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ABSTRACT

A new kind of polymeric material (PNIPAAm-co-SA) was prepared by conjugating a thermosensitive polymer, Poly (N-isopropylacrylamide) (PNIPAAm) with streptavidin (SA). This smart prepared composite displayed a controllable conformation change between an expanded and a collapsed form, below or above its lower critical solution temperature (LCST). Differential scanning calorimetry (DSC) analysis demonstrated that the PNIPAAm-co-SA bioconjugate showed the same LCST as the original synthetic polymer, PNIPAAm, which was also 32 °C. Based on the specific interaction between SA and biotin, a higher capture efficiency of PNIPAAm-co-SA, which was almost 100% in PBS buffer solution and above 70% in serum was obtained, respectively. And the high affinity between PNIPAAm-co-SA