

## Mannose-targeted Mesoporous Silica Nanoparticles for Photodynamic Therapy

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Covalent attachment of water-soluble photosensitizers (Figure 1) into mesoporous silica nanoparticles (MSN) for photodynamic therapy (PDT) applications is described. Those MSN were monodispersed with a diameter of 100 nm, a specific surface area of 860 m<sup>2</sup>/g and a pores diameter of 2.2 nm. These MSN were proved to be active on breast cancer cells after endocytosis. Moreover, MSN were functionalized on their surface by mannose using an original pathway with diethyl squarate as the linker. Those mannose-functionalized MSN dramatically improved the efficiency of PDT on breast cancer cells. In addition, the involvement of mannose receptors for the active endocytosis of mannose-functionalized MSN was demonstrated (Figure 2).

