Abstract

Colloids Surf B Biointerfaces. 2013 Feb 1;102:189-94. doi: 10.1016/j.colsurfb.2012.06.039. Epub 2012 Aug 14.

Hepatocurative activity of biosynthesized silver nanoparticles fabricated using Andrographis paniculata.

Suriyakalaa U[1], Antony JJ, Suganya S, Siva D, Sukirtha R, Kamalakkannan S, Pichiah PB, Achiraman S.

Author information

[1]Department of Environmental Biotechnology, Bharathidasan University, Tiruchirappalli 24, Tamil Nadu, India.

Abstract

The current investigation was aimed to determine the hepatocurative role of silver nanoparticles (AgNPs) synthesized rapidly using Andrographis paniculata. The nanoparticles fabricated at varying temperatures were characterized by UV-visible spectroscopy (UV-vis), transmission electron microscopy (TEM), fourier transform infra-red spectroscopy (FTIR), energy dispersive X-ray (EDX) and inductively coupled plasma optical emission spectroscopy (ICP-OES) alongside zeta potential measurement. UV-vis spectroscopic readings indicated a prominent peak at 423 nm. TEM analysis indicated that the biosynthesized nanospheres were in the size range of 13-27 nm. EDX spectrum indicated strong signal for AgNPs with 90.1% purity. The total concentration of AgNps was 216.7 mg/L after synthesis as by ICP-OES. Zeta potential was -34.3 mV indicating stable AgNPs. In vitro radical scavenging assay proved strong antioxidant effect of the AgNPs compared to 5% aqueous leaf extract. CCl(4) was used to induce hepatic injury in mice model. The biosynthesized AgNPs at three different doses (25, 50, 100mg/kg BW of the animal) were used for treatment. Silymarin was used as a standard.

Low dose (25mg/kg BW) was effective in revival of all biological parameters to near normal in all intoxicated groups indicating the curing effects on CCl(4) induced liver injury.

PMID: 23018020 [PubMed - indexed for MEDLINE]

Publication Types, MeSH Terms, Substances

LinkOut - more resources

PubMed Commons

PubMed Commons home

0 comments

How to join PubMed Commons