

# IRSHAD UR REHMAN

**Personal Details:**

**Nationality:** PAKISTANI

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**QUALIFICATION**

**2007-2013** Ph.D in Molecular Biology, National Centre of Excellence in Molecular Biology, University of the Punjab, Lahore.

**Thesis title:** *Molecular Cloning and Sequencing of Entire HCV Genotype 3a cDNA of Pakistani Isolates and their Quasispecies Analysis.*

**2002-2006** B.Sc (Hons.) in Biotechnology**,** University of Peshawar, Pakistan.

**AWARDS:**

**2012** 4 Months regular fellowship at CDC USA awarded by US Government.

**2011** 6th month training experience in USA, CDC awarded by IRSIP international research support initiative program (IRSIP) HEC.

**2010** 6th month training experience in France was awarded by French Government.

**2006**  HEC Indigenous fellowship Batch III, *(M.Phil Leading to PhD).*

**WORK EXPERIENCE:**

**2014-to date** Assistant Professor at Center of Biotechnology and Microbiology, University of Peshawar, Pakistan.

**2011-2012** 10 months work experience as guest research fellow & regular fellow. Centre for disease control and prevention (CDC), under the supervision of Dr. Yuri Khudyakov

**2010** Six months training experience in France, *Institute of Albert Bonniot*, University of Grenoble, France under the supervision of Patrice Marche.

**2007-2010** Worked as a Research Scholar at the National Center of Excellence in molecular Biology (CEMB), University of the Punjab, Pakistan, under the Supervision of Dr. Muhammad Idrees.

**COURSES STUDIED IN M.PHIL AND PH.D**

General Molecular Biology, Biochemistry, Recombinant DNA techniques, Gene Expression and Regulation, Bioinformatics (DNA & protein softwares), Biostatistics, Molcular Virology, Cell biology, Medical genetics, Medical Microbiology and General Microbiolgy. Advancement in Biochemistry, Lab Biosafety, Realtime PCR quantification, Effects of GMO on Environment, Advances in Stem cell.

**LABORATORY EXPERIENCE:**

Microbial techniques, Biochemical testing & Molecular Techniques e.g. DNA extraction, Plasmid extraction, Gel Electrophoresis, Dot-blot, Genomic PCR, RNA extraction PCR Amplification, Real Time PCR, ELISA, Genotyping. Tissue & cell culturing, Transformation, Transfection, Primer Designing, cDNA synthesis, sequencing PCR, Spectrophotometry, Restriction Digestion analysis, Cloning, SDS-PAGE and Western Blot.

**RESERCH PUBLICATIONS: IF=60.37**

## Irshad Ur Rehman, Gilberto Vaughan, Michael A Purdy, Guo-Liang Xia, Joseph C Forbi, Livia Maria Gonçalves Rossi, Sadia Butt, Muhammad Idrees, Yury E Khudyakov. Genetic History of Hepatitis C Virus in Pakistan. Infection, Genetics and Evolution 2014 August 12. IF=3.264

1. [Ali M](http://www.ncbi.nlm.nih.gov/pubmed?term=Ali%20M%5BAuthor%5D&cauthor=true&cauthor_uid=24532035), [**Rehman IU**](http://www.ncbi.nlm.nih.gov/pubmed?term=Rehman%20IU%5BAuthor%5D&cauthor=true&cauthor_uid=24532035)**,**[Idrees M](http://www.ncbi.nlm.nih.gov/pubmed?term=Idrees%20M%5BAuthor%5D&cauthor=true&cauthor_uid=24532035). Emergence of genetically variant Hepatitis C virus population in response to increased antiviral drug pressure, Pakistan. [Virus Genes.](http://www.ncbi.nlm.nih.gov/pubmed/24532035) 2014 Jun;48(3):543-9. doi: 10.1007/s11262-014-1047-y. Epub 2014 Feb 16. IF=1.77
2. [Ali L](http://www.ncbi.nlm.nih.gov/pubmed?term=Ali%20L%5BAuthor%5D&cauthor=true&cauthor_uid=24742271), [Idrees M](http://www.ncbi.nlm.nih.gov/pubmed?term=Idrees%20M%5BAuthor%5D&cauthor=true&cauthor_uid=24742271)1, [Ali M](http://www.ncbi.nlm.nih.gov/pubmed?term=Ali%20M%5BAuthor%5D&cauthor=true&cauthor_uid=24742271), [Hussain A](http://www.ncbi.nlm.nih.gov/pubmed?term=Hussain%20A%5BAuthor%5D&cauthor=true&cauthor_uid=24742271)**,**[**Ur Rehman I**](http://www.ncbi.nlm.nih.gov/pubmed?term=Ur%20Rehman%20I%5BAuthor%5D&cauthor=true&cauthor_uid=24742271)**,** [Ali A](http://www.ncbi.nlm.nih.gov/pubmed?term=Ali%20A%5BAuthor%5D&cauthor=true&cauthor_uid=24742271), [Iqbal SA](http://www.ncbi.nlm.nih.gov/pubmed?term=Iqbal%20SA%5BAuthor%5D&cauthor=true&cauthor_uid=24742271), [Kamel EH](http://www.ncbi.nlm.nih.gov/pubmed?term=Kamel%20EH%5BAuthor%5D&cauthor=true&cauthor_uid=24742271). Inhibitory effect of kaolin minerals compound against hepatitis C virus in Huh-7 cell lines. [BMC Res Notes.](http://www.ncbi.nlm.nih.gov/pubmed/?term=Inhibitory+effect+of+kaolin+minerals++compound+against+hepatitis+C+virus++in+Huh-7+cell+lines.) 2014 Apr 17;7:247. doi: 10.1186/1756-0500-7-247. IF=1.39
3. Badar S, Khubaib B, Idrees M, Hussain A, Butt S, Afzal S, Ali M, **Rehman I** *et al.,* Association of hepatitis C virus with insulin resistance: evidences from animal studies and clinical studies. Hepat Mon. 2012 Jan; 12(1):11-5. Epub 2012 Jan 20. IF= 1.796
4. Sobia Manzoor, Muhammad Idrees*\**, Javed Ashraf, Azra Mehmood, Sadia Butt, Kaneez Fatima, Haji Akbar, **Irshad ur Rehaman,** Ishtiaq Qadri.Identification of ionotrophic purinergic receptors in Huh-7 cells and their response towards structural proteins of HCV genotype 3a. ”.*Virology J.,* 2011. IF=2.09.
5. Muhammad Z Yousaf, Muhammad Idrees, Zafar Saleem, **Irshad U Rehman,** Muhammad Ali. Expression of core antigen of HCV genotype 3a and its evaluation as screening agent for HCV infection in Pakistan, Virology, J 2011; 8:364 doi:10.1186/1743-422X-8-364. IF= 2.09.
6. **Sadia Butt†, Muhammad Idrees\*†, Irshad-ur Rehman†, Liaqat Ali, Abrar Hussain,Muhammad Ali, Naveed Ahmed, Sana Saleem and Madiha Fayyaz.** Establishment of stable Huh-7 cell lines expressing various hepatitis C virus genotype 3a protein: an in-vitro testing system for novel anti-HCV drugs. BMC Genetic Vaccines and Therapy 2011, **9**:12. IF=1.86
7. Sadia Butt,Muhammad Idrees, **Irshad Ur Rehman,** Haji Akbar, Muhammad Shahid, Samia Afzal, Saima Younas and Iram Amin. “Mixed Genotype Infections with Hepatitis C Virus, Pakistan” Emerging Infectious Diseases. 2011:17; 8. IF=7.327.
8. **Madiha Akram, Muhammad Idrees, Shamail Zafar, Abrar Hussain, Sadia Butt, Samia Afzal, Irshad UR Rehman**, **Liaqat Ali, Sana Saleem, Muhammad Ali**and**Azeem Butt.** Effects of Host and virus related factors on Interferon-alpha+ribavirin and Pegylated-interferon+ribavirin treatment outcomes in Chronic Hepatitis C patients. Virology Journal 2011, 8:234 doi:10.1186/1743-422X-8-234. IF=2.09
9. Haji Akbar, \*Muhammad Idrees, Sadia Butt, Zunaira Awan, Muhammad Farooq Sabar, **Irshad-ur Rehaman,** Abrar Hussain, Sana Saleem. “High Baseline Interleukine-8 level is a Independent Risk Factor for the achievement of Sustained Virological Response in Chronic HCV Patients”.*J Infec Gen Evol* 2011. IF=3.264
10. Muhammad Idrees, **Irshad ur Rehman**, Sobia Manzoor,  Haji Akbar,  Sadia Butt, Samia Afzal,  Muhammad Zubair Yousaf, Abrar Hussain. Evaluation of three different HCV Typing Methods for detection of Mixed Genotype Infections. Journal of Digestive Diseases. doi: 10.1111/j.1751-2980.2011.00496.x IF=1.924
11. 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 doi:10.1186/1743-422X-8-204 IF=2.09
12. **Muhammad Ali, Muhammad Idrees, Liaqat Ali, Abrar Hussain, Irshad Ur Rehman**,**Sana Saleem, Samia Afzal**and **Sadia Butt.** Hepatitis B virus in Pakistan: A systematic review of prevalence, risk factors, awareness status and genotypes. *Virology Journal* 2011, 8:102 doi:10.1186/1743-422X-8-102. IF=2.09
13. **Bisma Rauff, Muhammad Idrees, Shahida AMJAD RIAZ Shah, Sadia Butt**,**Azeem M Butt, Liaqat Ali, Abrar Hussain, Irshad ur Rehman**and**Muhammad Ali.** Hepatitis Associated Aplastic Anemia: A review. *Virology Journal* 2011, **8**:87 doi:10.1186/1743-422X-8-87. IF=2.09
14. **Samia Afzal, Muhammad Idrees, Muhammad Ali, Muhammad Ilyas, Abrar Hussain, Madiha Akram, Sadia Butt, Sana Saleem, Irshad Ur Rehman**,**Liaqat Ali**and**Muhammad Shahid.** Envelope 2 protein phosphorylation sites S75 & 277 of hepatitis C virus genotype 1a and interferon resistance: A sequence alignment approach.*Virology Journal* 2011, 8:71 doi:10.1186/1743-422X-8-71. IF=2.09
15. **Liaqat Ali\*, Muhammad Idrees\*, Muhammad Ali, Irshad-ur Rehman**,**Abrar Hussain, Samia Afzal, Sadia Butt, Sana Saleem, Saira Munir Sadaf Badar.** An overview of treatment response rates to various anti-viral drugs in Pakistani Hepatitis B Virus infected patients. *Virology Journal* 2011, 8:20 doi:10.1186/1743-422X-8-20.IF=2.09

# ****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. BMC Genetic Vaccines and Therapy 2011, **9**:2. IF=1.86

# Sadia Butt, Muhammad Idrees, Muhammad shahid, Iram Amin, Saima Younas, Samia Afzal, Haji Akbar, Irshad Ur Rehman. Change in hepatitis C virus clades: A cross-sectional study of chronic HCV patients in Pakistan from 2000-2010. Eur J Clin Microbiol Inf Dis 2011. IF= 2.544

1. Muhammad Idrees, Amreek Lal, Fayyaz Ahmed Malik, Abrar Hussain, **Irshad ur Rehman,** Haji Akbar, Sadia Butt, Muhammad Ali, Liaqat Ali, Fayyaz Ahmed Malik. Occult hepatitis C virus infection and associated predictive factors: the Pakistan experience. *J Infec Gen Evol* 2010. doi:10.1016/j.meegid.2010.12.004. IF=3.264
2. **Zunaira Awan, Muhammad Idrees, Irum Amin, Sadia Butt, Samia Afzal, Haji Akbar, Irshad-ur Rehman, Saima Younas, Muhammad Shahid, Amreek Lal, Sana Saleem** **and Bisma Rauff**. Pattern and Molecular epidemiology of HBV genotypes circulating in Pakistan.*J Infec Gen Evol* Vol. 10(8); 1242-1246. IF=3.264
3. Sadia Butt, Idrees Khan, Haji Akbar, **Irshad Ur Rehman,** Zunaira Awan, Muhammad Shahid, Samia Afzal, Abrar Husain, Sobia Mnazoor, Shazia Rafique (2010). The changing epidemiology pattern and frequency distribution of hepatitisC virus in Pakistan*. Journel of Infection, genetics and evolution* Vol. 10(5); 595-600. IF=3.264
4. Zunaira Awan, Muhammad Idrees, Shazia Rafique, **Irshad-ur Rehman**, Haji Akbar, Sadia Butt, Sobia Manzoor, Liaqat Ali Khan, Saira Munir, Samia Afzal, Zareen Fatima, Bisma Rauff, Mahrukh Naudhani, Mohammad Ali, Sana saleem, Sadaf Badar. Hepatitis B virus YMDD Motif mutations with emergence of Lamivudine resistant mutants: a threat to recovery. Gastroenterology and Hepatology from Bed to bench journal 2010; **3(3):**108-114.

IF=1.0098

1. **Muhammad Idrees\***, **Sadia Butt,** **Zunaira Awan**, **Mahwish Aftab**, **Bushra Khubaib**, **Irshad-ur Rehman,** **Madiha Akram**, **Sobia Manzoor**, **Haji Akbar**, **Shazia Rafique** and **Sheikh Riazuddin. (2009).** Nucleotide identity and variability among different Pakistani hepatitis C virus isolates. *Virology Journal*. **6:**130doi:10.1186/1743-422X-6-130. IF=2.09
2. H**.** Akbar**,** M. Idrees\*, S. Manzoor, **I. ur Rehman,** Sadia Butt, *et al.,*(2009). Hepatitis C Virus Infection: a review of the current and future aspects and concerns in Pakistan. *Journal of General and Molecular Virology*, **1(2)**, pp. 012-018.
3. Muhammad Idrees, Shazia Rafique, **Irshad-ur Rehman**, HajiAkbar**,** Sadia Butt, Muhammad Zubair Yousaf, *et al.,* (2009). Hepatitis C Virus Genotype 3a infection and hepatocellular carcinoma: Pakistan experience. *World J Gastroentrol* 2009 Octuber 28; 15(40):5080-5085. IF= 2.433

**LECTURES & PRESENTATION**

1. **Irshad-ur Rehman.** Oral presentation **“**Molecular Cloning and Sequencing of Entire Complementary DNA of Hepatitis C Virus Genotype 3a Genome of Pakistani Isolate and its Phylogenetic Analysis”.1st annual HCV management symposium 10th-11th February, 2011. NUST center of virology & immunology (NCVI, NUST), Islamabad Pakistan.
2. Sadia Butt, **Irshad Ur Rehman,** Muhammad Idrees. Abstract No. 10076: **Hepatitis C Virus in Pakistan.** APASL 7th Single Topic Conference “Hepatitis C Virus” 17th-18th December 2010, Makuhari, Chiba, Japan.
3. Sadia Butt, Muhammad Idrees, Saira Munir, Bisma Rauff, Sana Saleem, Mahrukh Naudhani, Muhammad Ali, Liaqat Ali, Zareen Fatima, Sadaf Badar, **Irshad-ur Rehman,** **The Role of HCV Genotypes in the Development of Hepatocellular Carcinoma (HCC) In Developing Countries like Pakistan.** 9th Shaukat Khanum Memorial Cancer Symposium, 26 - 28 November 2010, Lahore, Pakistan.
4. **Irshad Ur Rehman**, Haji Akbar, Sadia Butt, Zunaira Awan, Muhammad Idrees. **Hepatitis C Virus Infection: a review of the current and future aspects and concerns in Pakistan** *Florence* *Conference* *on* *Phenotype* *Micro* *Array* *Analysis* *of* *Microorganisms*. The Environment, Agriculture and Human Health. 13th-15th September, 2010. Florence, Italy.
5. Sadia Butt, Muhammad Idrees, **Irshad Ur Rehman**, Haji Akbar, Zunaira Awan. **Frequency distribution and Changing Pattern in Hepatitis C Virus genotypes: a 10 years data on 20552 chronic HCV Carriers.** *Florence* *Conference* *on* *Phenotype* *Micro* *Array* *Analysis* *of* *Microorganisms*. The Environment, Agriculture and Human Health. 13th-15th September, 2010. Polo delle scienze Sociali - Novoli, Florence, Italy.
6. Sadia Butt, Zunaira Awan, **Irshad Ur Rehman**, Haji Akbar, Shazia Rafique, Sobia Manzoor Abrar Husain, M Idrees. **A Change in HCV Genotype Pattern Seen in Pakistan: Data of more than Fifteen Thousands Patients**. 2nd National Symposium On Microbiology, Pre & Post Symposium Biosafety And Biosecurity Workshop in collaboration with Biosafety Society of Pakistan & Pakistan Society for Microbiology, University of Sindh, Jamshoro. Hyderabad, Pakistan.
7. Sadia Butt, **Irshad-Ur Rehman,** Muhammad Idrees and Sheikh Riazudin. 2009. **Development of subgenomic replicons of HCV genotype 3a**. Symposium at National Center of Excellence in Molecular Biology Pakistan.
8. Butt S, Awan Z, **Rehman I,** Akbar H, Ilyas M, *et al.,* 2009. **Changing Pattern of Hepatitis C Virus (HCV) Genotype Distribution in Pakistan: Disease and Anti-Viral Therapy Outcome after 10-15 Years.** 6th Annual conference on infectious diseases April 04-05. Symposium at Shaukat Khanum Memorial Hospital, Lahore, Pakistan.
9. Sadia Butt, Zunaira Awan, **Irshad-Ur-Rehman**, Haji Akbar, Muhammad Idrees. **The impact of changing pattern of Hepatitis C Virus genotype on disease outcome in different age groups: A 10 years experience.** 7th Annual Conference of IDSP on 20th Feb 2010. The Aga Khan University Hospital, Stadium Road, Karachi, Pakistan.
10. **Irshad Ur Rehman**. **Hepatitis C Virus Infection: a review of the current and future aspects and concerns in Pakistan.** 2nd National Symposium On Microbiology (New trends and advancement in Microbiology)Biosafety Society of Pakistan & Pakistan Society for Microbiology, University of Karachi & The Institute of Plant sciences, University of Sindh, Jamshoro, Pakistan.

**SEMINARS, SYMPOSIUMS AND CONFERENCES ATTENDED:**

* **25 July 2012:** *Bioinformatics Seminar Series:* “Genomic Applications for Molecular Epidemiology”, Global Communication Center, Roybal Campus, Center for disease control and prevention (CDC), Atlanta, Georgia.
* **01-02 December 2011:** *Symposium on HCV:* “Identification, Screening and Surveillance of HCV Infections in the Era of Improved Therapy for Hepatitis C”. Auditorium B3, Tom Harkin Global Communication Center, Roybal Campus, Center for disease control and prevention, Atlanta, GA.
* Got Special training on Biosafety and Bio-security, CDC, USA October, **2011**.
* **23 October, 2011:** Certificate of Course Mastery recognized by the OFFICE OF HEALTH & SAFETY, CDC, USA for demonstrating a thorough understanding and ability to apply the principles of “SAFETY SURVIVAL SKILLS PT-1: GENERAL RESPONSIBILITIES”.
* **25 October, 2011:** Certificate of Course Mastery recognized by the OFFICE OF HEALTH & SAFETY, CDC, USA for demonstrating a thorough understanding and ability to apply the principles of “SAFETY SURVIVAL SKILLS PT-2: LABORATORY SAFETY”.
* **25 October, 2011:** Certificate of Course Mastery recognized by the Office of Health & Safety, CDC, USA for demonstrating a thorough understanding and ability to apply the principles of “SUPERVISORY SKILLS”.
* **25 October, 2011:** Certificate of Course Mastery recognized by the Office of Health & Safety, CDC, USA for demonstrating a thorough understanding and ability to apply the principles of “ACCIDENT INVESTIGATION”.
* **25 October, 2011:** Certificate of Course Mastery recognized by the Office of Health & Safety, CDC, USA for demonstrating a thorough understanding and ability to apply the principles of “OCCUPATIONAL EMERGENCY PROGRAM”.
* Training on Biosafety level 1 (BSL1), BSL2, BSL3 and BSL 4, CDC USA, **2011-2012.**
* **10th-11th February, 2011**: 1st annual HCV management symposium NUST center of virology & immunology (NCVI, NUST), Islamabad Pakistan.
* **26 - 28 November 2010:** 9th Shaukat Khanum Memorial Cancer Symposium, at PC hotel Lahore, Pakistan.
* **13th-15th September, 2010:** *Florence* *Conference* *on* *Phenotype* *Micro* *Array* *Analysis* *of* *Microorganisms*. The Environment, Agriculture and Human Health. Polo delle scienze Sociali - Novoli, Florence, Italy.
* **1st April 2010:** “Clinical trials and systematic reviews”, Department of Oral health sciences, Sheikh Zayed Federal Postgraduate Medical Institute, Sheikh Zayed Medical Complex, Lahore.
* **18th-19th March 2010:** 2nd National Symposium On Microbiology **(**New trends and advancement in Microbiology)Biosafety Society of Pakistan & Pakistan Society for Microbiology, University of Karachi & The Institute of Plant sciences, University of Sindh, Jamshoro, Pakistan.
* **19th-20th February 2010:** 7th Annual Conference on Infectious Diseases, Microbial Threats: Local Challenges and Strategies”. Shaukat khanum Hospital, Lahore.
* **3rd -4th April 2009:** 6th Annual Conference on Infectious Diseases, Avari/ Shaukat khanum Hospital, Lahore, Pakistan.
* **24th-28th March 2008:** National Bioforum 2008 organized and attended symposia in BioRegarding Molecular Biological Research, siRNA technology as therapeutic tool and a workshop on regulation of use of GM crops. National Centre of Excellence in Molecular Biology (NCEMB), Lahore, Pakistan.
* **19th-21st November 2007.** 3rd International Conference on Plant Pathology & 7th Biennial meeting of Phytopathological Society held at Department of Mycology & Plant Pathology.
* **23rd July 2007:** Mini symposium on new vistas of Plant and Medical Molecular Biology. National Centre of Excellence inMolecular Biology, Lahore, Pakistan.

**COMPUTER SKILLS**

1. DNA STAR, Muffet, LOS ALMAS, MEGA5 (Biological Software)

2. SPSS

3. Microsoft Word processing, Microsoft Windows

4. Introduction to Microsoft Excel, Microsoft PowerPoint

5. Well experience in Internet applications.

**REFERENCES:**

1. **DR. MUHAMMAD IDREES KHAN, Ph.D**   
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1. **DR. YURI KHUDYAKOV, Ph.D**

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1. **DR. PATRICE MARCHE, Ph.D**

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