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RESEARCH ARTICLE

Lactobacillus paracasei GMNL-32 exerts a therapeutic effect on cardiac abnormalities in NZB/W F1 mice

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Abstract

Systemic lupus erythematosus (SLE) is a disease that mostly affects women. Accelerated atherosclerosis is a high-risk factor associated with SLE patients. SLE associated with cardiovascular disease is one of the most important causes of death. In this study, we demonstrated that *Lactobacillus paracasei* GMNL-32 (GMNL-32), a probiotic species, exhibits anti-fibrosis and anti-apoptotic effects on the cardiac tissue of NZB/WF1 mice. Female NZB/W F1 mice, a well-known and commonly used lupus-prone mouse strain, were treated with or without GMNL-32 administration for 12 weeks. Oral administration of GMNL-32 to NZB/WF1 mice significantly increased the ventricular thickness when compared to that of NZB/WF1 mice. Administration of GMNL-32 significantly attenuated the cardiac cell apoptosis that was observed in exacerbate levels in the control NZB/WF1 mice. Further, the cellular morphology that was slightly distorted in the NZB/WF1 was effectively alleviated in the treatment group mice. In addition, GMNL-32 reduced the level of Fas death receptor-related pathway of apoptosis signaling and enhanced anti-apoptotic proteins. These results indicate that GMNL-32 exhibit an effective protective effect on cardiac cells of SLE mice. Thus, GMNL-32 may be a potential therapeutic strategy against SLE associated arthrosclerosis.