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Efficient Encapsulation of Gold Nanorods into Block Copolymer Micelles DAE HWAN KIM, YOU-YEON WON, Purdue University — Gold nanorods (GNRs) have the potential to be used as an imaging and/or hyperthermia agent for cancer theragnosis. Clinical applications of as-synthesized GNRs (i.e., CTAB-coated CNRs) are currently limited by their cytotoxicity and insufficient colloidal stability. With an aim to address these problems, we developed a self-assembly processing technique for encapsulation of GNRs in block copolymer (BCP) micelles. This technique uses simple steps of solvent exchange processes designed based on the known principles of block copolymer self-assembly. It will be demonstrated that BCP-encapsulated GNRs are stable against aggregation under physiological conditions and non-toxic to cells.

Dae Hwan Kim
Purdue University

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