



Indian Journal of Chemistry  
Vol. 64, March 2025, pp. 269-284  
DOI: 10.56042/ijc.v64i3.16546



## Advances in Contemporary Research

### DNA binding molecules

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*Received 20 January 2025; accepted(revised) 27 February 2025*

Interactions between DNA and DNA binding molecules govern the life of cells that are the building blocks of all living organisms. Differences in gene expression form the basis for why and how different cells with diverse functions are found. Expression of undesired genes can lead to cancer, diabetes, cardiovascular diseases, immunodeficiency and a number of birth defects. This review primarily discusses about molecules like drugs and transcription factor domains that affect gene expression, different moieties (HNCCH, enediynes, strained rings, flat intercalating rings) with which such molecules bind to specific regions of DNA and synthetic analogues that have been produced from the design of parent scaffolds. Understanding different mechanisms with which molecules bind to DNA allows the design of novel molecules that can bind to any given sequence of DNA and show desired activity after binding to DNA.

**Keywords:** DNA binding molecules, Transcription factors, Gene expression, Intercalation, Strand cleavage, Sequence selectivity