

Interactions between the surfaces of gold or silver nanoparticles and biomolecules such as amino acids and proteins

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Abstract

Colloidal gold or silver nanoparticles were prepared by hydrogen tetrachloroaurate trihydrate (HAuCl₄) or silver nitrate (AgNO₃) in a mixture solution of water and sodium citrate as a reducing agent. The gold or silver colloid was characterized by using UV spectroscopy and TEM. The surfaces of the gold or silver colloids were modified with various amino acids and proteins such as cystein, lysine, arginine, glutathione and BSA.¹⁾²⁾ The interactions between the surface of the nanoparticles and the functional groups of the biomolecules were investigated and compared.³⁾ The self-aggregations of biomolecule-conjugated nanoparticles were also investigated, which is presumably due to hydrogen bondings of carboxylic acid and amine groups.⁴⁾

References

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