

Exploring the mechanisms in cancer metastasis

Nivedha Murali Shankar^a and Annapoorni Rangarajan^b

^aDepartment of Biotechnology, St. Joseph's College of Engineering, Chennai,
nivedhamuralishanker@gmail.com

^bMolecular Reproduction, Development and Genetics, Indian Institute of Science, Bengaluru,
anu@iisc.ac.in

1. ABSTRACT

Cancer cells migrate from primary to a secondary site by a process called as metastasis. This happens due to the process called as epithelial to mesenchymal transition (EMT), wherein the epithelial cells attain mesenchymal like traits. Cancer cells experience some stresses during their proliferation in the primary site, and these stresses activates AMPK (AMP activated protein kinase). AMPK is a stress sensor kinase which promotes EMT by upregulating several transcription factors. My work was to understand the role of phosphorylation of certain transcription factors. During stress conditions like matrix deprivation, differential genes are regulated by cancer cells to aid in metastasis and to evade immune responses. Understanding the regulation of genes in cancer patient blood samples was my second project work. Some of the techniques used include- competent cells preparation, transformation and efficiency check, plasmid isolation, restriction digestion, RNA isolation, PCR.