

**EXTRAMURAL PROJECTS:**

<b>Principal Investigator/Mentor</b>	<b>Project Title</b>	<b>Funding Agency</b>
<b>Dr. Chinmay Kumar Panda</b>	Identification of novel candidate gene(s) associated with the development of uterine cervical carcinoma	Council of Scientific and Industrial Research, Govt. of India
	Identification of susceptible genes associated with arsenic induced bladder cancer in West Bengal, India	Dept. of Biotechnology, Govt. of West Bengal
	Molecular analysis of alterations in chromosome 3 in Bladder carcinoma of Indian patients.	UGC-NET Research Fellowship of Miss Mukta Basu
	Analysis of alterations of Wnt and hedgehog pathways during development of head and neck squamous cell carcinoma (HNSCC)	UGC-NET Research Fellowship of Mr. Balarko Chakrobarty
	Molecular analysis of active HPV 16 profile during progression of cervical cancer in Indian patients	CSIR Research Associateship of Dr. Gangotree Mohanty
	Anticancer effects of <i>Holarrhenaanti dysenterica</i> derived tri-terpene compounds	DST-Woman Scientist Scheme –A of Dr. Anindita Ghosh
	Analysis of immune checkpoint alteration in Epstein-Barr virus associated gastric carcinoma in Indian patients	National post-doctoral fellowship, SERB, Dept. of Science and Technology, Govt. of India of Dr. Biswabandhu Bankura
	Analysis of alteration of NOTCH pathway in head and neck squamous cell carcinoma of Indian patients	DST-Woman Scientist Scheme-A of Miss Debalina Mukhopadhyay
	Analysis of DNA modifying and DDR (DNA damage response) genes associated with the development of Uterine Cervical Carcinoma (CACX)	DST-INSPIRE Fellowship of Miss Priyanka Dutta

## INTRAMURAL PROJECTS:

Principal Investigator/Mentor	Project Title	Funding Agency
Dr. Chinmay Kumar Panda	Molecular analysis of the development of oral, cervix and breast carcinomas of Indian patients	CNCI
	Molecular profiling of Triple Negative Breast Cancer (TNBC) for therapeutic intervention	Do
	Analysis of chemo-tolerance mechanism of tumor	Do
	Analysis of HPV profile in oral, cervix and breast carcinomas of Indian patients	Do
	Evaluation of potent antitumor activities of some natural phenolic compounds	Do

## PUBLICATIONS IN LAST FIVE YEARS:

1. Bhattacharjya S., Nath S., Ghose J., Maiti G. P., Biswas N., Bhattacharyya N. P., Bandyopadhyay S., **Panda C. K.** and Roychoudhury S.: miR-125b promotes cell death by targeting Spindle Assembly Checkpoint gene MAD1 and modulating mitotic progression. **Cell Death and Differentiation**, **20**, 430–442, 2013.
2. Maiti G. P., Ghosh A., Chatterjee R., Roy A.; Sharp T. V., Roychoudhury S. and **Panda C. K.**. Reduced expression of LIMD1 in ulcerative oral epithelium associated with tobacco and areca nut. **Asian Pacific Journal of Cancer Prevention**, **13(9):4341-4346, 2012.**
3. Ghosh A., Maiti G. P., Bandopadhyay M. N., Chakraborty J., Roychoudhury S. and **Panda C. K.**: Inactivation of 9q22.3 tumor suppressor genes predict outcome for patients with head and neck 2squamous cell carcinoma. **Anticancer Research** **33: 1215-1220, 2013.**
4. Mondal P, Datta S, Maiti GP, Baral A, Jha GN, **Panda C. K.**, Chowdhury S., Ghosh S., Roy B., Roychoudhury S.: Comprehensive SNP scan of DNA repair and DNA damage response genes reveal multiple susceptibility loci conferring risk to tobacco associated leukoplakia and oral cancer. **PloS ONE** **8(2): e56952, 2013. Doi:10.1371/journal.pone.0056952**
5. Maiti G.P., Mondal P., Mukherjee N., Ghosh A., Ghosh S., Dey S., Chakraborty J., Roy A., Biswas J., Roychowdhury S. and **Panda C. K.**: Overexpression of EGFR in head and neck 2quamous cell carcinoma is associated with inactivation of SH3GL2 and CDC25A genes. **PloS ONE: 8(5), e63440. Doi:10.1371/journal.pone.0063440.**
6. Chatterjee A., Dutta S., Mukherjee S., Mukherjee N., Dutta A., Mukherjee A., Sinha S., **Panda C.K.**, Chaudhuri K., Roy A. L and Mukhopadhyay K.. Potential contribution

of SIM2 and ETS2 functional polymorphisms in Down syndrome associated malignancies. **BMC Medical Genetics**, **14**: 12, 2013.

7. Sarkar S., Maiti G. P., Jha J., Biswas J., Roy A., Roychoudhury S., Sharp T., **Panda C.K.**: Reduction of proliferation and induction of apoptosis are associated with shrinkage of head and neck squamous cell carcinoma due to neoadjuvant chemotherapy. **Asian Pac J Cancer Prev**, **14** (11), 6419-6425, 2013.
8. Basu P., Dutta S., Begum R., Samadder A., Das P., Mittal S., Das Dutta P., **Panda C. K.**, Bharti A.C., Sinh V., Dey B., Biswas J., Das B. C., Talwar G. P.: Clearance of Cervical Human Papillomavirus Infection by Topical Application of Curcumin and Curcumin Containing Polyherbal Cream: A Phase II Randomized Controlled Study. **Asian Pac J Cancer Prev**, **14** (10), 5753-5759, 2013.
9. Mitra S., Mukherjee N., Das S., Das P., **Panda C.K.**, Jayprokas Chakrabarti J.: Anomalous altered expressions of downstream gene-targets in TP53-miRNA pathways in head and neck cancer. **Scientific Reports** **4**: 6280 | DOI: 10.1038/srep06280, 2014.
10. Maiti G. P., Ghosh A., Mondal P., Ghosh S., Chakraborty J., Roy A., Roychowdhury S. and **Panda C. K.**: Frequent inactivation of SLIT2 and ROBO1 signaling in head and neck lesions: Clinical and Prognostic implications. **Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology**, **119**(2): 202-212, 2015.
11. Chakraborty C., Dutta S., Mukherjee N., Samadder S., Roychowdhury A., Roy A., Mondal R. K., Basu P., Roychoudhury S. and **Panda C. K.**: Inactivation of PTCH1 is associated with the development of cervical carcinoma: clinical and prognostic implication. **Tumor Biology** 2015 Feb;36(2):1143-54 DOI 10.1007/s13277-014-2707-1
12. Ghosh I, Mittal S., Banerjee D., Singh P., Dasgupta S., Chatterjee S., Biswas J., **Panda C.K.** and Basu P.: Study of accuracy of colposcopy in VIA and HPV detection-based cervical cancer screening program. **Australian and New Zealand Journal of Obstetrics and Gynaecology** **54**: 570–575, 2014.
13. Dutta S., Chakraborty C., Dutta A. K., Mandal R. K., Roychoudhury S., Basu P., **Panda C. K.**: Physical and methylation status of HPV16 in asymptomatic cervical infections changes with malignant transformation. **Journal of Clinical Pathology** **68**(3):206-211, 2015.
14. Bhattacharjya S., Singha Roy K., Ganguly A., Sarkar S., Panda C.K., Bhattacharyya D., Bhattacharyya N. P. and Roychoudhury S.: Inhibition of nucleoporin member Nup214 expression by miR-133b perturbs mitotic timing and leads to cell death. **Molecular Cancer** 2015 Feb 15;14(1):42. doi: 10.1186/s12943-015-0299-z.
15. Basu P. Mittal S., Banerjee, D., Singh P., **Panda C.**, Dutta, S. Mandal R., Das P., Biswas J., Muwonge R.; Sankaranarayanan R.: Diagnostic accuracy of VIA and HPV detection as primary and sequential screening tests in a cervical cancer screening demonstration project in India. **Int. J. Cancer**, **137**(4):859-867, 2015.
16. Maiti G. P., Ghosh A., Mondal P., Baral A., Datta S., Samadder S., Nayak S. P., Sikdar N., Chakraborty J., Biswas J., Chowdhury S., Roy B., Roychowdhury S., **Panda C. K.**, The SNP rs1049430 in the 3'-UTR of SH3GL2 regulates its expression: Clinical and prognostic implications in head and neck squamous cell carcinoma. **Biochimica et Biophysica Acta (Molecular Basis of Disease)**, **1852**(5):1059-1067, 2015.
17. Dutta, S., Chakraborty C., Mandal R., Basu, P., Biswas J., Roychoudhury S., **Panda C.K.**: Persistent HPV16/18 infection in Indian women with the A-allele (rs6457617) of

- HLA-DQB1 and T-allele (rs16944) of IL-1 $\beta$  -511 is associated with development of cervical carcinoma. **Cancer Immunology, Immunotherapy**, **64(7):843-851**, 2015.
18. Sur, S., Pal, D., Banerjee, K., Mandal, S., Das, A., Roy, A., **Panda, C. K.**: Amarogentin regulates self renewal pathways to restrict liver carcinogenesis in experimental mouse model. **Molecular Carcinogenesis**. doi: **10.1002/mc.22356**. 2015 Jul 8.
  19. Sur S., Pal D., Mandal S., Roy A., **Panda C.K.**: Tea polyphenols epigallocatechin gallate and theaflavin restrict mouse liver carcinogenesis through modulation of self-renewal Wnt and hedgehog pathways. **J Nutr Biochem**. 2015 Aug 21. pii: **S0955-2863(15)00210-7**. doi: **10.1016/j.jnutbio.2015.08.016**.
  20. Basu P, Richard Muwonge R., Mittal S., Banerjee D., Ghosh I., **Panda C.K.**, Mandal R., Sankaranarayanan R.: Implications of semi-quantitative HPV viral load estimation by Hybrid capture 2 in colposcopy practice. **J Med Screen**: 2015 DOI: **10.1177/0969141315606483**.
  21. Datta S., Ray A., Singh R., Mondal P., Basu A., De Sarkar N., Majumder M., Maiti G., Baral A., Jha G., Mukhopadhyay I., **Panda C.**, Chowdhury S., Ghosh S., Roychoudhury S., Roy B.: Sequence and expression variations in 23 genes involved in mitochondrial and non-mitochondrial apoptotic pathways and risk of oral leukoplakia and cancer. **Mitochondrion** 09/2015; **25**. DOI:**10.1016/j.mito. 2015. 09. 001**.
  22. Mukherjee N., Islam Md. S., Roychowdhury A., Bhattacharya R., Bhattacharya N., Chunder N., Sinha S., Alam N., Roy A., Roychoudhury S., **Panda C. K.**: The Stem Cell Renewal and DNA Damage Response Pathways Are Frequently Altered In Fibroepithelial Tumors of Breast in Indian Patients. **Pathol. Res. Practice**: **212(3):196-203**, 2016. doi: **10.1016/j.prp.2015.12.008**.
  23. Bhattacharya R., Mukherjee N., Dasgupta H., Islam S. Md, Alam N., Roy A., Roychoudhury S., **Panda C. K.**: Frequent alterations of SLIT2-ROBO1-CDC42 signaling pathway occur in breast cancer: clinic-pathological correlation. **J of Genetics** **2016 Sep;95(3):551-63**.
  24. Dutta S., Singh R. K., Mandal R. K., Roychoudhury S., Basu P., **Panda C. K.**: Alteration of HPV16 genetic and epigenetic profiles in CaCx patients is indicative of poor disease prognosis: a cohort analysis. **International Journal of Gynecological Cancer** **2016 May;26(4):750-7**. doi: **10.1097/IGC.0000000000000679**.
  25. Ghosh S, Ghosh S, Bankura B, Saha ML, Maji S, Ghatak S, Pattanayak AK, Sadhukhan S, Guha M, Nachimuthu SK, **Panda C. K.**, Maity B, Das M. : Association of DNA repair and xenobiotic pathway gene polymorphisms with genetic susceptibility to gastric cancer patients in West Bengal, India. **Tumour Biol**. 2016 Jul;**37(7):9139-49**. doi: **10.1007/s13277-015-4780-5**
  26. Ghuwalewala S, Ghatak D, Das P, Dey S, Sarkar S, Alam N, **Panda CK**, Roychoudhury S.: CD44<sub>high</sub>CD24<sub>low</sub> molecular signature determines the Cancer Stem Cell and EMT phenotype in Oral Squamous Cell Carcinoma. **Stem Cell Res**. 2016 Feb **13;16(2):405-417**. doi: **10.1016/j.scr.2016.02.028**.
  27. Dey Ghosh R., Ghuwalewala S., Das P., Mandloi S., Alam Sk K., Chakraborty J., Sarkar S., Chakrabarti S., **Panda C.K.** and Roychoudhury S.: MicroRNA profiling of cisplatin-resistant oral squamous cell carcinoma cell lines enriched with cancer-stem-cell-like and epithelial-mesenchymal transition-type features. **Scientific Reports** 6:23932 | DOI:

10.1038/srep23932, 2016

28. Sur S., Pal D., Roy R., Barua A., Roy A., Saha P., **Panda C. K.**: Tea polyphenols EGCG and TF restrict tongue and liver carcinogenesis simultaneously induced by N-nitrosodiethylamine in mice. **Toxicology and Applied Pharmacology** **300**, 34–46, **2016**.
29. Mittal S., Mandal R., Banerjee D., Das P., Ghosh I., **Panda C.**, Biswas J., Basu P.: HPV detection-based cervical cancer screening program in low- resource setting: lessons learnt from a community-based demonstration project in India. **Cancer Causes Control**, **27**, 351-358, **2016**.
30. Mukherjee N., Dasgupta H., Bhattacharya R., Pal D., Roy R., Islam S., Alam N., Biswas J., Roy A., Roychoudhury S., **Panda C. K.**: Frequent inactivation of MCC/CTNNBIP1 and overexpression of phospho-beta-cateninY654 are associated with breast carcinoma: Clinical and Prognostic significance. **Biochimica et Biophysica Acta (Molecular Basis of Disease)** **1862**, 1472-1484, **2016**.
31. Chakraborty C., Roychoudhury A., Samadder S., Roy A., Mandal R. K., Basu P., Roychoudhury S., **Panda C. K.**: Association of P16-RBSP3 inactivation with phosphorylated RB1 overexpression in basal–parabasal layers of normal cervix unchanged during CACX development. **Biochemical Journal** **473(19)**:3221-36, **2016**.
32. Bandopadhyay M., Sarkar N., Datta S., Das D., Pal A., Panigrahi R., Banerjee A., **Panda C. K.**, Das C., Chakrabarti S. and Chakravarty R.: Hepatitis B virus X protein mediated suppression of miRNA-122 expression enhances hepatoblastoma cell proliferation through cyclin G1-p53 axis. **Infectious Agents and Cancer** (2016) **11**:40. DOI **10.1186/s13027-016-0085-6**
33. Dasgupta H., Nupur Mukherjee N., Islam Md. S., Bhattacharya R., Alam N., Roy A., Roychoudhury S., **Panda C. K.**: Frequent Alterations of HRR Pathway in Primary and Chemotolerant Breast Carcinomas: Clinical Importance. **Future Oncology** **13(2)**:159-174, **2017**.
34. Roychowdhury A., Samadder S., Das P., Mandloi S., Addya S., Chakraborty C., Basu P.S., Mondal R., Roy A., Chakrabarti S., Roychoudhury S., **Panda C.K.**: Integrative genomic and network analysis identified novel genes associated with the development of advanced cervical squamous cell carcinoma. **Biochimica et Biophysica Acta** **1861**, 2899–2911, **2017**.
35. Roychowdhury A, Samadder S, Islam MS, Chaudhury K, Roy A, Banerjee D., Mandal R, Basu P. S, Roychoudhury S, **Panda CK**. Identification of Changes in the Human Papilloma Virus 16 (HPV16) Genome During Early Dissemination of Cervical Cancer Cells May Complement Histological Diagnosis of Lymph Node Metastasis. **Pathol Oncol Res.** **23**, 845-852, **2017**.
36. Islam S., Dasgupta H., Roychowdhury A., Bhattacharya R., Mukherjee N., Roy A., Mandal G. K., Alam N., Biswas J., Mandal S., Roychoudhury S., **Panda C. K.**: Study of association and molecular analysis of human papillomavirus in breast cancer of Indian

patients: Clinical and prognostic implication. **PLoS ONE 12(2): e0172760. doi:10.1371/journal.pone.0172760.**

37. Sarkar S., Alam N., Chakraborty J., Biswas J., Mandal S., Roychoudhury S. and **Panda C. K.:** Human Papilloma Virus (HPV) infection leads to development of head and neck lesions but offers better prognosis in malignant Indian patients **Medical Microbiology and Immunology (2017) DOI 10.1007/s00430-017-0502-5.**
38. Datta A, Ghatak D, Das S, Banerjee T, Paul A, Butti R, Gorain M, Ghuwalewala S, Roychowdhury A, Alam S. K., Das P, Chatterjee R, Dasgupta M, **Panda C. K.**, Kundu G. C., Roychoudhury S: p53 gain-of-function mutations increase Cdc7-dependent replication initiation. **EMBO Rep. 2017 Nov;18(11):2030-2050. doi: 10.15252/embr.201643347.**
39. Islam S., Mazumdar (Indra), D., Basu M., Roychowdhury A., Das P., Dasgupta H., Roy A., Alam N., Mondal R. K., Roychoudhury S., **Panda C. K.:** Phylogenetic analysis of Human Papillomavirus 16 variants isolated from Indian Breast cancer patients showed difference in genetic diversity with that of Cervical cancer isolates. **Virus Research 2018 Jan 2;243:1-9. doi: 10.1016/j.virusres.2017.10.004.**
40. Sur S., Maurya A. K., Roy A., Sharp T V., Pal D. K, **Panda C. K.:** Over expression of HIF1 $\alpha$  is associated with inactivation of both LimD1 and VHL in renal cell carcinoma: Clinical importance. **Pathology Research and Practice 2017 Dec;213(12):1477-1481. doi: 10.1016/j.prp.2017.10.009.**
41. Chakraborty C., Samadder S., Roychowdhury A., Roy A., Das P., Mandal R. K., Roychoudhury S., **Panda C. K.:** Activation of Wnt - $\beta$ -catenin pathway in basal-parabasal layers of normal cervical epithelium comparable during development of uterine cervical carcinoma. **Molecular and Cellular Biochemistry 2017 Oct 27. doi: 10.1007/s11010-017-3216-5.**
42. Ghosh S., Bankura B., Ghosh S., Saha M. L., Pattanayak A. K., Ghatak S., Guha M., Nachimuthu S. K., **Panda C. K.**, Maji S., Chakraborty S., Maity B., Das M.: Polymorphisms in ADH1B and ALDH2 genes associated with the increased risk of gastric cancer in West Bengal, India. **BMC Cancer 17:782- 793, 2017. DOI 10.1186/s12885-017-3713-7.**
43. Karmakar A, Goswami R, Saha T, Maitra S, Roychowdhury A, **Panda C. K.**, Sinha S, Ray A, Mohanakumar K. P, Rajamma U, Mukhopadhyay K.: Pilot study indicate role of preferentially transmitted monoamine oxidase gene variants in behavioral problems of male ADHD probands. **BMC Med Genet. 5;18(1):109. doi: 10.1186/s12881-017-0469-5 (2017).**

## ACADEMIC ACTIVITIES

### Thesis Supervised:

Ph.D (Sc.)	: Twenty five
DNB (Co-supervisor)	: Six
MD (Pathology)(Co-supervisor)	: One
M.Sc./B.Tech/M.Tech	: Sixty

<b>Present Research Associate</b>	: Three
<b>Present Ph.D student</b>	: Eight
<b>Present DNB student (Co-supervisor)</b>	: Two
<b>Present MD (Pathology) Student (Co-supervisor)</b>	: Three
<b>Present MCh (Urology) Student (Co-supervisor)</b>	: Two

<b>Papers Published</b>	: 142
<b>Gene Bank Submission</b>	: 19
<b>GEO Submission</b>	: 1
<b>Reviews, Monographs, Book Chapters:</b>	11

### Integrative course work taught to Ph.D students:

1. Human Genetics
2. Molecular Genetics of Cancer
3. Stem cell renewal pathway and cancer
4. Electrophoresis
5. Polymerase chain reaction
6. DNA Sequencing
7. Microarray analysis