Epigenetic events shape cancer initiation and progression. By targeting mechanisms involved in epigenetic regulation, epigenetic therapeutics serve as effective weapons against cancer.

**Inhibiting histone deacetylation**

Histone deacetylases (HDACs) remove acetyl groups from histone lysine residues, leading to closed chromatin structures and gene silencing. HDAC mutations abnormally deacetylate or inactivate tumor suppressor genes that slow cell division, promoting cancer development (1). HDAC inhibitor drugs upregulate tumor suppressor genes and inhibit cancer cell growth.

**Targeting DNA methylation**

DNA methylation by DNA methyltransferases (DNMTs) blocks transcriptional factor binding and disrupts gene activity, triggering many cancer types. DNMT blockade drugs effectively prevent DNA hypermethylation and inhibit tumor progression (2).

**Changing RNA modification**


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**References**