

CURRICULUM VITAE (Professional Profile)

Dr. SAMIA AFZAL d/o MUHAMMAD AFZAL

Gender: **Female**

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Education

- **Post Doc** in Molecular Immunology 2014 to 2015, Institut Albert Bonniot, Centre de Recherche INSERM-UJF Grenoble, France.
- **PhD** in Molecular Biology, 2007-2013, National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore.
- **M.Phil** in Molecular Biology, 2004-2006, National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore.
- **M.Sc** in Zoology, 2001-2003, Department of Zoology, University of Punjab, Lahore.
- **B.Ed.** in Science, 2003-2005, Allama Iqbal Open University, Islam Abad.

Professional Experience

- Working as Asst. Professor at National Center of Excellence in molecular Biology (CEMB), University of the Punjab, Pakistan from March 2021 to date.
- Worked as Asst. Professor at National Center of Excellence in molecular Biology (CEMB), University of the Punjab, Pakistan from July 2014 to Feb 2021.
- Worked as a Lecturer at National Center of Excellence in molecular Biology (CEMB), University of the Punjab, Pakistan from January 2010 to June 2014.
- Worked as a Research officer at National Center of Excellence in molecular Biology (CEMB), University of the Punjab, Pakistan from December 2005 to December 2009.

Reserch Projects/Grants:

1. Polymorphisms in interferon induced genes and their impact on immune changes: An approach to predict the treatment outcome in Hepatitis C Virus infected patients. (PERIDOT 2019-2022, PKR 3.6 Million) PI.
2. Development of a single chimeric Dengue Virus DNA Vaccine and study of its immunogenicity and response against local Dengue Serotypes (NRPU, HEC, 2017-2020, PKR 7.6 Million) PI.
3. An evaluation of dengue envelope (E) antigen for Dengue serotype 2. (NRPU, HEC, PKR 6.2 Million) Co-PI.
4. Development of detection assays based on ELISA and PCR diagnosis systems for reproducible and early detection of Dengue Virus. (PU, 2016-2018; PKR 1 Million) Co-PI & Principal Researcher.
5. Innovative strategic plans to improve public health in the East Mediterranean Region (EMR) during outbreaks of emerging and re-emerging zoonotic infections. (WHO/EMRO 2022-2023, PKR 3.0 Million) PI.

Research Publications:

1. Sadia Butt, Muhammad Idrees, Irshad Ur Rehman, Haji Akbar, Muhammad Shahid, **Samia Afzal**, Saima Younas and Iram Amin. Mixed genotype infection with Hepatitis C Virus. *Emerging Infectious Diseases* 2011; 17(8) 1565-1567. (IF 16.126).
2. Muhammad Usman Ashraf, Kanzal Iman, Farhan Khalid, Muhammad Salman Hafiz, Talha Shafi, Momal Rafi, Nida Javaid, Rashid Hussain, Fayyaz Ahmad, Syed Shahzad ul Hussan, Shaper Mirza, Muhammad Shafiq, **Samia Afzal**. Evolution of Efficacious Pan-Genotypic HCV Therapies. *Medicinal Research Reviews*, 2019, 39:1091–1136 (IF=12.388)
3. †Zuzana Macek Jilkova, †**Samia Afzal**, et al. Progression of fibrosis in patients with chronic viral hepatitis is associated with IL-17+ neutrophils. *Liver International*, 2016, 36(8):1116-24. (IF=8.754).
4. **Samia Afzal**, Muhammad Idrees, Mazhar Hussain. De Novo modeling of Envelope 2 protein of HCV isolated from Pakistani patient and epitopes prediction for vaccine development. *Journal of Translational Medicine*, 2014, 12:115 (IF=8.44).
5. Muhammad Usman Ashraf, Hafiz Muhammad Salman, Muhammad Farhan Khalid, Muhammad Haider Farooq Khan, Saima Anwar, **Samia Afzal**. CRISPR-Cas13a mediated targeting of hepatitis C virus internal-ribosomal entry site (IRES) as an effective antiviral strategy. *Biomedicine & Pharmacotherapy* 2021, 136 (IF=7.419).
6. Rabia Nawaz, Sadia Zahid, M Idrees, Shazia Rafique, M Shahid, Ammara Ahad, Iram Amin, Iqra Almas, **Samia Afzal***. HCV-induced regulatory alterations of IL-1 β , IL-6, TNF- α , and IFN- γ operative, leading liver en-route to non-alcoholic steatohepatitis. *Inflammation Research*, 2017, 66(6):477-486. (IF=6.986)
7. **Samia Afzal***, Muhammad Hassan et al. Breast Cancer; Discovery of Novel Diagnostic Biomarkers, Drug Resistance, and Therapeutic Implications. *Frontiers in Molecular Biosciences*, 2022, 9:783450 (IF=6.113).
8. **Samia Afzal***, Khadija Fiaz, et al. Interrelated Oncogenic Viruses and Breast Cancer. *Frontiers in Molecular Biosciences*, 2022, 9:781111 (IF=6.113).
9. Hifsa Mobeen, Muhammad Safdar, Asma Fatima, **Samia Afzal***, Hassan Zaman, Zuhair Mehdi. Emerging applications of nanotechnology in context to immunology: A comprehensive review. *Frontiers in Bioengineering and Biotechnology*, 2022, 10:1024871. (IF=6.064)
10. **Samia Afzal**, Muhammad Idrees, et al. Mutations in the E2-PePHD region of hepatitis C virus genotype-3a and correlation with response to interferon and ribavirin combination therapy in Pakistani patients. *Virology Journal*. 2010, 7:377 (IF=5.913).
11. **Samia Afzal**, Muhammad Idrees, et al. Role of Serine (75 & 277) E2 gene of HCV 1a in interferon resistance: A sequence alignment approach. *Virology Journal* 2011, 8:71 (IF=5.913).
12. Atif Ahmed, Muhammad Safdar, Samran Sardar, Sahar Yousaf, Fiza Farooq, Ali Raza, Muhammad Shahid, Kausar Malik, ***Samia Afzal**. Modern Vaccine Strategies for Emerging Zoonotic Viruses 2022, 21(12):1711-1725, (IF=5.683).
13. Ayma Aftab, **Samia Afzal***, Zahida Qamar, Muhammad Idrees. Early detection of MDR Mycobacterium tuberculosis mutations in Pakistan. *Scientific Reports*, 2021, 11:16736. (IF=4.996).

14. Muhammad Bilal, Aqsa Javaid, Farhat Amjad, Tamer Abou Youssif, ***Samia Afzal**. An overview of prostate cancer (PCa) diagnosis: Potential role of miRNAs. *Translational Oncology* 2022; (26)101542 (IF=4.803).
15. Zareen Fatima, Muhammad Idrees, Mohammad A Bajwa, Zarfishan Tahir, Obaid Ullah, Muhammad Q Zia, Abrar Hussain, Madiha Akram, Bushra Khubaib, **Samia Afzal**. Serotype and genotype analysis of dengue virus by sequencing followed by phylogenetic analysis using samples from three mini outbreaks-2007-2009 in Pakistan. *BMC Microbiology* 2011, **11**:200 (IF=4.465)
16. Madiha Akram, Muhammad Idrees, Abrar Hussain, **Samia Afzal**, et al. Characterization of Hepatitis C Virus genotype 3a Hypervariable region 1 in patients achieved rapid virological response to alpha interferon and Ribavirin Combination therapy. *Virology Journal* 2011; **8**:253 (IF=5.913).
17. Zuzana Macek Jilkova, Komal Saleem, **Samia Afzal**, Thomas Decaens. Predictive Factors for Hepatocellular Carcinoma Development after Direct-Acting Antiviral Treatment of HCV. *Livers*, 2021, **1**, 313–321.
18. Zunaira Awan, Muhammad Idrees, Irum Amin, Sadia Butt, **Samia Afzal**, et al. Pattern and Molecular epidemiology of HBV genotypes circulating in Pakistan. *Infection, Genetics, Evolution* 2010, **10**(8); 1242-6. (IF=4.393).
19. **Samia Afzal**, Muhammad Idrees. Envelope protein 2 phosphorylation sites: a possible site for resistance to HCV interferon therapy. *Journal of Viral Hepatitis* 2012, **19**: (IF=3.517).
20. Shazia Rafique, Muhammad Idrees, Muhammad Ilyas, Abrar Hussain, Muhammad Ali, Liaqat Ali, Sadia Butt, **Samia Afzal**, Irshad Ur Rehman and Sana Saleem. Positional effect of phosphorylation sites 266 and 267 in the cytoplasmic domain of the E2 protein of hepatitis C virus 3a genotype: Interferon Resistance analysis via Sequence Alignment. *Virology Journal* 2011, **8**:204 (IF=5.913).
21. Sadia Butt, Idrees Khan, Haji Akbar, Irshad Ur Rehman, Zunaira Awan, Muhammad Shahid, **Samia Afzal**, et al. The changing epidemiology pattern and frequency distribution of hepatitis C virus in Pakistan. *Infection, genetics, evolution* 2010, **10**(5); 595-600. (IF=4.393).
22. Muhammad Ali, Muhammad Idrees, Liaqat Ali, Abrar Hussain, Irshad Ur Rehman, Sana Saleem, **Samia Afzal**, Sadia Butt. Hepatitis B virus in Pakistan: A systematic review of prevalence, risk factors, awareness status and genotypes. *Virology Journal*, 2011; **8**: 102. (IF=5.913).
23. †Zareen Fatima, †**Samia Afzal**, Muhammad Idrees, et al., (2013). Change in demographic pattern of dengue virus infection: evidence from 2011 dengue outbreak in Punjab, Pakistan. *Public Health* 2013, **127**(9) 875-877 (IF=4.984).
24. Madiha Akram, Muhammad Idrees, Shamail Zafar, Abrar Hussain, Sadia Butt, **Samia Afzal**, et al. Effects of Host and virus related factors on Interferon- α +ribavirin and Pegylated-interferon+ribavirin treatment outcomes in Chronic Hepatitis C patients. *Virology Journal* 2011, **8**:234 (IF=5.913).
25. Sadia Butt, Muhammad Idrees, Muhammad Shahid, Iram Amin, Saima Younas, **Samia Afzal**, Haji Akbar, Irshad Ur Rehman. Change in HCV clades pattern: an 11 years data over 22'125 chronic HCV patients. *Eur J Clin Microbiol Inf Dis*. 2011,**30**:669-672 (IF=5.103).
26. Liaqat Ali, Muhammad Idrees, Muhammad Ali, Irshad ur Rehman, Abrar Hussain, Zunaira Awan, **Samia Afzal**, et al. An overview of treatment response rates to various anti-viral drugs in Pakistani Hepatitis B Virus infected patients. *Virology Journal*. 2011, **8**:20 (IF=5.913).

27. Ayma Aftab, ***Samia Afzal** et al. p53 and rb promoter methylation in hepatitis C virus-related chronic hepatitis and hepatocellular carcinoma. *Future Virology* 2021; 6(1), 15–25 (IF=3.015).
28. Bushra Khubaib, Sana Saleem, Muhammad Idrees, **Samia Afzal**, Muhammad Waseem. The genotype CC of IL-28B SNP rs12979860 is significantly associated with a sustained virological response in chronic HCV-infected Pakistani patients. *Journal of Digestive Diseases* 2015; 16:293-298 (IF=3.366).
29. Khadija Zahid, Sana Shakoor, Hina Afzal Sajid, ***Samia Afzal** et al. Advancements in developing an effective and preventive dengue vaccine. *Future Virology*, 2020;15(2), 127–138. (IF=3.015).
30. Bushra Khubaib, Muhammad Idrees, Zareen Fatima, Madeeha Akram, **Samia Afzal** et al. Evaluation of three techniques for detection of IL28B SNP: A prognostic tool for HCV treatment outcome. *Journal of digestive diseases* 2017; 18(7)404-409.(IF=3.366)
31. Anum Syyam, Amjad Nawaz, Muhammad Shahid, Muhammad Idrees, Kausar Malik, **Samia Afzal***. Adenoviral Vector System: Construction, History and Therapeutic Applications. *Biotechniques*, 2022, 73(6). (IF=2.746).
32. Muhammad Shahid, Muhammad Idrees, **Samia Afzal** et al. Blood-based gene expression profile of oxidative stress and antioxidant genes for identifying surrogate markers of liver tissue injury in patients infected with Hepatitis C Virus infection. *Archives of Virology*, 2020, 165:809–822 (IF=2.685).
33. Muhammad Zubair Yousaf, Sadia Zia, Kamran Anjum, Usman Ahmad Ashfaq, Muhammad Imran, **Samia Afzal**, Sarfraz Iqbal. Deadly outbreak of chickenpox at district Faisalabad, Pakistan: possible causes, and preventive way forward. *Molecular Biology Reports*, 2018; 45:2941–2943 (IF=2.742)
34. Musab bin Umair, Fujimura Nao Akusa, Hadia Kashif, Seerat-e-Fatima, Fatima Butt, Marium Azhar, Iqra Munir, Muhammad Ahmed, Wajeeha Khalil, Hafz Sharyar, Shazia Rafque, Muhammad Shahid, ***Samia Afzal**. Viruses as tools in gene therapy, vaccine development, and cancer treatment. *Archives of Virology*, 2022, (IF=2.685).
35. Muhammad Shahid, Muhammad Idrees, Muhammad Azeem Butt, Syed Mohsin Raza, Iram Amin, Afza Rasul, **Samia Afzal**, Sadia Zahid, Rabia Nawaz. Hepatitis C and G virus coinfection in Punjab, Pakistan: incidence and its correlation analysis with clinical data. *European journal of gastroenterology & hepatology* 2019; 31(3):389-392 (IF=2.566).
36. Muhammad Idrees, Irshad ur Rehman, Sobia Manzoor, Haji Akbar, Sadia Butt, **Samia Afzal**, et al., "Evaluation of three different HCV Typing Methods for detection of Mixed Genotype Infections. *Journal of Digestive Diseases* 2011; 12; 199–203. (IF=2.325).
37. Iram Amin, Saima younas, ***Samia Afzal** et al. HSV-1 and Host antiviral immune responses. *Viral Immunology*, 2019; 32(10)424-429 (IF=2.175)
38. Irshad-ur Rehman, Muhammad Idrees, Muhammad Ali, Liaqat Ali, Sadia Butt, Abrar Hussain, Haji Akbar and **Samia Afzal**. Hepatitis C virus genotype 3a with phylogenetically distinct origin is circulating in Pakistan. *Genetic Vaccines and Therapy*, 2011, 9:2 (IF=2.10).
39. Muhammad Ali, **Samia Afzal**, Asad Zia, Ahmed Hassan, Ali Talha Khalil, Muhammad Ovais, Zabta Khan Shinwari, Muhammad Idrees. A systematic review of treatment response rates

- in Pakistani hepatitis C virus patients; current prospects and future challenges, *Medicine* 2016; 95:50(e5327) (IF=1.889).
40. Mazhar Hussain, Muhammad Idrees, **Samia Afzal**. Development of Global Consensus of Dengue Virus Envelope Glycoprotein for Epitopes Based Vaccine Design. *Current Computer-Aided Drug Design* 2015, 11, 84-97 (IF=1.639).
 41. Ali Hassan, Afraz Saeed, ***Samia Afzal** et al. Applications and hazards associated with carbon nanotubes in biomedical sciences. *Inorganic and Nano-Metal Chemistry* 2020 50:9, 741-752 (IF=1.514)
 42. Muhammad Hassan, Muhammad Zalkifal, Abdul Wahab, **Samia Afzal*** et al. Novel Coronavirus; A review from its origin to the current status of its therapeutic strategies. *Critical Reviews in Eukaryotic Gene Expression*. 2021, 31(3): 21-34. DOI:10.1615/CritRevEukaryotGeneExpr.2021038075 (IF=1.406)
 43. Iram Amin, Ayesha Vajeaha, Saima Younas, ***Samia Afzal** et al. HSV1 Infection: Role of viral proteins and cellular receptors. *Critical Reviews in Eukaryotic Gene Expression*. 2019, 29(5):461 –469 (IF=1.406)
 44. Muhammad Munam Mustafa Bukhari, Iqra Mir, Muhammad Idrees, **Samia Afzal**, & Muhammad Shahid. Role of MicroRNAs in Establishing Latency of Human Immunodeficiency Virus. *Critical Reviews in Eukaryotic Gene Expression*. 2020, 30(4):337–348 (IF=1.406)
 45. Sheeza Ali, ***Samia Afzal** et al. (2020) Paradoxical Role of Dengue Virus Envelope Protein Domain III Antibodies in Dengue Virus Infection. *Critical Reviews in Eukaryotic Gene Expression*. 30(3):199 – 206. (IF=1.406)
 46. Iqra Almas, Hamna Imtiaz, Mahrukh Shaheen, ***Samia Afzal**. Drug resistance in Hepatitis C Virus: Future prospects and strategies to combat it. *Critical Reviews in Eukaryotic Gene Expression*. 2020,30(4):323–336(IF=1.406)
 47. Mahrukh Shaheen, ***Samia Afzal** et al. A review on the association of IL28B polymorphism with clearance of Hepatitis C Virus. *Critical Reviews in Eukaryotic Gene Expression*. 2020, 30(3):223–229 (IF=1.406)
 48. Muhammad Hassan, Ali Hassan, Muhammad Farooq, **Samia Afzal*** et al. Dengue Vaccines: Ongoing Challenges and Current Status in the Advancement of Different Candidates. *Critical ReviewsTM in Eukaryotic Gene Expression*, 2021, 31(5):7–19 (IF=1.406).
 49. Sadaf Badar, Bushra Khubaib, Muhammad Idrees, Abrar Hussain, Zunaira Awan, Sa-dia Butt, **Samia Afzal** et al. Association of Hepatitis C Virus with Insulin Resistance: Evidences from Animal Studies and Clinical Studies. *Hepatitis Monthly* 2012, 11-15 (IF=1.214)
 50. Liaqat Ali, Zakkia Gul, Asiya Ijaz, Nouman Khalid, Falak Zeb, **Samia Afzal** et al. An overview of Dengue viral infection circulating in Pakistan. *Journal of Vector Borne Diseases*. DOI: 10.4103/0972-9062.331412 (IF=0.735).
 51. Muhammad Shahid, Iram Amin, ***Samia Afzal** et al. Prevalence and Molecular Detection of Dengue Virus in 2013 Outbreak in KPK and Punjab, Pakistan. *Pakistan journal of Zoology* 2017; 49(3) 1119-1122. (IF=0.687)
 52. Farkhanda Manzoor, Iram Amin, Muhammad Shahid, **Samia Afzal** et al. *Aedes aegypti* is the Major Vector for Transmission of Dengue Virus in Lahore, Pakistan. *Pakistan Journal of zoology*, 2017; 49(2)1-3. (IF=0.687)

53. Muhammad Shahid, Iram Amin, ***Samia Afzal**, Zareen Fatima and Muhammad Idrees. Comparative Analysis of Immunological and Genomic Outcomes of Dengue Virus Outbreak in Pakistan. *Pakistan Journal of zoology*, 2019; 51(5), 1-4. (IF=0.687)
54. ***Samia Afzal** et al. Chikungunya outbreak in Pakistan: Reality or Myth? *Pakistan Journal of Zoology*.2020; 52(4),1627-1630. (IF=0.687)
55. Iram Amin, Shazia Rafique, Nadeem Ahmed, Muhammad Shahid, **Samia Afzal** et al. Bacterial Expression and Purification of Antigenic Recombinant Protein Encoded by Hepatitis Delta Virus Antigen of Pakistani Isolate. *Pakistan Journal of Zoology*.2022; (IF=0.687).
56. Ayma Aftab, ***Samia Afzal**, Muhammad Idrees. Patient with Suspected COVID-19 Infection Tests Negative in Nasopharyngeal Swabs but is Confirmed by Laboratory Tests and Chest CT Scan: A Case Report. *Pakistan Journal of Zoology*.2022; (IF=0.687).
57. Anum Syyam, Nazish Saqlain, Sidra Hareem, Naghmana Mazhar, Liaqat Ali, ***Samia Afzal**. Anti-A and Anti-B Titer Among Blood Group O Donors at a Tertiary Care Centre Lahore, Pakistan. *Pakistan Journal of Zoology*. 2022; (IF=0.687).
58. Aadil Sultan, Mohsin Ahmad Khan*, Nadeem Ahmed, Muhammad Hassan, Rashid Bhatti, Hafsa Naeem, Muhammad Islam Khan, Saad Tahir, **Samia Afzal*** and Ahmad Ali Shahid. Gene Multimerization in Expression Vector: A Potential Strategy for Enhanced Protein Expression in E. coli. *Pakistan Journal of Zoology*.2022; (IF=0.687).
59. Muhammad Shahid*, Muhammad Idrees, Afza Rasul, Iram Amin, **Samia Afzal**. Identification of Predictive Factors in Chronic Hepatitis C Patients with Non-Infected Individuals: A Comparative Analysis. *Pakistan Journal of Zoology*.2022; (IF=0.687).
60. ***Samia Afzal** et al., Frequency of Hepatitis D Viral Infection in Chronic Hepatitis B Patients in Pakistan. *Pakistan Journal of Zoology*.2022; (IF=0.687).
61. Iqra Almas, ***Samia Afzal** et al. Quasispecies analysis through NGS and Identification of Escape mutation in a family infected with Hepatitis B Virus: A study from Lahore, Pakistan. *Pakistan Journal of Zoology*.2022; (IF=0.687).
62. Iram Amin, Muhammad Idrees, Zunaira Awan, Muhammad Shahid, **Samia Afzal** and Abrar Hussain. PCR could be a method of choice for identification of both pulmonary and extra-pulmonary tuberculosis. *BMC Research Notes* 2011; 4:332
63. Iqra Mir, Sania Aamir, Syed Rizwan Hussain Shah, Muhammad Shahid, Iram Amin, **Samia Afzal** et al. Immune-related therapeutics: an update on antiviral drugs and vaccines to tackle the COVID-19 pandemic. *Osong Public Health and Research Perspectives*. 2022; (1) 0024-32.
64. Zunaira Awan, Muhammad Idrees, Abrar Hussain, Irshad Ur Rehman, Muhammad Ali, **Samia Afzal** et al. Influence of Hepatitis B Virus Genetic Heterogeneity on Treatment Response Against Lamivudine and Interferon in Pakistani Isolates. *Anti-Infective Agents* 2016; 14(2): 121-125
65. Mishal Rani, Muhammad Farooq, Sania Aamir, Iqra Mir, Muhammad Hassan, Bakhtiar Ahmed, Abeera Iftikhar, Syed Rizwan Hussain Shah, Shazia Rafique, **Samia Afzal**, Muhammad Idrees, Iram Amin and Muhammad Shahid. A review on corona virus - pandemic: Update on epidemiology, diagnosis, and treatment. *Pure and Applied Biology* 2022, 1(1):146-158

66. Sadia Zahid, Saadia Andleeb, Sadia Anjum, ***Samia Afzal** et al. A Molecular Based Approach to Characterize Untypable HCV Genotype. *International Journal of Pathology*. 2020,18(4):128-135
67. ***Samia Afzal**, Muhammad Idrees et al. Study of inhibition of interferon inducible genes by dephosphorylation of E2 envelope gene of HCV genotype 1a. 14th International Bhurban Conference on Applied Sciences and Technology (IBCAST) 2017; DOI:10.1109/IBCAST.2017.7868053
68. Iqra Almas, ***Samia Afzal** et al. Studies on circulating microRNAs: Members of Let-7 family and their correlation with Hepatitis C virus disease pathogenesis and treatment concerns. 14th International Bhurban Conference on Applied Sciences and Technology (IBCAST) 2017; DOI: 10.1109/IBCAST.2017.7868051 .
69. Iqra Almas, ***Samia Afzal** et al. Role of circulatory microRNAs in the pathogenesis of hepatitis C virus. *Virus Disease* 2017; 28:360–367.
70. Zunaira Awan, Muhammad Idrees, Irshad-ur Rehman, Haji Akbar, Sadia Butt, Mohammad Ali, Sana Saleem, Sadaf Badar, Bushra Khubaib, Liaqat Ali Khan, Saira Munir, **Samia Afzal**, et al. Hepatitis B virus YMDD Motif mutations with emergence of Lamivudine resistant mutants: a threat to recovery. *Gastroenterology and Hepatology from Bed to bench*. 2010; 3(3): 108-114.
71. Shahzadi Javeed, Maha Almas, Muhammad Shahid, Aleena Sumrin, Hamid Bashir, Muhammad Bilal, Zafar Saleem, Ghulam Zahra Jahangir, **Samia Afzal** et al. Nrf2: A master regulator of cellular defense mechanism and a novel therapeutic factor. *Pakistan Journal of Biotechnology* 2017;14(1):121-126
72. Iram Amin, Shagufta Naz, Muhammad Shahid, **Samia Afzal** et al. Inhibitory Effects of Thiazolide Compounds against Hepatitis C virus: in vitro Study. *International Journal of Virology and Molecular Biology* 2016, 5(2): 27-33
73. Muhammad Idrees, Waqar Hussain, Habib ur Rehman, Ghias un Nabbi Tayyab, **Samia Afzal** et al. Dengue Virus Serotype 2 (DEN-2): The Causative Agent of 2011-Dengue Epidemic in Pakistan. *American journal of Biomedical Sciences*.2012, 4(4), 307-315
74. Shazia Rafique, Maham Saeed, Iqra Ilyas, Zoya Asad, **Samia Afzal** et al. Advancements in Biosensing Technologies for the Detection of Human Immunodeficiency Virus. *Advances in Preventive Medicine and Health Care*. 2021, 4: 1030.
75. Zaheer Abbas, **Samia Afzal*** et al. Drought stress, its effects and adaptation in plants. *Journal of Biological and Allied Health Sciences*. 2021, 1(1):1-4.
76. Ayma Aftab, **Samia Afzal***, Liaqat Ali, Muhammad Idrees. The Emerging Role of Epigenetics (DNA methylation) in Hepatitis C Virus-Induced Hepatocellular Carcinoma. (Accepted at *Hepatitis Monthly*). (IF=1.214).