Electronic Supporting Information

for

Self-assembling Conjugate of SN38 with Aminoguanidine for Simultaneous Suppression of Breast Cancer Cell Growth and Migration.

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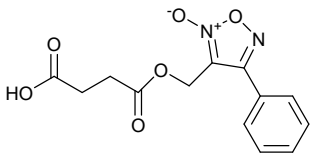
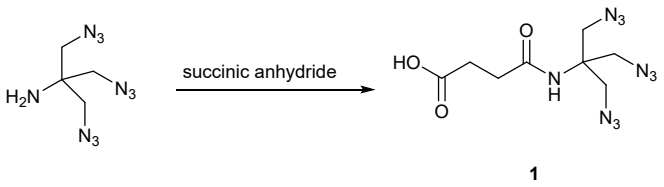


Scheme S1. The structure of nitric oxide donor

Synthesis of compound 1: firstly, 1,3-diazido-2-(azidomethyl) propan-2-amine was synthesized as described in the literatures. Then 1,3-diazido-2-(azidomethyl) propan-2-amine (3.14 g, 16 mmol) and succinic anhydride (1.6 g, 16 mmol) was dissolved in 50 mL CH_2Cl_2 and stirred over night at room temperature. Then the reaction solution was washed with water three times and dried with anhydrous sodium sulfate. After removel of CH_2Cl_2 in vacuum, compound 1, a white solid, was obtained with the yield of 91%.^{1}H-NMR (300 MHz, Chloroform-*d*) δ 5.91 (s, 1H), 3.70 (s, 6H), 2.71 (t, J=6.6Hz, 2H), 2.52 (t, J=6.6Hz, 2H).



Scheme S2. Synthetic route of compound 1

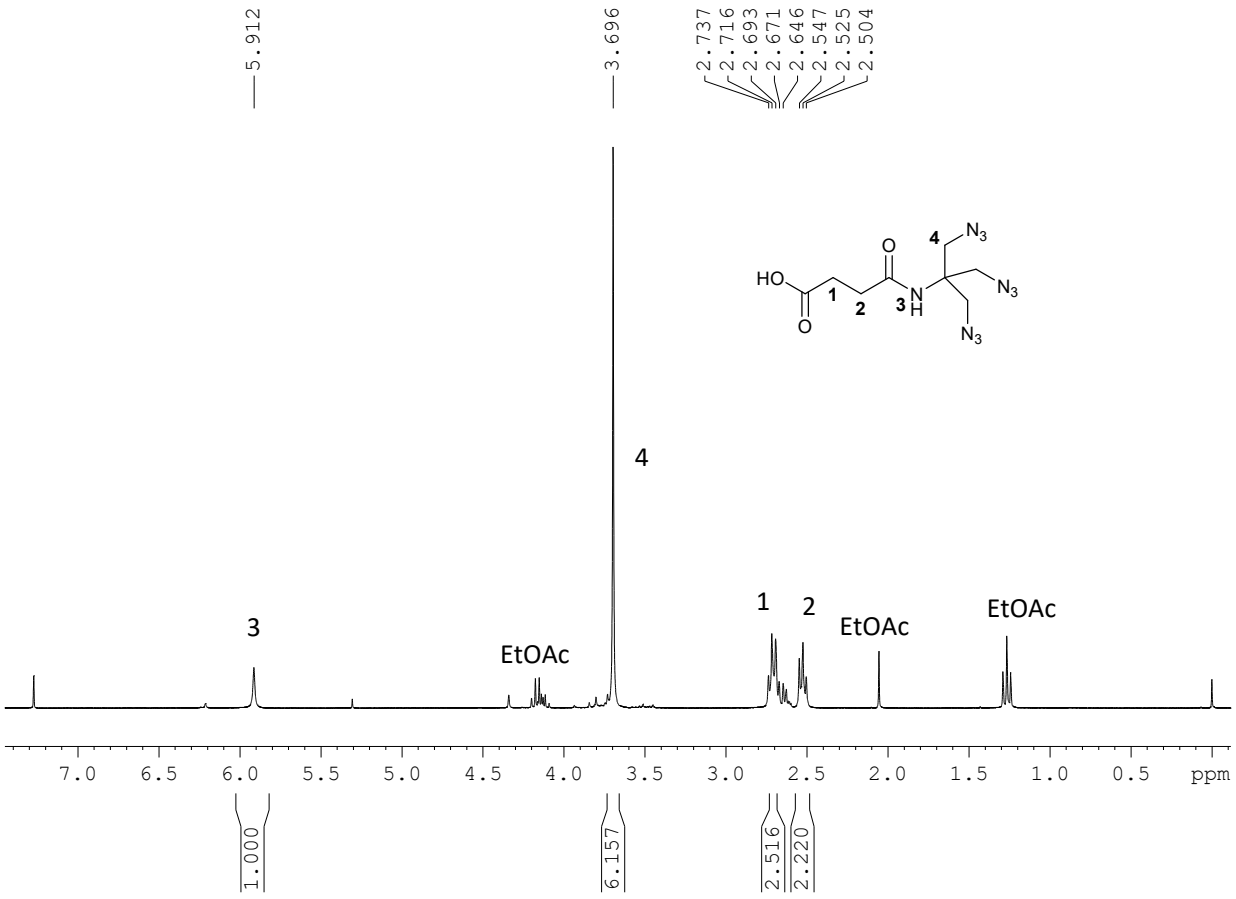


Figure S1. ^{1}H NMR spectrum of compound **1** (300 MHz, Chloroform-*d*)

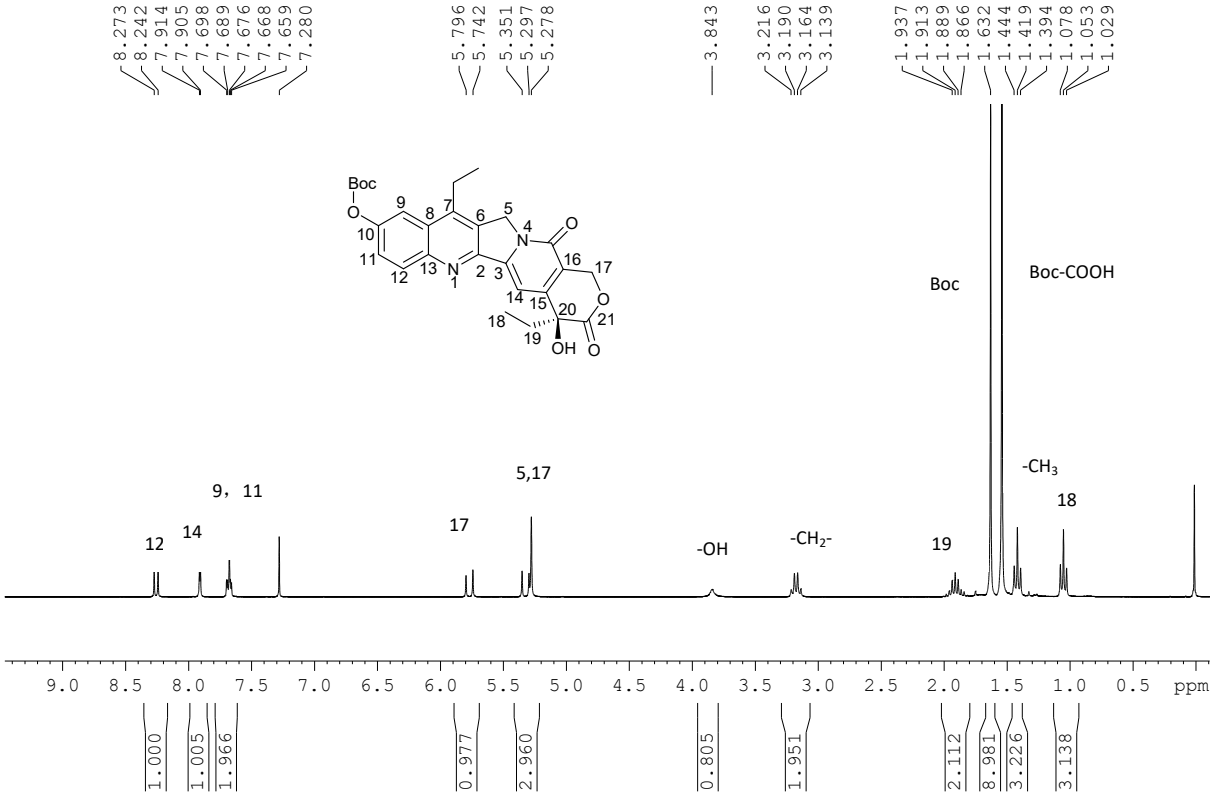


Figure S2. [1]H NMR spectrum of compound **2** (300 MHz, Chloroform-*d*)

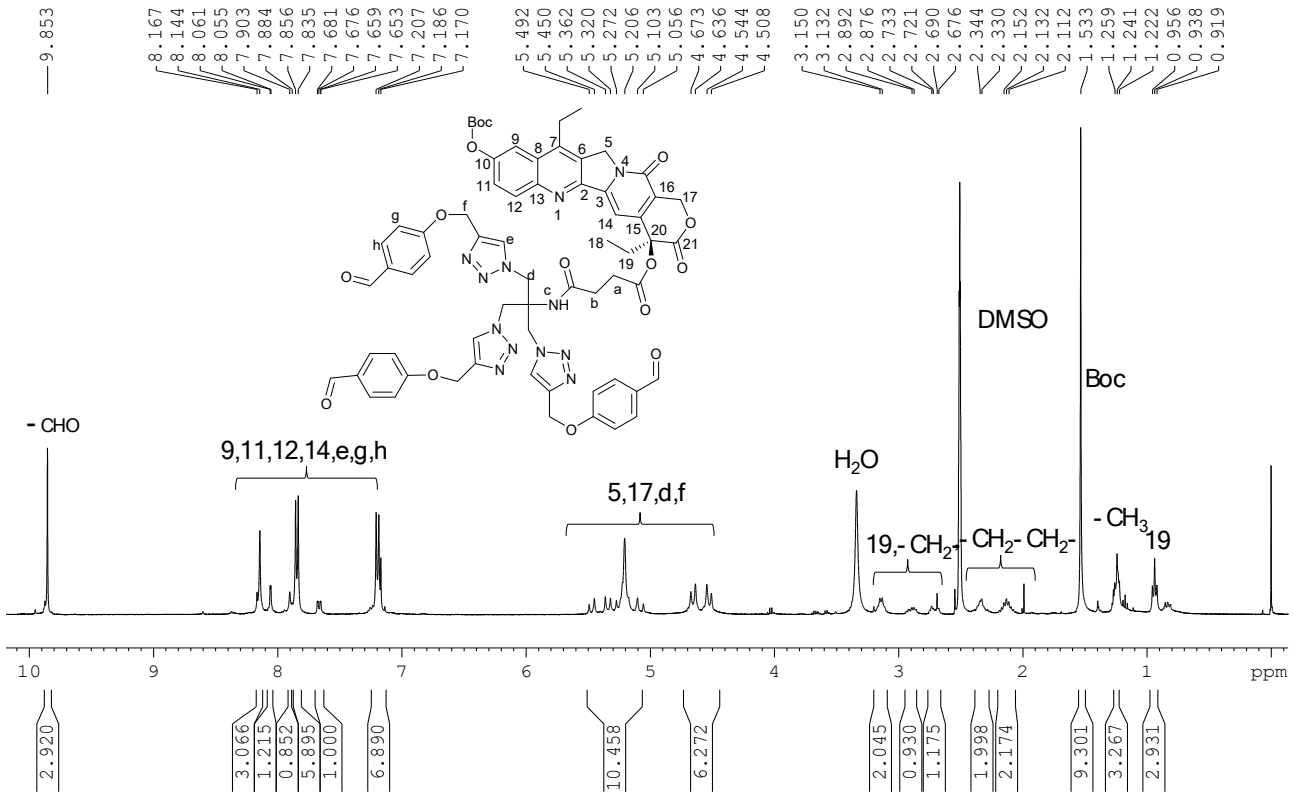


Figure S3. [1]H NMR spectrum of compound **4** (400 MHz, DMSO-d_6)

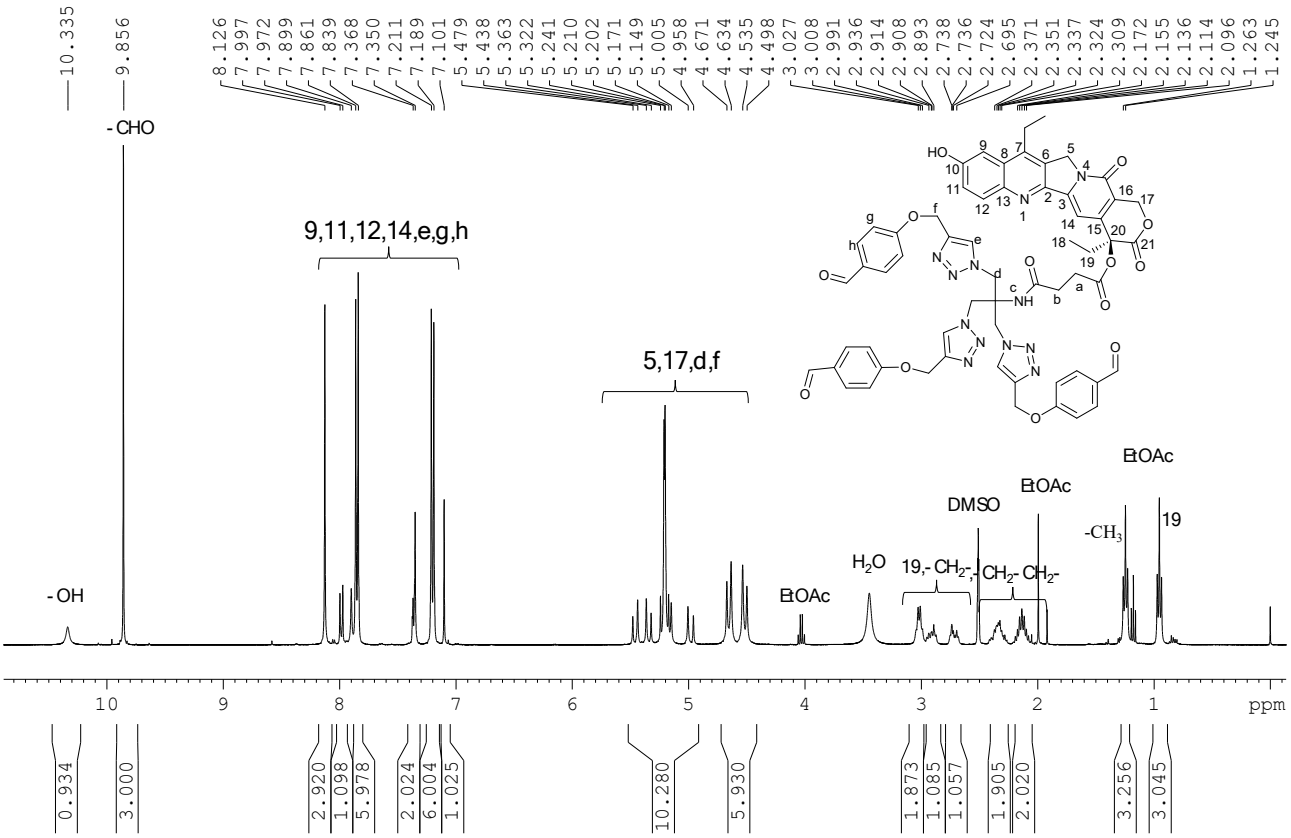


Figure S4. [1]H NMR spectrum of compound **5** (400 MHz, DMSO-d_6)

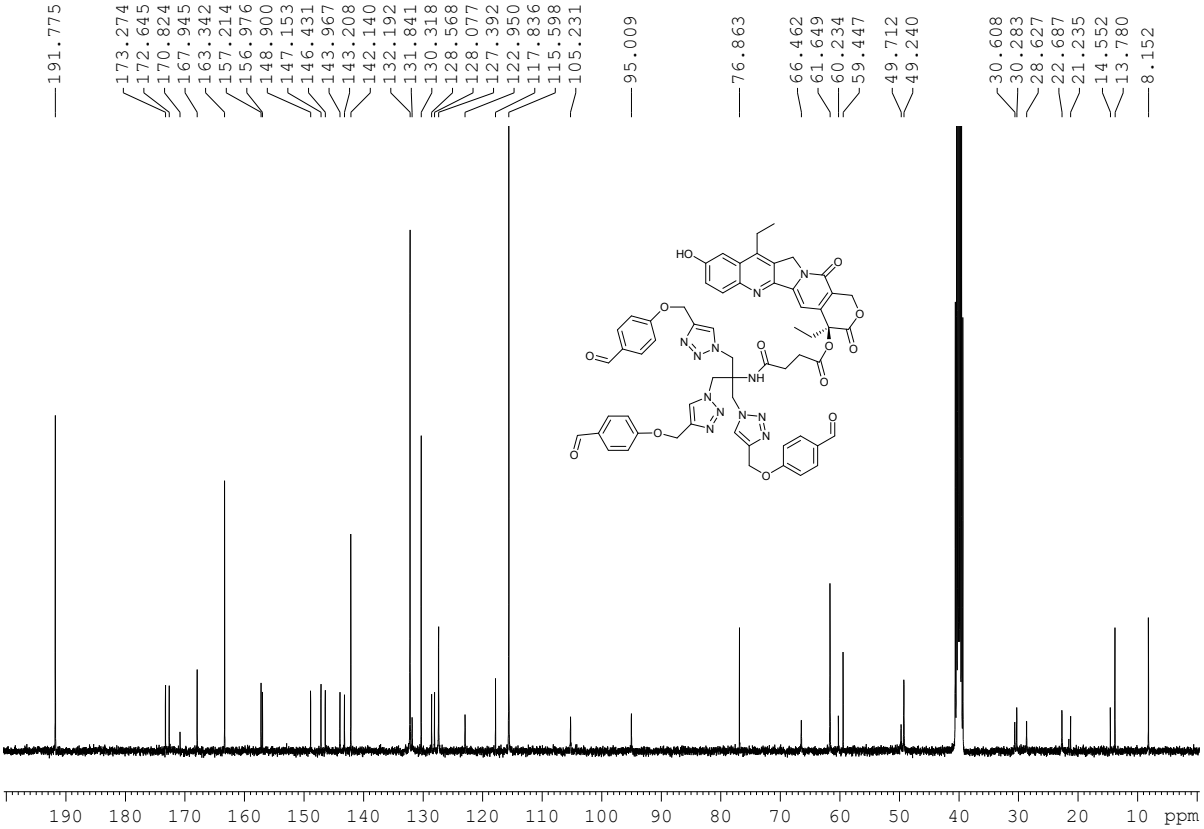


Figure S5. [13]C NMR spectrum of compound **5** (101MHz, DMSO-d_6)

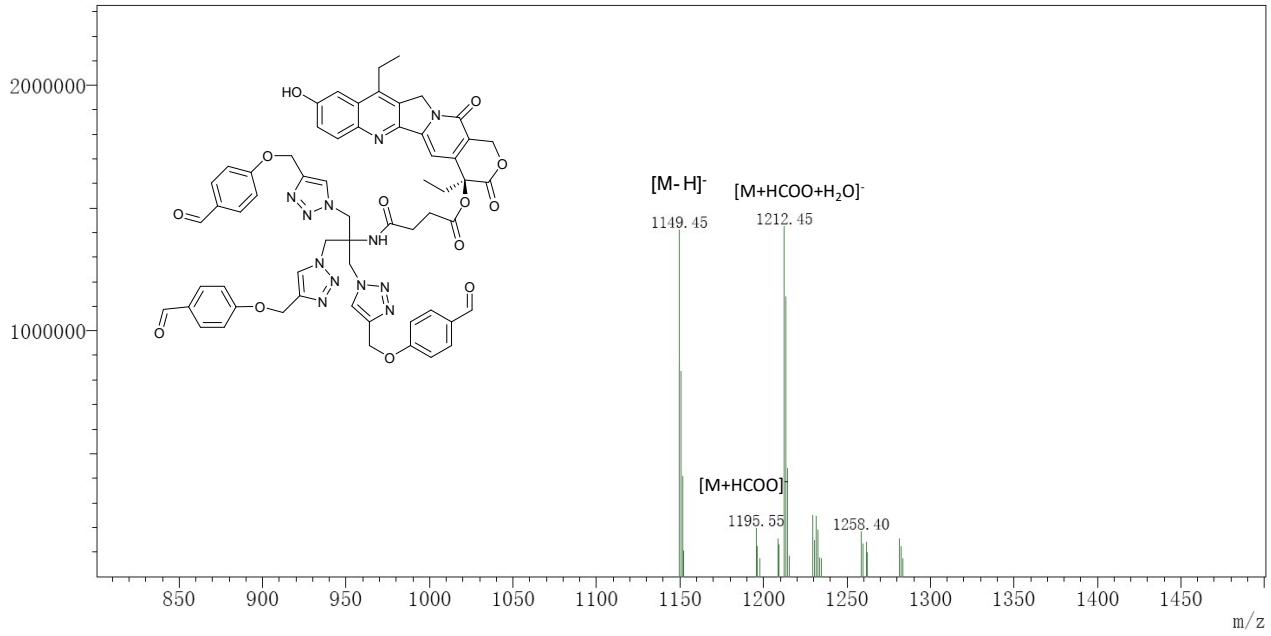


Figure S6. ESI-MS spectrum of compound **5**

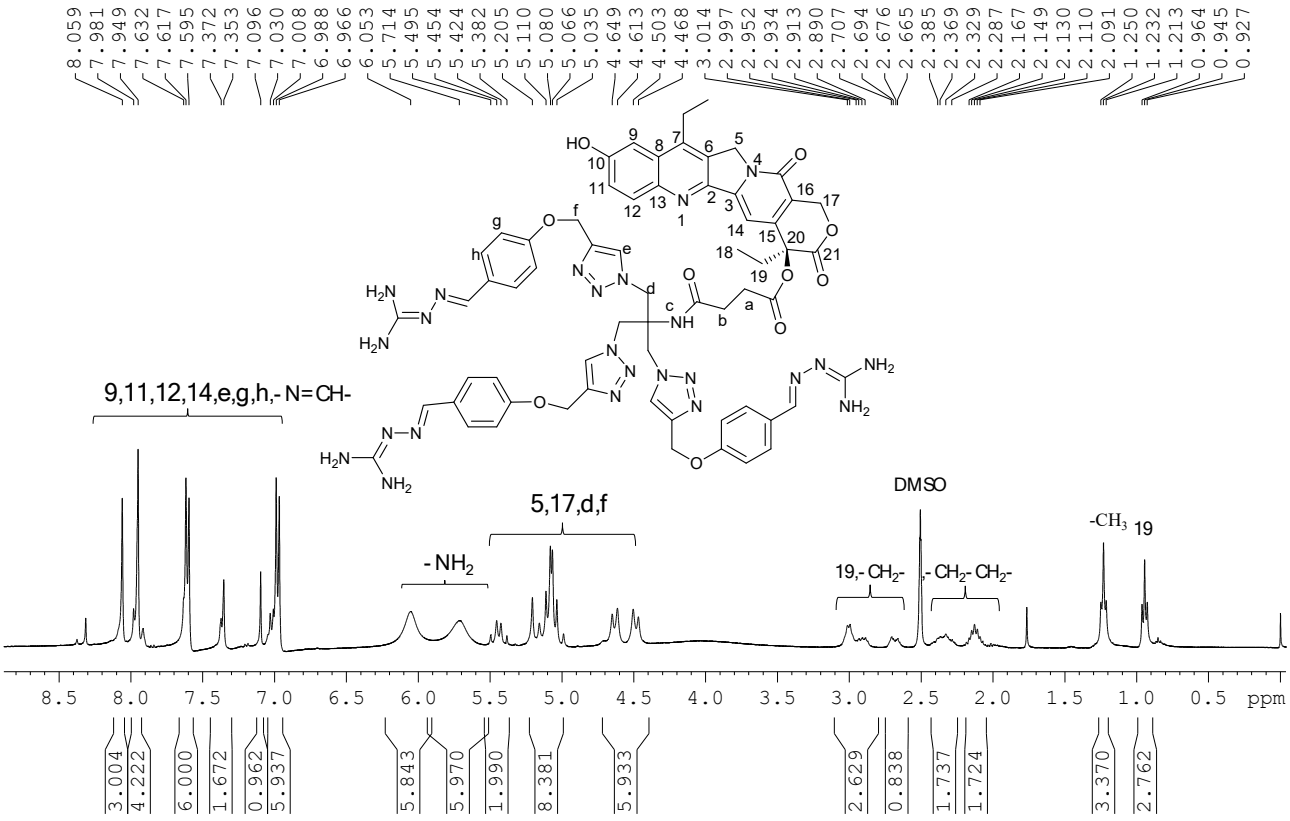


Figure S7. ^{1}H NMR spectrum of compound **6** (400 MHz, DMSO-d_6)

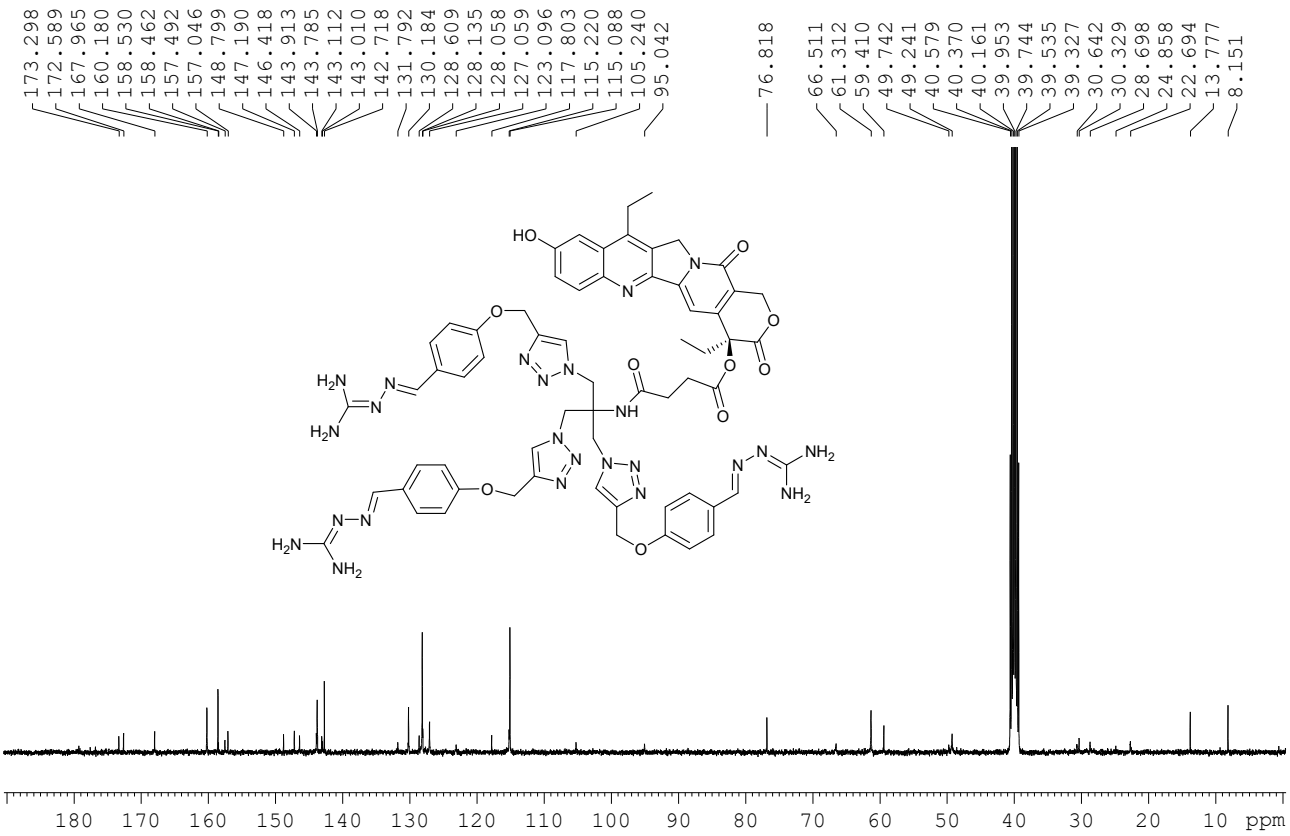


Figure S8. ^{13}C NMR spectrum of compound **6** (101MHz, DMSO-d_6)

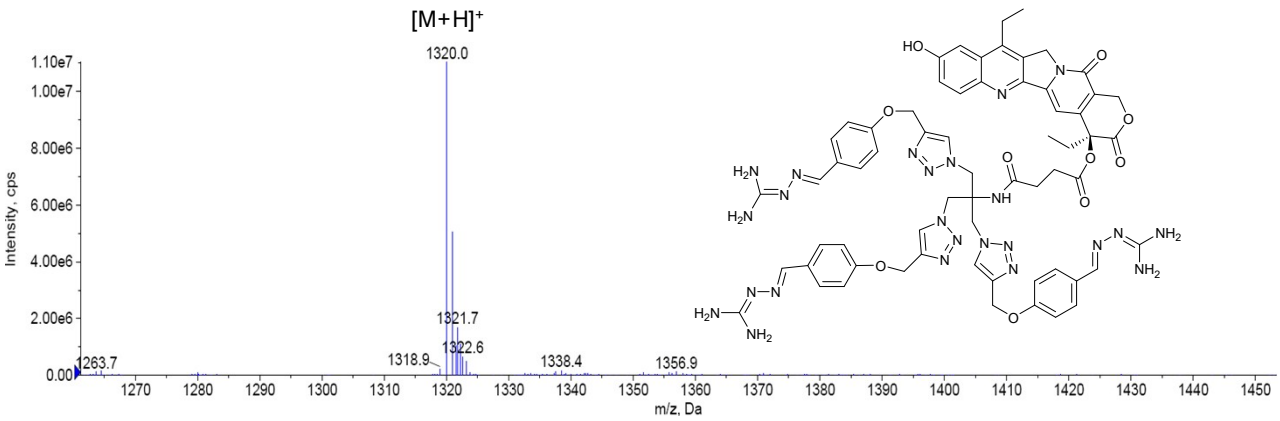


Figure S9. ESI-MS spectrum of compound **6**

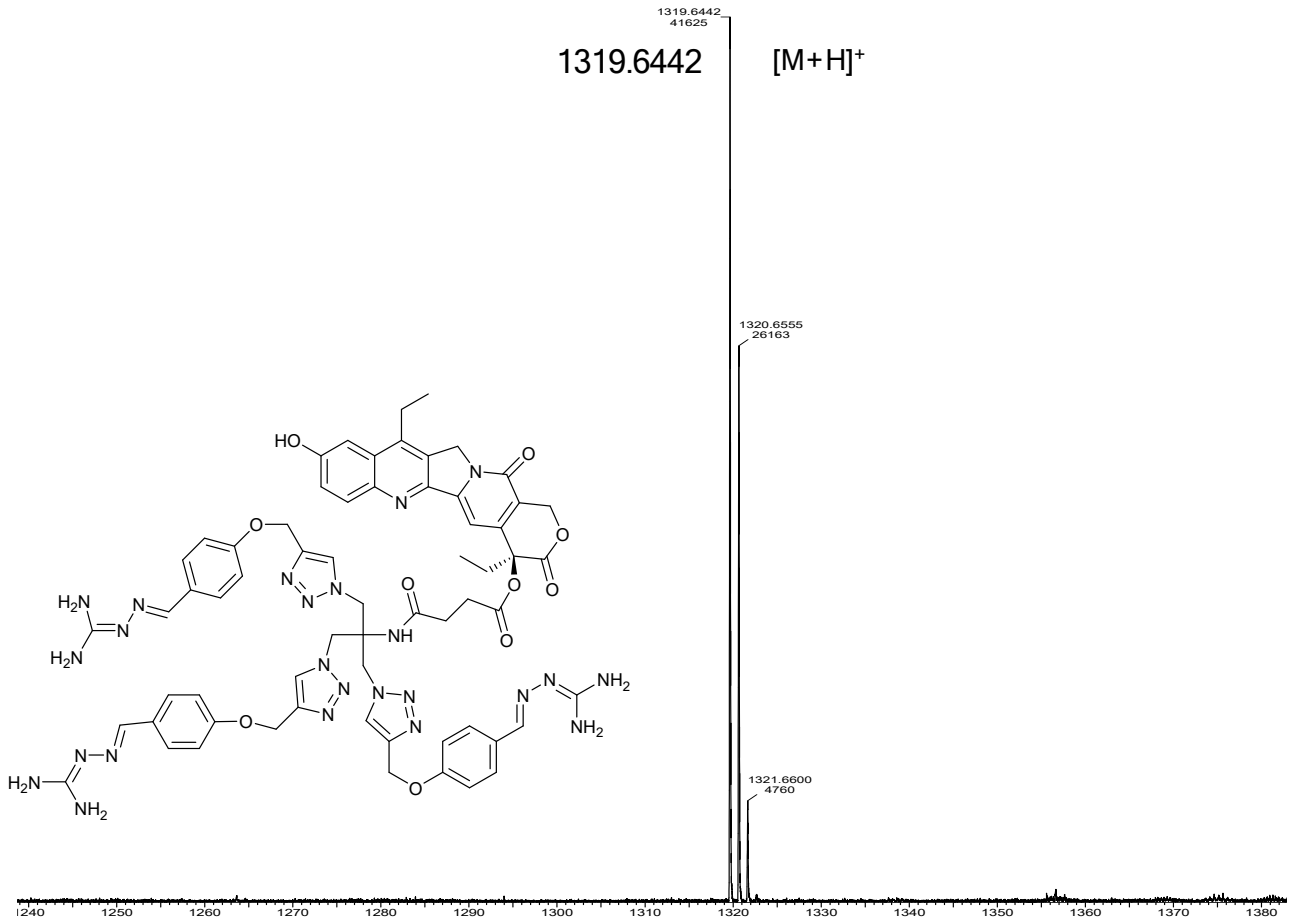


Figure S10. ESI-HRMS spectrum of compound **6**

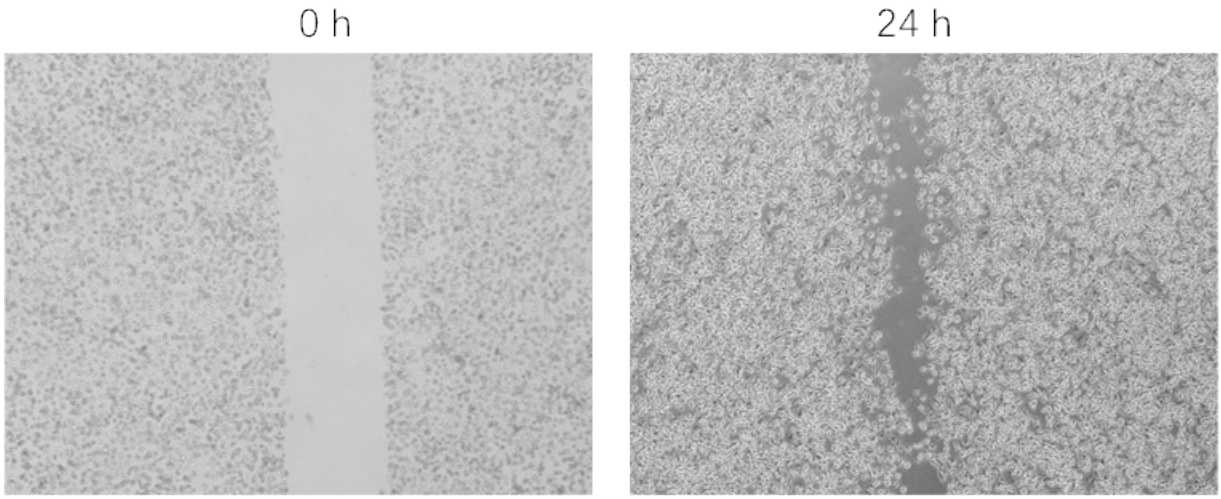


Figure S11. The effect of SN38 on migration of cancer cells measured using scratch test. MDA-MB-231 cells were pre-incubated for 24 h with drugs at dose of 0.5 μM. Analyses of lateral migratory cells were obtained by measuring wound closure rate.

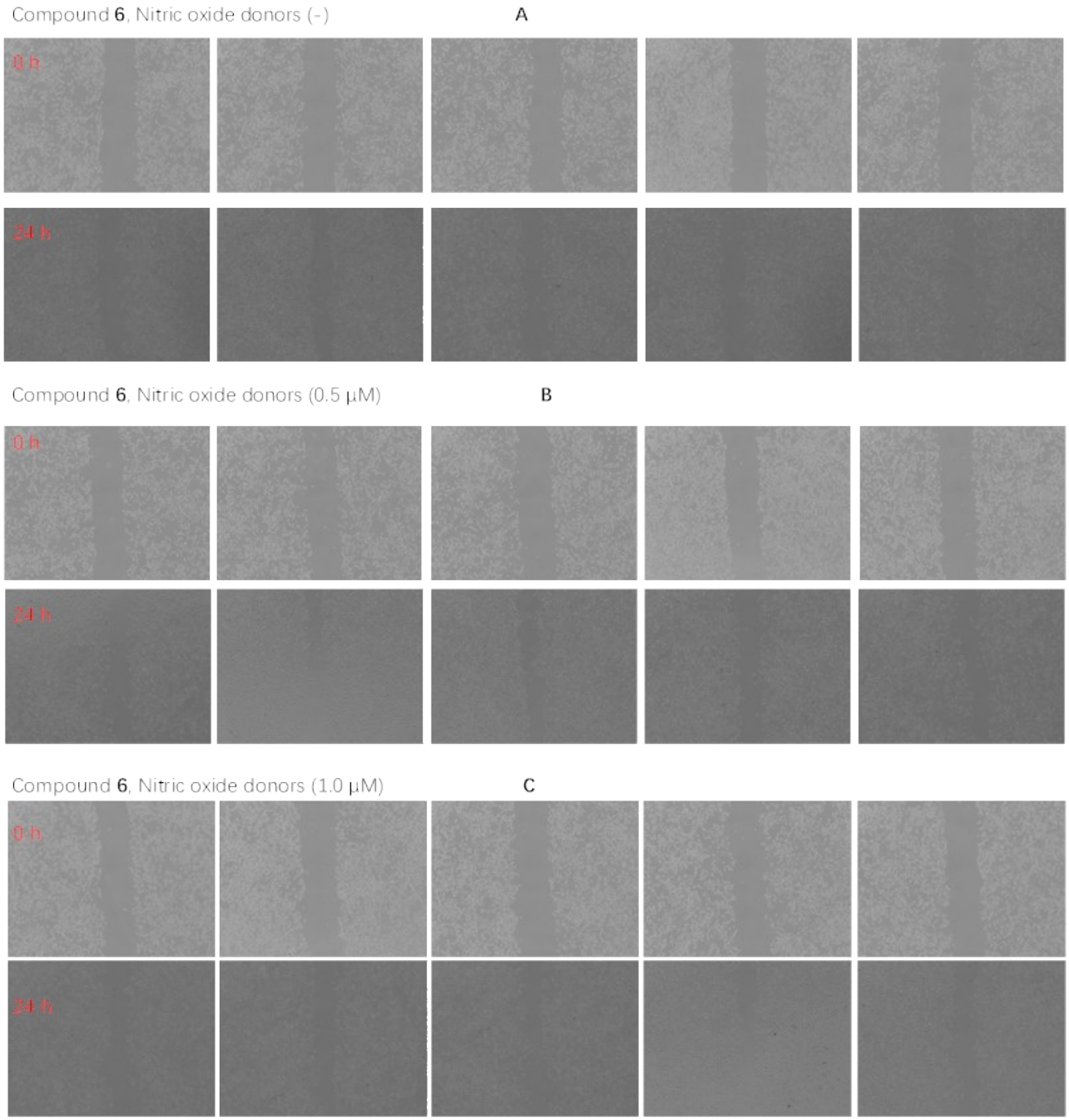


Figure S12. The effect of pretreatment of NO donor on migration of cancer cells treated with compound **6** via scratch test. MDA-MB-231 cells were pretreated for 1 h with NO donor and co-incubated with compound **6** at dose of 1 μM. The wound healing rate were assayed. Compound **6** was administered in the form of nanoparticles.