

Nanoparticles based on the Phase-Separated Films of Conjugated Polymers and Phospholipids  
for Photothermal Therapy

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We prepared water-dispersed PCPDTBT nanoparticles by using the phase separation between PCPDTBT and DOPC (1,2-dioctanoyl-sn-glycero-3-phosphocholine), and by the conventional lipid vesicle preparation process. The shape and size of resulting nanoparticles was confirmed using a Transmission electron microscopy (TEM), Field Emission Scanning Electron Microscope (FE-SEM) and Particle size analyzer (PSA). The shape of particles was round and average particle size was 130.5 nm. They can absorb near-infrared light which is transmittable through human body tissue, and irradiate heat to ablate cancer cell by photothermal effect. After successful cellular uptake of nanoparticles, efficient photothermal ablation of cancer cells was confirmed.