A New Hepatoprotective Flavone Glycoside from the Flowers of *Onopordum alexandrinum* Growing in Egypt

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A bioactivity-guided fractionation of the ethyl acetate fraction of the flowers of *Onopordum alexandrinum* L. (Asteraceae) yielded a new flavonoidal glycoside designated as acacetin-7-*O*-galacturonide (**9**), alongside with nine known flavonoids; 6-methoxy-apigenin (hispidulin) (**1**), acacetin (**2**), apigenin (**3**), luteolin (**4**), kaempferol (**5**), eriodictyol (**6**), apigenin-7-*O*-glucoside (**7**), luteolin-7-*O*-glucoside (**8**), and kaempferol-3-*O*-rutinoside (**10**). The compounds were assayed for their hepatoprotective activity against CCl_4-induced hepatic cell damage in rats and free radical scavenging activity using 2,2-diphenyl-1-picrylhydrazyl (DPPH). Compounds **4**, **6**, **9**, and **10** have not been previously reported from flowers of *O. alexandrinum* L., and this is the first report of acacetin-7-*O*-galacturonide (**9**) in nature which has also shown significant hepatoprotective and free radical scavenging effects. The isolated compounds were identified using different spectroscopic methods (UV, ^{1}H NMR, ^{13}C NMR, HMQC, HMBC, and COSY).

Key words: Onopordum alexandrinum, Acacetin-7-*O*-galacturonide, Hepatoprotective