Thermoresponsive dendrimers based on oligoethylene glycols: Design, synthesis and cytotoxic activity against MCF-7 breast cancer cells

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Abstract:

Three interesting thermoresponsive branched oligoethylene glycol dendrimers based on tetrabromohydroquinone were efficiently synthesized from tetrabromohydroquinone and three different oligoethylene glycol derivatives. By visual inspection, all these dendrimers are water-soluble at room temperature. The thermoresponsive behaviors were investigated by using UV/vis turbidity measurement at different temperatures for 0.25 wt% of aqueous solutions from D1, D2 and D3. The cytotoxicity of the prepared dendrimers was tested against MCF-7 breast cancer cells. All tested dendrimers showed considerable results, where D2 dendrimer gave the best result; it showed cytotoxicity against MCF-7 cell line with IC50 of 1.07 mg/mL and resistant fraction equals 1.97%, the other two dendrimers showed a modest cytotoxic profile.

Keywords:

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