

Supporting Information

Figure S1. X-ray diffraction patterns of Fe_3O_4 (a), $Fe_3O_4@SiO_2$ (b) and $Fe_3O_4@SiO_2@APES$ (c).



Figure S2. FTIR spectra of $Fe_3O_4@SiO_2$ (a) and immobilized ALP magnetic nanoparticles (b).



Figure S3. X-ray diffraction patterns of immobilized ALP magnetic nanoparticles and free ALP.