

Supplementary Materials

A Smart Responsive Quercetin-Conjugated Glycol Chitosan Prodrug Micelle for Treatment of Inflammatory Bowel Disease

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Compound 2: ^1H NMR (400 MHz, CDCl_3) δ 7.79 (d, 2H, $J = 8.4$ Hz), 7.35 (d, 2H, $J = 8$ Hz), 4.70 (s, 2H), 1.34 (s, 12H). ^{13}C NMR (100 MHz, CDCl_3) δ 144.01, 135.06, 126.08, 83.83, 65.25, 24.87. HRMS-ESI (m/z): [M-H] $^-$ calcd. for $\text{C}_{13}\text{H}_{18}\text{BO}_3$ 233.0349, found 233.0357.

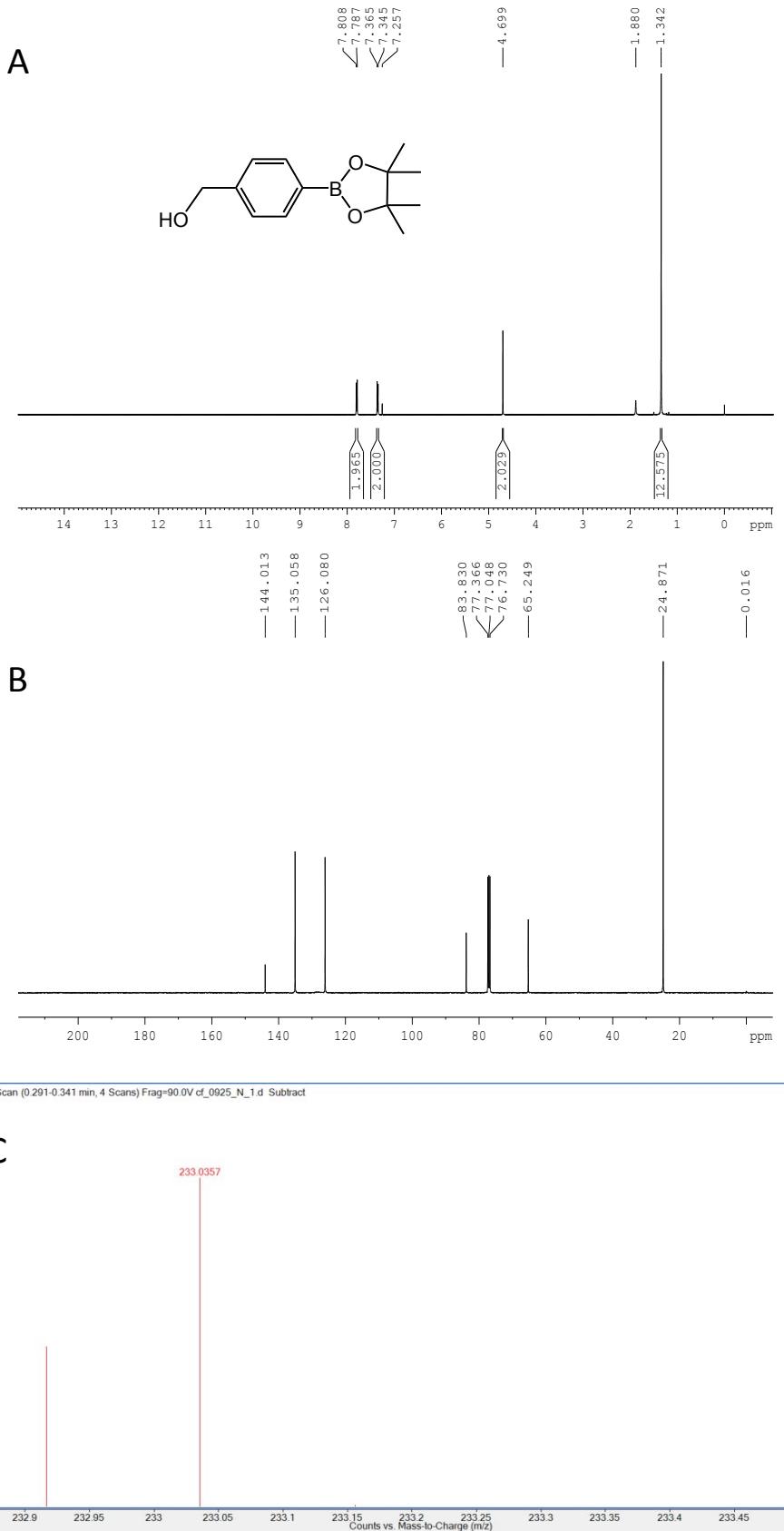


Figure S1. ^1H NMR (A), ^{13}C NMR (B) and ESI-HRMS spectra (C) of compound 2.

Compound 3: ^1H NMR (400 MHz, DMSO- d_6) δ 8.33 (d, 2H, J = 9.2 Hz), 7.73 (d, 2H, J = 8 Hz), 7.58 (d, 2H, J = 8.8 Hz), 7.48 (d, 2H, J = 8 Hz), 5.35 (s, 2H), 1.31 (s, 12H). ^{13}C NMR (100 MHz, DMSO- d_6) δ 155.53, 152.44, 145.43, 137.07, 135.21, 127.64, 125.31, 121.79, 84.01, 70.82, 24.88. HRMS-ESI (m/z): [M+H] $^+$ calcd. for $\text{C}_{20}\text{H}_{23}\text{BNO}_7$, 400.2668, found 400.2679.

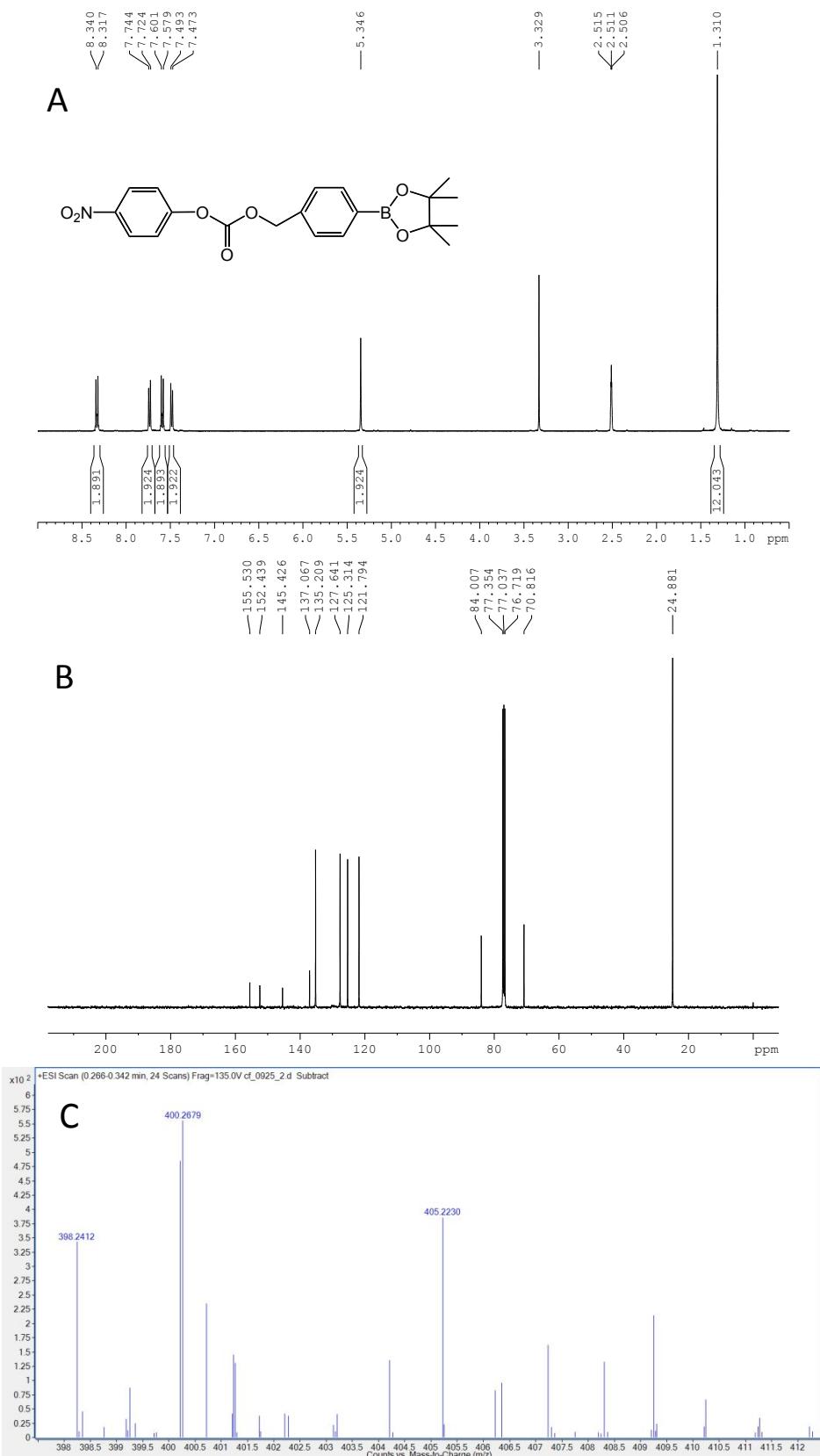


Figure S2. ^1H NMR (A), ^{13}C NMR (B) and ESI-HRMS spectra (C) of compound **3**.

The HPLC analysis of Que release

In the part of 3.4. *In vitro Drug Release Profile*, the cumulative amount of **Que** was determined by HPLC. Take the case of **Que** release with $10 \mu\text{M} \text{ H}_2\text{O}_2$ at pH 5.8. The HPLC conditions: UV-detector, $\lambda = 374 \text{ nm}$, C-18 column, eluent: 0.4% formic acid in water : methanol : acetonitrile : trifluoroacetate (20:50:25:5, v/v), flow rate: $0.8 \text{ mL}\cdot\text{min}^{-1}$). The retention time of **Que** was at 10.035 min as below.

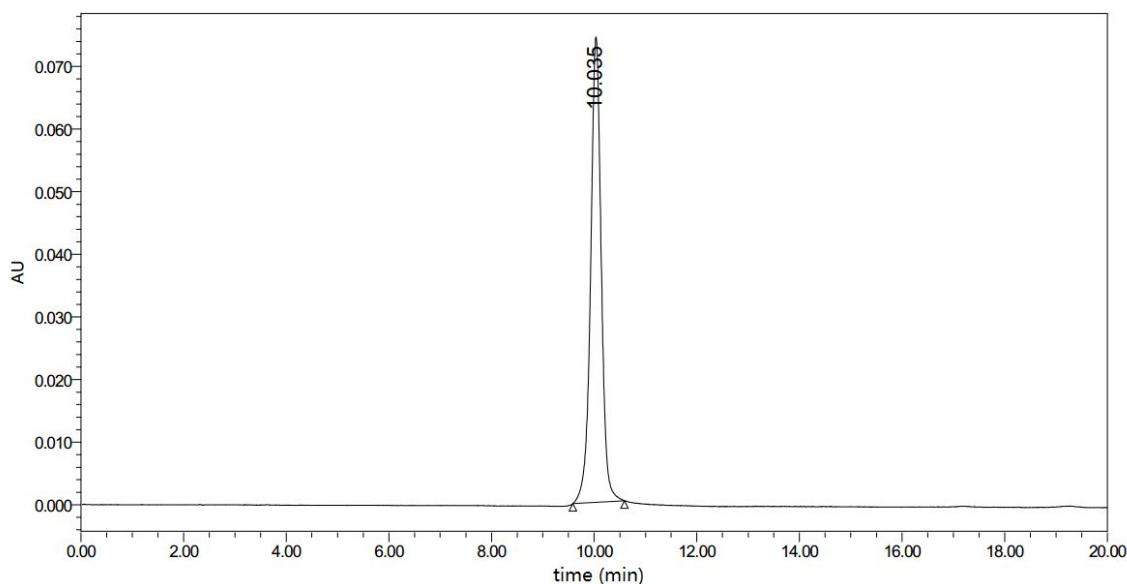


Figure S3. The HPLC analysis of **Que** release in the presence of $10 \mu\text{M} \text{ H}_2\text{O}_2$ at pH 5.8.

The drug accumulation in different tissues

Each sample ($10 \mu\text{L}$) prepared previously was injected into HPLC (Agilent ODS C-18 column, $4.6 \times 250 \text{ mm}$, $5 \mu\text{m}$ particle size), methanol/0.2% phosphoric acid = 53:47 (v/v), $1.0 \text{ mL}\cdot\text{min}^{-1}$, 25°C) for **Que** quantification. *In vivo* biodistribution of various doses of **GC-B-Que** micelles was also evaluated by quantitatively detecting the quercetin amounts in different tissues. Take the case of drug biodistribution for **GC-B-Que (M)**, HPLC analysis was given in Figure S4, and the retention times of **Que** were at 13.18-13.36 min as below.

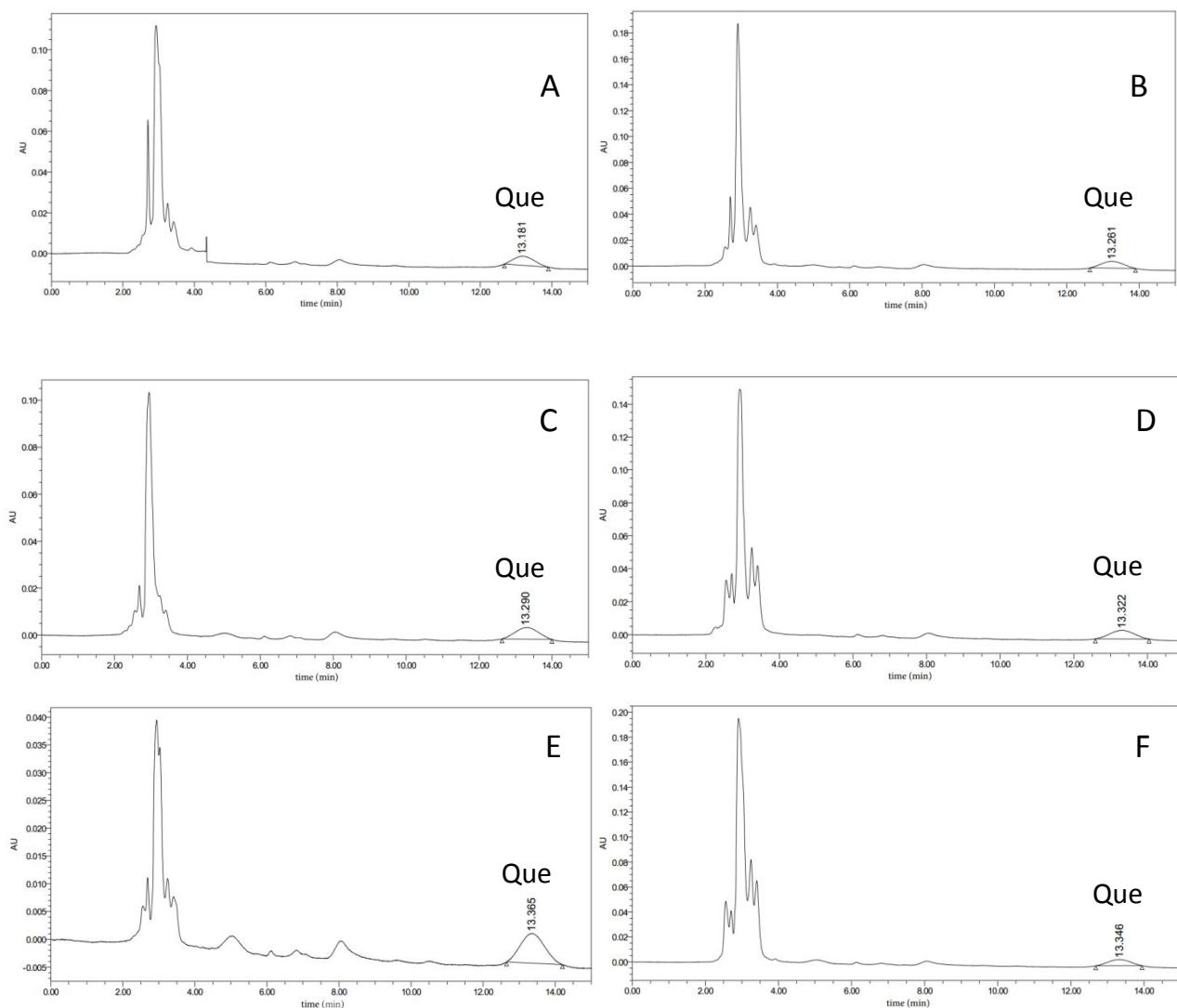


Figure S4. The drug accumulation in heart (A), liver (B), spleen (C), lung (D), colon (E) and kidney (F) of **GC-B-Que (M)** analyzed by HPLC.