Supporting information

Synergistic Therapy of Chemotherapeutic Drug and MTH1 Inhibitor with pH-Sensitive Polymeric Delivery System for Oral Squamous Cell Carcinoma

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Notes

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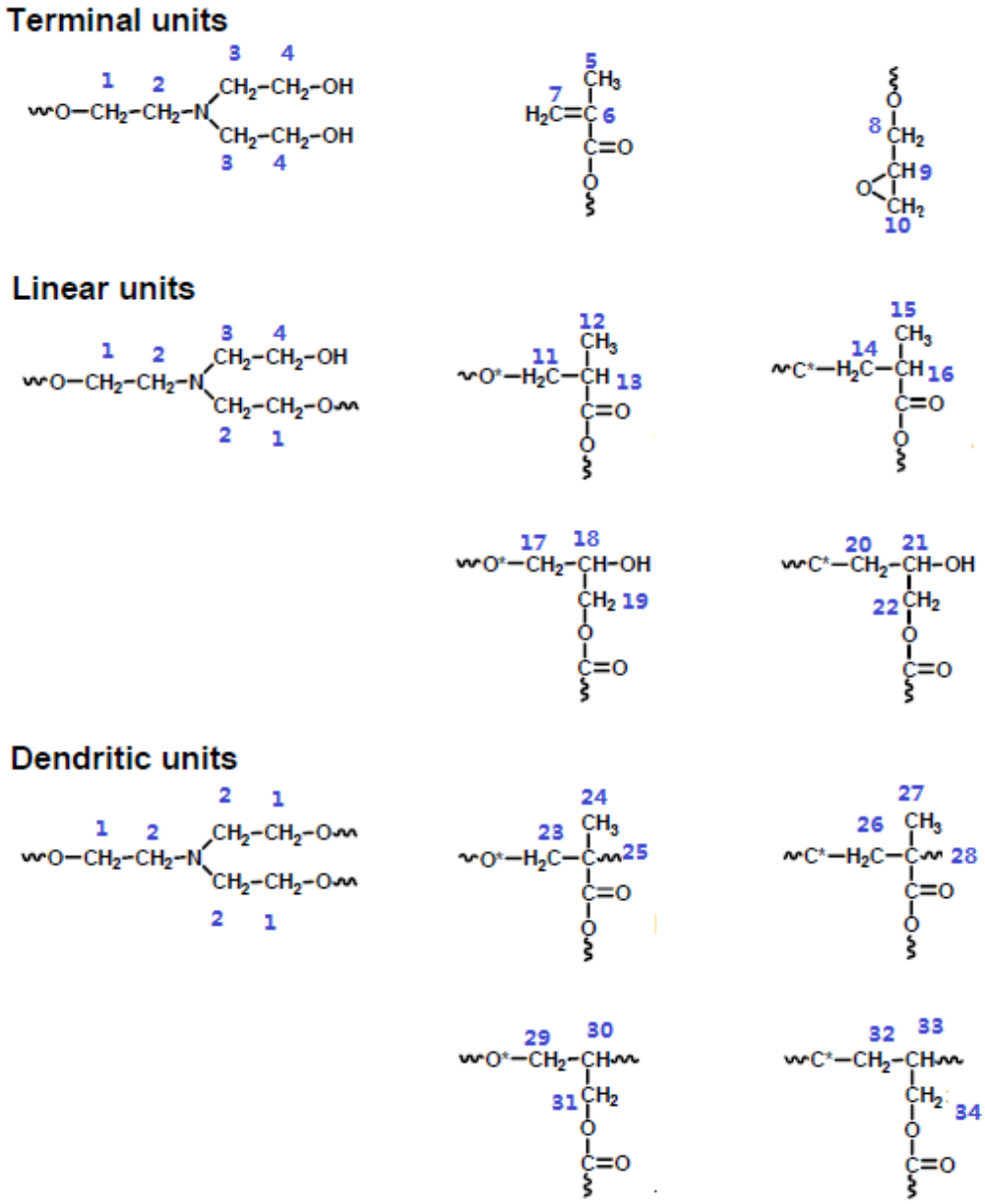
Experimental

The cationic hyperbranched poly(amine-ester)s were prepared by proton-transfer polymerization. A typical polymerization procedure is as follows: A suspension of KH in mineral oil (30% in weight) was introduced in a dry preweighted 100 mL Schlenk flask under argon (Ar). The mineral oil was removed by three extractions with THF, and the remaining THF was removed by vacuum. When KH was completely dried, the flask was weighted again to determine the amount of KH (0.698 g, 17.4 mmol). Then, 40 mL of DMSO and TEOA (12.9 g, 86.5 mmol) was introduced to the flask. The solution was stirred for 30 min to form the potassium alcoholate. Subsequently, GMA (11.8 g, 83.0 mmol) was added by syringe, and the polymerization was conducted at 80 ℃ for 48 h. Upon completion of the polymerization, the mixture was precipitated in 1000 mL of acetone/diethyl ether (v/v 1/4). The product was redissolved in methanol and neutralized by filtration over cation exchange resin. The obtained polymer was precipitated twice from methanol solution in cold diethyl ether and then dried in vacuo at 25 ℃ for 24 h.

Scheme S1. Various Structural Units of Hyperbranched Poly(amine-ester)s



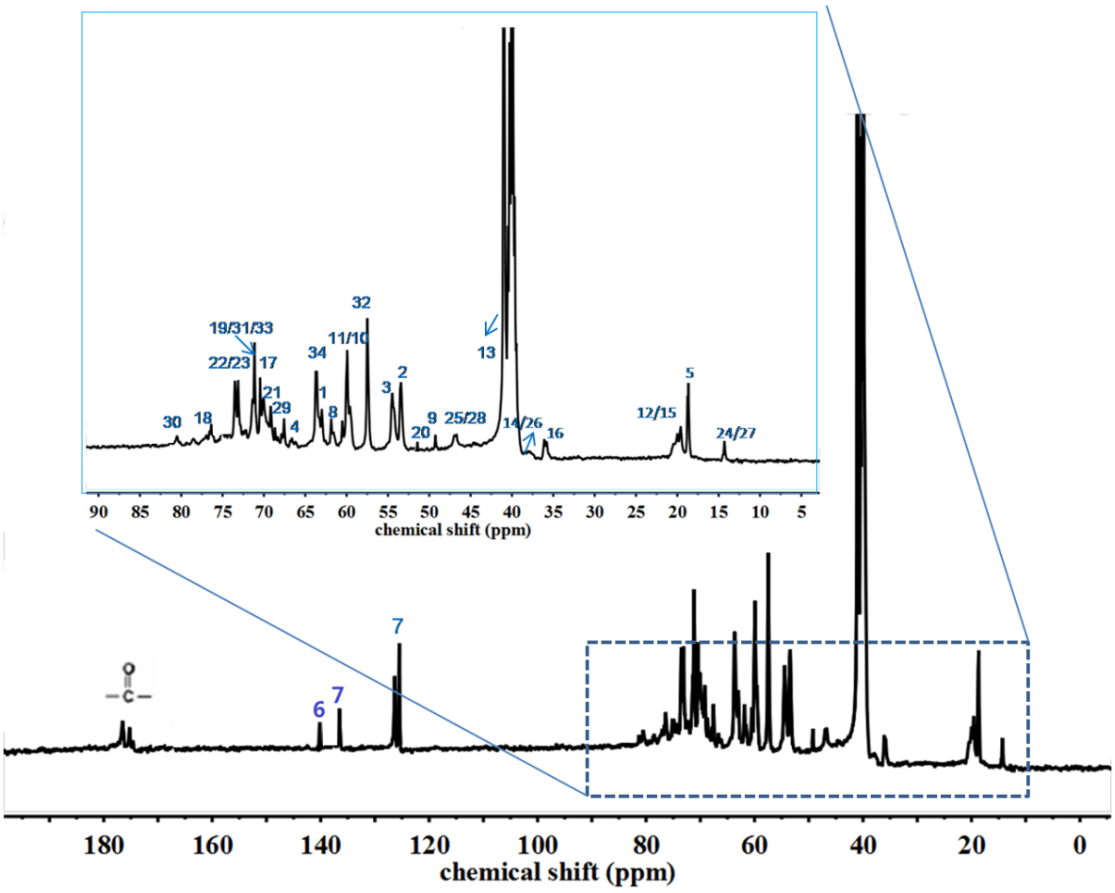


Figure S1. ^{13}C NMR spectrum of hyperbranched poly(amine-ester) synthesized from TEOA and GMA in DMSO-d_6. (Inset: regions from 90 to 5 ppm).

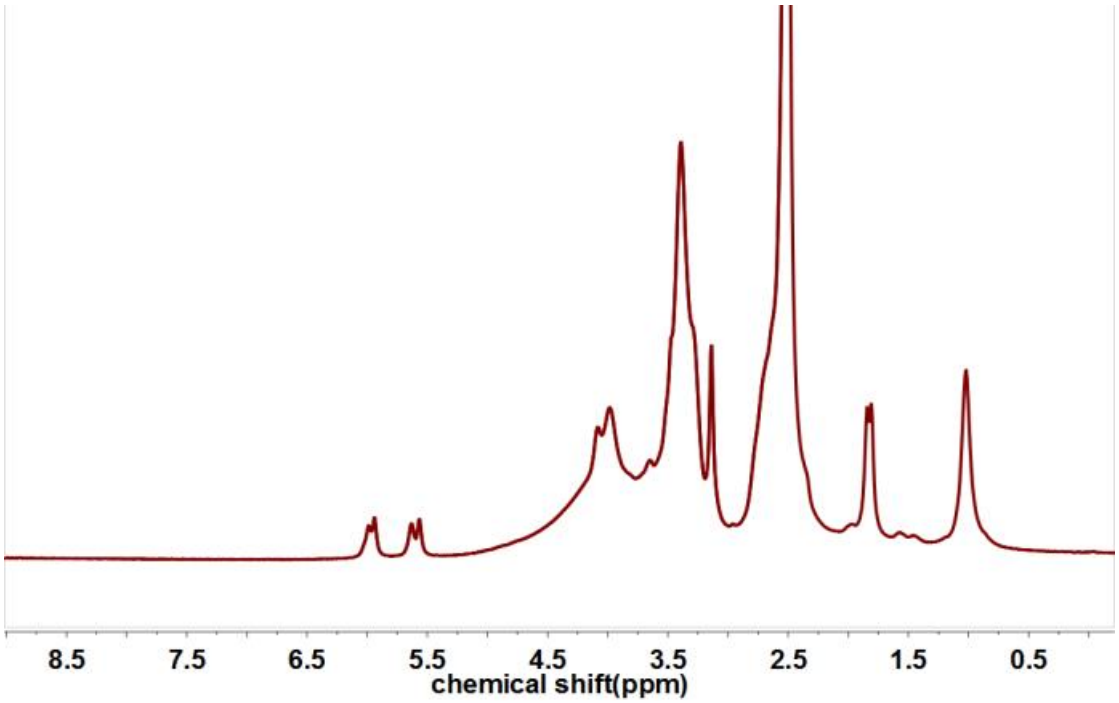


Figure S2. ^{1}H NMR spectrum of hyperbranched poly(amine-ester) synthesized from TEOA and GMA in DMSO-d_6.

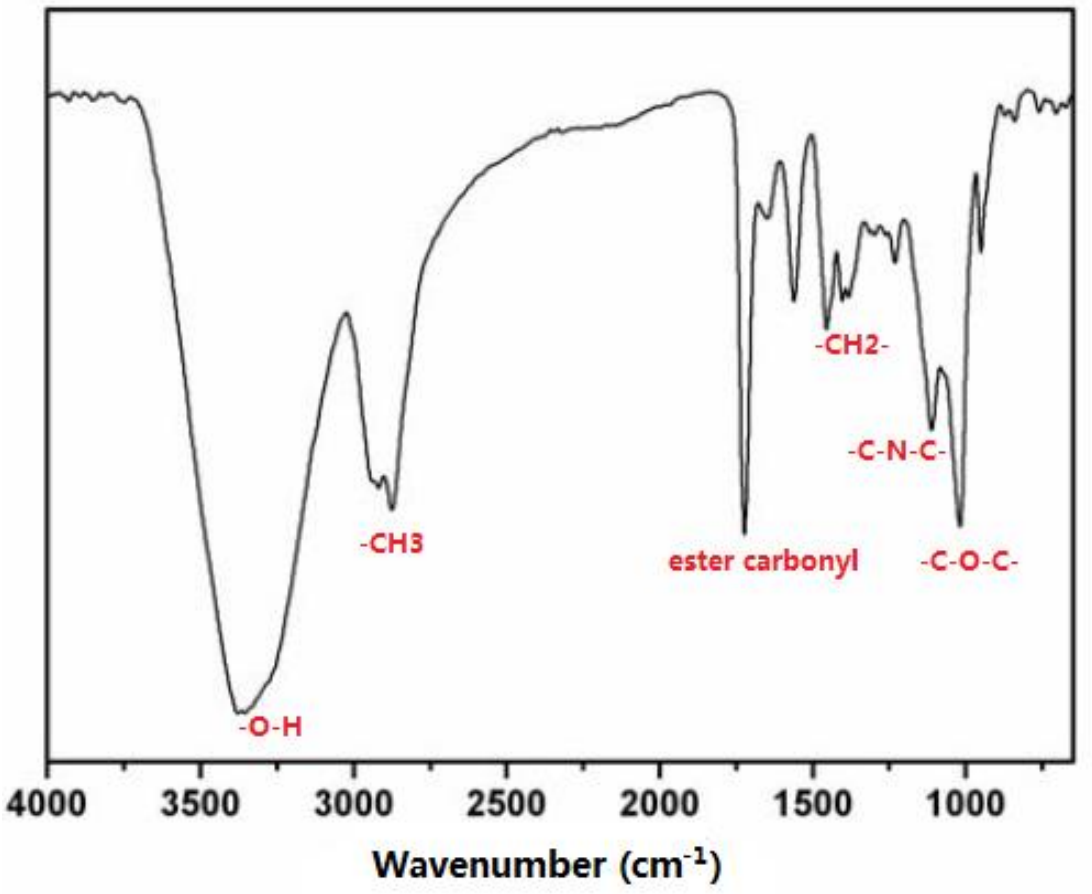


Figure S3. Representative FTIR spectrum of hyperbranched poly(amine-ester).