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# Expression of N-cadherin in myocardial tissues during the development of a rat heart

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**ABSTRACT.** We investigated the expression and distribution of N-cadherin during the development of a rat heart. Immunohistochemistry (IHC) was performed to detect the expression and distribution of N-cadherin in the myocardial tissues of rats at embryonic day 18 (E18d), postnatal day 5 (P5d), postnatal day 19 (P19d), postnatal day 40 (P40d), and postnatal year 1 (P1y). Reverse transcription polymerase chain reaction was used to determine mRNA expression levels of N-cadherin in the myocardial tissues at E18d, P5d, P19d, P40d, and P1y. The IHC results showed that at E18d N-cadherin was dispersedly distributed both on the cell surface and in the cytoplasm of the myocardial cells, and gradually became concentrated at the end-to-end intercalated discs of the cardiomyocytes from birth through immaturity. In the young, middle-aged, and old rats, N-cadherin was typically distributed at the

 

intercalated discs at the end of the myocardial cells. No significant differences in the mRNA expression levels of N-cadherin were detected in the myocardial tissue of rats at E18d, P5d, P19d, P40d, and P1y. During the development of the rat heart, observable changes in the distribution of N-cadherin occurred in the myocardial tissues, but there were no detectable changes in the expression of N-cadherin, indicating that N-cadherin is indispensable to maintaining the physical structure and function of the heart.

**Key words:** N-cadherin; Intercalated disc; Cardiomyocyte; Rat; Heart development

 