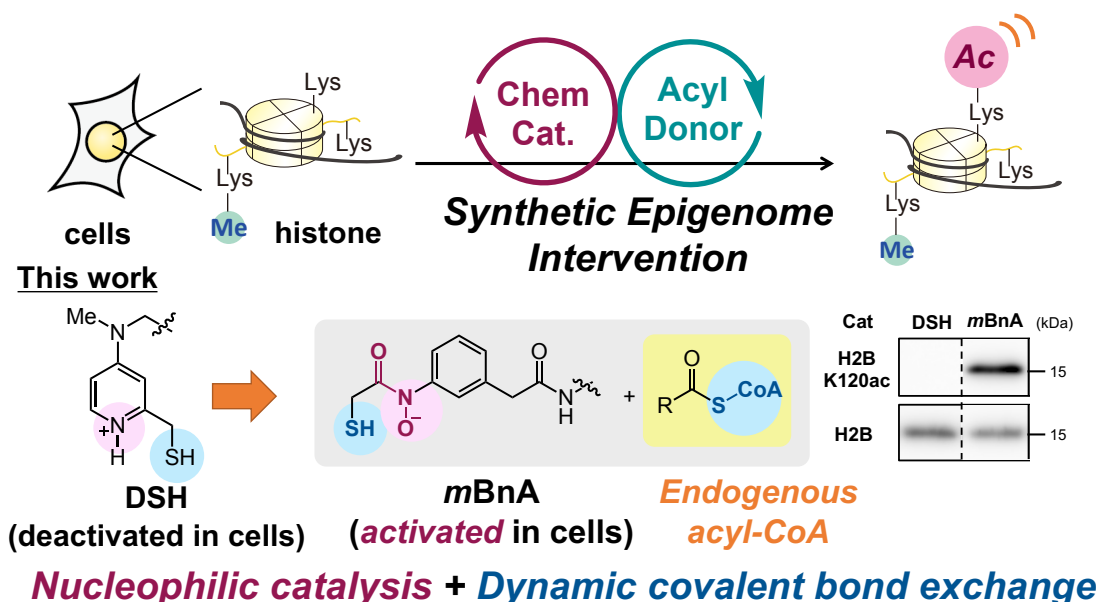


A Catalyst for Epigenome Sensing and Regulation

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Life emerges from biomolecules and a network of chemical reactions among them. Post-translational modifications of histone proteins are the representative. They regulate gene transcription and thus form the basis of epigenome. We have been developing chemical catalysts that acylate histone proteins in living cells to synthetically regulate the epigenome.¹ If successful, it will be a new way to regulate life and will also serve as a useful cell biology tool. In this talk, I will discuss a catalyst enabling in-cell histone lysine acylation with endogenous acyl-CoA as the sole acyl donor.² Its application to sense in-cell acyl-CoA concentration under various environmental stimuli will also be disclosed.



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