**DR. SHAKIRA GHAZANFAR** *December 2023*

***Microbiologist & Probiotic Specialists***

Senior Scientific Officer

**(PARC. Pakistan Govt. Since 2007)**

# PERSONAL INFORMATION

|  |  |
| --- | --- |
|  | shakira\_akmal@parc.gov.pk,\_ shakira\_akmal@yahoo.com,  |
|  | Office: 091: 051-90733833; Cell: 0333-5554517, DOB- 9-11-1982 Pakistani |
| Google Scholar | https://scholar.google.com/citations?user=Pe2UHgMAAAAJ&hl=es |
| Research Gate | https://www.researchgate.net/profile/Shakira-Ghazanfar |
| D.O.B | 09-11-1982 |

**FIELD OF SPECIALIZATION**

##  Microbiology, (PhD) Human and animal Probiotic Developer

 (Major Field of specialization) (Fine field Specialization)

**ACCOMPLISHMENTS**

* Establishment of **Probiotic Development Lab**, Islamabad, Pakistan
* Development of **AI based probiotic prebiotic based Products (Animal Feed, Poultry feed, Human Food etc.)**
* Developed a **Bioinformatic tool (Probio predict)** for prediction of the probiotic product
* Funding, execution and monitoring of development projects from different donor agencies
* Supervised/co-supervised more than 70 Ph.D./M. Phil/MS students
* Supervised /**co-supervised International post doc Student**
	+ Hippolyte T. Mouafo, Senior Scientist at Centre for food and nutrition research in Cameroon, TWAS-CUI postdoctoral fellowship
* Organized trainings/webinars/workers in Probiotic Genomics for National and International Trainees
* **Publications**: More than 100 National and International research articles and Editor of books on Probiotic, AI
* **Editors: CRC Press, A Taylor and Francis Group**. and **Springer Nature;** Probiotic and Machine Learning
* **Guest Editor:** " */Applied Sciences/*: <https://www.mdpi.com/journal/applsci/special_issues/87PLDC349H>".
* **Guest Editor:** [Probiotics and Prebiotic: Back to Nature to Improve Health (biolifesas.org)](https://www.biolifesas.org/EN/collection/1695108973510/articles)
* [**Guest Editor:**Life | Special Issue : Effects of Natural Products as Adjuvants on Animals (mdpi.com)](https://www.mdpi.com/journal/life/special_issues/0C6OCEHT75)
* **Topic Coordinator:** Frontier of Nutrition
* **Reviewer: Scientific Report-Nature**, Springer Nature, MDPI, Food,
* Microorganisms, Fermentation, Applied Sci.  Antibiotics
* <https://orcid.org/0000-0002-6277-5106>
* **Editorial Board Member**, DIET FACTOR (Journal of Nutritional & Food Science)
* <https://www.dietfactor.com.pk/index.php/df>

**Skills**

* NGS based Product Development:
* Project writing and execution
* Organizing trainings/workshops/webinars/online conferences

**PRINCIPAL INVESTIGATOR On going**

Agricultural Linkage Programme (www.alp.gov.pk) (2021 to 2024)

Working as a Project Manager in ALP” Govt, of **Pakistan Funder project** (worth **Rupee 10.00 Million Pak Rupee**)

*Pakistani Probiotic Products, project aim.*

**EDUCATION**

**PhD (Microbiology)** Feb/012 – May/16

Quaid-i-Azam University, Islamabad, Pakistan

* **Research Area**: Gut Microbial Genomics / Probiotic Product (PP)
* **Defended** successfully with 80% grades and distinction on May 2016

**M. Phil. (Microbiology)**

Quaid-i-Azam University, Islamabad, Pakistan

* **Research Area:** Microbiology
* **Defended** successfully with 80% grades and distinction

# PROFESSIONAL EXPERIENCE

1. **Senior Scientific Officer (SSO)** Sep/15– date

National Institute for Genomics and Advanced Biotechnology. ([www.parc.gov.pk/index.php/en/nigab](http://www.parc.gov.pk/index.php/en/nigab)),

1. **Assistant Professor** Jun/16–date

Department of Animal Genomics and Biotechnology, degree awarding, PARC Institute for Advanced Sciences in Agricultural, Islamabad, Pakistan ([www.parc.gov.pk/index.php](http://www.parc.gov.pk/index.php))

* + **Teaching course:** Rumen Biotechnology, Genomics, Food Microbiology
	+ **Supervise** more than 100 Research Internees students
1. **Project Director/Principal Investigator** Jun/18–Jan20

Punjab Agricultural Research Board ([www.parb.agripunjab.gov.pk](http://www.parb.agripunjab.gov.pk/)

* + Successfully WIN “PARB 1002” project (worth **Rupee 15.86 Million**), from Punjab Agricultural Research Board to

develop the Animal Probiotic to Improve Milk Yield (Pakistan’s first NGS/genomic characterized indigenous Probiotic)

1. **Visiting Research Fellow/Consultant** Jan/19–date

SDA ([www.sda.org](http://www.sda.org/))

* + Providing livestock consultancy to farmers for improve milk yield (economic aspects of Pakistan)
1. **Visiting Research Fellow/Consultant** Jan/16–date

SDPI ([www.sdpi.org](http://www.sdpi.org/))

1. [**Scientific Officer**](http://www.linkedin.com/search?search&title=Scientific%2BOfficer&sortCriteria=R&keepFacets=true&currentTitle=CP&trk=prof-exp-title) **(SO)** Sep/10–Sep/15

Department of Animal Nutrition and Microbiology, ([www.parc.gov.pk](http://www.parc.gov.pk/)) NARC, Pakistan

1. **Acting Director** May/16 to Sep/16

Institute for Microbial culture Collection of Pakistan, (IMCCP), ([www.parc.gov.pk](http://www.parc.gov.pk/)) NARC, Islamabad, Pakistan

1. [**Research Assistant**](http://www.linkedin.com/search?search&title=Research%2BAssisstant&sortCriteria=R&keepFacets=true&currentTitle=CP&trk=prof-exp-title)March/08 to Aug/10

Department of Animal Nutation, ([www.parc.gov.pk](http://www.parc.gov.pk/)) NARC, Pakistan

RADP Sub Project title: “Stair Step Heifer Development Program for Induction of Early Puberty”

1. **Visiting Lecturer in Zoology** Dec 06 – Dec 07

Govt. Viqar-Un-Nisa, Post Graduates College, Rawalpindi

* + Teaching Zoology to BSc (final year students)

# EXPERIENCE

More than **15 years’ experience** in Health status and production enhancement through **Microbial Genomics**

##### Dry Lab Skills:

* + **NGS DATA ANALYSIS: SMALL GENOME SEQUENCING: ALIGNMENT AND ASSEMBLY, FUNCTIONAL ANNOTATIONS**.
	+ **16 s r RNA gene sequencing**: Phylogenetic analysis (DNA-seq,) for expression variations and comparative genomics for unveiling the adaptive evolution in probiotic bacteria
	+ **BLAST (Basic Local Alignment Search Tool),** Sequence Analysis Tools, SNP effect, EBI-Tool- Protein Alignment, Multiple sequence alignment:
	+ **Functional genomics**: Using WGS/NGS platform for enhancement of animal/human productivity
	+ **NGS applications in probiotic science**
	+ **I-TASSER (Iterative Threading ASSEmbly Refinement)** for predicting three-dimensional structure model of protein
	+ **SNP detection** using statistical analyses and association studies with probiotic
	+ **Probiotic markers/Genes** and **pathway analyses using RAST, PATRIC , Generous Softwares**
	+ Developed a Bioinformatic tool (Probiopredict) for prediction of the probiotic product

##### Wet Lab Skills:

* + **Isolation of Bacteria**: sampling, sample processing, media preparation, bacterial culturing, bacterial purification.
	+ **Morphology and Biochemical Testing of Bacteria**: Gram straining, Florescent Microscopy, API 50/20 kits
	+ **Molecular Testing of Bacteria**: Bacterial DNA Extraction, Gel electrophoresis, nano-drop. PCR, Spectrophotometer
	+ **Proteomic**: 2D Gel Electrophoresis classic and 2 DIGE, SDS PAGE and Agarose Gel Electrophoresis
	+ **Genomics**: Whole genomics DNA Extraction (kit/ manual method)
	+ **Probiotic**: acid tolerance, bile tolerance, cholesterol lowing effect tests, phenol test, hemolytic test
	+ **AMR**: antimicrobial testing, antibiotic testing.

##### Nano-particle synthesis:

* + **Microbial Gene Bank**: More than **400 bacterial Isolates** have been isolated and preserved at -80 oC
	+ **Microbial based Product Development**: Human as well as animal use microbial based feed and food products

##### Statistics and Software’s:

* + - Descriptive statistics analysis and basic visualization in R, Working experience on **Windows and Linux OS**
		- Microsoft Excel, SPSS, MS-OFFICE, BioEdit and other Bioinformatics tools (**BLAST, primer, ClustalW**).

# ACADEMIC HONORS AND AWARD

 **Young Biotechnology Award 2021**

* Shakira Ghazanfar, Young Biotechnology Award by Society for uplifting of rural area (SURA), Agra, India. Nov 12- 14 2021, held at College of Agriculture (Rukmani Devi Group) sarawali, **India.**

# ORGANIZER OF TRAINING/WORKSHOPS/WEBINERS

* + - One Day **NIGAB Webinar Series**, Entitled Use of Advanced Molecular Techniques in Sustainable Agricultural*,* , 24 February 2023, ONLINE NIGAB, ISLAMABAD, PAKISTAN,
		- 2 days hands on training/workshop of **Microbial NGS Data Analysis and Machine Learning**, NIGAB, ISLAMABAD, PAKISTAN, 14, 15, December 2022. **Chief Organizer** of NIGAB Training, Islamabad Pakistan.
		- One Day international Conference of Genomics of Beneficial Microbes; **Chief Organizer** Shakira Ghazanfar, **One Day international Conference of Genomics of Beneficial Microbes**, ONLINE NIGAB, ISLAMABAD, PAKISTAN, 23, December 2021
		- One Day international Conference of Genomics of Animal Gut microbiota, 2022; Shakira Ghazanfar, **One Day international Conference of Genomics of Animal Gut Microbes,** ONLINE NIGAB, ISLAMABAD, PAKISTAN, 22, June 2022.
		- One Day **NIGAB Webinar Series**, Entitled Use of Advanced Molecular Techniques in Sustainable Agricultural*,* , 11 October 2022, ONLINE NIGAB, ISLAMABAD, PAKISTAN,

# PAKISTAN PROBIOTIC DATABASE (PPD):

* + - PPD Stands for Pakistan Probiotics Database. It is a bioinformatics database designed to store, manipulate and download a project related data. The data stored in the database will include the metadata as well as the sequence data in order to perform the future data analysis. It is one of its own kinds of database in Pakistan with special focus over the control vocabulary of the projects plus with the mark of its beginning it has earned the title of **Pakistan’s first Probiotic Database**. The data present in the database currently is not public but only in the access of the ones present in our lab. The work has been ongoing on the project and it has achieved its basic structure, building and will acquire shape with time.
		- **Achievements:** More than 100 bacterial isolates have been isolated and data recorded.

# MICROBIAL GENE BANK: NEXT GENERATION SEQUENCING (NGS)

* + - An important achievement of my career is that I am working for first time in the history of the country on the **whole genome sequence (WGS)** of lactic acid bacteria isolated from *Nilli Ravi* Buffalo gut and other **Pakistani ecology**. I initiated the project for the Establishment of **NIGAB-Microbial Culture Collection (NMCC)** at NARC. MNCC is a **microbial gene bank** for the preservation of the bacterial strains for future use in teaching, research and industrial application.
		- Currently we have **more than 300 microbial** isolate**s** in the NMCC including ***Pediococcus pentosaceus, Lactococcus lactis***: Involved in the preparation of silage for improve milk yield in hot condition, ***Bacillus subtilis,*** Involved in the preparation of poultry feed for improve meat production, ***Bacillus tequilensis***: Involved in the preparation of silage for improve milk yield in hot condition, ***Lactobacillus fermentum, Lactobacillus agilis, Lactobacillus delbrueckii****:* Main bacteria involved in the production of yogurt, ***Pediococcus acidilactici, Enterococcus faecalis, Weissella cibaria, Weissella confusa, Weissella bombi*** etc.

# Draft genome sequencing of Probiotic bacteria

Genomic data submission: [https://www.ncbi.nlm.nih.gov](https://www.ncbi.nlm.nih.gov/)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Strain ID** | **Accession numbers** | **Animal Breed/source** | **Identify Bacteria** |
| 1 | SPARC1 | [PRJNA734144](https://www.ncbi.nlm.nih.gov/bioproject/PRJNA734144) | Cheese | *Enterococcus Facilus* |
| 2 | SPARC2 | [PRJNA734146](https://www.ncbi.nlm.nih.gov/bioproject/PRJNA734146) | Buffalo/gut | *Pediococcus pentosaceus* |
| 3 | SPARC3 | PRJNA734151 | Goat/gut | *Bacillus Subtills* |
| 4 | SPARC4 | Under processing | Poultry/gut | *Bacillus Subtills* |
| 5 | SPARC5 | Under processing | Human Gut | *Lactobacillus plantrum* |
| 6 | SPARC6 | Under processing | Sahiwal cow gut | *Enterococcus Facilus* |
| 7 | SPARC7 | Under processing | Poultry gut | *Bacillus* |
| 8 | SPARC8 | Under processing | Human gut | *Enterococcus Facilus* |
| 9 | SPARC9 | Under processing | Animal gut | *Weissella bombi*  |
| 10 | SPARC10 | Under processing | Animal gut | *Weissella bombi*  |
| 11 | SPARC12 | Under processing | Human Gut | *Pediococcus pentosaceus* |
| 12 | SPARC13 | Under processing | Human Gut | *Bacillus Subtills* |

# RESEARCH PROJECTS: Developed / Conceived / Approved (secured)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Project Title** | **Principal / Co-Principal Investigator** | **Amount (Mn)** | **Funding Agency** | **Duration** | **Comments** |
| **1** | ***Development of Indigenous feed additive prebiotic and products to improve productivity of dairy Buffalo in cost effective manners*** | ***Principal Investigator/ Project Manger*** | ***15.86*** | ***Punjab Agricultural Research Board (PARB),******Pakistan*** | ***2018-2021*** | ***completed*** |
| **2** | ***NGS Based identification of yeast for preparation of yeast extract*** | ***Principal Investigator*** | ***10.15*** | ***Agricultural Linkage Programme (ALP),******Pakistan*** | ***2021-2024*** | ***Ongoing*** |
| **3** | ***Probiotic poultry products*** | ***Principal Investigator*** | 10.12 | Agricultural Linkage Programme (ALP),Pakistan | 2022 | Short listed |
| 4 | ***NGS Based study of animal gut related microbial flora*** | Principal Investigator | 10.12 | Agricultural Linkage Programme (ALP),Pakistan | 2022 | Short listed |
| 5 | ***Development of Indigenous Vaccine for the Prevention/ Control of Peste des Petits Ruminants (PPR) in Ruminants*** | Co- Principal Investigator | 20.12 | Agricultural Linkage Programme (ALP),Pakistan | 2018 | **Declined** |
| 6 | ***Identification, Characterization and Preservation of Economically Beneficial*** | Principal Investigator/ ProjectManger | US$. 12000 | International Foundation of Science | 2017 | Declined |
| 7 | ***Bacteria from Pakistani Ecology*** |  |  | (IFS),Sweden |  |  |

**PRINCIPAL INVESTIGATOR (Flag B)**

Punjab Agricultural Research Board ([www.parb.agripunjab.gov.pk](http://www.parb.agripunjab.gov.pk/)) (2018 to 2021) Jun/18–date

* Successfully WON “PARB 1002” project (worth **Rupee 15.86 Millions**), from Punjab Agricultural Research Board to develop the Animal Probiotic to Improve Milk Yield (Pakistan’s first genomic characterized indigenous Probiotic feed supplement)
* Project website:<https://parb1002.wixsite.com/probiotics>
* Achievement:
	+ One animal probiotic product (NMCC) has been prepared in lab and the field trials are under processed for its commercialization and patent
	+ 25 FAO microbes used for probiotic are isolated and preserved for product preparation. (see below)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Isolation Source description** | **Strains identify** | **Activities** | **FAO****Approve** | **Use** |
| Host: AnimalBreed: Nilli Ravi buffalo Isolation source:Deep in the rectum, Feeding pattern: Conversational feeding (Crude Protein: 15 %) | *Lactobacillus fermentum, Weissella cibaria Weissella confusa Weissella bombi Pediococcus acidilactici Pediococcus pentosaceus:* | Animal GIT conditions resistance, antibiotic and antimicrobial susceptibility (In vitro)Mice intestine colonization (In vivo) 40 days filed safety trail on broiler (invivo) | Yes | Animal feed preparation, |
| Host: AnimalBreed: Nilli Ravi buffalo Isolation source:MilkFeeding pattern: Conversational feeding(Crude Protein: 15 %) | *Lactobacillus delbrueckii* [*Weissella confusa*](https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=1583)[*Lactobacillus fermentum*](https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=1613)[*Enterococcus lactis*](https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=357441)[*Weissella cibaria*](https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=137591)[*Lactococcus lactis subsp.*](https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=203404)[*Enterococcus faecium*](https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=1352) | Animal GIT conditions resistance, antibiotic and antimicrobial susceptibility (In vitro)Mice intestine colonization (In vivo) 40 days filed safety trail on broiler (invivo) | Yes | Animal feed preparation, Yougut |
| Host: Human**Source: Fecal****Feeding pattern:**Conversational feeding | *Lactobacillus fermentum, Lactobacillus plantarum Lactobacillus paracasei Lactococcus lactis Lactobacillus delbrueckii Weissella cibaria Weissella confusa Weissella bombi Pediococcus acidilactici Pediococcus pentosaceus* | Human GIT conditions resistance, antibiotic and antimicrobial susceptibility (In vitro)Mice intestine colonization (In vivo) 40 days filed safety trail on broiler (invivo) | Yes | Human food preparation, |

# RECENT RESEARCH

* **Recently isolated microbial strains to improve milk yield:** August 2023

#### Isolation, biochemical characterization and molecular identification (16 Sr RNA gene sequencing) of microbial strains from various indigenous animal sources such as local *Sahiwal* cattle as well as *Nilli Ravi* buffalo breed gut involved in the feed digestion, yield improvements etc. These microbial strains include:

* + *Lactobacillus fermentum:* Involved in production/preparation of fermented milk*.*
	+ *Lactobacillus paracasei*:
	+ *Lactobacillus plantarum*
	+ *Lactococcus lactis:* Involved in the preparation of silage for improve milk yield in hot condition
	+ *Lactobacillus agilis*
	+ *Lactobacillus delbrueckii:* Main bacteria involved in the production of yogurt.
	+ *streptococcus thermophilus*
	+ *Pediococcus acidilactici*
	+ *Pediococcus pentosaceus:*
	+ *Enterococcus lactis*
	+ *Enterococcus faecalis*
	+ *Weissella cibaria*
	+ *Weissella confusa*
	+ *Weissella bombi*
	+ *Bacillus tequilensis*
* **Whole Genomic sequencing of the local isolate’s bacterial strains;**
	+ Genes were detected for antibiotic resistance
	+ Antibiotic resistant genes: On going
* **Metagenomics analysis of the gut microbial flora of dairy animals**

**SERVIC**

1. **Service as Editor**
* **Guest Editor:** " */Applied Sciences/*: <https://www.mdpi.com/journal/applsci/special_issues/87PLDC349H>".
* **Guest Editor:** [Probiotics and Prebiotic: Back to Nature to Improve Health (biolifesas.org)](https://www.biolifesas.org/EN/collection/1695108973510/articles)
[**Guest Editor:**Life | Special Issue: Effects of Natural Products as Adjuvants on Animals (mdpi.com)](https://www.mdpi.com/journal/life/special_issues/0C6OCEHT75)
**Topic Coordinator:** Frontier of Nutrition
* **Editorial Board Member**, DIET FACTOR (Journal of Nutritional & Food Science), <https://www.dietfactor.com.pk/index.php/df>
	+ Act as Guest Editor: [Applied Sciences](https://www.mdpi.com/journal/applsci) (ISSN 2076-3417).
		- * Special Issue "Evolution of Functional Foods, Nutraceuticals and Probiotics: From Conventional Food to Next Generation Biotherapeutics" A special issue of [Applied Sciences](https://www.mdpi.com/journal/applsci) (ISSN 2076-3417). This special issue belongs to the section "[Food Science and Technology](https://www.mdpi.com/journal/applsci/sections/food_science_and_technology)".
	+ Act as Guest Editor:
		- * Next Generation Probiotic: Back to Nature to Improve Health
	+ Topic Coordinator' in frontiers in Nutrition'Topic Coordinator' in frontiers in Nutrition
	+ Acta Scientific Agriculture (ISSN: 2581-365X)
	+ Acta Scientific Microbiology (ISSN: 2581-3226)
	+ Member editorial board (Acta Scientific Agriculture)

 **(b) Key Papers Reviewed**

* + Fecal microbiome modulation of bacterial communities associated with the administration of probiotic lactic acid bacteria to feedlot cattle. **Scientific report, Nature**
	+ Microbial community’s probiotic in animals. **Scientific report, Nature**

 **PROTOCOL DEVELOPED**

#### Probiotic bacterial isolation based on local media recipe

**RESEARCH TECHNIQUES KNOWN**

* + - **Molecular Biology** DNA and RNA extraction, Plasmid isolation, Tissue culture etc

#### **Microbiology** Bacterial Isolation & enumeration, identification, morphological and physiological characterization, biochemical tests for bacterial identification, Media Preparation, Various Staining.

* + - SDS-PAGE and Western Blotting, Bacterial Gene isolation, Antibiotic Resistances genes
		- **Bioinformatics skills**: Gene Identification and Sequence Analyses, BLAST (Basic Local Alignment Search Tool), primer3, Clustal W, Sequence Analysis Tools, SNP effect, EBI-Tool- Protein Alignment
		- **Training** of graduate students and project designing in Lab

**STATISTICS AND SOFTWARES:**

Microsoft Excel, SPSS, MS-OFFICE, BioEdit and other Bioinformatics tools (**BLAST, primer, ClustalW**).

#### Experience with statistical analyses and/or programming, C/C++ and R.

**TEACHING**

1. **Summary of Courses Taught**

|  |  |  |
| --- | --- | --- |
| AGB-700 | Genomics | 2 (1-1) |
| MG-501 | Microbial Anatomy and Physiology | 4 (4-0) |
| MG 604 | Food and Dairy Microbiology | 4 (4-0) |

* + PUBLICATIONS/CITATIONS DATA
* Total Manuscripts published/submitted in Journals: 50
* Manuscripts under review process for publication in Journals: 20
* Book Chapters contributed in International Edited Book(s): 10
* Book published (Under processed) 3
* New paper articles 4

##### PhD Thesis

* 1. **Shakira, G.** 2016. Study on the Effects of Dietary Supplementation of *Saccharomyces cerevisiae* on Performance of Dairy Cattle and Heifer. PhD thesis. Quaid-i-Azam University, Islamabad, Pakistan.<http://prr.hec.gov.pk/jspui/bitstream/123456789/7705/1/Shakira%20Ghazanfar%20Full.pdf>
1. **Key Research Papers:**
2. **Key Research Papers:**

|  |  |  |
| --- | --- | --- |
| **S #** | **ISI Impact Factor Journal\*** | **IF** |
|  | **2022 (240 impact factor)** |  |
|  |  |  |
|  | [Antibiotic Resistance Genes Prediction Via Whole Genome Sequence Analysis of Stenotrophomonas maltophilia](https://www.researchgate.net/publication/376486520_Antibiotic_Resistance_Genes_Prediction_Via_Whole_Genome_Sequence_Analysis_of_Stenotrophomonas_maltophilia?_sg%5B0%5D=riAEOVNwVtyeM8tw77YCwjPkzOINbzI03PiwaZ9LPUZ0FmsD7qwM7_qXjvL_T3orcnbVN4WwSVzMgwyq5bQe_UWiqL-TVeIMfUcbdOm2.4rCQ7aL-MLh37_foOKzWUT6kdZFIYxGpgrM_PqB1fbZ3lx068z6Y_AuO1CHZHG8RVPxX5HCJXZWVvRIQ450Fmw&_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InByb2ZpbGUiLCJwYWdlIjoicHJvZmlsZSIsInByZXZpb3VzUGFnZSI6InByb2ZpbGUiLCJwb3NpdGlvbiI6InBhZ2VDb250ZW50In19),  | **6.70** |
|  | [ES-PredHSP: Improved Prediction of Heat Shock Proteins Using Machine Learning by Enhanced Sampling Technique"](https://www.researchgate.net/publication/375273394_ES-PredHSP_Improved_Prediction_of_Heat_Shock_Proteins_Using_Machine_Learning_by_Enhanced_Sampling_Technique?_sg%5B0%5D=X9olLEhVdBk-gZ3A-C8_mPjqgzW7esISI14zki_JgLCS-8fAbzFyLQANQpalcZT_W6-EobFMOh7daN05f5qHDF2869pFGMJI_XN_ND97.cAqEnOOZZDUMX_cWqhsOMW-muOayiKuGieth4MkorYemSsgoIko7M3GLhkQ4rkuPwOObEkbBYqJ8yC3GOrIW1A&_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InByb2ZpbGUiLCJwYWdlIjoicHJvZmlsZSIsInBvc2l0aW9uIjoicGFnZUNvbnRlbnQifX0) Journal of Biological Regulators and Homeostatic Agents | **3.5** |
|  | [Association of Cholesterol with Hepatorenal Markers and Quality of Life in Diabetic Patients Before and after Magnesium and Potassium Supplement**s**](https://www.researchgate.net/publication/375379398_Association_of_Cholesterol_with_Hepatorenal_Markers_and_Quality_of_Life_in_Diabetic_Patients_Before_and_after_Magnesium_and_Potassium_Supplements?_sg%5B0%5D=X9olLEhVdBk-gZ3A-C8_mPjqgzW7esISI14zki_JgLCS-8fAbzFyLQANQpalcZT_W6-EobFMOh7daN05f5qHDF2869pFGMJI_XN_ND97.cAqEnOOZZDUMX_cWqhsOMW-muOayiKuGieth4MkorYemSsgoIko7M3GLhkQ4rkuPwOObEkbBYqJ8yC3GOrIW1A&_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InByb2ZpbGUiLCJwYWdlIjoicHJvZmlsZSIsInBvc2l0aW9uIjoicGFnZUNvbnRlbnQifX0) | **4.50** |
|  | [Immunostimulant, Hepato and Nephroprotective potential of Bacillus subtilis (NMCC-path-14) in comparison to Dexamethasone in alleviating CFA induced arthritis"](https://www.researchgate.net/publication/375119348_Immunostimulant_Hepato_and_Nephroprotective_potential_of_Bacillus_subtilis_NMCC-path-14_in_comparison_to_Dexamethasone_in_alleviating_CFA_induced_arthritis?_sg%5B0%5D=X9olLEhVdBk-gZ3A-C8_mPjqgzW7esISI14zki_JgLCS-8fAbzFyLQANQpalcZT_W6-EobFMOh7daN05f5qHDF2869pFGMJI_XN_ND97.cAqEnOOZZDUMX_cWqhsOMW-muOayiKuGieth4MkorYemSsgoIko7M3GLhkQ4rkuPwOObEkbBYqJ8yC3GOrIW1A&_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InByb2ZpbGUiLCJwYWdlIjoicHJvZmlsZSIsInBvc2l0aW9uIjoicGFnZUNvbnRlbnQifX0) | **4.6** |
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| **40** | Khan, S., A. Din, G. M. Ali, S. I. Khan, I. Arif, M. N. Riaz, and S. Ghazanfar. "Screening of lactic acid bacteria for their use as buffalo probiotic." *JAPS: Journal of Animal & Plant Sciences* 30, no. 6 (2020).0.4  | **0.49** |
| **41** | Habib, K., Ahmad, T., Ali, G.M., Arif, I., Imran, M., Parveen, S., Riaz, A., Maqbool, A. and Ghazanfar, S., Molecular Identification of Lactic acid bacteria Isolated from Lactating Cattle Lower Gut as a Potential Probiotic Species. *Indian Journal of Animal Research*, *54*(1-8). 0.48 | **0.48** |
| **42** | Sakandar, Hafiz Arbab, Stan Kubow, Behnam Azadi, Rani Faryal, Barkat Ali, **Shakira Ghazanfar**, Umar Masood Quraishi, and Muhammad Imran. "Wheat fermentation with Enterococcus mundtii QAUSD01 and Wickerhamomyces anomalus QAUWA03 consortia induces concurrent gliadin and phytic acid degradation and inhibits gliadin toxicity in Caco-2 monolayers." *Frontiers in microbiology* 9 (2019): 3312. 4.09 | **4.09** |
| **43** | **Shakira Ghazanfar,** screening a Six Critical Genes-Based Novel System of Diagnostic and Prognostic Biomarkers in Prostate Adenocarcinoma Patients of Different Clinical Variables, Computational and Mathematical Methods in Medicine, (Accepted) | **2.50** |
| **44** | **Shakira Ghazanfar,** Risk and Prognostic Factors for TERT Promoter Mutations and Papillary Thyroid Carcinoma. American Journal of Translational Research, (Accepted)  | **4.01** |
| **45** | **Shakira Ghazanfar,** [Probiotic Yeast Saccharomyces: Back to Nature to Improve Human Health](https://www.mdpi.com/2309-608X/8/5/444) | **5.80** |
| **46** | **Shakira Ghazanfar** [**Muhammad Iqbal Anjum,**](https://www.google.com.pk/url?sa=t&rct=j&q&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CBsQFjAA&url=http%3A%2F%2Fwww.gcu.edu.pk%2FBio_IAnjum.htm&ei=jkS2VLGqAvGd7gaQj4HIDA&usg=AFQjCNHK4L2j7QQcnyZ6y2mWDpPkS4vimA&bvm=bv.83640239%2Cd.bGQ) **Atiya Azim and Iftikhar Ahmed. 2015.** Effect of dietary supplementation of probiotic yeast (*Saccharomyces cerevisiae*) culture on growth performance, blood parameters, nutrient digestibility and fecal flora of dairy heifers**” ‘*The Journal of* Animal and Plant Science25(1): 53-59.** | **0.49** |
| **47** | M. Naeem, I. Ahmed, S. Ahmed, Z. Ahmed, M. N. Riaz, and Shakira Ghazanfar. **2018.** Screening of cattle gut associated Bacillus strains for their potential use as animal probiotic. **Indian Journal of Animal Research** DOI: 10.18805/ijar. B-948 (Online published 16-82018). | **0.44** |
| **48** | Khan, K.A.; Zizzadoro, C.; Di Cerbo, A.; Pugliese, N.; Khan, G.M.; **Ghazanfar, S**.; Almusalami, E.M.; Muzammal, M.; Alsalman, K.J.; Farid, A. Preparation and In Vitro Evaluation of Controlled-Release Matrices of Losartan Potassium Using Ethocel Grade 10 and Carbopol 934P NF as Rate-Controlling Polymers. *Polymers* **2022,** *14*, 2993. <https://doi.org/10.3390/polym14152993> | **4.967** |
| **46** | Probiotics, their action modality and the use of multi-omics in metamorphosis of commensal microbiota into target-based probiotics", DOI: 10.3389/fnut.2022.959941. Frontiers Health Production  | **5.123** |
| **47** | Khan, F.F., Sohail, A., Ghazanfar, S. et al. Recent Innovations in Non-dairy Prebiotics and Probiotics: Physiological Potential, Applications, and Characterization. Probiotics & Antimicro. Prot. (2022). <https://doi.org/10.1007/s12602-022-09983-9> | **5.332** |
| **48** | Aziz, T.; Farid, A.; Haq, F.; Kiran, M.; Ullah, A.; Zhang, K.; Li, C.; Ghazanfar, S.; Sun, H.; Ullah, R.; Ali, A.; Muzammal, M.; Shah, M.; Akhtar, N.; Selim, S.; Hagagy, N.; Samy, M.; Al Jaouni, S.K. A Review on the Modification of Cellulose and Its Applications. Polymers **2022**, 14, 3206. https://doi.org/10.3390/polym14153206 | **4.976** |
| **Total IM** |  | **240** |

**Others:**

* 1. **Shakira Ghazanfa**r**. 2020.** “Lactic Acid Bacteria: Promising Role against Coronaviruses". *Acta Scientific Nutritional Health* 4.7: 55-62.
	2. Rafia Sameen and **Shakira Ghazanfar.** 2020 “Whole-Genome Sequencing of *Lactobacillus fermentum* and its Application as Probiotic in Poultry Feed". Acta Scientific Nutritional Health 4.7: 49-54
	3. Abdul Manan, Muhammad Kamran, Mukashfa Akhlaq, Sadaf Faisal, Filza Mustafa, Zainab and **Shakira Ghazanfar** **(2019).** Isolation and Identification of Probiotic Bacteria to Improve Animal Health and Production
	4. Urva Akmal1, Muhammad Muneeb Subhani and **Shakira Ghazanfar (2019).** Isolation and Identification of Probiotic to Improve Nutritional Value of Diet Supplements. *Acta Scientific Nutritional Health* 3.8 (2019): 139-143.
	5. **Shakira Ghazanfar, Maria Qubtia, Fariha Hassan, Iftikhar Ahmed, Muhammad Imran 2018. Effects of indigenously isolated *Saccharomyces cerevisiae* probiotics on milk production, nutrient digestibility, blood chemistry and fecal microbiota in lactating dairy cows. *The Journal of Animal and Plant Science,* 28(2). 0.4 y**
	6. Kamran Ali, Ihsan Ullah, Hayaz Uddin, **Shakira Ghazanfar** and Mustansar Ali Ghazanfar. **2017.** Study on the effects of dietary supplementation of probiotic yeast on feed intake, body weight gain and fecal microbiota of crossbreds steer. *International Journal of Biosciences* 10(4), 288-294
	7. Farah N, Sadia M, **Shakira Ghazanfar** Tahir SS, Naseem R, Muhammad Imran. **2016**. Isolation, characterization and application of indigenous Lactic Acid Bacteria in milk fermentation. *International Journal of Biosciences* 9(6), 415- 430
	8. [Muhammad Iqbal Anjum,](https://www.google.com.pk/url?sa=t&rct=j&q&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CBsQFjAA&url=http%3A%2F%2Fwww.gcu.edu.pk%2FBio_IAnjum.htm&ei=jkS2VLGqAvGd7gaQj4HIDA&usg=AFQjCNHK4L2j7QQcnyZ6y2mWDpPkS4vimA&bvm=bv.83640239%2Cd.bGQ)  **Shakira Ghazanfar** and I. Begum. **2014.** Nutritious composition of wheat grains and straw Influenced by difference in varieties grown under uniform agronomic practices. *International Journal of Veterinary Science.* 3 (3): 100-104.
	9. **Shakira Ghazanfar**, Imdad Hussain Mirza and Asma Latif. **2012**. Scope of common DNA based methods for study of rumen bacterial population. *Bangladesh Journal of Animal Sciences. 41* (2):141-146.

##### Shakira Ghazanfar, Asma Latif, Imdad Hussain Mirza and Mukhtar Ahmad Nadeem. 2011. Macro-minerals concentrations of major fodder tree leaves and shrubs of district Chakwal, Pakistan. *Pakistan Journal of Nutrition*. 10 (5): 480-484.

* 1. **Atiya Azim, Shakira Ghazanfar, Asma Latif and Mukhtar Ahmed Nadeem. 2011.** Nutritional evaluation of some top fodder tree leaves and shrubs of district Chakwal, Pakistan in relation to ruminants requirements. *Pakistan Journal of Nutrition* 10 (1): 54**-59**.
	2. **Shakira Ghazanfar,** Imdad Hussain Mirza, Asma Latif, and Mukhtar Ahmad Nadeem. **2011.** Proximate analysis of fodder tree leaves of district Rawalpindi, Pakistan. Pakistan Journal of Livestock Science 111(3): 188-191
	3. **Shakira Ghazanfar** and Atiya Azim. **2010**. Metagenomics and its application in soil ecosystem potential biotechnological prospects. *International Journal of Animal and Plant Sciences*. 6 (2): 611- 622.

##### Shakira Ghazanfar and Atiya Azim. 2009. Metagenomics and its application in rumen ecosystem potential biotechnological prospects. *Pakistan Journal of Nutrition*. 8 (8): 1309-1315

1. **Book Chapters**
	1. Charles O. Adetunji, Olugbemi T. Olaniyan, Mayowa J. Adeniyi, Omosigho Omoruyi Pius, **Shakira Ghazanfar**, Wajya Ajmal, Olorunsola Adeyomoye ;Blockchain and Clinical Trials for Health Informatics, Blockchain Technology in Healthcare - Concepts, Methodologies, and Applications Applied Artificial Intelligence in Data Science, Cloud Computing and IoT Frameworks (2023) 1: 77. <https://doi.org/10.2174/9789815165197123010007>
	2. Charles O. Adetunji, Olugbemi T. Olaniyan, Mayowa J. Adeniyi, Omosigho Omoruyi Pius, **Shakira Ghazanfar**, Olorunsola Adeyomoye ;Advancing Health Research Data Analysis with Blockchain Technology, Blockchain Technology in Healthcare - Concepts, Methodologies, and Applications Applied Artificial Intelligence in Data Science, Cloud Computing and IoT Frameworks (2023) 1: 129. https://doi.org/10.2174/9789815165197123010010
	3. Olugbemi T. Olaniyan, Mayowa J. Adeniyi, Charles O. Adetunji, Omosigho Omoruyi Pius, **Shakira Ghazanfar,** Wajya Ajmal, Olorunsola Adeyomoye ;Blockchain Distributed Ledger Technologies for Biomedical and Healthcare Applications, Blockchain Technology in Healthcare - Concepts, Methodologies, and Applications Applied Artificial Intelligence in Data Science, Cloud Computing and IoT Frameworks (2023) 1: 188. https://doi.org/10.2174/9789815165197123010013
	4. Olugbemi T. Olaniyan, Mayowa J. Adeniyi, Charles O. Adetunji, Omosigho Omoruyi Pius, **Shakira Ghazanfar**, Wajya Ajmal, Sujata Dash, Olorunsola Adeyomoye ;Medical Imaging Systems Using Blockchain, Blockchain Technology in Healthcare - Concepts, Methodologies, and Applications Applied Artificial Intelligence in Data Science, Cloud Computing and IoT Frameworks (2023) 1: 203. https://doi.org/10.2174/9789815165197123010014
	5. **Shakira Ghazanfar** etal., 2023, Discovery of Novel Compounds of Pharmaceutical Significance Derived from AlgaeJuly 2023, DOI: [10.1002/9781119857860.ch28](http://dx.doi.org/10.1002/9781119857860.ch28), In book: Next‐Generation Algae
	6. **Shakira Ghazanfar** etal., 2023,Application of Nanotechnology for the Bioengineering of Useful Metabolites Derived from Algae and Their Multifaceted Applications, July 2023. DOI: [10.1002/9781119857860.ch27](http://dx.doi.org/10.1002/9781119857860.ch27), In book: Next‐Generation Algae
	7. **Shakira Ghazanfar** etal., 2023, [The Role of Probiotics and Prebiotics in Gut Modulation](https://www.researchgate.net/publication/373958523_The_Role_of_Probiotics_and_Prebiotics_in_Gut_Modulation?_sg%5B0%5D=zhzm01uXjPpxOEFDZNY3mkn3YDt0qsu8zHR1ipIoF9bmvtt3yh3HJYCg6euLtTeaxWsQtFNCy9cLy5y8qtXXMB7GvG2l03RGTu4qVyhq.WU2lau7JeIwTp86AW09nQmZLC3e_JmuCCZa6mxaVSPw8VOd63OVrQfq-FsgLbmS1zqyiju4AzVNIQkiJcccV0g&_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InByb2ZpbGUiLCJwYWdlIjoicHJvZmlsZSIsInByZXZpb3VzUGFnZSI6InByb2ZpbGUiLCJwb3NpdGlvbiI6InBhZ2VDb250ZW50In19), DOI:[10.1002/9781119904786.ch18](http://dx.doi.org/10.1002/9781119904786.ch18), In book: The Gut Microbiota in Health and Disease
	8. **Shakira Ghazanfar,** Olulope Olufemi Ajayi, Abel Inobeme et al. "Roles of nutrigenomics in drug discovery and development." In Role of Nutrigenomics in Modern-Day Healthcare and Drug Discovery, pp. 277-299. Elsevier, 2023.
	9. Adetunji, Charles Oluwaseun, Frank Abimbola Ogundolie, John Tsado Mathew, Abel Inobeme, Olotu Titilayo, Olugbemi Tope Olaniyan, Oluwatosin Ademola Ijabadeniyi et al. "Graphene-based nanomaterials for targeted drug delivery and tissue engineering." Novel Platforms for Drug Delivery Applications (2023): 277-288.
	10. Adetunji, Charles Oluwaseun, Frank Abimbola Ogundolie, John Tsado Mathew, Abel Inobeme, Olotu Titilayo, Olugbemi Tope Olaniyan, **Shakira Ghazanfar** et al. "Nanotube platforms for effective drug delivery applications." Novel Platforms for Drug Delivery Applications (2023): 317-332.
	11. Adetunji, Charles Oluwaseun, Frank Abimbola Ogundolie, Modupe Doris Ajiboye, John Tsado Mathew, Abel Inobeme, Wadzani Palnam Dauda**, Shakira Ghazanfar** et al. "Nano-engineered Sensors for Food Processing." In Bio-and Nano-sensing Technologies for Food Processing and Packaging, pp. 151-166. Royal Society of Chemistry, 2022.
	12. Adetunji, Charles Oluwaseun, Frank Abimbola Ogundolie, Olugbemi Tope Olaniyan, John Tsado Mathew, Abel Inobeme, Olotu Titilayo, **Shakira Ghazanfar** et al. "Nanobiomaterials for Food Packaging Sensor Applications." In Bio-and Nano-sensing Technologies for Food Processing and Packaging, pp. 167-180. Royal Society of Chemistry, 2022.
	13. Adetunji, Charles Oluwaseun, Olugbemi **Shakira Ghazanfar** Abel Inobeme et al. "Roles of nutrigenomics in drug discovery and development." In Role of Nutrigenomics in Modern-Day Healthcare and Drug Discovery, pp. 277-299. Elsevier, 2023.
	14. **Shakira Ghazanfar,** 2021 Understanding the mechanism of action of indigenous probiotic yeast: linking the gut microbiota and performance in dairy animals, *Saccharomyces* book DOI: 10.5772/intechopen.95822
	15. **Shakira Ghazanfar**, Aayesha Riaz, Ghulam Muhammad Ali, Saima Naveed, Irum Arif, Sidra Irshad, Naeem Riaz and Nazneen Manzoor. Common Methods to Understand and Develop Indigenous Probiotics Yeast for Ruminant. InTech

Open Access Books, 2019

* 1. **Shakira Ghazanfar** Aayesha Riaz, Muhammad Naeem Tahir, Saad Maqbool, Ghulam Muhammad Ali, Fatima Tariq and Irum Arif. Probiotic Supplement Improves the Health Status and Lactation Performance in Dairy Animals (Published: April 26th 2019)
	2. **Shakira Ghazanfar,** Khalid, N., Ahmed, I., Imran M. Probiotic Yeast: Mode of Action and Its Effects on Ruminant Nutrition. Chapter 8, pp. 179–202. In: - Yeast - Industrial Applications ISBN 978-953-51-5782-3. Ed. Antonio Morata. InTechOpen Janeza Trdine 9 51000 Rijeka, Croatia (2017).

##### BOOKS: AS EDITOR

* 1. **Shakira Ghazanfar\*,** Probiotic Genomics: Under the agreement CRC Press, Taylor and Francis Group, Boca Raton.ISBN-10 0367473364, ISBN-13 9780367473365 (\*Corresponding Editor **(Accepted, agreement signed, chapters invited)**
	2. **Shakira Ghazanfar\*,** Probiotics: Role in health and production. CRC Press, Taylor and Francis Group, Boca Raton.ISBN-10 0367473364, ISBN-13 9780367473365 (\*Corresponding Editor **(Accepted, agreement signed, chapters invited)**
	3. **Ghazanfar S\*,** Akbar MY, Adetunji CO, Ali GM, (2022) Machines learning for probiotics: (\*Corresponding Editor Trends and Application. Springer, New York **(Accepted, agreement signed, chapters invited)**
	4. **Ghazanfar S\*,** (2023) (\*Corresponding Editor Machines learning for probiotics:. Springer, New York **(Submitted)**

##### Abstract (Posters/oral) Presented in Conferences (National/ International):

1. **KEY NOTE SPEAKER**
	1. **Shakira Ghazanfar, 2021.** “*Isolation and Molecular Characterization of Potential Probiotic Bacterial Strains for Their Potential Use in Cow Feed*” 3rd Edition of Webinar on Probiotics, Gut Microbiome & Immune System Organized by Endeavor Research Private Limited. Jul 15 to 15, 2021 Virtual Event,
	2. **Shakira Ghazanfar, 2021** “*Impact of buffalo gut associated Pediococcus pentosaceus SPARC2 on growth performance and gut microbiota of tilapia fish (Oreochromis niloticus)”* (Biotechnology3345), “3rd World Congress on Advances in Biotechnology” December 6-7, 2021 in Dubai, UAE Virtual Event
	3. **Shakira Ghazanfar, 2021,** *Draft Genome Sequence of Pediococcus pentosaceus SPARC2, isolated from gut of indigenous water buffalo (Bubalus bubalis), South-East-Asia*, Next Generation sequencing conference, 31 August 2021. Islamabad, Pakistan.
2. **ORAL PRESENTATIONS**
	* 1. **Shakira Ghazanfar, 2021,** *Draft Genome Sequence of Pediococcus pentosaceus SPARC2, isolated from gut of indigenous water buffalo (Bubalus bubalis), South-East-Asia*, Next Generation sequencing conference, 31 August 2021. Islamabad, Pakistan.
		2. **Shakira Ghazanfar, 2019.** Role of the Metagenomics in Search Probiotic strains.1st International Conference on Recent Updates in Biotechnology (ICRUB-2019), Organized by Abdul Wali Khan University Mardan (AWKUM). October 16- 18, 2019. Islamabad Pakistan
		3. **Shakira Ghazanfar,**Iftikhar Ahmed, Muhammad Iqbal Anjum, Maria Qbtiya and Muhammad Imran. **2017**. Dietary supplementation of probiotic yeast improved gastrointestinal tract microbiota in growing *Sahiwa*l cattle and heifers. Full length paper: Oral presentation in 4th International Conference and Industrial Exhibition on Dairy Science Park (DSP 2017); November 1 - 5 , **2017,** Konya, Turkey
3. **Abstract Published in Conferences**
	* + Evaluation Of *Pediococcus Pentosaceus* SPARC2 Via In Vitro, In Vivo And In Silico Techniques Reveals Potential Probiotic Attributes Osama Butt, Lalia Jafri, Maryam Idrees, Wajya Ajmal, Muhammad Naeem, Muhammad Aqeel, Ghulam Muhammad Ali, Sharjeel Khalid, **Shakira Ghazanfar.** Fourth International Conference on EMERGING TRENDS IN BIOINFORMATICS & BIOSCIENCES (ICETBB-2022) September 15-17, 2022
		+ Abid Majeed , Muhammad Shahzad Ahmed , Rana Arsalan Javaid , Faiza Siddique , Jalal Hassan, **Shakira Ghazanfar** Optimization of Water Requirement Of Rice Crop For Normal Growth And Yield Production Under Limited Water Supply. Fourth International Conference on EMERGING TRENDS IN BIOINFORMATICS & BIOSCIENCES (ICETBB-2022) September 15-17, 2022
		+ Muhammad Naeem, Iftikhar Ahmed, Rahimullah, Asma Bibi, Shahzad Ahmed and **Shakira Ghazanfar,. 2017.** *Screening for Lower Gut Associated Bacillus Species in the Lactating Dairy Cattle.*11th International Biennial Conference of Pakistan Society for Microbiology, 19-20 December **2017,** Multan-Pakistan
		+ Iftikhar Ahmed, Saira Abbas, Arshia Amin**, Shakira Ghazanfar,,** Abdul Ghafoor and Wen-Jun Li. **2017.** *National Culture Collection activities for PARC, Pakistan and the description of several novel species of bacteria from Pakistan ecology.*11th International Biennial Conference of Pakistan Society for Microbiology, 19-20 December 2017, Multan-Pakistan
		+ **Shakira Ghazanfar,** Maria Qubtia, Fariha Hassan, Muhammad Afzal, Iftikhar Ahmed, Muhammad Imran. *Dietary supplementation of probiotic yeast improves gut microbiota and blood profile of dairy heifers and cattle****. 4th International Conference and Industrial Exhibition on Dairy Science Park (DSP 2017),*** 1-5, November **2017.** The Selcuk University, Konya, Turkey
		+ Smayia Sharif, **Shakira Ghazanfar,** Shahid Zaman,Iffat Tahira Nafeesa Qudsia Hanif and Muhammad Imran. *Impact of grinded levels of inoculant on microbiological and nutritional quality of corn silage****. 4th International Conference and Industrial Exhibition on Dairy Science Park (DSP 2017),*** 1-5, November **2017.** The Selcuk University, Konya, Turkey
		+ **Shakira Ghazanfar,** Qubtia, M. Hassan, F. Muhammad, A. Ahmed, I. Muhammad, I. Isolation and characterization of nutritionally important Lactic Acid Bacteria from cattle gut**. *67th Annual Meeting of the European Federation of Animal Science,*** 29 August-2 September **2016.** The Waterfront, **Belfast, Northern Ireland**
		+ **Shakira Ghazanfar,** Qubtia, M. Hassan, F. Muhammad, A. Ahmed, I. Imran, M**.** Dietary supplementation of *Saccharomyces cerevisiae* as a probiotic on gut health status in dairy cattle**. *67th Annual Meeting of the European Federation of Animal Science,*** 29 August-2 September **2016**. The **Waterfront, Belfast, Northern Ireland**
		+ Iftikhar Ahmed, Saira Abass, Asia Bangah, Arshia Amin, **Shakira Ghazanfar,** Akbar Ali. 2015. Describing novel bacteria from Pakistan Ecology: Challenges and Opportunities. *In*: ***Proceedings of International Conference of Soil Sustainability and Food Security***, November15-17, **2015**, Faisalabad
		+ **Shakira Ghazanfar,** M. I. Anjum, F. Hassan, I. Ahmed, M. Qbtiya, M. Afzal and M. Imran. Effects of dietary supplementation of probiotic yeast (*Saccharomyces cerevisiae)* on production performance of dairy cattle. ***10th Biennial International Conferences of Pakistan Society for Microbiology Exploring Microbes for Future Endeavors***, 25-28, **2015.** Lahore. Pakistan
		+ **Shakira Ghazanfar,** M. I. Anjum, F. Hassan, I. Ahmed, M. Qbtiya, M. Afzal and M. Imran. Dietary Supplementation of probiotic yeast on Production and Health Status in Lactating Dairy Cattle*.* ***3rd International workshop on Dairy Science Park*.** 16-18, 1W-DSP-**2015**. University of Agriculture, Peshawar. Pakistan.
		+ Smayia Sharif, Nafeesa Qudsia Hanif, **Shakira Ghazanfar,** and M. Imran, **2013**. Effect of inoculant concentration on safety and nutritional quality of corn silage. ***Applications of Molecular Biology in Medicine and Agriculture***, QAU, Islamabad, Proc. August 20-22/2013: numb. PP114.
		+ OPTIMIZATION OF WATER REQUIREMENT OF RICE CROP FOR NORMAL GROWTH AND YIELD PRODUCTION UNDER LIMITED WATER SUPPLY Abid Majeed1 , Muhammad Shahzad Ahmed1 , Rana Arsalan Javaid1 , Faiza Siddique1 , Jalal Hassan1 , Shakira Ghazanfar2 1Rice Research Program, Crop Sciences Institute, National Agricultural Research Center (NARC), Islamabad, Pakistan 2National Institute for Genomics and Advanced Biotechnology, National Agricultural Research Center (NARC), Islamabad, Pakistan Corresponding Author’s email: abid.majeed@gmail.com

##### Article Published in Newspaper

* **Shakira Ghazanfar, 2019.** [*Animal Probiotic Database of Pakistan: “APDP*](https://www.researchgate.net/project/Animal-Probiotic-Database-of-Pakistan-APDP)[https://www.dailyparliamenttimes.com/2019/04/03/on-going-research-on-probiotics-may-provide-a-leap-for- mankind/#.XLIsdExuLIU](https://www.dailyparliamenttimes.com/2019/04/03/on-going-research-on-probiotics-may-provide-a-leap-for-mankind/#.XLIsdExuLIU)
* **Shakira Ghazanfar,** Irum Arif Talal Amin. **2019.** *PAKISTAN’S FIRST LABORATORY SET TO UNDERSTANDING MODE OF ACTION IN ANIMAL GUT THROUGH NGS DATA ANALYSIS*

[https://www.dailyparliamenttimes.com/2019/06/01/pakistans-first-laboratory-set-to-develop-cost-effective-](https://www.dailyparliamenttimes.com/2019/06/01/pakistans-first-laboratory-set-to-develop-cost-effective-buffalo-probiotic-to-improve-milk-production/) [buffalo-probiotic-to-improve-milk-production/](https://www.dailyparliamenttimes.com/2019/06/01/pakistans-first-laboratory-set-to-develop-cost-effective-buffalo-probiotic-to-improve-milk-production/)

* **Shakira Ghazanfar,,** Mariyum. **2019**. *On Going Research on Probiotics- May Provide A Leap For Mankind.*[https://www.dailyparliamenttimes.com/2019/04/03/on-going-research-on-probiotics-may-provide-a-leap-for- mankind/#.XMQx0kxuLIU](https://www.dailyparliamenttimes.com/2019/04/03/on-going-research-on-probiotics-may-provide-a-leap-for-mankind/#.XMQx0kxuLIU)

##### Shakira Ghazanfar,, 2013. Improving livestock production in Pakistan

<http://www.nation.com.pk/E-Paper/islamabad/2013-02-10/page-11>

* 1. **NATIONAL TRAINING COURSES/WORKSHOPS ATTENDED**
		1. Attended a training course on “*NEXT Generation Sequencing*” 14-15 February **2023** at Secretariat Training Institute, Islamabad
		2. Attended a training course on “*NEXT Generation Sequencing*” 16-17 March **2022** at Secretariat Training Institute, Islamabad.
		3. Attended a training course on “*NEXT Generation Sequencing*” 16-17 March **2020** at Secretariat Training Institute, Islamabad.
		4. Attended workshop on “*Biosafety and Biosecurity in Life-Science Research*” 26-28 April, **2016** at Pakistan Academy of Science, Islamabad, Pakistan organized by QAU, Islamabad.
		5. Attended workshop on “*Food Security-Issues, Concerns and Strategies*” organized by NCRD 15-17 November, **2016** at NCRD Islamabad, Pakistan.
		6. Attended workshop on “*Scientific Writing Workshop*”, 27-28 August **2015** at Islamabad organized by Pakistan Academy of Science.
		7. Attended workshops “*Stress Management at Work Place*” 27-28 May **2015**, organize by Pakistan Manpower Institute (PMI), Islamabad.
		8. Attended a training course on “*Facilitators on Farmer Centered Diagnosis Using the Feed Assessment (FEAST) Tool*”, 6-9 November **2014** at Islamabad.
		9. Attended a training course on “*Project Management using MS project*” 17-21 November **2014** at Secretariat Training Institute, Islamabad.
		10. Attended the symposium entitled ‘*National One Health Symposium’* on 18th November **2013** at NARC.
		11. Attended National Poultry Symposium on Poultry and welfair help on 11=12, 2018 in PAMS Arid Agriculture University Rawalpindi-Pakistan.

**Teaching**

##### HEC-approved supervisor Since October 22, 2020 (vide HEC Letter No. HEC/HRD/ASA/2019/30851)

* **Human Resource: RESEARCH STUDENTS SUPERVISED/TRAINED**
* **Post doc: Co supervisor:**
* PhD’s Research Project of Students: **10 Co-supervision /1 Co-supervised**
* M.Phil. Research Project of Students: 50: **10 supervision/ 20 Co-supervised** /**20 Co-supervision/ 4 supervised**
* M.Sc**.** Research Project of Students: **10 Co-supervised**
* B.Sc. Research Project of students**:10 Co-supervised /7 supervised**

**Post Doc Student: TAWAS**

* **Hippolyte Tene Mouafo (2022-2023)**

*Development of probiotic and immune-boosting beverage using Tamarind:*

Centre for Food, Food Security and Nutrition Research, Institute of Medical Research and

Medicinal Plant Studies, PO-Box 13033 Yaoundé, **Cameroon**

1. **PhD Students:** Co-supervision

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| --- | --- | --- | --- | --- |
| **Sr. No** | **Name of Student** | **Name of University** | **Research Theme** | **Year** |
| 1 | M. Irfan Khan | Animal Nutrition Deptt. Arid university, Pakistan | Development and evaluation of indigenous probiotic in promoting broiler performance | 2016-2021 |
| 2 | Fassila Fayyaz Khan | Deptt. of Food science Arid university, Pakistan | Functional Food. | 2015-2022 |
| 3 | Mujeeb Khan | Dept of Pharmacy QAU, Islamabad | GUT BRAIN and probiotic | 2016-2022 |
| 4 | Ahmad Nawaz Khan | Deptt of Biotechnology, Bano Uni | Animal feed | 2016-2022 |
| 5 | M. Osama Butt | Dept of Pharmacy QAU, Islamabad | Ulcer and probiotic | On-going |
| 6 | Maria | Deptt. of Biotechnology, Arid university, Pakistan | NGS | On-going |
| 7 | Allah Nawaz | Comsat University, Islamabad | Neocortical | On-going |
| 8 | Rashid khan | Ripha University, Islamabad | Probiotic preparation | On-going |
| 9 | Saqah | Deptt. of Food science Arid university, Pakistan | Functional Food. | On-going |
| 10 |  | Haripur Uni | Functional Food. | On-going |

1. **M.Phil Students: supervision**

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| --- | --- | --- | --- | --- |
| **Sr. No** | **Name of Student/roll****Number** | **Name of University** | **Research Theme** | **Year** |
| 1 | Aroosa Rustam ms160200008 | Virtual University, Lahore, Pakistan | Isolation and identification of*Staphylococcus aureus* | On-going |
| 2 | Sana Khezar | Virtual University, Lahore, Pakistan | Human Metagenomics | On-going |

##### M. Phil. Students: Co-Supervision

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| **Sr. No** | **Name of Student** | **Name of University** | **Research Theme** | **Year** |
| 1 | Amer | Abasyn University, Islamabad | Poultry Gut and NGS | On-going |
| 2 | Sadia | Abasyn University, Islamabad | Poultry Gut and NGS | On-going |
| 3 | Roma | Abasyn University, Islamabad | Poultry Gut and NGS | On-going |
| 4 | Mehvish | Abasyn University, Islamabad | Poultry Gut and NGS | On-going |

1. **M.Phil Students: Co-Supervised**

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| --- | --- | --- | --- | --- |
| **Sr. No** | **Name of Student/roll Number** | **Name of University** | **Research Theme** | **Year** |
| 1 | Asma Bibi | Hazara, University, Mansahra | Microbial diversity of Fish gut | 2017-18 |
| 2 | M. Naeem | Hazara, University, Mansahra | *Bacillus* for poultry feed. | 2017-18 |
| 3 | Rahee mullah | Hazara, University, Mansahra | Human gut microbiota study | 2017-18 |
| 4 | Kanwal Habib | Virtual University, Lahore | Animal gut microbiota and milk yield | 2017-18 |
| 5 | Sarmir khan | Hazara, University, Mansahra | Buffalo gut Microbial study | 2017-18 |
| 6 | Hammed Khan | Hazara, University, Mansahra | Milk probiotic | 2017-18 |
| 7 | Tariq Khan | Hazara, University, Mansahra | Rumen microbiology of buffalo | 2017-18 |
| 8 | Iram khan | Arid university, Rawalpindi | Poultry gut | 2019-20 |
| 9 | M. Shahid | Hazara, University, Mansahra | Rumen Metagenomics | 2019-20 |
| 10 | Naveed Khan | Hazara, University, Mansahra | Whole genome Sequence, NGS | 2019-20 |
| 11 | Yasir khan | Hazara, University, Mansahra | Nano-tech | 2019-20 |
| 12 | Noshad Khan | Hazara, University, Mansahra | Bacteriocin | 2019-20 |
| 13 | M. Ahmed | Hazara, University, Mansahra | Next Generation Probiotics (NGP) | 2019-20 |
| 14 | M. Jabbar | Islamic university, Bahawalpur | Metagenomics | 2019-20 |
| 15 | Mehvish | Women University of Azad Kashmir Bagh | Lypase | 2019-20 |
| 16 | Iqrah Munzoor | Women University of Azad Kashmir Bagh | AMR (50 strains) | 2019-20 |
| 17 | Lubna Mumtaz | Women University of Azad Kashmir Bagh | (Mice) | 2019-20 |
| 18 | Shagolta Muzar | Women University of AzadKashmir Bagh | Amylase | 2019-20 |
| 19 | Maria Rafiq | Women University of Azad Kashmir Bagh | Nano | 2019-20 |
| 20 | Ulfat Akhatar | Women University of Azad Kashmir Bagh | L.D (Dairy) | On-going |
| 21 | Munaza Saeed | Women University of Azad Kashmir Bagh | L.agilu | On-going |
| 22 | Dur sher | Abasyn University, Islamabad | Antimicrobial resistance | On-going |
| 23 | Nusrat | Abasyn University, Islamabad | Metagenomics (NGS) | On-going |
| 24 | Farazana | Abasyn University, Islamabad | *Lactococcus Lactic* | On-going |
| 25 | Bushrah | Abasyn University, Islamabad | Antimicrobial resistance *S. Aerus* | On-going |
| 26 | Kamran Khan | Abasyn University, Islamabad | ESP, LAB | On-going |
| 27 | Remesha | Sialkot, Universiy,Pakistan | Yeast | On-going |
| 28 | Mahvish | Abasyn University, Islamabad | Fat and probiotic | On-going |
| 29 | Maria | Abasyn University, Islamabad | Glyein and probiotic | On-going |
| 30 | Amer khan | Abasyn University, Islamabad | LAB | On-going |
| 31 | Amin | Abasyn University, Islamabad | Probiotic | On-going |
| 32 | Gull bibi | Kashmir university |  | On-going |
| 33 | Naveed | Bag university | PRGR | On-going |
| 34 | Zahid | Arid university | Fish probiotics | On-going |
| 35 | Yasir  | Abasyn University, Islamabad | Human Gut Metagenomics | On-going |

1. **M.Phil Students: Supervised**

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| **Sr. No** | **Name of Student/roll Number** | **Name of University** | **Research Theme** | **Year** |
| 1 | Sana Abid MS160400102 | Virtual University, Lahore, Pakistan | Screening of *Lactobacillus fermentum* from Buffalo milk for their potential | 2020 |
| 2 | Muhammad Osma | Abasyn University, Islamabad | Buffalo gut microbiota | 2021 |

##### M.Sc Students: Co-supervised

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| **Sr. No** | **Name of Student/roll Number** | **Name of University** | **Research Theme** | **Year** |
| 1 | Urva | Fatima Jinnah University, Islamabad | LAB from pickle | 2018-19 |
| 2 | Umama | Fatima Jinnah University, Islamabad | Fruits. | 2018-19 |
| 3 | Sitarah | Fatima Jinnah University, Islamabad | Dairy products | 2018-19 |

1. **B.Sc. Students: Co-supervised**

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| --- | --- | --- | --- | --- |
| **Sr. No** | **Name of****Student/roll Number** | **Name of University** | **Research Theme** | **Year** |
| 1 | Arej | Abasyn University, Islamabad | Isolation and biochemical Identification of*Lactococcus* | 2018-19 |
| 2 | Chanadani | Abasyn University, Islamabad | 2018-19 |
| 3 | Hefsa Kanwal | Abasyn University, Islamabad | Population Diversity Analysis Using 16 s Ribosomal RNA of Probiotic Bacterial strains | 2019-20 |
| 4 | Amara Nawaz | Abasyn University, Islamabad |
| 5 | Freeha Zulfiqar | Abasyn University, Islamabad |
| 6 | Maria | Abasyn University, Islamabad |  |  |
| 7 | Amara | Abasyn University, Islamabad |

1. **B.Sc. Students: supervised**

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| --- | --- | --- | --- | --- |
| **Sr. No** | **Name of Student/roll****Number** | **Name of University** | **Research Theme** | **Year** |
| **1** | **Maria** | Abasyn University, Islamabad | Probiotic Bacterial strains | 2021-22 |
| 1 | Wafa | Abasyn University, Islamabad | Isolation and biochemical Identification of*Lactococcus* | 2019-20 |
| 2 | semma | Abasyn University, Islamabad | 2019-20 |
| 3 |  |  |  |  |

**PARTICIPATION IN THESIS AND ORAL EXAMINATION COMMITTEES**

* **Examiner, Thesis and Oral Exam of M.Phil / Ph.D students**, Department of Microbiology/ Biotechnology, Quaid-e- Azam University, Islamabad, Pakistan – October, 2018 to date.
* **Examiner, Thesis and Oral Exam of M.Phil / Ph.D students,** Department of Microbiology/ Biotechnology, Virtual University, Lahore – June, 2020 to date.
* **Examiner, Thesis and Oral Exam of M.Phil / Ph.D students**, Department of Microbiology/ Biotechnology, Arid University, Islamabad, Pakistan – October, 2020 to date.
* **Examiner, Thesis and Oral Exam of M.Phil / Ph.D students**, Department of Microbiology/ Biotechnology, Women University Bagh, Kashmir – October, 2021 to date.

# TRAINING

* Training [Workshop Course on (NGS)” organized by ORIC, COMSATS, Islamabad (27th – 28th March, 2019)](http://ww3.comsats.edu.pk/ciitblogs/BlogsDetailsOuter.aspx?ArticleId=144868)
* Training Workshop Course on “NGS organized by Alpha Genomics, Islamabad, 17-18 April, 2019
* Training Workshop Course on “NGS organized by ORIC, COMSATS, Islamabad, August 22-23, 2019.
* Training Workshop Course on “NGS organized by ORIC, COMSATS, Islamabad, March15-16, 2022.

# SUBMISSIONS of NGS data and DNA sequences to GenBank Database

Submission of 16S rRNA gene sequence data of the more than **500 microbial strains from local**, which is published in, The National Center for Biotechnology Information (NCBI); Gene Bank Database of Bethesda, USA, [https://www.ncbi.nlm.nih.gov/.](https://www.ncbi.nlm.nih.gov/)Submission of molecular data of the 3 metagenomic, which is published in DNA Database National Center for Biotechnology Information (NCBI), USA, <https://www.ncbi.nlm.nih.gov/>

**Metagenomics:** 16s amplicon

## Genomic data submission:

* + 1. **Bio Project ID: PRJNA 659343,** Probiotic Analysis of human gut microbial flora
		2. **Bio Project ID: PRJNA 558186**: Development of indigenous probiotic feed additive products to improve productivity of dairy buffalo in cost effective manners

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Strain ID** | **Accession numbers** | **Animal Breed** | **Source** |
| 1. | B1 | SRR9891485 | Early lactating buffalo | Animal Fecal |
| 2. | B2 | SRR9891484 | Middle lactating buffalo | Animal Fecal |
| 3. | B3 | SRR9891486 | Late lactating buffalo | Animal Fecal |
| 4. | H4 | [SRR125325](https://dataview.ncbi.nlm.nih.gov/object/SRR12532570)69 | 16s amplicon: human 4 | Human Fecal |
| 5. | H3 | [SRR12532570](https://dataview.ncbi.nlm.nih.gov/object/SRR12532570) | 16s amplicon: human 3 | Human Fecal |
| 6. | H2 | [SRR1253257](https://dataview.ncbi.nlm.nih.gov/object/SRR12532570)1 | 16s amplicon: human 2 | Human Fecal |
| 7. | H1 | [SRR1253257](https://dataview.ncbi.nlm.nih.gov/object/SRR12532570)2 | 16s amplicon: human 1 | Human Fecal |

# Whole genome sequencing of Probiotic bacteria

## Genomic data submission:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Strain ID** | **Accession numbers** | **Animal Breed/source** | **Identify Bacteria** |
| 1 | SPARC1 | [PRJNA734144](https://www.ncbi.nlm.nih.gov/bioproject/PRJNA734144) | Cheese | Enterococcus Facilus |
| 2 | SPARC2 | [PRJNA734146](https://www.ncbi.nlm.nih.gov/bioproject/PRJNA734146) | Buffalo/gut | Pediococcus pentosaceus |
| 3 | SPARC3 | PRJNA734151 | Goat/gut | Bacillus Subtills |
| 4 | SPARC4 | Under processing | Poultry/gut | Bacillus Subtills |
| 5 | SPARC5 | Under processing | Human Gut | Lactobacillus plantrum |
| 6 | SPARC6 | Under processing | Sahiwal cow gut | Enterococcus Facilus |
| 7 | SPARC7 | Under processing | Poultry gut | Bacillus |
| 8 | SPARC8 | Under processing | Human gut | Enterococcus Facilus |

**Reference:**

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Executive Director SDPI. Pakistan

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**MOTIVATION**

**To enhance my knowledge in the field of food biotechnology/safety/food borne diseases, so that I could be in better position to serve the humanity regard this most crucial aspect of lif**