

International Conference on Nurturing Sustainability through Innovations in Science and Technology for Global Welfare



Contribution ID: 158

Type: Poster

Antioxidant And Antibacterial Property Of Guar Gum Silver Nanoparticles

Guar gum is a novel agrochemical processed from endosperm of cluster bean *Cyamopsis tetragonoloba*. Industrial applications of guar gum are possible because of its ability to form hydrogen bonding with water molecule. Thus, it is chiefly used as thickener and stabilizer. It is also beneficial in the control of many health problems like diabetes, bowel movements, heart disease and colon cancer. Chemically, guar gum is an exopolysaccharide composed of the sugars –galactose and mannose. The backbone is a linear chain of β -1,4-linked mannose residues to which galactose residues are 1,6-linked at every second mannose, forming short side-branches. Eco-friendly silver nanoparticles (AgNPs) were synthesized by using guar gum polysaccharide, since they have multi-functionalities owing to their ecological origin and biocompatible nature. The synthesized GG-AgNPs was primarily characterized by UV-VIS spectroscopy that showed the surface plasmon resonance (SPR) at 410–420 nm. In addition, the GG-AgNPs was evaluated for its antioxidant activity against DPPH free radicals. The antibacterial activity of guar gum will also be explored against entero-toxigenic bacterial strains.

Keywords: Guar gum, nanoparticles, antioxidant, antibacterial.

Primary author: Mr S, Karthik (jain university student)

Co-authors: Ms SN, Ananya (jain university student); Dr A, Madhavarani (assistant professor); Ms P RAJ, RACHANA (jain university student); Ms K, Sai satya (jain university student); Ms BV, YUVANIKA (jain university student)

Presenter: Mr S, Karthik (jain university student)

Track Classification: Health and Well-being