

IMRAN KHAN

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Research Focus

Dr. Khan is currently serving as an Assistant Professor at Faculty of Medicine, Macau University of Science and Technology, Macau SAR, China. His duties include teaching at undergraduate and postgraduate level. Dr. Khan has served at universities at Malaysia and Pakistan. His research revolves around the intricate interplay between hosts and microbes. His primary focus lies in understanding the pivotal role of microbes in the development and prevention of various human diseases. Specifically, he investigates conditions such as cancer, allergies, obesity, and metabolic disorders. One fascinating aspect that captivates Dr. Khan's attention is the influence of gut microbes on the efficacy and availability of orally administered Western and Chinese medicines. He contributes to the scientific community by serving as an Associate Editor for BMC Pharmacology and Toxicology and Frontiers in Microbiome. He has also served as a Guest Editor for several renowned journals such as Frontiers Nutrition and Frontiers Pharmacology.

Keywords of Research

Host-Microbe's interaction, Bioinformatics, Amplicon sequencing, TCM-microbes Interaction, Microbial culturomics, Metagenomics, Gut Microbiome implications in Human Disease

Academic qualification

2011-2016 Ph.D. in Biochemistry; King Abdulaziz University, Jeddah, Saudi Arabia
2006-2010 BS (Hons) Biotechnology University of Malakand, KP, Pakistan

Training

1. Training Program in Effective Ph.D./Doctoral Supervision. Organized by School of Graduate Studies & Educational Development Centre. 27th September 2025 (Saturday). By, Macau University of Science and Technology, Macau SAR, China.
2. Capacity building workshop on HEC anti-plagiarism policy 2023 & use of Turnitin software. 31 Oct 2024. Organized by QEC, Abdul Wali Khan University Mardan, KP, Pakistan.
3. One Day Hands on MALDI-TOF MS. (23 Nov, 2014). King Fahd Medical Research Center, King Abdulaziz University, Jeddah, Saudi Arabia
4. Quality Control Measures in Laboratories. 31st Oct. 2013. King Fahd Medical Research Center, King Abdulaziz University Jeddah, Saudi Arabia.

Career Experiences

A. Full Time Positions

Jul 2025-Present **Assistant Professor**, Faculty of Medicine; Macau University of Science and Technology, Macau

Aug 2022 – Jul 2025 **Assistant Professor**, Department of Biotechnology; Abdul Wali Khan University Mardan, Pakistan

Jan-Aug 2022 **Senior Lecturer**; Biotechnology Research Institute, University of Malaysia Sabah, Malaysia

Sept 2019 to Aug 2021 **Global Talent Fellow**; Macau University of Science and Technology, Macau

July 2016 to Aug 2019 **Postdoc Fellow** at Hsiao Lab, Macau University of Science and Technology, Macau

Mar-Nov 2011 **Research Associate**; National Institute for Biotechnology and Genetic Engineering, Pakistan

B. Editorial Experience

May 2022 – present: **Editor** of BMC Pharmacology and Toxicology

Apr 2022 – 31 Aug 2023: **Guest Editor** for Frontiers in Nutrition. Topic: Nutrition to Support Gut Health and the Microbiome in Athletes

Jun 2022 – 31 Aug 2023: **Guest Editor** for Frontiers in Pharmacology. Topic: Pharmaceutical treatment of infections in internal medicine

Oct 2023 – 31 Dec 2024: **Guest Editor** for Frontiers in Pharmacology. Topic: The Roles of Pathogens in Gut-Related Diseases and the Strategies for Inhibiting Their Growth

Jan 2024 – 31 Dec 2025: **Guest Editor** for Frontiers in Nutrition. Topic: Natural Products: A Microecological Perspective for Treating Diabetes and its Complications

C. Editorial Experience

Referee for journal of Advanced Science

Referee for journal of BMC Complementary medicine and therapies

Referee for journal of BMC Gastroenterology

Referee for journal of BMC Microbiology

Referee for journal of Cancer Management and Research

Referee for journal of Cell cycle

Referee for journal of Chinese Medical journal

Referee for journal of Current Medical Research and Opinion

Referee for journal of Current research in pharmacology and drug discovery

Referee for journal of Discover Oncology

Referee for journal of Frontiers in Cellular and Infection Microbiology

Referee for journal of Frontiers in Genetics

Referee for journal of Frontiers in Immunology

Referee for journal of Frontiers in Marine science

Referee for journal of Frontiers in Microbiology

Referee for journal of Frontiers in Nutrition

Referee for journal of Frontiers in Pharmacology

Referee for journal of Frontiers in Veterinary science

Referee for journal of Functional Foods

Referee for journal of Heliyon

Referee for journal of Herbal Medicine

Referee for journal of International Journal of Biological Macromolecules

Referee for journal of Oncology Reports

Referee for journal of Pharmacological research

Referee for journal of Phytomedicine

Referee for journal of Pharmaceutical Biology

Referee for journal of Regional Studies in Marine Science

Referee for journal of Science of the Total Environment

Referee for journal of World Journal of Surgical Oncology

Scholastic Honors

Nominated by the USERN for 2024 emerging scientist prize.

Awarded “Global Talent Fellowship” by the Macau SAR government for two years, 2019-2021.

Awarded “Saudi Arabia Government International Scholarship for Ph.D. studies” from 2011-2016.

Administrative Experience

Teaching Responsibilities/Assignments

Subjects	Program	Years
Advance Molecular Diagnostics	MS/Ph.D. Biotechnology	2022-2025
Immunology	MS Nursing	2025-Present
Immunology	BS Biotechnology	2022-2025
Clinical Microbiology	Medical Students	2025-Present
Pharmaceutical Biotechnology	BS Biotechnology	2022-2025
Principles of Biochemical Engineering	BS Biotechnology	2022-2025

Professional Index

Total articles published	53
Book/Chapters published	4
Research grants as PI	2
Total citations	~2550
h-index	28
i10-index	39

Record of Supervised Students as Main Supervisor (MS and Ph.D. only)

Program/Level	Thesis Title	Institute	Student Name (std no.)	Status
Ph.D. Biotechnology	Assessing Microbial Diversity and Antibiotic Resistance Profiles in Diabetic Foot Ulcers: A Comprehensive Metagenomic study	Abdul Wali Khan University Mardan, Pakistan	Farooq Ur Rehman	Ongoing
Ph.D. Biotechnology	Harnessing the Therapeutic Potentials of Bacterial Spores in Remodeling Gut Microbiome: A Novel Approach for Alleviating Symptoms of Ulcerative Colitis	Abdul Wali Khan University Mardan, Pakistan	Muhammad Usman (15-F-AWKUM-GCM-BS-BTE-64)	Ongoing
MS: Chinese Medicine	Determination of the consistent and abundant MHC-II autoantigens among the RA patients	Macau University of Science and Technology, Mac	Ms. Ziyun	Ongoing
MS: Biotechnology	Shotgun Metagenome Sequencing of Healthy Donor for Functional and Resistome Profiling of Gut Microbiome	Abdul Wali Khan University Mardan, Pakistan	Nadia Wahab (AWKUM-231028553)	Completed 12.01.2026
MS: Biotechnology	Identification of Bacteria Contributing to the Development of Obesity.	Abdul Wali Khan University Mardan, Pakistan	Hania Attaullah	Completed 20.11.2025
MS: Biotechnology	Identification of Bacterial Clusters Associating with the Initiation of Colorectal Cancer.	Abdul Wali Khan University Mardan, Pakistan	Aliya Mumand (AWKUM-22139324)	Completed 24.12.2024
MS: Biotechnology	Determination of the Impact of Tuberculosis on the Intestinal Microbiota by Analyzing Multiple Datasets	Abdul Wali Khan University Mardan, Pakistan	Fareeha Raz (AWKUM-22142250)	Completed 24.12.2024
Mentee of MBBS program	Years-1 st students. Project will be assigned in 4 th year	Faulty of Medicine, Macau University of Science and Technology, Mac	Yue Han	Ongoing
Mentee of MBBS program	Years-1 st students. Project will be assigned in 4 th year	Faulty of Medicine, Macau University of Science and Technology, Mac	Yue Li	Ongoing
Mentee of MBBS program	Years-1 st students. Project will be assigned in 4 th year	Faulty of Medicine, Macau University of Science and Technology, Mac	Duo Zhuoer Mei	Ongoing

Research Projects

Title of Research Project	Role/Status	Funding Agency	Amount of Funds
Evaluation of MHC-II autoantigens and pathogenic TCRs for Precise Diagnosis and Therapy of Rheumatoid Arthritis <i>Duration: 36 months, Grant No. 0048-2025-RIA2</i>	PI/under review Start: Feb 23, 2026	FDCT, Macau	MOP\$ 1.2 million
Mechanism and Application of Microgravity Environment in Ameliorating Hypoxia-Induced Cell Death in Liver Organoids <i>Duration: 24 months, Grant No. FRG-25-120-FMD</i>	PI/ongoing Start: Nov 7, 2025	FRG, M.U.S.T., Macau	MOP\$ 0.77 million
Analysis of Gut Microbiome in Multi-Drug Resistant Strains Infected Human and Mice Model <i>Duration: 12 months, Grant No. 84 - 34 - ط - آ</i>	PI/completed Start: Mar 18, 2014 Complete: May 17, 2015	King Abdullah City of Science and Technology, KSA	SAR 89000

Consultation and Membership of Review Panels

Role	Institute	Duration
External expert for Grant Review	Fakeeh Medical University, Jeddah, Saudi Arabia	2026-Cont.
Member Board of Study	Department of Microbiology and Immunology, National University of Medical Sciences, Rawalpindi, Pakistan.	Feb 2026-Cont.
Member Curriculum Review Committee	Department of Biotechnology, Kohsar University Murree, Pakistan.	Oct 2025-Cont.
Expert Consultant for HEC grant	HEC LCF-349 project titled "Development of multipurpose Synthetic Microbiome Based Transplants (SMT) to recover Gut Microbiome Dysbiosis". National University of Medical Sciences, Pakistan.	2022-2024

Current and Previous Memberships in Institutions/Societies

2026-cont.	Member "Neher's (Nobel Laureate) Biophysics Laboratory for Innovative Drug Discovery, Macau University of Science and Technology, Macau SAR, China
2026-cont.	Member "Access Committee" UK Biobank Database. Macau University of Science and Technology, Macau SAR, China
2021-2022	American Society of Microbiology
2019-2021	Consortium for Globalization of Chinese Medicine

Services as an External Examiner for Thesis Review

M.Phil.	Sept 2025	Ms. Sania Ikram	Department of Biological Science, NUMS	Genome-Based Perspectives of Aerobic Bacteria Isolated from Healthy Human Gut
M.Phil.	Sept 2025	Ms. Zoha Abbasi	Department of Biological Science, NUMS	Genomic Insights into Cross-Interaction Patterns and Resistome Features in Selected Anaerobic Human Gut Bacteria
M.Phil.	Nov 2024	Ms. Mahnoor	Department of Biological Science, NUMS	Targeted Culturing of Core Anaerobic Bacteria from Healthy Human Gut

Publications (# indicates co-first and * indicates corresponding author contribution)

1. Xie Y, Gianoncelli A, **Khan I**, Ribaud G, Coghi P. (5R,5aR,8aR,9S)-9-(2-Bromo-3,4,5-trimethoxyphenyl)-8-oxo-5,5a,6,8,8a,9-hexahydrofuro[3',4':6,7]naphtho[2,3-d][1,3]dioxol-5-yl 3,4,5-trimethoxybenzoate. (Published: 26 Feb, 2026). Molbank. 2026(1). Page M2140. DOI: <https://doi.org/10.3390/M2140>. **Impact Factor 0.4**. Q2
2. Mahnoor, Ullah R, Sonyia, Khan R, Bahadar A, Elbatel I, **Khan I**, Alnahari AA, Haider A, Jamal SB, Khan R. (Published: 31 December, 2025). *A modified targeted culturing approach provided a snapshot into interdependencies and resistome among core anaerobic bacteria of the healthy human gut*. Microbiology Spectrum. DOI: 10.1128/spectrum.03182-25. **Impact Factor 3.8**. Q1.
3. Al-Subhi T, Yasir M, Samar AB, El-Kafrawy SH, **Khan I**, Hassan AM, Norah AO, Atrouni AA, Kumosani T, Azhar EI. *Alteration of bacterial community composition with respiratory infection and linkage of taxa with bacterial pathogens in Saudi Arabia from the Arabian Peninsula*. Journal of Infection and Public Health. Volume 18, Issue 12, December 2025, 102986. DOI: 10.1016/j.jiph.2025.102986. **Impact Factor 4.0**. Q1
4. Li X., Gouxin H., **Khan I.**, Ding Z. Hsiao WLW., Liu Z. (24 Feb, 2025). *The Prebiotic Effect of Kaempferol in Regulating Bile Acid Metabolism*. Food Science and Nutrition. Volume 13:e70023. DOI: 10.1002/fsn3.70023. **Impact Factor 3.55**. Q1.
5. **Khan I*#**, Gouxin H., Khan S., Ali A. *Editorial: The roles of pathogens in gut-related diseases and the strategies for inhibiting their growth*. (Published: 04.12.2024). Frontiers in Pharmacology. Volume 14. DOI: 10.3389/fphar.2024.1513694. **Impact Factor 4.4**. Q1
6. Li X*, **Khan I***, Han R., Huang G., Xia W., Lin Y., Leong WK., Su L., Betty YKL., Vincent KWW., Wu Q., Guo X., Hsiao WLW. *Gynostemma Pentaphyllum Saponins Shield Mice from Peanut Allergy by Modulation of Gut Microbiota: A Novel Approach for Peanut Allergy Management*. (Published: December 2024). Phytomedicine. **Impact Factor 8.3**. Q1
7. Huang G., Wang J., Yin L., **Khan I.**, Betty YKL., Zheng Y., Xu M., Vincent KWW., Hsiao WLW. (Published: 18.09.2024). *The impact of test anxiety on oral microbiota among medical students-A pilot study*. Stress and Health. DOI: 10.1002/smi.3479. Q1
8. Huang G, Khan R, Yilin Zheng, Ping Chin Lee, Qingnan Li and **Khan I***. *Exploring the role of gut microbiota in advancing personalized medicine*". (Published: 2023/11/30). Frontiers in Microbiology. volume 14. DOI: 10.3389/fmicb.2023.1274925. **Impact Factor 5.2**. Q1
9. **Khan I***. *Editorial: Drugs and gut microbiome interactions—an emerging field of tailored medicine*. (Published: 30.08.2023). BMC Pharmacology and Toxicology. 24(1).43. DOI: <https://doi.org/10.1186/s40360-023-00684-9>. **Impact Factor 2.9**. Q1
10. **Khan I***. *Editorial: Nutrition to support gut health and the microbiome in athletes*. Frontiers in Nutrition. Volume 10 – 2023. DOI: 10.3389/fnut.2023.1207543. **Impact Factor 6.6**. Q1
11. R Khan, MD Shah, L Shah, LP Chin, **I Khan***. *Bacterial polysaccharides—a big source for prebiotics and therapeutics*. Frontiers in Nutrition. (Published: 2022/11/3). Frontiers in Nutrition. 1-20. DOI:10.3389/fnut.2022.1031935. **Impact Factor 6.8**.

12. Wang, Jian; Feng, Zhe-Xiang; Ren, Tao; Meng, Wei-Yu; **Khan I**; Fan, Xing-Xing; Pan, Hu-Dan; Liu, Liang; Tang, Yi-Jun; Yao, Xiao-Jun; Li, Run-Ze, Wang, Mei-Fang; Leung, Elaine Lai-Han. *Novel clinical biomarkers in blood and pleural effusion for diagnosing patients with tuberculosis distinguishing from malignant tumor.* (Published 14 Oct 2022). Journal of Medicine. DOI:10.1097/MD.00000000000031027. **Impact Factor 1.55.**
13. L Yin, G Huang, **I Khan**, L Su, W Xia, BYK Law, VKW Wong, Q Wu, J Wang, Wai Kit Leong, WL Hsiao. *Poria cocos polysaccharides exert prebiotic function to attenuate the adverse effects and improve the therapeutic outcome of 5-FU in Apc^{Min/+} mice.* (Published: 2022/10/3). Journal of Chinese Medicine. 17 (1). 1-14. DOI: 10.1186/s13020-022-00667-8. **Impact Factor 4.55.**
14. Li X[#], Khan I[#], Huang G, Lu Y, Wang L, Liu Y, Lu L, Hsiao WLW, Liu Z. *Kaempferol acts on bile acid signaling and gut microbiota to attenuate the tumor burden in Apc^{Min/+} mice.* (Published: 05 Mar 2022). European Journal of Pharmacology.918:174773. DOI: 10.1016/j.ejphar.2022.174773. **Impact Factor 4.4.**
15. Waikit L, Guoxin H., Weilin L., Wenrui X., Xiaoang L., Ziren S., Liang L., Qiang W., Vincent K.W.W., Betty Y.K.L., Chenglai X., Xiaoling G., **Khan I*** and W.L. Wendy*. *Traditional Patchouli Essential Oil modulates the host's immune responses and gut microbiota and exhibits potent anti-cancer effects in Apc^{Min/+} mice.* (Published: 2022 Jan 12). Pharmacological Research.106082. DOI: 10.1016/j.phrs.2022.106082. **Impact Factor 10.5.**
16. Gouxin H, M Yasir, Y Zheng, **Khan I[#]**. Prebiotic properties of jiaogulan in the context of gut microbiome. (Published: 22 Jan 2022). Food Science and Nutrition. DOI: 10.1002/fsn3.2701. **Impact Factor 3.55.**
17. Kural A., **Khan I***, Seyit H, Caglar TR, Toklu P, Vural M. *Changes in the gut microbiota of morbidly obese patients after laparoscopic sleeve gastrectomy.* (Published: 2021 Dec. 08). 17:5-15. DOI: 10.2217/fmb-2021-0043. Future Microbiology. **Impact Factor 3.17** (2020).
18. Ali F., **Khan I**, Chen J, Akhtar K, Bakhsh EM, Khan SB. *Emerging Fabrication Strategies of Hydrogels and Its Applications.* (Published 24 Mar 2022). Gels, 8(4), 205. DOI: 10.3390/gels8040205. **Impact Factor 4.7.**
19. Yasir M., Khan R., Ullah R., Bibi F., **Khan I.**, Mustafa A., Ghamdi A., Azhar EI. *Bacterial diversity and the antimicrobial resistome in the southwestern highlands of Saudi Arabia.* (2021). Saudi Journal of Biological Sciences. 29(4):2138-2147. DOI: 10.1016/j.sjbs.2021.11.047. (Published: 24 November 2021). **Impact Factor 4.129.**
20. Wang J., Feng ZX, Ren T., **Khan I.**, Fan X, Pan HD, Liu L., Tang YJ., Li RZ., Wang MF, Leung ELH. *Novel clinical biomarkers in blood and pleural effusion for diagnosing patients with tuberculosis distinguishing from malignant tumour.* (Published: November 2021). Research Square. 58:102924. DOI: 10.21203/rs.3.rs-1049353/v1.
21. Chen J., Ali F., **Khan I***, Zhua YZ*. (2021). *Recent progress in the development of potential drugs against SARS-CoV-2.* Current Research in Pharmacology and Drug Discovery. Volume 2, 2021, 100057. (Published: 2021 Sep 14). doi.org/10.1016/j.crphar.2021.100057.
22. Wu Zeng, An Guo Wu, **Khan I**, Rui Long Zhang, Hang Hong Lo, Li Qun Qu, Lin Lin Song, Yuan Xiao Yun, Chen Juen, Jerome P. L. Ng, Si Yu Yuan, Yu Lu, Yong Tang, Vincent Kam-Wai Wong, Sookja Chung, Da Lian Qin, Simon Wing Fai Mok, Hualin Sun, Wen Luan Wendy Hsiao and Betty Yuen-Kwan Law. *Saponins isolated from Radix polygalae extent lifespan by modulating complement C3 and gut microbiota.* (Published: 2021 May 25). DOI: 10.1016/j.phrs.2021.105697. Pharmacological Research. **Impact Factor 10.5.**
23. Huang J, Liu D, Wang Y, Liu L, Li J, Yuan J, Jiang Z, Jiang Z, Hsiao WW, Liu H, **Khan I**, Xie Y, Wu J, Xie Y, Zhang Y, Fu Y, Liao J, Wang W, Lai H, Shi A, Cai J, Luo L, Li R, Yao X, Fan X, Wu Q, Liu Z, Yan P, Lu J, Yang M, Wang L, Cao Y, Wei H, Leung EL. *Ginseng polysaccharides alter the gut microbiota and kynurenine/tryptophan ratio, potentiating the anti-tumor effect of anti-programmed cell death 1 /programmed cell death ligand 1 (anti-PD-1/PD-L1) immunotherapy.*

(Published: 2021 May 18). Gut. 71(4):734-745. DOI: 10.1136/gutjnl-2020-321031. **Impact Factor 31.75.**

24. Xiaoang Li[#], **Khan I[#]**, Xia W, Huang G, Liu L, Kwan Law BY, Lin Yin, Liao W, Leong W, Han R, Wai Wong VK, Xia C, Guo X, W.L. Wendy Hsiao. *Icariin enhances youth-like features by attenuating the declined gut microbiota in the aged mice*. (Published: 2021 Mar 30). DOI: 10.1016/j.phrs.2021.105587. Pharmacological Research. **Impact Factor 10.5.**
25. Rehman F, Cheema T, Azeem T, Naseem A, **Khan I**, Iqbal N, Shaheen A, Rehman F, Rehman Q. (Published: 22 November 2020). *Groundwater quality and potential health risks caused by arsenic (As) in Bhakkar, Pakistan*. Environmental Earth Sciences. 79:529. DOI: 10.1007/s12665-020-09270-2. **Impact Factor 2.78.**
26. Huan-Ling Lai, Pei-Pei Chen, Dan Li, **Khan I**, Hsiao Wen Luan, Wendy, Fan Xing Xing, Yao Xiao Jun, Wu Qi Biao, Mei-Fang Wang, Leung Lai Han. *Clinical significance of LSEctin and its association with PVR in non-small-cell lung cancer patients*. (Published: November 2020). Annals of Translational Medicine. 8(21):1393. DOI: 10.21037/atm-20-3665. **Impact Factor 3.93.**
27. Weilin Liao[#], **Khan I[#]**, Huang G, Shengshuang Chen, Liu L, Wai Kit Leong, Xiao ang Li, Jianlin Wu & W.L.W Hsiao. *Bifidobacterium animalis* - the missing link for the cancer-preventive effect of *Gynostemma pentaphyllum*. (Published: 24 November 2020). Gut Microbes. 13(1):1847629. DOI: 10.1080/19490976.2020.1847629. Pages 1-14. **Impact Factor 11.245.**
28. Wenrui Xia, Lu Su, **Khan I**, Xiaoang Li, Wai Kit Leong, Lin Yin, Xiqing Bian, Jiyan Su, Guoxin Huang & W.L. Wendy Hsiao. *Lycium berry polysaccharides strengthen gut microenvironment and modulated gut microbiota of the mice*. (Published: 5 October 2020). Evidence-Based Complementary and Alternative Medicine. Vol 2020. Pages 10. DOI: 10.1155/2020/8097021. **Impact Factor 2.629.**
29. You H, Zhang YZ, Lai HL, Li D, Liu YQ, Li RZ, **Khan I**, Hsiao WW, Duan FG, Fan XX, Yao XJ, Cao YB, Wu QB, Leung EL, Wang MF. *Prognostic significance of tumor poliovirus receptor and CTLA4 expression in patients with surgically resected non-small-cell lung cancer*. (Published: 4 April 2020). Journal of Cancer Research and Clinical Oncology. 146(6):1441-1450. DOI: 10.1007/s00432-020-03189-8. **Impact Factor 4.55.**
30. Xia W[#], **Khan I[#]**, Li X, Wai Leong K, Yu Z, Huang G, Han R, Tsun Ho T, Hsiao W.L.W. *Adaptogenic flower buds exert cancer-preventive effects by enhancing the SCFA-producers, strengthening the epithelial tight junction complex and immune responses*. (Published: 3 June 2020). Pharmacological Research. 159:104809. DOI: 10.1016/j.phrs.2020.104809. **Impact Factor 10.5.**
31. **Khan I**, Li X, Law B, U KI, Pan BQ, Lei C, W.L.W. Hsiao. *Correlation of gut microbial compositions to the development of Kawasaki disease vasculitis in children*. (Published: 15 April 2020). Future Microbiology. 15:591-600. DOI: 10.2217/fmb-2019-0301. **Impact Factor 3.19.**
32. Chia L[#], **Khan I[#]**, Lina Z, Zhang J, M.Y. Simon Lee, Leong W, Hsiao WL, Zheng Y. *Fructo-oligosaccharides from Morinda officinalis remodeled gut microbiota and alleviated depression features in a stress rat model*. (Published: Feb 2020). Phytomedicine. 67:153157. DOI: 10.1016/j.phymed.2019.153157. **Impact Factor 5.34.**
33. **Khan I**, Sabrina Pathan, Xiao Ang Li, Wai Kit Leong, Wei Lin Liao, Vincent Wong, W.L. Wendy Hsiao. *Far infrared radiation induces changes in gut microbiota and activates host's GPCRs in mice*. (Published: March 2020). Journal of Advanced Research. 22:145-152. DOI: 10.1016/j.jare.2019.12.003. **Impact Factor 13.479.**

34. Fu-Gang Duan, Mei-Fang Wang, Ya-Bing Cao, Dan Li, Run-Ze Li, Xing-Xing Fan, **Khan I**, Huan-Ling Lai, Yi-Zhong Zhang, Wendy Wen-Luan Hsiao, Xiao-Jun Yao, Qi-Biao Wu, Liang Liu, Yi-Jun Tang & Elaine Lai-Han Leung. (2019). *MicroRNA-421 confers paclitaxel resistance by binding to the KEAP1 3'UTR and predicts poor survival in non-small cell lung cancer*. Cell Death & Disease. 10(11):821. DOI: 10.1038/s41419-019-2031-1. **Impact Factor 5.959**.
35. Leong W, Huang G, **Khan I**, Xia W, Li Y, Liu Y, Li X, Han R, Su Z, WL Wendy. *Patchouli essential oil and its derived compounds revealed prebiotic-like effects in C57BL/6J mice*. (published: 17 Oct 2019). 10:1229. DOI: 10.3389/fphar.2019.01229. Frontiers in Pharmacology. **Impact Factor 4.2**.
36. **Khan I**[#], Huang G[#], Li X, Liao W, Leong W, Xia W, Bian X, Wu J, Hsiao WLW. *Mushroom polysaccharides and jiaogulan saponins exert cancer preventive effects by shaping the gut microbiota and microenvironment in ApcMin/+ mice*. (Published: October 2019). Pharmacological Research. DOI: 10.1016/j.phrs.2019.104448. **Impact Factor 10.5**.
37. **Khan I**, Muhammad Yasir, Muhammad Farman, Taha Kumosani, Samera F. AlBasri, Osama S. Bajouh, Wendy Hsiao, Esam I. Azhar. *Evaluation of gut bacterial community composition and antimicrobial resistome in Saudi population*. (21 June, 2019). Infection and Drug Resistance. 2019(12): 1749—1761. DOI: <https://doi.org/10.2147/IDR.S200213>. **Impact Factor 3.4**.
38. **Khan I**[#], Huang G[#], Xiaoang Li, Waikit Leong, Wenrui Xia, W.L. Wendy Hsiao. *Mushroom polysaccharides from Ganoderma lucidum and Poria cocos reveal prebiotic functions*. (2018). Journal of Functional Foods. 41: 191–201. DOI: 10.1016/j.jff.2017.12.046. **Impact Factor 4.1**.
39. Qureshi, Q.A, Yasir M, **Khan I**, Fehmida Bibi, Esam I Azhar. *Culturomics-based taxonomic diversity of bacterial communities in the hot spring of Saudi Arabia*. (2018). OMICS: A Journal of Integrative Biology. 23(1):17-27. DOI: 10.1089/omi.2018.0176. **Impact Factor 2.61**.
40. Sheikh I, Yasir M, **Khan I**, Bahdur S, Azam N, Jiffri E, Kamal M, Ashraf G, and Beg M. *Lactoperoxidase immobilization on silver nanoparticles enhances its antimicrobial activity*. (2018). Journal of Dairy Research. 85(4):460-464. DOI: 10.1017/S0022029918000730. **Impact Factor 1.4**.
41. Yan-Hong Li, William Chi-Shing Tai, **Khan I**, Cheng Lu, Yao Lu, Wing-Yan Wong, Wood-Yee Chan, Wen-Luan Wendy Hsiao, Ge Lin. *Toxicoproteomic assessment of liver responses following acute exposure to pyrrolizidine alkaloid in rat*. (2018). Journal of environmental science and health part c-environmental carcinogenesis & ecotoxicology reviews, 36:2, 65-83. DOI: 10.1080/10590501.2018.1450186. **Impact Factor 4.0**.
42. Ivo Ricardo de Seabra Rodrigues Dias, Simon Wing Fai Mok, Flora Gordillo Martínez, **Khan I**, W.L.Wendy Hsiao, Betty Yuen Kwan Law, Vincent Kam Wai Wong and Liang Liu. *The calcium-induced regulation in the transcriptional and molecular circuitry of human inflammatory response and autoimmunity*. Frontiers in Pharmacology. (Published: 8 Jan 2018). 8;8:962. DOI: 10.3389/fphar.2017.00962. **Impact Factor 4.4**.
43. Khan TA, Youssri M. Ahmed, Mazin A. Zamzami, Saleh A. Mohamed, **Khan I**, Othman A.S. Baothman, Mohamed G. Mehanna, and Muhammad Yasir. *Effect of atorvastatin on the gut microbiota of high fat diet-induced hypercholesterolemic rats*. (2018). Scientific Reports. 8(1):662. DOI: 10.1038/s41598-017-19013-2. **Impact Factor 5.3**.
44. Khan TA, Youssri M. Ahmed, Mazin A. Zamzami, Saleh A. Mohamed, **Khan I**, Othman A.S. Baothman, Mohamed G. Mehanna, and Muhammad Yasir. *Atorvastatin Treatment Modulates the Gut Microbiota and Resilience in Abundance of Beneficial Taxa Among Hypercholesterolemic Patients*. (published: 2 Feb 2018). OMICS: A Journal of Integrative

Biology. 22(2):154-163. DOI: 10.1089/omi.2017.0130. **Impact Factor 2.61.**

45. Guoxin H[#], **Khan I[#]**, Xiaolang Li, Lei Chen, W.L. Wendy Hsiao. *Ginsenosides Rb3 and Rd reduce polypos formation while reinstate the dysbiotic gut microbiota and the intestinal microenvironment in Apc^{Min/+} mice*. (Published: 2 Oct 2017). Scientific Reports. 7: 12552. DOI:10.1038/s41598-017-12644-5. **Impact Factor 5.3.**
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Books/Chapters published (* indicates corresponding author contribution)

1. **Khan, I***, Akmal, K.F., Chong, W.S., Venmathi Maran, B.A., Shah, M.D. (2023). *Marine Biotechnology: A Frontier for the Discovery of Nutraceuticals, Energy, and Its Role in Meeting*

- Twenty-First Century Food Demands*. In: Shah, M.D., Ransangan, J., Venmathi Maran, B.A. (eds) *Marine Biotechnology: Applications in Food, Drugs and Energy*. Springer, Singapore.
2. Ullah, R., **Khan, I***. (2023). *Biotechnological Utilization of the Marine Environment for Food, Drugs, and Energy*. In: Shah, M.D., Ransangan, J., Venmathi Maran, B.A. (eds) *Marine Biotechnology: Applications in Food, Drugs and Energy*. Springer, Singapore.
 3. **Khan, I***, Ullah, R., Ali, S., Shah, M.D. (2023). *Bacterial Diversity in the Marine Environment and the Cutting-Edge Tools for Isolation, Identification and Characterization of the Marine Microbiome*. In: Shah, M.D., Ransangan, J., Venmathi Maran, B.A. (eds) *Marine Biotechnology: Applications in Food, Drugs and Energy*. Springer, Singapore.
 4. Khan R, Shah L., and **Khan I**. *Biotechnology in Pakistan: Past, Present, Future, Scope and Applications of Biotechnology in Pakistan*. (2012). LAMBERT Academic Publishing. ISBN: 978-3-659-24381-3.

Abstract Published

1. Guoxin Huang, W.L. Wendy Hsiao, **Khan I**, Lei Chen and Xiaoang Li. The anti-tumor effect and the impact on gut microbiota of gypenosides Rd and Rb3 in Apc^{Min/+} mice. *Cancer Research*. July, 2017. 77 (33). DOI: 10.1158/1538-7445.AM2017-242.
2. **Khan I**, Yasir M, Azhar E, Al-basri S, Barbour E, Kumosani T. (November 2015). Metagenomic profile of gut microbiota during pregnancy in Saudi population. (2016). *BMC Genomics*. 17(6). 1-78. DOI:10.1186/s12864-016-2858-0.
3. **Khan I**, Muhammad Yasir, Esam I. Azhar, Aymn T. Abbas, Elie K. Barbour, Taha Kumosani. 2016. Assessment of antibiotic resistance-dissemination from MDR E. coli to rat's microbiota by Matrix Assisted Laser Desorption Ionization Time of Flight Mass Spectrophotometry (MALDI TOF-MS). *Clin Exp Pharmacology* 2016,6:2 (suppl). DOI: 10.4172/2161-1459.C1.011.

Conferences/Workshops

1. International Precision Regenerative Medicine Symposium, 2025. December 18, 2025. Macau University of Science and Technology, Macau SAR. **Attendee**
2. 25th Asian Congress of Surgery. October 24-26, 2025. MGM Cotai, Macau. **Attendee**
3. International Conference on Emerging Technologies: Innovations for Sustainable Development Goals. 09-11, 2024. Bahrain, Swat. "Modulating the gut microbiome through herbal saponin: a novel approach for peanut allergy management. **Oral presentation**.
4. International Conference on Food and Applied Sciences; 19-21 August 202. Nathiagali, Pakistan. "Rejuvenating aging through icariin and remodeled gut microbiome. **Oral presentation**.
5. One day awareness/training workshop on "protection and commercialization of intellectual property rights (IPRS)". 13 December, 2023. Organized by National Agricultural Research Centre (NARC) and National Institute for Genomics and Advanced Biotechnology (NIGAB). **Attendee**.
6. Hong Kong Biotech Horizon - 2018. 19-24 September 2018. Hong Kong SAR. "Title: The Gut; where Chinese medicine and gut microbiota meet". **Oral presentation**
7. The 2nd council election meeting and 5th annual meeting of specialty committee of immunology of traditional Chinese medicine of the world federation of Chinese medicine societies cum the

- Cross-Strait Forum on research advancement in the treatment of Rheumatism. 9-11th November 2018. Nanning, China. **Attendee**
8. Consortium for Globalization of Chinese Medicine (CGCM-17). From 08 to 10th August 2018. Kuching, Malaysia. **Poster presentation**
 9. CGCM-16, (18 to 20 August, 2017), Guangdong, China. **Poster presentation**
 10. 2016 World life science conferences. November 2016. Beijing, China. **Poster presentation**
 11. 7th one day workshop on the significance of bioinformatics in life sciences. 7th May 2016. Capital University of Science and Technology, Islamabad, Pakistan. **Attendee**
 12. 5th Scientific Forum for Student of Faculty of Science. December 9, 2014. King Abdulaziz University, Jeddah, KSA. "Title: Gut microbiota responses to pregnancy and antibiotics". **Oral presentation**
 13. PhD researchers' seminars. May 22, 2014. King Fahd Medical Research Center, Jeddah, Saudi Arabia. "Title: The implications of Gut Microbiota in human health". **Oral presentation**
 14. Second International Genomic Medicine Conference. Nov 21, 2013, King Fahd Medical Research Center, Jeddah, Saudi Arabia. **Poster presentation**
 15. 4th Scientific Forum for Student of Faculty of Science. King Faisal Convocation Hall. October 6, 2013. "Title: Can we live without gut microbiota?". **Oral presentation**
 16. Graduation students' seminars. October 3, 2013. Department of Biochemistry, King Abdulaziz University, Jeddah, KSA. "Title: The importance of gut microbiota". **Oral presentation**
 17. Discovery of New Pharmacophores- An Alternative Approach and Bioassay Techniques for Drug Discovery and Development. 21st November 2012. King Faisal Convention Center; Organized by Department of Biochemistry, King Abdulaziz University Jeddah, Saudi Arabia. **Attendee**
 18. International Science Conference on Prospects and Challenges to Sustainable Agriculture. July 2012. Faculty of Agriculture, University of Azad Jammu and Kashmir, Pakistan. **Poster presentation**
 19. 1st International Symposium on Biotechnology; Current Trends. 2nd-4th July 2008. Organized by: Department of Biotechnology University of Malakand, Pakistan. **Organizing member**
 20. 1st National Symposium on Biotechnology; Recent Advances. 21st-24th May 2007. Organized by: Department of Biotechnology University of Malakand, Pakistan. **Organizing member**