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Education:

2003 Ph.D. Biotechnology Central Drug Research Institute, Lucknow India. *(Major in Biochemistry and Molecular Biology)*

1997 M.Tech. Biotechnology Institute of Engineering & Technology, Lucknow, India. *(Major in Industrial Microbiology and Biotechnology)*

1994 M.S. Biochemistry Lucknow University, Lucknow, India.

1992 B.S. Chemistry, Physics and Mathematics, Kanpur University, Kanpur, India.

Research Focus

Research interests of Dr Tripathi's laboratory includes Lon noncoding RNA, Transcription regulation, and the mechanisms regulating tumor development and metastasis in Colorectal and Liver cancer.

The major focus of Dr Tripathi's laboratory is to understand and identify the factors responsible for cancer progression, higher occurrence, metastasis, poor drug response and resistance. Recently, the lab identified higher expression of **Long noncoding RNA** MALAT1 in Colorectal Cancer (CRC) tissues with advance stages of disease. CRC is the leading cause of mortality in the USA. The five-year survival rate of patients diagnosed with localized-stage disease is 90%, survival declines to 71% and 14% for patients diagnosed with regional and distant stages, respectively. Which strikes to the need of very important factor "early diagnosis" to minimize distant metastasis. Early detection tests and receipt of timely, quality treatment will help to improve the CRC (and other cancer) management and survival.

Long **n**on**c**oding **RNA** (LncRNA) are a class of noncoding RNA (ncRNA) greater or equal to 200 nucleotides and accumulate differentially in the nucleus and in the cell cytoplasm. In contrast to protein-coding mRNAs (commonly used as diagnostic and prognostic markers), LncRNAs have tissue and disease specific expression patterns. This atypical characteristic of LncRNAs offers high specificity for clinical applications. LncRNA are

involved in regulation of diverse physiological and pathological processes including cancer. LncRNAs exhibit multiple biological functions in various stages of cancer development. Dr. Tripathi's lab is studying their role in different cancers utilizing novel approaches. Lab is also identifying and characterizing new lncRNAs in different cancers and mechanistically understanding the regulated pathways and associated proteins, which might represent promising therapeutic targets.

Dr Tripathi is well experienced in RNA biology and RNA Polymerase II Biochemistry, with postdoctoral experience from Vanderbilt University Medical Center, Nashville, TN. Later, as a Research Faculty at Vanderbilt University, he studied role of transcription factors (NFATs) as driver in CRC metastasis. His lab is currently focusing on to study stress mediated expression of T cell transcription factor NFAT and regulation of LncRNA-MALAT1 in different cancers. Dr. Tripathi's lab is utilizing the state of the art cutting edge technologies including CRISPR/Cas9 mediated knockdown/out of the genes, Lentiviral base overexpression and knockdown of genes in cell lines, Inducible (Tet-ON) expression, Stable cell lines for expression/knockdown of protein of interest, iRAP (in vivo RNA Antisense Purification/Proteomics) methods to identify the proteins and RNAs (coding and noncoding) associated with different regulatory pathways. The lab has multiple ongoing projects and looking for interested undergraduate or graduate student in biology /biochemistry and molecular biology to join and steer projects defining the role of different oncogenes in cancer biology, especially EMT, Progression and Metastasis.

Recent Publications

1. **Tripathi MK***, Zacheaus C, Doxtater K, Keramatnia F, Gao C, Yallapu MM, Jaggi M, Chauhan SC. Z Probe, an Efficient Tool for Characterizing Long Non-Coding RNA in FFPE Tissues. *Non-coding RNA 2018 Sep5;4(3).* PMID: 30189670. ****Corresponding author***

2. **Tripathi MK***, Doxtater K, Keramatnia F, Zacheaus C, Yallapu MM, Jaggi M, Chauhan SC. Role of lncRNAs in ovarian cancer: defining new biomarkers for therapeutic purposes. *Drug Discovery Today 2018 Sep; 23(9):1635-1643.* PubMed PMID: 29698834. ****Corresponding author***

3. Chowdhury P, Nagesh PKB, Hatami E, Wagh S, Dan N, **Tripathi MK**, Khan S, Hafeez BB, Meibohm B, Chauhan SC, Jaggi M, Yallapu MM. Tannic acid-inspired paclitaxel nanoparticles for enhanced anticancer effects in breast cancer cells. *J Colloid Interface Sci. 2018 Sep 22;535:133-148.* PMID:30292104.

4. Short SP, Kondo J, Smalley-Freed WG, Takeda H, Dohn MR, Powell AE, Carnahan RH, Washington MK, **Tripathi M**, Payne DM, Jenkins NA, Copeland NG, Coffey RJ, Reynolds AB. p120-Catenin is an obligate haploinsufficient tumor suppressor in intestinal neoplasia. *J Clin Invest. 2017 Dec 1;127(12):4462-4476.* PMID: 29130932.

5. Ganju A, Chauhan SC, Hafeez BB, Doxtater K, **Tripathi MK**, Zafar N, Yallapu M, Kumar R, Jaggi M. Protein kinase D1 regulates subcellular localization and metastatic function of metastasis-associated protein 1. *Br J* Cancer. 2018 Feb 20;118(4):587-599. PubMed PMID: 29465084.

6. Hafeez BB, Ganju A, Sikander M, Kashyap VK, Hafeez ZB, Chauhan N, Malik S, Massey AE, **Tripathi MK**, Halaweish FT, Zafar N, Singh MM, Yallapu MM, Jaggi M, Chauhan SC. Ormeloxifene suppresses

prostate tumor growth and metastatic phenotypes via inhibition of oncogenic β-catenin signaling and EMT progression. *Mol Cancer Ther. 2017 Oct;16 (10):2267-2280.*

7. **Tripathi Manish K**, Deane NG, Zhu J, An H, Mima S, Wang S, Padmanabhan S, Shi Z, Prodduturi N, Ciombor KK, Chen X, Washington MK, Zhang B and Beauchamp RD. "Nuclear Factor of Activated T-cell Activity Is Associated with Metastatic Capacity in Colon Cancer". *Cancer Research 2014; 74(23), 6947-57.*

8. Zhu S, Hong J, **Tripathi Manish K**, Sehdev V, Belkhiri A, El-Rifai W. Regulation of CXCR4-mediated invasion by DARPP-32 in gastric cancer cells. *Molecular Cancer Research 2013; 11, 86-94.*

9. Singha UK, Hamilton V, Duncan MR, Weems E, **Tripathi MK**, Chaudhuri M. Protein translocase of mitochondrial inner membrane in *Trypanosoma Brucei*. *Journal of Biological Chemistry 2012; 287(18), 14480-93.*

10. Papai G, **Tripathi Manish K**, Ruhlmann C, Layer JH, Weil PA, Schultz P. TFIIA and the transactivator Rap1 cooperate to commit TFIID for transcription initiation. *Nature 2010; 465, 956-961.*