

عنوان مقاله:

DNA Methylation and Its Role in the Development of Leukemia

محل انتشار:

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خلاصه مقاله:

Epigenetic changes play an essential role in cancer pathogenesis. It has been established by next-generation sequencing that more than 50% of the human cancers carry mutations in mechanisms involved in the organization of the chromatin and epigenetic regulations. DNA methylation is among the most common epigenetic changes in leukemia. In contrast to DNA mutations which are passively inherited from DNA replication, epimutations, for example, the hypermethylation and epigenetic silencing of tumor suppressor genes, must be actively maintained because of being reversible. Actually, the reversibility of epimutations by small-molecule inhibitors provides the basis for the use of such inhibitors in new cancer therapy strategies. However, DNA methylation mechanism and its role in leukemia are not fully understood; there are some serious concerns about the use of these drugs. In this study, we will review the mechanisms of DNA methylation and the genes that are methylated in leukemia. Moreover, new interesting findings of the epigenetic changes caused by adult T-cell leukemia/lymphoma have been fully discussed.

کلمات کلیدی:

Epigenetic, Leukemia, Methylation, Neoplasm, Treatment

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