

Abstract

DNA methylation is one of the most common epigenetics modifications, during which a methyl group from the donor molecule S-adenosyl-L-methionine is transferred to the 5' position of the cytosine ring to create 5-methylcytosine. This reaction is catalyzed by DNA methyltransferases.

Epigenetics modification plays an important role in the regulation of the transcription, genomic imprinting, X-chromosome inactivation and the development of the organism. This role in the regulation of transcription is important for the cancer. Especially the aberrant forms, like hypermethylation, which leads to transcriptional silencing of the tumor suppressing genes leading to the tumor progression, or hypomethylation causing genomic instability.

Key words: DNA methylation, demethylating drugs, haematological malignancies, methods of detection, myelodysplastic syndrome