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Abstract

The heart is a unique structure in the body as it is derived from four distinct pools of progenitors: the cardiac crescent, the SHF, the proepicardial organ and the cardiac neural crest. These progenitors differentiate into the different cell types that comprise the adult heart: cardiomyocytes, endothelial cells, vascular smooth muscle cells, fibroblasts, and the conduction system.

A key component of the cardiac development program is the exquisitely coordinated expression of various genes in a spatially and temporally controlled fashion. Genes must be activated or repressed within restricted regions at specific times in order for normal cardiac development to proceed. In large part, this regulation of gene expression is controlled by an evolutionarily conserved set of transcription factors and microRNAs (miRNAs). Historically, the study of cardiac transcription factors has been very informative in understanding the early events in cardiogenesis.

The rapidly evolving field of cardiac miRNAs promises to further extend our understanding of cardiac development. In this poster session of the conference, we will describe essential cardiac transcription factors and miRNAs and their role in controlling cardiac development.