

## DR. BUSHRA IJAZ



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### HIGHLIGHTS OF QUALIFICATIONS

Goal Directed, Result Oriented, Researcher with adequate Microbiology, Genomics, Biotechnology and Molecular Biology background and education. Skilled communicator, persuasive and adoptable. Self motivated with high energy, initiative and focus. Keen insight of environmental issues, able to identify the problems and form innovative solutions. Professional, personable, and articulate in presentations.

### CAREER OBJECTIVES

To work as a Molecular Biologist in dynamic environment, aiming towards professional growth and research to understand the Molecular Biology and functional Genomics, and would like to use the acquired skills for further growth in research & development.

### RESEARCH AND EMPLOYMENT EXPERIENCE

<b>Associate Professor:</b> June 2018-todate	National Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, Lahore. Pakistan
<b>Assistant Professor:</b> Nov 2015-June 2018	National Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, Lahore. Pakistan
<b>Lecturer:</b> Jan 2010-Nov 2015	National Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, Lahore. Pakistan
<b>Research Officer:</b> April 2006- 2010	National Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, Lahore. Pakistan.

## EDUCATION

- Ph.D Scholar:** Gene expression profiling: knock down effect of HCV genotype 3a genes on host genome in human liver cells. National Centre of Excellence in Molecular Biology (CEMB), University of the Punjab Lahore, Pakistan (Jan 2010-2015).
- M. Phil Scholar:** To study the gene expression analysis of HCV infected patients blood samples in comparison to normal and HBV National Centre of Excellence in Molecular Biology (CEMB), University of the Punjab Lahore, Pakistan (Jan 2004- Dec2006).
- M.Sc Scholar:** To study the Embryotoxicity of Malathion in Developing Chick from 3rd to 21st day embryo Zoology Department University of the Punjab Lahore, Pakistan (Sep2001-Dec2003)

## RESEARCH GRANTS

1. PI PHEC (Generation of SARS-COV-2 spike and protease cell culture system: screening of medicinal plants, plant-based compounds and molecular basis of interaction with host) amount of 8.00 million Rupees **(2021-2023)**.
2. PI NIH-HRI (RNAi as molecular scissors against dengue virus and *Aedes aegypti* mosquito: strategy to kill two birds with one stone) amount 2.7 million Rupees **(2022-2024)**.
3. PI HEC NRPU (Investigation of hepatoprotective role of flavonoids and Saponins mediated pathways in liver fibrosis and cirrhosis) amount of 4.2 million Rupees **(Completed)**.
4. HEC SRGP (Screening of Cyclopeptides as anti-HCV therapy) amount of 0.325 million rupees. **(Completed)** 2016-2017
5. HEC SRGP (Role of lncRNA in metastatic ability of Invasive Breast Cancer) Amount of 0.49 million rupees. **(Completed)**. 2017-2018

## AWARDS

1. HEC M. Phil monthly allowance (2004-2006)
2. HEC indigenous fully funded Ph.D scholarship (2010-2014)
3. Punjab University Performance Evaluation Award (2016)
4. APASL young scientist travel Award (2017)
5. Punjab University Performance Evaluation Award (2017)
6. Punjab University Performance Evaluation Award (2018)

## TEACHING EXPERIENCE

Course Conducted:

Advanced High through put techniques to Ph.D	(2020-2021)
Biotechnology Course to M.Phil	(2020-2021)
Biotechnology Course to M.Phil	(2017-2019)
Genomics and Proteomics Course to M.Phil	(2015-2017)
DNA microarray to Ph.D advance Course	(2015-2016)
Introduction to biosafety level to Ph.D advance Course	(2011-2012)
Introduction to biosafety level to Ph.D advance Course	(2012-2013)
DNA Microarray to Ph.D advance Course	(2014-2015)

## INTERNATIONAL PUBLICATIONS

- | No. | Publications   |
|-----|--|
| 1.  | Noreen S, Hasan S, Ghumman SA, Bukhari SNA, <b>Ijaz B</b> , Hameed H, Iqbal H, Aslam A, Elsherif MAM, Noreen S, Ejaz H (2022). pH Responsive Abelmoschus esculentus Mucilage and Administration of Methotrexate: In-Vitro Antitumor and In-Vivo Toxicity Evaluation. <i>Int J Mol Sci.</i> 23(5):2725. doi: 10.3390/ijms23052725.  |
| 2.  | Rehman S, Nazar R, Butt AM, <b>Ijaz B</b> , Tasawar N, Sheikh AK, Shahid I, Shah SM, Qamar R. (2022). Phytochemical Screening and Protective Effects of Prunus persica Seeds Extract on Carbon Tetrachloride-Induced Hepatic Injury in Rats. <i>Curr Pharm Biotechnol.</i> 23(1):158-170. doi: 10.2174/1389201022666210203142138.  |
| 3.  | Rehman S, Ali Ashfaq U, Sufyan M, Shahid I, <b>Ijaz B</b> , Hussain M (2022). The Insight of In Silico and In Vitro evaluation of Beta vulgaris phytochemicals against Alzheimer's disease targeting acetylcholinesterase. <i>PLoS One.</i> 17(3):e0264074. doi: 10.1371/journal.pone.0264074. eCollection 2022.   |
| 4.  | Iltaf J, Noreen S, Rehman MFU, Ghumman SA, Batool F, Mehdi M, Hasan S, <b>Ijaz B</b> , Akram MS, Butt H. (2021). Ficus benghalensis as Potential Inhibitor of 5 $\alpha$ -Reductase for Hair Growth Promotion: In Vitro, In Silico, and In Vivo Evaluation. <i>Front Pharmacol.</i> 12:774583. doi: 10.3389/fphar.2021.774583. eCollection 2021.   |
| 5.  | Rehman S, Nazar R, Butt AM, <b>Ijaz B</b> , Tasawar N, Sheikh AK, Shahid I, Shah SM, Qamar R (2021). Phytochemical Screening and Protective Effects of Prunus persica Seeds Extract on Carbon Tetrachloride-Induced Hepatic Injury in Rats. <i>Curr Pharm Biotechnol.</i> doi: 10.2174/1389201022666210203142138.  |
| 6.  | Ahmed F, Adnan M, Malik A, Tariq S, Kamal F, <b>Ijaz B</b> (2021). Perception of breast cancer risk factors: Dysregulation of TGF- $\beta$ /miRNA axis in Pakistani females. <i>PLoS One.</i> 16(7): e0255243. doi: 10.1371/journal.pone.0255243. eCollection.   |
| 7.  | KB Landry, S Azam, S Rehman, S Tariq, B Iqbal, M Abbas, DM Lembè, <b>Ijaz B</b> . (2021). Phytochemical analysis of Berberis lyceum methanolic extract and its antiviral activity through the restoration of MAPK signaling pathway modulated by HCV NS5A. <i>Asian Pacific Journal of Tropical Biomedicine</i> 11 (3), 132  |
| 8.  | Tariq S, Koloko BL, Malik A, Rehman S, <b>Ijaz B</b> , Shahid AA (2021). Tectona grandis leaf extract ameliorates hepatic fibrosis: Modulation of TGF- $\beta$ /Smad signaling pathway and upregulating MMP3/TIMP1 ratio. <i>J Ethnopharmacol.</i> 272:113938  |
| 9.  | Khalid H, Shahid S, Tariq S, <b>Ijaz B</b> , Ashfaq UA, Ahmad M (2021). Discovery of Novel HCV NS5B polymerase inhibitor, 2-(3,4-dimethyl-5,5-dioxidobenzo[e]pyrazolo[4,3-c][1,2]thiazin-2(4H)-yl)-N-(2-fluorobenzyl)acetamide via molecular docking and experimental approach. <i>Clin Exp Pharmacol Physiol.</i> doi: 10.1111/1440-1681.13571.   |
| 10. | Brice Landry K, Tariq S, Malik A, Sufyan M, Ashfaq UA, <b>Ijaz B</b> , Shahid AA (2021). Berberis lyceum and Fumaria indica: in vitro cytotoxicity, antioxidant activity, and in silico screening of their selected phytochemicals as novel hepatitis C virus nonstructural protein 5A inhibitors. <i>J Biomol Struct Dyn.</i> 25:1-25. doi: 10.1080/07391102.2021.1902395. Online ahead of print. |
| 11. | Khalid H, Landry KB, <b>Ijaz B</b> , Ashfaq UA, Ahmed M, Kanwal A, Froeyen M, Mirza MU (2020). Discovery of novel Hepatitis C virus inhibitor targeting multiple allosteric sites of NS5B polymerase. <i>Infect Genet Evol.</i> 84:104371. doi: 10.1016/j.meegid.2020.104371.  |
| 12. | Iqar U, Javaid H, Ashraf N, Ahmad A, Latief N, Shahid AA, Ahmad W, <b>Ijaz B</b> (2020). Structural and Functional Analysis of Pullulanase Type 1 (PulA) from Geobacillus thermopakistanensis. <i>Mol Biotechnol.</i> 62(8):370-379. doi: 10.1007/s12033-020-00255-x.PMID: 32347477  |

13. Ahmed F, **Ijaz B**, Ahmad Z, Farooq N, Sarwar MB, Husnain T (2020). Modification of miRNA Expression through plant extracts and compounds against breast cancer: Mechanism and translational significance. *Phytomedicine* 68:153168. doi: 10.1016/j.phymed.2020.153168.
14. Noreen S, Ghumman SA, Batool F, **Ijaz B**, Basharat M, Noreen S, Kausar T, Iqbal S (2020). Terminalia arjuna gum/alginate in situ gel system with prolonged retention time for ophthalmic drug delivery. *Int J Biol Macromol.* 152:1056-1067. doi: 10.1016/j.ijbiomac.2019.10.193.
15. **Ijaz B**, Ahmad W, Das T, Shabbiri K, Husnain T, Hassan S, (2019). HCV infection causes cirrhosis in human by step-wise regulation of host genes involved in cellular functioning and defense during fibrosis: identification of bio-markers, *Genes & Diseases*, 6(3):304-317
16. Rana MA, **Ijaz B**, Daud M, Tariq S, Nadeem T, Husnain T (2019). Interplay of Wnt  $\beta$ -catenin pathway and miRNAs in HBV pathogenesis leading to HCC. *Clin Res Hepatol Gastroenterol.* 43(4):373-386
17. Rehman S, Ashfaq UA, **Ijaz B**, Jabeen Z, Riazuddin S (2018). Comparison of Anti-HCV Activity of Multiple Punica granatum Extracts and Fractions in Virus-infected Human Hepatocytes. *Curr Pharm Biotechnol.* 19(15):1221-1231
18. Rehman S, Ashfaq UA, **Ijaz B**, Riazuddin S (2018). Anti-hepatitis C virus activity and synergistic effect of Nymphaea alba extracts and bioactive constituents in liver infected cells. *Microb Pathog.* 121:198-209.
19. Sumbal S, Javed A, Afroze B, Zulfiqar HF, Javed F, Noreen S, **Ijaz B** (2018). Circulating tumor DNA in blood: Future genomic biomarkers for cancer detection. *Exp Hematol.* 65:17-28
20. Nadeem T, Khan MA, **Ijaz B**, Ahmed N, Rahman ZU, Latif MS, Ali Q, Rana MA (2018). Glycosylation of Recombinant Anticancer Therapeutics in Different Expression Systems with Emerging Technologies. *Cancer Res.* 78(11):2787-2798.
21. J Butt, S Ishfaq, **B Ijaz**, ZA Mir, S Arshad, S Awais (2018). Authentication of polyherbal formulations using PCR technique. *Annals of phytomedicine.* 7 (1), 131-139
22. Daud, M., Rana, M.A., Husnain, T., **Ijaz B** (2017). Modulation of Wnt signaling pathway by hepatitis B virus. *Arch Virol.* 162(10):2937-2947
23. Mushtaq, M.W, Kanwal, F., Batool, A. Jamil T, Zia-ul-Haq M, **Ijaz B**, Huang Q, Ullah Z (2017). Polymer-coated CoFe<sub>2</sub>O<sub>4</sub> nanoassemblies as biocompatible magnetic nanocarriers for anticancer drug delivery. *J Mater Sci* 52: 9282-9293.
24. Tariq S, **Ijaz B**, Gull S, Rehman S, Muhammad SA, Husnain T (2017). Tectona grandis as potential inhibitor of HCV NS5A protein: in vitro and in silico study. *Hepatol Int* 11 (Suppl 1):S107
25. Kausar H, Gull S, Ahmad W, Awan JS, Sarwar TM, **Ijaz B** (2017). Role of alternative phosphorylation and O-glycosylation of erythropoietin receptor in modulating its function: an in silico study. *Turk J Biol.* 41: 816-825 doi:10.3906/biy-1704-3
26. Ahmad W, **Ijaz B**, Shabbiri K, Ahmed F, Rehman S (2017). Oxidative toxicity in diabetes and Alzheimer's disease: mechanisms behind ROS/ RNS generation. *J Biomed Sci.* 24(1):76. doi: 10.1186/s12929-017-0379
27. Rehman S, **Ijaz B**, Fatima N, Muhammad SA, Riazuddin S (2016). Therapeutic potential of Taraxacum officinale against HCV NS5B polymerase: In-vitro and In silico study. *Biomed Pharmacother.* 2016 Aug 8; 83:881-891. doi: 10.1016/j.biopha.2016.08.002.
28. Javaid MS, Latief N, **Ijaz B**, Ashfaq UA (2017). Epigallocatechin Gallate as an anti-obesity therapeutic compound: an in silico approach for structure-based drug designing. *Nat Prod Res.* 14:1-5. doi: 10.1080/14786419.2017.1365074.
29. Ahmed F, Mahmood N, Shahid S, Hussain Z, Ahmed I, Jalal A, **Ijaz B**, Shahid A, Mujtaba G, Mustafa T (2016). Mutations in Human Interferon  $\alpha$ 2b Gene and Potential as Risk Factor Associated with Female Breast Cancer. *Cancer Biother Radiopharm.* 31(6):199-208. doi: 10.1089/cbr.2016.2046.
30. Noreen S, Hussain I, Tariq MI, **Ijaz B**, Iqbal S, Qamar-UI-Zaman, Ashfaq UA, Husnain T (2015). Portulaca oleracea L. as a Prospective Candidate Inhibitor of Hepatitis C Virus NS3 Serine Protease. *Viral Immunol.* 28(5):282-9

31. Shahid I, Gull S, **Ijaz B**, Ahmad W, Ansar M, Asad S, Kausar H, Sarwar MT, Khan MK, Hassan S (2013). Stable Huh-7 cell lines expressing non-structural proteins of genotype 1a of hepatitis C virus. *J Virol Methods*. 189(1):65-9
32. Ahmad W, **Ijaz B**, Hassan S (2012). Gene expression profiling of HCV genotype 3a initial liver fibrosis and cirrhosis patients using microarray. *J Transl Med*,10 (1):41.
33. Asad S, **Ijaz B**, Ahmad W, Kausar H, Sarwar MT, Gull S, Shahid I, Khan MK, Hassan S (2012). Development of persistent HCV genotype 3a infection cell culture model in huh-7 cell. *Virol J*. 10;9:11
34. Jahan S, Khaliq S, Siddiqi MH, **Ijaz B**, Ahmad W, Ashfaq UA, Hassan S (2011). Anti-apoptotic effect of HCV core gene of genotype 3a in Huh-7 cell line. *Virol J*. 23;8:522
35. Kausar H, Gull S, **Ijaz B**, Ahmad W, Sarwar MT, Iqbal Z, Nawaz Z, Riazuddin S, Hassan S (2011). Huh-7 cell line as an alternative cultural model for the production of human like erythropoietin (EPO). *J Transl Med*.1;9:186
36. Jahan S, Samreen B, Khaliq S, **Ijaz B**, Khan M, Siddique MH, Ahmad W, Hassan S (2011). HCV entry receptors as potential targets for siRNA-based inhibition of HCV. *Genet Vaccines Ther*. 6;9:15
37. Ahmad W, **Ijaz B**, Javed FT, Gull S, Kausar H, Sarwar MT, Asad S, Shahid I, Sumrin A, Khaliq S, Jahan S, Pervaiz A, Hassan S. A (2011). Comparison of four fibrosis indexes in chronic HCV: Development of new fibrosis-cirrhosis index (FCI). *BMC Gastroenterol*,11:44
38. Ahmad W, **Ijaz B**, Gull S, Asad S, Khaliq S, Jahan S, Sarwar MT, Kausar H, Sumrin A, Shahid I, Hassan S (2011). A brief review on molecular, genetic and imaging techniques for HCV fibrosis evaluation. *Virol J*, 88(1):53
39. Jahan S, Khaliq S, **Ijaz B**, Ahmad W, Hassan S (2011). Role of HCV Core gene of genotype 1a and 3a and host gene Cox-2 in HCV-induced pathogenesis. *Virol J*, 8(1):155
40. **Ijaz B**, Ahmad W, Javed FT, Gull S, Hassan S (2011). Revised cutoff values of ALT and HBV DNA level can better differentiate HBeAg (-) chronic inactive HBV patients from active carriers. *Virol J*, 27; 8: 86
41. **Ijaz B**, Ahmad W, Javed FT, Gull S, Sarwar MT, Kausar H, Shahid I, Asad S, Khaliq S, Jahan S, Sumrin A, Hassan S (2011). Association of laboratory parameters with viral factors in patients with hepatitis C. *Virol J*, 8:361
42. Khaliq S, Jahan S, **Ijaz B**, Ahmad W, Asad S, Pervaiz A, samreen B, Hassan S (2010). Inhibition of core gene of HCV 3a genotype using synthetic and vector derived siRNAs. *Virol J*, 7:318
43. Khaliq S, Jahan S, **Ijaz B**, Ahmad W, Asad S, Hassan S (2011). Inhibition of HCV 3a genotype by siRNAs targeting envelop genes. *Arch Virol*,156(3):433-442
44. Ahmad W, Shabbiri K, **Ijaz B**, Asad S, Gull S, Fouzia K, Kausar H, Sarwar MT, Shahid I, Hassan S (2011). Claudin-1 required for HCV virus entry has high potential for phosphorylation and o-glycosylation. *Virol J*, 8:229
45. Sarwar MT, Kausar H, **Ijaz B**, Ahmad W, Ansar M, Sumrin A, Ashfaq UA, Gull S, Asad S, Shahid I, Hassan S (2011). NS4A protein as a marker of HCV history suggests that different hepatitis C virus genotypes originally evolved from genotype 1b. *Virol J*, 8:317
46. Jahan S, Khaliq S, Samreen B, **Ijaz B**, Khan M, Ahmad W, Ashfaq AU, Hassan S (2011). Effect of combined siRNA of HCV E2 gene and HCV receptors against HCV. *Virol J*, 8:295
47. Ahmad W, Shabbiri K, **Ijaz B**, Asad S, Nazar N, Nazar S, Fouzia K, Kausar H, Gull S, Tahir Sarwar MT, Shahid I, Hassan S (2011). Serine 204 phosphorylation and O- $\beta$ -GlcNAC interplay of IGFBP-6 as therapeutic indicator to regulate IGF-II functions in viral mediated hepatocellular carcinoma. *Virol J*, 8:208
48. Khan M, Jahan S, Khaliq S, **Ijaz B**, Ahmad W, Samreen B, Hassan S (2010). Interaction of the hepatitis C virus (HCV) core with cellular genes in the development of HCV-induced steatosis. *Arch Virol*,155(11):1735-53
49. Khaliq S, Khaliq SA, Zahur M, **Ijaz B**, Jahan S, Ansar M, Riazuddin S, Hassan S (2010). RNAi as a new therapeutic strategy against HCV. *Biotechnol Adv*, 28(1):27-34
50. Ahmad W, **Ijaz B**, Javed FT, Jahan S, Shahid I, Khan MF, Hassan S (2010). HCV genotype distribution and

possible transmission risks in Lahore, Pakistan. *World J Gastroenterol*, 14: 4321-4328

51. Ahmad W, **Ijaz B**, Javed FT, Kausar H, Sarwar MT, Gull S, Asad S, Shahid I, Hassan S. HCV genotype-specific correlation with serum markers: higher predictability for genotype 4a (2011). *Viro J*, **8**: 293-301
52. Sumrin A, Ahmad W, **Ijaz B**, Sarwar MT, Gull S, Kausar H, Jahan S, Asad S, Riazuddin S (2010). Purification and medium optimization of alpha amylase from *Bacillus Subtilis* 168. *Afr J Biotech*, 10(11): 2119-2129

## BOOK CHAPTERS

1. **Ijaz B**, Ashfaq A U, Anwaar A, Zeeshan Z, Anjum H and Husnain T (2019). Current progress in HCC using CRISPR: the latest gene editing tool.” In the book title ‘The CRISPR/Cas9 System: Applications and Technology’ Editor: Alfred A. Bertelsen <https://novapublishers.com/shop/the-crispr-cas9-system-applications-and-technology/>
2. **Ijaz B**, Rehman S, Fatima IH and Shams F (2020). Clinical Application of Liquid Biopsy in Solid Tumor HCC: Prognostic, Diagnostic and Therapy Monitoring Tool. Book title: *Frontiers in Clinical Drug Research – Hematology*. Bentham Science Publishers, edited by Atta-ur-Rahman FRS. ISBN: 978-981-14-6953-4, pp 193-239.

## NATIONAL PUBLICATIONS

1. Akbar S, Ishtiaq S, **Ijaz B**, Arshad N, Rehman S, Manzoor A, Rehman U, Tariq S. (2021). In vitro phytochemical and anticancer activity of *Misopates orontium* L. and *Dicliptera bupleuroides* Nees. *Pak J Pharm Sci*. 34(3(Special)):1195-1202.
2. Arshad N, Ishtiaq S, Khan FZ, Danish Z, Rashid AJ, **Ijaz B**, Tariq S (2021). GC-MS analysis, anticancer and anti-inflammatory activities of *Saussurea hypoleuca spreng*. Root. *Pak J Pharm Sci*. 34(1(Supplementary)):291-300.  
PMID: 34275853
3. Noreen S, Batool F, **Ijaz B**, Hussain M, Bilal F (2017). Influence of conventional and modern scheme of extraction and solvents on phytochemicals and biological activities of *Sphaeranthus indicus*. *Pure and Applied Biology*. 6 (3):776-785
4. Javed FT, **Ijaz B**, Ahamd W, Jahan S, Khaliq S, Hassan S (2010). Correlation of serum HCV titer, ALP and Bilirubin levels with liver fibrosis stages. *IJAVMS*, 4(2): 56-62
5. Jahan S, Khaliq S, Afzal N, Mujtiba G, Ahmad W, **Ijaz B**, sumrin A, Ishfaq A U, Hassan S (2011). Regulation of Apoptosis by HCV. *IJAVMS*, 5(4): 438-443
6. Asmatullah and **Ijaz B**. Embryotoxicity of Malathion in developing chick (2004). *Punjab University J Zoology* 19: 1-8

## RESEARCH STUDENTS SUPERVISED

### Ph.D Students:

Sr. No	Name	Title
1.	Koloko Brice Landary (TWAS Fellow)	Therapeutic Potential of Medicinal Plants against Hepatitis C Virus and Hepatocellular Carcinoma: In Vitro and In Vivo Study

2. Somayya Tariq (HEC Fellow) Evaluation of liver Antifibrotic Mechanisms of Selected Traditional Plants
3. Fayyaz Ahmed Phytochemical Mediated Regulation of miRNA Expression in Metastatic Breast Cancer
4. Tariq Nadeem (HEC Fellow) Isolation, Characterization and Loading of Immunomodulatory Cytokine IL-1 Receptor Antagonist on Nanoparticles and Their Anticancer Potential Studies
5. Noor Muhammad Analyses of BRCA1, BRCA2 and PALB2 genes in pancreatic cancer patients from Pakistan
6. Faiza Shams Flavonoids and Saponins Mediated Regulation of miRNA Against Liver Fibrosis

### M.Phil students:

1. M. Kazim Khan Gene Expression Analysis of Apoptosis Related Genes in Dengue Virus Infected patients (2013)
2. Sana Gul Combinatorial RNAi approach against HCV 3a genotype (2014)
3. M. Daud Hepatitis C virus core 3a mediated activation of Wnt canonical pathway (2015)
4. Somayya Tariq Melia azedarach and Tectona grandis as Potential inhibitor of HCV NS5A Protein: In vitro and In silico study (2016)
5. Sherian Gull In vitro and In silico antiviral activity analysis of Cassia fistula against HCV NS5A gene (2016)
6. Rimsha Shahid Differential expression analysis of Wnt signaling pathway in GII and GIII breast cancer patients (2016)
7. Arooj Arshad Modulation of hedgehog cell signaling pathway in HCV 3a infected and Sovaldi treated patients (2016)
8. Juwairiya Zulfiqar Authentication of herbal materials in polyherbal formulations using PCR Technique (2016)
9. Muhammad Adnan Differential Molecular analysis of TGF- beta 1 pathway and miRNA in grade-specific breast cancer patient's biopsy and blood for bio-marker identification (2017)
10. Umber Iqrar Modulation of TGFbeta1 signaling pathway and miRNA by anti-HCV plant extract FG-PK1 (2017)
11. Muhammad Shafique MAPK Pathway Induction by *Berberis lyceum* and *Capris spinosa* Plant Extracts: Potent HCV-NS5A Inhibitors (2018)
12. Muhammad Zeshan Hypoxia Inducible Factor Pathway Inhibitors: FM19G11, Methoxyestradiol and *Castenia sativa* Against Breast Cancer (2018)
13. Ayesha Malik Crosstalk of INSR/MAPK/PI3K/AKT in breast cancer: modulation through *Pisidium guajava* leaf extract (2019)
14. Kashaf Hira Therapeutic potential of synthetic compounds against breast cancer (2019)
15. Sana Shahid Investigating the therapeutic Potential of Synthetic Chemicals against Hepatitis C virus NS5B RNA dependent RNA polymerase (2019)
16. Bushra Iqbal Hepatoprotective and Inhibitory potential of medicinal plants against HCV-NS5A induced hepatocellular carcinoma via NF- $\kappa$ B pathway (2019)
17. Hafiza Ishrat Fatima Cross Talk between HCV NS5A and Nfk $\beta$ 1/RelA/HIF-1a Pathways: Impediment through Medicinal Plant Extracts (2020)
18. Ammara Shams Hepatoprotective and Anti-inflammatory potential of crude and semi purified fraction of *Euphorbia pilulifera* (2021)
19. Ayesha Azeem miRNA as Therapeutic Target: Regulation Through Medicinal Plants Against Breast Cancer (2021)

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| 20. | Hamza Anjum    | Ameliorative potential of lignan compound A: Modulation of TGF- $\beta$ /NOX4/miRNA axis in CCl <sub>4</sub> induced liver fibrosis model                                      | (2021) |
| 21. | Marrieum Malik | Phytochemicals As Lncrna Regulators In Treating Breast Cancer: In Silico And In Vitro Study  | (2021) |
| 22. | Saba Zafar     | Trigonella Foenum Graecum plant extract mediated inhibition of SARS-CoV-2 3C <sub>pro</sub> gene via modulation of TGF- $\beta$ /NF- $\kappa$ B gene and transactivated miRNAs | (2022) |
| 23. | Aamir Sohail   | Anti-fibrotic potential of Reserpine (alkaloid) targeting Keap1/Nrf2; Oxidative stress pathway in CCl <sub>4</sub> -induced liver fibrosis model                               | (2022) |

## ABSTRACTS

- 1) Tariq S, **Ijaz B**, Gull S, Rehman S, Muhammad SA, Husnain T. (2017). Tectona grandis as potential inhibitor of HCV NS5A protein: in vitro and in silico study. 26th Conference of the Asian Pacific Association for the Study of the Liver (APASL), Shanghai International Convention Center, on 15-19 February 2017 in Shanghai, China
- 2) Ahmed F, **Ijaz B**, Hussain Z, Ahmed I, Mahmood N, Hussnain T. Role of - Human Interferon alpha2b Gene and Pre-sumptive Drug Model against Breast Cancer. Presented at International Symposium on Advances in Molecular Biology of Plants and Health Sciences (29 – 31 December 2015) at National Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, Lahore - Pakistan
- 3) **Ijaz B**, Gull S, Asad S, Husnain. Combinatorial RNAi approach against HCV presented at 2nd International Conference of Drug development- natural and Synthetic, COMSATS Institute of Information technology, Abbottabad, Pakistan. (August 23-25, 2015)
- 4) Jahan S, Khaliq S, **Ijaz B**, Ahmad W, Hassan S. Combined siRNA against HCV Core and COX-2 inhibits genes involved in HCV induced oxidative stress leading to hepatocellular carcinoma. Presented at 9<sup>th</sup> Shaukat Khanum Memorial Cancer Symposium “Global Problem Local Solutions”, Lahore, Pakistan. (Nov 26-28, 2010).

## AS A RESOURCE PERSON

- 1) Participation as a resource person at “International training course on microarray technology for gene discovery and expression”. Jointly organized by Islamic Educational, Scientific and Cultural Organization (ISESCO) and Asia Pacific International Molecular Biology Network (A-IMBN) in collaboration with and held at Centre of Excellence in Molecular Biology (CEMB), University of the Punjab Lahore, Pakistan, 05-09 October, 2009.
- 2) Participation as a resource person at “ 2<sup>nd</sup> International Training Workshop on DNA Microarray for Gene Expression & Training Workshop on Biosafety in Biomedical Research. Organized by Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, Lahore, Pakistan in collaboration Biosafety Association of Pakistan (BSAP), University of Karachi, Karachi, Pakistan, 07-11 March, 2011
- 3) Participation as a resource person at International Training Workshop on “Microarray for Gene Expression.” Organized by Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, Lahore, Pakistan, April 22-25, 2014.
- 4) Participation as a resource person at International Training Workshop on “Microarray for Gene Expression.” Organized by Centre of Excellence in Molecular Biology (CEMB), University of the Punjab, Lahore, Pakistan, February