Fighting the Enemy Within

Basic Life Science and Issues : Presentation

Group 4

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Chapter Abstraction

Fighting the Enemy Within

11th chapter of *The Epigenetics Revolution*

”Epigenetic perspective of Cancer and its treatment”

Introduction: Cancer

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Epigenetic Approach for Oncogenesis

- DNA Methylation

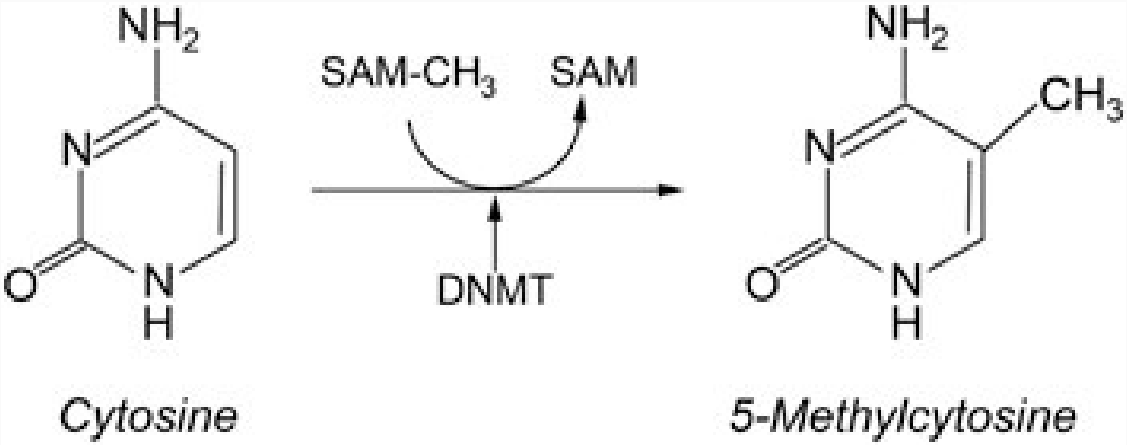
  Hypermethylation of CpG island

- Repressive Histone Modification

  Histone deacetylation

DNA Methylation

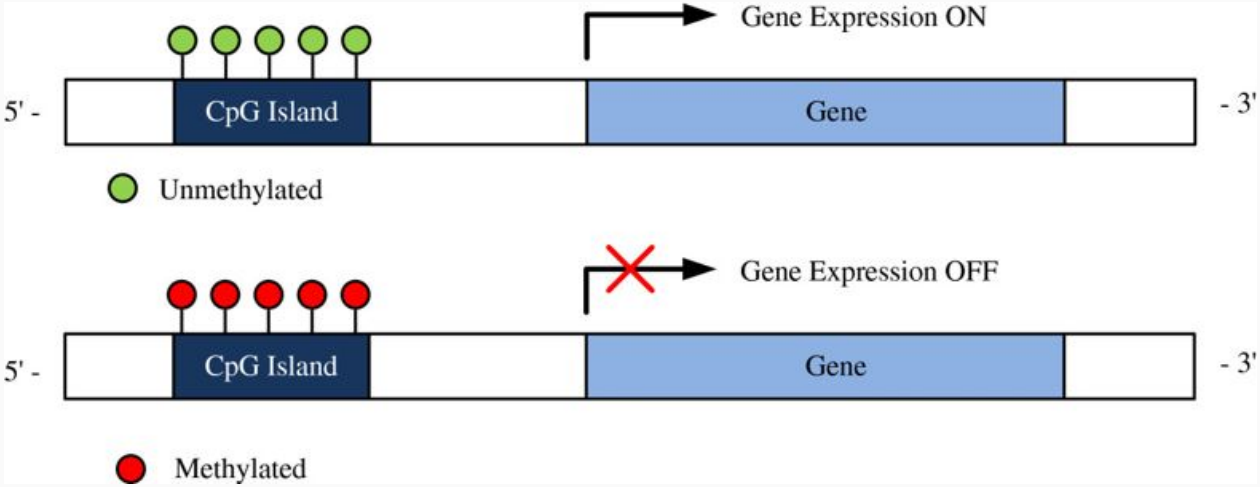
Cytosine before Guanine can be methylated



Cytosine and 5-methylcytosine

DNA Methylation

CpG dinuclotide cluster (CpG island, CGI) are usually located in the promoter regions of genes in a DNA sequence.



Hypermethylated CGI disables specific gene expression.

Histone deacetylation

Approach for Treatment

No easy wins

Alternative Approach

Conclusion

References

[1] Carey, N. (2012). *The Epigenetics Revolution*. Columbia University Press

[2] Kakumani, R.; et al. (2012). *Identification of CpG islands in DNA sequences using statistically optimal null filters*, EURASIP Journal on Bioinformatics and Systems Biology

[3] Kazantsev, Aleksey G; et al. (2008). *Therapeutic application of histone deacetylase inhibitors for central nervous system disorders*, Nature Reviews. Drug Discovery London Vol. 7 Iss. 10 854-68.

Q & A

Thank you!