

Luteolin, a bioactive flavone compound extracted from *Cichorium endivia* L. subsp. *divaricatum* alleviates the harmful effect of salinity on maize

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Abstract

The flavone luteolin was extracted, isolated and purified from leaves of *Cichorium endivia* L. subsp. *divaricatum* and identified based on ¹H and ¹³C NMR spectral analyses. Luteolin (0.0015 %) was applied to two cultivars of maize (Giza 2 and single cross 10) grains, germinated in the absence and presence of NaCl, in order to assess the bioactivity of luteolin and its role in alleviating the harmful effect of salt stress on maize. The results showed that luteolin enhanced germination and seedling growth of both maize cultivars in normal conditions. Furthermore, luteolin successfully alleviated the harmful effect of salinity on germination and seedling growth of maize. The potential role of luteolin was performed mainly by stimulating α-amylase activity leading to enhancing starch mobilization and increasing the accumulation of soluble sugars, and partially by enhancing the antioxidative defense. As future prospective, a great number of phenolic compounds need to be screened in order to make use of them in improving agriculture under stressful conditions.