An NAD+-dependent sirtuin depropionylase and deacetylase (Sir2La) from the probiotic bacterium Lactobacillus acidophilus NCFM

Sir2La is a NAD+-dependent sirtuin that catalyzes the hydrolysis of acetyl-, propionyl-, and butyryllysine. It is the first sirtuin from Lactobacillales and the first Gram-positive bacterial subclass of sirtuins to be functionally characterized. The ability to hydrolyze propionyl- and butyryllysine emphasizes the relevance of further exploring the role of other short-chain acyl moieties as PTMs.