

# Fighting the Enemy Within

Basic Life Science and Issues : Presentation

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4th Team

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Chungnam National University

- **Chae Eun Kim**  
College of Medicine, 19'
- **Jongkwan Bae**  
Dept of EE Comm. Engineering Education, 17'
- **Seungmin Lee**  
College of Medicine, 19'
- **Kangjun Heo**  
Dept of Computer Science and Engineering, 17'



## Fighting the Enemy Within

11th chapter of *The Epigenetics Revolution*

*"Epigenetic perspective of Cancer and its treatment"*



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- tumor suppressor genes for regulation



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- proto-oncogenes is over-activated
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# Epigenetic Approach for Oncogenesis

- DNA Methylation

Hypermethylation of CpG island

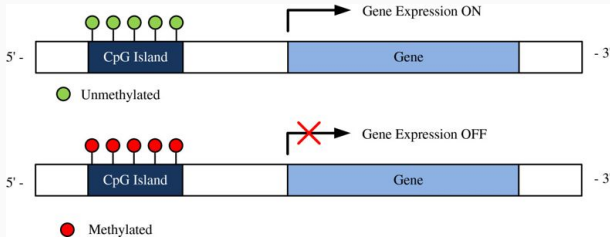
- Repressive Histone Modification

Histone deacetylation



# CpG Hypermethylation

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



Dense methylation for CpG island 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



Q & A

Thank you!