Anti-diabetic potential of luteolin (LU) and luteolin-7-*O*-glucoside (LUG) were investigated in the amount of equimolar on KK-A^y mice. The results showed that both of LU and LUG significantly improved blood glucose, HbA_{1c}, insulin, and HOMR-IR levels. Anti-inflammatory and anti-oxidative effects of the LU and LUG were also proved. Furthermore, TGs in serum and liver were significantly decreased in the LU and LUG groups, as well as the mRNA expression of fat acid expression-related genes (SREBP-1c), compared to the basal diet group (CON). When compared the effects between the LU and LUG groups, TGs of the LU group were lower than those of the LUG group, accompanied with significantly decreased FAS activity and SREBP-1c expression in liver. These results suggested that both LU and LUG had positive effects of anti-diabetes on KK-A^y mice, but LU more potently ameliorated diabetes than LUG, which might be attributed to the inhibitory of lipid synthesis.

Anti-diabetic effect of luteolin is stronger than its glucoside, luteolin-7-*O*-glucoside.