

# Sirtuins in the development of cardiac hypertrophy

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Lysine acetylation is one of the reversible post-translational modifications linked to the pathogenesis of cardiovascular diseases. Emerging evidence indicates that the activity of cellular histone and non-histone proteins, from prokaryotes to humans, is controlled by lysine acetylation. The acetylation sites are evolutionary conserved. The reaction is catalyzed by enzymes lysine acetyltransferases (KATs) and deacetylases (KDACs). Sirtuins are class III KDACs, which

are homologs of the yeast silencing information regulator 2 (Sir2) that require NAD<sup>+</sup> as cofactor. In mammals, seven sirtuin isoforms (SIRT1-7) having a common catalytic core domain, but structurally different N- and C-terminal extensions have been characterized. The role of Sirtuins in the development of cardiac hypertrophy will be discussed further in the talk.