Indian Institute of Technology Delhi

DEPARTMENT OF BIOCHEMICAL ENGINEERING & BIOTECHNOLOGY

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The epigenetic regulation of non-coding RNA landscape in glioblastoma stem cells

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Glioblastoma multiforme (GBM) presents unique challenges for treatment due to its localization, lack of early detection opportunities, aggressive biological behavior and resistance to therapy. The transcriptome classification divides primary GBMs into four different subgroups: classical, mesenchymal (MES), neural and proneural (PN). The existence of these molecular subtypes of GBM highlights the need for better characterization of mechanisms of their speciation and inter-subtype transitions to facilitate the development of subtype-specific targeting strategies. The dysregulation of non-coding RNA expression and their targeting mechanisms among GBM subtypes is poorly understood. To reveal the underlying picture of non-coding RNA driven complex subpopulation dynamics within the heterogeneous intra- tumoral ecosystem, we characterized the global expression of subtype-specific microRNA, long non- coding RNA, and circular RNA in transcriptionally and phenotypically diverse subpopulations of patient- derived glioblastoma stem-like cells. As non-coding RNAs are capable of re-arranging the molecular landscape in a cell type-specific manner, we argue that alterations in non-coding RNA levels are a potent mechanism of bi-directional transitions between GBM subpopulations resulting in intermediate hybrid stages and emphasizing highly intricate intra-tumoral networking.

All are welcome

Seminar will be held in DBEB SEMINAR ROOM at Block I, Room 223 at 3:30 PM
For additional information, contact Seminar coordinator D. Sundar at sundar@dbeb.iitd.ac.in