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Hyaluronan Modulated Expression of MMPs 2, 9, and 12 in Macrophages

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ABSTRACT

Hyaluronan (HA) is a ubiquitously expressed Glycosaminoglycan (GAG) found as a main component of the extracellular matrix (ECM). Matrix metalloproteases (MMPs) are class of enzyme responsible for the degradation of multiple ECM components, including HA. Following a myocardial infarction (MI), ECM remodeling occurs in the infarct tissue and involves an accumulation of HA. Remodeling is facilitated by multiple cell types, including macrophages. During post-MI ECM remodeling, macrophages degrade and engulf dead cells and ECM components, a process which requires the expression of MMPs. MMPs 2, 9, and 12 are known to be elevated post-MI; MMPs 9 and 12 are known to have HA as a substrate. These factors make MMPs 2, 9, and 12 especially relevant to the post-MI ECM remodeling process. The effect of increased HA present post-MI on levels of MMP expression in macrophages has yet to be investigated.
