

Abstract Submitted  
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**Influence of gold nanoparticle size on the orientation and activity of adsorbed proteins** KANWARJEET KAUR, JAMES FORREST, Dept. of Physics and Astronomy, University of Waterloo — We used UV-visible extinction spectroscopy to study the orientation and activity of rabbit immunoglobulin G and Protein A from *Staphylococcus aureus* adsorbed onto gold nanoparticles of various sizes (10-60nm). There is a shift in the localised surface plasmon resonance peak due to the interaction of proteins with the nanoparticles. The proteins adopt different orientations on smaller spheres as compared to larger spheres. IgG adopts end-on orientation on bigger spheres with the Fc domain directed towards the spheres. It displays no activity towards Protein A. This study shows that the curvature of nanoparticles strongly influences the orientation of adsorbed proteins. This could be useful in the designing of colloidal drug carriers.

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