

Poly (N-isopropyl acrylamide-co -Acrylic acid) graft Polyaspartamide Coated Magnetic Nanoparticles for Hyperthermia and Chemotherapy

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A series of pH- and thermo-sensitive poly(N-isopropyl acrylamide-co -acrylic acid) were synthesized by radical polymerization and grafted on polysuccinimide backbones. The polysuccinimide derivatives synthesized were coated on thermal-decomposition iron oxide magnetic nanoparticles for potential applications in drug delivery systems with hyperthermia and chemotherapy. The structure of polymer -shell and iron oxide was confirmed by FT -IR and ¹H-NMR spectroscopies and TEM. The particle size and its behaviors distribution is measured by ELS measurement and TEM. The thermal behaviors of coated materials were tested by applying the high frequency magnetic field by hyperthermia system