

### Color Transition of Paclitaxel Encapsulated Novel Polydiacetylene Vesicles

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Polydiacetylene vesicles, photopolymerized self-assembly of diacetylene monomers, are popular biosensors for its visible color transition due to external stimulation, such as temperature, pH, mechanical stress, and ligand-receptor interaction. Polyoxyethylene 40 stearate, a biocompatible nonionic surfactant, is combined to polydiacetylene vesicle for stealth property. Their ability to create stable and non-cytotoxic vesicles allow construction of a drug delivery system carrying a common anticancer agent, paclitaxel. The novel polydiacetylene vesicles exhibited color transition from blue to red, while its sustained release of paclitaxel. The drug release profile, vesicle size distribution, and shape of different ratio are determined.