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Development Prospects of Polymer Conjugation for the Inhibition of Cancer Cells

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For most molecule-targeted anticancer systems, intracellular protein targets are very difficult to be accessed by antibodies, and also most efforts are made to inhibit protein activity temporarily rather than inactivate them permanently. In this work we firstly designed and synthesized multifunctional polymer-drugconjugates for intracellular molecule-targeted binding and inactivation of protein for growth inhibition of cancer cells. Small molecule drug was conjugated to polymer side chain for intracellular signal protein targeting, and simultaneously the fluorescent characteristic of polymer for tracing the cellular uptake and localization of polythiophene-drug conjugates by cell imaging. The conjugates showed selective growth inhibition of cancer cells, which exhibits low side effect for our intracellular molecule-targeted therapy system.