DJ (2004) Phosphorylation States of Translational Initiation factors (eIFs) affect mRNA Cap-Binding. *Biochemistry* 43, 9092-9097.
  29. Khan MA, Mustafa J and Musarrat J (2003) Mechanism of DNA strand breakage induced by photosensitized tetracycline-Cu (II) complex. *Mutation Research*, 525(1)109-119.
  30. Khan MA and Musarrat J (2003) Interactions of tetracyclines and its derivatives with DNA *in vitro* in presence of metal ions. *Int. J. Biol. Macromol*, 33 (1-3) 49-56.
  31. Tayyab S, Khan NJ, Khan MA and Kumar Y (2003) Behavior of various mammalian albumins towards bilirubin binding and photochemical properties of different bilirubin-albumin complexes. *Int. J. Biol. Macromol*, 31, 187-193.
  32. Khan MA, Muzammil S and Musarrat J (2002) Differential binding of tetracyclines with serum albumin and induced structural alterations in drug bound protein. *Int. J. Biol. Macromol*, 30(5), 243.
  33. Khan MA and Musarrat J (2002) Tetracycline-Cu (II) photo-induced fragmentation of serum albumin. *Comp. Biochem. Physiol.C Toxicol Pharmacol.* 131 (4) 439-446.

34. Khan MA, Kumar Y and Tayyab S (2002) Bilirubin binding properties of pigeon serum albumin and its comparison with human serum albumin. *Int. J. Biol. Macromol*, 30: 171-178.
35. Jaiswal R, Khan MA and Musarrat J (2002) Photosensitized paraquat-induced structural alterations and free radical mediated fragmentation of serum albumin. *J. Photochem. Photobiol.* 67(3), 163-170.
36. Khan MA, Muzammil S and Musarrat J (1998) "Interaction of photosensitized tetracycline with serum albumin" *Biochem. Mol. Biol. Int.*, 46, 943-950.

(iii) Abstracts Published

1. Domashevskiy AV and Khan, MA, (2023) Targeting the iron response element (IRE)-mRNA of Alzheimer's Amyloid Precursor Protein (IRP1). *J. Biol. Chem.* 299 (3S) S655.
2. Khan MA, Theil EC and Goss DJ (2019) Ferritin iron response element (IRE)-mRNA binding to eukaryotic translation initiation factor (eIF)4F. *Proceedings of the 24<sup>th</sup> Annual Meeting of RNA Society.*
3. Khan MA, Theil RC and Goss DJ (2019). Iron response element-mRNA binding to iron response protein: metal ion sensing. *Proceedings of the 21<sup>th</sup> International conference on RNA biology (ICRNAB).*
4. Khan MA and Goss DJ (2018). PABP and eIF4B Effects Binding Affinity and Kinetic Rates of Genome Linked Viral Protein (VPg) with Eukaryotic Initiation Factor 4F. *The FASEB Journal April 20*, 652.19.
5. Ma J, Khan MA, Merrick WC, Theil EC and Goss DJ (2013). Mechanism of activator (eIF4F) and suppressor (IRP) binding to iron responsive element mRNA. *The FASEB Journal April 9*, 27: 551.8.
6. Theil EC, Ma J, Halder S, Khan MA and Goss DJ (2013). How Fe<sup>2+</sup> activates IRE-mRNA: A duet with IRP and eIF4F. *American Journal of Hematology.* 88(5): E63.
7. Ma J, Khan MA, Merrick WC, Halder S, Theil EC and Goss DJ (2012). Iron induced eukaryotic initiation factor/mRNA binding affinity change. *The FASEB Journal March 29*, 26: 947.1.
8. Khan MA, Ma J, Halder S, Theil EC and Goss DJ (2011). Iron Response Element (IRE) Riboswitches from Different mRNAs Selectively Influence Repressor Protein (IRP1) Binding Kinetics and Metal Ion Responses. *Proceedings of the 24<sup>th</sup> Annual International Symposium on the RNA Structure and Function: A New frontier in Biomedical Research*, Center for study of Gene Structure and Function, Hunter College, City University of New York and Weill Cornell Medical College Clinical & Translational Science Center, New York, Jan 21.
9. Ma J, Khan MA, Merrick WC, Halder S, Theil EC and Goss DJ (2011). The interaction between eIF4F and iron response protein with IRE-mRNA. *The FASEB Journal (Suppl.) 25*: 703.2.
10. Ma J, Khan MA, Merrick WC, Halder S, Theil EC and Goss DJ (2011). Interaction between eukaryotic initiation factors and IRE/IRP system. *Proceedings of the 24<sup>th</sup> Annual International Symposium on the RNA Structure and Function: A New frontier in Biomedical Research*, Center for study of Gene Structure & Function, Hunter College, City University of New York and Weill Cornell Medical College Clinical & Translational Science Center, New York, Jan 21.
11. Sharma DS, Banerjee B, Khan MA and Goss DJ (2011). A comparative study of cap-independent translation mechanism in barley yellow dwarf virus and tobacco etch virus. *Proceedings of the 24<sup>th</sup> Annual International Symposium on the RNA Structure and Function: A New frontier in Biomedical Research*, Center for study of Gene Structure and Function, Hunter College, City University of New York and Weill Cornell Medical College Clinical & Translational Science Center, New York, Jan 21.
12. Khan MA, Ma J, Halder S, Theil EC and Goss DJ (2010). Probing the Iron Switch in mRNA: Interactions of Iron Response Protein with IRE-mRNA. *Proceedings of the 15<sup>th</sup> Conference on Translational Control.* Cold Spring Harbor Laboratory, New York.
13. Khan MA, Walden WE, Theil EC and Goss DJ (2010) Kinetic analysis of Iron Responsive Element (IRE) mRNA with Iron Regulatory Protein (IRP1). *The FASEB Journal*, 499.7.

14. Khan MA and Goss DJ (2010) Kinetic Analysis for the Interaction of Initiation Factors (eIFs) with Tobacco Etch Virus Internal Ribosome Entry Site RNA. *Proceedings of the 15<sup>th</sup> Annual Meeting of RNA Society*, Seattle, USA.
15. Khan MA, Walden WE, Theil EC and Goss DJ (2009) Selective decrease in regulatory iron response protein 1 (IRP1) binding to mRNA iron response element (IRE). *The FASEB Journal*, 22(1), 998.1.
16. Khan MA, Gallie DR and Goss DJ (2008) Poly(A)-binding protein affects the kinetics of tobacco etch virus pseudoknot RNA binding to translation initiation factor eIF4F. *The FASEB Journal*, 22(1), 998.1.
17. Goss DJ, Khan MA, Miyoshi H and Gallie DR (2008) The role of potyvirus genome linked protein, VPg, in cap-independent translation: interactions with initiation factors and IRES RNA. *Proceedings of the 13<sup>th</sup> Conference on Translational Control*. Cold Spring Harbor Laboratory, New York.
18. Goss DJ Khan MA, Domashevskiy A and Yumak H (2008) Biophysical insights into the mechanism of viral protein synthesis. *Proceedings of the 40<sup>th</sup> American chemical society-middle atlantic regional meeting*, New York.
19. Khan MA, Miyoshi H and Goss DJ (2007) Translation Initiation Factors eIF4F and eIFiso4F Interacts Differently with Potyvirus Genome-Linked Protein, VPg". *The FASEB Journal*, April 21(5), 641.5.
20. Khan MA, Ray S, Domashevskiy A, Yumak H, Gallie DR, Miyoshi H and Goss DJ (2006) New Insights into the Mechanism of Plant TEV Virus Protein Synthesis. *Proceedings of the 11<sup>th</sup> Conference on Translational Control*, Pg 177. Cold Spring Harbor Laboratory, New York.
21. Khan MA, Miyoshi H, Ray S, Natsuaki T, Suehiro N and Goss DJ (2006) Interaction of genome-linked protein (VPg) of turnip mosaic virus (TuMV) with translation initiation factors eIFiso4E and eIFiso4G. *The FASEB Journal*, 20(4), 100.6.
22. Ray S, Domashevskiy A, Yumak H, Khan MA, Gallie DR and Goss DJ (2006) Tobacco etch virus mRNA preferentially binds eukaryotic initiation factor (eIF)4G rather than (eIF)iso4G. *The FASEB Journal*, 20(4), 100.7.
23. Khan MA and Goss DJ (2005) Translation Initiation factor (eIF) 4B affects the Rates of binding of the mRNA m<sup>7</sup>G cap analogue to eIFiso4F and eIFiso4F·PABP: Stopped-Flow Kinetic Studies. *Biophysical Journal* (supplement).
24. Khan MA and Goss DJ (2004) Functional Effects of *in vitro* Phosphorylation of Translational Initiation Factors. *Proceedings of the 9<sup>th</sup> Conference on Translational Control*. Cold Spring Harbor Laboratory, New York.
25. Khan MA and Goss DJ (2004) Phosphorylation States of Translational Initiation factors (eIFs) affect mRNA Cap-Binding. *Biophysical Journal* (supplement), 86(1), 316a.
26. Khan NJ, Khan MA, Kumar Y and Tayyab S (2002) Binding of bilirubin to different mammalian albumins and its effect on photochemical reaction. *Proceedings of the 9<sup>th</sup> APCCB and ACBI*, New Delhi, India.
27. Zaidi S, Singh BR, Khan MA and Musarrat J (2002) In vitro assessment of the genotoxic potential of certain herbicides. *Proceedings of the 4<sup>th</sup> Indian Agricultural Scientists and Farmer's Congress*, Ch. Charan Singh University, Meerut, U.P., India.
28. Khan MA, Kumar Y and Tayyab S (2001) Bilirubin binding properties of pigeon serum albumin and its comparison with human serum albumin. *Proceedings of the 89<sup>th</sup> Indian Science Congress*, Lucknow, U.P., India.
29. Khan MA and Musarrat J (2001) Mechanism of DNA breakage induced by tetracycline-Cu(II) complex upon photosensitization: Role of cuprous ion and oxygen free radicals. *Proceedings of National symposium on stability and stabilization of biomolecules*, Biotechnology, A.M.U. Aligarh, India.
30. Khan MA and Musarrat J (2000) Strand scission in DNA induced with tetracycline-Cu(II) complex upon photosensitization. *Proceedings of the 88<sup>th</sup> Indian Science Congress*, IARI, PUSA, New Delhi, India.

31. Khan MA, Muzammil S and Musarrat J (1999) Interactions of tetracycline and its derivatives with calf thymus DNA. *Proceedings of the 68<sup>th</sup> Annual Meeting of the Society of Biological Chemist*, I.I.Sc., Bangalore, India.
32. Khan MA, Muzammil S and Musarrat J (1998) Protein fluorescence quenching and free radical generation with photosensitized tetracycline. *Proceedings of the 6<sup>7th</sup> annual Meeting of the Society of Biological Chemist*, J.N.U., New Delhi, India.
33. Khan MA and Musarrat J (1997) Studies on the binding and photoinduced degradation of serum albumin with tetracycline. *Proceeding of the 66<sup>th</sup> Annual Meeting of the Society of Biological Chemist*, Andhra University, Visakhapatnam, India.
34. Khan MA, Khan MA, Khan RH and Siddique S (1996) pH dependence of lectin-carbohydrate interactions” *Proceedings of National Symposium on Molecular and Cellular Biophysics and 23<sup>rd</sup> Annual Meeting of Indian Biophysical Society*, AIIMS and JNU, New Delhi, India.

(iv) Invited Talks

- Khan MA, Targeting IRE mRNA signalling pathway in iron homeostasis and Alzheimer’s disease. Life Science Program seminar series, Dept. Life Science, COSGS, Alfaisal University, Riyadh, KSA, February 2020.
- Khan MA, Translation initiation in eukaryotic and viral protein synthesis: cap dependent and cap-independent translation. Life Science Program seminar series, Dept Life Science, COSGS, Alfaisal University, Riyadh, KSA, March 2018.
- Khan MA, Gene regulation of iron metabolism by IRE-mRNA/IRP system. Life Science Program seminar series, Dept Life Science, COSGS, Alfaisal University, Riyadh, KSA, February 2017.
- Khan MA, Gene regulation of viral protein synthesis, Department of Natural Science, State University of New York, January 2015.
- Khan MA, Viral protein synthesis: cap-dependent/independent. Hunter College City University of New York, USA, December 2014.
- Khan MA, Biochemistry of iron, Department of Science, New York Institute of Technology, New York, May 2013.
- Khan MA, Role of phosphorylation on protein synthesis, Mercy College, NY USA, October 2012.
- Khan MA, Iron and diseases. Dept. Biochemistry, Penn University, New York, April 2011.
- Khan MA, probing the iron switch in mRNA. Weill Cornell Medical College Clinical & Translational Science Centre, New York, Jan 2009.

(V) Conference/Symposium/Workshops Attended

1. 2019- 24<sup>th</sup> Annual Meeting of RNA Society, Krakow, Poland, June 11-16.
2. 2017- The International Conference on Physical and Life Sciences, organized by the Society for Academic Research, Roosevelt hotel, Manhattan, New York, NY, USA, July 24.
3. 2011- 24<sup>th</sup> Annual International Symposium, RNA Structure and Function: A New Frontier in Biomedical Research, Center for study of Gene Structure and Function, Hunter College, City University of New York and Weill Cornell Medical College Clinical & Translational Science Center, New York, Jan 21.
4. 2010- 15<sup>th</sup> Annual RNA Society Meeting, Seattle, Washington, U.S.A. June 22-26.
5. 2010- American Society for Biochemistry and Molecular Biology (Experimental Biology) annual meeting, Anaheim, California, U.S.A. April 24-28.
6. 2009- American Society for Biochemistry and Molecular Biology (Experimental Biology) annual meeting, New Orleans, Louisiana, U.S.A. April 18-22.
7. 2009- Workshop on grant writing and the “Biophysical techniques used in the study of proteins-protein and protein-RNA interactions”. Sponsored by the NIH, MCRI, Gene center, CUNY, USA, June 20-July 24.
8. 2009- 22<sup>nd</sup> Annual International Symposium, Translational Cancer Research, Center for

- study of Gene Structure and Function, Hunter College, City University of New York and Weill Cornell Medical College Clinical & Translational Science Center, NY, Jan 22, 2009.
9. 2008- *American Society for Biochemistry and Molecular Biology (Experimental Biology)* annual meeting, San Diego, California, U.S.A. April 5-9.
  10. 2008- *13<sup>th</sup> Conference on Translational Control*. Cold Spring Harbor Symposium, held at Cold Spring Harbor Laboratory, New York, Sept 3-7.
  11. 2008- *40<sup>th</sup> American chemical society-middle Atlantic regional meeting*. ACS meeting, held at Queensborough community college, bayside, Queens, New York. May 17-20.
  12. 2008- 21<sup>st</sup> Annual International Symposium: *Frontiers of Nanotechnology and Biotechnology: Integration and Invention*, Center for study of Gene Structure and Function Hunter College, City University of New York, Jan 18.
  13. 2007- *American Society for Biochemistry and Molecular Biology (Experimental Biology)* annual meeting, Washington, DC, U.S.A. April 28-May 2.
  14. 2006- *11<sup>th</sup> Conference on Translational Control*. Cold Spring Harbor Symposium, held at Cold Spring Harbor Laboratory, New York, Sept 7-12.
  15. 2006- *American Society for Biochemistry and Molecular Biology (Experimental Biology)* annual meeting, San Francisco, CA, U.S.A. April 1-5.
  16. 2005- *49<sup>th</sup> Annual meeting of Biophysical Society*, Long Beach, California, U.S.A. Feb 12-16.
  17. 2004- *9<sup>th</sup> Conference on Translational Control*. Cold Spring Harbor Symposium, Cold Spring Harbor Laboratory Meeting, New York, Sept 7-12.
  18. 2004- *48<sup>th</sup> Annual meeting of Biophysical Society*, Baltimore, U.S.A. Feb 14-18.
  19. 2002- *9<sup>th</sup> APCCB and 28<sup>th</sup> Annual conference of ACBI*, held at New Delhi, India, March 9-14.
  20. 2002- *4<sup>th</sup> Indian Agricultural Scientists and Farmer's Congress* held at Ch. Charan Singh University, Meerut, U.P., India
  21. 2001- *89<sup>th</sup> Indian Science Congress* held at Lucknow, U.P., India
  22. 2001- *National symposium on stability and stabilization of biomolecules* held at Interdisciplinary Biotechnology unit, A.M.U. Aligarh, India, March 13-14.
  23. 2000- *88<sup>th</sup> Indian Science Congress* held at IARI, PUSA, New Delhi, India.
  24. 2000- "*National Science Day Program*" sponsored by DBT, Ministry of Science & Technology, Government of India, organized by the Interdisciplinary Biotechnology Unit, AMU, Aligarh, India, Feb 28.
  25. 1999- *68<sup>th</sup> Annual Meeting of the Society of Biological Chemist*, held at I.I.Sc., Bangalore, India.
  26. 1999- Workshop on "*Bioinformatics in the 21<sup>st</sup> Century*" sponsored by DBT, Ministry of Science & Technology, Government of India, organized by the Distributed Information Sub-Centre, AMU, Aligarh, India, Oct 26-28.
  27. 1999- *National Science Day Program* sponsored by DBT, Ministry of Science & Technology, Government of India, organized by the Interdisciplinary Biotechnology Unit, AMU, Aligarh, India, Feb 28.
  28. 1998- *67<sup>th</sup> annual Meeting of the Society of Biological Chemist*, India held at J.N.U., New Delhi, India.
  29. 1998- *National Science Day Program* sponsored by DBT, Ministry of Science & Technology, Government of India, organized by the Interdisciplinary Biotechnology Unit, AMU, Aligarh, India, Feb 28.
  30. 1997- *66<sup>th</sup> Annual Meeting of the Society of Biological Chemist*, India, held at Andhra University, Visakhapatnam, India, Dec 22-24.
  31. 1996-*National Symposium on Molecular and Cellular Biophysics and 23<sup>rd</sup> Annual Meeting of Indian Biophysical Society* held at AIIMS & JNU, New Delhi, India, Feb 18-21.
  32. 1993- Short Term Technical Training on "*Some recent techniques used in the study of peptides, proteins and enzymes*". Sponsored by the Department of Biotechnology, Government of India at Interdisciplinary Biotechnology Unit, AMU, Aligarh, India.