

Name : Dr. Shelly Sehgal
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AREAS OF RESEARCH

Molecular Microbiology, Comparative genomics, Cancer Biology

EDUCATION

University of Jammu

Ph.D Microbiology

M.Sc Microbiology

Jammu and Kashmir, India

2013

2006

Guru Nanak Dev University

B.Sc Microbiology

Punjab, India

2004

GRANTS AND AWARDS

Postdoctoral Fellowship award

University Grants Commission, India

2015

Smt. Guman Devi Verma BEST WOMAN SCIENTIST award

ISMPP conference, Gujrat, India

2013

Qualified Eligibility Test for Lecturership

SET, University Grants Commission, India

2011

Gold medal in Post Graduation

University of Jammu

2006

Gold medal in Graduation

Guru Nanak Dev University

2004

RESEARCH EXPERIENCE

Postdoctoral Fellow

2015- May' 2017

Unravelling the association between Hepatitis C viral infection and associated carcinoma

1. Characterization of HCV genotypes and assessment of viral load assay in sample population and their correlation with hepatocellular carcinoma onset and progression.
2. Risk factor analysis and quality of life assessment.

Doctoral Fellow; Advisor- Prof. Manoj K. Dhar

2007- 2013

Study of the molecular mechanism of gene amplification (Case study - esophageal cancer)

1. Developed abridged chromosomal maps indicating the position of co-localization of ARS with the proposed fragile sites.
2. Elucidated the interplay of DNA bending and fragile sites in promoting gene amplification.
3. Multivariate risk factors analysis for esophageal cancer in sample population.
4. Quantified gene expression of selected genes from the tumor biopsy samples

Post Graduate Researcher; Advisor- Dr. Sanjana Kaul

2006

Morphological and molecular characterization of keratinophilic fungi from high altitudes

1. Microscopic and macroscopic identification of keratinophilic fungal isolates using hair bait technique.
2. RAPD profiling and Phylogenetic characterization of the isolates.

PUBLICATIONS

1. **Sehgal, S.**, Gupta, S., Kaul, S., Gupta, B.B., Dhar, M.K. 2017. EORTC QLQ-OES 18 module strategy for assessment of quality of life in esophageal cancer patients. IOSR Journal of Pharmacy and Biological Sciences 12, 62-67.
2. **Sehgal, S.**, Gupta, S., Kaul, S., Dhar, M.K. 2017. Genetic diversity among clinical isolates of *Helicobacter pylori* detected from India. International Journal of Medical Research Professionals. 3, 155-58.
3. **Sehgal, S.**, Kaul, S., Dhar, M.K. 2015. Mechanism of gene amplification *via* yeast autonomously replicating sequences. The Scientific World Journal. 2015- 387367.
4. Dhar, M.K., **Sehgal, S.**, Kaul, S. 2014. Gene amplification and its significance in genomic instability and cancer. Edited by RC Sobti. 35-44. **(Book Chapter)**
5. **Sehgal, S.**, Kaul, S., Dhar, M.K. 2013. Integration of bioinformatics and genomics approach unveils novel aspects of *Saccharomyces cerevisiae* Ste20 Kinases. Journal of Mycology and Plant Pathology. 43, 44-50.
6. Dhar, M.K., **Sehgal, S.**, Kaul, S., 2012. Structure, replication efficiency and

- fragility of yeast ARS elements. Research in Microbiology. 163, 243-253.
7. **Sehgal, S.**, Kaul, S., Gupta, B.B., Dhar, M.K., 2012. Risk factors and survival analysis of the esophageal cancer in the population of Jammu, India. Indian Journal of Cancer. 49, 245-250.
 8. **Sehgal, S.**, Kaul, S., Dhar, M.K. 2012. Study of the inherent fragile sequences of the yeast Sch9 kinase. "Biodiversity evaluation -Botanical Perspective. 367, 137-144. **(Book Chapter)**
 9. **Sehgal, S.**, Dhar, M.K., Kaul, S. 2011. Molecular characterization of the keratinophilic fungi isolated from high altitude regions of Kashmir. Environment Conservation Journal. 12, 109-114.
 10. Gupta S., Kalsotra P., **Sehgal S.**, Gupta N. 2016. Review of parameters used to assess hearing improvement in tympanoplasty. IOSR- JDMS. 15 (2).
 11. Gupta S., Manhas A., Zargar A.J., Kalsotra P., **Sehgal S.** 2016. Ossiculoplasty: hearing results with autologus incus. Otolaryngology clinics. 23, 12-17.

TEACHING EXPERIENCE

1. Lecturer on contractual basis in the School of Biotechnology. **2009-2015**
2. Mentor, Post graduate dissertation work. The titles of the dissertations were-

Analysis of promoter hypermethylation in esophageal cancer	2012
Epigenetic modifications in esophageal cancer	2013
RAPD profiling of <i>H. pylori</i> isolated from Jammu.	2014
3. Experience of conducting the Theory and Practical exam as Deputy Superintendent. **2009-2014**

SCIENTIFIC WORKSHOPS ATTENDED

1. 15 days DBT-short term training course on Bioprocess Engineering **2014**
2. Four days scientific training on the REAL-TIME PCR organized by Invitrogen Bioservices, Gurgaon. **2011**
3. One week BIOINFORMATICS WORKSHOP ON GENOMICS organized by Super Computing Facility for Bioinformatics & Computational Biology, IIT, Delhi. **2010**
4. Two days Bioinformatics Training Workshop "CONVERTING DATA TO KNOWLEDGEBASE" held jointly by Bioinformatics

- centre, School of Biotechnology, University of Jammu and BIF Lab, School of Biotechnology, SMVDU, Katra. **2011**
5. Four days International workshop on “rRNA SEQUENCING, PHYLOGENY & NEXT GENERATION GENOME SEQUENCING” by American Society for Microbiology at BITS Mesra, Ranchi. **2010**
 6. GENERAL COURSE ON INTELLECTUAL PROPERTY from WIPO. **2008**
 7. Two day workshop on “CONVERTING BIOSCIENCES TO BIOPRODUCTS” organized by Tanya Biotech. **2006**
 8. Two months Industrial Training in the Quality Assurance Laboratory at Verka Milk Plant, Mohali, Chandigarh, India. **2002**
 9. Training in Microbiology and Quality Assurance Labs of CREMICA, Coca-Cola, Jagatjit fermentation plant. **2003-04**

ABSTRACTS PUBLISHED

1. “Pre and post-operative quality of life in esophageal cancer patients” in 4th J&K Women Science Congress, Jammu’ 2016. **(Oral presentation)**
2. Clinical and molecular profiling of *H. Pylori* isolates from J & K at 1st J&K Medical Science Congress, ASCOMS, JAMMU’ 2016. **(Oral presentation)**
3. “Integration of bioinformatics and genomics approach unveils novel aspects of *Saccharomyces cerevisiae* Ste20 Kinases”. ISMPP, Navsari, Gujrat’ 2013. **(Oral presentation)**
4. “Molecular characterization of the keratinophilic fungi isolated from the high altitude regions of Kashmir” in 3rd J&K State Science Congress, Jammu’ 2008. **(Poster presentation)**
5. “Understanding the molecular mechanism of carcinoma oesophagus” in 5th J&K State Science Congress, Jammu’ 2010. **(Oral presentation)**
6. “Univariate and multivariate analysis of risk factors involved in esophageal cancer” in 7th J&K State Science Congress, Jammu’ 2011. **(Oral presentation)**
7. “Ste20 Kinases: Fragility and genome stress” in National Symposium on Fungal biology and applications, Punjabi University, Patiala’ 2011. **(Oral presentation)**
8. “WHY ARE WE WHERE WE ARE? Understanding yeast ARS *in-silico* and *in-vitro*” in 51st Annual Conference of AMI, Ranchi’ 2010. **(Poster presentation)**
9. “Proteome dynamics of yeast mitochondria in aging and cancer” in ICMRM,

SMVDU, Katra' 2010. (**Oral presentation**)

10. "Statistical approaches in understanding in carcinoma oesophagus in Jammu" in ISHG, Lucknow' 2010. (**Poster presentation**)
11. Attended an International symposium on Cancer Biology at JNU, New Delhi' 2007.
12. Attended National symposium on Microbial biodiversity and Bio-Prospecting, ISMPP 2010, Jammu.

CONFERENCE AWARDS

1. Award for **BEST POSTER PRESENTATION** at the J&K Science Congress for the paper titled "*Univariate and multivariate analysis of risk factors involved in esophageal cancer*". **2011**
2. Award for the **BEST ORAL PRESENTATION** at the International conference on Mitochondria (ICMRM) at SMVDU, for the paper titled "*Mitochondria as longevity regulators*" **2010**
3. Award for **BEST POSTER PRESENTATION** in J&K Science Congress for the paper titled "*Molecular characterization of the keratinophilic fungi isolated from the high altitude regions of Kashmir*". **2008**
4. **CONSOLATION PRIZE** for poster presentation on National Science Day. **2006**
5. Award for the national level **BEST PROJECT** in Children Science Congress for the project on mushrooms (*Agaricus bisporus*). **2000**