

## Curriculum Vitae

### BUSHRA MIRZA

#### Address (Home):-

A-4, QAU colony  
Islamabad, Pakistan.  
Phone no. Res. 92 51 2601126.  
Mobile # 0300 9820923

**E.mail. bushramirza@qau.edu.pk**

**Date of Birth:-**21st April 1967.

#### Address (Work):-

Vice Chancellor  
Lahore College for Women University,  
Jail Road, Shadman, Lahore,  
Phone no. Office. +92-42-99203801-9

**vc.office@lcwu.edu.pk**

**Nationality:** - Pakistani.

#### Education:-

- March-Nov. 1996 University of North Carolina USA. **Post-doc.** Project:- Map based cloning of the *Enhancer of gene silencing 1* locus which enhances the silencing of a foreign gene in *Arabidopsis*. Supervisor:- Dr. Sarah Grant.
- 1992-96 University of Cambridge, England. **Ph.D.** in Plant Molecular Biology. Project :-Gene inactivation in transgenic *Arabidopsis*. Supervisor :- Dr. I. Furner.
- 1990-92 Quaid-i-Azam University, Pakistan. **M.Phil** in Genetics. Grade A and 1<sup>st</sup> position. Project:- Cytogenetical effects of a single treatment of seedlings with 5- azacytidine in selected crops. Supervisor :- Prof. Dr. A.S. Qureshi.
- 1988-90 Quaid-i-Azam University, Pakistan. **M.Sc.** in Biological Sciences. Grade A and 1<sup>st</sup> position.
- 1985-87 Punjab University, Pakistan. **B.Sc** Division 1.

#### Awards and Distinctions :-

- 2016 **Tamgha-i-Imtiaz** Presidential award to be conferred on 23 March 2017
- 2016 **Best Research Paper Award**, by Higher Education Commission, Pakistan
- 2014 **Charles Wallace fellowship**, by British Council.
- 2013 **ISESCO Women in Science Chair** by Islamic Educational Scientific and Cultural Organization, Kingdom of Morocco.
- 2010 **Prof. A. R. Shakoori Gold Medal** by The Zoology Society of Pakistan.
- 2009 **Best Young Research Scholar Award** by Higher Education Commission, Pakistan
- 2008 **PAS Gold Medal** in the field of Biochemistry by Pakistan Academy of Sciences.
- March-Nov. 1996 **Post-doctoral research fellowship.** University of North Carolina, Chapel Hill. USA.
- 1992-95 **Cambridge Commonwealth Trust Scholarship.** University of Cambridge, England.
- 1992-95 **Overseas Research Scholarship.** England.
- 1990-92 **First position in M.Phil** in the Department of Biological Sciences, Quaid-i-Azam University, Islamabad, Pakistan.
- 1988-1990 **President Talent Scholarship and first position in M.Sc.** in the Dept. of Biological Sciences, Quaid-i-Azam University, Islamabad, Pakistan.

#### Work Experience:-

##### A. Research and teaching experience

- 2010- **Professor** in the Department of Biochemistry, Quaid-i-Azam University, Pakistan.

- 2007- 2010 **Associate Professor** in the Department of Biochemistry, Quaid-i-Azam University, Pakistan.
- 2000- 2007 **Assistant Professor** in the Department of Biological Sciences, Quaid-i-Azam University, Pakistan.
- 1999-2000 **Lecturer** in the Department of Biological Sciences, Quaid-i-Azam University, Pakistan.
- 1997-1999 Teaching molecular biology courses as a **visiting faculty member** in the Department of Biological Sciences, Quaid-i-Azam University, Pakistan.
- March1996-Nov1996 **Post-doctoral** research experience of *Arabidopsis* Genetics and Molecular biology
- 1992-1996 Research experience of *Arabidopsis* Genetics and Molecular biology as graduate student.
- 1993-95 Demonstrated undergraduate practical courses: Biology of Cell and Molecular Cell Biology at the University of Cambridge, England.

### **B. Other related experience**

- 2012- 2015 Chairperson, Department of Biochemistry, Quaid-i-Azam University, Islamabad
- 2009- Present Provost Girls' Hostels, Quaid-i-Azam University, Islamabad.
- 2002- Present Delivered lectures on Recombinant DNA technology to the college teachers for the refresher courses organized by Punjab and Federal Government.
- 2001- Present Examiner for the research theses of several universities.
- 2003- Present Reviewer of the manuscripts submitted to several international Journals.
- 2003-Present Evaluated research project proposals submitted to H.E.C Islamabad.

### **C. Membership**

- 2016- Present Member of Pakistan Science Foundaton Technnical Committee.
- 2015- Present Member of Technical Evaluation Committee, Institutional Strengthening program, Higher Education Commission
- 2015- Present Member of Syndicate Fatima Jinnah University, Rawalpindi
- 2015- Present Member of Selection Board, Fatima Jinnah University, Rawalpindi
- 2014- Present Member of Selection Board, GC women University, Faisalabad
- 2013- Present Member of Institutional Biosafety Committee, Quaid-i-Azam University
- 2014- 2015 Member of Technical Evaluation Committee, Travel Grants program, Higher Education Commission
- 2012- Present Member of Department Promotion Committee, Quaid-i-Azam University
- 2004-2007 Elected member of Academic Council Quaid-i-Azam University
- 2001-2002 Associate member of the American Society for Biochemistry and Molecular Biology USA.
- 2001-Present Fellow of the Salzburg Seminar, Austria.
- 2000-Present Member of Pakistan Botanical Society, Pakistan.
- 1999-Present Member of Quaid-i-Azam University Allumini Assistance Program.
- 1992- Present Fellow of Cambridge Commonwealth Trust Society, Cambridge, England.
- 1992- Present Fellow of Cambridge Philosophical Society, Cambridge, England.

### **Research Projects:-**

- 2016-2018 Genetic transformation of *Artemisia Annu* L. with rol genes for enhancement of secondary metabolites. Funded by Higher Education Commission.
- 2015- 2016 Transformation of tomato for enhanced tolerance to abiotic stress. Funded by King Abdullah University of Science and Technology, Kingdom of Saudi Arabia

- 2014-2015 Evaluation of potential gene flow from Bt cotton in Pakistan. Funded by Center for Environment Risk Assessment ILSI Research Foundation, Washington D.C
- 2010-2012 Isolation of antioxidant and antitumor agents from *Hedera nepalensis* and *Fagonia cretica*. Funded by Higher Education Commission.
- 2005-2008 Generation of salt resistant tomato by using *Hal I* and *Hal II* genes and molecular analysis of transgenic plants. Funded by Higher Education Commission.
- 2004-2007 *Agrobacterium* mediated genetic transformation of Artemisia sp for enhancement of artemisinin, an antimalarial compound. Funded by Higher Education Commission
- 2002-2005 Molecular and Biochemical analysis for characterization of genetic diversity in barley land races from West Asia and North African region. Pakistan Science Foundation.
- 2001-2002 Identification of the genes involved in Vascular Patterning in *Arabidopsis thaliana*. Funded by University Grant Commission, Pakistan.
- 1999-2000 Induced mutagenesis in tomatoes. Funded by University Grant Commission, Paksitan.

**Patent:**

Purification of Bioactive Saponin Esculentoside D. from *Phytolacca Latbenia* (Institutional ID Number 11UMC034) University of Missouri Columbia, USA

**PhD theses supervised**

1. Nizam-ud-Din. (2007) True Potato Seed (TPS) production and hybrid formation using *In-vitro* multiplied parental lines
2. Amna Noor (2008) Studies on production of transgenic rice plants resistant to bacterial blight using *Agrobacterium*-mediated transformation
3. Abida Yasmeen (2008) Generation of transgenic tomato with *Arabidopsis* early flowering *Leafy* and *Ap1* genes
4. Rehan Naeem (2008) Genetic diversity of *Hordeum vulgare* germplasm as revealed by hordein and microsatellite markers
5. Sheeraz Ahmad (2008) Biological Screen of Organotin(IV) complexes
6. Samia Innayatullah (2009) Biological evaluation of some selected plant species of Pakistan
7. Nyla Jabeen (2009) *Agrobacterium* mediated gene transformation of tomato using rice chitinase gene (RCG3) to develop resistance against fungal pathogens.
8. Abdualmannan (2009) Determination of artemisinin content of various Artemisa species of Pakistan and its enhancement in *Artemisia annua*.
9. Waseem Ahmad (2010) *Agrobacterium* mediated genetic transformation of potato.
10. Maryam Jamil (2010) Screening of selected plant species of Pakistan for their Pharmacological activities.
11. Waheed Arshad (2011) Genetic transformation of tomato (*Solanum lycopersicum* L.) by using *ROL* genes.
12. Ihsan-ul Haq (2012) Isolation and characterization of biologically active compounds from selected medicinal plants
13. Nazif Ullah (2012) Isolation, purification and characterization of allelopathic compounds from selected plants.
14. Nyla Safdar (2012) *Agrobacterium* mediated transformation of tomato with yeast Halotolerance genes.

15. Bushra Hafeez Kiani (2013) Transfer of *rol* genes and evaluation of artemisinin synthesis in transformed *Artemisia annua* L. and *Artemisia dubia* WALL
16. Samreen Saleem (2015) Biological evaluation, isolation and characterization of compounds from *Fagonia cretica* L.
17. Laila Jaffery (2015) Biological evaluation, isolation and characterization of compounds from *Hedera nepalensis* K. Koch.
18. Waqas Khan Kayani (2016) Biological Evaluation, Phytoecdysteroids Analyses and their Enhancement in *Ajuga bracteosa* Wall. ex Benth.
19. Hammad Ismail (2016) Genetic Transformation of *Lactuca sativa* L. for the production of pharmaceuticals.
20. Erum Dilshad (2016) Genetic Transformation of *Artemisia carvifolia* Bunch with *rol* Genes for Enhancement of Secondary Metabolites.
21. Nosheen Akhtar (2016) Evaluation of Pharmacological Potential of Bioactive Compounds Isolated from a Selected Medicinal Plant.
22. Rehana Rani (2016) *Agrobacterium* mediated transformation and secondary metabolite analysis of *Ajuga bracteosa* Wall. ex. Benth.

**M.Phil theses supervised:-**

1. Nusrat Saba (2001) Induced mutagenesis in tomatoes.
2. Nyla Jabeen (2001) Ethylmethanesulphonate mutagenesis in *Capsicum annum*.
3. Summara Aziz (2002) Morphophysiological and biochemical analysis of genetic diversity of *Hordeum vulgare* L. in West Asia and North Africa.
4. Nabeela Zafar (2002) Morphophysiological and biochemical analysis of genetic diversity of *Oryza sativa* in Pakistan.
5. Waseem Haider (2002) Selection of the best tomato cultivar for callus induction and regeneration.
6. Saba Irshad Khokher (2002) Antimalarial activity of traditional medicinal plants.
7. Ghulam Raza (2002) Determination of biokinetics and renal clearance of secnidazole in male volunteers by HPLC method.
8. Waheed Mumtaz (2002) Identification, Purification and characterization of acidic proteases from *Aspergillus niger*.
9. Ayeda Karami (2002) Characterization of  $\beta$ - Thalassemia allele in United Arab Emirates.
10. Zafar Iqbal (2002) Tissue culture and transformation studies of *Lycopersicon esculentum*.
11. Tahira Azad (2003) Production, Purification and characterization of alkaline protease from fungus *Fusarium oxysporum*.
12. Rashida Kanwal (2003) Evaluation of milk and study of its shelf life with relation to Lactoperoxidase system.
13. Saima Tazeen (2003) *Agrobacterium tumefaciens* mediated transformation of *Vigna radiata*.
14. M.Zakryya Khan (2003) Production, Purification and characterization of alkaline protease from *Aspergillus terreus*.
15. Saima Sadaf (2003) Genetic transformation of *Artemisia absinthium*.
16. Shabana Maqsood (2003) To study the quality of market made yoghurt.
17. Shawkat Ali (2004) Transformation of rough lemon with yeast salinity tolerance genes.
18. Maryam Jamil (2004) Biochemical analysis of Genetic diversity of *Hordeium vulgare* L.
19. Hassan Zubair (2004) Mutagenic improvement of locally isolated bacteria for amino acid production by utilizing industrial waste products.

20. Abdul Mannan (2004) Comparative study of Artemisinin content in different species of *Artemisia* available in Paksitan and antibacterial assay of *Artemisia vestitia*.
21. Sorrosh Haider (2004) Transformation of tomato with *Arabidopsis* Leafy gene.
22. Tubba Noor Syed (2004) Generation of transgenic *Artemisia Absinthium* L.
23. Aysha Yameen (2004) Iron availability from fortified wheat flour: comparison of different products and fortificants for nation wide fortification program.
24. Manawar Ahmad (2005) Study of factors affecting *Agrobacterium tumefaciens* mediated genetic transformation of Rough Lemon.
25. Ihsan ul Haq (2005) Antibacterial and Brine Shrimp toxicity assay of crude extracts of *Artemisia dubia*.
26. Sarwat Shah (2005) *Agrobacterim* mediated transformation of tomato with *LEAFY* gene.
27. Muhammad Hassan (2005) Transformation of tomato (*Lycopersicon esculentum* Mill) with *Arabidopsis* early flowering gene *APETALATA (API)* through *Agrobacterium* infiltration of ripened fruits.
28. Humaira Naureen (2006) Biological activities of Chalcones and their Libraries
29. Ateeq-ur-Rehman (2006) Evaluation of methanolic extract of wild thyme (*Thymus surphyllum* L)
30. Ahsan Hussain (2006) Biological activities of *Fagonia cretica* L
31. Rukhsana Iram (2006) Biological activities of *Artemisia fragrans*
32. Nazia Shaheen (2006) *Agrobacterium rhizogenes* mediated transformation of *Artemisia* species and bacterial activity of their secondary metabolites
33. Aisha Aftab (2006) Evaluation of biological and pharmacological activities of *Adhatoda vasica* Nees.
34. Asma Shaheen (2006) Evaluation of biological activity of *Phytolacca latbenia* (Moq) Hans Walter
35. Muhammad Shoaib (2006) Genetic biodiversity study of wild Oat (*Avena fatua* L) populations based on seed storage protein polymorphism.
36. Ibrar Ahmed (2006) Optimization of conditions for diversity studies in barley (*Hordeum vulgare* L) using microsatellite markers
37. M. Faheem Asim (2007) Analysis of artemisinin content in different *Artemisia* species of Pakistani origin.
38. Javaria Aslam (2007) Biological evaluation of novel Schiff bases bearing phenyl ferrocene.
39. Naila Safdar (2007) Genetic transformation of tomato (*Lycopersicon esculentum*) with yeast *Halotolerance* gene.
40. M. Tahir Waheed (2007) Transformation of *Lycopersicon esculentum* by using rol gene.
41. Asma Noreen (2007) Evaluation of biological activity of novel Schiff bases.
42. Hina Shehbaz (2008) Diversity studies of Avena.
43. Arshia Riffat (2008) Biological evaluation of organic compounds including ferrocene containing Schiff bases.
44. Azmat Sohail (2008) Transformation and expression studies of recombinant Taq polymerase gene in *E. coli*.
45. Ayesha Farooq (2008) Tomato transformation and transgenic plant production using yeast Halotolerance gene.
46. Samreen Salim (2008) Determination of biological activities metallic derivatives of Mefenamic Acid.
47. Laila Jaffery (2008) Determination of Biological activities of some semicarbazones

48. Sumara Salahudin (2008) Herbicide resistance in Pakistani population of *Avena fatua* L.
49. Mohammad Ajmal (2008) Microsatellite Polymorphism of *Avena fatua* L (wild oat) germplasm of Pakistan.
50. Rehana Rani (2009) Purification of recombinant Taq polymerase from transformed *E. coli*.
51. Nosheen Akhtar (2009) Transformation of tomato for its improvement against fungal infections.
52. Bushra Hafeez Kiani (2009) Genetic transformation of *Artemisia* by rol genes.
53. Misbah Tauseef (2009) Biological evaluation of some organic compounds including organometallic Schiff bases
54. Anees Fatima (2009) Determination of biological activities of some novel n-substituted benzamides
55. Farah Bashir (2009) Determination of biological activities of azoxy ester derivatives and their interaction with DNA
56. Simab Kanwal (2009) Pharmacological activity of biological active compounds from *Hedera nepalensis*
57. Gul naz (2009) Biological screening and phytochemical study of *Aster thomsonii* and *Salvia nubicola*
58. Faisal Masood (2010) Screening of wheat germplasm for stem rust resistance gene Sr 24 by MAS
59. Nabila Iqbal (2010) Pharmacological evaluation and fractionation of *Acer oblongifolium* (L) extract.
60. Erum Dilshad (2010) Pharmacological evaluation of some novel Aza-Heterocyclic (Pyrazole) derivative and their Intermediates
61. Majid Ali (2010) Transformation and Artemisinin analysis of *Artemisia dubia*.
62. Asma Umer Khayam (2010) Pharmacological studies of selected species of *Artemisia* plant.
63. Yasmin Niazi (2010) Pharmacological studies on 1,4-disubstituted-1,2,3 triazoles
64. Ambreen Gul Muazzam (2010) Analysis of Occult species of HCV-RNA in peripheral Blood Mononuclear cells (PBMCs) of Seronegative patients
65. Saboor Waris (2010) Pharmacological; activities of Nitro and Amine compounds containing different functionalities.
66. Hassan Mehboob Awan (2010) Biological evaluation and in silico studies on 1,4-disubstituted 1,2,3-triazoles.
67. Sumbal Wahid (2011) Determination of Medicinal importance of Metal phosphines, schiff bases and their complexes.
68. Sehrish Sarfraz (2011) Determination of therapeutic potential of poly (azomethine)esters and their monomers
69. Aisha Khalid (2011) Evaluation of the transgenic lines of *Solanum lycopersicum* L. cv. Rio Grande Transformed with *rol A,B* or *C* Gene.
70. Sarah Sarwar (2011) ) Bioassay guided isolation of antibacterial compound/s from *Quercus dilatata* L.
71. Munazza Ihtisham (2011) Bioassay guided isolation of antioxidant compound/s from *Quercus dilatata* L.
72. Nazia Ambreen (2011) *In-vitro* propagation of *Saussurea lappa* C.B. Clarke and its pharmacological evaluation
73. Kanwal Javed (2011) Pharmacological evaluation of diamines, their precursors, some Schiff bases and complexes

74. Hammad Ismaial (2012) Biological evaluation of Cu-complexes of schiff-bases and their precursors.
75. Sahar Amjad (2012) *In-vitro* testing of *Rhazya stricta* extracts for important biological activities
76. Shahid Nasim (2012) Optimization of tissue culturing conditions and analysis of withanolides in *Withania coagulans*.
77. Amara Rashid (2012) *In-vitro* biological evaluation of selected medicinal plants and isolation of withanolides from *Withania coagulans*.
78. Sara Anjum (2012) Determination of biological activity of aromatic compounds having amino and nitro groups.
79. Saira Asif (2012) *In-vitro* propagation and optimization of *Agrobacterium rhizogene* mediated transformation of *Ajuga bracteosa*.
80. Aysha Zaka (2012) Determination of biological activity of some Dialdehyde monomers and polyazomethine ether sulfones.
81. Muhammad Asad (2012) Bioassay directed isolation of Aromatase inhibitors from *Withania coagulans* dunal.
82. Mariym Khalid (2013) Isolation of bioactive compounds and nano metallic complexes formation from extract of *Phytolacca latbenia* (Moq) H. Walter
83. Tooba Khalid (2013) Isolation and evaluation of bioactive compounds of *Phytolacca latbenia* (Moq) Hans Walter.
84. Tanveer Ahmed (2013) Biological activity-guided isolation of compounds from *Rhazya stricta* Decne
85. Aman Ullah (2013) *Agrobacterium tumefaciens* mediated genetic transformation of *Artemisia dubia* Wall. Ex Bess with Rol A gene and comparative analysis of the transgenic plants for their Artemisinin contents and its derivatives
86. Sidra Javad (2013) Biological evaluation of Schiff bases and their Cu and Ni metal complexes
87. Samina Rubnawaz (2013) Genetic transformation of *Ajuga bracteosa* Wall. Ex Benth for the enhancement of secondary metabolites
88. Maryum Shafiq (2013) Pharmaceutical evaluation of schiff bases and their Co and Pd metal complexes
89. Sehar Ilyas (2013) *Agrobacterium tumefaciens* mediated transformation of *Ajuga bracteosa* Wall. Ex Benth with rol A gene
90. Huma Naveed (2013) In Silico studies and *in vitro* assays of withanolides from *Withania coagulans*.
91. Anum Habib (2014) Determination of therapeutic potential of Schiff Base Metal complexes and their precursors.
92. Asif (2014) Optimization of tissue culture and transformation conditions of selected Edible plant species.
93. Faiza Arshad (2014) Pharmacological assessment of Novel Schiff Base Ligands and Metal complexes of Palladium and Copper.
94. Beenish Sohail (2014) Synthesis, characterization and biological evaluation of gold and iron nanoparticles
95. Zunaria Riaz (2014) Isolation purification and Biological evaluation of compounds from *Rhazya stricta* Dence.
96. M Arsalan Khan (2014) Cloning of myc tagged *rolA* gene in *Agrobacterium*-mediated plant transformation vector
97. Humna Hassan (2015) Genetic Transformation of *Withania coagulans* (stocks) Dunal with rol genes

98. Khulla Naseer (2015) Optimization and analysis of cell suspension cultures of *Lactuca sativa* L.
99. Maryum Naeem (2015) Optimization of regeneration and transformation of *Fagonia indica*
100. Aysha Kiran (2015) Biological evaluation of Benzimidazole ligands and their metal complexes
101. Afshan Anwar (2015) Determination of therapeutic potential of novel ferrocenyl amides
102. Noor ullah (2015) Association between Methylene Tetrahydrofolate Reductase (MTHFR) gene polymorphism and risk of male infertility in Pakistan
103. M. Ali Raza (2015) Molecular Genetic Diagnosis of suspected Huntington's disease patients and subsequent molecular characterization in Pakistani population.
104. Sara Zafar (2016) Transformation of *Artemisia annua* with *rol B* and *rol C* genes and its Biological Evaluation
105. Kiran Zafar (2016) Biological evaluation and molecular analysis of *Lactuca sativa* Var. Iceberg transformed with *rol* Genes.
106. Iram Shahzadi (2016) Genetic transformation of *Lycopersicon esculentum* Mill with AtPLC5 Gene
107. Gauhar Rehman (2016) Agrobacterium Mediated transformation of Tomato with Drought and Halotolerance Gene
108. Narmeen Ashraf (2016) Genetic Transformation of *Lycopersicon esculentum* Mill using an abiotic stress tolerance gene
109. Amna Naheed Khan (2016) *Agrobacterium tumefaciens* mediated genetic transformation of *Lycopersicon esculentum* Mill for enhancement of abiotic stress tolerance

#### **Current Research Students :-**

Nine Ph.D and six M.phil students

#### **Conferences / Workshops organized as convener/focal person**

1. National Conference on Trends in Biochemistry and Molecular Biology, 21<sup>st</sup> Feb, 2012 Quaid-i-Azam University, Islamabad
2. Professional Competency Enhancement Program for University Teachers, 11<sup>th</sup> June to 4<sup>th</sup> July 2012 Quaid-i-Azam University, Islamabad
3. 12th National & 3rd International Conference of Botany, Sept. 1<sup>st</sup> to 3<sup>rd</sup> 2012 Quaid-i-Azam University, Islamabad
4. International Conference on Applications of Molecular Biology in Medicine and Agriculture 20 -22 August 2013, Quaid-i-Azam University, Islamabad
5. ISESCO Women in Science Conference on Contribution of Pakistani Women in Scientific and Social Development March 8, 2016 Quaid-i-Azam University, Islamabad.

#### **Conference Presentations:-**

1. **B. Mirza** and I.J.Furner (1995) "Gene Inactivation in Transgenic *Arabidopsis*" at the 6th International Meeting on *Arabidopsis* Research, Madison, Wisconsin, USA. June 7-11-1995.
2. **B. Mirza** and I.J.Furner (1995) "DNA methylation and copy number of the insertion region influence transgene activity in *Arabidopsis*" at Mechanisms and Applications of Gene Silencing conference. Nottingham University, England. March 27th-31st 1995.

3. **B. Mirza** and S. Grant (1996) "Map based cloning of the *Enhancer of gene silencing 1* in *Arabidopsis*" at the Tenth Annual Plant Molecular Biology Retreat, Morehead, North Carolina, USA. September 20-22, 1996
4. **B. Mirza** (2000) Methylation of promoter sequence influences the transgene activity in *Arabidopsis* at All Pakistan Science Conference Muzaferabad. May 2000.
5. **B. Mirza** (2000) Irreversible inactivation of a transgene in *Arabidopsis thaliana* at 7<sup>th</sup> National Conference of Plant Scientists at University of Punjab Lahore. November 14-16, 2000.
6. **B. Mirza** (2001) Biotechnology: Legal, ethical and moral issues at Salzburg Seminars, Salzburg, Austria. Oct 14-21, 2001.
7. **B. Mirza** (2002) Antimalarial activity of some medicinal plants at the International workshop on health challenges of 21<sup>st</sup> century and traditional medicine in SAARC region. NIH Islamabad. November 4-6, 2002.
8. N. Zafar and **B. Mirza** (2003) Morphophysiological and biochemical analysis of genetic diversity of *Oryza sativa* L. in Pakistan. 8<sup>th</sup> National meeting of plant scientists. Department of botany, University of Karachi. Feb 24-28, 2003.
9. N. Saba and **B. Mirza** (2003) Ethyl methane sulphonate induced chemical mutagenesis in *Lycopersicon esculentum*. 8<sup>th</sup> National meeting of plant scientists. Department of botany, University of Karachi. Feb 24-28, 2003.
10. S. Aziz and **B. Mirza** (2003) Morphophysiological and biochemical analysis of genetic diversity of *Hordeum vulgare* L of West Asia and North Africa. 8<sup>th</sup> National meeting of plant scientists. Department of Botany, University of Karachi. Feb 24-28, 2003.
11. Saima Tazeen and **Bushra Mirza** (2003) *Agrobacterium tumefaciens* Mediated transformation of *Vigna radiata*. 7<sup>th</sup> International conference Trends in Biochemistry and molecular biology, Institute of Biochemistry and Biotechnology University of Punjab, Lahore Pakistan, April 2-5, 2003.
12. S. Nadeem, H. Zubair, **B. Mirza** and H.M. Muzammil (2004) Upgradation of cane molasses for amino acid fermentation by locally isolated bacteria. 24<sup>th</sup> Pakistan congress of zoology (international congress). Allama Iqbal Open University Islamabad. March 30<sup>th</sup> –April 1<sup>st</sup>, 2004.
13. A. Yasmeen and **B. Mirza** (2004) Generation of transgenic tomato with the *Arabidopsis* early flowering Leafy (*LFY*) gene. 2<sup>nd</sup> National conference of Biology. G. C. University, Lahore. 22-24<sup>th</sup> April, 2004.
14. A. Mannan and **B. Mirza** (2004). Comparative study of Artemisinin content in different species of *Artemisia* available in Pakistan and antibacterial assay of *Artemisia vestitia*. International symposium on "Medicinal plants: Linkages beyond national boundaries". NARC Islamabad. 7-9, September 2004.
15. S. T. Noor, S. Sadaf and **B. Mirza** (2004). Generation of transgenic *Artemisia absinthium* L. International symposium on "Medicinal plants: Linkages beyond national boundaries". NARC Islamabad. September 7-9, 2004.
16. Ahsan Hussain, H. Zubair and **B. Mirza** (2004) Production and purification of alkaline protease from *Aspergillus terreus*. 4<sup>th</sup> International Science Conference. University of Azad Jammu and Kashmir, Muzaffarabad. October 6-9, 2004.
17. Ihsan ul Haq, Maryum Jamil, Abdulmannan and **B. Mirza** (2004). Antibacterial and Brine Shrimp toxicity assay of crude extracts of *Artemisia dubia*. 5<sup>th</sup> International & 15<sup>th</sup> National Chemistry Conference. Quaid-i-Azam University Islamabad. November 24-27, 2004.

18. Ahsan Hussain and **B. Mirza** (2004) Purification and characterization of alkaline protease from *Aspergillus terreus*. 5<sup>th</sup> International & 15<sup>th</sup> National Chemistry Conference. Quaid-i-Azam University Islamabad. November 24-27, 2004.
19. S. Irshad and **B. Mirza** (2004) Antimalarial activity of traditional medicinal plants. 5<sup>th</sup> International & 15<sup>th</sup> National Chemistry Conference. Quaid-i-Azam University Islamabad. November 24-27, 2004.
20. A. Mannan, Ihsan-ul-Haq and **B. Mirza** (2004). Comparative study of Artemisinin content in different species of *Artemisia* available in Paksitan. 5<sup>th</sup> International & 15<sup>th</sup> National Chemistry Conference. Quaid-i-Azam University Islamabad. November 24-27, 2004.
21. **B. Mirza** (2004) Understanding the Gender Dimensions of Biotechnology Research and Application. Regional Consultative Expert Workshop. National Commission on Biotechnology, the Gender Advisory Board, UNCSTD. November 30<sup>th</sup> - December 1<sup>st</sup>, 2004.
22. **B. Mirza** (2004) Plant genetic engineering: Methodology, applications and concerns. National conference of Genetic Engineering, Hazara University, Mansehra. 1<sup>st</sup> – December 3<sup>rd</sup>, 2004.
23. Shawkat Ali and **Bushra Mirza** (2004) Transformation of Rough Lemon (*Citrus jambhiri* Lush.) with yeast *HAL2* gene. 5<sup>th</sup> International Plant Tissue Culture & Biotechnology Conference. University of Dhaka, Bangladesh. December 4-6, 2004.
24. A. Yasmeen **B. Mirza** (2004) Generation of transgenic tomato with the *Arabidopsis* early flowering Leafy (*LFY*) gene. 5<sup>th</sup> International Plant Tissue Culture & Biotechnology Conference. University of Dhaka, Bangladesh. December 4-6, 2004.
25. Munawar Ahmad and **Bushra Mirza** (2004) Factors affecting efficiency of *Agrobacterium* mediated transformation in Rough Lemon (*Citrus jambhiri* Lush.). 5<sup>th</sup> International Plant Tissue Culture & Biotechnology Conference. University of Dhaka, Bangladesh. December 4-6, 2004.
26. Saba Irshad and **Bushra Mirza** (2005) Antimalarial activity of traditional medicinal plants *in vitro*. 8<sup>th</sup> International symposium on protein structure function relationship. HEJ research Institute of Chemistry University of Karachi. Jan. 7-10, 2005.
27. S. Ali and **B. Mirza** (2005) Transformation of Rough Lemon (*Citrus jambhiri* Lush.) with yeast *HAL2* gene. International conference on Biotechnology for salinity and drought tolerance in plants. Pakistan Academy of Sciences, Islamabad. March 28-31, 2005.
28. **Bushra Mirza** and Abida Yasmeen (2005) Generation of transgenic tomato with the *Arabidopsis* early flowering *LEAFY* (*LFY*) and *APETALA I* (*API*) genes. 16<sup>th</sup> International conference on *Arabidopsis* research, University of Wisconsin, Medison, USA. June 15-19, 2005.
29. Farza Latif Ansari, Samina Nazir, Humaira Noureen and **Bushra Mirza** (2005) Combinatorial synthesis and antibacterial studies on an indexed chalcone library. 11<sup>th</sup> Asian Chemical Congress, Korea University, Seoul, Korea. August 24-26, 2005.
30. Muhammad Hassan, Waheed Arshad, Munawar Ahmad, Abida Yasmeen and **Bushra Mirza** (2005) In-planta genetic transformation of tomato through *Agrobacterium* infiltration of ripened fruits. 4<sup>th</sup> World Congress of Cellular and Molecular Biology. France October 7-12, 2005.
31. Munawar Ahmad and **Bushra Mirza** (2005). An efficient protocol for transient transformation of intact fruit and transgene expression in *Citrus*. 4<sup>th</sup> World Congress of Cellular and Molecular Biology. France October 7-12, 2005.

32. Maryum Jamil and **Bushra Mirza** (2005). Antibacterial, cytotoxicity and antitumor assay of selected plant species of Pakistan. 4<sup>th</sup> World Congress of Cellular and Molecular Biology. France October 7-12, 2005.
33. Rehan Naeem and **Bushra Mirza** (2005) Characterization of *Hordeum vulgare* accessions of Pakistan by Hordein SDS-PAGE. Plant Genetics, Mechanisms of Genetic Variation. American Society for Plant Biologists, Snowbird Resort & Conference Centre, Snowbird, Utah. October 12-16, 2005. France October 7-12, 2005.
34. Farzana Latif Ansari, Samina Nazir, Humaira Noureen and **Bushra Mirza** (2006) Combinatorial synthesis and brine shrimp cytotoxicity studies on an indexed chalcone library. 10<sup>th</sup> International Symposium on Natural Product Chemistry. H.E.J Research Institute of Chemistry. Karachi. January 6-9, 2006.
35. Rehan Naeem and **Bushra Mirza** (2006). Characterization of genetic diversity in core collection accessions of barley, *Hordeum vulgare*, of Pakistan. 9th National Conference of Plant Scientists, the Institute of Botany, University of Sindh, Jamshoro, Pakistan. February 13-15, 2006.
36. Bushra Mirza (2007) Molecular Markers: Tool for genetic diversity studies An international conference on biodiversity conservation as a renewable resource of Pakistan held in Arid Agriculture University in March 2007.
37. Muhammad Shoaib, Ibrar Ahmed, Abdul Mannan, Waseem Ahmad and Bushra Mirza (2007) Genetic diversity in wild oat (*Avena fatua* L.) populations of Pakistan on the basis of seed storage protein polymorphism An international conference on biodiversity conservation as a renewable resource of Pakistan held in Arid Agriculture University in March 2007.
38. Madiha Islam, Ibrar Ahmed, Waheed Arshad, Muhammad Rashid Khan and Bushra Mirza (2007) Genetic diversity in wild oat (*Avena fatua* L.) populations of Pakistan as revealed by microsatellite markers An international conference on biodiversity conservation as a renewable resource of Pakistan held in Arid Agriculture University in March 2007.
39. Ibrar Ahmed, Madiha Islam, Abdul Mannan, Muhammad Sheeraz Ahmad, Rehan Naeem and Bushra Mirza (2007) Optimization of conditions for assessment of genetic diversity in barley (*Hordeum vulgare* L.) using microsatellite markers An international conference on biodiversity conservation as a renewable resource of Pakistan held in Arid Agriculture University in March 2007.
40. Muhammad Zaeem Akhtar, Rehan Naeem and Bushra Mirza (2007) Single reaction PCR optimization of Randomly Amplified Polymorphic DNA (RAPD) markers for *Artemisia* An international conference on biodiversity conservation as a renewable resource of Pakistan held in Arid Agriculture University in March 2007.
41. Muhammad Zaeem Akhtar, Nazia Hassan, Muhammad Fayyaz Chaudhary and Bushra Mirza (2007) Phytotoxic effect of *Artemisia* Species 5<sup>th</sup> executive management seminar on recent advances in environmental science and management, held in April 11-13, 2007 by Pakistan institute of science and technology Islamabad
42. Bushra Mirza (2008) Evaluation of selected medicinal plants and synthetic compounds for biological activities. Second National Conference on health biotechnology, Pakistan Academy of Sciences, Islamabad, 27-28 May 2008.
43. Maryam Jamil, Bushra Mirza and Ihsan ul Haq 2008. Screening of Selected Plant Species of Pakistan for Pharmacological Activities. 9<sup>th</sup> Biennial Conference Advances in Biochemistry and Molecular Biology. PMAS-Arid Agriculture University Rawalpindi. December 17-20, 2008.

44. Naila Safdar and Bushra Mirza 2008. Transformation of tomato (*Solanum lycopersicum L.*) with *Yeast Halotolerance HAL 1* gene. 9<sup>th</sup> Biennial Conference Advances in Biochemistry and Molecular Biology. PMAS-Arid Agriculture University Rawalpindi. December 17-20, 2008.
45. Waheed Arshad, Waseem Ahmad and Bushra Mirza 2008. Comparison of Transient *Gus* Expression through Biolistic Gun and *Agrobacterium* Mediated Transformation in Tomato, Potato and Rice. 9<sup>th</sup> Biennial Conference Advances in Biochemistry and Molecular Biology. PMAS-Arid Agriculture University Rawalpindi. December 17-20, 2008.
46. Muhammad Ajmal, Muhammad Zaeem Akhtar, Rehan Naeem, Ibrar Ahmed, Rashid Mehmood and Bushra Mirza Microsatellite Polymorphism in *Avena Fatua L* (Wild oat) Germplasm of Pakistan. 9<sup>th</sup> Biennial Conference Advances in Biochemistry and Molecular Biology. PMAS-Arid Agriculture University Rawalpindi. December 17-20, 2008.
47. Rehan Naeem, Zaeem Akhtar and Bushra Mirza Development of Optimal Core Collection for *Hordeum vulgare* Germplasm by SSR Analysis: an Optimal Strategy for Germplasm Management. 9<sup>th</sup> Biennial Conference Advances in Biochemistry and Molecular Biology. PMAS-Arid Agriculture University Rawalpindi. December 17-20, 2008.
48. Muhammad Zaeem Akhtar, Nazia Hassan, Rehan Naeem, Muhammad Ajmal, Muhammad Fayyaz Chaudhary and Bushra Mirza. Maximizing Randomly Amplified Polymorphic DNA (RAPD) Markers to Study Genetic Diversity among *Artemisia* Species. 9<sup>th</sup> Biennial Conference Advances in Biochemistry and Molecular Biology. PMAS-Arid Agriculture University Rawalpindi. December 17-20, 2008.
49. Amna Noor, Hamid Rashid, Zubeda Chaudhry and Bushra Mirza. Effect of Application of Different Concentrations of Acetosyringone for the Improvement of Transform. 9<sup>th</sup> Biennial Conference Advances in Biochemistry and Molecular Biology. PMAS-Arid Agriculture University Rawalpindi. December 17-20, 2008.
50. Ihsan ul Haq, Nazif Ullah, Simab Kanwal, Gulnaz bibi, and Bushra Mirza Biological Evaluation and Phytochemical Analysis of *Euphorbia wallichii* Root Extract and its Fractions. 9<sup>th</sup> Biennial Conference Advances in Biochemistry and Molecular Biology. PMAS-Arid Agriculture University Rawalpindi. December 17-20, 2008.
51. Bushra Hafiz Kiyani and Bushra Mirza comparative artemisinin analysis in *Artemisia annua* and *Artemisia dubia* transformed with two different *agrobacteria* harbouring *rol ABC* gene, 12th national & 3rd international conference of botany, QAU Isb Sept. 1st to 3rd 2012.
52. Munaza Ihtisham, Ihsan-ul-Haq, Sara Sarwar, Samreen Saleem, Laila Jafri, Nazif Ullah and Bushra Mirza, HPLC-DAD analysis and free radical scavenging potential of *quercus dilatata*, 12th national & 3rd international conference of botany, QAU Isb Sept. 1st to 3rd 2012.
53. Rehan Naeem and Bushra Mirza, Development and characterization of barely core collection: A strategy for germ plasm management, 12th national & 3rd international conference of botany, QAU Isb Sept. 1st to 3rd 2012.
54. Samreen Saleem, Tamara P. Kondratyuk, Leng Chee Chang, Bushra Mirza and John M. Pezzuto. Cytotoxic Compounds from *Fagonia cretica L.* Exerts p53 Dependent and Independent Apoptosis via DNA Damage in Human Breast Cancer Cell Lines. International Conference on Applications of Molecular Biology in

- Medicine and Agriculture 20 -22 August 2013, Quaid-i-Azam University, Islamabad
55. Bushra Hafeez Kiani, Nazif Ullah, Ihsan-ul-Haq and Bushra Mirza. Transgenic *Artemisia dubia* WALL Showed Altered Phytochemistry and Pharmacology International Conference on Applications of Molecular Biology in Medicine and Agriculture 20 -22 August 2013, Quaid-i-Azam University, Islamabad
  56. Bushra Mirza. 2nd Annual South Asia Biosafety Conference 15-16 September 2014 Taj Samudra Hotel, Colombo, Sri Lanka
  57. Novel TGR5 agonists stimulating biosynthesis and secretion of glucagon-like peptide-1 (GLP-1) Jafri, L (Jafri, L.)[ 1 ] ; Saleem, S (Saleem, S.)[ 2 ] ; Calderwood, D (Calderwood, D.)[ 3 ] ; Gillespie, A (Gillespie, A.)[ 3 ] ; Mirza, B (Mirza, B.)[ 1 ] ; Green, BD (Green, B. D.)[ 3 ] DIABETIC MEDICINE 33 Pages: 26-27 Supplement: 1 Special Issue: SI Meeting Abstract: A62 Published: MAR 2016
  58. Workshop on Preparing Biological Laboratories for ISO35001 (CWA 15793) Laboratory Biorisk Management. PBSA and Forgarty International Center, NIH 10-13 December 2016 Marriott Karachi.
  59. Joint meeting of presidents of ISESCO Women Science Chairs 7-9 March 2017 ISESCO's Headquarters, Rabat, Kingdom of Morocco.

#### Publications:-

1. Afsari Sharif, Muhammad E. Haq, **Bushra Mirza** and Muhammad Ashraf (1992) "Ultrastructural Localization of Ag-NOR Stained Proteins in Interphase Nucleolus of *Hordeum vulgare*". Journal of Research (Science), 4(1) 1-5.
2. Muhammad Ashraf, Afsari Sharif, **Bushra Mirza** (1995). "Effects of 5-azacytidine on nucleolus in root tip cells of two crops". The Nucleus 38 (1,2).
3. **Bushra Mirza** (2001) Irreversible inactivation of a transgene in *Arabidopsis thaliana*. Pakistan Journal of Botany 33 (2) 203-209.
4. **Bushra Mirza** (2001) *Arabidopsis* a model system for plant research has been completely sequenced. On line Journal of Biological Sciences 1(4) 298.
5. **Bushra Mirza** (2001) Genetic and molecular analysis of transgenic Arabidopsis, using a chlorophyll gene as a marker. Science Vision 6(4) 48-55.
6. Zubeda Chaudary, I. Feroz, Waseem Haider, Hamid Rashid, **Bushra Mirza** and A. Quraishi (2001) Varietal Response of *Lycopersicon esculentum* L. to Callogenesis and Regeneration. OnLine Journal of Biological sciences 1 (12) 1138-1140.
7. Nusrat Saba and **Bushra Mirza** (2002) Ethyl methane sulfonate induced genetic variability in *Lycopersicon esculentum*. International Journal of Agriculture and Biology 4 (1) 89-92.
8. Nyla Jabeen and **Bushra Mirza** (2002) Ethyl Methane Sulfonate enhances genetic variability in *Capsicum annum*. Asian Journal of Plant Sciences. 1(4) 425-428.
9. Rashida Kanwal, Toqeer Ahmed, I. H. Athar and **Bushra Mirza** (2002) Comparative analysis of quality of milk collected from Rawalpindi/Islamabad region. Pak. J. Food Sci. 12(1-2) 29-33.
10. Nyla Jabeen and **Bushra Mirza** (2004) Ethyl Methane Sulfonate induces morphological mutations in *Capsicum annum*. International Journal of Agriculture & Biology. 6 (2) 340-345.
11. Rashida Kanwal, Toqeer Ahmed and **Bushra Mirza** (2004) Comparative analysis of quality of milk collected from buffalo, cow, goat and sheep of

- Rawalpindi/Islamabad region in Pakistan. Asian Journal of Plant Sciences. 3(3) 300-305.
12. **Bushra Mirza** (2004) Islamic perspectives on Biotechnology. In: Cross Cultural Biotechnology: Ethical, Legal and Social Issues. (M. Brannigan ed). Rowman & Littlefield Publishers, Inc. Maryland, USA. ISBN(s) 9780742532663
  13. Saima Tazeen and **Bushra Mirza** (2004) Factors affecting *Agrobacterium tumefaciens* mediated genetic transformation of *Vigna radiata* L. Wilczek. Pakistan Journal of Botany. 36(4):887-896.
  14. Munawar Ahmad and **Bushra Mirza** (2005). An efficient protocol for transient transformation of intact fruit and transgene expression in *Citrus*. Plant Molecular Biology Reporter (Canada) 23: 419a-419k.
  15. Amna Noor, Hamid Rashid, Zubeda Chaudhry and **Bushra Mirza** (2005) High frequency regeneration from scutellum derived calli of basmati rice cv.basmati 385 and super basmati. Pakistan Journal of Botany. 37(3):673-684.
  16. **Bushra Mirza** (2005) Influence of the nature of the T-DNA insertion region on transgene expression in *Arabidopsis thaliana*. Russian Journal of Genetics, 41 (12) 1322-1328.
  17. Nyla Jabeen, Zubeda Chaudhry, Hamid Rashid and **Bushra Mirza** (2005) Effect of Genotype and explant type on *in vitro* shoot regeneration of tomato (*Lycopersicon esculentum* Mill). Pakistan Journal of Botany. 37(4):899-903.
  18. Farzana Latif Ansari, Samina Nazir, Humaira Noureen and **Bushra Mirza** (2005) Combinatorial synthesis and antibacterial studies on an indexed chalcone library. Chemistry and Biodiversity (Zurich) 2: 1656-1664.
  19. Nizam-ud-Din, **Bushra Mirza**, M. Qamar and A. Khabir (2005) Root formation in true potato seed parental lines by IBA application. Pak. J. Agri.Sci., 42(3-4): 29-35.
  20. Amna Noor, Zubeda Chaudhry, Hamid Rashid and **Bushra Mirza** (2006) Evaluation of resistance of rice varieties against bacterial blight caused by *Xanthomonas oryzae* pv. *Oryzae*. Pakistan Journal of Botany. 38(1): 193-203.
  21. Shawkat Ali and **Bushra Mirza** (2006) Micropropagation of rough lemon (*Citrus jambhiri* Lush.): Effect of explants type and hormone concentration. Acta Botanica Croatica. 65 (2): 137-146.
  22. Rehan Naeem, Ibrar Ahmed, Rehana Asghar and **Bushra Mirza** (2006). Characterization of *Hordeum vulgare* accessions of Pakistan by Hordein SDS-PAGE. Cereal Research Communications. (Hungary) 34 (4): 1247-1254.
  23. Farkhanda Shaheen, Amin Badshah, Marcel Gielen, Michal Duesk, Karla Fejfarova, Dick de Vos and **Bushra Mirza** (2007) Synthesis, characterization, antibacterial and cytotoxicity activity of new Palladium (II) complexes with Dithiocarbamate ligands. X-ray structure of Bis (dibenzyl-i-s'-dithiocarbamato)pd(II) New Palladium(II) Complexes with dithiocarbamate ligands. Journal of Organometallic Chemistry 692: (14) 3019-3026.
  24. Mohammad Hanif, Mukhtiar Hussain, Saqib Ali, Moazzam H. Bhatti, M. Sheeraz Ahmed, **Bushra Mirza**, Helen S. Evans (2007) Synthesis, spectroscopic investigations, crystal structures and biological screening of the organotin (iv) derivatives of peperonylic acid. Turkish Journal of Chemistry 31: 349-361.
  25. Samia Inayatullah, Rukhsana Irum, Ateeq-ur-Rehman, M. Fayyaz Chaudhary and **Bushra Mirza** (2007) Biological Evaluation of Some Selected Plant Species of Pakistan. Pharmaceutical Biology. 45: 397-403.
  26. Ahsan Ullah, Farzana Latif Ansari, Ihsan-ul-Haq, Samina Nazir and **Bushra Mirza** (2007) Combinatorial Synthesis and Antitumour Studies on an Aryl and Heteroaryl

- Chalcone Library using Positional Scanning Method. *Chemistry and Biodiversity (Switzerland)* 4: 203-214.
27. Ahsan Hussain, Muhammad Zia and **Bushra Mirza** (2007) Cytotoxic and Antitumor potential of *Fagonia cretica* L. *Turkish Journal of Biology*. 31: 19-24.
  28. Muhammad Sheeraz Ahmed, Mukhtiar Hussain, Mohammad Hanif, Saqib Ali, and **Bushra Mirza** (2007) Synthesis, chemical characterization and biological screening for Antitumor and cytotoxicity of Organotin (IV) derivatives of 3,4-Methylenedioxy 6-nitrophenylpropenic acid. *Molecules* 12: 2348-2363.
  29. **Bushra Mirza**, Mohammad Shoaib, Munawar Ahmad, Yong- Bi Fu (2007) Genetic diversity in Pakistani populations of *Avena fatua* revealed by seed storage protein polymorphism. *Communications in Biometry and Crop Science*. 2: 41-48.
  30. A. Mannan, N. Shaheen, A. Rehman, W. Arshad, M. Zia and **B. Mirza** (2007) Production and release of allelopathic compounds by *Artemisia* hairy root cultures. *Allelopathy Journal*. 20(20): 379-386.
  31. Ian Funer, Louise Ellis, Saleha Bahkt, **Bushra Mirza** and Mazhar Sheikh (2008) The CAUT lines; a novel resource for studies of cell autonomy in Arabidopsis. *The Plant Journal*. 53 (4):645-660.
  32. Muhammad Zareef, Rashid Iqbal, **Bushra Mirza**, Khalid M. Khan, Abdul Manan, Faheem Asim and Sher W. Khan (2008) Synthesis and Antimicrobial Activity of some derivatives of acylhydrazine including novel benzenediazasulfonamides. *ARKIVOC* (ii) 141-152.
  33. M. Sheeraz Ahmed, Mukhtiar Hussain, Mohammad Hanif, Saqib Ali, Mazhar Qayyum and **Bushra Mirza** (2008) Di- and Triorganotin(IV) esters of 3, 4-Methylenedioxycinnamic Acid: Synthesis, Spectroscopic characterization and Biological Screening of antimicrobial, cytotoxic and antitumor activities. *Chem Biol Drug Des* 71: 568-576.
  34. M. Hasan, A.J. Khan, S. Khan, A.H. Shah, A.R. Khan and **Bushra Mirza** (2008) Transformation of tomato (*Lycopersicon esculentum* Mill.) with Arabidopsis early flowering gene *Apetal1* (*API*) through *Agrobacterium* infiltration of ripened fruits. *Pakistan Journal of Botany* 40 (1): 161-173.
  35. Farzana Latif Ansari, Fatima Iftikhar, Ihsan-ul-Haq, **Bushra Mirza**, Mohammad Baseer and Umer Rashid (2008) Solid-phase synthesis and biological evaluation of a parallel library of 2,3-dihydro-1,5-benzothiazepines. *Bioorganic & Medicinal Chemistry* 16(16): 7691-7697.
  36. M. Khawar Rauf, M. Adeel Saeed, Imtiaz-ud-Din, M. Bolte, A Badshah, and **Bushra Mirza** (2008) Synthesis, characterization and biological activities of some new Organotin (IV) derivatives: Crystal structure of  $[\text{Sn Ph}_3](\text{OOC}_6\text{H}_4\text{OH})$  and  $[(\text{SnMe}_3)_2 (\text{OOC})_2\text{C}_6\text{Cl}_4 (\text{DMSO})_2]$ . *Journal of Organometallic Chemistry* 693 (18): 3043-3048.
  37. Aamir Saeed, Sabah Zaman, Maryam Jamil and **Bushra Mirza** (2008) Synthesis and antifungal activity of some novel N-(4-Phenyl-3-arylthiazol-2(3H)-ylidene) substituted benzamides. *Turkish Journal of Chemistry* 32: 585-592.
  38. Abdual Mannan, Nazia Shaheen, Waheed Arshad, Rizwana Aleem Qureshi, Muhammad Zia and **Bushra Mirza** (2008) Hairy roots induction and artemisinin in *Artemisia dubia* and *Artemisia indica*. *African Journal of Biotechnology* 7 (18): 3288-3292.
  39. Muhammad S Ahmad, **Bushra Mirza**, Mukhtiar Hussain, Muhammad Hanif, Saqib Ali, Michael J Walsh, Francis L Martin (2008) ATR-FTR spectroscopy detects alterations induced by organotin(IV) carboxylates in MCF-7 cells at sub-cytotoxic/genotoxic concentrations. *PMC Biophysics* 1:3 doi:10.1186/1757-5036-1-3.

40. Abida Yasmeen, **Bushra Mirza**, Samia Inayatullah, Naila Safdar, Maryam Jamil and M. Fayyaz Choudhry (2009) In Planta transformation of tomato. *Plant Molecular Biology Reporter* 27 (1) 20-28.
41. Haq Nawaz, Zareen Akhter, Sumaira Yameen, Humaria M. Siddiqi, **Bushra Mirza** and Arshia Rifat (2009) Synthesis and biological evaluations of some Schiff-base esters of ferrocenyl aniline and simple aniline. *Journal of Organometallic Chemistry* 694: 2198-2203.
42. Ibrar Ahmed, Madiha Islam, Waheed Arshad, Abdul Mannan, Wasim Ahmad and **Bushra Mirza** (2009) High quality plant DNA extraction, suitable for PCR; is it still a problem? *Journal of Applied Genetics* 50 (2):105-107.
43. Ibrar Ahmad, Madiha Islam, Abdul Mannan, Rehan Naeem and **Bushra Mirza** (2009) Optimization of conditions for assessment of genetic diversity in barley (*Hordium vulgare* L.) using microsatellite markers. *Barley Genetic Newsletter* 39:5-12.
44. Mukhtiar Hussain, Muhammad Hanif Saqib Ali, Saira Shahzadi, Muhammad Sheeraz Ahmad, **Bushra Mirza** and Helen S. Evans (2009) Synthesis And Coordination Chemistry Of Organotin(IV) Complexes of 2,3-Methylenedioxyphenylpropenoic Acid. *Journal of Coordination Chemistry* 62 (13) 2229-2238.
45. Uzma Habib, Amin Badshah, Ulrich Fkrke, Rizwana Aleem Qureshi, **Bushra Mirza**, Nazar-ul-Islam and Azeem Khan (2009) Synthesis of (2,4-Diamino-5-(3', 4',5'-trimethoxybenzyl) Pyrimidine) Copper (II) Complex at 20-25° C and its structural characterization. *J. Chem. Crystallogr.* 39:607-611.
46. Mukhtiar Hussain, Adnan Siddique, Muhammad Sheeraz Ahmad, Muhammad Hanif, Saqib Ali and **Bushra Mirza** (2009) Dimethyltin(IV) Derivatives of Biologically Potent Substituted Phenylacrylic Acids; Synthesis, Chemical Characterization and Inhibitory Effects on *Agrobacterium Tumefaciens* Cells. *Chemical Biology & Drug Design* 74: 183-189.
47. Uzma Habib, Amin Badshah, Ulrich Florke, Rizwana Aleem Qureshi, **Bushra Mirza**, Nazar-ul-Islam, Azeem Khan. (2009) Synthesis and structural characterization of (2,4-Diamino-5-(3', 4', 5'-Trimethoxy benzyle) Pyrimidine copper(II) Complex. *Journal of Chemistry crystallography.* 703-734.
48. Sadaf Yaqoob, Saqib Ali, Ihsan-ul-Haq and **Bushra Mirza** (2009) Interaction of Naproxen with Transition Metals: Synthesis, Characterization, Anti-inflammatory Activity and Kinetic Studies. *Journal of Coordination Chemistry* 62(21): 3463-3470.
49. Farzana Latif Ansari, Muhammad Baseer, Fatima Iftikhar, Saima Kulsoom, Ahsan Ullah, Samina Nazir, Awais Shaukat, ihsan-ul-Haq and **Bushra Mirza** (2009) Microwave assisted synthesis, antibacterial activity against *Bordetella bronchiseptica* of a library of 3'- hydroxyaryl and heteroaryl chalcones and molecular descriptor-based SAR. *ARKIVOC* (x) 318-332.
50. Nyla Jabeen **Bushra Mirza**, Zubeda Chaudhary, Hamid Rashid and Muhammad Gulfray (2009) Study of factors affecting *Agrobacterium* mediated gene transformation in tomato (*Lycopersicon esculentum* Mill.) CV. Riogrande using rice chitinase (CHT-3) gene *Pakistan Journal of Botany* 41(5): 2605-2614.
51. Ateeq-ur-Rehman, Abdul Mannan, Samia Inayatullah, M. Zaeem Akhtar, Mazhar Qayyum and **Bushra Mirza** (2009) Biological evaluation of wild thyme (*Thymus serphillum*). *Pharmaceutical Biology* 47 (7):628-633.
52. Nighat Fatima, Muhammad Zia, Riaz-ur-Rehman, Zarrin Fatima Rizvi, Safia Ahmad, **Bushra Mirza** and M. Fayyaz Chaudhary (2009) Biological activities of

- Rumex dentatus L: Evaluation of methanol and hexane extracts. African Journal of Biotechnology 8(24): 6945-6950.
53. Abdul Mannan, Tooba Noor Syed and **Bushra Mirza** (2009) Factor affecting Agrobacterium tumefaciens mediated transformation of *Artemisia absinthium* L. Pakistan Journal of Botany 41(6): 3239-3246.
  54. Muhammad Adeel Saeed, Muhammad Khawar Rauf, Imtiaz-ud-din, Amin Badshahj, Muhammad Zaeem Akhtar and **Bushra Mirza** (2010) Some bioactive organotin (IV) derivatives with 3,4-dichlorophenylacetic acid: synthesis, spectroscopic properties and X-ray structure of [Sn<sub>4</sub>(C<sub>4</sub>H<sub>9</sub>)<sub>8</sub>(OOCCH<sub>2</sub>C<sub>6</sub>H<sub>3</sub>Cl<sub>2</sub>O<sub>2</sub>)]. Turk J Chem 33:109-118.
  55. Muhammad Hanif, Mukhtiar Hussain, Saqib Ali, Moazzam H. Bhatti, Muhammad Sheeraz Ahmed, **Bushra Mirza** and Helen Stoeckli-Evans (2010) In vitro biological studies and structural elucidation of organotin(IV) derivatives of 6-nitropiperonylic acid: Crystal structure of {[C(CH<sub>2</sub>O<sub>2</sub>C<sub>6</sub>H<sub>2</sub>(o-NO<sub>2</sub>)COO)SnBu<sub>2</sub>]<sub>2</sub>O}·2. Polyhedron 29:613-619
  56. M. Hussain, M. Hanif, S. Ali, S. Shahzadi, M.S. Ahmad, **B. Mirza** and H.S. Evans (2010) In Vitro Antitumor and Antibacterial Assay of Organotin (IV) Complexes of 2,3-Methylenedioxybenzoic Acid: X-Ray Structure of [(C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>Sn(C<sub>8</sub>H<sub>5</sub>O<sub>4</sub>)<sub>2</sub>]. Journal of the Iranian Chemical Society 7(1):155-163.
  57. Mukhtiar Hussain, Muhammad Hanif, Muhammad Sheeraz Ahmad, Saqib Ali and **Bushra Mirza** (2010) Structure Elucidation and Inhibitory Effects of Self Assembled Organotin (IV) Esters of p-tolyl Acetic Acid on Bacterial, Fungal, Brine Shrimps and Potato tumor cells. Drug and Chemical Toxicology 33(2): 183-192.
  58. Muhammad Zia, **Bushra Mirza**, Salman Akbar Malik and Muhammad Fayyaz Chaudhary (2010) Expression of rol genes in transgenic soybean (*Glycine max* L.) leads to changes in plant phenotype, leaf morphology, and flowering time. Plant Cell Tiss Organ Cult. 103:227–236
  59. Abdul Mannan, Ibrar Ahmed, Waheed Arshad, Muhammad F Asim, Rizwana A Qureshi, Izhar Hussain and **Bushra Mirza** (2010) Survey of artemisinin production by diverse *Artemisia* species in northern Pakistan. Malaria Journal 9:310 doi: 10.1186/1475-2875-9-31.
  60. Hussain A, Mannan A, Zubair H, and **Bushra Mirza** (2010). Purification and Characterization of Alkaline Proteases from *Aspergillus terreus*. Journal of the Chemical Society of Pakistan. 32: (4): 497-504
  61. Zaheer, M, Shah A, Akhter Z , Qureshi R , **Bushra Mirza**, Tauseef M, Bolte M (2011) Synthesis, characterization, electrochemistry and evaluation of biological activities of some ferrocenyl Schiff bases. Applied Organometallic Chemistry.1 : 61-69
  62. Rehan Naeem, Lynn Dahleen and **Bushra Mirza** (2011) Genetic differentiation and geographical Relationship of Asian barley landraces using SSRs. Genetics and Molecular Biology 34: 2, 268-273
  63. Haroon Ahmed, **Bushra Mirza**, Qasim Khan, Waseem Safdar and Mazhar Qayyum (2011) Seroprevalence of hypodermosis (*Hypoderma lineatum*) in the cattle of potohar region, Pakistan. International Journal of Cell and Molecular Biology 2(2):497-510.

64. N. Safdar, A. Yasmeen and **B. Mirza** (2011) An insight into functional genomics of transgenic lines of tomato cv Rio Grande harbouring yeast halotolerance genes *Plant Biology* 13: 620-631.
65. G. bibi, Ihsan-ul-Haq, N. Ullah, A. Mannan and **B. Mirza** (2011) Antitumor, cytotoxic and antioxidant potential of *Aster thomsonii* extracts. *African Journal of Pharmacy and Pharmacology*. Vol 5(2,) pp. 252-258.
66. Saba Irshad, Abdul Mannan and **Bushra Mirza** (2011) Antimalarial activity of three Pakistani plants. *Pakistan Journal of Pharmaceutical Sciences*. 24(4):589-591.
67. Mannan Abdul; Ahmed Ibrar; Arshad Waheed; **Bushra Mirza** (2011) Effects of Vegetative and Flowering Stages on the Biosynthesis of Artemisinin in *Artemisia* Species. *Archives of Pharmacal Research* 34(10):1657-1661
68. Simab Kanwal, Nazif Ullah, Ihsan-ul-Haq, Imran Afzal, **Bushra Mirza** (2011). Antioxidant, antitumor activities and phytochemical investigation of *Hedera nepalensis* K. Koch, An important medicinal plant from Pakistan. *Pakistan Journal of Botany* 43: 85-89.
69. Nasima Arshad, Samreen Saleem and **Bushra Mirza** (2012) Electrochemical And Spectroscopic Investigations Of Isoniazide And Its Analogs With Ds.DNA At Physiological Ph: Evaluation Of Biological Activities. *European journal of medicinal Chemistry* 47: 452-461
70. Samia Inayatullah, Paul Prezler, Hassan K. Obied, Ata-ur Rehman, **Bushra Mirza** (2012) Bioprospecting traditional Pakistani medicinal plants for potent antioxidants. *Food Chemistry* 132: 222-229.
71. Ihsan-ul-haq, Nazif Ullah, Gulnaz Bibi, Simab Kanwal, Muhammad Sheeraz Ahmad and **Bushra Mirza** (2012). Antioxidant/anticancerous activity and phytochemical analysis of *Euphorbia wallichii* root extract and its fraction. *Iranian Journal of Pharmaceutical Research*. 11 (1):241-249.
72. Laila Jafri, Farzana L. Ansari, Maryam Jamil, Saima Kalsoom, Sana Qureishi and **Bushra Mirza** (2012) Microwave-assisted Synthesis and Bioevaluation of Some Semicarbazones. *Chem Biol Drug Des*; 79: 950–959.
73. Bushra Hafeez Kiani, Naila Safdar, Abdul Mannan and **Bushra Mirza** (2012). Comparative Artemisinin analysis in *Artemisia dubia* transformed with two different *Agrobacterium* harbouring *rol ABC* genes. *Plant Omics Journal* 5(4):386-391.
74. Asghari Gul, Zareen Akhter, Arshad Bhatti, Muhammad Siddiq , Abbas Khan, Humaira M. Siddique, Naveed Kauser Janjua, Amber Shaheen, Sehrish Sarfraz, **Bushra Mirza** (2012) Synthesis, physicochemical studies and potential applications of high-molecularweight ferrocene-based poly(azomethine)ester and its soluble terpolymers. *Journal of Organometallic Chemistry* 719: 41-53.
75. Maryam Jamil, **Bushra Mirza**, Abida Yasmeen and Mir Ajab Khan (2012) Pharmacological activities of selected plant species and their phytochemical analysis *Journal of Medicinal Plants Research* 6(37): 5013-5022.
76. Ali M, Kiani BH, Mannan A, Ismail T and **Mirza B.** (2012) Enhanced production of artemisinin by hairy root cultures of *Artemisia dubia*. *Journal of Medicinal Plants Research* Vol. 6(9), pp. 1619-1622.

77. Nasima Arshad; Naeem Abbas; Moazzam H Bhatti; Naghmana Rashid; Muhammad N Tahir; Samreen Saleem; **Bushra Mirza** (2012). Synthesis, characterization, DNA binding and in vitro biological studies of Ni(II), Cu(II) and Zn(II) complexes of N-phthaloyglycine. *Journal of Photochemistry and Photobiology B*: 117: 228-239
78. Workalemahu M. Berhanu, Mohamed A. Ibrahim, Girinath G. Pillai, Alexander A. Oliferenko, Levan Khelashvili, Farukh Jabeen, **Bushra Mirza**, Farzana Latif Ansari, Ihsan ul-Haq, Said A. El-Feky and Alan R. Katritzky (2012) Similarity analysis, synthesis, and bioassay of antibacterial cyclic peptidomimetics. *Beilstein Journal of Organic Chemistry*. 8: 1146–1160
79. Ghulam murtaza; Rauf Muhammad Khawar; Amin Badsha; Ebihara Masahiro; said Muhammad; Gielen Marcel; De vos Dick; Erum Dilshad; **Bushra Mirza** (2012) Synthesis, structural characterization and in vitro biological screening of some homoleptic copper(II) complexes with substituted guanidines. *European Journal of Medicinal Chemistry* 48: 26-35
80. Ihsan-ul-Haq, Abdul Mannan, Maryam Jamil, Izhar Hussain and **Bushra Mirza** (2012). Antibacterial and brine shrimp toxicity assay of crude extract of *Artemisia dubia*. *Pakistan Journal of Botany* 44(4): 1487-1490
81. Maryum Jamil, Ihsan ul Haq, **Bushra Mirza** and Mazhar Qayyum (2012) Isolation of antibacterial compounds from *Quercus dilatata* L. through bioassay guided fractionation. *Annals of Clinical Microbiology and Antimicrobials* 11(11) DOI: 10.1186/1476-0711-11-11
82. Ihsan-ul-Haq, **Bushra Mirza**, Eung-Jung Park, Brittany E. Burns, Laura E. Marler, Tamara P. Kondratyuk and John M. Pezzuto (2012) Preliminary evaluation for cancer chemopreventive and cytotoxic potential of selected medicinal plants from Pakistan. *Pharmaceutical Biology*. 51(3): 316-328
83. Gulnaz Bibi, Ihsan-ul-Haq, Nazif Ullah, Ambreen Gull Muazzam, Abdul Mannan, **Bushra Mirza** (2012) Phytochemical Evaluation of Naturally Growing *Aster Thomsonii* Plant Species. *IJPI's Journal of Pharmacognosy and Herbal Formulations*. 2(9), 33-39.
84. Shawkat Ali, Abdul Mannan, Mohamed El Oirdi, Abdul Waheed and **Bushra Mirza** (2012) Agrobacterium-mediated transformation of rough lemon (*Citrus jambhiri* Lush.) with yeast HAL2 gene. *BMC Research notes* 5: 285
85. N. Safdar and **Bushra Mirza** (2013) Comparative physiological responses of the yeast Halotolerance genes expressed in transgenic lines of tomato cv Rio Grande under saline conditions. *Acta Physiologiae Plantarum*. 35: 919-929
86. Rehan Naeem, and **Bushra Mirza** (2013) Development and characterization of barley core collection: a strategy for germplasm management. *Pak. J. Bot.* 45(S1): 333-338
87. Munazza Ihtisham, Ihsan-ul-Haq, Sara Sarwar, and **Bushra Mirza**. (2013) HPLC-DAD analysis and free radical scavenging potential of *Quercus dilatata* L. **Pak. J. Botany** 45(SI):577-581
88. Asma Noureen, Samreen Saleem, Tabinda Fatima, Humaira Masood Siddiqi and **Bushra Mirza** (2013) Synthesis, characterization, biological evaluation and QSAR

- of some Schiff base esters: Promising new antitumor, antioxidant and anti-inflammatory agents. *Pak. J. Pharm. Sci.* 26 (1): 113-124
89. Asghari Gul, Zareen Akhter, Muhammad Siddiq, Sehrish Sarfraz, and **Bushra Mirza** (2013) Ferrocene-Based Aliphatic and Aromatic Poly(azomethine)esters: Synthesis, Physicochemical Studies, and Biological Evaluation. *Macromolecules* 46: 2800-2807
  90. Nazif Ullah, Ihsan Ul Haq and **Bushra Mirza** (2013) Phytotoxicity evaluation and phytochemical analysis of three medicinally important plants from Pakistan. *Toxicology and Industrial Research*. doi: 10.1177/0748233712472527
  91. Ihsan-ul-Haq, UiJoungYoun, Xingyun Chai, Eun-Jung Park, Tamara P. Kondratyuk, Charles J. Simmons, Robert P. Borris, **Bushra Mirza**, John M. Pezzuto, and LengChee Chang (2013) Biologically Active Withanolides from *Withania coagulans*. *Journal of Natural Products* 76(1):22-28
  92. Nazif Ullah, Ihsan Ul Haq, Naila Safdar and **Bushra Mirza** (2013) Physiological and biochemical mechanisms of allelopathy mediated by the allelochemical extracts of *Phytolacca latbenia* (Moq.) H. Walter **Toxicology and Industrial Health**. DOI: 10.1177/0748233713483205
  93. Nasima Arshad, Naghmana Rashid, Sajida Absar, Muhammad S. A. Abbasi, Samreen Saleem, **Bushra Mirza** (2013) UV-absorption studies of interaction of karanjin and karanjachromene with ds. DNA: Evaluation of binding and antioxidant activity. *Central European Journal of Chemistry* 11(12): 2040-2047
  94. Muhammad Sheeraz Ahmad, S M Saqlan Naqvi, Sajida Mushtaq, Farzana Ramzan, Abdul Sami, Salma Batool, Ihsan-ul-Haq and **Bushra Mirza** (2013) Phytochemical and biological evaluation of *Polygonum amplexicaule* rhizome extract. *Canadian Journal of Pure and Applied Sciences* 7 (3): 2491-2498.
  95. Rehana Rani, Abdul Mannan, MA Yameen, **Bushra Mirza** (2013) Determination of yield and activity of recombinant Taq polymerase produced in pTTQ18 Vector. *Minerva Biotecnologica* 25(2):95-100
  96. Samina Nazir, Farzana Latif Ansari, Tajammul Hussain, Kehkashan Mazhar, Ambreen Gul Muazzam, Zaheer-ul-Haq Qasmi, Talat Makhmoor, Humera Noureen, **Bushra Mirza** (2013) Brine shrimp lethality assay 'an effective prescreen': Microwave-assisted synthesis, BSL toxicity and 3DQSAR studies-based designing, docking and antitumor evaluation of potent chalcones. *Pharmaceutical Biology* 51 ( 9): 1091-1103
  97. Arshad, Nasima; Farooqi, Shahid Iqbal; Bhatti, Moazzam H, Samreen Salim and **Bushra Mirza** (2013) Electrochemical and spectroscopic investigations of carboxylic acid ligand and its triorganotin complexes for their binding with ds.DNA: In vitro biological studies *Journal of Photochemistry and Photobiology B-Biology* 125:70-82
  98. Ihsan-ul-Haq; **Mirza, Bushra**; Kondratyuk, Tamara P, Park E J, Burns BE, Marler LE and Pezzuto JM (2013) Preliminary evaluation for cancer chemopreventive and cytotoxic potential of naturally growing ethnobotanically selected plants of Pakistan. *Pharmaceutical Biology* 51 (3):316-328
  99. Muhammad A. Abbasi, Babar Shahzad, Asis-ur-Rehman, Khadija Nafeesa, Shahid Rasool, Muhammad Ashraf, Syeda Abida Ejaz, Hammad Ismail and **Bushra Mirza** (2014) Synthesis, spectral characterization and bioactivity studies of some S-

- substituted derivatives of 5-(4-chlorophenyl)-1,3,4-Oxadiazol-2-thiol. World Journal of Pharmaceutical Sciences 2(1): 32-40
100. Sabahat Zahra Siddiqui, Muhammad Athar Abbasi, Misbah Irshad Aziz-ur-Rehman, Babar Shahzad, Muhammad Ashraf, Irshad Ahmad, Muhammad A Lodhi, B Mirza, H Ismail, MN Akhtar (2014) Synthesis, pharmacological evaluation, molecular docking and cytotoxicity studies on some n-substituted 5-[(4-chlorophenoxy) methyl]-1, 3, 4-oxadiazole-2-yl-2-sulfanyl acetamides. American Journal of Pharm Research 4 (08): 3603
  101. Bushra Hafeez Kiani, John Suberu, Guy Cameron Barker and **Bushra Mirza** (2014) Development of efficient miniprep transformation methods for *Artemisia annua* using *Agrobacterium tumefaciens* and *Agrobacterium rhizogenes*. In Vitro Cell.Dev.Biol.-Plant DOI 10.1007/s11627-014-9647-3
  102. Waqas Khan Kayani, Rehana Rani, Ihsan-ul-Haq and **Busrha Mirza** (2014) Seasonal and geographical impact on the morphology and 20-hydroxyecdysone content in different tissue types of wild *Ajuga bracteosa* Wall. ex Benth. Steroids 87: 12-20
  103. Waheed Arshad, Tahir Ali, Ihsan-ul-Haq and **Bushra Mirza** (2014) *Agrobacterium*-mediated transformation of tomato with rolB gene results in enhancement of fruit quality and foliar resistance against fungal pathogens rol gene. PLOS ONE 9 (5): DOI: 10.1371/journal.pone.0096979
  104. Laila Jafri, Samreen Saleema, Ihsan-ul-Haq, Nazif Ullah, and **Bushra Mirza** (2014) In vitro assessment of antioxidant potential and determination of polyphenolic compounds of *Hedera nepalensis* K. Koch. Arabian Journal of Chemistry DOI 10.1016/j.arabjc.2014.05.002
  105. Naseer Ali Shah, Muhammad Rashid Khan, Saadia Sattar, Bushra Ahmad, **Bushra Mirza** (2014) HPLC-DAD analysis, Antioxidant potential and Anti-urease activity of *Asparagus gracilis* Collected from District Islamabad. BMC Complementary and Alternative Medicine 14(1):347.
  106. Erum Dilshad, **Bushra Mirza**, Muhammad Shabbir, Zia-ul- Haq, Zareen Akhter (2014) Biological Evaluation Of Aza-Heterocyclic derivatives and their Intermediates. World Journal of Pharmaceutical Research Vol.3 (6): 2111-2126.
  107. Shehzadi, Sumaira; Siddiqi, Humaira Masood, Qasim, Malik Muhammed, Fawad Musfirah, Manan, Abdul, Khan, Naeema, Saleem, Samreen, Bashir Farah and **Mirza, Bushra** (2014) Synthesis, Characterization and Biological Evaluation of Novel Diesters of 4,4 '-Dihydroxy Azoxy Benzene with Long Chain Carboxylic Acids. Journal of the Chemical Society of Pakistan 36(3): 462-472
  108. Nasima Arshad, Moazzam H. Bhatti, Shahid Iqbal Farooqi, Samreen Saleem, **Bushra Mirza** (2014) Synthesis, photochemical and electrochemical studies on triphenyltin(IV) derivative of (Z)-4-(4-cyanophenylamino)-4-oxobut-2-enoic acid for its binding with DNA: Biological interpretation. Arabian Journal of Chemistry. DOI: 10.1016/j.arabjc.2014.08.018
  109. Samreen Saleem, Laila Jafri, Ihsan ul Haq, Leng Chee Chang, Danielle Calderwood, Brian D Green, **Bushra Mirza**, Plants *Fagonia cretica* L. and *Hedera nepalensis* K. Koch contain natural compounds with potent dipeptidyl peptidase-4 (DPP-4) inhibitory activity (2014). Journal of Ethnopharmacology.156: 26-32.
  110. Rashid Mahmood, Farnaz Malik, Shahzad Hussain, Kazi Muhammad Ashfaq, Tanveer Akhtar, Muhammad Rizwan Alam, Salman Akbar Malik, Bushra Mirza, Farzana Khalid, Asif Hanif Chaudhry (2014) Seroprevalence of cytomegalovirus among blood donors in local population. International Journal of Pharmaceutical Chemistry 4 (4): 146-150

111. Naila Safdar, Bushra Mirza (2014) An experimental comparison of different transformation procedures assessed in tomato cv Rio Grande with yeast HAL 1 gene. Turkish Journal of Biochemistry-Turk Biyokimya Dergisi. 39 (3): 245-252
112. Komal Khan, Humaira Fatima, Malik Mumtaz Taqi, Muhammad Ziab, Tofeeq ur-Rehmana, Bushra Mirza, Ihsan-ul- Haq (2015) Phytochemical and in vitro biological evaluation of Artemisia scoparia Waldst. & Kit for enhanced extraction of commercially significant bioactive compounds. Journal of Applied Research on Medicinal and Aromatic Plants. doi:10.1016/j.jarmap.2015.04.002

119. Bushra Hafeez Kiani and Bushra Mirza (2015) Transgenic Artemisia dubia WALL; showed altered phytochemistry and pharmacology. Arabian Journal of Chemistry 10.1016/j.arabjc.2015.04.020

126.

128. Akhtar, N., & Mirza, B. (2015). Phytochemical analysis and comprehensive evaluation of antimicrobial and antioxidant properties of 61 medicinal plant species. *Arabian Journal of Chemistry*.

131.

132. Jafri, L., Saleem, S., Calderwood, D., Gillespie, A., Mirza, B., & Green, B. D. (2016). Naturally-occurring TGR5 agonists modulating glucagon-like peptide-1 biosynthesis and secretion. *Peptides* 78, 51-58

133. Ashraf, Adnan, Waseeq Ahmad Siddiqui, Jamshed Akbar, Ghulam Mustafa, Harald Krautscheid, Nazif Ullah, Bushra Mirza, Falak Sher, Muhammad Hanif, and Christian G. Hartinger (2016) Metal complexes of benzimidazole derived sulfonamide: Synthesis, molecular structures and antimicrobial activity. *Inorganica Chimica Acta* 443, 179-185

134. Jafri, L., Saleem, S., Kondrytuk, T.P., Haq, I.U., Ullah, N., Pezzuto, J. M., Mirza, B. (2016) *Hedera nepalensis* K. Koch: A Novel Source of Natural Cancer Chemopreventive and Anticancerous Compounds. *Phytotherapy Research*. 30(3), 447-453.

135. Akhtar, N., Syed, D.N., Khan, M.I., Adhami, V.M., Mirza, B., Mukhtar, H. (2016) The pentacyclic triterpenoid, plectranthoic acid, a novel activator of AMPK induces apoptotic death in prostate cancer cells. *Oncotarget* 7 (4): 3819-3831

136. Kayani, W.K., Palazon, J., Cusido, R.M., Mirza, B. (201) The effect of rol genes on phytoecdysteroid biosynthesis in *Ajuga bracteosa* differs between transgenic plants and hairy roots. *RSC Advances* 6 (27): 22700-22708.

137. Muhammad Shabir, Zareen Akhter, Iqbal Ahmed, Safeer Ahmed, Maryam Shafiq, Bushra Mirza, Vickie McKee, Khurram Shahzad Munawar and Ahmad Raza Ashraf (2016) Schiff base triphenylphosphine palladium (II) complexes: Synthesis, structural elucidation, electrochemical and biological evaluation. *Journal of Molecular Structure* 1118, 250-258.

138. Bushra Hafeez Kiani, John Suberu and Bushra Mirza (2016) Cellular engineering of *Artemisia annua* and *Artemisia dubia* with the rol ABC genes for enhanced production of potent anti-malarial drug artemisinin. *Malaria Journal* 15: 252

139. Nasima Arshad, Moazzam Bhatti, Shahid Iqbal Farooqi, Samreen Saleem and Bushra Mirza (2016) Synthesis, photochemical and electrochemical studies on triphenyltin(IV) derivative of (Z)-4-(4-cyanophenylamino)-4-oxobut-2-enoic acid for its binding with DNA: Biological interpretation Arabian Journal of Chemistry, 9(3): 451-462
140. Dilshad, E., Zafar, S., Ismail, H., Waheed, M. T., Cusido, R. M., Palazon, J., & Mirza, B. (2016). Effect of Rol Genes on Polyphenols Biosynthesis in *Artemisia annua* and Their Effect on Antioxidant and Cytotoxic Potential of the Plant. *Applied Biochemistry and Biotechnology*, 179 (8): 1456-1468.
141. Erum Dilshad, Hammad Ismail, Ihsan-ul-Haq, Rosa Maria Cusido, Javier Palazon, Karla Ramirez Estrada, Bushra Mirza. (2016). Rol genes enhance the biosynthesis of antioxidants in *A. carvifolia* Buch. *BMC Plant Biology* 16: 125
142. Khan I, Lee KL, Fakruzzaman M, Song SH, Ihsan-ul-Haq, Mirza B, Yan CG, Kong IK (2016) Coagulansin-A has beneficial effects on the development of bovine embryos in vitro via HSP70 induction. *Biosci Rep.* 36: e00310
143. Shabbir, M; Akhter,; Ahmad, I; Ahmed, S; Ismail, H; Mirza, B; McKee, V; Bolte, M (2016) Synthesis, characterization, biological and electrochemical evaluation of novel ether based ON donor bidentate Schiff bases. *Journal of Molecular Structure*, 1116, 84-92.
144. Amanullah ; Mirza, B ; Rizvi, ZF ; Zia, M (2016) Production of artemisinin and its derivatives in hairy roots of *Artemisia dubia* induced by rol A gene transformation. *Pakistan Journal of Botany* 48(2): 699-706.
145. Ahmed M, Phul AR, Ihsan-ul-Haq, Bibi G, Mazhar K, Ur-Rehman T, Zia M and Mirza B (2016) Antioxidant, anticancer and antibacterial potential of *Zakhm-e-hayat* rhizomes crude extract and fractions. *Pakistan Journal of Pharmaceutical Sciences.* 29 (3): 895-902.
146. Kayani, Waqas Khan; Dilshad, Erum; Ahmed, Tanveer; Ismail, Hammad; Mirza, Bushra (2016) Evaluation of *Ajuga bracteosa* for antioxidant, anti-inflammatory, analgesic, antidepressant and anticoagulant activities *BMC Complementary and Alternative Medicine* 16: 375 DOI 10.1186/s12906-016-1363-y
147. Zaheer, Muhammad; Akhter, Zareen; Gul, Asghari; Tauseef, Misbah,; Bushra ; Bolte, Michael; Fatmi, Muhammad Qaiser; Ahmed, Moiz Uddin (2016) Biological Evaluation of Newly Synthesized Schiff Bases: Crystal Structure Complemented by DFT Calculation. *Journal of the Chemical Society of Pakistan.* 38 (4): 737-748
148. Fayaz Ali Larik, Amer Saeed, Pervaiz Ali Channar, Hammad Ismail, Erum Dilshad, Bushra Mirza (2016) New 1-octanoyl-3-aryl thiourea derivatives: Solvent-free synthesis, characterization and multi-target biological activities. *Bangladesh Journal of Pharmacology* 11(4): 894-902.
149. Faiz Ullah Shah, Maryam Jamil, Javaria Aslam, Asghari Gul, Zareen Akhter and Bushra Mirza (2016) Influence of Ferrocene and Transition Metals on the Biological Activities of Schiff Bases *J. Chem. Soc. Pak.* 38 (06) 1112-1120.
150. Kayani, WK., Fattahi, M., Palazon, J., Cusido, RM., Mirza, B. (2016) Comprehensive screening of influential factors in the *Agrobacterium tumefaciens*-mediated transformation of the Himalayan elixir: *Ajuga bracteosa* Wall. ex. Benth *Journal of Applied Research on Medicinal and Aromatic Plants* 3(4): 151-159
151. Hammad Ismail, Erum Dilshad, Mohammad Tahir Waheed, Moniba Sajid, Waqas Khan Kayani and Bushra Mirza (2016) Transformation of *Lactuca sativa* L. with rol C gene results in increased antioxidant potential and enhanced analgesic, anti-inflammatory and antidepressant activities in vivo. *3 Biotech* 6:215

152. Mushtaq, Afifa; Ali, Saqib; Tahir, Muhammad Nawaz; Ismail, Hammad; Mirza, Bushra; Saadiq, Muhammad; Haleem, Muhammad Abdul, Iqbal Muhammad (2017) New bioactive heteroleptic copper(ii) carboxylates: structure, enzymatic and dna-binding studies. *Acta Chimica Slovenica*, 64 (2): 397-408
153. Hammad Ismail, Erum Dilshad, Mohammad Tahir Waheed and Bushra Mirza (2017) Transformation of Lettuce with rol ABC Genes: Extracts Show Enhanced Antioxidant, Analgesic, Anti-Inflammatory, Antidepressant, and Anticoagulant Activities in Rats. *Applied Biochemistry and Biotechnology* 181,( 3): 1179–1198
154. Muhammad Shabbir, Zareen Akhter, Iqbal Ahmad , Safeer Ahmed, Vickie McKee, Hammad Ismail, Bushra Mirza (2017) Copper (II) complexes bearing ether based ON donor bidentate Schiff bases: Synthesis, characterization, biological and electrochemical investigations. *Polyhedron* 124 117–124.
155. Rehana Rani., Mubarak Ali Khan., Waqas Khan Kayani., Sami Ullah., Ijaz Naeem., Bushra Mirza (2017) Metabolic signatures altered by in vitro temperature stress in *Ajuga bracteosa* Wall. ex. Benth. *Acta Physiol Plant* 39:97
156. Tabassum, Saira; Ahmed, Madiha; Mirza, Bushra; Naeem, Muhammad; Zia, Muhammad; Shanwari, Zabta Khan; Khan, Gul Majid (2017) Appraisal of phytochemical and in vitro biological attributes of an unexplored folklore: *Rhus Punjabensis* Stewart *BMC Complementary and Alternative Medicine* 17: 146
157. Khan, Imran; Lee, Kyeong-Lim; Xu, Lianguang, Mesalam Ayman, Chowdhury, M. M. R; Joo, Myeong-Don ; Ihsan-ul-Haq; Mirza, B; Kong, IK (2017) Improvement of in vitro-produced bovine embryo treated with coagulansin-A under heat-stressed condition. *Reproduction* 153 (4): 421-431
158. Muhammad Shabbir, Zareen Akhter, Iqbal Ahmad, Safeer Ahmed, Michael Bolte, Hammad Ismail, Bushra Mirza (2017) Ferrocene-based Schiff bases copper (II) complexes: Synthesis, characterization, biological and electrochemical analysis *Inorganica Chimica Acta* 463, 102–111
159. Nasima Arshad, Fouzia Perveen, Aamer Saeed, Pervaiz Ali Channar, Shahid Iqbal Farooqi, Fayaz Ali Larik, Hammad Ismail, Bushra Mirza (2017) Spectroscopic, molecular docking and structural activity studies of (E)-N'-(substituted benzylidene/methylene) isonicotinohydrazide derivatives for DNA binding and their biological screening *Journal of Molecular Structure* 1139, 371–380
160. Aamer Saeed, Pervaiz Ali Channar, Fayaz Ali Larik, Farukh Jabeen, Urooj Muqadar, Shomaila Saeed, Ulrich Flörke, Hammad Ismail, Erum Dilshad, Bushra Mirza (2017) Design, synthesis, molecular docking studies of organotin-drug derivatives as multi-target agents against antibacterial, antifungal,  $\alpha$ -amylase,  $\alpha$ -glucosidase and butyrylcholinesterase *Inorganica Chimica Acta* 464, 1 204–213
161. Muhammad Shabbir, Zareen Akhter, Paul R. Raithby, Lynne H. Thomas, Hammad Ismail, Faiza Arshad, Bushra Mirza, Simon J. Teat & Khalid Mahmood (2017) Synthesis, characterization and biological properties of novel ON donor bidentate Schiff bases and their copper(II) complexes. *Journal Of Coordination Chemistry* 70 (14): 2463-2478
162. Shahab Khan, Tofeeq Ur-Rehman, Bushra Mirza, Ihsan Ul-Haq and Muhammad Zia (2017) Antioxidant, antimicrobial, cytotoxic and protein kinase inhibition activities of fifteen traditional medicinal plants from Pakistan. *Pharmaceutical Chemistry Journal*. 51 (5): 391–398
163. Muhammad Shabbir, Iqbal Ahmad, Hammad Ismail, Safeer Ahmed, Vickie McKee, Zareen Akhter, Bushra Mirza (2017) Pharmacological, electrochemical and drug–DNA interaction aspects of tridentate Schiff bases and their triphenylphosphine nickel(II) complexes. *Polyhedron*.133: 270–278

164. Syeda Saniya Zahra, Madiha Ahmed, Muhammad Qasim, Bilquees Gul, Muhammad Zia, Bushra Mirza and Ihsan-ul Haq (2017) Polarity based characterization of biologically active extracts of *Ajuga bracteosa* Wall. ex Benth. and RP-HPLC analysis BMC Complementary and Alternative Medicine 17:443 <https://doi.org/10.1186/s12906-017-1951-5>
165. Muhammad Shabbir, Zareen Akhter, Hammad Ismail and BushraMirza (2017) Synthetic bioactive novel ether based Schiff bases and their copper(II) complexes. Journal of Molecular Structure 1146: 57-61
166. Rehan Naeem, Bushra Mirza (2017) High-throughput DNA extraction and optimization of PCR Efficiency for Barley SSRs Genotyping. Arab J Sci Eng DOI 10.1007/s13369-017-2749-y