



Heart Protective Effects of Luteolin on Rats with Doxorubicin-induced Heart Failure

Feng WANG¹, Dongye LI^{1,2*}, Jing CHEN², Wen Jin HU¹ & Yang LIU¹

¹ *Institute of Cardiovascular Disease, Xuzhou Medical College, Xuzhou 221002, China*

² *Department of Cardiology, Affiliated Hospital of Xuzhou Medical College, Xuzhou 221006, P.R.China*

SUMMARY. Luteolin, a naturally occurring flavonoid, widely exists in fruits, ordinary vegetables and medical plants. Recent studies have suggested that luteolin confers rapid-cardioprotective effects in isolated rat hearts. It is unknown whether long-term application of luteolin is beneficial or not for chronic heart failure. In this study we investigated the cardiac effects of sustained administration of luteolin. Our data showed that luteolin treatment can partially reverse ventricular remodeling, improve cardiac ejection fraction, decrease concentration of brain natriuretic peptide and reduce cardiac fibrosis. We also found luteolin inhibited apoptosis of cardiomyocytes, downregulated the expression of the pro-apoptotic protein Bax and upregulated the expression of the anti-apoptotic protein Bcl-2. These results demonstrate that long-term application of the luteolin for treatment of rats with doxorubicin-induced heart failure can improve cardiac function, partially reverse ventricular remodeling. These effects may be related to luteolin's inhibition of apoptosis of cardiomyocytes.

KEY WORDS: Apoptosis, Chronic heart failure, Doxorubicin, Echocardiography, Luteolin.

* Author to whom correspondence should be addressed. *E-mail:* dongyeli@medmail.com.cn