

Prevention of Cellular ROS Damage by Isovitexin and Related Flavonoids

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摘要.

Abstract

The antioxidant properties of isovitexin and related flavonoids were studied. Isovitexin inhibited xanthine oxidase with an IC₅₀ value of = 15.2 microM. The flavonoid analogues, apigenin, kaempferol, quercetin, myricetin, and genistein also inhibited xanthine oxidase with IC₅₀ values of 0.58, 2.18, 1.09, 9.90, and 4.83 microM, respectively. Isovitexin protected DNA from the Fenton reaction-induced breakage in a dose-dependent manner with an IC₅₀ value of 9.52 microM. Isovitexin also protected HL-60 cells from the ROS damage induced by the xanthine/xanthine oxidase reaction. Isovitexin exhibited the lowest cytotoxicity toward HL-60 cells (LD₅₀ >400 microM) compared to the other flavonoids examined. In addition, excess hydrogen peroxide induced by cadmium in A2780 ovarian cells was significantly suppressed by isovitexin. These results suggest that isovitexin in rice may protect cells from oxidative stress.