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## RAAZIA TASADDUQ (PhD)

[https://scholar.google.com/citations?hl=en&user=vjG8JsAAAAAJ&view\\_op=list\\_works&gmla=AETOMgEWIFXaA8-e41bczOKcqZlrwvl-FG2i5SBXVpOHMWrnGyjO9gPFFKOL-9KS9YE2XejBEcjrmaZl3nqosmwnFzq3T8cnzdAK5w#d=gs\\_hdr\\_drw&t=1720201903934](https://scholar.google.com/citations?hl=en&user=vjG8JsAAAAAJ&view_op=list_works&gmla=AETOMgEWIFXaA8-e41bczOKcqZlrwvl-FG2i5SBXVpOHMWrnGyjO9gPFFKOL-9KS9YE2XejBEcjrmaZl3nqosmwnFzq3T8cnzdAK5w#d=gs_hdr_drw&t=1720201903934)

### Personal Statement

Passionate Cell and Molecular Biologist with 10+ years of extensive experience in Higher Education and research. Proficient in research project development, guiding research students and fostering dynamic laboratory experiences. A motivated researcher and teacher who encourages students to be creative and enable them to push boundaries. Committed to create an inclusive learning environment and inspire females to join STEM fields.

### Work Experience

#### Assistant Professor (Aug 2014- till to date)

Department of Biochemistry  
Kinnaird College for Women, Pakistan

#### Lecturer (Jan 2024-June 2024)

Department of Biochemistry  
Kinnaird College for Women, Pakistan

**Courses taught to MPhil:** Chemistry of Biomolecules, Advances in Biochemistry, Advanced Techniques in Biochemistry and Molecular Biology.

**Courses taught to BS:** Biochemical Techniques, Biochemical Communications, Immunology, Human Biochemistry and Diseases, Microbial Biochemistry, Disease and Inheritance, Water and Foodborne Diseases, Science of Hormones.

#### Editorial board member

- Pakistan Journal Zoology (since 2018)
- BIOMEDICUS: Biomedicus: Journal of Biological and Biomedical Frontiers (since 2025)

### Current Research Interests

My projects are based on bioinspiration with the focus on finding innovative and sustainable solutions for the challenges that affect the health sector and environment. Current projects are:

- Repellent activity of plant oils against *Aedes aegypti*, a dengue vector
- Antimicrobial potential of phytochemical constituents of plant extracts (*I. verum* and *P. betel*)
- Development of eco-friendly sanitary napkins
- Development of cellulose from agrowaste

### Skills

#### Teaching and Mentoring

- Research project and thesis advisor
- Teaching graduate and undergraduate courses
- Student counseling
- Curriculum development

#### Research and Lab skills

- Culturing of animal cell lines
- Osteogenic differentiation
- Natural product research with respect to bone, antimicrobials and mosquito repellents
- Drug target prediction and protein drug interaction
- Microbial culturing and identification
- Antimicrobial assays
- Gene expression analysis
- Restriction Fragment Length Polymorphism Analysis (RFLP)
- GC-MS data analysis

#### Computer skills

- Microsoft Office
- GraphPad
- Bioinformatics tools

## Education

### Ph. D. (2014)

**Institute:** School of Biological Sciences, University of the Punjab, Lahore.

**Thesis Advisor:** Dr AR Shakoori

**Thesis Title:** Osteogenic potential of herb, *Cissus quadrangularis*: Effect of ethanolic extract on differentiation of mouse pre-osteoblast cell line, MC3T3-E1

Part of Ph. D. research was conducted at Drs. Gary & Janet Stein Laboratory, College of Medicine, University of Vermont, VT, USA.

Ph. D. course work CGPA: 3.966

GRE-ETS (Biochemistry, Cell & Molecular Biology):  
Score 670, percentile 92.

### B. Sc. (Hons.) (2003-2007)

**Institute:** Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore.

**Thesis title:** Association between a variation rs235678 in the *bmp2* gene and bone mineral density in local osteoporotic female population.

**Thesis Advisor:** Dr AR Shakoori

CGPA 3.93/4.00 (83%), Grade: B

## Languages

- Urdu (mother tongue)
- English

## Professional Affiliations

- Life-time member of Zoological Society of Pakistan, since 2018.
- Member of the Executive Council, Zoological Society of Pakistan, since 2018.

## Thesis Supervision

MPhil students: 17

BS students: 43

## Thesis Co-supervision

MPhil students: 2

## Publications

1. **Tasadduq R**, Shahid S, Younus A, Ajmal L, Ajmal S, Chaudhry KA, Younas H, Naveed H. Effect of Caffeine and Soda Consumption on the Level of Serum Electrolytes and Hepatic Enzymes in Healthy Population of Punjab: A Cross-Sectional Analysis. *Curr Nutr Food Sci*. Available online. (IF=0.8)
2. Younas H, Shahid M, Khan Z, Fatima K, **Tasadduq R**. Investigating the association of Angiotensin II Type I Receptor A1166C Polymorphism with Breast Cancer Risk in the Pakistani Population. *Asian Pac J Cancer Prev*. 2024, 1;25(1):79-85.
3. Akhtar S, Shoaib A, Javiad I, Qaisar U, **Tasadduq R**. Farmyard manure, a potential organic additive to reclaim copper and *Macrophomina phaseolina* stress responses in mash bean plants. *Sci Rep*. 2023, 1;13(1):14383. (IF=3.8)
4. Toor RH, Tasadduq R, Lian JB, Stein JL, Stein GS and Shakoori AR. *Cissus quadrangularis* (Hexane Fraction) inhibits RANK-L induced osteoclast differentiation of murine macrophage RAW264.7 cell line. *Pakistan J Zool*. 2022, 1-16. (IF=0.78)
5. Ajmal S, Shafqat M, Ajmal L, Younas H, **Tasadduq R**, and Mahmood N. Evaluation of Anti-cancer and Anti-proliferative Activity of Medicinal Plant Extracts (Saffron, Green Tea, Clove, Fenugreek) on Toll Like Receptors Pathway. *Nat Prod Sci*. 2022. 28(3): 121-129.
6. Ajmal L, Hamid A, Raza FA, Chaudhary SU, Iman K, Ajmal S, Younas H, Khalid R, Iqbal M, **Tasadduq R**. Repellent activity of trans-anethole and tea tree oil against *Aedes aegypti* and their interaction with OBP1, a protein involved in olfaction. *Entomologia Experimentalis et Applicata*. 2022, 170: 547– 554. (IF=2.25)

7. Ajmal L, Ajmal S, Ajmal M, Nawaz G, Toor RH, Younas H, Sheikh, **Tasadduq R**. HLA System and its participation in recurrent pregnancy loss. Pakistan J Zool. 2022, 54(4),1905-1916. (IF=0.78)
8. **Tasadduq R**, Ajmal L, Batool F, Zafar T, Babar A, Riasat A, Shakoori AR. Interplay of immune components and their association with recurrent pregnancy loss. Human Immunolo. 2021, 82(3): 162-169. (IF=2.41)
9. Toor RH, Nasir Z, Tariq M, **Tasadduq R**, Gardner QA, Zaman W., Lian JB, Stein JL, Stein GS and Shakoori AR. Bioactivity Guided Isolation and Identification of Anti-adipogenic Constituents from n-Butanol Fraction of *Cissus quadrangularis*. Critical Rev Eukaryotic Gene Exp 2020, 30:510-541. (IF=2.15)
10. Toor RH, Malik S, Qamar H, Batool F, Tariq M, Nasir Z, **Tasadduq R**, Lian JB, Stein JL, Stein GS and Shakoori AR. Osteogenic potential of hexane and dichloromethane fraction of *Cissus quadrangularis* on murine preosteoblast cell line MC3T3-E1 (subclone 4). J Cell Physiol. 2019, 234(12):23082-23096 (IF=4.5)
11. Toor RH, **Tasadduq R**, Adhikari A, Chaudhary MI, Lian JB, Stein JL, Stein GS and Shakoori, AR. Ethyl acetate and n-butanol fraction of *Cissus quadrangularis* promotes the mineralization potential of murine pre-osteoblast cell line MC3T3-E1 (sub-clone 4). J Cell Physiol. 2019, 234(7):10300-10314. (IF=4.5)
12. Saqib S, Akram, A, Halim SA and **Tassaduq R**. Sources of  $\beta$ -galactosidase and its applications in food industry. 2017, 3 Biotech. 7(1):79. (IF=0.92)
13. **Tasadduq R**, Gordon J, Al-Ghanim KA, Lian JB, Van Wijnen AJ, Stein JL, Stein GS and Shakoori AR. Ethanol extract of *Cissus quadrangularis* enhances osteoblast differentiation and mineralization of murine pre-osteoblast cell line, MC3T3-E1. J Cell Physiol. 2017, 232: 540-547. (IF=4.0)
14. **Tasadduq R**, Bibi A, Bibi N and Shakoori AR. Association between a variation rs235678 in the bmp2 gene and bone mineral density in local osteoporotic female population. 2014, Pakistan J Zool. 46(1):261-266. (IF=0.54)

## Awards

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- **Thanassi-Nutter award** (Jan-June, 2013) for best semester presentation, Department of Biochemistry, College of Medicine, University of Vermont, VT, USA.
- Awarded **HEC-IRSIP** (International Research Initiative Program) fellowship for six months, 2012.
- **Studentship** for PhD from School of Biological Sciences, University of the Punjab, 2008.
- **Distinction** (1st Position, Gold Medal), B. Sc. (Hons.) from Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore.
- **Merit Scholarship**, BSc. Microbiology and Molecular Genetics, 2003-2007.
- **Yusuf Wahab Award**, 1<sup>st</sup> position in Lahore Diocese Board of Education, in O-Levels, 2000.

## Administrative Duties

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- Served as external reviewer for the shortlisting of the candidate for Assistant Professor and Lecturer for Department of Biotechnology, Kinnaird College for Women, Lahore. (May 2020, April 2023, April 2024).
- Member of the synopsis and thesis defense committee.
- Member of the post-graduate Board of Studies committee of Department of Biochemistry, Kinnaird College for Women, Lahore.
- Member of the post-graduate Self-Assessment Report (SAR) committee of Department of Biochemistry, Kinnaird College for Women, Lahore.
- In-charge of the equipment maintenance of Biochemistry Laboratory, Department of Biochemistry, Kinnaird College for Women, Lahore.

## Other Academic activities

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- **Peer-reviewed the articles** for Pakistan Journal of Zoology, Pakistan Journal of Biochemistry and Biotechnology, Journal of Pregnancy & Newborn care, Experimental and Therapeutic Medicine, Human Fertility, CEOG, BBIH.
- Served as the **external examiner** for the MPhil viva voce for the LCWU, UVAS, PU, LGU, The Women University Multan, Minhaj University, Lahore.

## Presentations

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- Javaid Z and **Tasadduq R.** Determination of chemical constituents of *Melaleuca alternifolia* oil and their in-silico interaction with OBP1 of *Aedes aegypti*. 15<sup>th</sup> Biennial International Conference of the Pakistan Society for Biochemistry and Molecular Biology (PSBMB), School of Biological Sciences, University of the Punjab, Lahore. 14<sup>th</sup>-17<sup>th</sup> April, 2025. **(Poster)**
- Naveed H and **Tasadduq R.** Molecular docking studies of *Syzygium aromaticum* oil components exhibiting repellent activity against odorant receptor 4 of *Aedes aegypti*. Kinnaird's 3<sup>rd</sup> International Conference on Science, Technology and Innovation, Kinnaird College for Women, Lahore. 18<sup>th</sup> -20<sup>th</sup> February, 2025. **(Oral)**
- Ashraf M, Zulfiqar Z, Khalid R and **Tasadduq R.** Determination of antibacterial activity of ethyl acetate extract of *Piper betel* against *Pseudomonas aeruginosa*, *Citrobacter* and *Klebsiella*. 41<sup>st</sup> Pakistan Congress of Zoology-International. Institute of Zoology, University of Punjab, Lahore. 16<sup>th</sup>-18<sup>th</sup> March, 2023. **(Oral)**
- Qadeer Q, Khalid R and **Tasadduq R.** Cloning of OBP1 gene from *Aedes aegypti* without signal peptide into expression host *E. coli* BL21. 41<sup>st</sup> Pakistan Congress of Zoology-International. Institute of Zoology, University of Punjab, Lahore. 16<sup>th</sup>-18<sup>th</sup> March, 2023. **(Oral)**
- **Tasadduq R** and Bhatti AA. Antimicrobial activity of fractions of ethyl acetate extract of *Illicium verum*. Kinnaird's 2nd International Conference on Science, Technology and Innovation, Kinnaird College for Women, Lahore. 8<sup>th</sup> -10<sup>th</sup> March, 2023. **(Oral)**
- **Tasadduq R** and Dur-E-Najjaf. In silico analysis of repellent activity of Dimesterol and Chavicol against *Aedes aegypti* (Oral). First Virtual Pakistan Congress of Zoology. (International). (40th Pakistan Congress of Zoology – International). 17<sup>th</sup> -19<sup>th</sup> December, 2021. **(Oral)**
- **Tasadduq R**, Gordon J, Lian J, Stein JL, van Wijnen AV, Stein GS, Shakoori AR. Osteogenic effect of Ethanolic Extract of *Cissus quadrangularis* on differentiation of Murine PreOsteoblast Cell Line, MC3T3-E1(Oral). Kinnaird College for Women, Lahore. 2<sup>nd</sup> -4<sup>th</sup> April, 2019. **(Oral)**
- Dur-E-Najjaf, **Tasadduq R.** Molecular Identification of Bacterial Strains Isolated From Saishu, Skardu. Kinnaird College for Women, Lahore. 2<sup>nd</sup> -4<sup>th</sup> April, 2019. **(Poster)**
- Shah Z, Waris A, **Tasadduq R.** Determination of antibacterial activity of Butanol based extracts of *Illicium verum* against *Escherichia coli* and *Staphylococcus aureus*. Kinnaird College for Women, Lahore. 2<sup>nd</sup> -4<sup>th</sup> April, 2019. **(Poster)**
- Tariq Z, **Tasadduq R.** Determination of repellent activity of organic extracts of *Illicium verum* against *Aedes aegypti*. Kinnaird College for Women, Lahore. 2<sup>nd</sup> -4<sup>th</sup> April, 2019. **(Poster)**
- **Tasadduq R**, and Shakoori AR. Osteoblastogenic effect of *C. quadrangularis*. 30th International Pakistan Congress of Zoology, Faisalabad, Pakistan. 2<sup>nd</sup>-4<sup>th</sup> March, 2010. **(Oral)**
- **Tasadduq R**, Bibi A, Bibi N and Shakoori AR. Association between a variation rs235678 in the bmp2 gene and bone mineral density in local osteoporotic female population. *BioVisionAlexandria 2008* Conference, Alexandria, Egypt. 11<sup>th</sup>-16<sup>th</sup> April, 2008. **(Oral)**
- **Tasadduq R** and Shakoori AR. Association between a variation rs235678 in the bmp2 gene and bone mineral density in local osteoporotic female population. 28th International Pakistan Congress of Zoology, Faisalabad, Pakistan. 18<sup>th</sup> 20<sup>th</sup> March, 2008. **(Oral)**

## Business Competitions

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- Farhan F and **Tasadduq R.** NISAFETY: Safe to use Sanitary Napkins. Kinnaird's 3<sup>rd</sup> Business Plan, Innovative Idea Competition. Kinnaird College for Women, Lahore. 19<sup>th</sup> February, 2025. **(Prototype)**
- Naveed H, **Tasadduq R**, Raza FA and Khalid R. Zanzapel: an ecofriendly mosquito repellent. Kinnaird's 3<sup>rd</sup> Business Plan, Innovative Idea Competition. Kinnaird College for Women, Lahore. 19<sup>th</sup> February, 2025. **(Prototype)**
- Asif I, **Tasadduq R**, Younas A and Khalid R. Cellenzo: Bacterial Cellulose from Agrowaste. Kinnaird's 3<sup>rd</sup> Business Plan, Innovative Idea Competition. Kinnaird College for Women, Lahore. 19<sup>th</sup> February, 2025. **(Prototype)**

## Conferences, Workshops and Seminars

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- Consent and Ethics in Public Health and Research, a Workshop. Kinnaird College for Women, Lahore. 29<sup>th</sup> April, 2025. (Organizer)
- Conflict Resolution and Management, a Workshop. Kinnaird College for Women, Lahore. 25<sup>th</sup> March, 2025. (Attendee)
- Growth and Reflection in a personal and professional context, a Workshop. Kinnaird College for Women, Lahore. 25<sup>th</sup> March, 2025. (Attendee)
- Enhancing Communication Skills for Leaders, a Workshop. Kinnaird College for Women, Lahore. 7<sup>th</sup> April, 2025. (Attendee)
- Kinnaird's 3<sup>rd</sup> International Conference on Science, Technology and Innovation, Kinnaird College for Women, Lahore. 18<sup>th</sup> -20<sup>th</sup> February, 2025. (Organizer)
- Advances in Molecular Docking and Drug Designing, a Hands-on-Workshop. Kinnaird College for Women, Lahore. 16<sup>th</sup> November 2024. (Organizer)
- The role of the arts and sciences in preparing women for entrepreneurship and financial security, a Workshop. Kinnaird College for Women, Lahore. 6<sup>th</sup> June 2024. (Attendee)
- Teachers Training Workshop on Drug Use Prevention. Kinnaird College for Women, Lahore. 10<sup>th</sup> May 2024. (Attendee)
- Bacteriophage Therapy: An Innovative and Sustainable Approach to Combat Antimicrobial Resistance, a Seminar. Kinnaird College for Women, Lahore. 8<sup>th</sup> May, 2024. (Organizer)
- Preconception Care and Precision Medicine, a Seminar. Kinnaird College for Women, Lahore. 22<sup>nd</sup> November 2023. (Organizer)
- Python Essentials Hands-on-training Workshop. Kinnaird College for Women, Lahore. 14<sup>th</sup>-16<sup>th</sup> May 2023. (Attendee)
- Innovations in Control and Management of Arboviral Diseases in Pakistan, a Seminar. Kinnaird College for Women, Lahore. 9<sup>th</sup> March 2023. (Organizer)
- Kinnaird's 2nd International Conference on Science, Technology and Innovation, Kinnaird College for Women, Lahore. 8<sup>th</sup> -10<sup>th</sup> March, 2023. (Organizer)
- 41<sup>st</sup> International Pakistan Congress of Zoology, University of the Punjab, Lahore, Pakistan. 16-18<sup>th</sup> March, 2023. (Attendee)
- Mushrooms, its Secrets and Entrepreneurship, A one day workshop, Department of Botany in collaboration with ORIC, Kinnaird College for Women, Lahore. 14<sup>th</sup> March 2022. (Attendee)
- Writing the SAR (Self-Assessment Report), Online Webinar, organized by the Quality Enhancement Cell of Kinnaird College for Women. Lahore, 29<sup>th</sup> January 2022. (Attendee)
- First Virtual Pakistan Congress of Zoology (International), (40th Pakistan Congress of Zoology – International). 17<sup>th</sup> -19<sup>th</sup> December, 2021. (Attendee)
- Role of QEC in Kinnaird, A Seminar. Kinnaird College for Women. Lahore, 28<sup>th</sup> October, 2021
- Lecturing to Electric Teaching, Online Workshop, organized by the Quality Enhancement Cell of Kinnaird College for Women, Lahore. 22<sup>th</sup> May, 2021. (Attendee)



- Quality Assurance Parameters for Effective Teaching, Online Workshop. Kinnaird College for Women. Lahore, 26<sup>th</sup> March, 2021. (Attendee)
- Recent Advances in Molecular Sciences, International Conference, University of the Punjab. 6<sup>th</sup>-8<sup>th</sup> November, 2021. (Attendee)
- Outcome Based Education (OBE) and Embedded Assessments: Preparing Graduates for Practical Life Skills, Online Workshop, organized by Quality Enhancement Cell of Kinnaird College for Women. 12th December, 2020. (Attendee)
- Outcome Based Education (OBE), Online Workshop, organized by Quality Enhancement Cell of Kinnaird College for Women. 28th November, 2020. (Attendee)
- Kinnaird's 1<sup>st</sup> International Conference on Science, Technology and Innovation. Kinnaird College for Women. 2nd-4th April 2019. (Organizer)
- ISO 21001 Educational Organization Management System (EOMS), A Workshop, organized by the Quality Enhancement Cell of Kinnaird College for Women, Lahore. 17<sup>th</sup> November, 2018. (Attendee)
- Application of Statistics in Biological Research, Kinnaird College for Women, Lahore. 3<sup>rd</sup> November, 2018. (Attendee)
- Advancements in Drug Discovery and Vaccine Design, Syed Babar Ali School of Science and Engineering, Lahore University of Management Sciences (LUMS). 19<sup>th</sup> March, 2018. (Attendee)
- 38th International Pakistan Congress of Zoology, University of the Punjab, Lahore, Pakistan. 27th February-1st March, 2018. (Attendee)
- Bioinformatics and Computational Drug Designing. A Workshop, Department of Biochemistry, Kinnaird College for Women, Lahore, Pakistan. Jan. 27-28, 2017. (Attendee)
- High Performance Liquid Chromatography. A Workshop, School of Physical Sciences, University of the Punjab, Lahore, Pakistan. Nov. 26, 2016. (Attendee)
- Computational Resources for Protein Modeling: A Workshop, School of Biological Sciences, University of the Punjab, Lahore, Pakistan. March 14-18, 2011. (Attendee)
- 30th International Pakistan Congress of Zoology, University of Agriculture, Faisalabad, Pakistan (2nd-4th March, 2010). (Attendee)
- Training course on Herbal Pharma Technology, PCSIR, Lahore, Pakistan (January 25-28, 2010). (Attendee)
- Separation Science and the Omics: A Workshop, School of Biological Sciences, University of the Punjab, Lahore, Pakistan. April 06-10, 2009. (Attendee)
- 28th International Pakistan Congress of Zoology, Government College University, Faisalabad, Pakistan. 18-20th March, 2008. (Attendee)
- BioVision Alexandria 2008 Conference, Alexandria, Egypt. 11-16th April, 2008. (Attendee)
- International Symposium on Glycoproteins in Health and Diseases, School of Biological Sciences, University of the Punjab, Lahore, Pakistan. May 27-29th, 2008. (Attendee)

## Referees

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- Prof. Dr. A. R. Shakoori, School of Biological Sciences, University of the Punjab, Lahore, Pakistan.  
arshakoori.sbs@pu.edu.pk, +92-42-99230960
- Dr. Hooria Younas, Dean of Life Sciences, HOD-Department of Biochemistry, Kinnaird College for Women, Lahore.  
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