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A targetable fluorescent probe for detecting mitochondrial viscosity in live cells by fluorescence lifetime imaging

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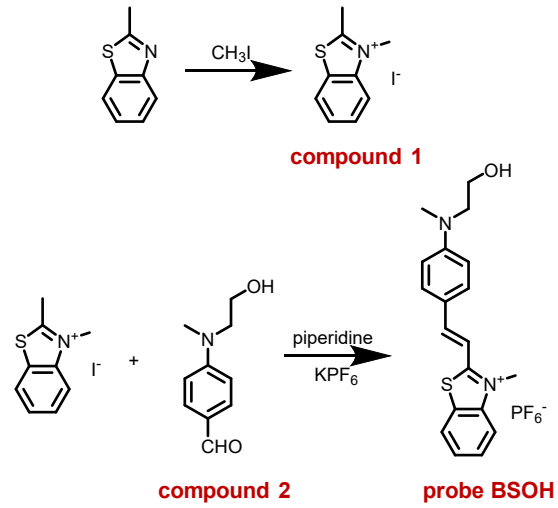

Figure S1. The synthetic rout of BSOH

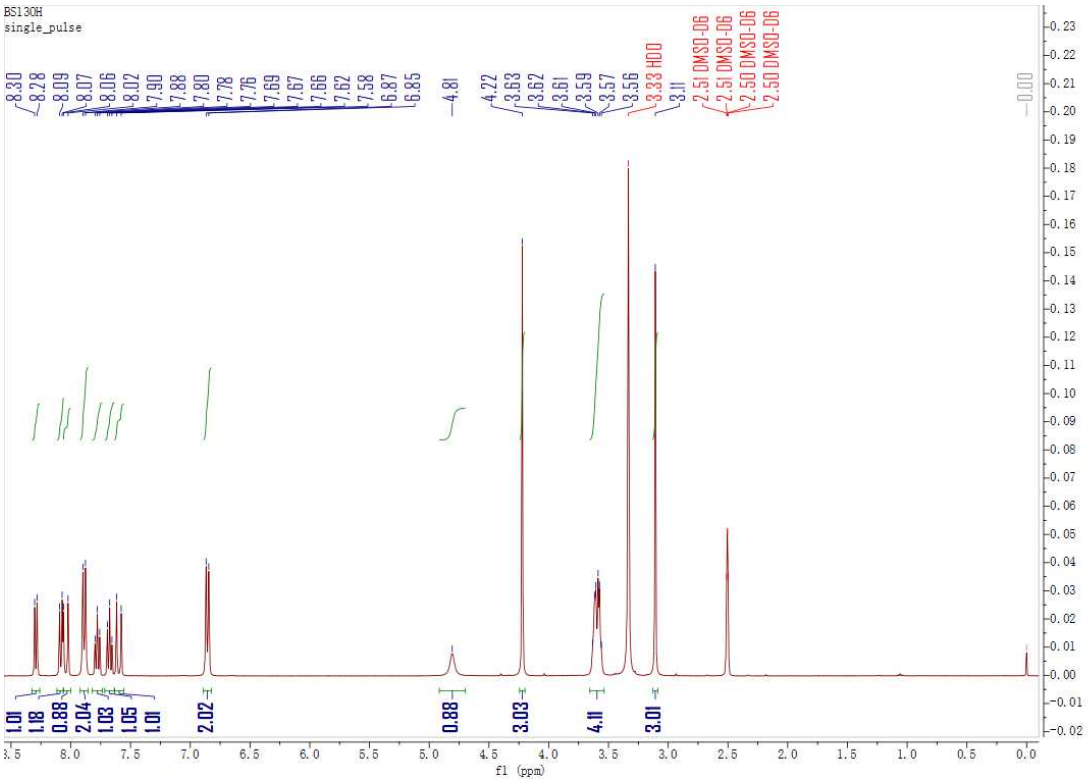

Figure S2. ^{1}H-NMR spectrum of BSOH in d_6-DMSO.

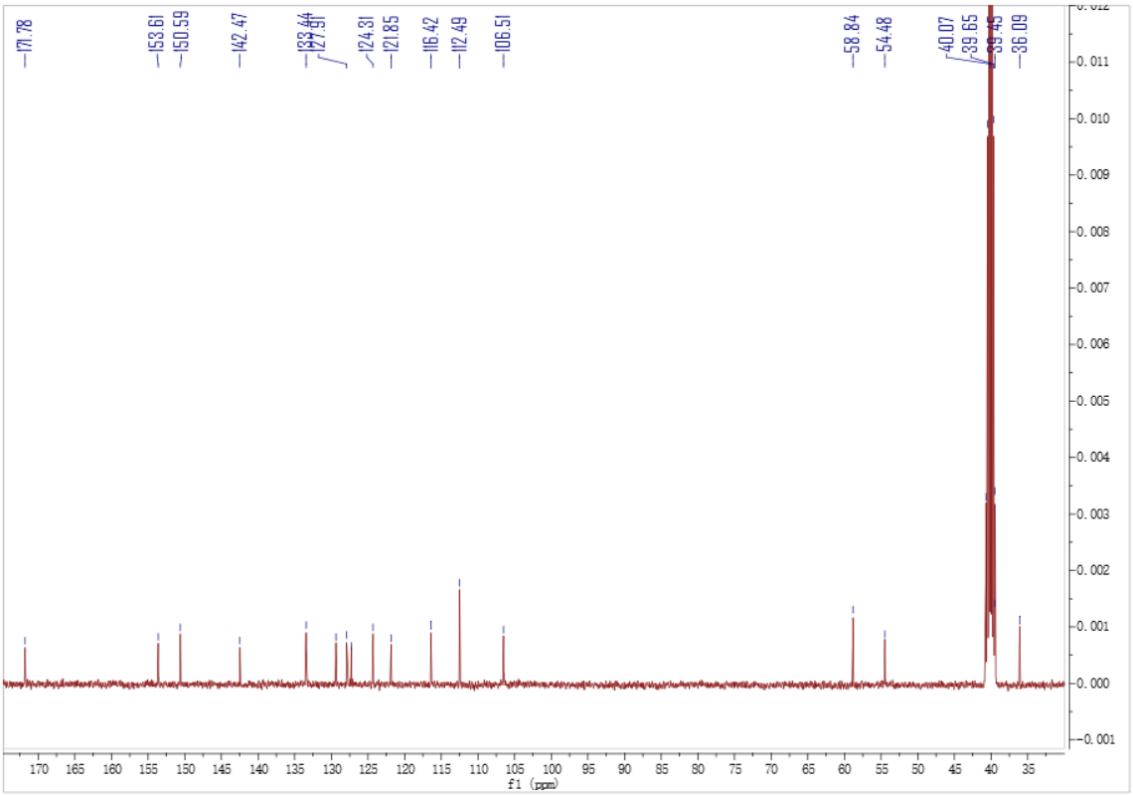

Figure S3. ^{13}C-NMR spectrum of BSOH in d_6-DMSO.

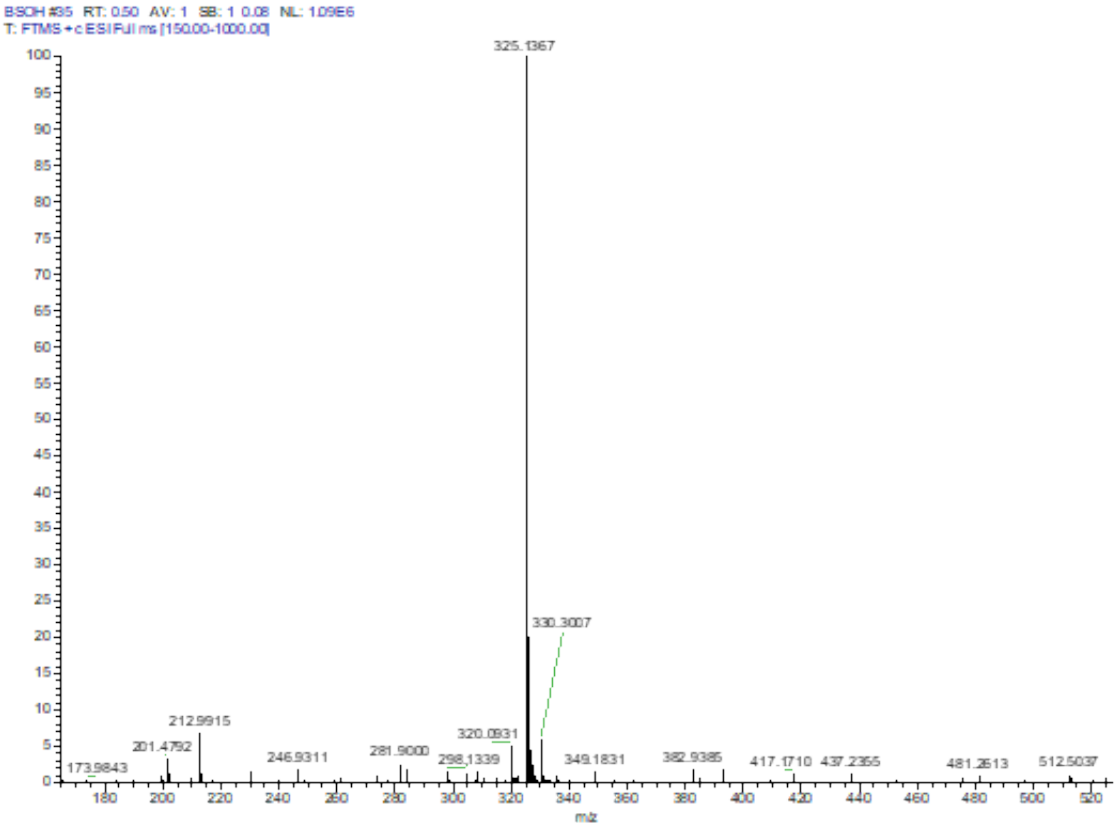

Figure S4. HR-MS Spectrum of BSOH.

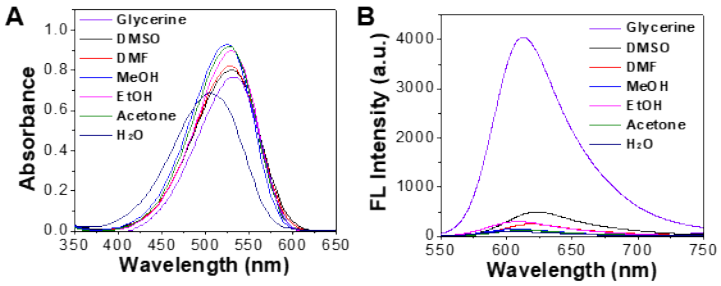

Figure S5. The UV-vis absorption and fluorescence emission spectra of BSOH in different solvents.

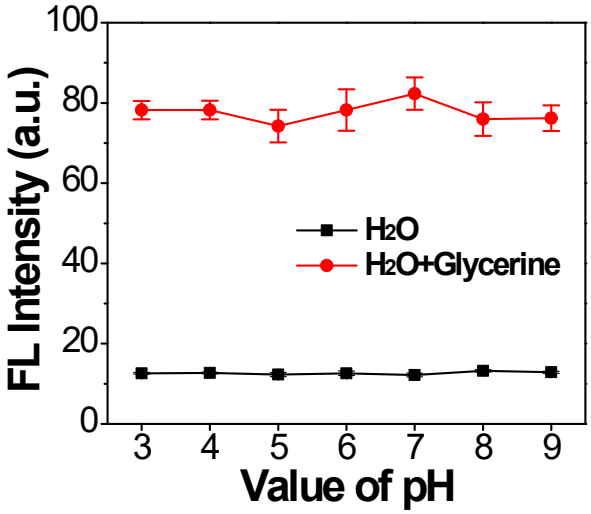

Figure S6. Fluorescence emission intensity at 610 nm of probe BSOH (10 μM) in different pH of water and water with 50% volume of glycerine under the excitation of 510 nm. The error bars represent 3 tests.

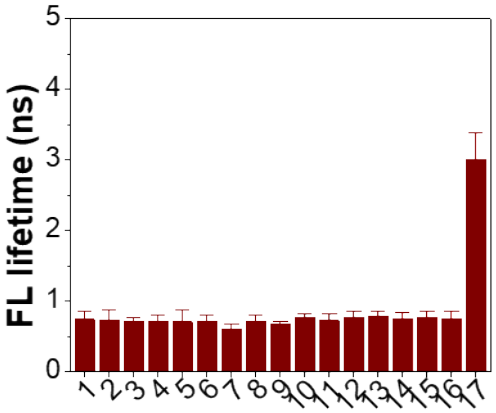

Figure S7. The fluorescence lifetime selectivity of BSOH (10 μM in PBS) towards various analytes: (1) blank, (2) Na^+, (3) K^+, (4) Mg^{2+}, (5) Ca^{2+}, (6) SO_4^{2-}, (7) SO_3^{2-}, (8) HPO_4^{2-}, (9) H_2S, (10) HClO, (11) H_2O_2, (12) Zn^{2+}, (13) Cu^{2+}, (14) Fe^{2+}, (15) lysine, (16) glutathione, (17) glycerol. The sample concentrations are 100 μM, except samples 15,16 (0.025 mg/mL),17 (10 mg/mL).

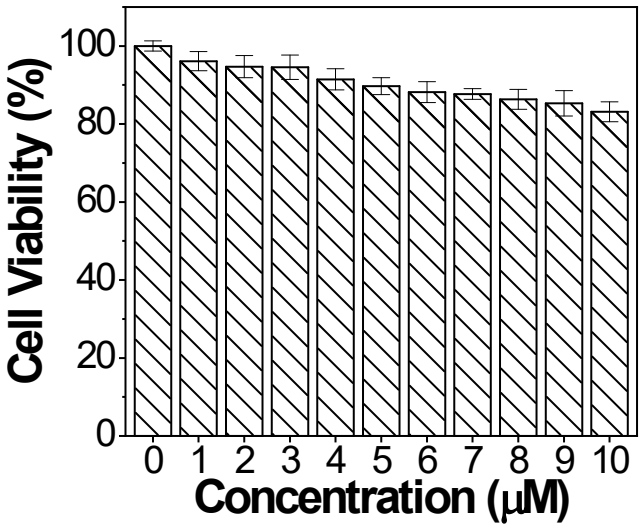

Figure S8. Hep G2 cells viability in the presence of BSOH measured by the MTT assay. The error bars represent the mean errors from 6 measurements.

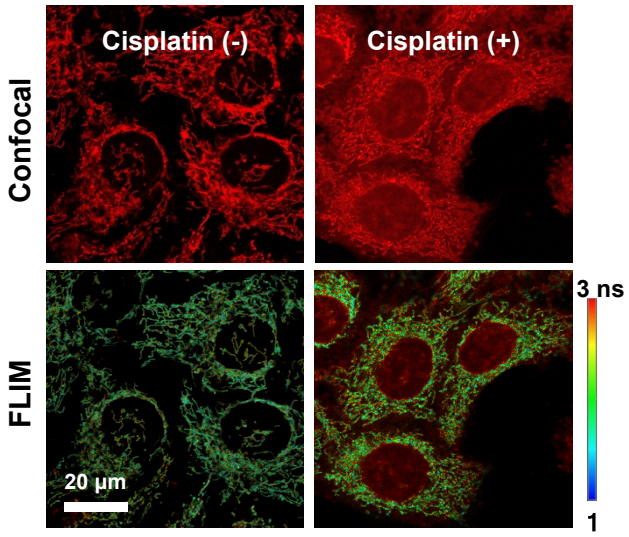

Figure S9. The confocal and FLIM imaging of BSOH treated without/with cisplatin under the same test condition.

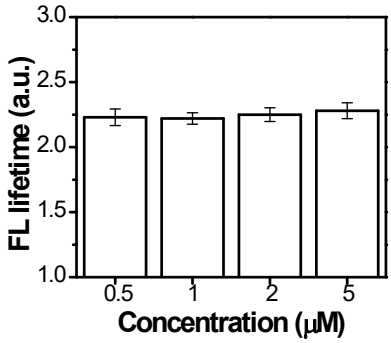

Figure S10. The fluorescence lifetime statistics of different concentrations of BSOH (0.5, 1, 2, 5 μM) in Hep G2 cells.

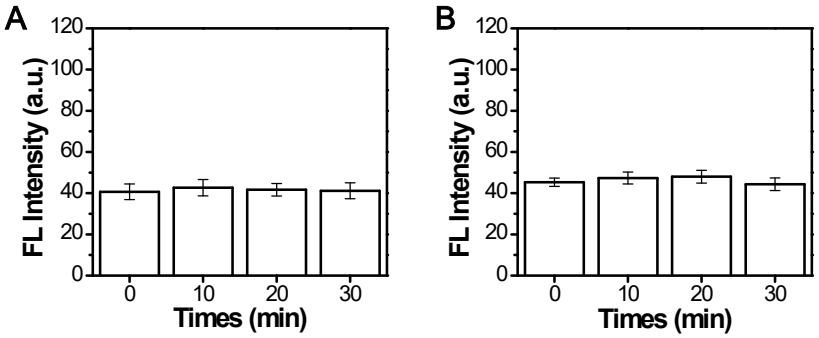

Figure S11. (A) Statistical diagram of fluorescence intensity at BSOH (2 μM) concentration after treating Hep G2 cells with nystatin (10 μM) for 0 to 30 minutes. (B) Statistical diagram of fluorescence intensity at BSOH (2 μM) concentration after treating Hep G2 cells with etoposide (10 μM) for 0 to 30 minutes.

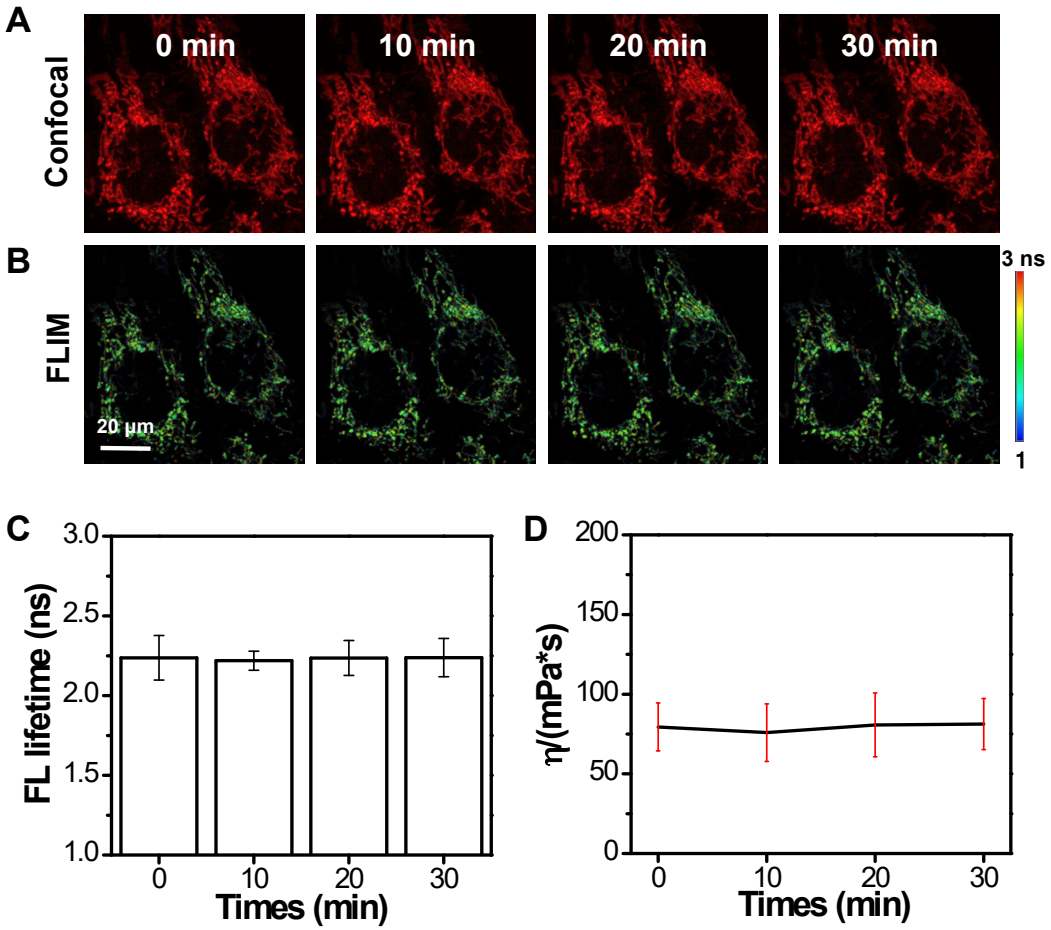

Figure S12. (A) real-time confocal fluorescence imaging of BSOH (2 μM) for 0-30 min in Hep G2 cells. (B) Fluorescence lifetime imaging in the corresponding images of (A). (C) The fluorescence lifetime of mitochondria according to the (A). The error bars represent the standard deviation (±SD).