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Dr. Soumble Zulfiqar

Personal Information

Citizenship: Pakistani
Marital Status: Married
Birth: 24th Feb. 1976, Lahore (Pakistan)
CNIC #: 35202- 2681639-0

Languages

• English • Urdu

Education

2012 **Ph.D. (Biological Sciences)**
School of Biological Sciences, University of The Punjab, Lahore
Topic: Molecular analysis of gene responsible for copper resistance in bacteria isolated from industrial effluents.

2000 **M.Sc. Zoology (1st Div.)**
Zoology Department, University of The Punjab, Lahore
Topic: Effect of synthetic pyrethroid (Fury) on esterases of different strains of *Rhyzopertha dominica*.

1996 **B.Sc. (1st Div.)**
Govt. College for Women, Samanabad, Lahore

1993 **F.Sc. (1st Div.)**
Govt. College for Women, Samanabad, Lahore

1991 **Matriculation (1st Div.)**
Govt. Girls Higher Secondary School, Samanabad, Lahore

Current Position

March 2018 - to date **Assistant Professor (Animal Sciences)**, School of Biological Sciences, University of The Punjab, Lahore

Professional Experience

Aug 2012- March 2018 **Post-Doctoral Fellow**, School of Biological Sciences, University of The Punjab, Lahore
Project: Regulation of copper metallothionein in *Klebsiella pneumoniae*

Jan., 2018 **Focal person, Molecular Biology lab** for Ph.D., King Edward University, Lahore

Oct. 2015 - July 2016 **Assistant Professor (visiting)**, Faculty of Life Sciences, University of Central Punjab, Lahore

Sep.-Nov., 2016 **Focal person, Molecular Biology lab** for Ph.D., King Edward University, Lahore

May-Aug, 2012 **Research Officer**, School of Biological Sciences, University of The Punjab, Lahore

2002 – 03 **Subject specialist (Science)**, City Cadet School, Al-Mumtaz road, Off Multan road, Lahore

Literary Compositions

- Co-edited Urdu Science Encyclopedia published by Urdu Science board, Ministry of Education, Govt. of Pakistan

Research Experience

Aug 2012- March 2018	Post Doc. Fellow	Cell and Molecular Biology	School of Biological Sciences, University of The Punjab, Lahore
June – July 2012	Research officer	Cell and Molecular Biology	School of Biological Sciences, University of The Punjab, Lahore
2004 – 2012	Ph.D.	Biological Sciences	School of Biological Sciences, University of The Punjab, Lahore
1998 – 1999	M.Sc.	Molecular Biology	Department of Zoology, University of The Punjab, Lahore

Research Expertise

- **Microbiology techniques**
 - Establishment of aseptic conditions for bacterial growth
 - Sampling microbes from different types of environment
 - Growing bacteria aerobically and an-aerobically
 - Microbial behavior under different stress conditions
- **Molecular biology techniques**
 - **Manipulation of DNA**
 - Isolation of genomic DNA
 - Amplification of desired fragment of DNA
 - Gene Cloning (DNA gel extraction, ligation, transformation, plasmid isolation, restriction analysis)
 - **Manipulation of RNA**
 - Isolation of total RNA
 - Denaturing gel electrophoresis for qualitative and quantitative analysis
 - cDNA synthesis
 - Post RT PCR
 - **Manipulation of Protein**
 - Poly acrylamide gel electrophoresis
 - Optimization of expression
 - protein purification
 - **Atomic absorption spectrometry**
 - **Quantitative real time PCR**
 - **Enzyme Immunoassays**
- **Bioinformatics**
 - **Comparative analysis:** Genome study, Primer designing, Sequence BLAST, Multiple alignment, Determination of phylogenetic relationship
 - **Structural analysis:** Prediction and analysis of membrane Topology, Secondary structure, Tertiary structure, motifs and domains of protein

Area of Research Interest

My area of research interest has been to investigate metal resistance mechanisms in prokaryotes and protozoans. Cloning, promoter activity and transcriptional profiling of these genes in response to metals have revealed many structural and functional aspects of their role in enabling organisms to grow in the presence of high amounts of the metals.

The application of this research is quite diverse such as development of industrial waste management systems. Bioremediation of toxic metals in the environment may help to reduce their adverse effects including some lethal ones for human health. This study can also lead to development of bioreporters for biomining industry.

The ultimate goal of any research is human betterment. Research in bio medical sciences has more direct implications, therefore, I am also utilizing my expertise in the field of bio medical sciences. For this purpose, I am taking part in projects related to hepatitis, a pulmonary disease COPD and diabetes management.

Statement of interest in research and teaching

As a student, I always have been curious to explore new areas of knowledge. I am ever ready for challenging tasks, which many others usually do not. I believe in my own capabilities and do not prefer to copy others, though I value suggestions put forward by others. Therefore, during M.Sc., Ph.D. and Post Doc. Fellowship, I selected such topics in which new aspects could be found out and was able to discover new facts.

Research, for me, can only be meaningful, if one shares the findings with others. It automatically prompts me to guide the young researchers as this is one of the most effective ways to transfer knowledge to others.

Projects Completed

- Regulation of copper metallothionein in *Klebsiella pneumoniae*
- Molecular Characterization of silver resistance in *Klebsiella pneumoniae*
- Protein Engineering of Cadmium Metallothionein PMCD1 of *Paramecium*
- Antibodies against hepatitis C virus (HCV) envelope proteins

Projects Undergoing

- Gold resistance potential in *Klebsiella pneumoniae* – a molecular approach
- Identification and molecular characterization of metal resistant gene(s) of ciliates from local industrial wastewater
- Molecular Characterization of Znt Regulon for multi-metal resistance in *Klebsiella pneumoniae*
- Characterisation of copper resistant bacteria from copper rich rocks and their probable role for copper mineralization.
- Genetic expression of toll like receptors in COPD
- Genetic expression of intracellular metabolic regulators - mTOR, Akt and AMPK – in response to sodium butyrate treatment in mice.

Research Supervision

- MPhil degrees awarded:2
- MPhil students currently under supervision:2

Researchers/Internees facilitated

Ph.D. Scholars

- Muhammad Tariq Zahid, 2015. Molecular Characterization of metal resistant gene(s) of ciliates from local industrial wastewater. Department of Zoology, Govt. College University, Lahore.
- Gul Afshan, Ph.D. scholar. Antibodies against hepatitis C virus (HCV) envelop proteins. University College of Pharmacy, University of The Punjab, Lahore.
- Ms. Maimoona Imran. Ph.D. scholar. Molecular Characterization of Cus Regulon in Response to Silver in *Klebsiella pneumoniae*. Department of Zoology, University of The Punjab, Lahore. (Thesis writing)
- Ms. Hafsa Saeed. Ph.D. scholar. Molecular Characterization of Znt Regulon for multi-metal resistance in *Klebsiella pneumoniae*. School of Biological sciences, University of The Punjab, Lahore. (Thesis writing)
- Ms. Ayesha Ghauri. Ph.D. scholar. Genetic expression of toll like receptors in COPD. Department of Zoology, University of The Punjab, Lahore. (Research on going)

M. Phil/MS students

- Ms Tabassum Yousaf, (2018) M.Phil. (Biological Sciences). Comparative analysis of gold and copper induced protein profile in *Klebsiella pneumoniae*. School of Biological Sciences, University of The Punjab, Lahore.
- Ms Sidra Noreen, (2018) M.Phil. (Biological Sciences). Molecular characterization of cadmium induced proteins in *Paramecium primaurelia*. School of Biological Sciences, University of The Punjab, Lahore.
- Ms Iram Yaqoob, (2017) M.Phil. (Biological Sciences). Functional characterization of CopA – a p-type ATPase – through gene knockout system. School of Biological Sciences, University of The Punjab, Lahore
- Sana Amjad, (2017) MS (Zoology). Molecular identification of *paramecium* and characterization of cadmium resistant *PMCD1* gene.
- Saleha Batool, (2017) MS (Zoology). Molecular identification of a ciliate and characterization of a novel metallothionein gene *PMMT1*.
- Ms Ayesha Manzoor, (2017) M.Phil. (Biotechnology). Cloning, expression and characterization of alkaline phosphatase gene from *Anoxy bacillus*. Institute of industrial Biotechnology, Govt. College University, Lahore
- Mr Musadak Iqbal (2017) M.Phil. (Biotechnology). Evaluation of promoter activation of copper restant gene from *Klebsiella pneumoniae*. Institute of industrial Biotechnology, Govt. College University, Lahore
- Ms Amina Younas, (2016) M.Phil. (Biological Sciences). Molecular characterization of copper responsive copA, a p.type ATPase from *Klebsiella pneumoniae*. School of Biological Sciences, University of The Punjab, Lahore.
- Ms Sidra Mustafa, (2016) M.Phil. (Biological Sciences). Molecular characterization of CueR, a MerR like transcriptional regulator, against multi-metal resistance in *Klebsiella pneumoniae*. School of Biological Sciences, University of The Punjab, Lahore.
- Ms Hira Nazim, (2016) M.Phil. (Biological Sciences). Molecular characterization of a cadmium metallothionein PMCD1 and a novel metallothionein PMMT1 in *Paramecium*. School of Biological Sciences, University of The Punjab, Lahore.
- Ms Abeedha Tu-Allah, M.Phil. (Biological Sciences). Gold resistance potential in *Klebsiella pneumoniae* – a molecular approach. School of Biological Sciences, University of The Punjab, Lahore.
- Ms Asra Ghaus, (2015) M.Phil. (Zoology). Protein Engineering of Cadmium Metallothionein PMCD1 of *Paramecium*. Zoology Department, University of The Punjab, Lahore.

- Ms. Madiha Shad, (2015) M.Phil. (Biological Sciences). Molecular Characterization of Cue Regulon in Response to Silver in *Klebsiella pneumoniae*. School of Biological Sciences, University of The Punjab, Lahore.
- Ms. Naseem Ramzan, (2015) M.Phil. (Biosciences). Molecular characterization of copper responsive promoter - *pcusCFBA* in *klebsiella pneumoniae*. Department of Biosciences, COMSATS institute of Information technology, Sahiwal Campus.
- Mr. Khuram Shehzad, (2014) M.S. (Biochemistry). Expression and characterization of multi-copper oxidase (CueO) in *Klebsiella pneumoniae*. Institute of Biochemistry and Biotechnology, University of The Punjab, Lahore
- Ms. Sana Tahir (2013) M.Phil. (Biotechnology). Regulation of copper resistance genes in *Klebsiella pneumoniae*. Institute of industrial Biotechnology, Govt. College University, Lahore
- Ms. Saima Akram (2013) M.Phil. (Microbiology). Molecular analysis of *copA* gene – a P type ATPase - in *Klebsiella pneumoniae*. Institute of industrial Biotechnology, Govt. College University, Lahore

Internees

- Maria Tariq (Roll # 7) BS Biochemistry 5th semester, Institute of Biochemistry and Biotechnology, University of The Punjab, Lahore 2 months (5.10.15 - 5.12.15)
- Nageen Khan (Roll # 34) BS Biochemistry 5th semester, Institute of Biochemistry and Biotechnology, University of The Punjab, Lahore 2 months (5.10.15 - 5.12.15)
- Hanfa Ashfaq (Roll # 5) BS Biochemistry 5th semester, Institute of Biochemistry and Biotechnology, University of The Punjab, Lahore 2 months (5.10.15 - 5.12.15)
- Ms. Rabia Fazal (2008-va-343) B.S. (Hons.) (Biotechnology and Informatics), Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Lahore, Pakistan, from April 6 to June 2, 2012
- Ms. Madiha Iqbal (2008-va-338) B.S. (Hons.) (Biotechnology and Informatics), Institute of Biochemistry and Biotechnology, University of Veterinary and Animal Sciences, Lahore, Pakistan, from April 6 to June 2, 2012
- Ms. Nabila Akram (2004-GCUF-683-521), B.Sc. (Bioinformatics), Govt. College University, Faisalabad, Pakistan, from April – May 2008

Others

- Dr. Fehmida Farrukh Khan, Senior Registrar. Detection of functional and structural autonomy in euthyroid multinodular goiter. Endocrinology Unit & DMC, SIMS/Services Hospital, Lahore

Scholarship/Award/Honour

- Chairperson of a Session - Cell and Molecular Biology, Physiology, Genetics - 39th Pakistan Congress of Zoology (International) March 4-6, 2019. Department of Zoology, Islamia College University, Peshawar
- Co-chairperson of a Session - Cell and Molecular Biology, Physiology, Genetics - 38th Pakistan Congress of Zoology (International) Feb. 27 – March 1, 2018. University of The Punjab, Lahore
- Founding member and finance secretary, The Shakoorian society of Biomedical Researchers
- Co-chairperson of a Session - Cell and Molecular Biology, Physiology, Genetics - 37th Pakistan Congress of Zoology (International) Feb. 28 – March 2, 2017. GC University, Faisalabad
- Co-chairperson of a Session - Cell and Molecular Biology, Physiology, Genetics - 36th Pakistan Congress of Zoology (International). Feb. 16-18, 2016. Department of Zoology, University of Sindh, Jamshoro

- Co-chairperson of a Session - Cell and Molecular Biology, Physiology, Genetics - 35th Pakistan Congress of Zoology (International). March 1-4, 2015. Centre of Excellence in Marine Biology, University of Karachi, Karachi
- Co-chairperson of a Session - Cell and Molecular Biology, Physiology, Genetics - 34th Pakistan Congress of Zoology (International). Feb. 25-27, 2014. Bahauddin Zakariya University, Multan
- Indigenous scholarship for Ph.D. program (2004-2029). School of Biological Sciences, University of The Punjab, Lahore
- **President Talent Farming Scheme Scholarship** during M.Sc. under the auspices of University Grants Commission (1998)
- Certificate of honor obtained in Teacher's Training Workshop (2002) under the auspices of City Cadet School, Al-Mumtaz road, Off Multan road, Lahore

Congresses/Symposia/workshop Organized

- National Workshop on Recombinant DNA technology, April 8-13, 2019. School of Biological sciences, University of The Punjab, Lahore
- 39th Pakistan Congress of Zoology (International) March 4-6, 2019. Department of Zoology, Islamia College University, Peshawar
- National Workshop on Production & Purification of Recombinant Proteins, Nov. 12-17, 2018. School of Biological sciences, University of The Punjab, Lahore
- National Workshop on Recombinant DNA technology, April 2-7, 2018. School of Biological sciences, University of The Punjab, Lahore
- 38th Pakistan Congress of Zoology (International) Feb. 27 – March 1, 2018. University of The Punjab, Lahore
- Child Abuse Awareness Seminar, Feb, 17, 2018. The Shakoorian Society of Biomedical Researchers. Children Library Complex, Shahrah Aiwan e Sannat O Tijarat, Lahore.
- National Workshop on Recombinant Protein Production & Purification, Nov. 6-11, 2017. School of Biological sciences, University of The Punjab, Lahore
- National Workshop on Recombinant DNA technology, March 3-8, 2017. School of Biological sciences, University of The Punjab, Lahore
- 37th Pakistan Congress of Zoology (International). Feb. 28 – March 2, 2017. GC University, Faisalabad
- Second National Workshop on Recombinant DNA technology, April 25-30, 2016. School of Biological sciences, University of The Punjab, Lahore
- 36th Pakistan Congress of Zoology (International). Feb. 16-18, 2016. Department of Zoology, University of Sindh, Jamshoro
- 35th Pakistan Congress of Zoology (International). March 1-4, 2015. Centre of Excellence in Marine Biology, University of Karachi, Karachi
- 34th Pakistan Congress of Zoology (International). Feb. 25-27, 2014. Bahauddin Zakariya University, Multan
- First National Workshop on Recombinant DNA technology, April 22-29, 2013. School of Biological sciences, University of The Punjab, Lahore
- International symposium on glycoproteins in health and diseases, May 27-29, 2008. School of Biological sciences, University of The Punjab, Lahore
- International symposium on Nanochemistry of enzymes. Sep. 20-21, 2006. School of Biological sciences, University of The Punjab, Lahore

Conferences/Symposia/Workshops attended

- International Conference of Punjab University 2019 “Recent Innovations in Molecular Sciences”. Nov. 6-8, 2019
- 39th Pakistan Congress of Zoology (International) March 4-6, 2019. Department of Zoology, Islamia College University, Peshawar
- 38th Pakistan Congress of Zoology (International) Feb. 27 – March 1, 2018. University of The Punjab, Lahore
- Child Abuse Awareness Seminar, Feb, 17, 2018. The Shakoorian Society of Biomedical Researchers. Children Library Complex, Shahrah Aiwan e Sannat O Tijarat, Lahore.
- 37th Pakistan Congress of Zoology (International). Feb. 28 – March 2, 2017. GC University, Faisalabad
- Workshop on NGS data analysis. March 3-4, 2016. COMSATS Institute of Information Technology (CIIT) Islamabad, Pakistan.
- 36th Pakistan Congress of Zoology (International). Feb. 16-18, 2016. Department of Zoology, University of Sindh, Jamshoro
- 35th Pakistan Congress of Zoology (International). March 1-4, 2015. Centre of Excellence in Marine Biology, University of Karachi, Karachi
- 34th Pakistan Congress of Zoology (International). Feb. 25-27, 2014. Bahauddin Zakariya University, Multan
- Hands on experience workshop on Enzyme Immunoassays. Dec. 10-12, 2013. National health Research Complex at Shaikh Zayed Medical Complex, Lahore
- 32nd Pakistan Congress of Zoology (International). March 6-8, 2012. Govt. College University, Lahore
- 30th Pakistan Congress of Zoology (International). March 2-4, 2010. University of Agriculture, Faisalabad
- 29th Pakistan Congress of Zoology (International). Feb. 24-26, 2009. University of Sindh, Jamshoro
- 28th Pakistan Congress of Zoology (International). March 18-20, 2008. Govt. College University, Faisalabad
- International symposium on glycoproteins in health and diseases, May 27-29, 2008. School of Biological sciences, University of The Punjab, Lahore
- 27th Pakistan Congress of Zoology (International). Feb. 27- March 1, 2007. Bahauddin Zakriya University, Multan
- International symposium on Nanochemistry of enzymes. Sep. 20-21, 2006. School of Biological sciences, University of The Punjab, Lahore
- 26th Pakistan Congress of Zoology (International). April 4-6, 2006, University of The Punjab, Lahore
- 25th Pakistan Congress of Zoology. March 17-19, 2005. Agriculture University, Tandujam
- Teachers training Workshop August 1-10, 2002. City Cadet School, Al-Mumtaz road, Off Multan road, Lahore
- 20th Pakistan Congress of Zoology. March 28-30, 2000. University of Sindh, Jamshoro
- 19th Pakistan Congress of Zoology. April 19-21, 1999. NARC (PARC), Islamabad
- 18th Pakistan Congress of Zoology. April 20-22, 1998, University of The Punjab, Lahore

National and International Publications (Impact Factor 16.386)

1. Afshan, G., **Zulfiqar, S.**, Mehboob, S., Khan, M. T. J. and Shakoori, A. R., 2019. Production of antibodies against hepatitis C virus envelope glycoprotein E2- A potential vaccine against HCV infection. *Pak. J. Zool.*, **51(6)**: 2311-2322. (Impact Factor 0.790)
2. **Zulfiqar, S.**, Shehzad, K., Tahir, S., and Shakoori, A. R., 2019. Dual role of multicopper oxidase of *Klebsiella pneumoniae* as a copper homeostatic element and a novel alkaline laccase with potential application in green chemistry. *Pak. J. Zool.*, **51(1)**: 107-115. (Impact Factor 0.790)
3. Adalat, R., Saleem, F., Bashir, A., Ahmad, M., **Zulfiqar, S.**, Shakoori, A. R., 2019. Multiple upstream start codons (AUG) in 5' untranslated region enhance translation efficiency of cry2Ac11 without helper protein. *J. Cell. Biochem.*, **120(2)**: 2236-2250. (Impact Factor 3.448)
4. Zahid, M. T., Shakoori, F. R., **Zulfiqar, S.**, Al-Ghanim, K. A., Shakoori, A. R., 2018. Growth characteristics, metal uptake and expression analysis of copper metallothionein in a newly reported ciliate, *Tetrahymena farahensis*. *Pak. J. Zool.*, **50(3)**: 1171-1181 (Impact Factor 0.547) (Cited by 1)
5. Shakoori, T. A., **Zulfiqar, S.**, Khawaja, K. I. and Masud, F., 2018. Effect of Butyrate on Genetic Expression of Sirt1/AMPK and Akt/mTOR Axes in Murine Adipose Tissue. *Pak. J. Zool.*, **50(2)**: 515-522 (Impact Factor 0.547)
6. Khan, Z., Rehman, A., Hussain, S. Z., Nisar, M. N., **Zulfiqar, S.** and Shakoori, A. R., 2016. Cadmium resistance and uptake by bacterium, *Salmonella enterica* 43C, isolated from industrial effluent. *AMB Express*, **6**:54-69. (impact factor 1.825)
7. Zahid, M. T., Shakoori, F. R., **Zulfiqar, S.**, Ahmed, I., Al-Ghanim, K., Mehboob, S. and Shakoori, A. R., 2016. Molecular Characterization of a Copper Metallothionein Gene from a Ciliate *Tetrahymena farahensis*. *J. Cell. Biochem.*, **117(8)**:1843-1854 (Impact Factor 3.085) (4 citations)
8. Khan, Z., Hussain, S. Z., Rehman, A., **Zulfiqar, S.** and Shakoori, A. R., 2015. Evaluation of cadmium resistant bacterium, *Klebsiella pneumoniae*, isolated from industrial wastewater for its potential Use to bioremediate environmental cadmium. *Pak. J. Zool.*, **47(6)**: 1533-1543 (Impact Factor 0.478)
9. Zahid, M. T., Shakoori, F. R., **Zulfiqar, S.**, Jahan, N. and Shakoori, A. R., 2014. A New Ciliate Species, *Tetrahymena farahensis*, isolated from the industrial wastewater and its phylogenetic relationship with other members of the genus *Tetrahymena*. *Pak. J. Zool.* **46(5)**: 1433-1445 (Impact Factor 0.404)
10. **Zulfiqar, S.** and Shakoori, A. R., 2012. Molecular characterization, metal uptake and copper induced transcriptional activation of efflux determinants in copper resistant isolates of *Klebsiella pneumoniae*. *Gene*, **510**: 32-38 (Impact Factor 2.196) (5 citations)
11. Zahid, N., **Zulfiqar, S.** and Shakoori, A. R., 2012. Functional analysis of *cus* operon promoter of *Klebsiella pneumoniae* using *E. coli lacZ* assay. *Gene*, **495**: 81-88 (Impact Factor 2.196) (2 citation)
12. Shakoori, A. R., Ismail, S., **Zulfiqar, S.** and Mujeeb, K. A., 2004. Effect of α -cypermethrin on esterases of 6th instar larvae and 10 days old adults of three different strains of *Tribolium castaneum*. *Pak. J. Zool.*, **36(3)**: 173–188 (Impact Factor 0.08) (1 citation)

Conference/symposium publications

Zulfiqar, S., Zaheer, S. and Shakoori, T.A. "Sodium butyrate- a potential anti-cancer drug via decreased expression of mTOR and Sirt1." International Conference of Punjab University 2019 "Recent Innovations in Molecular Sciences". Nov. 6-8, 2019

Zahoor, A., Ali, F. **Zulfiqar, S.** Tariq, N. H., Shahid, H. R. N., Aziz, T. and Awais, H. B. "Synthesis, characterization and antimicrobial properties of Al-Cu-Fe

quasicrystals.” International Symposium on Advances in Metallurgy & Materials 2019

Afshan, G., **Zulfiqar, S.**, Khan, M.T.J. and Shakoori, A.R. “Development of antibodies against hepatitis C virus envelope glycoproteins E1 and E2.” 38th Pakistan Congress of Zoology (International) Feb. 27 – March 1, 2018. University of The Punjab, Lahore.

Yousaf T., **Zulfiqar, S.** and Shakoori, A.R. “Identification of a novel gold specific homeostatic system in *Klebsiella pneumoniae*” 38th Pakistan Congress of Zoology (International) Feb. 27 – March 1, 2018. University of The Punjab, Lahore.

Mustafa S., **Zulfiqar, S.** and Shakoori, A.R. “Molecular characterization of CueR, a MerR like transcriptional regulator, against multi-metal resistance in *Klebsiella pneumoniae*” 37th Pakistan Congress of Zoology (International). Feb. 28 – March 2, 2017. GC University, Faisalabad.

Saeed, H., **Zulfiqar, S.** and Shakoori, A.R. “Molecular characterization of *znt* regulon for multi-metal resistance in *Klebsiella pneumoniae*” 37th Pakistan Congress of Zoology (International). Feb. 28 – March 2, 2017. GC University, Faisalabad.

Younas, A., **Zulfiqar, S.** and Shakoori, A.R. “Molecular characterization of copper responsive CopA – a P type ATPase – from *Klebsiella pneumoniae*” 37th Pakistan Congress of Zoology (International). Feb. 28 – March 2, 2017. GC University, Faisalabad.

Afshan, G., **Zulfiqar, S.**, Khan, M.T.J. and Shakoori, A.R. “Antibodies against hepatitis C virus 3a envelope glycoproteins E1 and E2 following cloning, expression and protein purification in Pakistan.” 37th Pakistan Congress of Zoology (International). Feb. 28 – March 2, 2017. GC University, Faisalabad.

Amjad, S., Nizam, H., **Zulfiqar, S.** and Shakoori, A.R. “Isolation and characterization of cadmium resistant *Paramecium* sp.” 37th Pakistan Congress of Zoology (International). Feb. 28 – March 2, 2017. GC University, Faisalabad.

Nizam, H., Tasneem, F., **Zulfiqar, S.** and Shakoori, A.R. “Enhanced cadmium binding ability in response to noval modifications in a *Paramecium* cadmium metallothionein PMCD1” 37th Pakistan Congress of Zoology (International). Feb. 28 – March 2, 2017. GC University, Faisalabad. (Best presentation award)

Batool, S., Nizam, H., **Zulfiqar, S.** and Shakoori, A.R. “Molecular characterization of a novel metallothionein PMMT1 in *Paramecium* sp.” 37th Pakistan Congress of Zoology (International). Feb. 28 – March 2, 2017. GC University, Faisalabad.

Shakoori T., Irfan, K., **Zulfiqar S.**, Masud, F. “Genetic expression of mTOR, Akt & AMPK with sodium butyrate treatment in mice.” 36th King Edward Medical University International Annual Scientific Symposium. 19 Dec. 2016. King Edward Medical University, Lahore.

Allah A. T., **Zulfiqar, S.** and Shakoori, A. R. “Molecular Dependence of Gold Resistance on Copper Responsive Genes in *Klebsiella pneumoniae*.” 36th Pakistan Congress of Zoology (International). Feb. 16-18, 2016. Department of Zoology, University of Sindh, Jamshoro.

Shehzad, K., **Zulfiqar, S.** and Shakoori, A. R. “Cloning, expression and characterization of multicopper oxidase (CueO) in *Klebsiella pneumoniae* KW.” 35th Pakistan Congress of Zoology (International). March 1-4, 2015. Centre of Excellence in Marine Biology, University of Karachi, Karachi.

Zulfiqar, S., Akram, S. and Shakoori, A. R. “Molecular characterization and copper induced transcriptional analysis of *copA*, a copper translocating p-type ATPase, of *Klebsiella pneumoniae*.” 34th Pakistan Congress of Zoology (International). Feb. 25-27, 2014. Bahauddin Zakariya University, Multan.

Tahir, S., **Zulfiqar, S.** and Shakoori, A. R. “Cloning and Expression Analysis of CueR - a MerR like Transcriptional Activator - from *Klebsiella pneumoniae* Isolated from Industrial Effluents.” 33rd Pakistan Congress of Zoology (International). April 2-4, 2013. Pakistan Museum of Natural History, Islamabad.

Zulfiqar, S. and Shakoori, A. R. “Structural analysis of *cus* regulon of *Klebsiella pneumoniae* involved in copper resistance.” 32nd Pakistan Congress of Zoology (International). March 6-8, 2012. University of Sindh, Jamshoro.

Tahir, S., **Zulfiqar, S.** and Shakoori, A. R. "Amplification and cloning of *cueO* and *cueR* genes responsible for Copper resistance in *Klebsiella pneumoniae*." 32nd Pakistan Congress of Zoology (International). March 6-8, 2012. University of Sindh, Jamshoro

Akram, S., **Zulfiqar, S.** and Shakoori, A. R. "Amplification and cloning of *copA*, a copper translocating p-type ATPase in *K. pneumoniae*." 32nd Pakistan Congress of Zoology (International). March 6-8, 2012. University of Sindh, Jamshoro.

Zulfiqar, S. and Shakoori, A. R. "Quantitative expression analysis of *cus* operon in *Klebsiella pneumoniae* at transcriptional level through real time PCR." 30th Pakistan Congress of Zoology. March 2-4, 2010. University of Agriculture, Faisalabad.

Zulfiqar, S. and Shakoori, A. R. "Identification, cloning and sequence analysis of *cus*-operon of copper resistant *Klebsiella pneumoniae*." 29th Pakistan Congress of Zoology. Feb. 25-27, 2009. University of Sindh, Jamshoro.

Zulfiqar, S. and Shakoori, A. R. "Cloning of gene responsible for copper accumulation in bacteria isolated from industrial effluents". 28th Pakistan Congress of Zoology. March 18-20, 2008. Govt. College University, Faisalabad.

Zulfiqar, S., and Shakoori, A. R. "Determination of copper resistance in bacteria". 26th Pakistan Congress of Zoology (International). April 4-6, 2006. University of The Punjab, Lahore.

Zulfiqar, S., "Educational Models and Strategies." Teachers training Workshop. Aug. 1-10, 2002. City Cadet School, Al-Mumtaz road, Off Multan road, Lahore.

Zulfiqar, S., Ismail, S., Mujeeb, K. A. and Shakoori, A.R. "Analysis of esterases of different strains of *Rhizopertha dominica* as indicator of resistance against a synthetic pyrethroid (*Fury*)." 20th Pakistan Congress of Zoology. March 28-30, 2000. University of Sindh, Jamshoro.

Zulfiqar, S., Mujeeb, K. A. and Shakoori, A. R., "Effect of pyrethroid (*Fury*) on different strains of *Rhizopertha dominica*." 19th Pakistan Congress of Zoology. April, 19-21, 1999. NARC (PARC), Islamabad.

Professional Membership

- Life fellow of Zoological Society of Pakistan
- Founding member and finance secretary, The Shakoorian society of Biomedical Researchers

References

- Prof. Dr. A. R. Shakoori,
School of Biological Sciences, University of The Punjab, Lahore
Phone 92-42-99230133 Fax 92-42-99230980
Email arshaksbs@yahoo.com; arshakoori.sbs@pu.edu.pk
- Prof. Dr. Javed Iqbal,
School of Biological Sciences, University of The Punjab, Lahore
Phone 92-42-99230966 Fax 92-42-99230980
Email javediqbal1942@yahoo.com