Curriculum vitae

AL MAGNIFICO RETTORE
DELL'UNIVERSITA' DEGLI STUDI DI MILANO **COD. ID: 6715**

Il sottoscritto chiede di essere ammesso a partecipare alla selezione pubblica, per titoli ed esami, per il conferimento di un assegno di ricerca presso il Dipartimento di Dipartimento di Biosciences _____

Responsabile scientifico: __rof. Kater Martin_____

[Rana Khalid Iqbal]

CURRICULUM VITAE

INFORMAZIONI PERSONALI

Cognome	Iqbal
Nome	Rana Khalid

OCCUPAZIONE ATTUALE

Incarico	**Struttura**
Assistant Professor	Institute of Molecular Biology and Biotechnology, BZU, Multan (April-2023 – At Present)
Postdoc	Department of Biology, University of Padova, Italy (Jan-2022 to April-2023
Assistant Professor	Institute of Molecular Biology and Biotechnology, BZU, Multan (August 2017 to Jan-2022)
Lecturer	Institute of Molecular Biology and Biotechnology, BZU, Multan (Oct-2012 to Jan-2013)

ISTRUZIONE E FORMAZIONE

Titolo	**Corso di studi**	**Università**	**anno conseguimento titolo**
Laurea Magistrale o equivalente			
Specializzazione			
Dottorato Di Ricerca Ph.D	Aspects of Molecular and Cellular Biology	University of Strasbourg, France	2017
Master of Philosophy	Biotechnology	Bahauddin Zakariya University, Multan	2011
Master of Sceicne	Biotechnology	Bahauddin Zakariya University, Multan	2008
Bachelor of sceince	B.Sc	Bahauddin Zakariya University, Multan	2006

HHSc	Higher Secondary School Certificate	BISE Multan	2004
SSC	High Secondary School certificate	BISE Multan	2002

ISCRIZIONE AD ORDINI PROFESSIONALI

Data iscrizione	**Ordine**	**Città**

LINGUE STRANIERE CONOSCIUTE

lingue	livello di conoscenza
English	C2

PREMI, RICONOSCIMENTI E BORSE DI STUDIO

Anno	Descrizione premio
2012	Won a fully funded Ph.D. scholarship for conducting research at the University of Strassburg, France. 2022
2022	Postdoc fellowship at the Department of Biology, University of Padova, Italy

ATTIVITÀ DI FORMAZIONE O DI RICERCA

I did my Ph.D. at the University of Strasbourg, France, in the discipline of Molecular and Cellular Biology in plant sciences where I was involved in different projects related to plant physiology. In the first part of my Ph.D. research, I studied the influence of import of different inducible potential open reading frames (ORF) as cargo RNA into mitochondria using the PKTLS shuttle on the growth pattern of different mutant versions of Arabidopsis thaliana. The molecular changes associated with the introduction of a potential ORF into mitochondria were identified at the transcriptome level by RT-PCR and next-generation sequencing. The findings of this project were published in a peer-reviewed journal, Cells, as the first author. During the second part of my Ph.D. research, I focused on understanding the mechanisms of mitochondrial DNA repair and recombination, in particular, identifying the functional significance of 5'-3' exonucleases (OEX) in mitochondria of Arabidopsis thaliana and studying their influence on mt DNA replication and repair. I cloned the OEX genes in fusion with the GFP protein. The fusion proteins were transiently expressed in tobacco leaves after transfection by particle bombardment. GFP fluorescence was observed with a confocal microscope. Subsequently, the mitochondrial OEX protein fused to a N-terminal His tag was expressed in bacteria and after purification with Immobilised Metal Ion Affinity chromatography (IMAC) and gel filtration, its exonuclease activity was tested on different DNA substrates. The manuscript of this part of the project is in preparation. In this report we have stated that after the transform During my Ph.D., I realized that I am strongly motivated by the wide variety of tasks and responsibilities that come with the profession of a scientist. To extend my research experience and gain insights into plant cell signaling, in January 2022, I joined the lab of Professor Micheal Zottini, as a postdoc researcher at the Department of Biology, University of Padova, Italy. As a postdoc, I studied SOUP: signaling the organelle-folded protein response in plants by analysing the transcriptome response in particular the expression of genes (including alternative oxidase i.e. and mitochondrial heat shock proteins mtHSC70-1 and mtHSC70.5) that are associated with the mitochondrial stress response. During the stress response, the interaction between different mitochondrial complexes was studied by RT-PCR. Furthermore, it was revealed that the mutual interaction between mitochondrial complexes is related to the retardation of growth in terms of inhibition of the primary root and elongation of the root hairs. A manuscript from this part of my research is in preparation. As demonstrated by the number of students I have supervised during my academic career at the Institute of Molecular Biology and Biotechnology of Bahauddin Zakariya University, Multan, Pakistan, and in postdoctoral research at the University of Padova, Italy. I would like to actively contribute to the development of new talent, and I enjoy working together as a team, which is evident by my contribution as the corresponding

author/first author and coauthor in 26 different research articles published in SCI journals. Scientific discussions are extremely valuable and often lead to t he development of new ideas, concepts, and solutions to complex research questions. My scientific interest is greatly attracted by your recent project "Development of advanced rice genotypes with greater resilience". In this project, I would like to prepare the transgenic mutants of rice then characterize them at the molecular and phenotypical levels. Total RNAs will be prepared, followed by RT-PCR and NGS at the molecular levels. The phenotypic data of the mutants will also be studied under different stress conditions.

ATTIVITÀ PROGETTUALE

Anno	**Progetto**

TITOLARITÀ DI BREVETTI

Brevetto

CONGRESSI, CONVEGNI E SEMINARI

Data	**Titolo**	**Sede**

PUBBLICAZIONI: **for first author and *corresponding author) Impact Factor: 75.56**

1.Dietrich, André, Clémentine Wallet, **Rana Khalid Iqbal,** José M. Gualberto, and Frédérique Lotfi. "Organellar non-coding RNAs: emerging regulation mechanisms." ***Biochimie*** "117 (2015): 48-62. **(impact factor 4.079)**

2.Niazi, Adnan Khan†, Etienne Delannoy†, **Rana Khalid Iqbal†,**Daria Mileshina, Romain Val, Marta Gabryelska, Eliza Wyszko et al. "Mitochondrial transcriptome control and intercompartment cross-talk during plant development." ***Cells*** 8, no. 6 (2019): 583. **(impact factor 6.00)**

3.Gilani, Munaza, Subhan Danish, Niaz Ahmed, Ashfaq Ahmad Rahi, Ahmed Akrem, Uzma Younis, Inam Irshad, and **Rana Khalid Iqbal***. "Mitigation of drought stress in spinach using individual and combined applications of salicylic acid and potassium." ***Pak. J. Bot"*** 52, no. 5 (2020): 1505-1513. **(impact factor 1.2)**

4.Sabir, Ali, Arslan Iftikhar, Muhammad Umar Ijaz, Ghulam Hussain, Azhar Rasul, **Rana Khalid Iqbal**, Faiqa Sajid, and Haseeb Anwar. "Retrospective study of frequency of ABO and Rhesus blood group among population of Safdarabad and Faisalabad cities of Pakistan." ***BMC Research Notes"*** 14 (2021): 1-5. **(impact factor 1.8)**

5.Amjad, Syeda Fasiha, Nida Mansoora, Israr Ud Din, **Rana Khalid Iqbal**, Ghulam Hussain Jatoi, Ghulam Murtaza, Samia Yaseen et al. "Application of zinc fertilizer and mycorrhizal inoculation on physio-biochemical parameters of wheat grown under water-stressed environment. "***Sustainability"*** 13, no. 19 (2021): 11007. **(impact factor 3.9)**

6.Iqbal, Javed, Sidra Kiran, Shabir Hussain, **Rana Khalid Iqbal**, Umber Ghafoor, Uzma Younis, Tayebeh Zarei et al. "Acidified biochar confers improvement in quality and yield attributes of sufaid chaunsa mango in saline soil." ***Horticulturae"*** 7, no. 11 (2021): 418. **(impact factor 2.923)**

7.Sardar, Rehana, Asma Zulfiqar, Shakil Ahmed, Anis Ali Shah, **Rana Khalid Iqbal,** Shabir Hussain, Subhan Danish et al. "Proteomic changes in various plant tissues associated with chromium stress in sunflower." ***Saudi Journal of Biological Sciences"*** 29, no. 4 (2022): 2604-2612. **(Impact Factor 4.4)**

8.Aziz, Muhammad Naveed†, **Rana Khalid Iqbal**†, Muhammad Irfan, Asia Parveen, Muhammad Asif, Sezayi Ozubek, Munir Aktas, Mourad Ben Said, and Furhan Iqbal. "First report on molecular epidemiology, seasonality and phylogeny of Toxoplasma gondii infecting goats from Khanewal district in Punjab, Pakistan." ***Acta Tropica*** "228 (2022): 106304. **(Impact Factor 2.7)**

9.Aziz, Muhammad Naveed, Muhammad Irfan, Asia Parveen, Muhammad Asif, Maryam Ijaz, Sadia Mumtaz, Sezayi Ozubek, Munir Aktas, **Rana Khalid Iqbal***, and Furhan Iqbal. "Prevalence, epidemiology, seasonality, and phylogeny of Anaplasma marginale in blood samples of goats collected from Punjab, Pakistan." ***Tropical Animal Health and Production***" 54, no. 1 (2022): 74. **(Impact Factor 1.893)**

10.Iftikhar, Arslan, Rimsha Nausheen, Imran Mukhtar, **Rana Khalid Iqbal,** Ahmad Raza, Ayesha Yasin, and Haseeb Anwar. "The regenerative potential of honey: A comprehensive literature review." *Journal of Apicultural Research"* 62, no. 1 (2023): 97-112. **(Impact Factor 1.9)**

11.Jamil, Hira, Adeela Awan, Atif Akbar, Muhammad Babar, Sana Akhtar, **Rana Khalid Iqbal**, and Furhan Iqbal. "A study of association between presence or absence of GSTT1 and GSTM1 and/or single nucleotide polymorphism in FABP2 and GSTP1 with incidence of diabetes type 2: A case-control study." ***Journal of Pakistan Medical Association"*** 72, no. 4 (2022): 714-714. **(Impact Factor 1.002)**

12.Taalay, Iram†, **Rana Khalid Iqbal**†, Muhammad Asif, Aqib Ahmad, Muhammad Amjad, Farhana Naureen Anwar, Munir Aktas, Mourad Ben Said, and Furhan Iqbal. "Molecular survey of Toxoplasma gondii in cattle and buffaloes and phylogenetic position of Pakistani isolates based on ITS-1 gene." ***Comparative Immunology, Microbiology and Infectious Diseases"*** 84 (2022): 101782. **(impact factor 2.0)**

13. Khan, Rao Waqar Ahmad, Faisal Saeed Awan, and **Rana Khalid Iqbal***. "Evaluation and identification of salt tolerant wheat through in vitro salinity induction in seeds." ***Pak J Bot"*** 54 (2022): 1987-93. **(impact factor 1.2)**

14. Saeed, Ahsan, Zahra Rafiq, Muhammad Imran, Qamar Saeed, Muhammad Q. Saeed, Zahid Ali, **Rana K. Iqbal** et al. "In-silico studies calculated a new chitin oligomer binding site inside vicilin: A potent antifungal and insecticidal agent." ***Dose-Response*** "20, no. 2 (2022):

15593258221108280. **(Impact Factor 2.623)**

15. Khan, Rao Waqar Ahmad, Rao Sohail Ahmad Khan, Faisal Saeed Awan*****, Ahmed Akrem, Arslan Iftikhar, Farhana Naureen Anwar, Hind AS Alzahrani, Hameed Alsamadany, and **Rana Khalid Iqbal***. "Genome-wide association studies of seedling quantitative trait loci against salt tolerance in wheat." ***Frontiers in Genetics*** ”13 (2022): 946869. **(Impact Factor 3.7)**

16. Ali, Yasir, Sidra Iqbal, Hafiz Muhammad Aatif, Khalid Naveed, Azhar Abbas Khan, Muhammad Ijaz, Muhammad Murtaza Magsi **Rana Khalid Iqbal** et al. "Predicting stripe rust severity in wheat using meteorological data with environmental response modeling." ***Journal of King Saud University-Science”*** 35, no. 4 (2023): 102591. **(Impact Factor 3.8)**

17. Syed, Asad, Abdallah M. Elgorban, Ali H. Bahkali, Rajalakshmanan Eswaramoorthy, **Rana Khalid Iqbal**, and Subhan Danish. "Metal-tolerant and siderophore producing Pseudomonas fluorescence and Trichoderma spp. improved the growth, biochemical features and yield attributes of chickpea by lowering Cd uptake." ***Scientific Reports”*** 13, no. 1 (2023): 4471. **(Impact Factor 4.6)**

18. Kainat, Nermeen, Ahsan Saeed, Arslan Ali, Binish Khaliq, Sohaib Mehmood, Muhammad Qamar Saeed, **Rana Khalid Iqbal,** Sobia Khalid, and Ahmed Akrem. "In silico modeling and docking of salicylic acid revealing the sod like activity of an antimicrobial seed vicilin of capsicum annuum L. VAR. grossum." ***Pak. J. Bot”*** 55, no. 5 (2023): 1941-1949. **(Impact Factor 1.2)**

19. Zerlasht, Mehwish, Sadaf Javaria, Mian Anjum Murtaza, **Rana Khalid Iqbal,** Muhammad Yousaf Quddoos, Sajida Azhar, Asad Syed, and Abdallah M. Elgorban. "Antimicrobial potential and phyto-physio-chemical characterization of brans from wheat, oat, and rice." ***Journal of King Saud University-Science”*** 35, no. 5 (2023): 102709. **(Impact Factor 3.8)**

20.Iqbal, Muhammad, Naveed Iqbal Raja, Said Akbar Khan, Aamir Ali, Asma Hanif, Mubashir Hussain, Tauseef Anwar **Rana Khalid Iqbal** et al. "Evaluation of Green Synthesized Silver Nanoparticles against Bacterial Pathogenic Strains of Plants." ***Pak. J. Bot***”55, no. 5 (2023): 1967-1972. **(Impact Factor 1.2)**

21. Naeem, Muhammad*, Muhammad Nadeem, Hira Iqbal, Faiza Marrium, Hafiz Muhammad **Rana Khalid Iqbal*** et al. New insights for exploring the bioactive nature and biomedical activities of allium cepa. " ***Pak. J. Bot*** 55, no. 6 (2023): 2203-2209. **(Impact Factor 1.2)**

22. Kumar, Sachin, Surinder Singh Rana, Neelam Sharma, **Rana Khalid Iqbal**, Huma Qureshi, Tauseef Anwar, Asad Syed, Abdallah M. Elgorban, and Rajalakshmanan Eswaramoorthy. "Weed phyto-sociology and diversity in relation to conservation agriculture and weed management strategies in Northwestern Himalayas of India." ***Journal of King Saud University-Science”*** 35, no. 6 (2023): 102728. **(Impact Factor 3.8)**

23. Iftikhar, Arslan, Rimsha Nausheen, Mohsin Khurshid, **Rana Khalid Iqbal**, Humaira Muzaffar, Abdul Malik, Azmat Ali Khan et al. "Pancreatic regenerative potential of manuka honey evidenced through pancreatic histology and levels of transcription factors in diabetic rat model." ***Heliyon”*** 9, no. 9 (2023). **(Impact Factor 4.0).**

24. Aslam, Jawaria, Mirza Imran Shahzad*, Hafiz Muhammad Ali, Mussarat Ramzan, Mohammad Zahid Mustafa, **Rana Khalid Iqbal***, Abdurahman Hajinur Hirad, Abdullah A. Alarfaj, and Subhan Danish*. "Antioxidant and anti-inflammatory potentials of aerial and floral parts of Neurada procumbens extracts: *In-vitro* and *in-vivo* studies." ***Journal of King Saud University-Science”*** 35, no. 7 (2023): 102822. **(Impact Factor 3.8).**

25. Irfan, Muhammad†, Shun-Chung Chang†, **Rana Khalid Iqbal†**, Muhammad Tanveer, Muhammad Asif, Adil Khan, Nasreen Nasreen et al. "Seasonality, epidemiology and phylogeny of *Theileria ovis* with a note on hematological and biochemical changes in asymptomatic infected goats from Pakistan." ***PLoS One"*** 18, no. 8 (2023): e0290620. **(Impact Factor 3.7).** 26.Qian, Lisheng, Khadim Dawar, Israr Ullah, Muhammad Irfan, Zhiheng Zhang, Ishaq Ahmad Mian, Bushra Khan **Rana Khalid Iqbal** et al. "Zinc foliar application mitigates cadmium-induced growth inhibition and enhances wheat growth, chlorophyll contents, and yield." ***ACS Omega"*** 8, no. 36 (2023): 32372-32381. **(Impact Factor 4.1).** 27.Minhas Asif*, Malik Safdar, Malik Safdar Saeed, Abdullah Ehsan, **Rana Khalid Iqbal*** et al**.** (2024). Response of integrated use of humic acid and chemical fertilizer on growth and yield of rice crop (O*ryza sativa* L.) in calcareous soil. *Pak. J. Bot*, *56*, 3. **(Impact Factor 1.2).**

Articoli su riviste
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Atti di convegni
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[titolo, struttura, città, anno]

1. https://www.ncbi.nlm.nih.gov/nuccore/MW885251.1

- *Toxoplasma gondii* isolate 18 internal transcribed spacer 1, partial sequence

2. https://www.ncbi.nlm.nih.gov/nuccore/MW885250.1

- *Toxoplasma gondii* isolate 67 internal transcribed spacer 1, partial sequence

3. https://www.ncbi.nlm.nih.gov/nuccore/MW885249.1

- *Toxoplasma gondii* isolate 87 internal transcribed spacer 1, partial sequence

4. https://www.ncbi.nlm.nih.gov/nuccore/MW374294.1

- *Toxoplasma gondii* isolate 197 internal transcribed spacer 1, partial sequence

5. https://www.ncbi.nlm.nih.gov/nuccore/MW374293.1

- *Toxoplasma gondii* isolate 159 internal transcribed spacer 1, partial sequence

6. https://www.ncbi.nlm.nih.gov/nuccore/MW374090.1
   - *Toxoplasma gondii* isolate 05 internal transcribed spacer 1, partial sequence
7. https://www.ncbi.nlm.nih.gov/nuccore/MW374089.1
   - *Toxoplasma gondii* isolate 01 internal transcribed spacer 1, partial sequence
8. https://www.ncbi.nlm.nih.gov/nuccore/OL461228.1

- ***Toxoplasma gondii* isolate goat01 internal transcribed spacer 1, partial sequence**

9. **https://www.ncbi.nlm.nih.gov/nuccore/OL461229.1**
   - *Toxoplasma gondii* isolate goat 05 internal transcribed spacer 1, partial sequence
10. https://www.ncbi.nlm.nih.gov/nuccore/MW759702.1
    - *Anaplasma marginale* clone 03 major surface protein 5-like (msp5) gene, partial sequence
11. https://www.ncbi.nlm.nih.gov/nuccore/MW759703.1
    - *Anaplasma marginale* clone 67 major surface protein 5-like (msp5) gene, partial sequences
12. https://www.ncbi.nlm.nih.gov/nuccore/MW759704.1
    - *Anaplasma marginale* clone 67 major surface protein 5-like (msp5) gene, partial sequences
13. https://www.ncbi.nlm.nih.gov/nuccore/MW759701.1
    - *Anaplasma marginale* clone 101 major surface protein 5-like (msp5) gene, partial sequence.
14. https://www.ncbi.nlm.nih.gov/nuccore/PP719440
    - *Theileria lestoquardi* isolate Pak-68 merozoite surface protein gene, partial cds.
15. https://www.ncbi.nlm.nih.gov/nuccore/PP719441
    - *Theileria lestoquardi* isolate Pak-DS3 merozoite surface protein gene, partial cds.
16. https://www.ncbi.nlm.nih.gov/nuccore/PP719442

    - *Theileria lestoquardi* isolate Pak-06 merozoite surface protein gene, partial cds.

Il presente curriculum, non contiene dati sensibili e dati giudiziari di cui all'art. 4, comma 1, lettere d) ed e) del D.Lgs. 30.6.2003 n. 196.

RICORDIAMO che **i curricula SARANNO RESI PUBBLICI sul sito di Ateneo** e pertanto si prega di non inserire dati sensibili e personali. Il presente modello è già precostruito per soddisfare la necessità di pubblicazione senza dati sensibili.

Si prega pertanto di **NON FIRMARE** il presente modello.

Luogo e data: _____05/07/2024_____, _____