

Gold nanoparticles from different plant extracts: a study on stability, shape and toxicity

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The large scale production of nanoparticles claims for sustainable reactants, such as reducing/capping agents obtained from agricultural by-products. Here we prepared gold nanoparticles (AuNPs) in high yields by using extracts from leaves of plants and by following sustainable synthetic routes. Searching for growth conditions to control the shape of AuNPs, we found that extracts from *Cucurbita pepo* grown in presence of Cu(II), Ag(I), or Au(III) gave nanoparticles with treatment-dependent shape. Screening the best materials, we found that extracts from leaves of several marketable plants produced AuNPs with differences in shape and dimension and with/without toxicity on bone-marrow mesenchymal stromal cells.