Supporting Information

Spiropyran-induced One-dimensional Cyclodextrin Microcrystals with Light-driven Fluorescence Change

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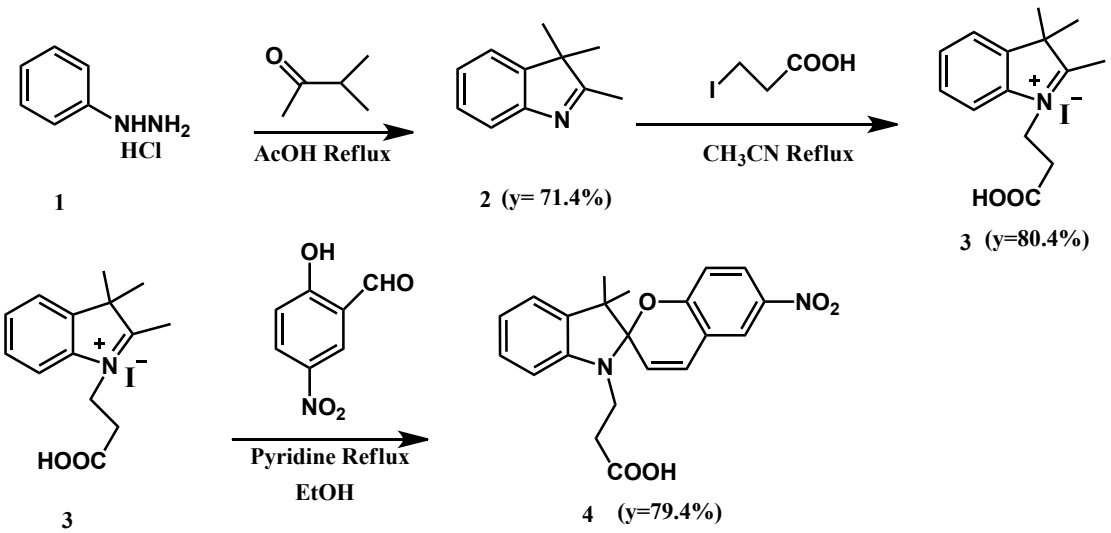

Scheme S1. Synthesis of compound 4 (**SP-COOH**).

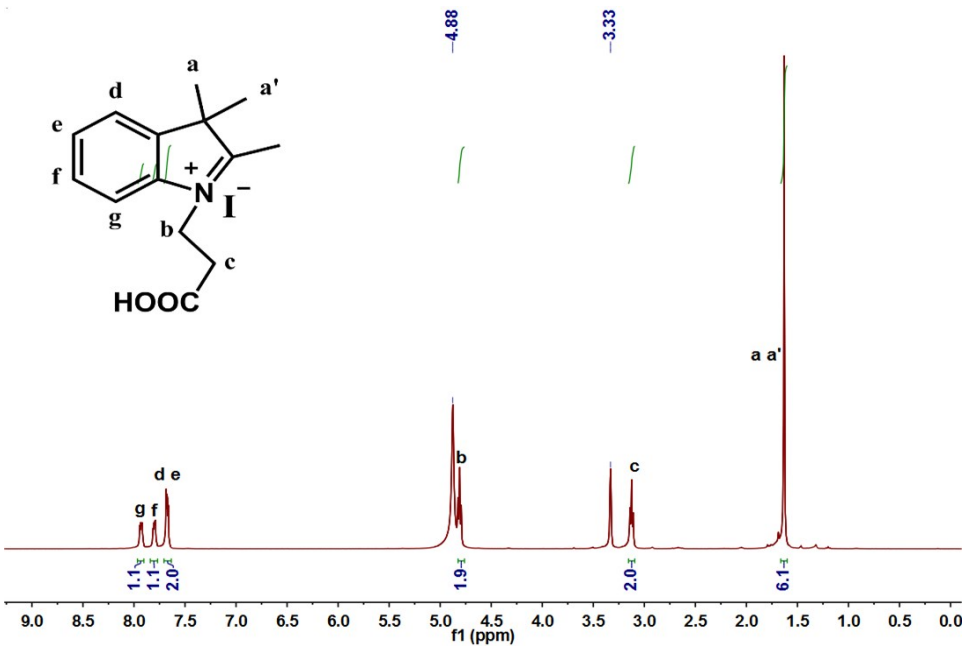

Fig. S1 ^{1}H NMR spectrum of compound 3.

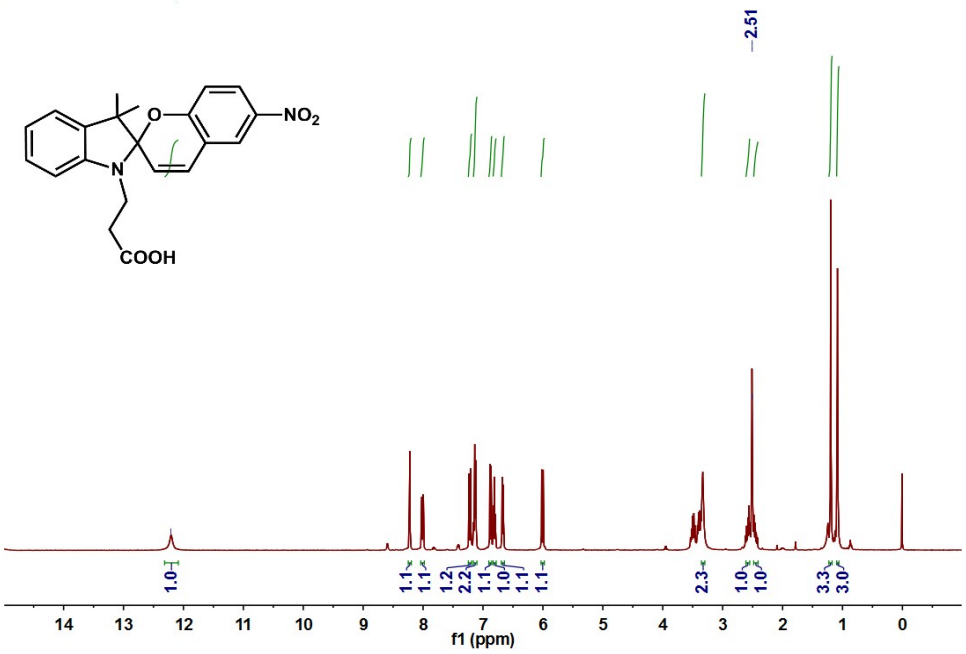

Fig. S2 ^{1}H NMR spectrum of **SP-COOH**.

^{1}H NMR (400 MHz, DMSO) δ 12.21 (s, 1H), 8.22 (d, J = 2.8 Hz, 1H), 8.01 (dd, J = 9.0, 2.8 Hz, 1H), 7.22 (d, J = 10.4 Hz, 1H), 7.14 (t, J = 6.5 Hz, 2H), 6.88 (d, J = 9.0 Hz, 1H), 6.81 (t, J = 7.4 Hz, 1H), 6.67 (d, J = 8.1 Hz, 1H), 6.01 (d, J = 10.4 Hz, 1H), 3.35 (d, J = 12.9 Hz, 3H), 2.58 (dt, J = 14.8, 7.3 Hz, 1H), 2.49 – 2.41 (m, 1H), 1.20 (s, 3H), 1.08 (s, 3H).

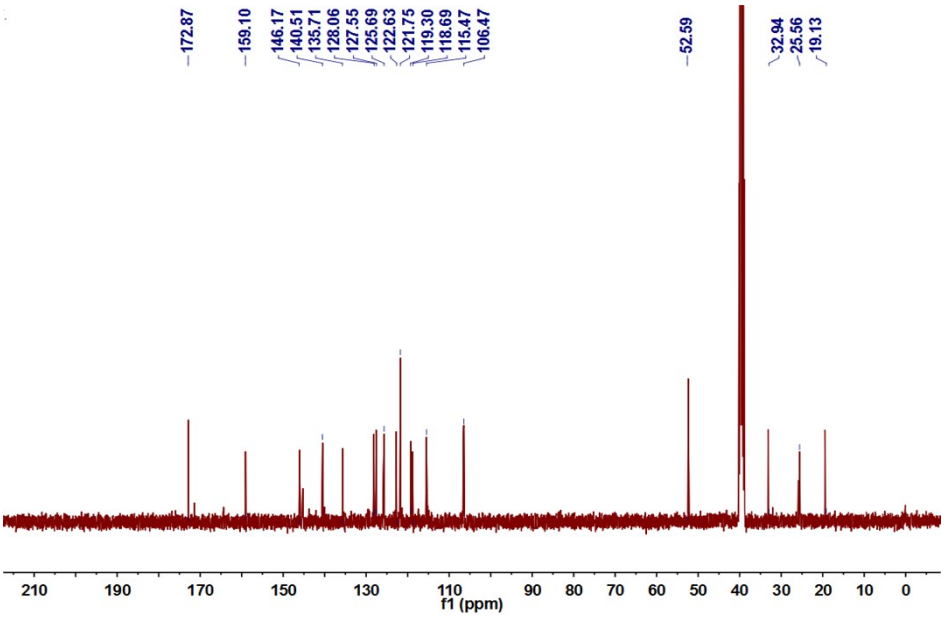

Fig. S3 ^{13}C NMR spectrum of **SP-COOH**.

^{13}C NMR (101 MHz, DMSO) δ 172.87, 159.10, 146.17, 140.51, 135.71, 128.06, 127.55, 125.69, 122.63, 121.75, 119.30, 118.69, 115.47, 106.47, 52.59, 32.94, 25.56, 19.13.

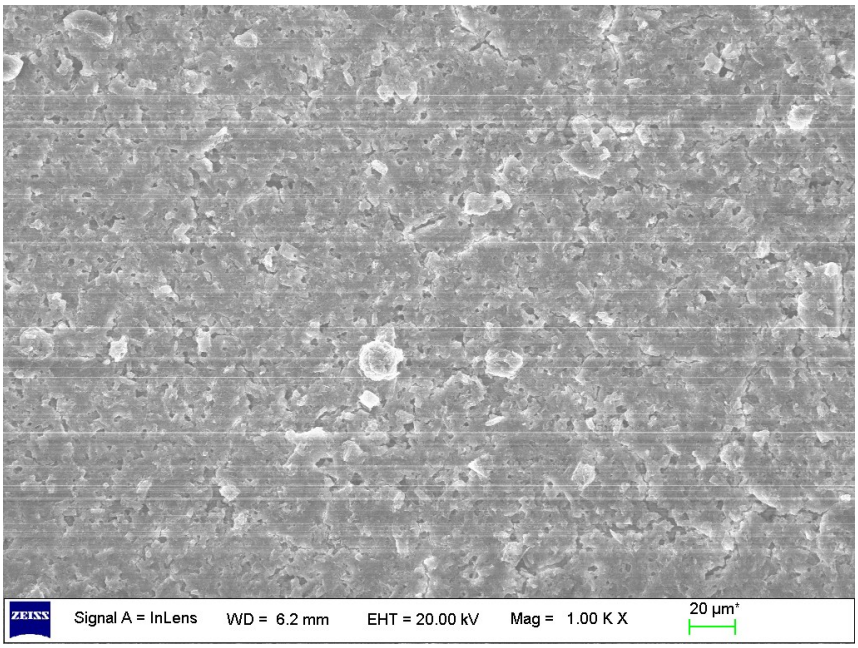

Fig. S4 SEM of **SP-COOH@γCD** film.

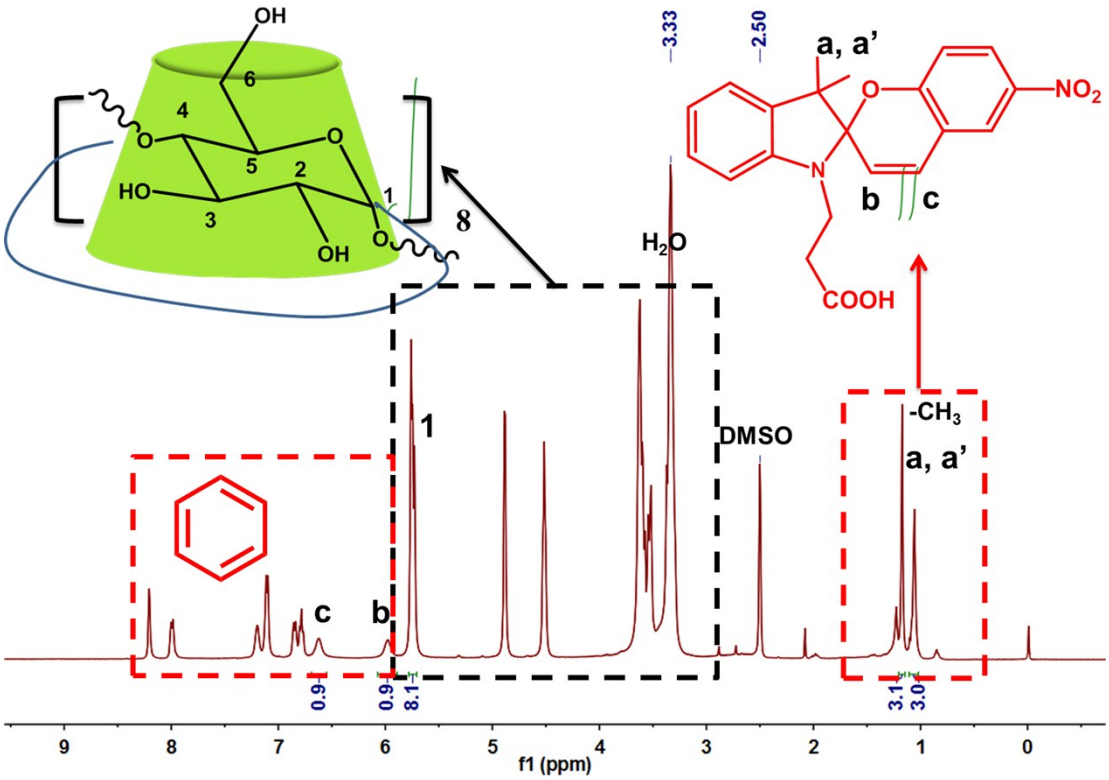

Fig. S5 ^{1}H NMR spectrum of **SP-COOH@γCD**.

Fig. S6 ESI-MS of **SP-COOH/βCD** powder, only **SP-COOH** can be found. (Note: the condition used for **SP-COOH@γCD** is the same as that used for **SP-COOH/βCD**)

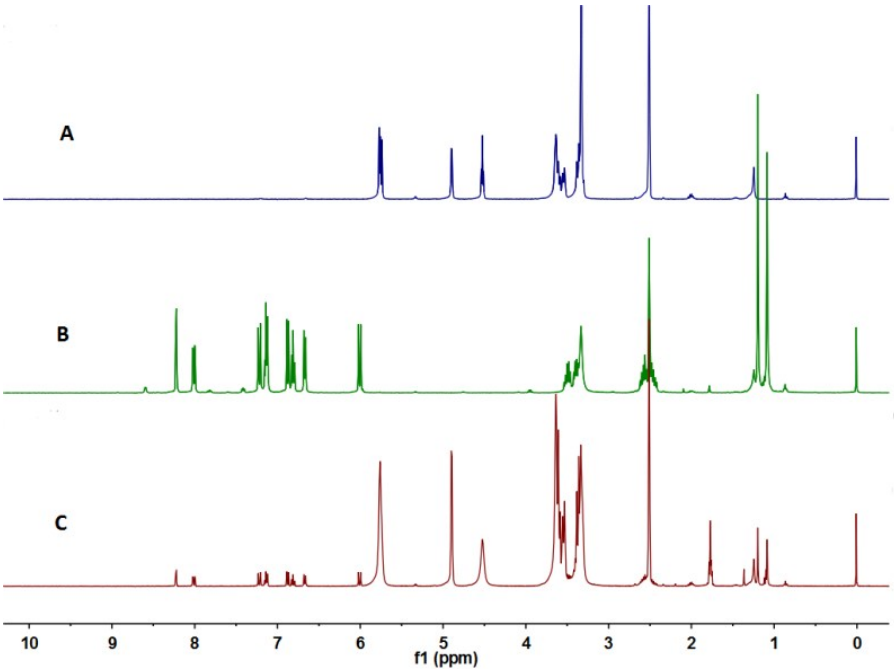

Fig. S7 ^{1}H-NMR spectra of (A) **γCD**, (B) **SP-COOH**, (C) **SP-COOH@γCD**.

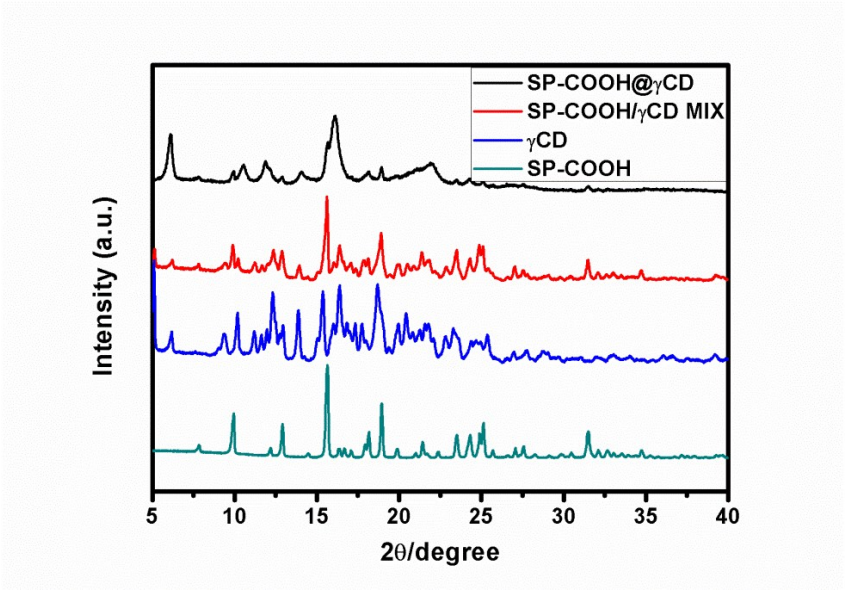

Fig. S8 XRD profiles of **SP-COOH@γCD**, **SP-COOH/γCD** 1:1 mixture, **γCD**, and **SP-COOH**.

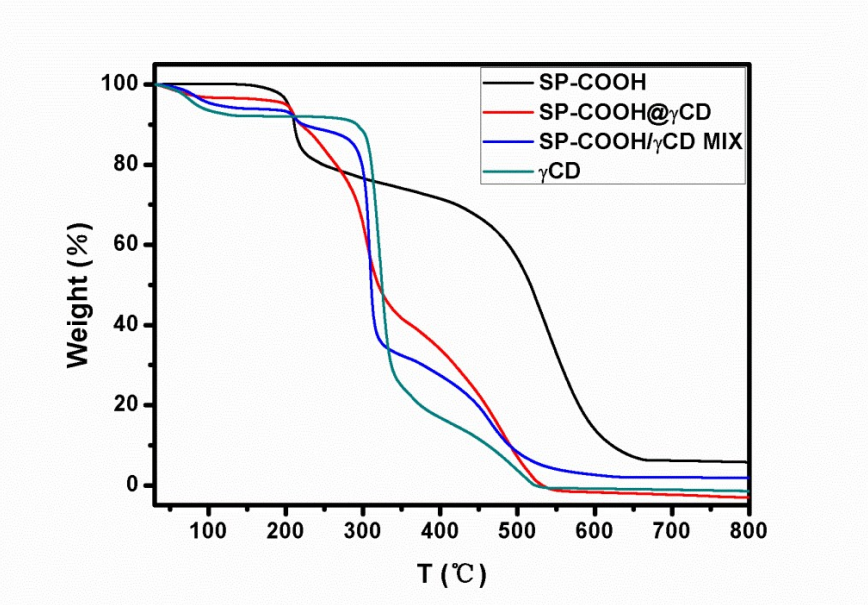

Fig. S9 TGA curves for **SP-COOH**, **SP-COOH@γCD**, **SP-COOH/γCD** mixture (1:1) and **γCD**.

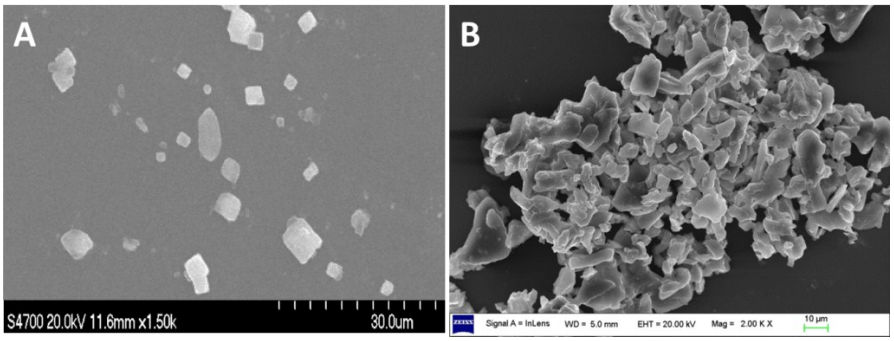

Fig. S10 SEM images of (A) pristine **SP-COOH** and (B) **γCD**.

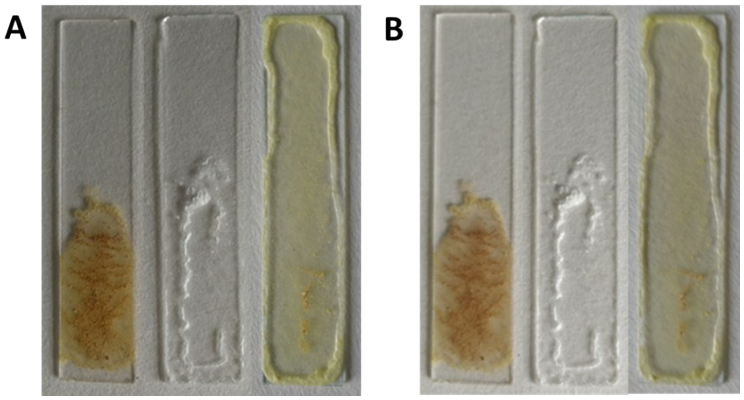

Fig. S11 The film of pure **SP-COOH** (left), pure **γCD** (middle) and **SP-COOH/γCD** mixture (1:1) (right). (A) before UV irradiation, (B) after UV (365 nm) irradiation for three minutes.