DNA methylation Factsheet

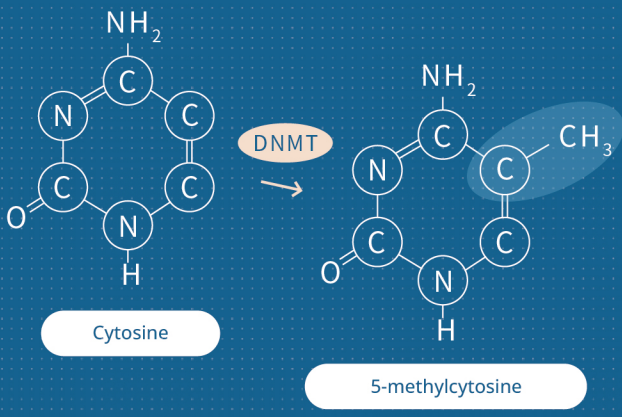
Epigenetics

DNA methylation is an epigenetic regulation. Environmental cues and lifestyle are important factors affecting one's epigenetics changes.

01

5-methylcytosine

Cytosine is modified to 5-methylcytosine by DNA methyltransferase (DNMT) without altering the DNA sequences.



02

Tumor suppressor gene, TSG

- Acts to regulate cell division, keeping it in check.
- DNA methylation of TSG promotes cellular oncogenesis via TSGs silencing.
- DNA methylation occurs at the promoter regions of TSGs.
- PAX1 and ZNF582 are the two known TSGs regulated by DNA methylation.

03

Tumor cell

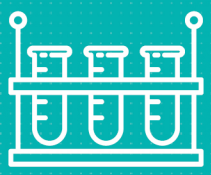
- Disruption of tumor suppressor activity in the cell
- Resistance of cell apoptosis
- Abnormal cell proliferation
- Avoidance of immune destruction
- Induction of angiogenesis
- Activation of invasion and metastasis

04

Cancers with aberrant DNA methylation

Oral cancer, cervical cancer, bladder cancer and etc.

DNA methylation can be used as cancers screening, aid in diagnostic or prognostic tool.



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