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International E-Conference on
ADVANCED MATERIALS SCIENCE AND GRAPHENE NANOTECHNOLOGY
November 25-26, 2020 I Webinar

Anticancer activity of Au/ Chitosan core/shell nanoparticles against Hep-G2, Liver Cancer Cell Line

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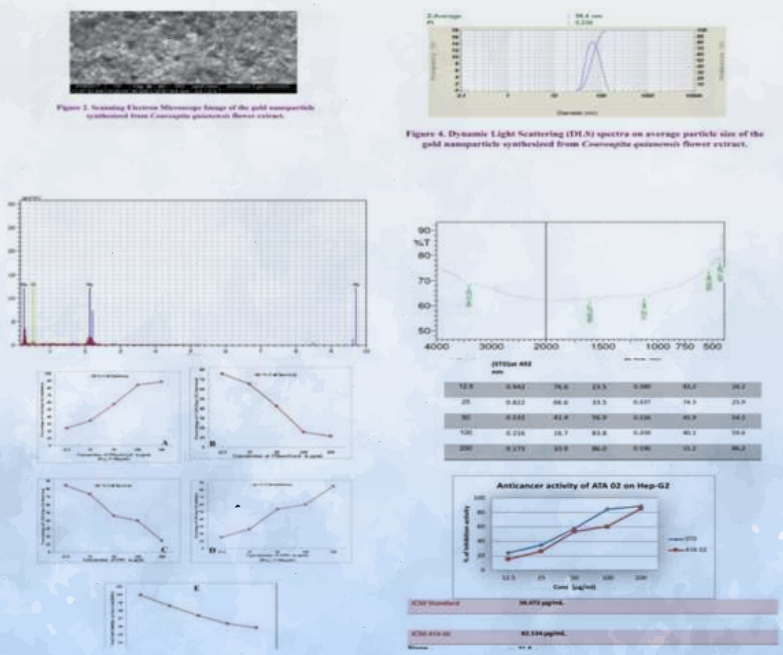
Gold nanoparticles (Au NPs) have brought to the forefront of cancer research in recent years because of their facile synthesis and surface modification, strongly enhanced and tunable optical properties as well as excellent biocompatibility feasible for clinic settings. In this present study, green synthesis of gold nanoparticles using aqueous leaf extract of C. quianensis used as a novel source of bio-reductants was evidenced. FT-IR spectra of Gold nanoparticles synthesized from C. quianensis showed intense peaks at 1127.44 cm–1, 1620.27 cm–1, 3412.22cm–1 , 533.34 cm–1and 427.25 cm–1corresponding to aromatic compounds. SEM analysis of synthesized Gold nanoparticles showed the presence of polydispersed spherical gold nanoparticles. EDAX analysis showed the presence of strong elemental gold peak and oxygen peak. The oxygen peak might be due to the presence of biomolecules bound to the surface of the gold nanoparticles.DLS was used to measure the particle size in colloidal solution. The size of the gold nanoparticle was 59.4nm. The polydispersity index was found to be 0.286.The cytotoxicity effect is very high in biosynthesized AuNPs than 5FU and raw plant extraction against Hep G2 cells. The synthesized AuNPs inhibited the growth of the cancer cells significantly, in a dose and duration dependent manner. DNA fragmentation assay confirmed the antiproliferative effect of of gold nanoparticles synthesized from the flower extract of Couroupita quianensis. Synthesized nanoparticles showed well-defined fragmentation pattern in the cell line Hep G2. the plant extract derived gold nanoparticles exhibited strong cytotoxic effects against Hep G2, the liver cancer cells, which suggest that biologically synthesized gold nanoparticles have great potential to be used as novel anticancer agents for the treatment of liver cancer.



ISBN: 978-1-8382915-1-8

Selvarani S, Moorthi PV, Saranya P, Abirami M 2015. Anti-Cancer Activity of Silver Nanoparticl3e Synthesized from Stem Extract of ocimum Kilimandscharicum Against Hep-G2, Liver Cancer Cell Line, Journal of Nanotechnology & Nanoscience, Vol-1, Issue-1. KJNN-100103

Selvarani S, Vinayaga PM, Ramalakshmi M, Padmapriya S and Abirami M. Ocimum Kilimandscharicum Leaf Extract Engineered Silver nanoparticles and Its Bioactivity. J Nanomater Mol Nanotechnol 2016, 5:2

Keywords: AuNPs, FTIR, SEM, EDAX, DLS, Hep G2 liver cancer cells

Biography:

Dr. S. Selvarani is an Associate Professor in Zoology at Thiagarajar College, affiliated to Madurai Kamarajar University, Madurai. India. She obtained her Master's degree in Zoology from Jayaraj Annapackiam College for Women and Ph.d in Zoology from Kamarajar University, Madurai. Dr.S.Selvarani started her career in Thiagarajar College as a lecturer and currently continuing her teaching journey as an Associate professor. Even though her works pass through diversity of ants she confirms her interest towards nanotechnology, her current Research works focus on Nanotoxicology, Hereditary cancer.