

Allah-Rakha
Head | Professor
Department of Forensic Medicine
University of Health Sciences, Lahore, Pakistan. 54000.
Cell: +92 3456679399
Ph: +92 42 992 313 04 Ext: 342
UAN: +92 111 33 33 66 Ext: 342
Fax: +92 42 992 30870
[Email: DNAexpert@me.com](mailto:DNAexpert@me.com)
<https://www.uhs.edu.pk/for-publication.php>

Experience

JULY 2022-PRESENT | PROFESSOR | HEAD

Department of Forensic Medicine, University of Health Sciences, Lahore, Pakistan

JULY 2018- JULY 2022 | ASSOCIATE PROFESSOR

Department of Forensic Sciences, University of Health Sciences, Lahore, Pakistan

JULY 2011- JULY 2018 | ASSISTANT PROFESSOR

Department of Forensic Sciences, University of Health Sciences, Lahore, Pakistan

APRIL 2010-JUN 2011 | FORENSIC EXPERT (DNA)

National Forensic Science Agency, National Police Bureau, Ministry of Interior, Islamabad, Pakistan

MAY 2009-FEB 2010 | POST DOC FELLOW

Yonsei DNA Profiling Group, Yonsei University, School of Medicine, Seoul, Korea

Current Roles:

1. Chairman – **Hall Council** – University of Health Sciences, Lahore
2. Convener – **Tender Committee** – University of Health Sciences, Lahore
3. Member – **Harassment of Women at Workplace Committee** – University of Health Sciences, Lahore
4. Member – **Drug & Tobacco Control Committee** – University of Health Sciences, Lahore
5. Member – **Institutional Review Board** – University of Health Sciences, Lahore
6. Member – **Academic Council** – University of Health Sciences, Lahore
7. Member – **Advance Studies & Research Board** – University of Health Sciences, Lahore.
8. Convener – **Sports and Fitness Society** – University of Health Sciences, Lahore
9. Member – **Board of Studies** – Forensic Sciences- University of Swat, KPK
10. Member – **Newsletter Management Committee** – University of Health Sciences, Lahore

Education

PHD FORENSIC MEDICINE- (GENETICS) | 2008

Department of Forensic Medicine, Xi'an Jiaotong University, Xi'an, P.R. China

MPHIL MOLECULAR BIOLOGY | 2005

Forensic DNA Laboratory of National Center of Excellence in Molecular Biology, The University of Punjab, Lahore, Pakistan

BACHELOR OF SCIENCE HONS. | 2002

University of Agriculture, Faisalabad

Affiliations

MEMBER | INTERNATIONAL SOCIETY FOR FORENSIC GENETICS

Selected Publications

1. Adnan, A., Mona, S., **Rakha, A.**, Nazir, S., Wang, H. and Ren, F., 2025. Molecular Diversity of Three Forensically Relevant Dipterans from Cadavers in Lahore, Pakistan. *Insects*, 16(4), p.381.
2. Salah Ud Din, Shad, N.A., Khadim, H., Tahir, M.A., Khan, M.F., Nazir, S., **Rakha, A.** and Munawar, A., 2025. Electrochemical Differentiation of Inks Using Au@ Pt Nanocomposite Based Sensing Platform. *Materials Chemistry and Physics*, p.130654.
3. Buzdar, Z.A., Ali, H., Munir, M., Shad, N.A., Rakha, A. and Munawar, A., 2025. Advancing forensic investigations based on TiO₂/Bi₂O₃ electrochemical sensor for precise potassium estimation in vitreous humor. *Heliyon*, 11(2).
4. Khan, M.F.; **Rakha, A.**; Munawar, A.; Nazir, S.; Khan, A.; Khan, M.A.; Ahmad, M.; Wang, C.-C.; Adnan, A. Genetic Diversity and Forensic Utility of X-STR Loci in Punjabi and Kashmiri Populations: Insights into Population Structure and Ancestry. *Genes* 2024, 15, 1384. <https://doi.org/10.3390/genes15111384>
5. Noor, S., Akhtar, S., Khan, M.F., Rehman, R.A., Salman, M., Nazir, S., **Rakha, A.**, Ullah, I. and Munawar, A., 2024. Preliminary Study on Mitochondrial DNA Analysis from Different Sports Items. *Forensic Science International*, p.112077.
6. Zargham, M., Khan, M.F., Rehman, R.A., **Rakha, A.**, Nazir, R., Salman, M., Akhtar, S., Nazir, S., Zareef, I. and Munawar, A., 2024. Role of doped ZnO variants for the development of latent fingerprint. *Inorganic Chemistry Communications*, p.112269.
7. Shad, N.A., **Rakha, A.**, Qayyum, M.A., Siddiqi, M.H., Mahmood, Z., Nazir, S., Khan, M.F., Sajid, M.M., Rehman, R.A., Riaz, A. and Din, S.U., Munawar, A., 2024. Zn₃ (VO₄)₂/Bi₂WO₆ composite based versatile platform for cotinine sensing and latent fingerprints development by using multiple modalities. *Materials Science and Engineering: B*, 301, p.117203.
8. Riaz, A., **Rakha, A.**, Shad, N.A., Munawar, A. and Siddiqi, M.H., 2023. Harnessing MoS₂ nanomaterials for TNP sensing and anticancer efficacy. *Materials Chemistry and Physics*, p.128619.
9. Rahat MA, Akbar F, Rasool A, Ilyas M, **Rakha A**, Shams S, Jelani M, Bibi F, Shirah BH, Abdulkareem AA, Naseer MI, Israr M. Phenotypic Classification of Eye Colour and Developmental Validation of the Irisplex System on Population Living in Malakand Division, Pakistan. *Biomedicine*. 2023 Apr 20;11(4):1228.
10. Shad, N.A., Munawar, A., Javed, Y., **Rakha, A.**, Riaz, A., Din, S.U., Zareef, I., Sajid, M.M., Khan, M.F., Akhtar, S. and Salman, M., 2023. In-field deployable and facile nanosensor for the detection of pesticides residues. *Analytica Chimica Acta*, 1259, p.341204.
11. Ikram MS, Mehmood T, **Rakha A**, Akhtar S, Khan MIM, Al-Qahtani WS, Safhi FA, Hadi S, Wang CC, Adnan A. Genetic diversity and forensic application of Y-filer STRs in four major ethnic groups of Pakistan. *BMC Genomics*. 2022 30;23(1):788. doi: 10.1186/s12864-022-09028-z. PMID: 36451116; PMCID: PMC9714238.

12. Noreen S, Ballard D, Mehmood T, Khan A, Khalid T, **Rakha A**: Evaluation of loci to predict ear morphology using two snapshot assays. *Forensic Science, Medicine and Pathology* (2022) 1-22.
13. Jawad M, Adnan A, Rehman RA, Nazir S, Adeyemo O, Amer S, Hadi S, Liu F, Wang C-C, **Rakha A**: Evaluation of facial hair-associated snps: A pilot study on male pakistani punjabi population. *Forensic Sci. Med. Pathol.* (2022) 1-10. Impact Factor: 2.007.
14. Nazir S, Adnan A, Rehman RA, Al-Qahtani WS, Alsaleh AB, Al-Harthi HS, Safhi FA, Almheiri R, Lootah R, Alreyami A, Almarri I, Wang CC, **Rakha A**, Hadi S: Mutation Rate Analysis of RM Y-STRs in Deep-Rooted Multi-Generational Punjabi Pedigrees from Pakistan. *Genes.* (2022) 13, 1403. Impact Factor: 3.886.
15. Khalid NB, Sarwar M, **Rakha A**, Khalid AM, Munawar A, Riaz A, Rehman RA, Akhtar S: Medicinal honeycomb ceria nanoparticles' fabrication by using green synthesis method. *Appl. Nanosci.* (2022) 1-11. Impact Factor: 3.674.
16. Tarabi T, Javed Y, Sajid MM, **Rakha A**, Munawar A, Shad NA, Munir H, Riaz A, Jilani A: Ultrasensitive and rapid detection of artemisinin based on bismuth tungstate dressed rgo nanocomposite. *Mater. Chem. Phys.* (2022) 126547. Impact Factor: 4.094.
17. Adnan A, **Rakha A**, Lazim H, Nazir S, Al-Qahtani WS, Abdullah Alwaili M, Hadi S, Wang C-C: Are roma people descended from the punjab region of pakistan: A y-chromosomal perspective. *Genes* (2022) 13(3):532. Impact Factor: 3.886.
18. Yang XY, **Rakha A**, Chen W, Hou J, Qi XB, Shen QK, Dai SS, Sulaiman X, Abdulloevich NT, Afanasevna ME, Ibrohimovich KB, Chen X, Yang WK, Adnan A, Zhao RH, Yao YG, Su B, Peng MS, Zhang YP. Tracing the Genetic Legacy of the Tibetan Empire in the Balti. *Mol Biol Evol.* 2021 Apr 13;38(4):1529-1536. doi:10.1093/molbev/msaa313. PMID: 33283852; PMCID: PMC8042757.
19. Siddiqi MH, Rakha A, Khan K, Akhtar T. Current pool of ultimate collection of mitochondrial DNA from remnants of Kalash. *Mitochondrial DNA B Resour.* 2021 Jul 15;6(8):2410-2414. doi: 10.1080/23802359.2021.1952119. PMID: 34345711; PMCID: PMC8284132.
20. Adnan A, **Rakha A**, Nazir S, Alghafri R, Hassan Q, Wang CC, Lu J. Forensic features and genetic legacy of the Baloch population of Pakistan and the Hazara population across Durand line revealed by Y-chromosomal STRs. *Int J Legal Med.* 2021 Apr 5. doi: 10.1007/s00414-021-02591-2. Epub ahead of print. PMID: 33818632.
21. Adnan A, **Rakha A**, Ameen F, Alarfaj AA, Almansob A, Wang CC, Lu J, Xing J. Genetic structure and forensic characteristics of Saraiki population from Southern Punjab, Pakistan, revealed by 20 Y-chromosomal STRs. *Int J Legal Med.* 2020 May;134(3):977-979. doi: 10.1007/s00414-019-02138-6. Epub 2019 Aug 7. PMID: 31392415.
22. Adnan A, He G, **Rakha A**, Kasimu K, Guo J, Hassan SE, Hadi S, Wang CC, Xuan JF. Phylogenetic relationship and genetic history of Central Asian Kazakhs inferred from Y-chromosome and autosomal variations. *Mol Genet Genomics.* 2020 Jan;295(1):221-231. doi: 10.1007/s00438-019-01617-0. Epub 2019 Oct 23. PMID: 31641857.
23. Adnan A, **Rakha A**, Nazir S, Rehman Z, Lu J, Xuan JF. Genetic characterization of 15 autosomal STRs in the interior Sindhi population of Pakistan and their phylogenetic relationship with other populations. *Int J Immunogenet.* 2020 Apr;47(2):149-157. doi: 10.1111/iji.12458. Epub 2019 Oct 27. PMID: 31657139.
24. Zhao M, Adnan A, **Rakha A**, Nazir S, Tian M, Zhang S, Pang H. Systematic sequence analysis of the FUT3 gene identifies 11 novel alleles in the Sindhi and Punjabi populations from Pakistan. *Sci Rep.* 2020 Mar 26;10(1):5543. doi: 10.1038/s41598-020-62524-8. PMID: 32218479; PMCID: PMC7099025.
25. Adnan A, **Rakha A**, Nazir S, Khan MF, Hadi S, Xuan J. Evaluation of 13 rapidly mutating Y-STRs in endogamous Punjabi and Sindhi ethnic groups from Pakistan. *Int J Legal Med.* 2019 May;133(3):799-802. doi: 10.1007/s00414-018-01997-9. Epub 2019 Jan 4. PMID: 30610450.
26. Chen P, Adnan A, **Rakha A**, Wang M, Zou X, Mo X, He G. Population background exploration and genetic distribution analysis of Pakistan Hazara via 23 autosomal STRs. *Ann Hum Biol.* 2019 Sep;46(6):514-518. doi: 10.1080/03014460.2019.1673483. Epub 2019 Oct 22. PMID: 31559868.
27. He G, Adnan A, **Rakha A**, Yeh HY, Wang M, Zou X, Guo J, Rehman M, Fawad A, Chen P, Wang CC. A comprehensive exploration of the genetic legacy and forensic features of Afghanistan and Pakistan Mongolian-descent Hazara. *Forensic Sci Int. Genet.* 2019 Sep;42:e1-e12. doi: 10.1016/j.fsigen.2019.06.018. Epub 2019 Jun 25. PMID: 31257046.

28. Xing J, Adnan A, **Rakha A**, Kasim K, Noor A, Xuan J, Zhang X, Yao J, McNevin. D, Wang B. Genetic analysis of 12 X-STRs for forensic purposes in Liaoning Manchu population from China. *Gene*. 2019 Jan 30;683:153-158. doi:10.1016/j.gene.2018.10.020. Epub 2018 Oct 13. PMID: 30326331.
29. Atif Adnan, Kasim K, **Rakha A**, Noor A, Cheema AS, Hadi S, Xing J. Population data of 23 Y STRs from Manchu population of Liaoning Province, Northeast China. *Int J Legal Med*. 2019 May;133(3):785-788. doi: 10.1007/s00414-018-1957-7. Epub.2018 Oct 23. PMID: 30353363.
30. Adnan A, **Rakha A**, Kasim K, Noor A, Nazir S, Hadi S, Pang H. Genetic characterization of Y-chromosomal STRs in Hazara ethnic group of Pakistan and confirmation of DYS448 null allele. *Int J Legal Med*. 2019 May;133(3):789-793. doi: 10.1007/s00414-018-1962-x. Epub 2018 Oct 30. PMID: 30377775.
31. Adnan A, **Rakha A**, Lao O, Kayser M. Mutation analysis at 17 Y-STR loci (Yfiler) in father-son pairs of male pedigrees from Pakistan. *Forensic Sci Int. Genet*. 2018 Sep;36:e17-e18. doi: 10.1016/j.fsigen.2018.07.001. Epub 2018 Jul 6. PMID: 30025817.
32. Peng MS, Xu W, Song JJ, Chen X, Sulaiman X, Cai L, Liu HQ, Wu SF, Gao Y, Abdulloevich NT, Afanasevna ME, Ibromimovich KB, Chen X, Yang WK, Wu M, Li GM, Yang XY, **Rakha A**, Yao YG, Upur H, Zhang YP. Mitochondrial genomes uncover the maternal history of the Pamir populations. *Eur J Hum Genet*. 2018. Jan;26(1):124-136. doi: 10.1038/s41431-017-0028-8. Epub 2017 Nov 29. PMID: 29187735; PMCID: PMC5839027.
33. Lee JH, Cho S, Kim MY, Shin DH, **Rakha A**, Shinde V, Lee SD. Genetic resolution of applied biosystems™ precision ID Ancestry panel for seven Asian populations. *Leg Med (Tokyo)*. 2018 Sep;34:41-47. doi: 10.1016/j.legalmed.2018.08.007. Epub 2018 Aug 23. PMID: 30153533.
34. **Rakha A**, Oh YN, Lee HY, Hussain S, Waryah AM, Adnan A, Shin KJ. Discriminating power of rapidly mutating Y-STRs in deep rooted endogamous pedigrees from Sindhi population of Pakistan. *Leg Med (Tokyo)*. 2018. Sep;34:17-20. doi: 10.1016/j.legalmed.2018.08.001. Epub 2018 Aug 4. PMID: 30098581.
35. Adnan A, Zhan X, Kasim K, **Rakha A**, Xin XJ. Population data and phylogenetic structure of Han population from Jiangsu province of China on GlobalFiler STR loci. *Int J Legal Med*. 2018 Sep;132(5):1301-1304. doi: 10.1007/s00414-018-1815-7. Epub 2018 Mar 2. PMID: 29500610.
36. Adnan A, **Rakha A**, Noor A, van Oven M, Ralf A, Kayser M. Population data of 17 Y-STRs (Yfiler) from Punjabis and Kashmiris of Pakistan. *Int J Legal Med*. 2018 Jan;132(1):137-138. doi: 10.1007/s00414-017-1611-9. Epub 2017 May 17. PMID: 28516222.
37. **Rakha A**, Fatima, Peng MS, Adnan A, Bi R, Yasmin M, Yao YG. mtDNA sequence diversity of Hazara ethnic group from Pakistan. *Forensic Sci Int Genet*. 2017. Sep;30:e1-e5. doi: 10.1016/j.fsigen.2017.07.004. Epub 2017 Jul 10. PMID: 28734663.
38. Hassan Q, **Rakha A**, Bashir MZ. Aspartic Acid Racemization with Correlation to Age: A Forensic Perspective. *J Coll Physicians Surg Pak*. 2017 May;27(5):283-287. PMID: 28599689.
39. Allah R, Yang L, Li SB. SNPs and forensic DNA typing. *Fa Yi Xue Za Zhi*. 2007. Oct;23(5):373-9. PMID: 18175580.
40. Yasmin M, **Rakha A**, Noreen S, Salahuddin Z. Mitochondrial control region diversity in Sindhi ethnic group of Pakistan. *Leg Med (Tokyo)*. 2017. May;26:11-13. doi: 10.1016/j.legalmed.2017.02.001. Epub 2017 Feb 8. PMID: 28549541.
41. **Rakha A**, Peng MS, Bi R, Song JJ, Salahudin Z, Adnan A, Israr M, Yao YG. EMPOP-quality mtDNA control region sequences from Kashmiri of Azad Jammu & Kashmir, Pakistan. *Forensic Sci Int Genet*. 2016 Nov;25:125-131. doi: 10.1016/j.fsigen.2016.08.009. Epub 2016 Aug 28. PMID: 27591488.
42. Israr M, Shahid AA, **Rakha A**, Zar MS, Shahzad MS, Rahman Z, Husnain T. Baluchi and Pakhtun population data of 9 X-chromosomal short tandem repeat loci. *J Forensic Leg Med*. 2016 Jan;37:45-9. doi: 10.1016/j.jflm.2015.10.006. Epub 2015. Nov 2. PMID: 26580724.
43. Adnan A, Ralf A, **Rakha A**, Kousouri N, Kayser M. Improving empirical evidence on differentiating closely related men with RM Y-STRs: A comprehensive pedigree study from Pakistan. *Forensic Sci Int Genet*. 2016 Nov;25:45-51. doi: 10.1016/j.fsigen.2016.07.005. Epub 2016 Jul 9. PMID: 27497645.
44. Hayat S, Akhtar T, Siddiqi MH, **Rakha A**, Haider N, Tayyab M, Abbas G, Ali A., Bokhari SY, Tariq MA, Khan FM. Mitochondrial DNA control region sequences study in Saraiki population from Pakistan. *Leg Med (Tokyo)*. 2015 Mar;17(2):140-4. doi: 10.1016/j.legalmed.2014.10.010. Epub 2014 Nov 8. PMID: 25465675.

45. Siddiqi MH, Akhtar T, **Rakha A**, Abbas G, Ali A, Haider N, Ali A, Hayat S, Masooma S, Ahmad J, Tariq MA, van Oven M, Khan FM. Genetic characterization of the Makrani people of Pakistan from mitochondrial DNA control-region data. *Leg. Med (Tokyo)*. 2015 Mar;17(2):134-9. doi: 10.1016/j.legalmed.2014.09.007. Epub.2014 Oct 13. PMID: 25454536.
46. Lee EY, Shin KJ, **Rakha A**, Sim JE, Park MJ, Kim NY, Yang WI, Lee HY. Analysis of 22 Y chromosomal STR haplotypes and Y haplogroup distribution in Pathans of Pakistan. *Forensic Sci Int Genet*. 2014 Jul;11:111-6. doi:10.1016/j.fsigen.2014.03.004. Epub 2014 Mar 15. PMID: 24709582.
47. **Rakha A**, Shin KJ, Yoon JA, Kim NY, Siddique MH, Yang IS, Yang WI, Lee HY. Forensic and genetic characterization of mtDNA from Pathans of Pakistan. *Int J.Legal Med*. 2011 Nov;125(6):841-8. doi: 10.1007/s00414-010-0540-7. Epub 2010 Dec.24. PMID: 21184092.
48. **Rakha A**, Yu B, Hadi S, Sheng-Bin L. Population genetic data on 15 autosomal STRs in a Pakistani population sample. *Leg Med (Tokyo)*. 2009 Nov;11(6):305-7.doi: 10.1016/j.legalmed.2009.08.001. Epub 2009 Sep 8. PMID: 19740693.
49. Zeng X, **Rakha A**, Li S. Genetic polymorphisms of 10 X-chromosome STR loci in Chinese Daur ethnic minority group. *Leg Med (Tokyo)*. 2009 May;11(3):152-4. doi:10.1016/j.legalmed.2009.01.001. Epub 2009 Mar 28. PMID: 19329347.
50. **Rakha A**, Yu B, Hadi S, Li S. Genetic analysis of Kashmiri Muslim population living in Pakistan. *Leg Med (Tokyo)*. 2008 Jul;10(4):216-9. doi:10.1016/j.legalmed.2007.12.005. Epub 2008 Mar 6. PMID: 18328763.
51. Gao S, Qiao K, **Rakha A**, Lai J, Li S. Allele frequencies for 10 X-STR loci in Nu population of Yunnan, China. *Leg Med (Tokyo)*. 2007 Sep;9(5):284-6. doi:10.1016/j.legalmed.2007.03.002. Epub 2007 Jun 13. PMID: 17569570.

Books Published

- I. In Modeling and Simulation of Functional Nanomaterials for Forensic Investigation, DOI: 10.4018/978-1-6684-8325-1. ISBN13: 9781668483251

Workshops and Training (Selected)

1. Invited Speaker at 4th International Conference (Navigation the Legal Challenges of Cyber Security and Forensic Evidence in the Digital Era), 24-25 April, 2025
2. Invited Speaker at 8th International Conference (Healthcare & Health Education in the AI Era), 24-27 April, (2024)
3. Invited speak at 6th International Conference of ARAB Society for Forensic Sciences and Forensic Medicine, 5th-7th December (2023)
4. Invited Speaker at 2nd Gujranwala Medical College Conference (Evolving Care Pathways in Modern Practice) 19th March, 2022
5. Invited Speaker Importance of Forensic Science in Pakistan, Khawaja Fareed UEIT Rahim Yar Khan, 27th January, 2022
6. National Consortium for Drug Free Community – **Organizer**- (2022)
7. Interpretation of DNA & Serology Report – **Organizer** - (2021)
8. Capacity Building Workshop for Postgraduate Program Reviewers, HEC Islamabad, 28th December, 2021
9. Interpretation of Medico Legal & Toxicological Report and its interconnection in Investigation – **Organizer** - (2021)
10. Violent Crime Investigation-Forensic Evidence Perspective – **Organizer** - (2019)
11. Forensic Medicolegal Training on Handling of Women Sex Violence Cases – **Organizer** -(2019)
12. Invited speaker at 1st International Conference on Innovation in Healthcare at Shalamar Medical and Dental College, Lahore. Feb. 3-5, 2017.
13. Invited Speaker at IBCAST-2017 held at National Center for Physics, Islamabad 10-14 Jan, 2017
14. Invited speaker at Northwest Polytechnic University, Xián, China. 2017

15. First International Conference of PhD Fellows/Scholars of Health Sciences”, at University of Faisalabad in collaboration with University of Health Sciences Lahore from 23 – 24 November 2013

Research Collaboration

International

1. KIZ, Chinese Academy of Sciences, China
2. Seoul National University, Korea
3. Penn State University, USA
4. Department of Forensic Molecular Biology, Erasmus MC University Medical Center, Rotterdam, The Netherlands
5. Yonsei DNA Profiling Group, Yonsei University, Korea

National

1. Department of Forensic Medicine, Allama Iqbal Medical College, Lahore
2. Department of Forensic Medicine, Sheikh Zayed, Lahore
3. Institute of Biochemistry and Biotechnology (IBBT), University of Veterinary and Animal Sciences, Lahore
4. Government College University, Lahore
5. Ziauddin University, Karachi
6. Commission on Science and Technology for Sustainable Development in the South (COMSATS), Sahiwal
7. National Institute for Biotechnology and Genetic Engineering, Faisalabad
8. Punjab Police