

**Dr. Shilpi Gupta**

Assistant Professor-III and DBT-BioCARE Women Scientist

**Specialization: Cancer Biology, HPV Biology, Transcriptional Regulation, Cancer Stem Cells, Non-coding RNAs, Exosomes, Cancer Drug Discovery, Cancer Genomics & Proteomics.**Email: [sgupta6@amity.edu](mailto:sgupta6@amity.edu); [drsgupta03@gmail.com](mailto:drsgupta03@gmail.com)

Dr. Shilpi Gupta earned her PhD in Biomedical Sciences from University of Delhi, Delhi in 2015, where Dr. Gupta first time investigated the functional role of two key transcription factors; AP-1/FRA-2 and NF- $\kappa$ B/c-REL in poor cell differentiation, aggressive tumorigenesis and metastasis during tongue carcinogenesis (TSCC). During her doctoral journey, she was deeply engaged in a series of notable research projects. Some of the most prominent research projects that she handled as a Senior Research Fellow were “Prevalence of human papillomavirus in healthy adolescent girls in Tamil Nadu” and “Prevalence of HPV infection and its physical status in cancers of different organ sites”. After completing PhD, Dr. Gupta assumed a position at Amity Institute of Molecular Medicine and Stem Cell Research (AIMMSCR), Amity University Uttar Pradesh, Noida, as a National Postdoctoral Fellow (NPDF), where her research efforts were primarily dedicated on transcriptional and epigenetic targeting of HPV+ve and HPV-ve oral-tongue cancers and cancer stem cells (CSCs). Her work concentrated extensively on understanding mechanisms of drug-resistance and chemo-sensitization to chemo-radiotherapy through novel herbal-based chemotherapeutic agents. After completing NPDF, Dr. Gupta joined at National Institute of Cancer Prevention and Research (NICPR), Noida, India, as a ICMR-Centenary-Post Doctoral Fellow (PDF). Here, her research revolved around an in-depth exploration of the AP-1/FRA-2 and NF- $\kappa$ B/c-REL-associated protein-protein interactome. The core objective was to unravel non-canonical and de-novo protein-protein interactions (PPIs) in relation with HPV infection and tobacco/alcohol usage in oral-tongue cancer patients. This investigation aimed to identify potential therapeutic targets for the development of precision and personalized medicine for the treatment of highly aggressive and drug-resistance oral-tongue cancers. Throughout her scientific career, Dr. Gupta has made substantial contributions to the field and published several papers in esteemed journals including The Lancet Oncology, Scientific Reports, Oncotarget, and Translational Oncology etc. Dr. Gupta’s research focuses on elucidating the role of key transcription factors and signalling pathways in the context of oral cancer and cancer stem cells with the main aim to pinpoint key pathways that could be targeted for therapeutic benefit to cancer patients. She is also working on liquid-biopsies-based biomarkers, microbiome, exosomal-non-coding RNAs (Exo-ncRNAs), CRISPR/Cas9-based genome editing, genomics, transcriptomics and proteomics. Apart from her research activities, Dr. Gupta is actively involved in the educational domain. Her teaching responsibilities encompass a range of courses including cancer biology, clinical trials, cancer stem cells, biomarkers, microbiology and molecular biology.

**Current Research Projects:**

1. DBT-BioCARE funded research project entitled “Targeting the NF- $\kappa$ B/c-REL Pathway as a Potential Therapeutic Strategy for Tongue Squamous Cell Carcinoma”.
2. DHR funded research project entitled “Deciphering BMI-1 Protein in Cancer Stem Cells as Potential Therapeutic Target for Aggressive Tongue Cancer Therapy”.

**Fellowships and Awards:**

1. **BioCARE-Women Scientist**, Awarded by Department of Biotechnology (DBT)-Biotechnology Career Advancement & Re-orientation Programme (BioCARE) in 2023.
2. **Young Scientist-A**, Awarded by Department of Health Research (DHR)-ICMR in 2021.
3. **Dr. D. S. Kothari Postdoctoral Fellowship (DSKPDF)**, Awarded by UGC in 2018 (not availed).
4. **ICMR-Post-Doctoral Fellowship (ICMR-PDF)**, Awarded by ICMR in 2018.
5. **National Post-Doctoral Fellowship (NPDF)**, Awarded by DST-SERB in 2016.
6. **Best Post Presentation Award** by Indian Association for Cancer Research (IACR) in 2013.
7. **Senior Research Fellowship (SRF)**, Award by Indian Council of Medical Research (ICMR) in 2011.

**Professional affiliation:**

- American Association for Cancer Research (AACR), Associate Member (Membership ID-464501).
- Indian Association for Cancer Research (IACR), Life Member (Membership ID- LM-1096).
- Editor and reviewer: Journal of Cancer Genetics and Biomarkers (2022-present).
- Reviewer of BMC Cancer, JCCS, JFS, JAFS.
- Awarded course certificate by **WHO**, Health Emergencies Programme on “Infection Prevention and Control (IPC) and Management of COVID-19 Infections. 2021.

### **Selected Publications:**

1. **Shilpi Gupta**, Prabhat Kumar and Bhudev C. Das. HPV+ve/-ve Oral Tongue Cancer Stem Cells: A Potential Target for Relapse-free Therapy. **Translational Oncology**, 2021 (IF. 4.8).
2. Prabhat Kumar\*, **Shilpi Gupta\***, Bhudev C. Das. Towards global elimination of cervical cancer in all groups of women. **The Lancet Oncology**, 2019 (IF: 54.433). \*Equal Contribution.
3. Vaishali Chandel, Sibi Raj, Prabhat Kumar, **Shilpi Gupta** et al. Metabolic regulation in HPV associated head and neck squamous cell carcinoma. **Life Sciences**, 2020 (IF. 6.8).
4. **Shilpi Gupta**, Prabhat Kumar, Nishi Sharma, Daman Saluja, Alok C. Bharti, Bhudev C. Das. Constitutive Activation of NF- $\kappa$ B p50/c-Rel Subunits Contribute in Tumor Aggressiveness and Metastasis during Tongue Carcinogenesis, **Oncotarget**. 2018 (IF. 5.2).
5. Anand N. Srivastava, Jata S. Misra, Shruti Srivastava, Bhudev C. Das & **Shilpi Gupta**, Cervical Cancer Screening in Rural India: Status and Current Concepts. **IJMR**, 0.4103/ijmr.IJMR\_5\_17. 2018 (IF. 5.274).
6. **Shilpi Gupta**, Prabhat Kumar & Bhudev C. Das. HPV: molecular pathways and targets. **Current Problems in Cancer**. 2018 (IF. 3.19).
7. **Shilpi Gupta**<sup>#</sup>, Prabhat Kumar, Jayant Maini & Mausumi Bhardwaj. Long Non-Coding RNAs Emerging as Potential Epigenetic Biomarkers for Tobacco and/or Alcohol-Induced Head and Neck Cancer. **Journal of Cancer Genetics and Biomarkers**, 2019. (IF-3.45).
8. **Shilpi Gupta**<sup>#</sup>, Prabhat Kumar, Jayant Maini et al. Epigenetic Biomarkers in head and neck cancers. **Journal of Cancer Genetics and Biomarkers**, 2018. (IF-3.45).
9. Abhishek Tyagi, **Shilpi Gupta**, Prabhat Kumar, Alok C. Bharti, and Bhudev C. Das. Emerging role of FRA-1 as a novel target for radio-sensitization in HPV-associated cancers. **AACR**, 2017 (IF. 9.1).
10. **Shilpi Gupta**, Prabhat Kumar and Bhudev C. Das. Selective participation of c-Jun with Fra-2/c-Fos promotes aggressive tumor phenotypes and poor prognosis in tongue cancer. **Scientific Reports**, Nature. 2015 (IF-4.99).

### **Articles in book/health magazine:**

1. **Dr. Shilpi Gupta**. Cervical Cancer Is Fully Preventable, Treatable If Caught Early. 2023. [bwhealthcacreworld.businessworld.in](http://bwhealthcacreworld.businessworld.in).
2. **Shilpi Gupta**, Prabhat Kumar, Ankan Mukherjee Das, D. K. Gupta & B. C. Das. Human Viruses: Infection, Prevention and Potential Target(s) for Therapy – A Comprehensive Review. ‘Human Viruses: Diseases, Treatments and Vaccines- The New Insights. pp3-54. Springer. 2021.
3. Hoda Elkhenany and **Shilpi Gupta**, **Mesenchymal stem cell-derived exosomes and regenerative medicine**. Role of Exosomes in Biological Communication Systems. pp141-164, Springer-Nature. 2021.
4. **Shilpi Gupta**, Prabhat Kumar and Bhudev C. Das. “DNA Tumor Viruses” in Text Book of Oncology in Indian Context. 2018.