



PCI-08

Hypoxic signaling in cardiac macrophage critically regulates cardiac remodeling processes

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Abstract

Hypoxia occurs in myocardial ischemia and cardiac hypertrophy, and accelerates the inflammatory processes during cardiac remodeling. Most of the cellular hypoxic responses are mediated through the transcription factor, hypoxia inducible factor-1 α (HIF-1 α) and HIF-1 α plays an important roles in M1 macrophage activation. Chronic inflammation occurs during pressure overload induced cardiac remodeling, and we demonstrate the importance of M1 macrophage hypoxic response in the regulation of cardiac fibrosis. Macrophages may have novel interactions with cardiac fibroblasts during cardiac remodeling.