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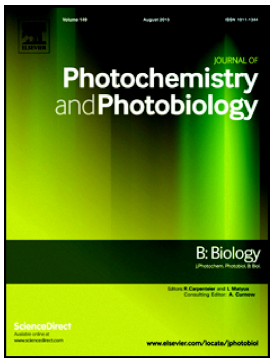

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One-pot biosynthesis of silver nanoparticles using *Iboza* Riparia and *Ilex* Mitis for cytotoxicity on human embryonic kidney cells

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Abstract

Plant extracts continue gaining significant prominence in green synthesis of silver nanoparticles (AgNPs), due to their potential applications in nano-medicine and material engineering. This work reports on green synthesis of silver nanoparticles (AgNPs) from aqueous extracts of *Iboza* Riparia *leaf* and *Ilex* Mitis root bark with diterpenes (DTPs) and saponins (SPNs) as major components. After TEM, DLS, TGA/DSC, ATR, XRD and UV-Vis characterization, the relevant cytotoxicity studies were conducted with the MTT assay on human embryonic kidney cells (HEK293T) followed by antioxidant activity with ABTS. Overall, the AgNPs-*DTPs* (156 nm) were found to be less toxic with 49.7 % cell viability, while AgNPs-*SPNs* (50 nm) and AgNPs-*PVA* (44 nm) had cell viability of 40.8 and 28.0 % respectively at 400 µM. Based on the cytotoxicity and antioxidant activity, it is fair to report that these plant extracts have potential reducing and capping agents as they retain chemical properties on the surface of the nanoparticles.

Keywords: Silver nanoparticles; Diterpenes; Saponins; MTT assay; Antioxidant activity

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