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Abstract

Enhancing the Bioavailability of Berberine Chloride through Eco Friendly Synthesized Gold Nanoparticles

Mahalaxmi Nagasubramanian

School of Environmental Sciences, Mahatma Gandhi University, Kottayam- 686560, Kerala, India

Abstract:

The Eco- friendly synthesis of Gold nanoparticles (GNPs) was achieved by solar irradiation method using the leaf extract of Boerhavia diffusa L (B.diffusa) as a reducing agent, which has got more therapeutic properties like anti-inflammatory, anti-proliferative etc. Synthesized GNPs were characterized by UV-Visible spectra, HRTEM, SAED, XRD spectra, FTIR spectroscopy. Further these GNPs were conjugated with Berberine chloride (BBR), an isoquinolin alkaloids derived mainly from Berberisaristate L. Berberine is widely used in Indian and Chinese system of medicine shows anti diabetic, anti-depressant activities. The phytomediately synthesized colloidal Gold nanoparticles were employed to enhance the activity of BBR using in vivo study. The bio conjugation of BBR+ GNP was analyzed using UV-Visible spectra. The non-mutagenic nature of GNP, BBR and BBR + GNP was proven using Ames test. All the concentrations of GNP,BBr and BBR+ GNP produced acceptable range of background revertant colonies without S9 mix. The bioavailability of BBR, BBR+GNP drug formulations (50 and 100 mg/kg p.o) in plasma was maximum at 20 min after a single dose oral administration of both the drugs. The maximum concentration of BBR + GNP over BBR alone in plasma was found to be attained from 10 min after oral administration. This indicates that the bioavailability of Berberine chloride is enhanced by the Gold nanoparticles.

Biography:

Mahalaxmi Nagasubramanianis a research scholar at school of environmental sciences, Mahatma Gandhi University, Kerala, with a fellowship from department of science and technology India (DST- Inspire fellow). She holds a Master degree (M Tech) in the subject Biotechnology. She is passionate about drug delivery and Nanoparticles.

Recent Publications:

1. Mahalaxmi Nagasubramanian et al; Mutational analysis and genotype-phenotype correlations in southern Indian patients with sporadic and familial aniridia, 2015.

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