

ORIGINAL RESEARCH ARTICLES

BIOSYNTHESIS OF COPPER NANOPARTICLES FROM EXTRACT OF *BALIOSPERMUM SOLANIFOLIUM*

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ABSTRACT

This study presents a novel nanotherapeutic strategy for the treatment of arthritis utilising copper nanoparticles prepared using leaf extract from *Baliospermum solanifolium*. Known for its anti-inflammatory properties, the plant was used as a natural capping and reducing agent during the development of nanoparticles. Fourier Transform Infrared spectroscopy, XRD, SEM, and UV-Vis spectroscopy were utilized to thoroughly evaluate the size, shape and structural integrity of the green-synthesised copper nanoparticles. The anti-inflammatory qualities were assessed *in vivo* using a carrageenan paw oedema model in rats. The copper nanoparticle gel formulation showed significantly superior anti-arthritis activity. These results suggest that a topical gel containing copper nanoparticles derived from *B. solanifolium* provides a safe and efficient nanotherapeutic alternative for the treatment of arthritis symptoms, with promising potential.