

## Special Issue

# DNA Methylation and Histone Modifications in Cellular Homeostasis

### Message from the Guest Editor

Current research on chromatin-mediated dysregulation of gene transcription faces significant constraints, lacking comprehensive frameworks to dissect its molecular mechanisms. Emerging technologies have enabled high-resolution chromatin state mapping, but critical gaps remain in linking epigenetic landscapes to transcriptional outcomes across various cellular contexts. This Special Issue focuses on two key epigenetic mechanisms—DNA methylation dynamics and histone post-translational modifications—which regulate eukaryotic cellular homeostasis. By presenting a curated collection of mechanistic studies and computational models, we aim to elucidate the roles of these epigenetic "gatekeepers." Special attention is given to resolving long-standing paradoxes. By integrating advanced epigenome analysis techniques, this Special Issue seeks to pioneer multidimensional approaches to decode the epigenetic logic of cellular equilibrium, with implications for cellular homeostasis and eukaryotic evolution.

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### Guest Editor

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### Deadline for manuscript submissions

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## International Journal of Molecular Sciences

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