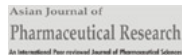


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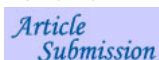
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Biological properties and Acute Toxicity Study of Copper oxide nanoparticles prepared by aqueous leaves extract of *Portulaca oleracea* (L)

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Abstract

The aim of this study is to use the purslan (*Portulacae oleracea* L) leaves aqueous extract in order to prepare copper nanoparticles and to explore antioxidant and anti-inflammatory activity of aqueous extract of *P. oleracea* L and CuNPs. The nanoparticles were characterized from structural and morphological point of view by using analytical techniques such as: UV-Vis spectroscopy, Fourier Transform Infrared Spectroscopy (FTIR), and Scanning Electron Microscopy (SEM). Antioxidant activity of purslane and CuNPs was studied done FRAP assay also the anti-inflammatory and hemolysis essay were studies. The acute toxicity test was applied in Wist albino rats. Obtain results show that the SEM analysis revealed that the particle size was found to be ranging under 46 nm. On the other hand, the copper nanoparticles and purslan possessed the reducing capacity when IC50 value was 68, 316 µg/ml and 79, 67 µg/ml respectively, the anti-inflammatory ability while IC50 value was 77, 503 µg/ml and 60, 727 µg/ml respectively. In this study, the toxicity test showed no mortality or behavioral change up to 20 mg/kg of albino Wistar rats CuNPs. We concluded that *Portulaca oleracea* L has potential properties as biocatalyst or natural stabilizers for CuNPs synthesis. Each CuNPs as *P. oleracea* L leaves extract were have a reducing and anti-inflammatory capacity which can be protect the cells against the degenerative effects of Reactive Oxygen Species (ROS).

Keywords

Copper nanoparticles, *Portulaca oleracea* L, Spectroscopy, Antioxidant ability.

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