

Studies on chiral-enhanced phenomena of biomolecules with silver nanoparticles

Taihua Li and Hyun Gyu Park.

Department of Chemical & Biomolecular Engineering, KAIST, Daejeon Korea

Tel (042)869-3972, FAX (042)869-3910

Abstract

Chiral-enhanced phenomena of silver nanoparticle-capped biomolecules are described. Silver nanoparticles were prepared by γ -irradiation or citrate reduction method. The silver nanoparticles were characterized by UV spectroscopy, TEM, XRD, and FTIR. Capping of the silver nanoparticles with chiral biomolecules such as cysteine, was accomplished by a thiolate bond between the thiol groups of biomolecules and the nanoparticle surfaces^{1,2,3}. Using circular dichroism(CD) spectroscopy³, and polarimeter, the chiral-enhanced phenomena were investigated for the silver nanoparticle-capped biomolecules.

References

1. Storhoff J. J., Lazarides A. A., Mucic R. C., Mirkin C. A., Letsinger R. L., and Schatz G. C. (2000), *J. Am. Chem. Soc.* **122**, 4640-4650.
2. Mandal S., Gole A., Lala N., Gonnade R., Ganvir V., and Sartry M. (2001), *Langmuir*. **17**, 6262-6268.
3. Choi S. H., Lee S. H., Hwang Y. M., Lee K. P. and Kang H. D. (2003), *Radiation Physics and Chemistry* **67**, 517-521.