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Epigenomics: Emerging hallmark of cancer

Cellular “Epigenomics” has been widely recognized to confer human cells a phenotype that is independent of alterations in the cellular DNA-sequence. Epigenomics is commonly used to describe chromatin based events that are tightly regulated by chromatin-modifying enzymes and non-coding RNAs (mi-RNAs). Epigenomics-programming plays a critical role in the regulation of DNA based process such as transcription, DNA repair and replication. Epigenomic-events also contribute to and are influenced by the ability of cells to decouple/couple the glycolysis from/with the aerobic respiration in a fashion that allows cells to undergo cyclic differentiation/de-differentiation process. Incontrovertible evidence exists to support the view that many of the hallmarks of cancer such as malignant self-renewal, differentiation blockade, evasion of death and tissue invasiveness are profoundly influenced by cellular “Epigenome” evolved to sustain itself upon the addiction for “Sugar” and “Methylation”. Hence it is not unlikely that epigenomic regulators may offer many possible targets for the drug discovery and will no doubt attract the attention of the pharmaceutical industry in the near future.

Biography

Deepak Kaul has obtained his PhD degree from Premier Indian Medical Institute “AIIMS”, New Delhi. His original contributions in the field of “Molecular Medicine” have not only added a new dimension to the understanding of human diseases at the molecular level but also attracted international recognition and acclaim. Presently, he is serving for “Post Graduate Institute of Medical Education & Research” Chandigarh, as a Professor and Head, Experimental Medicine & Biotechnology Department. He has mentored about 27 PhD students and also serves as an Editorial Board Member of reputed international medical journals.

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