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Supporting Information

Dual-Sensitive GO-Based Self-Assembly for Delivery of Hydrophobic Anti-Cancer Drug

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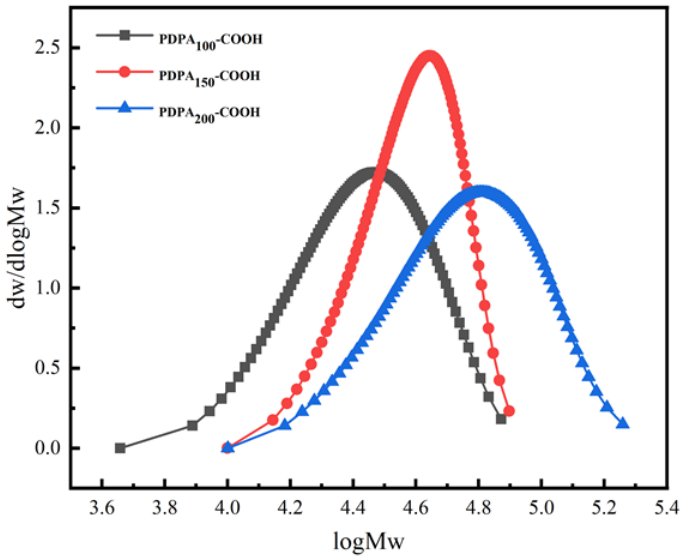

Fig. S1. The GPC curve of PDPA$_n$-COOH (n=100, 150, 200)

Fig. S1 was the gel permeation chromatogram (GPC) of PDPAn-COOH, the products were mainly synthesized by adjusting the molar ratio between DPA monomer and 4-(1-bromoethyl)benzoic acid initiator. There was a certain deviation between the actual molecular weight of the product and the charging ratio, but the result of molecular weight had a great correlation with the charging ratio. For example, in this chapter, the feeding ratios of monomer and initiator were 100:1, 150:1, 200:1, respectively. In fact, the molecular weights of the synthesized PDPA$_n$-COOH polymers were 23628, 36700, 48620, respectively, and the corresponding degrees of polymerization were 110, 170, 226.

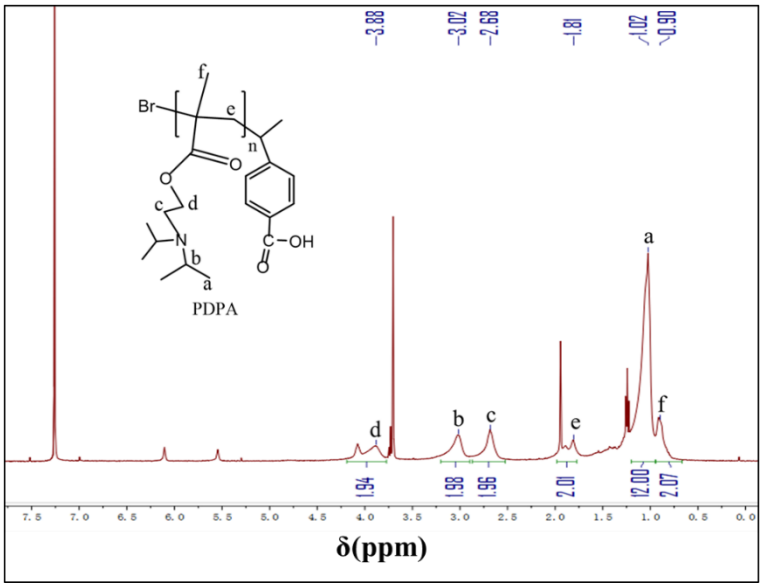

Fig. S2. The ^{1}H NMR of PDPA-COOH

As shown in Fig. S2, it could be found the peaks of 0.90 ppm (s, -CCH_3), 1.02 ppm (s, -$C(CH_3)_2$), 1.81 ppm (dt, -CH_2-), 2.43-2.81 ppm (m, -N-CH_2-), 2.82-3.18 ppm (m, -N-CH-), 3.68-4.05 ppm (m, -O-CH_2-), and the peak area conformed to the ratio of a : b : c : d : e : f=12 : 2 : 2 : 2 : 2 : 3, which indicated PDPA-COOH was formed.

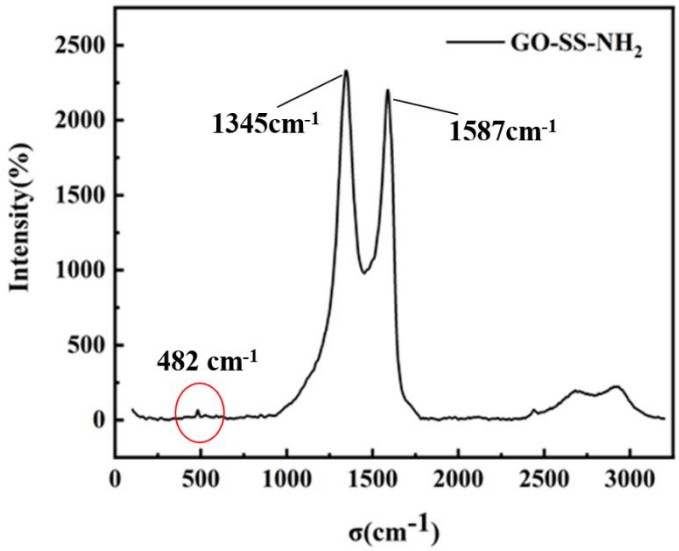

Fig. S3. The Raman spectrum of GO-SS-NH_2

The two strong characteristic peaks (Fig. S3) located at 1345 and 1587 cm^{-1} corresponded to the D peak (Disorder Peak) and the G peak (Graphitic Peak) of GO, respectively. The D peak was due to the defect sites in the GO structure and the sp^3 vibration of disordered carbon atoms, reflecting the disordered state between the graphite sheets. The G peak was the sp^2 characteristic peak of carbon atom, which reflected the symmetry and crystallinity of GO. The small peak at 482 cm^{-1} belonged to the Raman characteristic peak of disulfide bond.

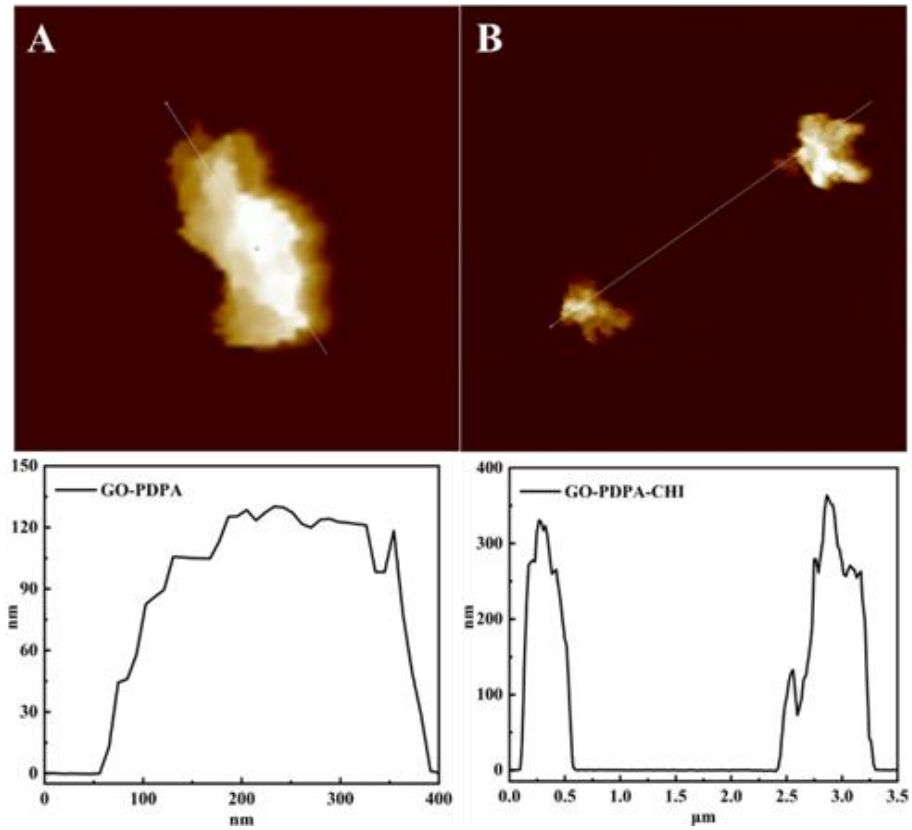

Fig. S4. The AFM images of GO-PDPA (A) and GO-PDPA-CHI (B)

Fig. S4 showed the thickness of GO-PDPA and GO-PDPA-CHI, which were nearly 120 nm and 300 nm, respectively. The thickness was found to increase due to the modification of PDPA and CHI on the surface of GO.