Current advantage in green synthesis of nanoparticles using plant extract

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**Abstract**: Nowadays, nanotechnology has grown to be an important research field in all areas including medicinal chemistry. Nanotechnology is a wide-range area of science which opens a new world of diagnostic and treatment for many autoimmune diseases such as inflammation and cancer. Nanoparticles (NPs) have very specific physicochemical and biological properties due to their size (1–100 nm). [1] Many chemical methods are chosen for synthesizing NPs because of their quick reaction time and their capability to produce monodispersed NPs [2]. Although all these methods are able to successfully produce the NPs, they have few disadvantages such as the high price of the process, lab maintenance and not being environment friendly since they make lots of pollution in the environment because of using toxic solvents and reducing agent [3]. To avoid these drawbacks, green chemistry approaches have been employed for production of NPs which is simple, convenient, less energy-intensive, easy, eco-friendly and minimize the usage of unsafe materials, and maximize the efficiency of the process. Plant-based polyphenols are considered to be the largest groups of natural antioxidants with extraordinary potential as drugs, nutraceuticals, and food additives [4]. The synthesized nanoparticles were characterized by UV, EPMA, XRD, SEM, TEM and FTIR data. In recent times, several groups have been reported to achieve success in the synthesis of Au, Ag, Zn, Ce and Pd nanoparticles obtained from extracts of plant parts [5].

**Keywords:** Green synthesis, Nanoparticle, Plant extracts, Nanoparticle characterization.

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