

Cyclic AMP signaling in the normal and failing heart: Compartmentation and therapeutic implications

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Cyclic nucleotide phosphodiesterases (PDEs) modulate the neuro-hormonal regulation of cardiac function by degrading cAMP and cGMP. In cardiomyocytes, multiple PDE isozymes with different enzymatic properties and subcellular localization regulate local pools of cyclic nucleotides and specific functions. In this talk, I will describe cAMP signalling in cardiomyocytes, its control by PDE2 and PDE4 as well as their modifications in pathological cardiac hypertrophy and heart failure (HF). I will also present evidence pointing to the concept of PDE activation that could have future therapeutic potential in HF.