

## Separation Process of Bovine Serum Albumin on Silica Coated Magnetic Nanoparticles

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This work presented the high throughput bovine serum albumin (BSA) separation process using the amino-functionalized silica coated magnetic nanoparticles (MNPs). The MNPs were modified and coated by tetraethyl orthosilicate (TEOS) in controlling the shell-thickness and sizes. The surface modification was obtained with amino-functionalized organic silanes on Si-coated MNPs. Characterizations of Si-coated MNPs were carried out using transmission electron microscopy (TEM), FT-IR(ATR-method), DRIFT-UV/Vis., X-ray diffraction (XRD) and a Vibrational Sample Magnetometer (VSM). To elucidate the relationship between surface area and reactivity of the materials, BET and Zetapotential were used. BSA was separated as a function of pH, concentration, number of amino groups. The utilization of functionalized MNPs for BSA separation process give a lot of advantages as generally practical bioseparation.