

Exploring the Epigenetic Landscape of Cancer Cells

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Abstract. This study dives into the epigenetic modifications that occur in cancer cells, providing insights into how these changes drive tumorigenesis. By mapping the epigenetic landscape, we aim to identify potential biomarkers for early cancer detection and targets for novel therapeutic interventions. Our findings contribute to a deeper understanding of cancer biology and the development of precision medicine approaches.

Keywords: Epigenetics, Cancer Biology, Tumorigenesis, Biomarkers, Precision Medicine

Introduction

Epigenetic modifications, including DNA methylation and histone modifications, play a significant role in regulating gene expression and are critical in the development and progression of cancer. These reversible changes can lead to the activation of oncogenes or the silencing of tumor suppressor genes, thereby promoting tumorigenesis. Our research focuses on characterizing the epigenetic landscape of various cancer cells, identifying key modifications that contribute to malignancy. By utilizing cutting-edge sequencing technologies and bioinformatics tools, we aim to uncover novel epigenetic markers for cancer diagnosis and potential therapeutic targets. This study enhances our understanding of the complex interplay between genetics and epigenetics in cancer, paving the way for more targeted and effective treatments.

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References

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