



## Rutin from Buckwheat Flowers and Leaves Alleviates Diabetic Myocardial Injury via Regulation of the RAS Axis in Rats

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**SUMMARY.** Type 2 diabetes model was induced by high-fat and high-calorie diet for six months. Rutin from buckwheat flowers and leaves (RBFL, 90 mg/kg/day and 180 mg/kg/day) improved the general condition and glucose tolerance, decreased the postprandial blood glucose level, heart weight index (HWI) and the activity of serum creatine kinase-mb (CK-MB) and lactate dehydrogenase (LDH). RBFL regulated the balance status of angiotensin-converting enzyme (ACE)-angiotensin II (Ang II)-Ang II type 1 receptor (AT1) axis and ACE2-Ang (1-7)-Mas axis in myocardial tissue and serum. The pathological changes of myocardial tissue were also improved after treated with RBFL. In conclusion, RBFL has protective effects on diabetic myocardial injury which may be related to decrease the postprandial hyperglycemia and regulate the balance of renin-angiotensin system (RAS) axis.

**RESUMEN.** El modelo de diabetes tipo 2 fue inducido por una dieta alta en grasas y calorías durante seis meses. La rutina de las flores y las hojas de alforfón (RBFL, 90 mg/kg/día y 180 mg/kg /día) mejoró el estado general y la tolerancia a la glucosa, disminuyó el nivel de glucosa en la sangre posprandial, el índice de peso del corazón (HWI) y la actividad de la creatina sérica. quinasa-mb (CK-MB) y lactato deshidrogenasa (LDH). El RBFL regula el estado de equilibrio del receptor de tipo 1 (AT1) de la enzima convertidora de angiotensina (ACE) -angiotensina II (Ang II) -Ang II y el eje ACE2-Ang (1-7)-Mas en el tejido miocárdico y el suero. Los cambios patológicos del tejido miocárdico también mejoraron después del tratamiento con RBFL. En conclusión, la RBFL tiene efectos protectores sobre la lesión miocárdica diabética que puede estar relacionada con la disminución de la hiperglucemia posprandial y con la regulación del equilibrio del eje del sistema renina-angiotensina (SRA).

**KEY WORDS:** Ang (1-7), Ang II, diabetes, injury, RAS.

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