Nanochemistry and biotechnology

Green synthesis of gold nanoparticles using ethanol extracts of *Juniperus communis* L. ripe berries

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Phyto-synthesis of gold nanoparticles is gaining importance due to their biocompatibility, low toxicity, green approach and environmental friendly nature. A number of synthetic methods have been employed for the synthesis of Au-based nanoparticles involving physical, chemical and biochemical techniques. Wet-chemistry synthesis techniques are often involve the use of noxious reducing and/or stabilizing agents and toxic solvents.

We used extract of Juniperus communis L. for the synthesis of gold nanoparticles. The reduction of gold ions occurred when $HAuCl_4$ solution were treated with ethanol extract of common juniper at room temperature. Synthesized nanoparticles particles were confirmed by analyzing the excitation of surface plasmon resonance using UV–Vis spectrophotometer at λ_{max} = 530 - 535 nm. The influence of reaction conditions (concentration, pH, temperature etc.). The kinetic of nanoparticles formation was carried out.

The transformation of polyphenols, polyphenol esters and monoterpenes during formation of nanoparticles were studied by FTIR spectroscopy.