

Supporting Information

Endoplasmic reticulum targeting ratiometric fluorescent probe for carboxylesterase

2 detection in drug-induced acute liver injury

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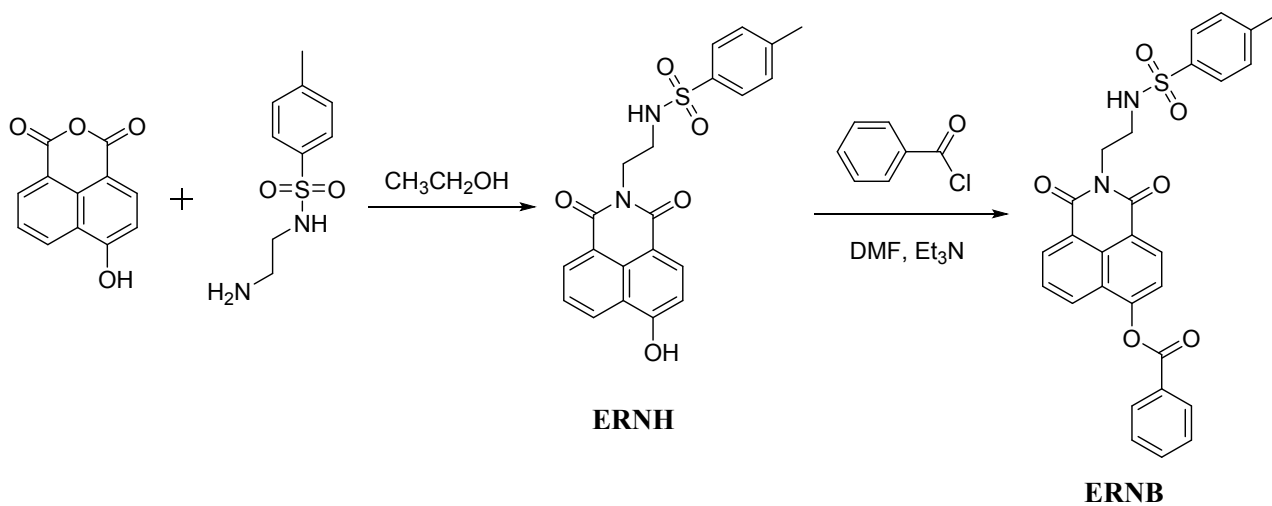


Figure S1. The synthetic route for **ERNB**.

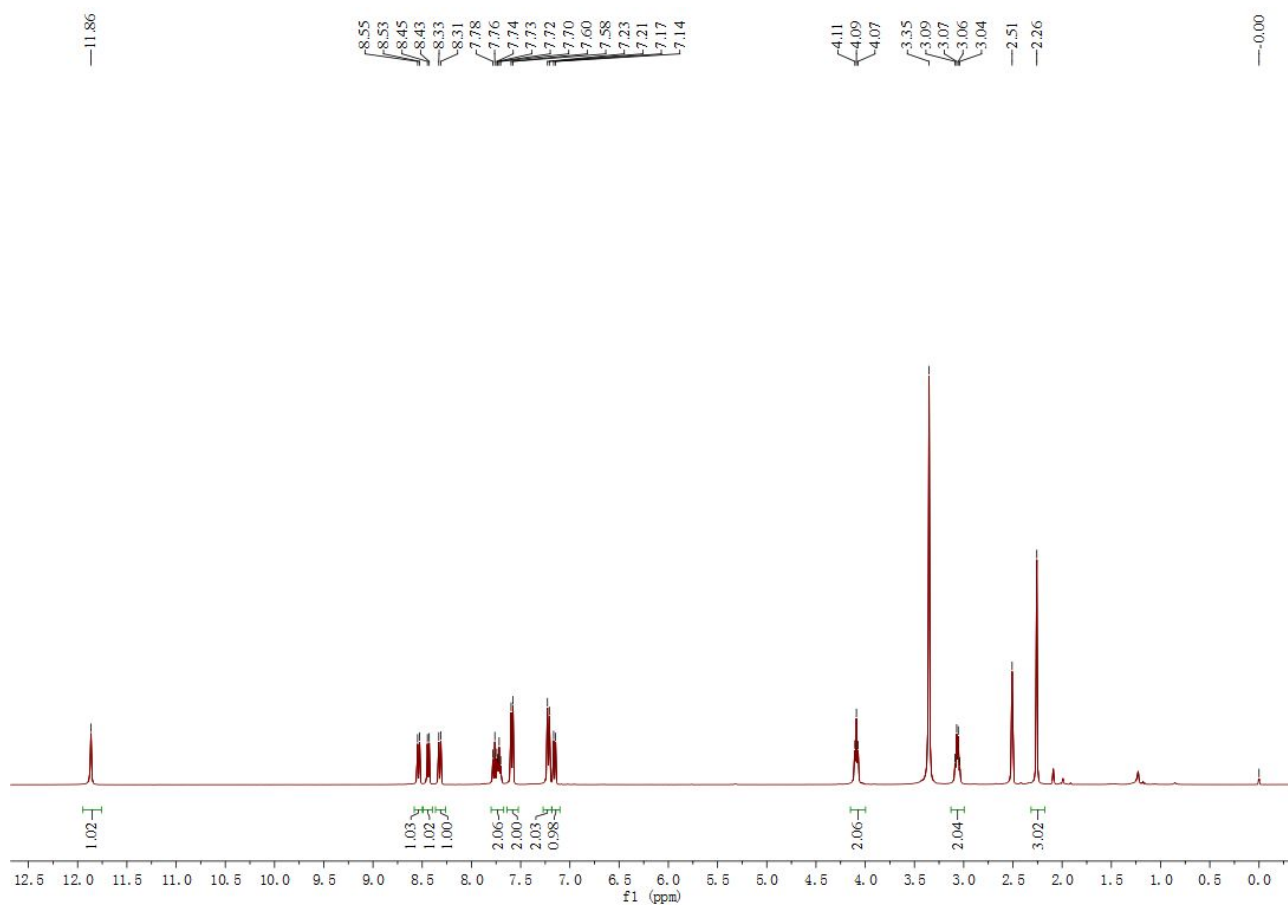


Figure S2. ^1H NMR (400 MHz, $\text{DMSO}-d_6$) spectrum of **ERNH**.

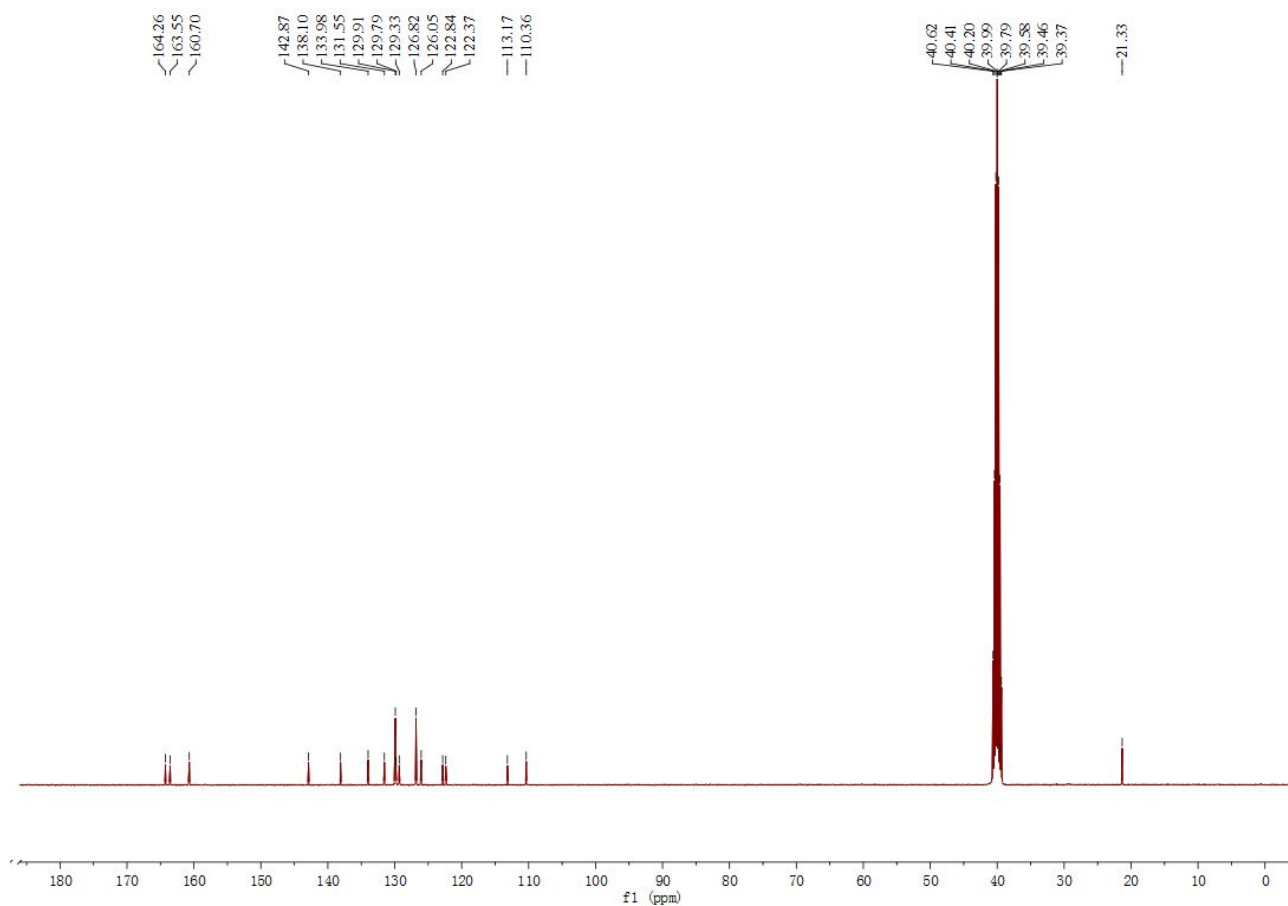


Figure S3. ^{13}C NMR (100 MHz, $\text{DMSO-}d_6$) spectrum of **ERNH**

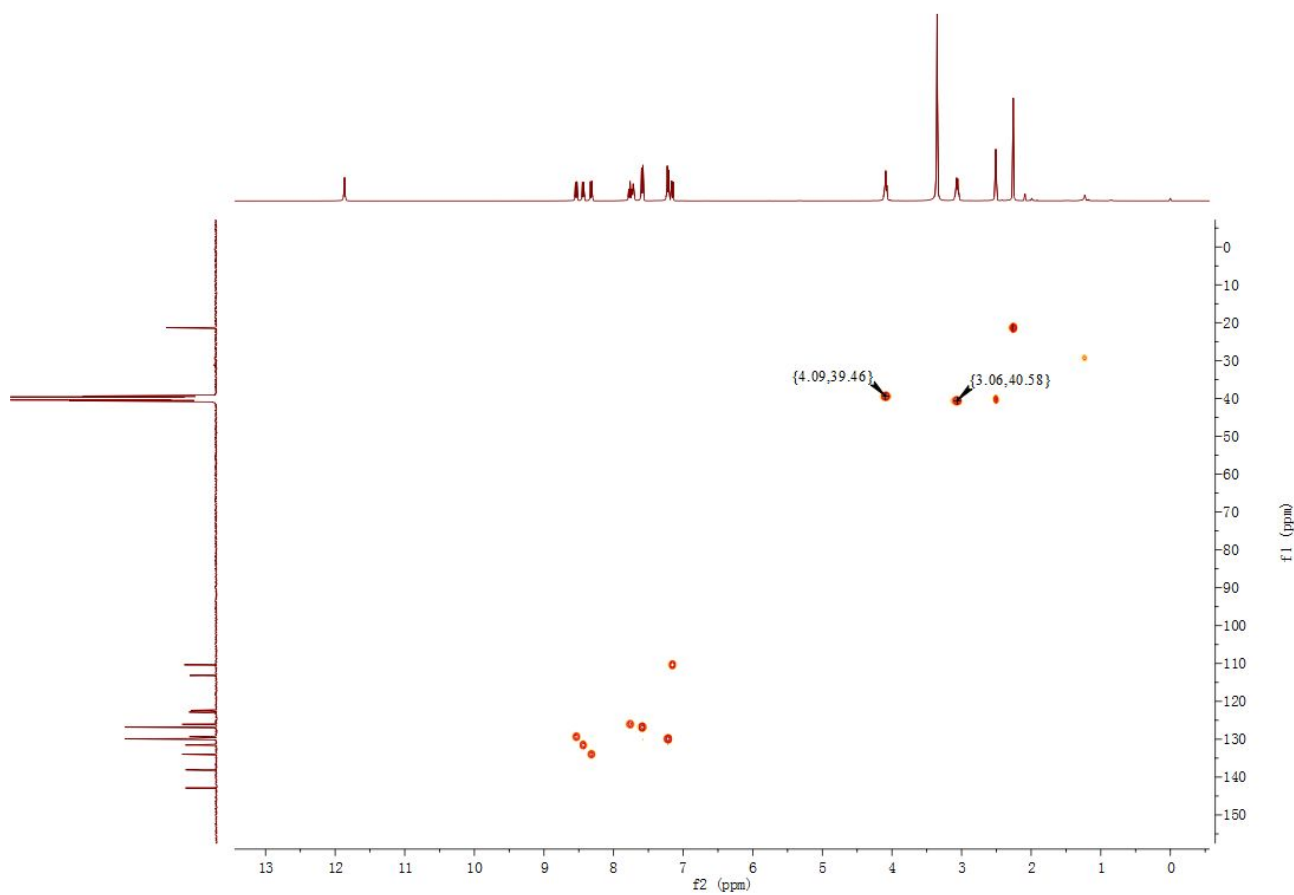


Figure S4. HSQC ($\text{DMSO-}d_6$) spectrum of **ERNH**.

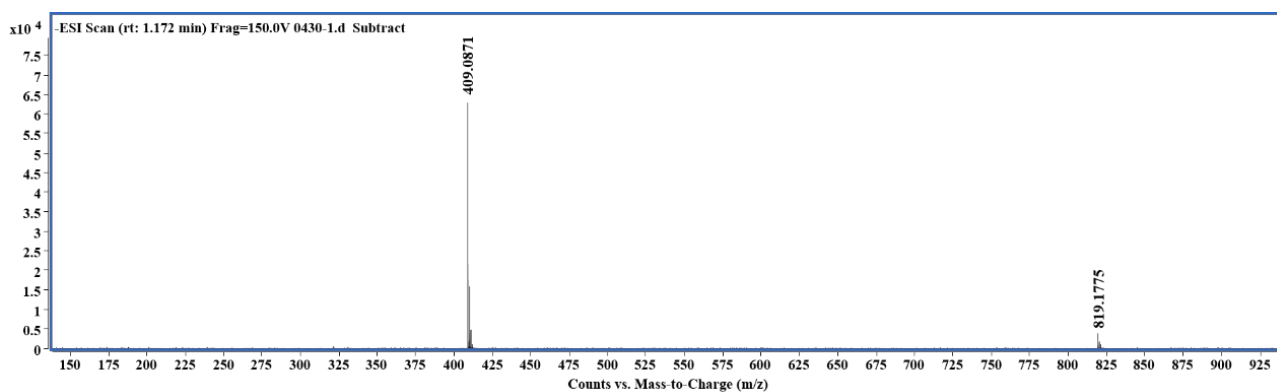
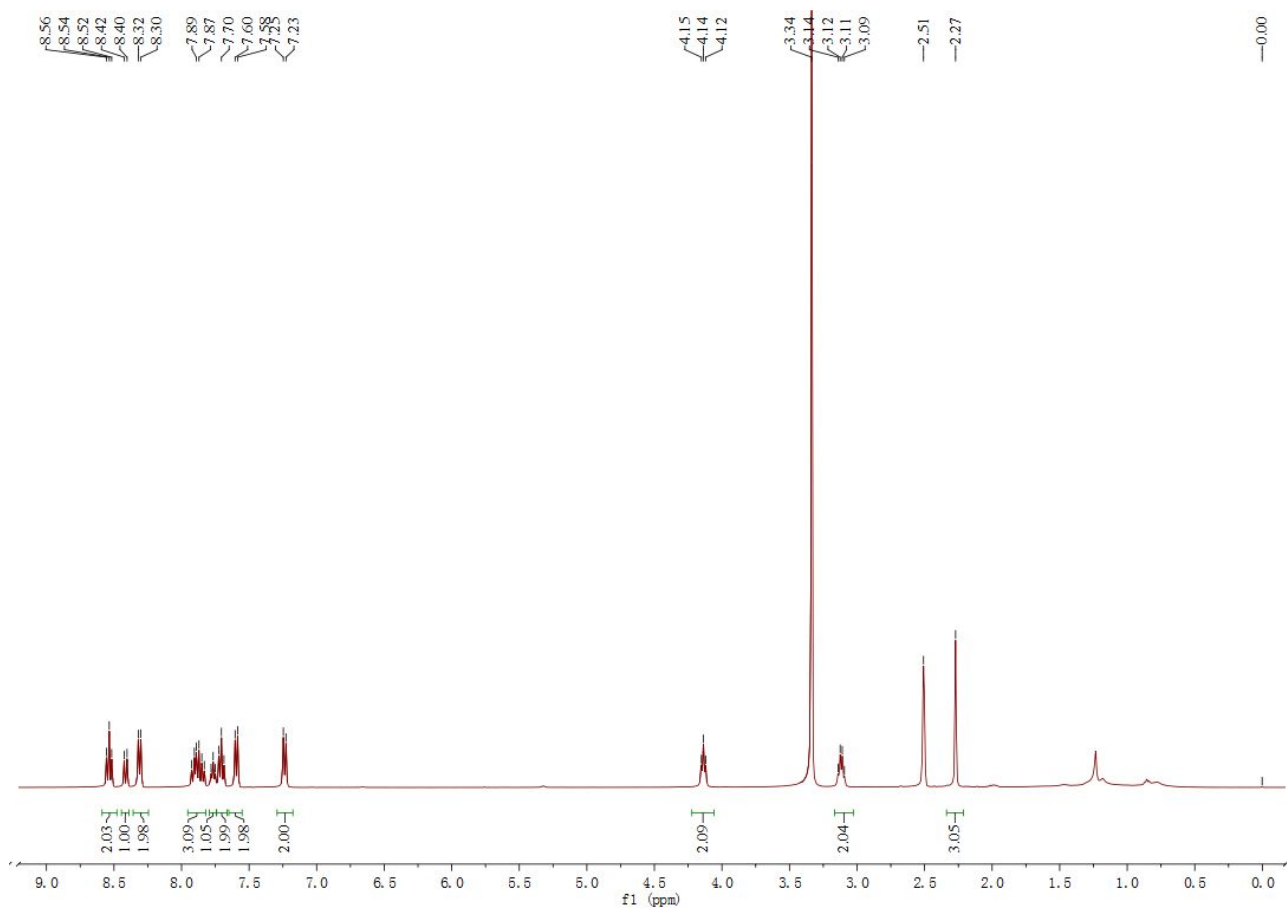
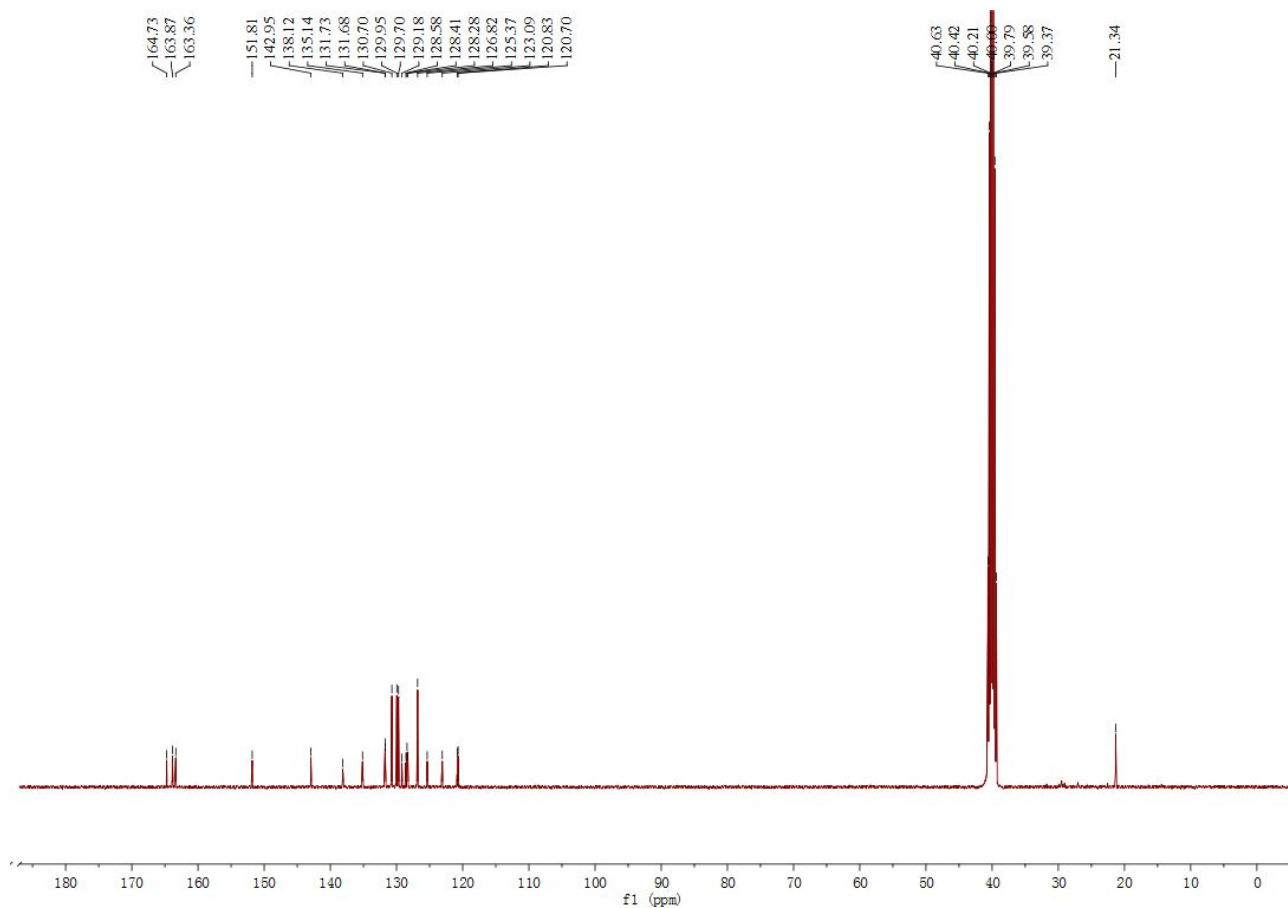


Figure S5. HRMS of ERNH.



FigureS6. ¹H NMR (400 MHz, DMSO-*d*₆) spectrum of ERNB.



FigureS7. ^{13}C NMR (100 MHz, $\text{DMSO}-d_6$) spectrum of **ERNB**.

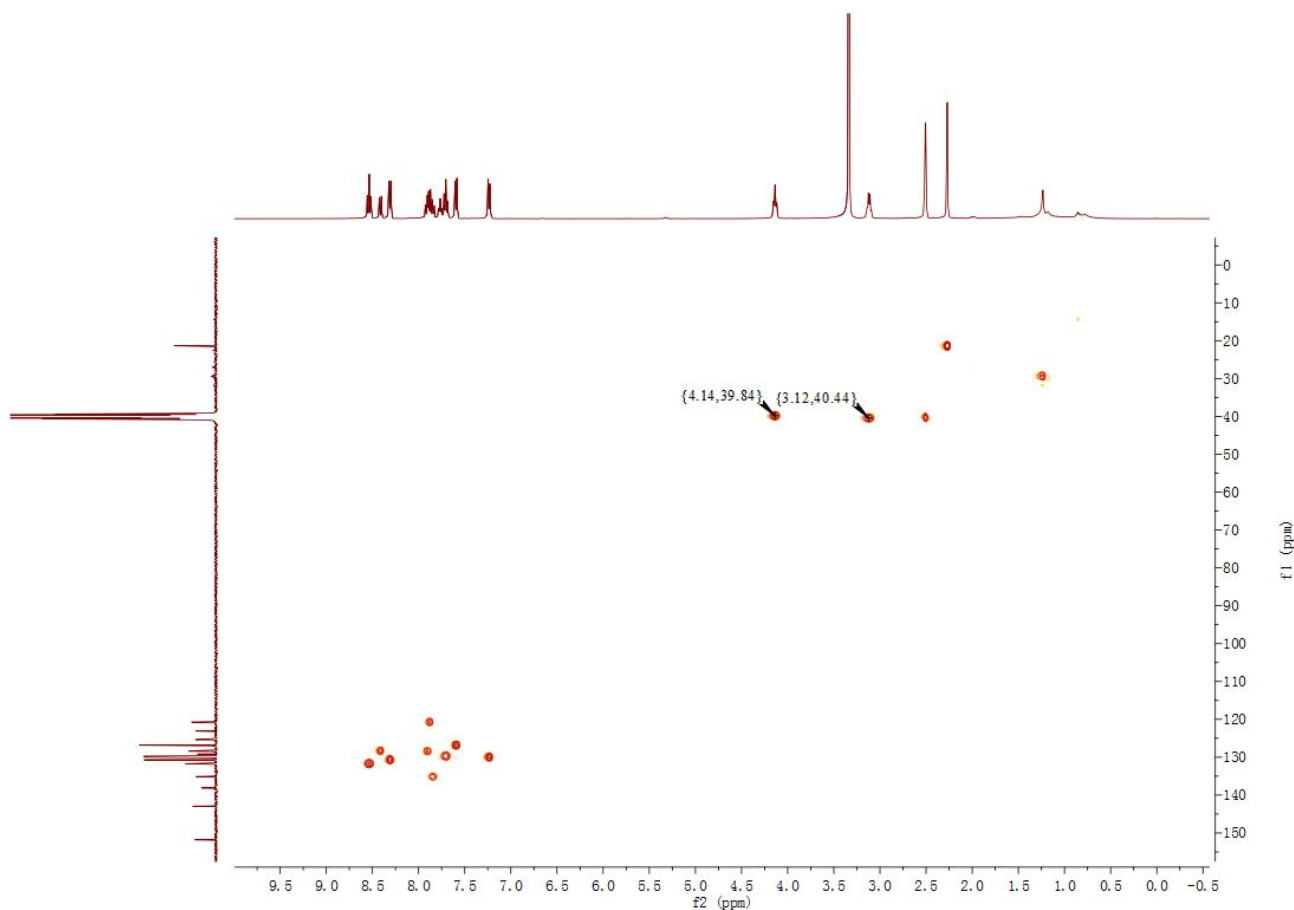


Figure S8. HSQC ($\text{DMSO}-d_6$) spectrum of **ERNB**.

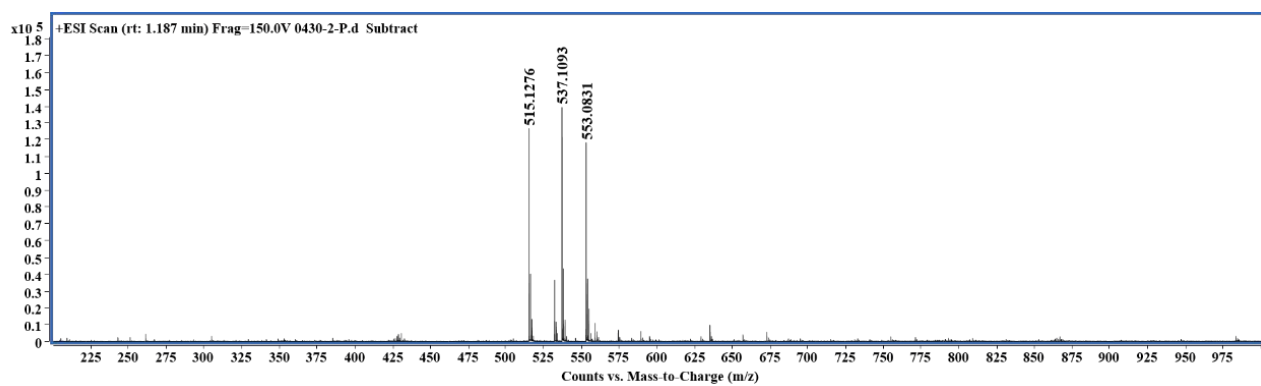


Figure S9. HRMS of ERNB.

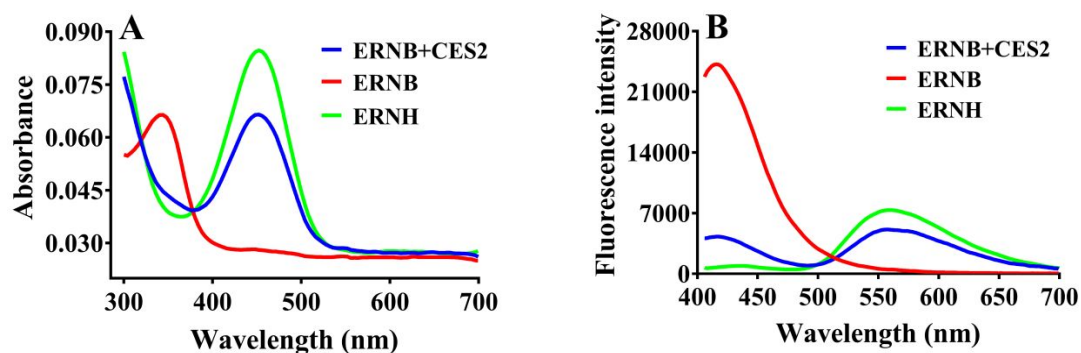


Figure S10. The absorption (A) and emission (B) spectral of **ERNB** (substrate), **ERNH** (metabolite) and the sample of **ERNB** incubated with CES2.

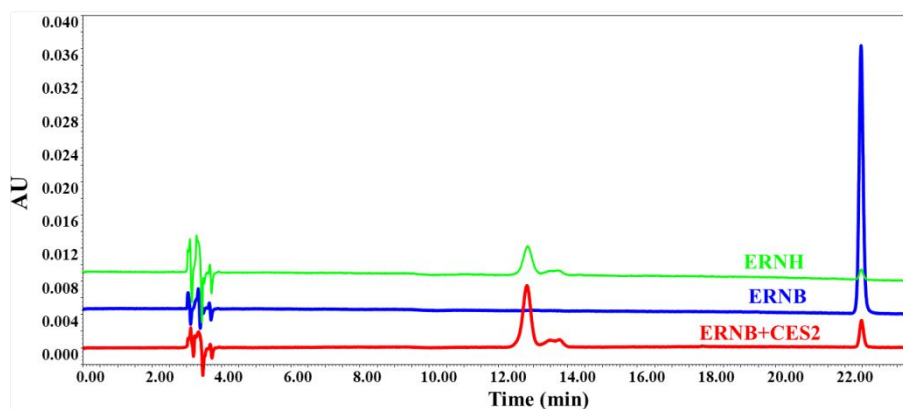


Figure S11. HPLC analysis of **ERNB**, the metabolite **ERNH** and the incubation sample of **ERNB**+CES2.

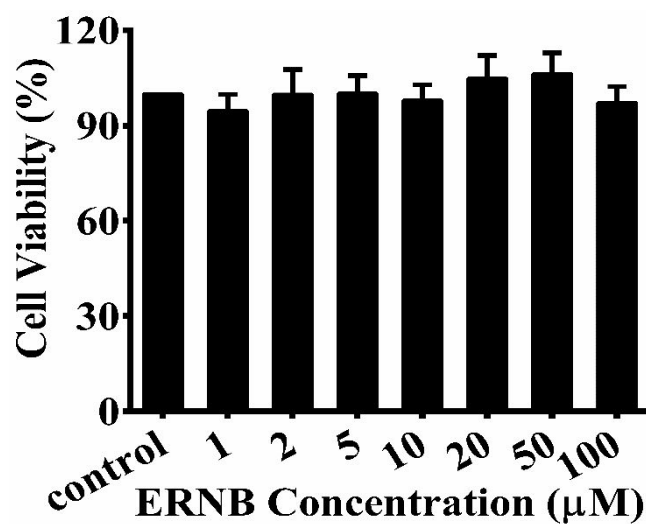


Figure S12. Cytotoxicity assay of ERNB in HepG2 cells.

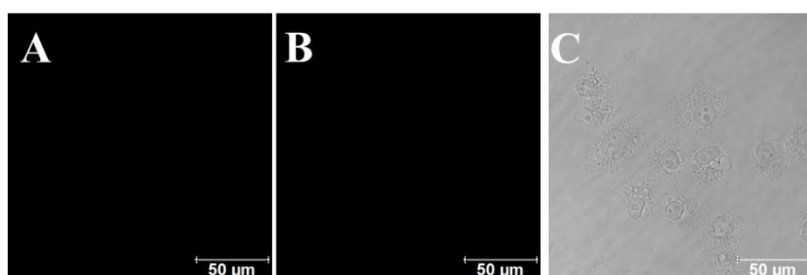


Figure S13. Different fluorescence imaging channel (A: blue, B: Green) and bright fields of HepG2 cells (C). Scale bars 50 μm.

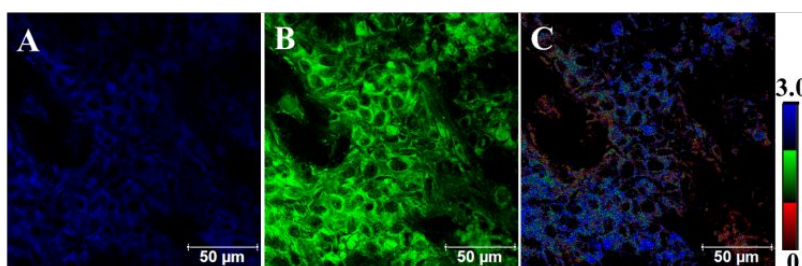


Figure S14 (A, B) The fluorescence imaging of CES2 in HepG2 tissues at different channel (Blue:425 – 475 nm; Green: 535 – 585 nm) after incubated with **ERNB** (50 μM); (C) the average $F_{\text{green}}/F_{\text{blue}}$ intensity ratios in the images. Data points represent the mean value of triplicate experiments for samples that were incubated at 37 °C for 1 h. Scale bars 50 μm.

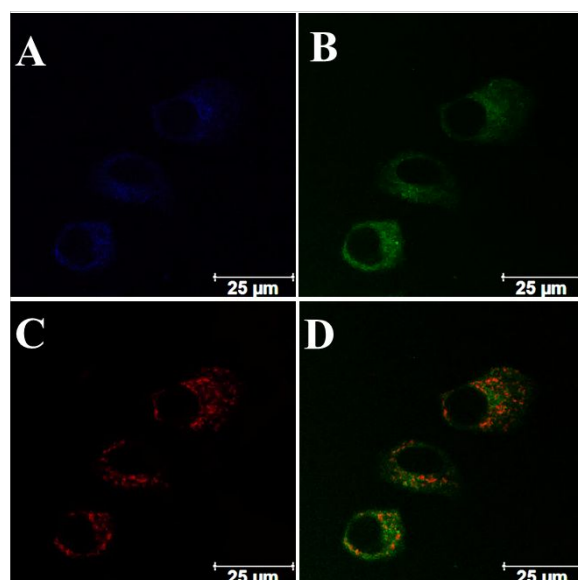


Figure S15. (A) Fluorescence images of of **ERNB** at the blue channel (425 – 475 nm); (B) fluorescence images of **ERNB** at the green channel (535 – 585 nm); (C) Mitochondria-Tracker; (D) merged fluorescence image of the green channel and Mitochondria-Tracker channel (red). Scale bars 25 μm.

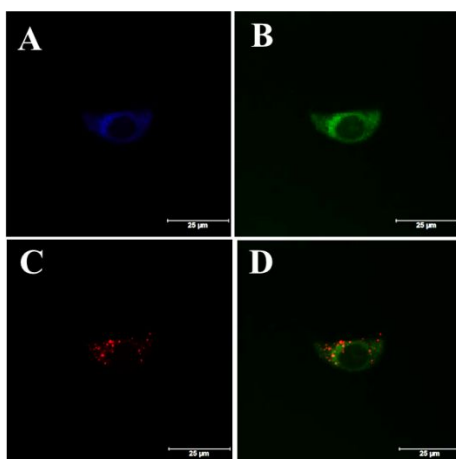


Figure S16. (A) Fluorescence images of of **ERNB** at the blue channel (425– 475 nm); (B) fluorescence images of of **ERNB** at the green channel (535 – 585 nm); (C) Lysosomes-Tracker; (D) merged fluorescence image of the green channel and Lysosomes -Tracker channel (red). Scale bars 25 μm.

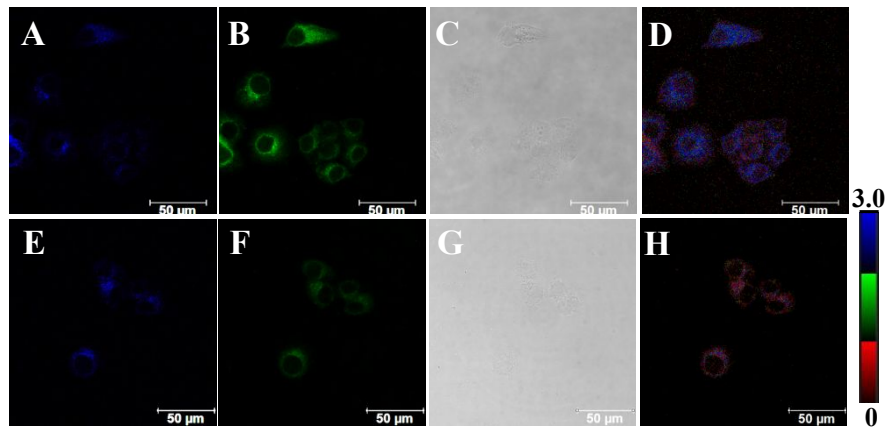


Figure S17 (A, B) The fluorescence imaging of HepG2 cell after incubating with **ERNB** at 37 °C for 1 h; (E,F) the imaging of CES2 after induced by tunicamycin (20 μg/mL) for 5 h; (C, G) the bright field of HepG2 cells; (D, H) the average $F_{\text{green}}/F_{\text{blue}}$ intensity ratios in the images. Scale bar is 50 μm.

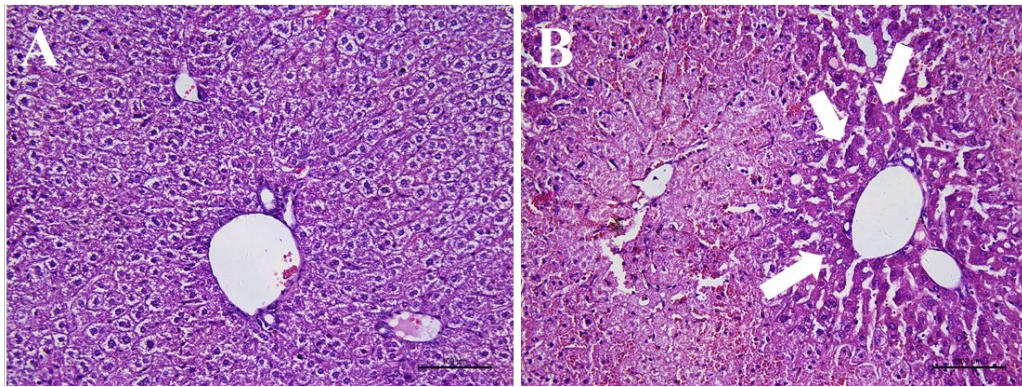


Figure S18. The Hematoxylin-Eosin staining of paraffin section for liver tissues in normal (A) and (B) APAP-induced acute liver injury group. Scale bar is 100 μm.