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**DNA methylation dynamics in aging: how far are we from understanding the mechanisms?**

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**Highlights**

- Aging trajectories can be closely tracked down by changes in the DNA epigenetic modification patterns
- We summarise current knowledge about DNA methylation/demethylation mechanisms and the dynamic nature of the DNA modifications pattern
- We describe DNA methylation and hydroxymethylation changes that occur during aging in mammals
- We discuss possible molecular mechanisms that underpin aging-associated DNA hypermethylation and hypomethylation

**Summary**

DNA methylation is currently the most promising molecular marker for monitoring aging and predicting life expectancy. However, the mechanisms underlying age-related DNA methylation changes remain mostly undiscovered.

Here we discuss the current knowledge of the dynamic nature of DNA epigenome landscape in mammals, and propose putative molecular mechanisms for aging-associated DNA epigenetic

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