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Oleuropein-Rich Diet Attenuates Hyperglycemia and Impaired Glucose Tolerance in Type 2 Diabetes Model Mouse

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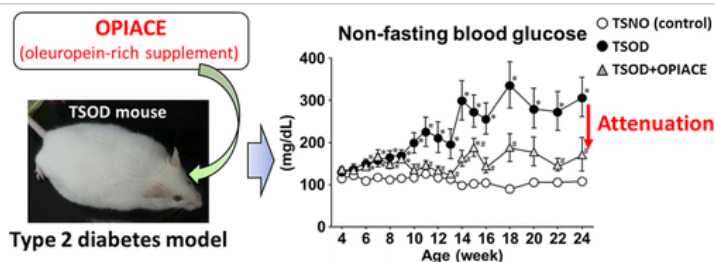
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Abstract



Oleuropein, a phenolic compound found in abundance in olive leaves, has beneficial effects on various diseases. However, it is unknown whether an oleuropein-rich diet is efficacious against type 2 diabetic phenotypes. In this study, we investigated the effects of the oleuropein-containing supplement OPIACE, whose oleuropein content exceeds 35% (w/w), on the diabetic phenotypes in type 2 diabetes model Tsumura Suzuki Obese Diabetes (TSOD) mouse. TSOD mice were fed OPIACE at 4 weeks of age, i.e., before the TSOD mice exhibited diabetic phenotypes. We revealed that OPIACE attenuated hyperglycemia and impaired glucose tolerance in TSOD mice over the long-term (from 10 to 24 weeks of age) but had no effect on obesity. Furthermore, we demonstrated that OPIACE mildly reduced oxidative stress in TSOD mice by 26.2% and attenuated anxiety-like behavioral abnormality in aged TSOD mice. The results suggest that oleuropein suppresses the progression of type 2 diabetes and diabetes-related behavioral abnormality over the long-term.

Keywords: type 2 diabetes; oleuropein; hyperglycemia; impaired glucose tolerance; anxiety

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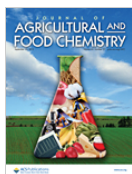
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Veronika Somoza, Russell J. Molyneux, Zhen-Yu Chen, Francisco Tomás-Barberán, and Thomas Hofmann

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