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# Screening and profiling assays for HDACs and sirtuins

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## Abstract

Epigenetic factors are enzymes or proteins that confer, remove or recognize covalent modifications to chromatin DNA or proteins. They can be divided into three broad groups, commonly referred to as the 'writers', 'erasers' and 'readers'. The HDACs and sirtuins, which remove acetyl groups from the  $\epsilon$ -amino of protein lysine residues, fall into the 'eraser' category. Due to their important effects on gene expression and involvement in various disease states, these enzymes have been the subjects of many assay development efforts in recent years. Commonly used techniques include mass spectrometry, antibody-based methods and protease-coupled assays with fluorogenic peptide substrates. Recent advances include the development of synthetic substrates for the assay of various newly discovered non-acetyl deacylation activities among the sirtuins.

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