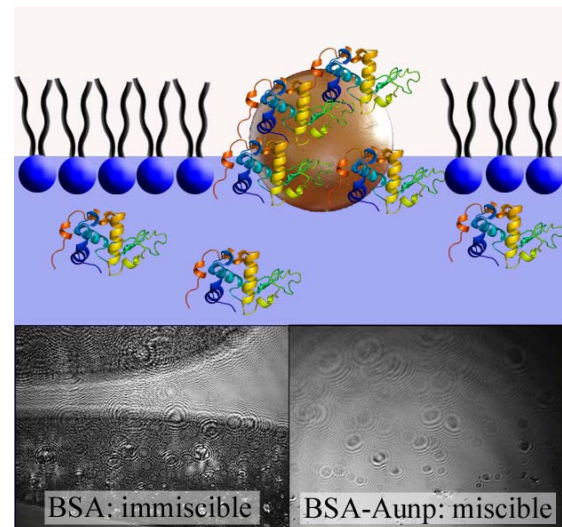


Emergent membrane-affecting properties of BSA–gold nanoparticle constructs

Gold nanoparticles possess unique optical and surface properties and represent promising materials as e.g. drug delivery vectors, biomarkers and folding templates for proteins. The conformation of the protein dictates protein function and interaction with interfaces, and as such manipulation of the protein-fold might invoke emergent properties useful for improved understanding and potential treatment of protein misfolding diseases such as Alzheimer's and Parkinson's. Adsorption of bovine serum albumin (BSA) onto gold nanoparticles (Aunps) results in partial unfolding of the protein. The resulting BSA–Aunp constructs

induce miscibility with phospholipid monolayer films, a trait not seen for BSA or Aunps alone, as well as disruption of liquid crystalline domains in the film. These protein-Aunp constructs might improve interaction with cell membranes and hence intracellular delivery.



Lystvet S. M., Volden S., Yasuda M., Halskau Ø., and Glomm W. R. Nanoscale, 2011, 3, 1788–1797.