

Seminar

Epigenetics and Drug Discovery

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Regulation of genome function beyond the gene sequence is epigenetics. Simple chemical modification of DNA (gene), DNA-associated proteins, and small RNA molecules are the key epigenetic machinery. It is crucial for the development and maintenance of cell identity and functions. Aberrant epigenetic machinery that results in altered gene expression is associated with several diseases such as cancer, inflammation, metabolic disorders, neurological disorders and others. Therefore, targeting these epigenetic processes such as DNA and histone modifications has emerged as a center for drug discovery. Drugs like azacytidine, vorinostat, romidepsine and many others are already in use for various cancers. Additionally, there are certain drugs that are under clinical trials such as Dnmt inhibitors, KDAC inhibitors, KAT inhibitors, PRMT inhibitors for various diseases. Recent work from our laboratory depicts that CSP-TTK21 a specific activator of p300/CBP epigenetic enzymes could be a potential drug candidate for spinal cord injury, Alzheimer's disease, depression and cognitive disorders. Additionally, a specific histone butrylation inhibitor LTK14A shows potential for obesity treatment in mouse models.

Monday, Nov 7th 2022

4:00 PM (Tea/Coffee at 3:45 PM)

Auditorium, TIFR-H