

Prof. Seema Zargar (Professor KSU)

Postal Address:

Department of Biochemistry
College of science, King Saud university
Female Campus, Diriyah
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PROFESSIONAL QUALIFICATIONS: Ph.D. Biotechnology.

WORK EXPERIENCE:

2021- till date: Professor at King Saud University, Riyadh.

2016-2020: Associate Professor at King Saud University. Riyadh.

2011-2016: Assistant Professor at King Saud University. Riyadh.

2009-2011: Associate Scientist at King Faisal Hospital and Research Centre, Riyadh.

2004-2009: PhD Biotechnology, Jamia Hamdard.

TEACHING EXPERIENCE

10 years of teaching experience at KSU. Topics Taught include: Biomembranes, Biochemistry of specialized tissues, Biotechnology and genetic engineering, Gene, Genetics, molecular carcinogenesis, Antibiotics, Immunology, Gene expression, bioinformatics, molecular Biology, selected Topics in Biochemistry, inborn errors of metabolism, Biochemistry of Blood, Advanced Bioanalytical techniques, Genetic manipulations and therapy .

Ongoing Student Research Projects

1. The effect of intervention of olmutinib with and without wheat germ oil on cell signaling pathways in thioacetamide induced mice.
2. Neuroprotective and hepatoprotective role of Quercetin by cell cycle regulators on Carbon tetrachloride induced oxidative stress
3. Unraveling the link between inflammation and obesity associated breast cancer the role of adipocytes AUF1
4. Molecular basis of regulation of cancer progression by Pozotinib and its combination with Olmutinib
5. Study the Role of AUF1 Inhibition in Chemo Sensitization of Osteosarcoma Cells

ACHIEVEMENTS:

Academic Editor

Biomed Research International.

BioMed Research International is a peer-reviewed, journal that publishes original research articles, review articles, and clinical studies covering a wide range of subjects in life sciences and medicine. The journal has an impact factor of 2.583 for year 2020-2021.

Other Achievements

Scored silver in M. Sc Biochemistry.

Qualified **JRF** and Eligibility for Lectureship (**NET**) held on 22nd June 2003 conducted by Council of Scientific and Industrial Research, New Delhi (All India Level Exam).

Junior Research Fellowship from Council of Scientific and Industrial Research (All India Level Eligibility Test) 2003-2005.

Senior Research Fellowship from Council of Scientific and Industrial Research (All India Level Eligibility Test) 2005-2009.

Other Activities

Member, curriculum Committee	2016-till date
Department of Biochemistry, College of Science, Sciences & Medical Studies Department for Women Students, King Saud University, Riyadh, Saudi Arabia.	

Member, Research Cooperation Committee	2020-till date
Department of Biochemistry, College of Science, Sciences & Medical Studies Department for Women Students, King Saud University, Riyadh, Saudi Arabia.	

Member, Postgraduate Committee	2014-2020
Department of Biochemistry, College of Science, Sciences & Medical Studies Department for Women Students, King Saud University, Riyadh, Saudi Arabia.	

Member, Accreditation Committee	2016-2017
Department of Biochemistry, College of Science, Sciences & Medical Studies Department for Women Students, King Saud University, Riyadh, Saudi Arabia.	

Member, Laboratory Committee	2011-2013
Department of Biochemistry, College of Science, Sciences & Medical Studies Department for Women Students, King Saud University, Riyadh, Saudi Arabia.	

Member, Examination Committee 2011-2014
Department of Biochemistry, College of Science,
Sciences & Medical Studies Department for Women Students,
King Saud University, Riyadh, Saudi Arabia.

Member, Safety Committee 2011-2013
Department of Biochemistry, College of Science,
Sciences & Medical Studies Department for Women Students,
King Saud University, Riyadh, Saudi Arabia.

Book Chapters:

1. Colchicine induced ion channel formation into membranes as mechanism behind chemotherapy drug cytotoxicity of cancer cells. (2019) A. Alqarni, **Seema Zargar**, M. Ashrafuzamman. Chapter V, 151-189. Lipid bilayers. Nova medicine and health, New York.
2. Transcription and its regulation. (2017) **Seema Zargar** and Tanveer Ahmad Wani. Chapter II, 19-30. Quick Revision of Molecular Biology. Research India Publications. India.

List of Original Research Articles:

1. Tanveer A. Wani, Nawaf Alsaif, Mohammed M. Alanazi, Ahmed H. Bakheit, Seema Zargar, Mashooq A. Bhat (2021). A potential anticancer dihydropyrimidine derivative and its protein binding mechanism by multispectroscopic, molecular docking and molecular dynamic simulation along with its in-silico toxicity and metabolic profile. European Journal of Pharmaceutical Sciences **IF 3.616**
2. Nawaf A. Alsaif, Tanveer A. Wani, Ahmed H. Bakheit, **Seema Zargar** (2020) Multi-spectroscopic investigation, molecular docking and molecular dynamic simulation of competitive interactions between flavonoids (quercetin and rutin) and sorafenib for binding to human serum albumin. International Journal of Biological Macromolecules. Published Online 26 October 2020; DOI: <https://doi.org/10.1016/j.ijbiomac.2020.10.098> **IF 5.162**
3. T.A.Wani, A.H.Bakheit, **Seema Zargar**, Z Alanazi, A.Al-Majed (2021). Influence of antioxidant flavonoids quercetin and rutin on the in-vitro binding of neratinib to human serum albumin. Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 246:118977. Q1 **IF 3.232**
4. S Alkhezayem, T.A.Wani, Salma Wakil, A Aljuraysi, **Seema Zargar** (2020). Transcriptome analysis of neratinib treated HER2 positive cancer model vs untreated cancer unravels the molecular mechanism of action of neratinib. Saudi Pharmaceutical Journal 28 (2020) 963–970. Q1 **IF 2.879**
5. Tanveer A. Wania, Nawaf Alsaif, Ahmed H. Bakheita, **Seema Zargar**, Abdurrahman A. Al-Mehiziaa, Azmat Ali Khan (2020). Interaction of an abiraterone with calf thymus

DNA: Investigation with spectroscopic technique and modelling studies. *Bioorganic chemistry* 100:2020,103957. **Q1 IF 3.940**

6. **Seema Zargar**, S Alamery, AH Bakheit, TA Wani. (2020) Pozotinib and bovine serum albumin binding characterization and influence of quercetin, rutin, naringenin and sinapic acid on their binding interaction. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 235; 118335 **Q1 IF 3.232**
7. TA Wani, AH Bakheit, **Seema Zargar**, H. Rizwana, A Al-Majed (2020). Evaluation of competitive binding interaction of neratinib and tamoxifen to serum albumin in multidrug therapy. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*. **Q1 IF 3.232**
8. TA Wani, A Almhizia, AH Bakheit, **Seema Zargar**, T A wani (2020). Study of binding mechanism of dapoxetine with Calf Thymus DNA by spectroscopic, thermodynamic techniques and molecular docking. *South African Journal of Chemistry*:73,44-50. **IF 1.490**
9. A Alenad, MM Alenezi, MS Alokail, K Wani, AK Mohammed, AM Alnaami, Maha Sulimani, **Seema Zargar**, Mario Clerici, Nasser M Al-Daghri (2020). Association of ANGPTL8 (Betatrophin) Gene Variants with components of Metabolic Syndrome in Arab Adults. *Scientific reports* 10 (1), 1-10. **IF 3.998**
10. **Seema Zargar**, Mona Alonazi, Humaira Rizwana, Tanveer A. Wani (2019) Resveratrol reverses thioacetamide-induced renal assault with respect to oxidative stress, renal function, DNA damage and cytokine release in Wistar rats. *Oxidative Medicine and Cellular Longevity*. **Article ID 1702959. Q2 IF 5.076**
11. TA Wani, AH Bakheit, **Seema Zargar**, MA Bhat, AA Al-Majed. (2019) Molecular docking and experimental investigation of new indole derivative cyclooxygenase inhibitor to probe its binding mechanism with bovine serum albumin. *Bioorganic chemistry* 89, 103010. **Q1**.
12. AA Al-Mehizia, AH Bakheit, **Seema Zargar**, MA Bhat, MM Asmari, TA Wani (2019) Evaluation of Biophysical Interaction between Newly Synthesized Pyrazoline Pyridazine Derivative and Bovine Serum Albumin by Spectroscopic and Molecular Docking Studies. *Journal of Spectroscopy*; Article ID 3848670. **Q3**
13. Nouf Alsalman, Abdulaziz Aljafari, Tanveer A. Wani, **Seema Zargar** (2019). High-dose aspirin reverses tartrazine-induced cell growth dysregulation independent of p53 signaling and antioxidant mechanisms in rat brain. *Biomed Research International*; **Article ID 9096404. Q2**
14. Tanveer A Wani, Ahmed H Bakheit, Mohammed Nazam Ansari, Abdul-Rahman A Al-Majed, Bakr M Al-Qahtani, **Seema Zargar** (2018). Spectroscopic and molecular modeling studies of binding interaction between bovine serum albumin and roflumilast. *Drug Design Development and Therapy* 12; 2627—2634. **Q2**

15. **Seema Zargar**, AA TA Aljafari, Wani (2018). Variants in MEF2A gene in relation with coronary artery disease in Saudi population. 3 Biotech. Jul;8(7):289. doi: 10.1007/s13205-018-1312-1. Q3
16. **Seema Zargar**, A A. Al-Majed and Tanveer A. Wani (2018). Potentiating and synergistic effect of grapefruit juice on the antioxidant and anti-inflammatory activity of aripiprazole against hydrogen peroxide induced oxidative stress in mice. BMC Complement Altern Med. 2018 Mar 23; 18(1). 106. **Q1**
17. TA Wani, AH Bakheit, MA Abounassif, Seema.Zargar (2018). Study of Interactions of an Anticancer Drug Neratinib with Bovine Serum Albumin: Spectroscopic and Molecular Docking Approach. Front Chem. 2018 Mar 7; 6:47. **Q2**
18. Asma Alkaf, Abdulaziz Al-Jafari, T A. Wani, S Alqattan, **Seema Zargar** (2017). Expression of STK11 gene and its promoter activity in MCF control and cancer cells. 3 Biotech 7:362. DOI 10.1007/s13205-017-1000-6.
19. T A. Wani , AH. Bakheit , H Al-Rabiah and **Seema Zargar**(2017). Study of binding interaction of rivaroxaban with bovine serum albumin using multi-spectroscopic and molecular docking approach. Chemistry Central Journal 11:134.
20. Tanveer A Wani*, **Seema Zargar**, Mohammed A. Hamidaddin,Ibrahim A. Darwish (2017).. Spectrophotometric and molecular modelling studies on in vitro interaction of tyrosine kinase inhibitor linifanib with bovine serum albumin. PLOSONE. 12(4):e0176015. <https://doi.org/10.1371/journal.pone.0176015>.
21. T A. Wani , AH. Bakheit , A Al-Majed, MA Bhat and **Seema Zargar** (2017).. Study of the Interactions of Bovine Serum Albumin with the New Anti-Inflammatory Agent 4-(1,3-Dioxo-1,3-dihydro-2H-isoindol-2-yl)-N'-[(4-ethoxy-phenyl) methylidene] benzohydrazide Using a Multi-Spectroscopic Approach and Molecular Docking. Molecules 2017, 22(8),1258; doi:10.3390/molecules. 22081258.
22. **Seema Zargar**, T A. Wani, A A Alamro, MA Ganaie. (2017). Amelioration of Thioacetamide Induced Liver Toxicity in Wistar Rats by Rutin. International journal of Immunopathology and Pharmacology.
23. Tanveer A Wani*, **Seema Zargar**, Salma Majid Wakil & Ibrahim A Darwish. (2016). Analytical Application of Flow Immunosensor in Detection of Thyroxine and Triiodothyronine in Serum. ASSAY and Drug Development Technologies 14(9):535-542. Nov
24. **Seema Zargar** , N J Siddiqi, S Ansar, M Alsulaimani & A. El ansary (2016). Therapeutic role of quercetin on oxidative damage induced by acrylamide in rat brain. *Pharmaceutical Biology* Vol. 54 , 9, sep. 2016.
25. Sabah Ansar, NJ Siddiqi , **Seema Zargar** , MA Ganaie and M Abudawood (2016). Hepatoprotective effect of Quercetin supplementation against Acrylamideinduced DNA damage in wistar rats. BMC Complementary and Alternative Medicine 16:327. Aug
26. Tanveer A Wani*, **Seema Zargar**, Salma Majid Wakil & Ibrahim A Darwish. (2016).New analytical application of antibody based biosensor in estimation of thyroid-stimulating hormone in serum. Bioanalysis **March**

27. **Seema Zargar** (2016). Effect of Aqueous Extract of *Rhazya stricta* Decne on Citrinin Production and Fungal Biomass by *Penicillium Notatum* and Optimization of Experimental Design using Response Surface Methodology. *Biosci Biotech Res Asia*; 13887-893. **june**
28. T A. Wani and **Seema Zargar** (2015). New ultra-performance liquid chromatography/tandem mass spectrometry method for the determination of irbesartan in human plasma. *Journal of food and drug analysis*. 23; 569-576. Sep 2015
29. **Seema Zargar**, T. A. Wani, S. K. Jain. (2015). Identification of Putative Vero Cell Protein(s) that Bind Specifically to Recombinant Envelope Protein of Dengue Virus Type 2. *Tropical journal of Pharmaceutical Research*. 14,(6) 997-1003. July 2015
30. T A. Wani , A.M. Alanazi, **Seema Zargar**, A. Ahmad, I. Darwish (2015). Box–Behnken Design Based Statistical Modelling for Optimization of UPLC-MS/MS Method for Analysis of Sorafenib in Bulk and Tablets. *Journal of Computational and Theoretical Nanoscience*. 12, 3598–3604. Oct 2015
31. T A. Wani and **Seema Zargar** (2015). New Highly-Sensitive Ultra-Performance Liquid Chromatography - Mass Spectrometry Method for Quantification of Telmisartan in Human Plasma. *TJPR* 14 (3): 511-518. Oct 2015
32. **Seema Zargar**, N JSiddiqi, S Al Daihan, TA. Wani. (2015) Protective effects of quercetin on cadmium fluoride induced oxidative stress at different intervals of time in mouse liver. *Acta biochimica polonica* 62(2) 207-213. April 2015
33. Tanveer A. Wani, **Seema Zargar** and Ajaz Ahmad. Ultra Performance Liquid Chromatography Tandem Mass Spectrometric Method Development and Validation for Determination of Neratinib in Human Plasma. *S. Afr. J. Chem.*, 2015, 68, 93–98. April 2015
34. N JSiddiqi and **Seema Zargar** (2015). Quercetin protects mice kidney collagen against the damage induced by cadmium fluoride. *Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci.* july 2015
35. TA Wani and **Seema Zargar**. (2014). Sensitive UPLC-tandem mass spectrometric method for determination and validation of hydrochlorthiazide in human plasma. *Lat. Am. J. Pharm*, accepted on nov 21/ 2014.
36. **Seema Zargar**. (2014). Inhibitory effect of various aqueous medicinal plant extracts production and fungal biomass by *Penicillium notatum* and *Aspergillus niger*. *IAIM*. 1(3): 1-8.
37. **Seema Zargar**, NJ Siddiqi, TH Khan, IE Elredah. (2014). Effect of cadmium fluoride and quercetin on *in vivo* activity of indoleamine 2,3-dioxygenase in mice liver and kidney. *Fluoride*. 47(1): 31–42.
38. NJ Siddiqi and **Seema Zargar** (2014). Effect of quercetin on cadmium fluoride induced alterations in hydroxyproline/collagen content in mice liver. *Connective tissue research*. 55(3): 234-238.
39. **Seema Zargar** and TA Wani. (2014). Ultra-performance liquid chromatography/tandem mass spectrometry method for simultaneous determination of irbesartan and hydrochlorthiazide in human plasma. Accepted in *Journal of the Iranian Chemical Society*. DOI 10.1007/s13738-014-0429-3
40. **Seema Zargar** and T A. Wani. (2014). New UPLC-MS/MS method for simultaneous determination of telmisartan and hydrochlorthiazide in human plasma. *Lat. Am. J. Pharm*, 33(3);432-40.

41. **Seema zargar.** (2014). Protective effect of *Trigonella foenum-graecum* on thioacetamide induced hepatotoxicity in rats. *Saudi Journal of Biological Sciences*.
42. TA Wani and **Seema Zargar** (2015). Statistical modelling for optimization of automated spectrophotometric assay for determination of cefadroxil in its pharmaceutical formulations. Accepted in *Lat. Am. J. Pharm*
43. Tanveer A. Wani, Muzaffar Iqbal, Ibrahim Darwish Nasr Y. Khalil, **Seema Zargar.**(2014) Development and validation of sensitive uplc-ms/ms based method for the estimation of crizotinib in human plasma. *Digest Journal of Nanomaterials and Biostructures*. 9:693-704.
44. Perwez Alam, Mohammad S. Ahmad, Tanveer Ahmad Wani, **Seema Zargar** and Nasir A. Siddiqui.(2014). Simultaneous quantification of two bioactive flavonoids Homoeriodictyol and Persicogenin in the methanol extract of aerial parts of two different species of genus *Rhus* by validated HPTLC densitometric method. Accepted in *Journal of Planar Chromatography - Modern TLC* October 2014. Manuscript No. JPC528R1
45. **Seema zargar**, S. wakil, A. mobeirek, A. al-jafari. (2013). Involvement of ATP-binding cassette, subfamily A polymorphism with susceptibility to coronary artery disease. *Biomedical Reports*., 883-888.
46. Darwish I A., Wani TA., Alanazi AM., Hamidaddin MA., **Seema Zargar.** (2013) Kinetic-exclusion analysis-based immunosensors versus enzyme-linked immunosorbent assays for measurement of cancer markers in biological specimens. *Talanta*. 111, 13-19.
47. S. Al-Daihan, M. Al-Faham, N. Al-shawi, R. Almayman, A. Brnawi, **Seema zargar** R. S. Bhat. (2013). Anti-microbial activity of *zingier officinal* and *curcum longa* extracts against some selected micro-organisms. *Journal of King Saud University - Science*, April, Volume 25, Issue 2, *Pages 115-120*.
48. T. A. Wani, A. Ahmad, **Seema Zargar**, Nasr Y. Khalil, Ibrahim A. (2012). Darwish. Use of response surface methodology for optimization and validation of new microwell-based spectrophotometric method for determination of atorvastatin calcium in tablets. *Chemistry Central Journal*., **6**:134 doi:10.1186/1752-153X-6-134.
49. **Seema Zargar**, Tanveer A. Wani, S. K. Jain. (2011). Morphological changes in vero cells postinfection with dengue virus type-2. *Microscopy Research and Techniques*. 74, 314-319.
50. T. A. Wani, M. Al-Omar, **Seema Zargar.** Huntington Disease: Current Advances in Pathogenesis and Recent Therapeutic Strategies. *International Journal of Pharmaceutical Sciences and Drug Research*. 2011; 3(2): 69-79.
51. **Seema zargar** and S. K. Jain. (2008). Published several sequence in Uniprot KB/Swiss-Prot entry under accession no. p84856, p694580.
52. **Seema** and S.K.Jain, (2005). Molecular mechanism of pathogenesis of dengue virus: Entry and fusion with target cell. *Ind. Jour. Clin. Biochem.*, 20 (2) 92-103.

CONFERENCES AND WORKSHOPS:

1. Attended webinar series for the month of July and August on Covid awareness 2021.
2. Speaker in Genomics and Precision medicine. 2017. British Council.

3. Abstract published in American Chemical Society, 1155 16TH ST, NW, WASHINGTON, DC 20036 USA
4. Seema and S.K. Jain. Proteomic approach for characterization of cell surface receptors for dengue virus: protein profile of permissive and non-permissive cells. Biotechnology and Human welfare magazine. 2006. Hamdard University. New Delhi.
5. Seema and Jain S. K. proteome profile of permissive and non-permissive cells for different serotypes of dengue virus. 33rd immunological society proceedings. 2004, 341-342.
6. Attended Interdisciplinary Science Conference on Recent Trends in Research in Biological Sciences.
7. Attended National Conference on Electron Microscopy and Allied Fields and XXIX Annual Meeting of EMSI.

REVIEWER

Reviewer to Journal of Infectious disease and immunity, Intervirology, Indian journal of Biological Sciences, Hindawi publishing systems, Science international, Indian Journal of Biophysics and Biochemistry Saudi Journal of Biological Sciences, BMC complementary and alternative medicine.

MEMBERSHIPS:

Member of European Federation of Biotechnology.

Member of Indian Immunological society.

Society of cancer research

EXPERTISE DEVELOPED DURING Post doctorate

FACS analysis of CD3, CD4 and CD8, CD25, CD44 and Ki67 antibodies, MACS separation of different cell types (Magnetic cell sorting), Adipose tissue separation and culturing from lipoaspirate of abdominal fat or gluteal fat tissue, Elisa for IL-6, adiponectin, Insulin, leptin, TNF- α and other adipokines, Isolation of thymocytes and splenocytes from mice and their culture, Extraction of DNA from mouse tail and their genotyping, Extraction of protein and Western blotting of cell lysates, Culturing of different types of primary and secondary cultures including established cell lines, Gene expression by Reverse transcription PCR, Cloning, cDNA library preparation and yeast two hybrid selection, Real time PCR, tunnel assay and double immunofluorescence,

PERSONAL DETAILS:

Attended a computer literacy programme conducted by the Department of Electronics and Communication Engineering of REC, Srinagar during May- July, 2000. Ample knowledge of computers with command on Windows, MS Office and internet world

Gender : Female

Marital Status : Married

Nationality : Indian

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Srinagar , Kashmir, India -19000