

Serinol-Based Versatile Disulfide-Reducing Reagent [†]

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[†] Honoring the Nobel Laureate in Chemistry Professor Morten Meldal, who is a continuous inspiration for all of us.

Supporting information

Table of contents

Sl. No.	Contents	Page No.
1.	Copies of ¹ H, ¹³ C, HPLC and Mass spectra of synthesized compounds.....	S2
2.	Stability test of DPDT in solid form. (A) freshly prepared; (B) after 60 days..	S18
3.	Stability test of DMPDT in solid form. (A) freshly prepared; (B) after 60 days.	S19
4.	HPLC chromatogram of Fmoc-Cys(SDMP)-OH with DTT (1:1 and 1:2 ratio) with 2.5% DIEA and 2.5% water at 0 min.....	S20
5.	Effect of different bases in reduction of Fmoc-Cys(S-DMP)-OH using DPDT in ACN/base/H ₂ O (95:2.5:2.5).....	S21
6.	Fmoc-Ala-Cys(SIT)-Leu-NH-resin after treatment with DTT with 2.5% DIEA and 2.5% water in DMF.....	S22

1. Copies of ^1H , ^{13}C , HPLC and Mass spectra of synthesized compounds

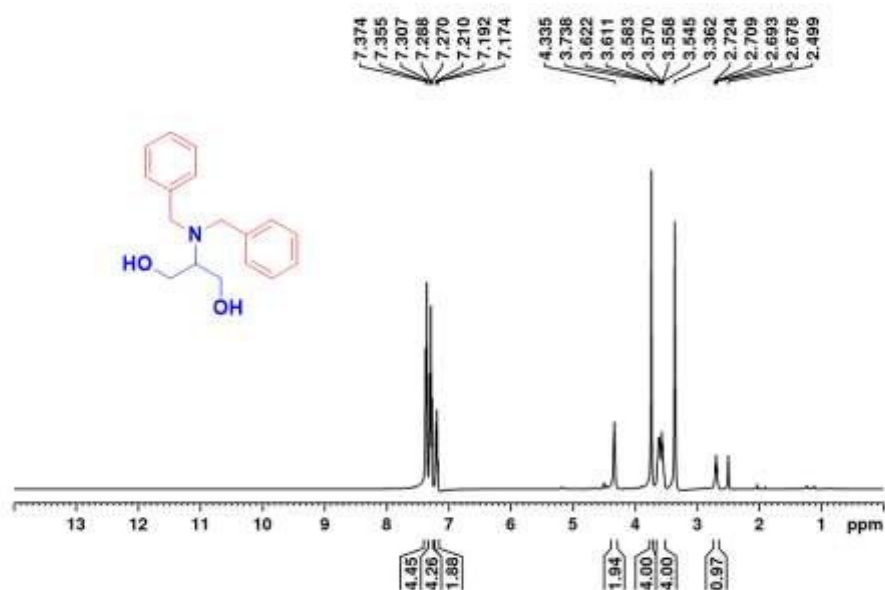


Figure S1: ^1H NMR of Compound 3a (400 MHz, $\text{DMSO}-d_6$)

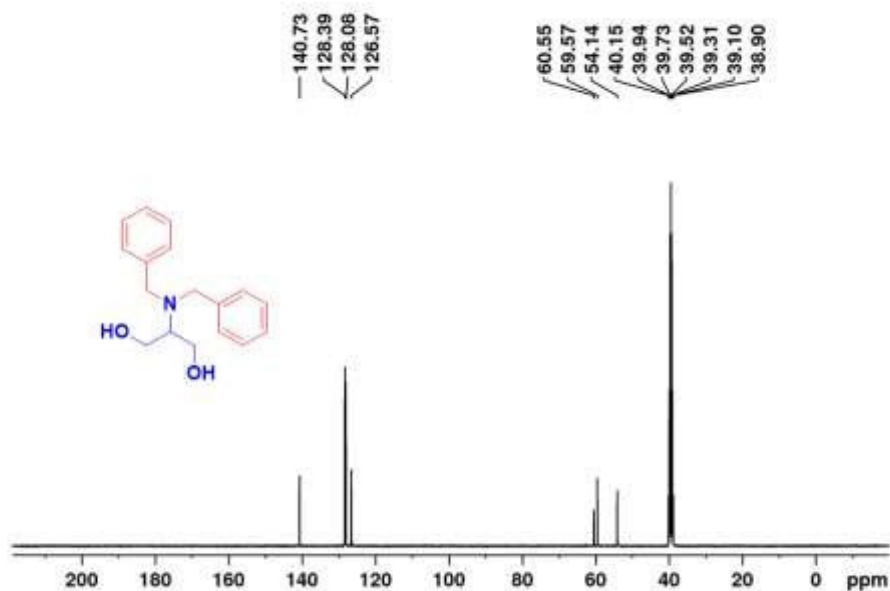


Figure S2: ^{13}C NMR of Compound 3a (100 MHz, $\text{DMSO}-d_6$)

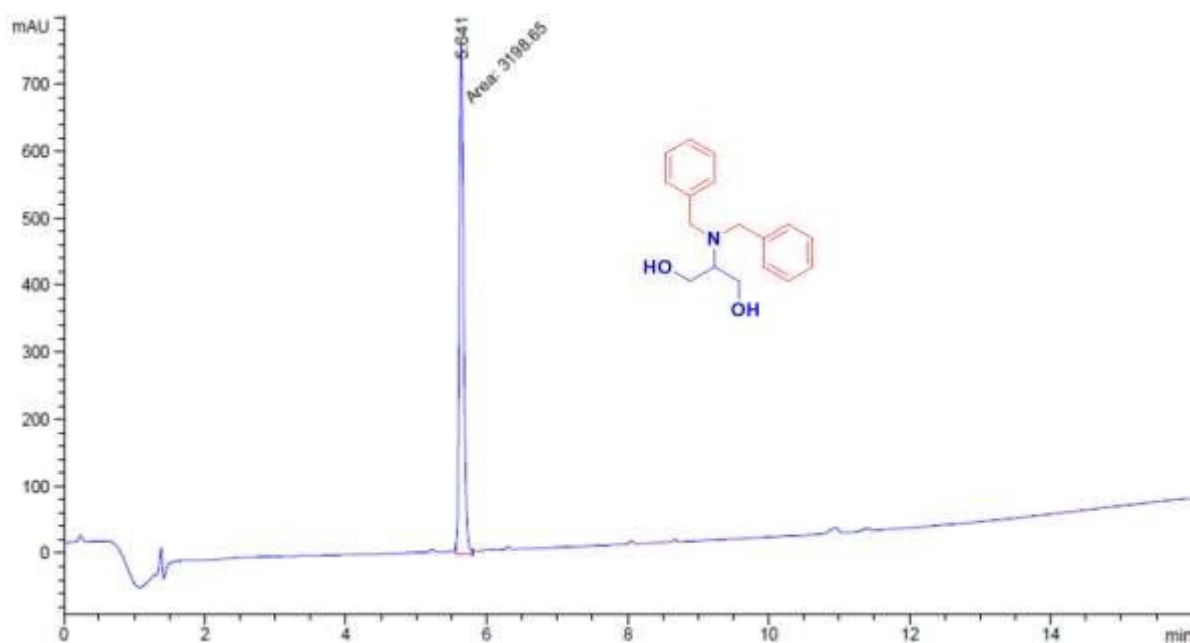


Figure S3: HPLC of Compound 3a

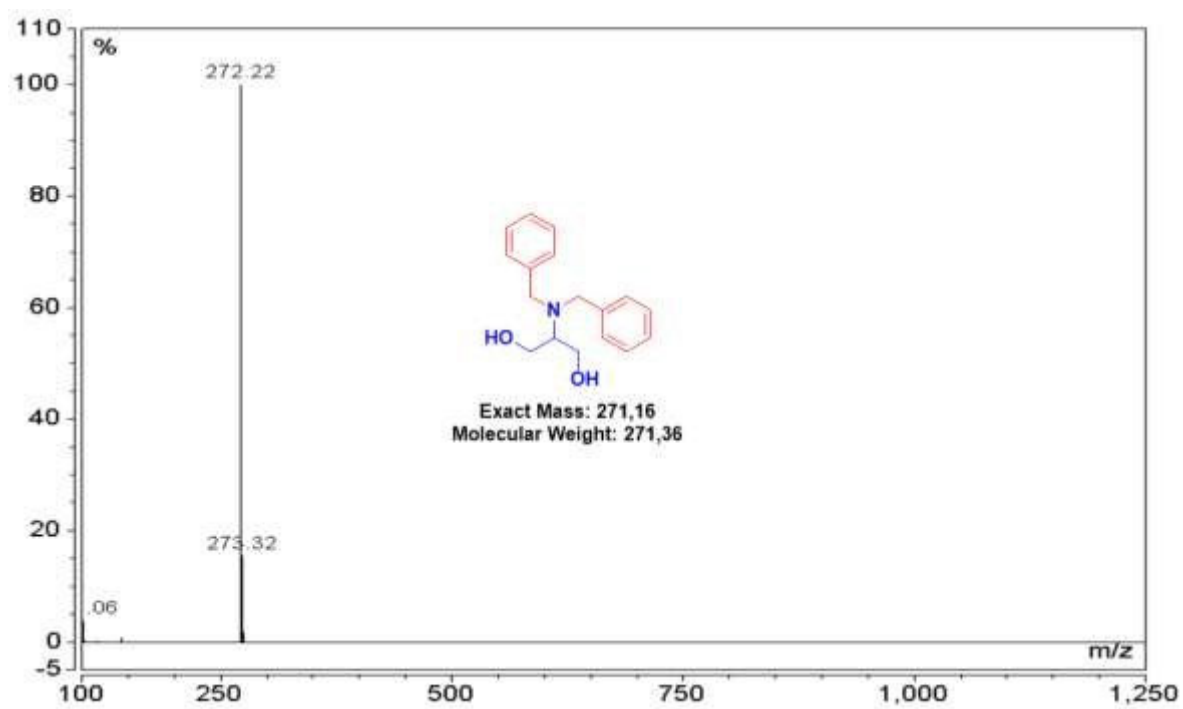


Figure S4: Mass of Compound 3a

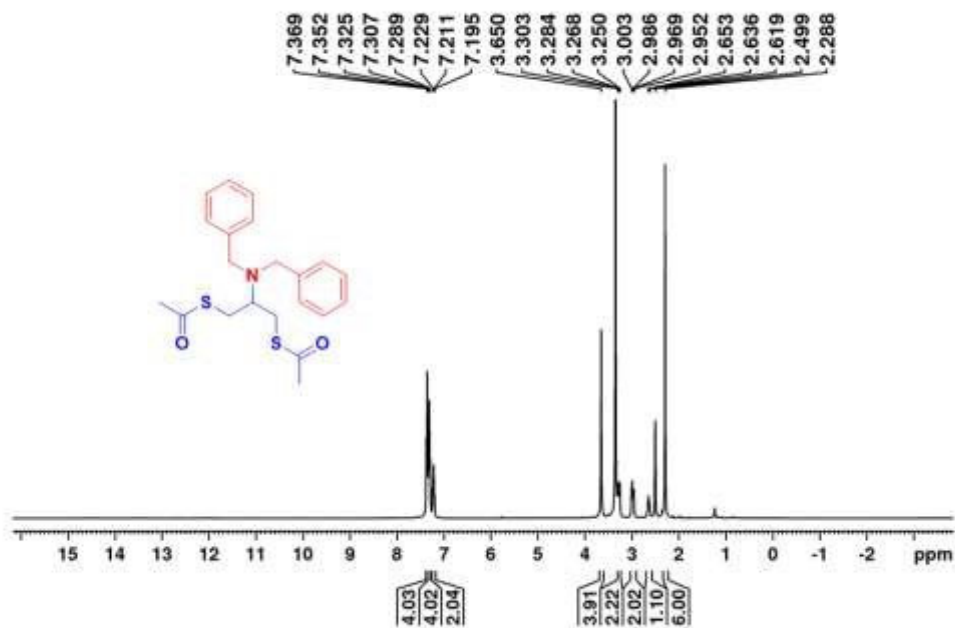


Figure S5: ¹H NMR of Compound 4a (400 MHz, DMSO-*d*₆)

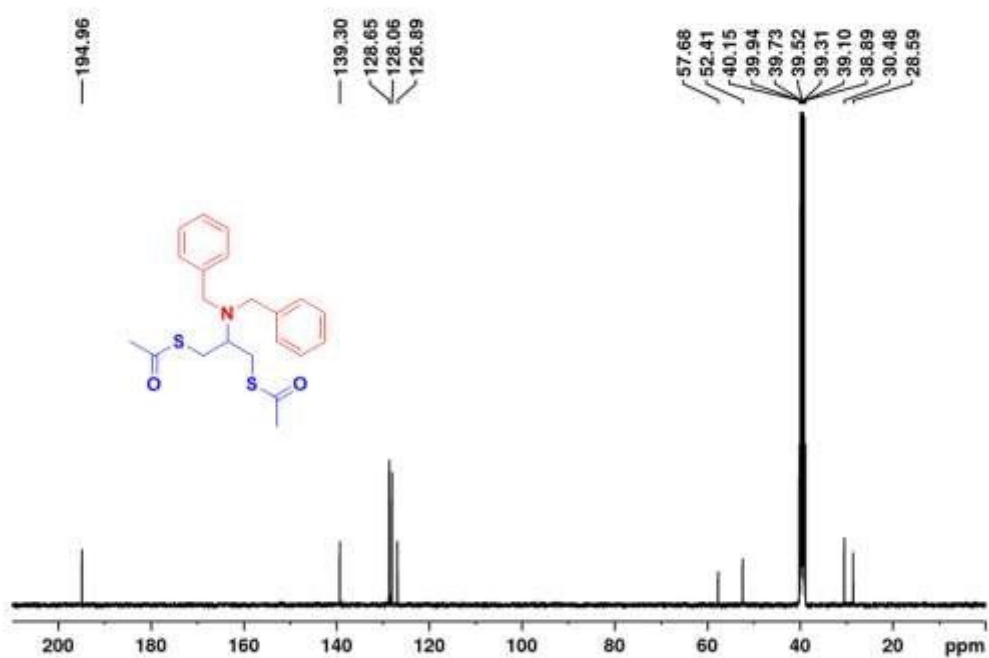


Figure S6: ¹³C NMR of Compound 4a (100 MHz, DMSO-*d*₆)

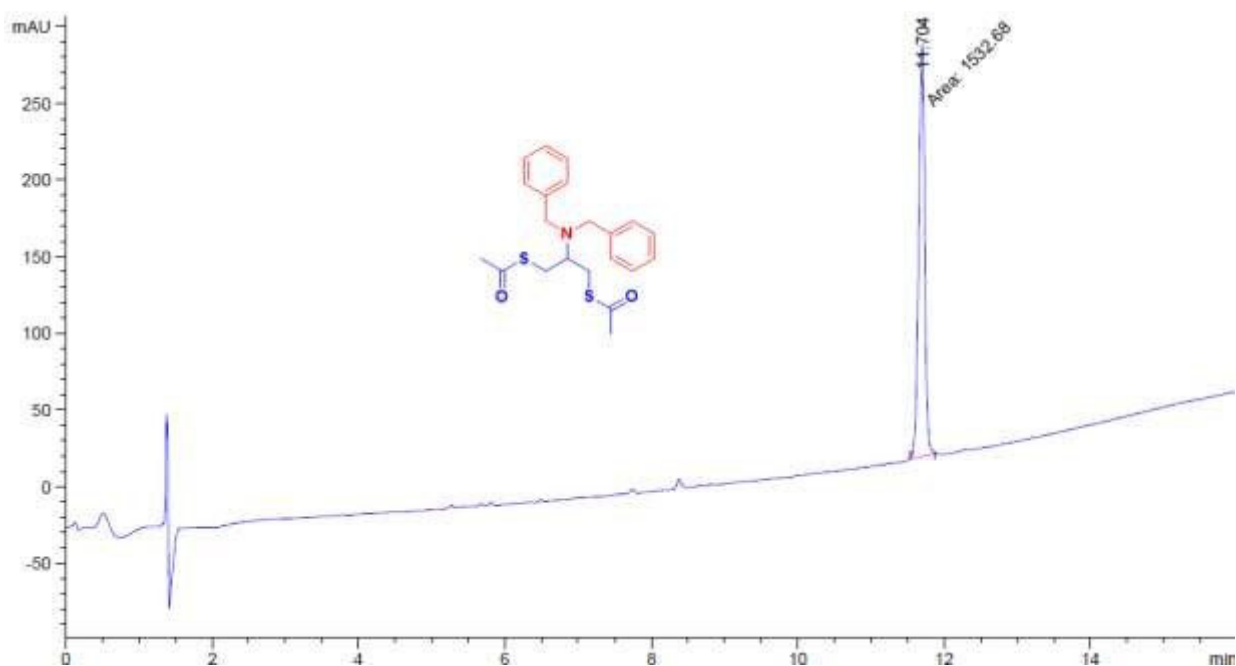


Figure S7: HPLC of Compound 4a

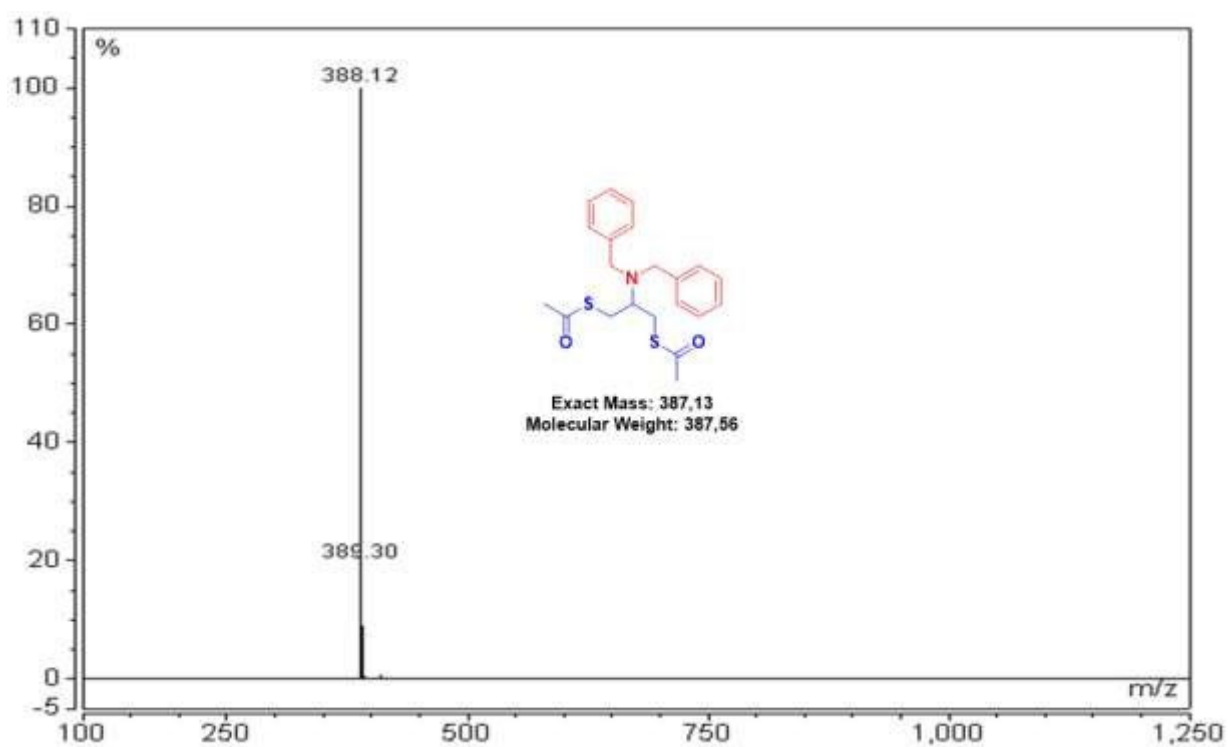


Figure S8: Mass of Compound 4a

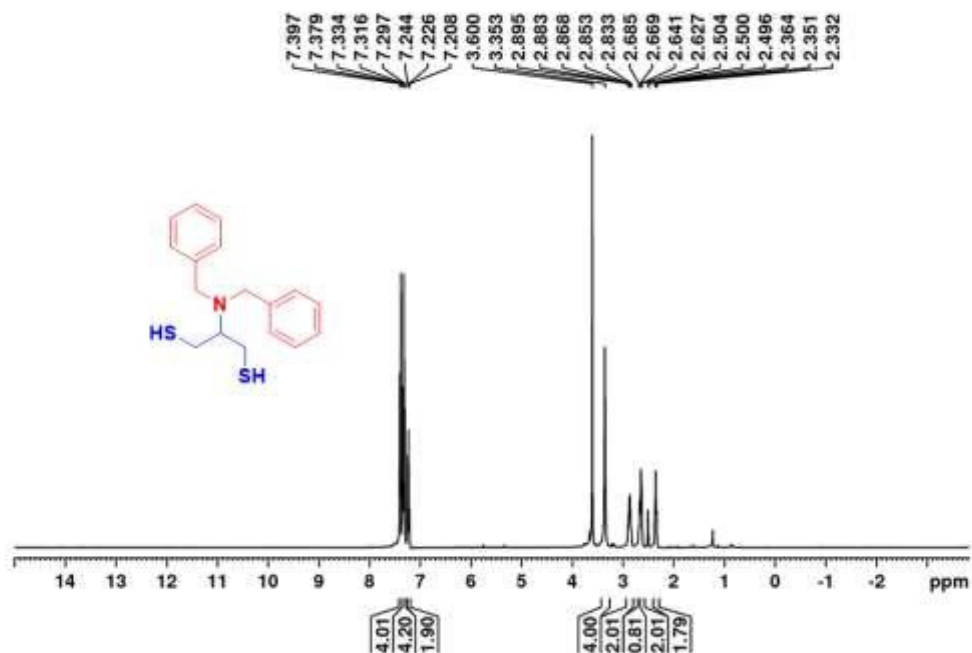


Figure S9: ¹H NMR of Compound 1a (DPDT) (400 MHz, DMSO-*d*₆)

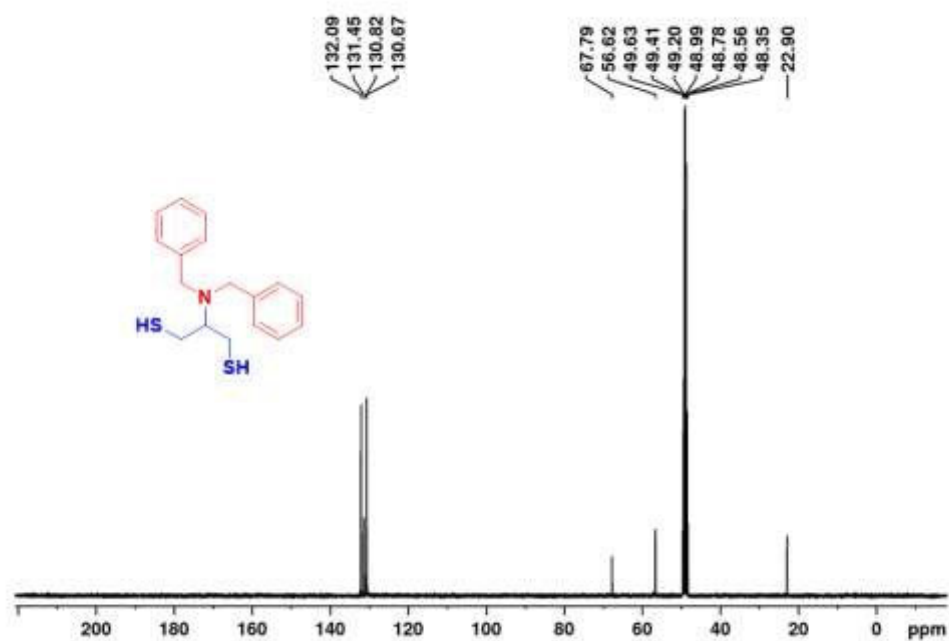


Figure S10: ¹³C NMR of Compound 1a (DPDT) (100 MHz, MeOD-*d*₄)

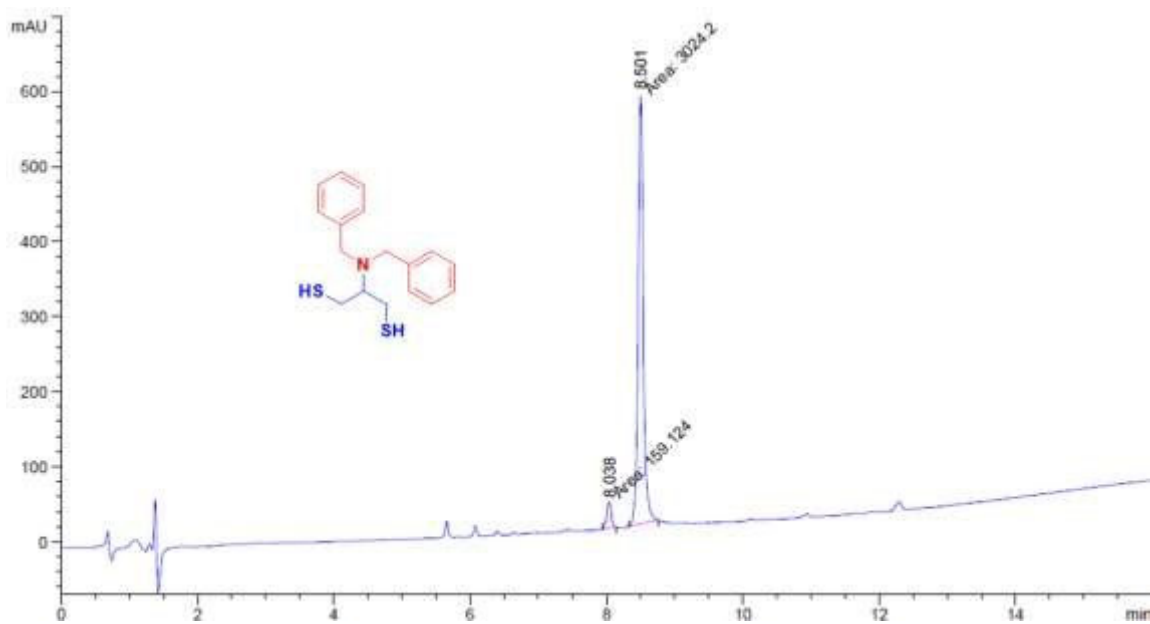


Figure S11: HPLC of Compound 1a (DPDT)

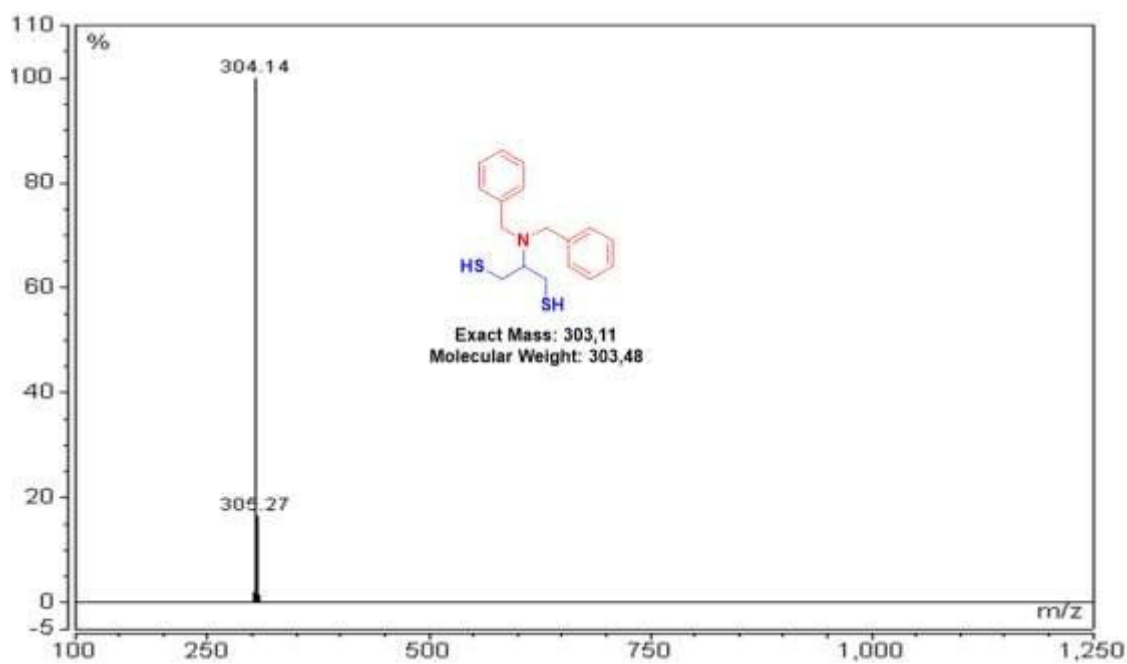


Figure S12: Mass of Compound 1a (DPDT)

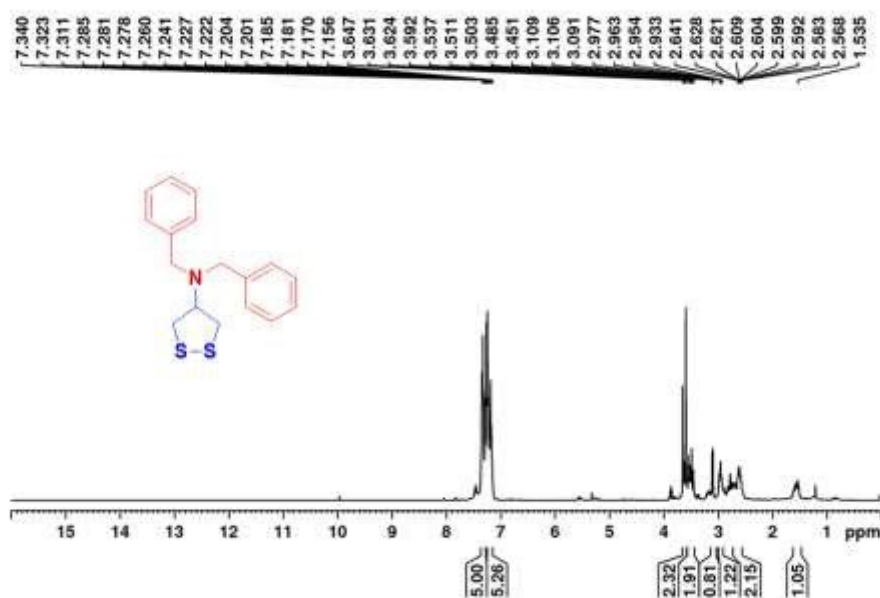


Figure S13: ¹H NMR of Compound 1a^{OX} (DPDT^{OX}) (400 MHz, CDCl₃)

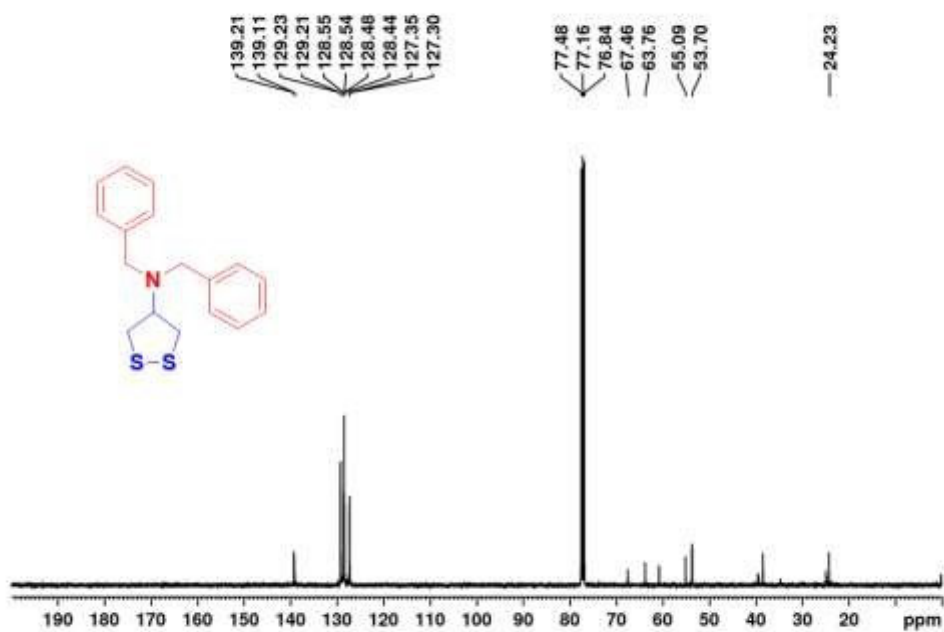


Figure S14: ¹³C NMR of Compound 1a^{OX} (DPDT^{OX}) (100 MHz, CDCl₃)

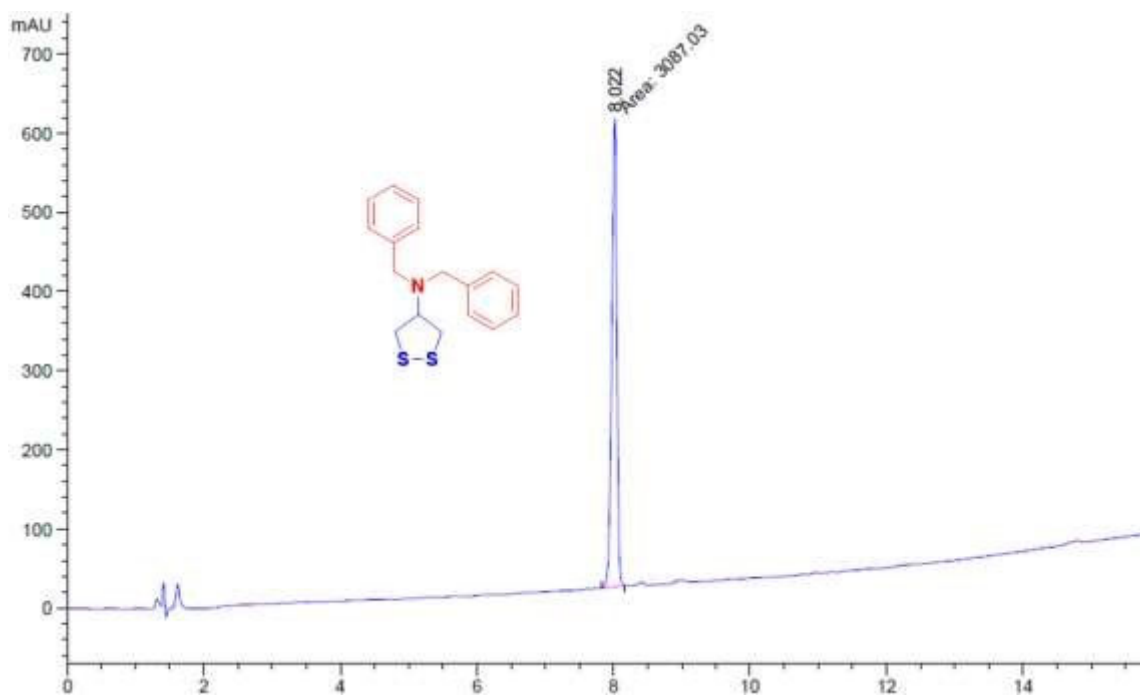


Figure S15: HPLC of Compound 1a^{OX} (DPDT^{OX})

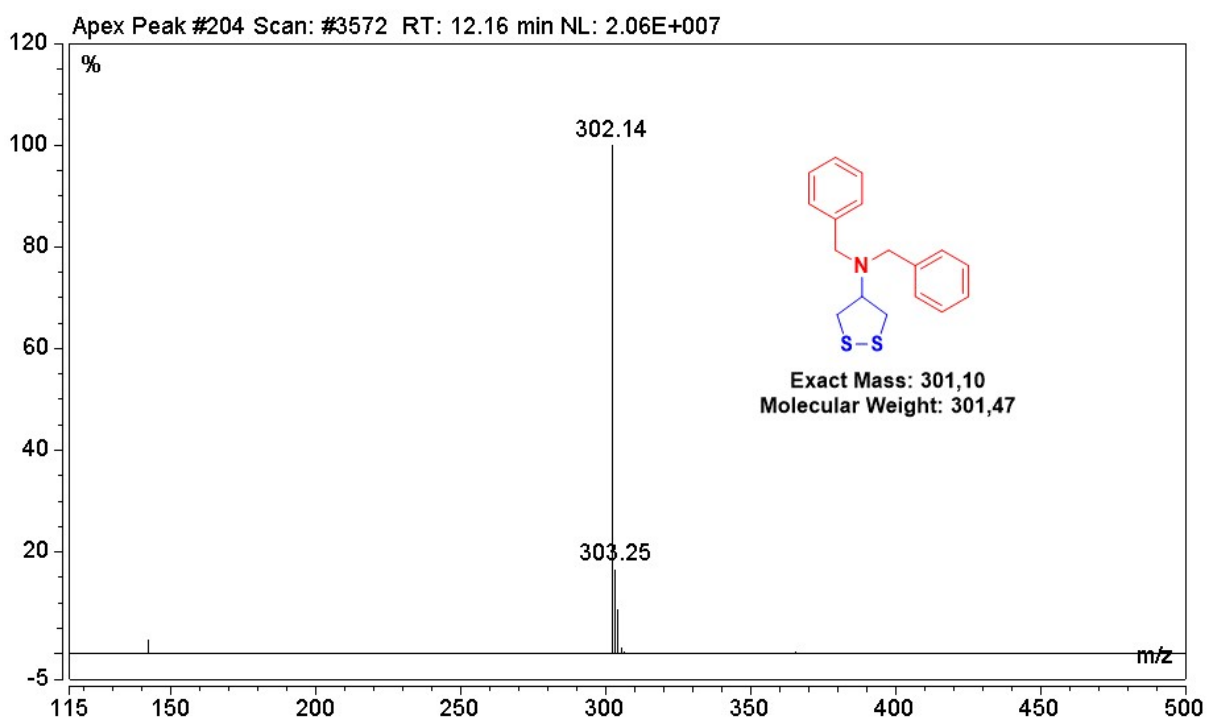


Figure S16: Mass of Compound 1a^{OX} (DPDT^{OX})

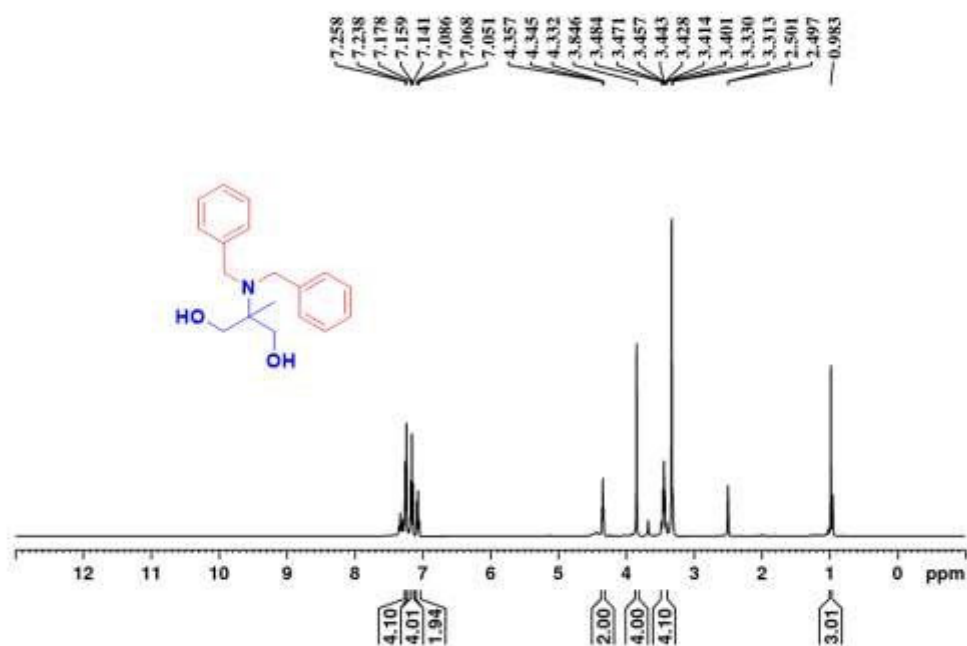


Figure S17: ¹H NMR of Compound 3b (400 MHz, DMSO-*d*₆)

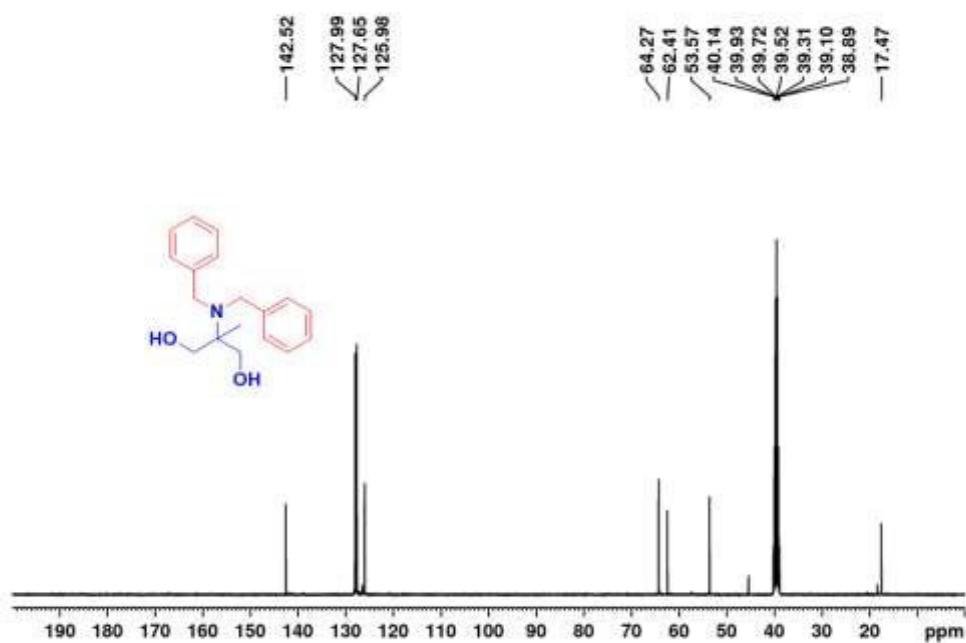


Figure S18: ¹³C NMR of Compound 3b (100 MHz, DMSO-*d*₆)

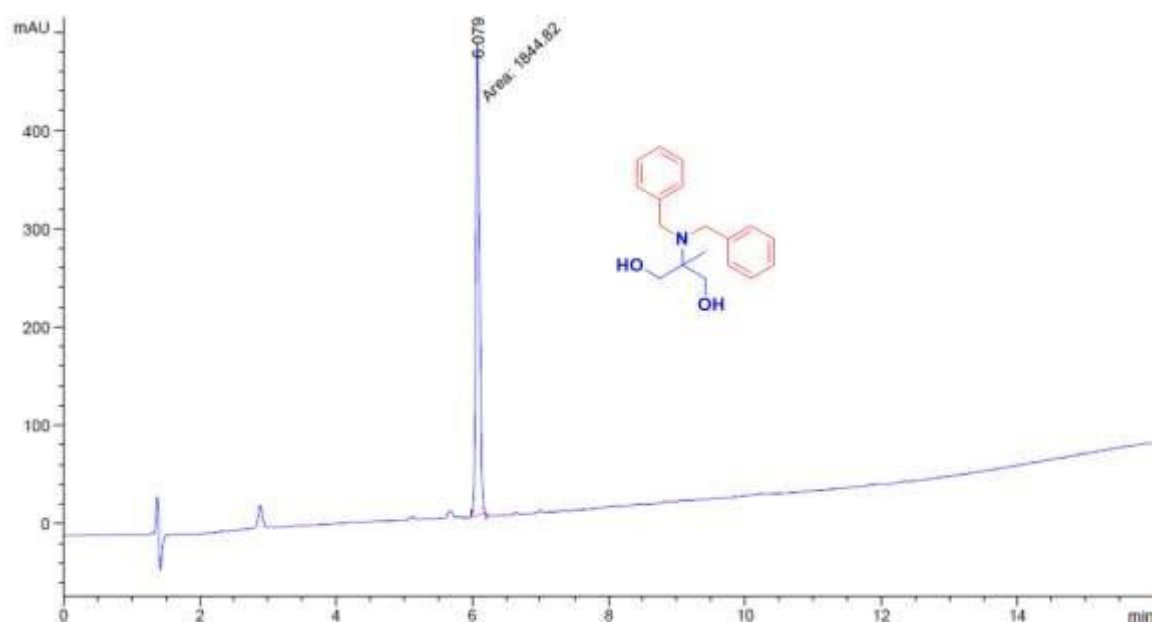


Figure S19: HPLC of Compound 3b

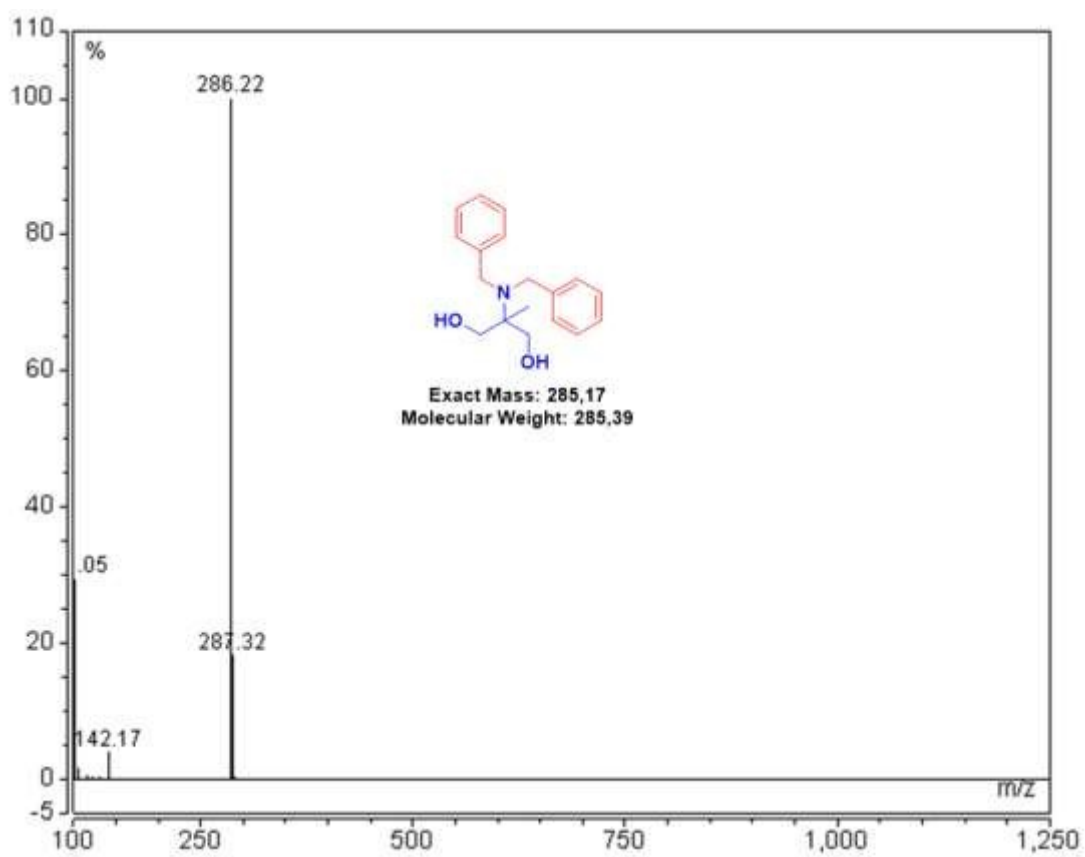


Figure S20: Mass of Compound 3b

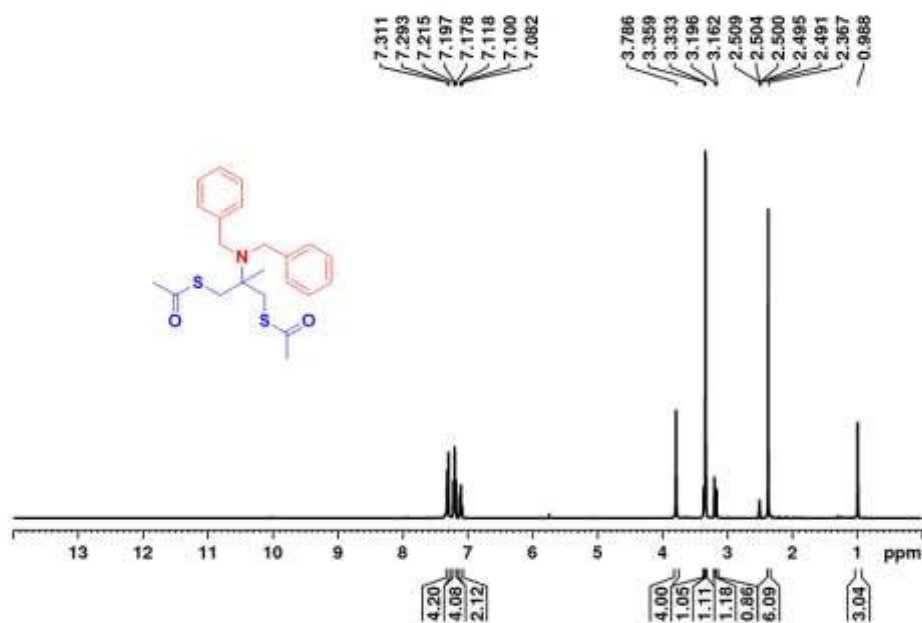


Figure S21: ¹H NMR of Compound 4b (400 MHz, DMSO-*d*₆)

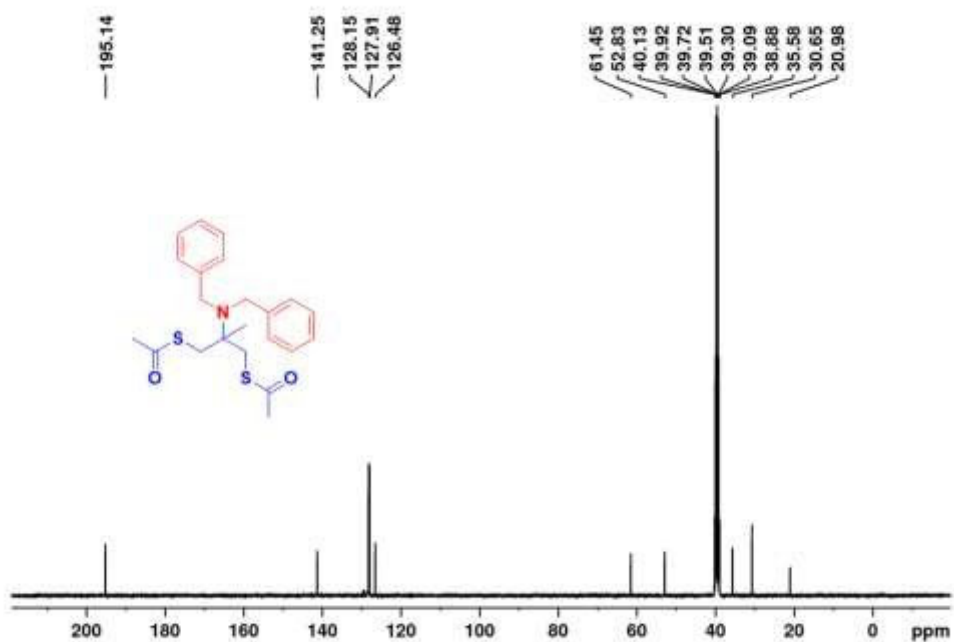


Figure S22: ¹³C NMR of Compound 4b (100 MHz, DMSO-*d*₆)

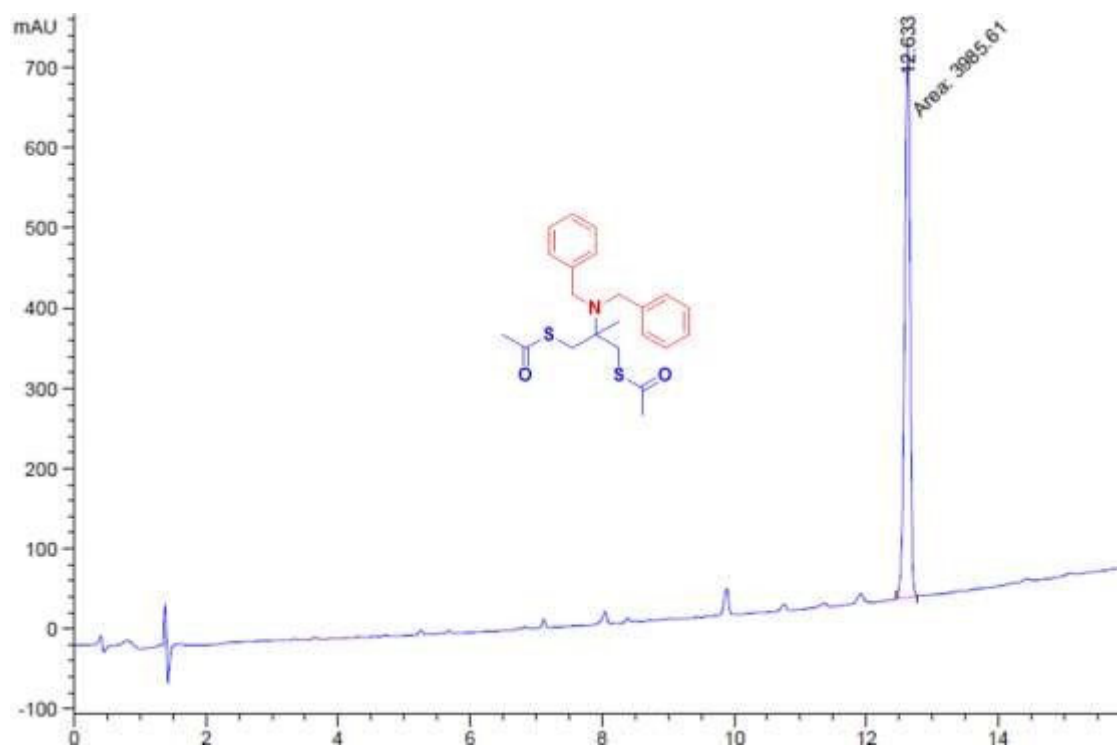


Figure S23: HPLC of Compound 4b

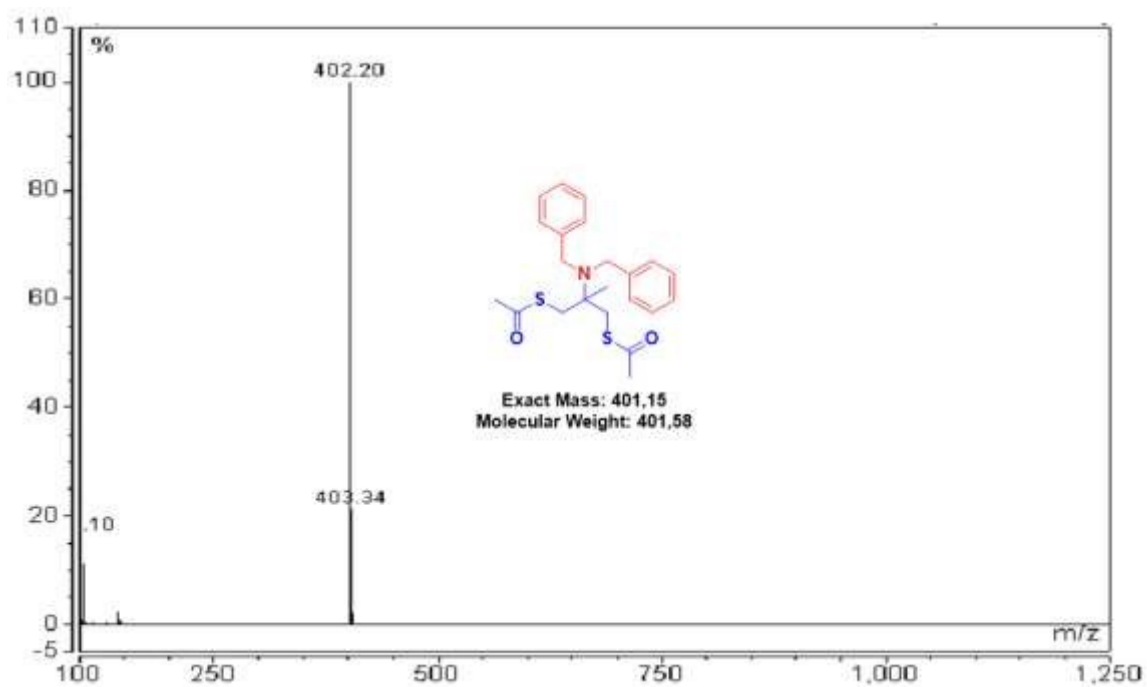


Figure S24: Mass of Compound 4b

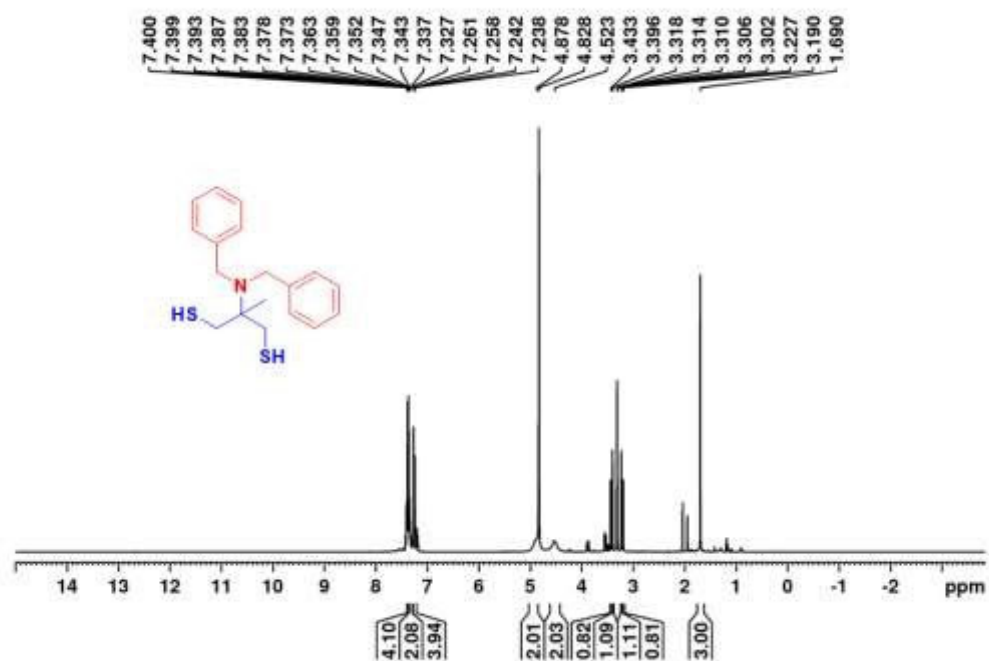


Figure S25: ¹H NMR of Compound 1b (DMPDT) (400 MHz, MeOD-*d*₄)

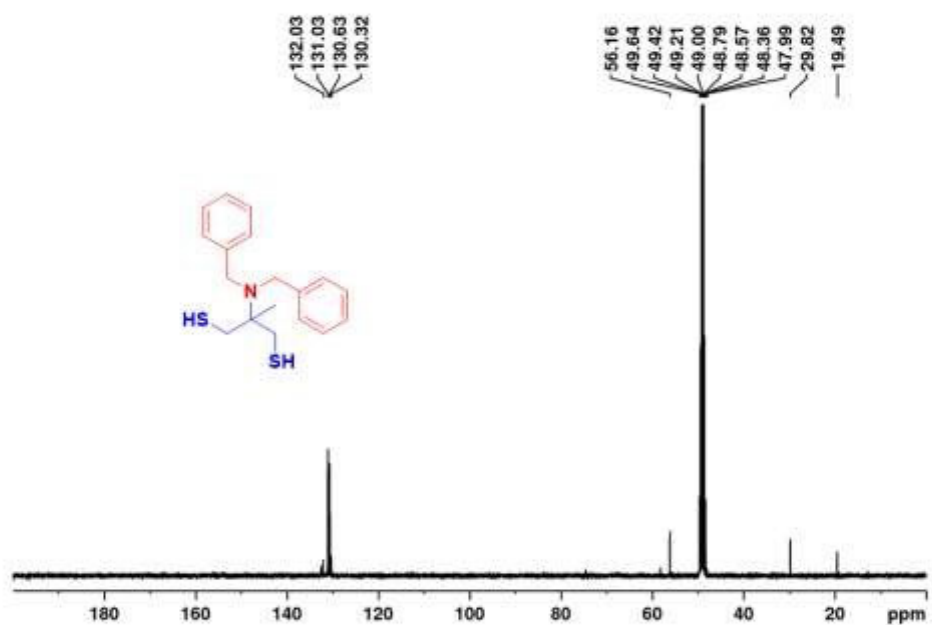


Figure S26: ¹³C NMR of Compound 1b (DMPDT) (100 MHz, MeOD-*d*₄)

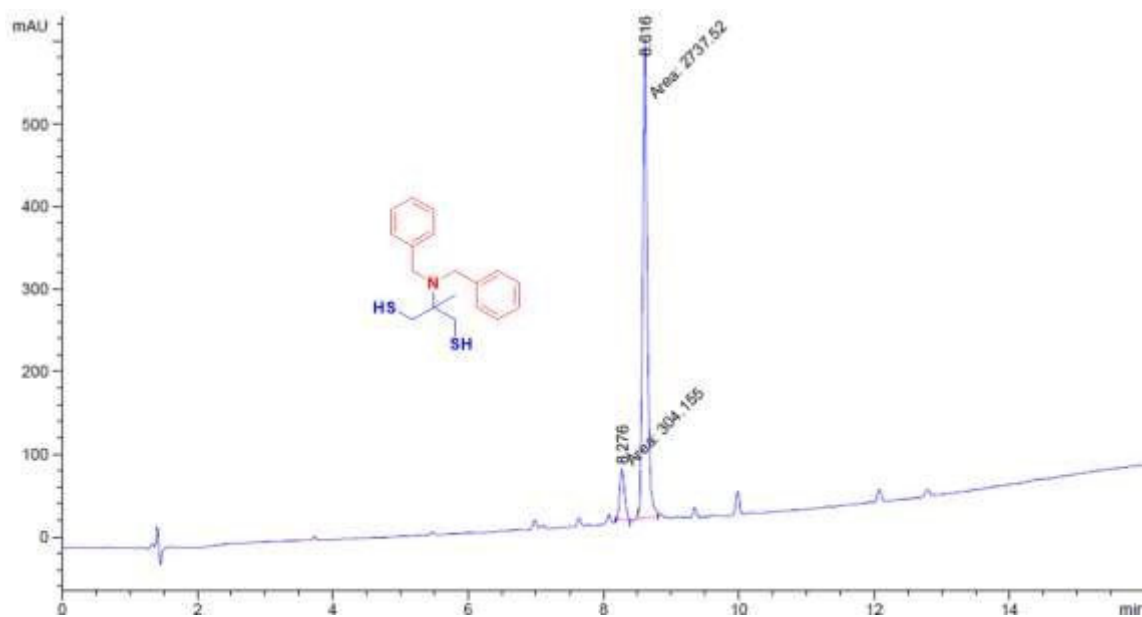


Figure S27: HPLC of Compound 1b (DMPDT)

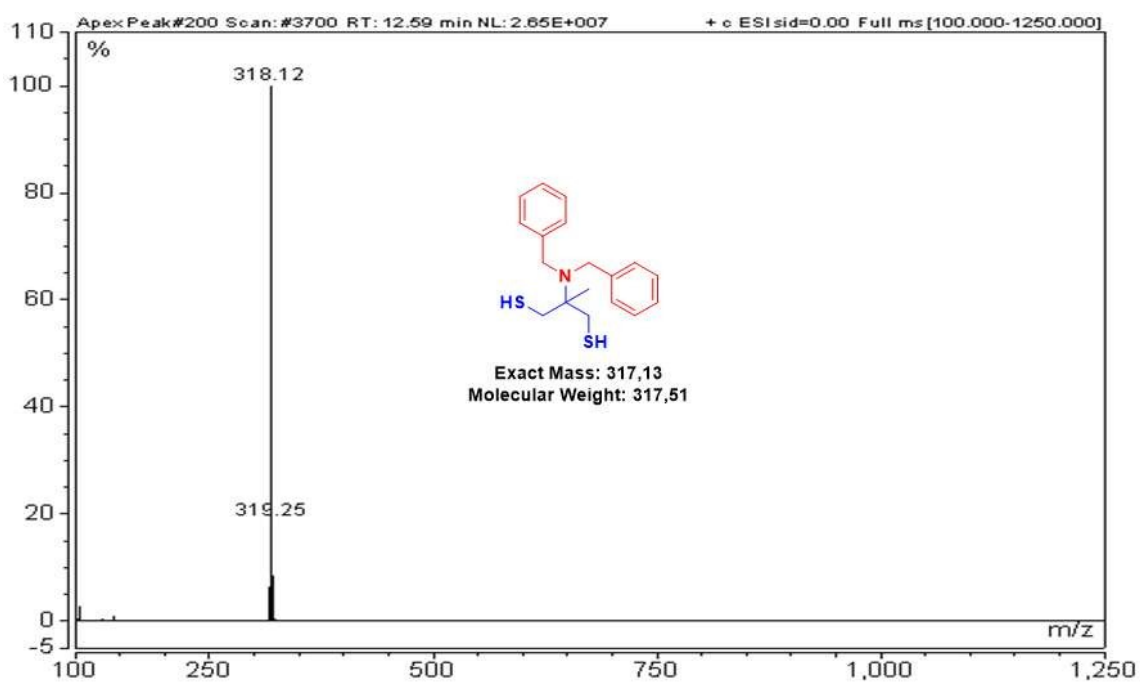


Figure S28: Mass of Compound 1b (DMPDT)

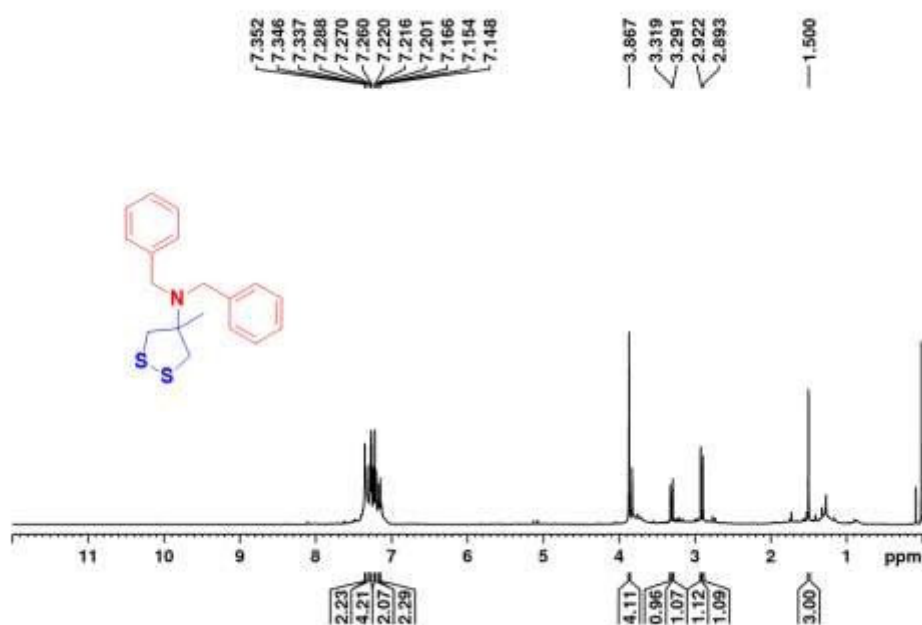


Figure S29: ¹H NMR of Compound 1b^{OX} (DMPDT^{OX}) (400 MHz, CDCl₃)

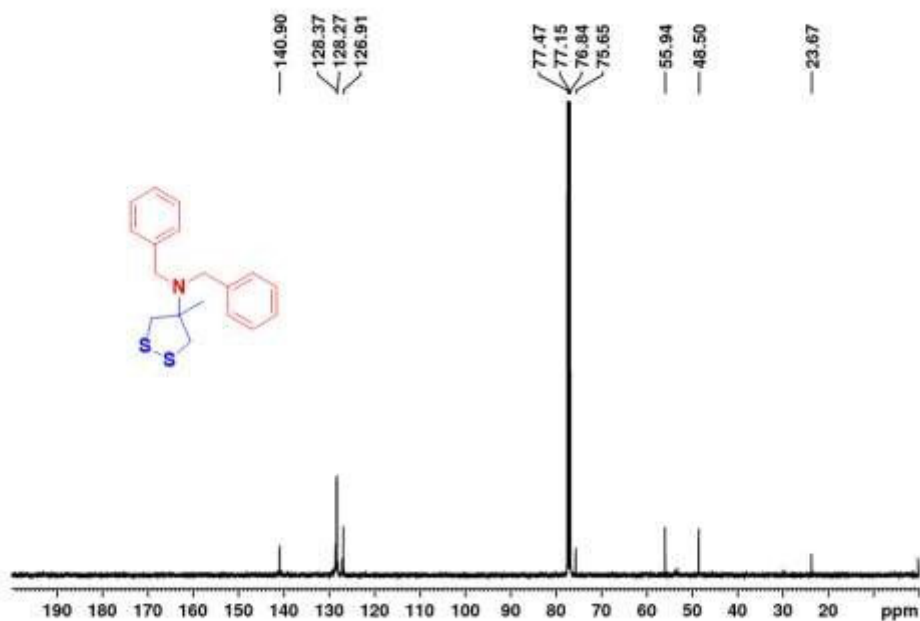


Figure S30: ¹³C NMR of Compound 1b^{OX} (DMPDT^{OX}) (100 MHz, CDCl₃)

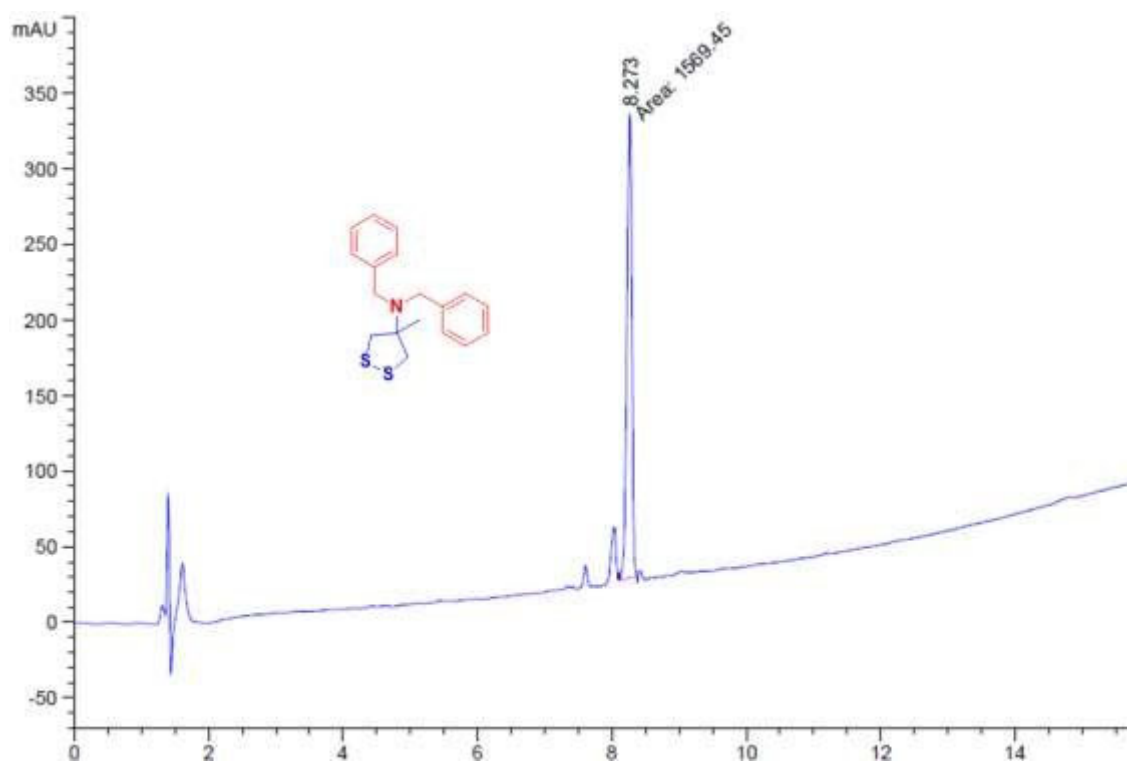


Figure S31: HPLC of Compound 1b^{ox} (DMPDT^{ox})

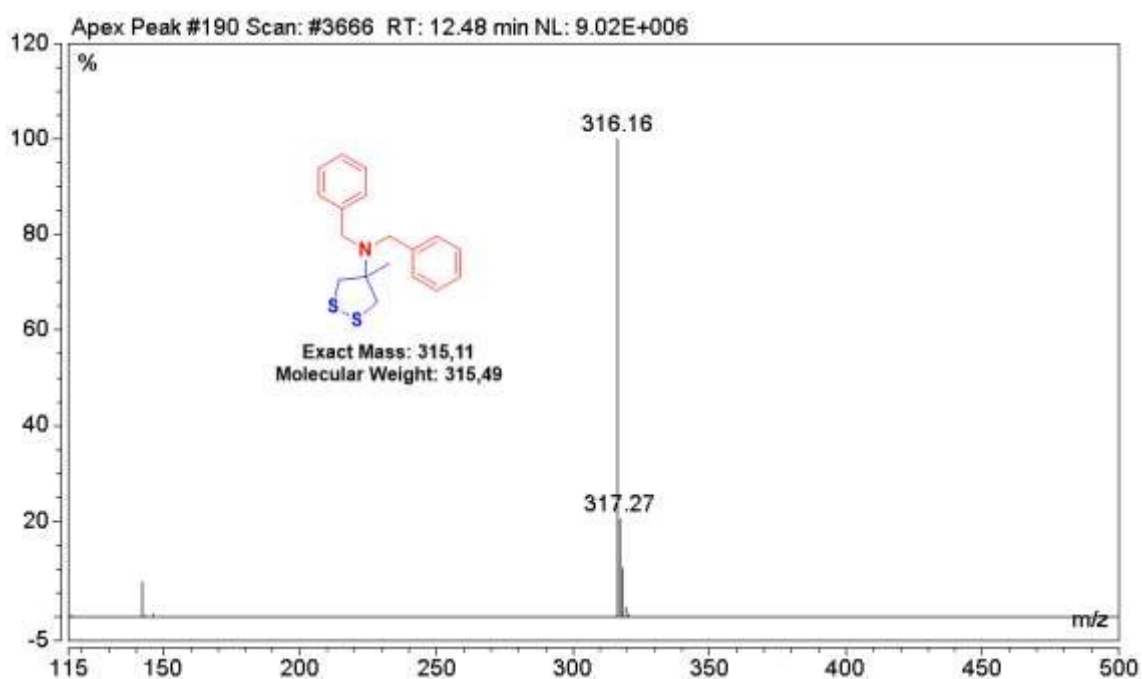


Figure S32: Mass of Compound 1b^{ox} (DMPDT^{ox})

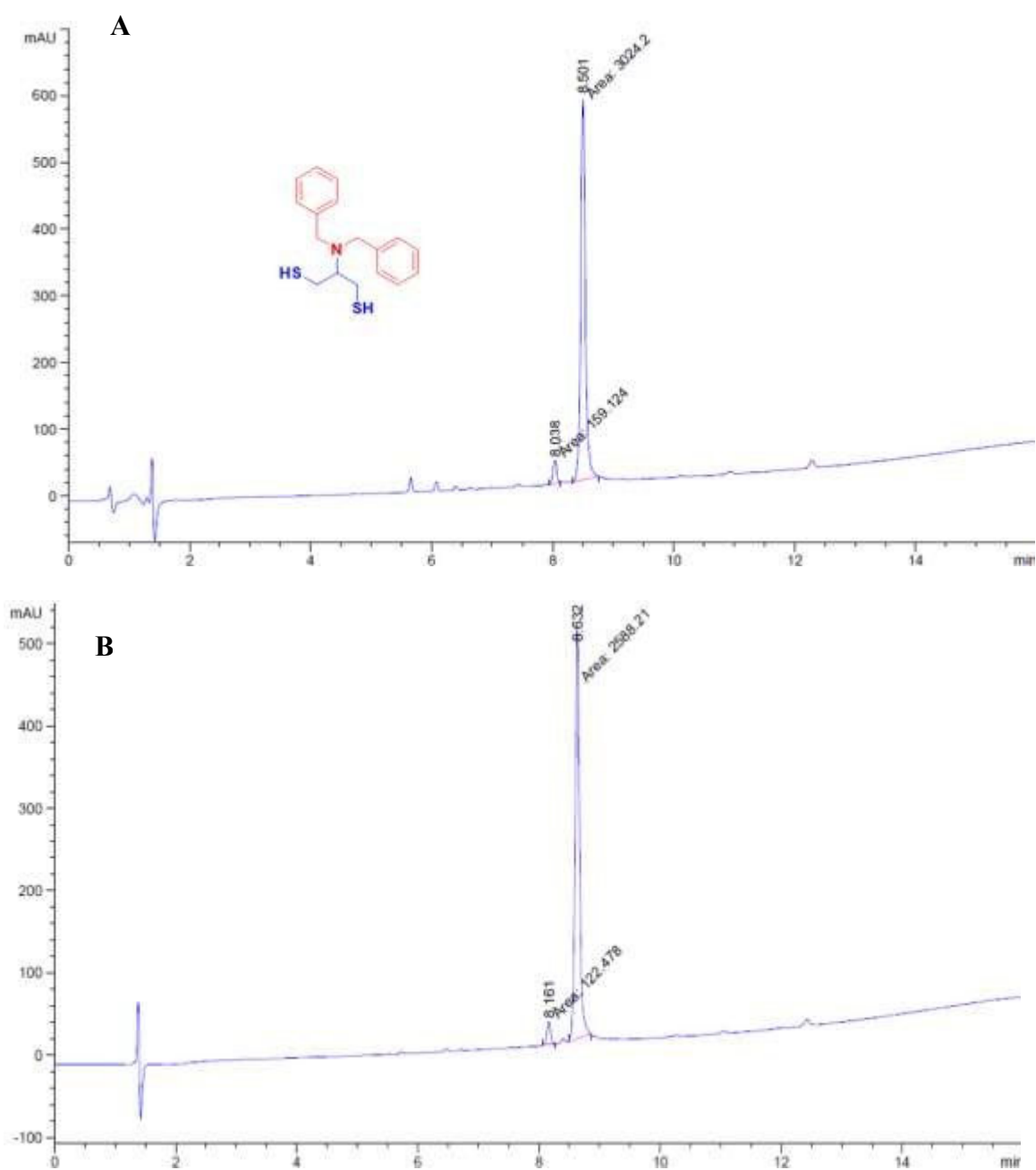


Figure S33: Stability test of DPDT in solid form. **(A)** freshly prepared; **(B)** after 60 days.

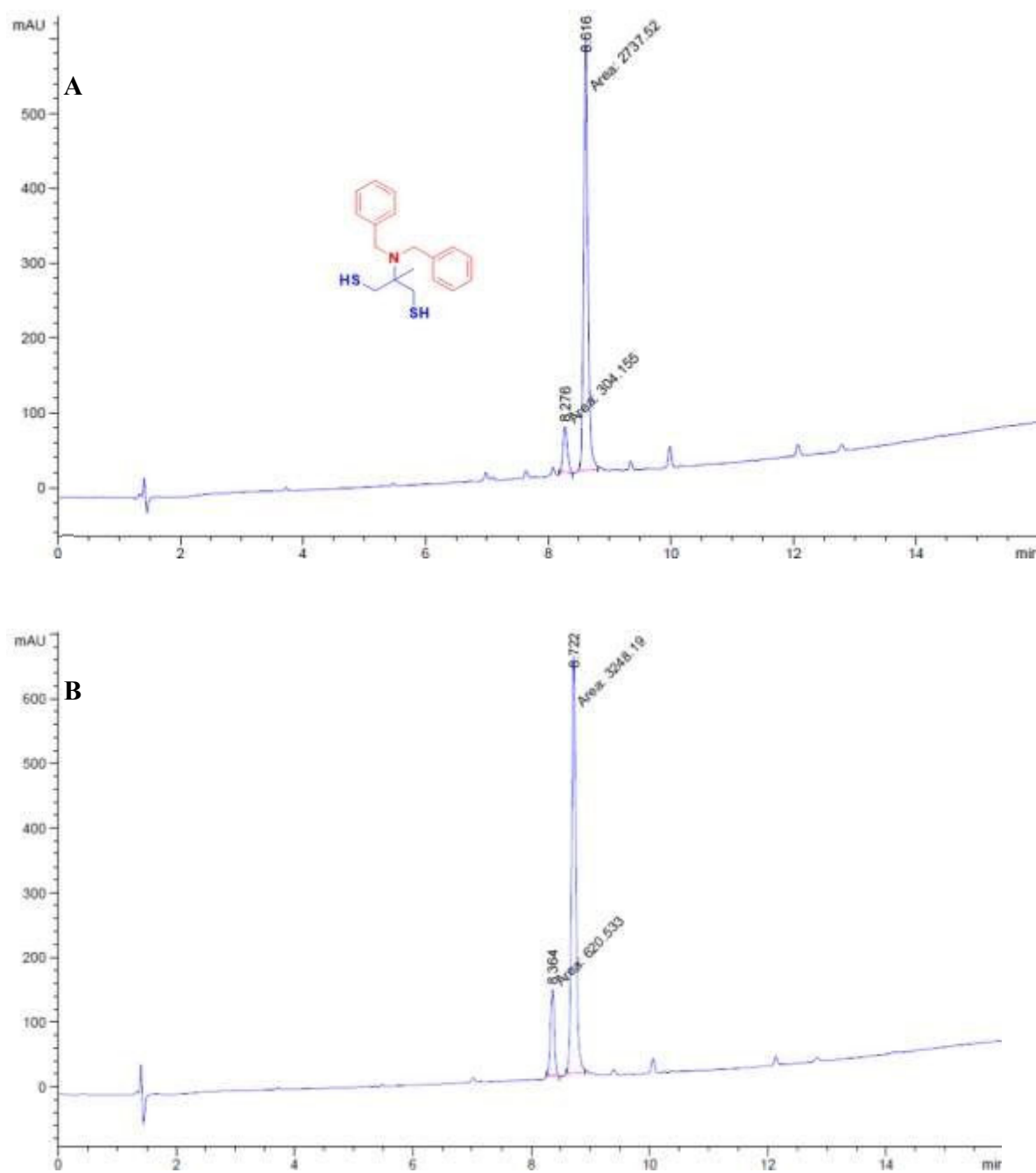


Figure S34: Stability test of DMPDT in solid form. **(A)** freshly prepared; **(B)** after 60 days.

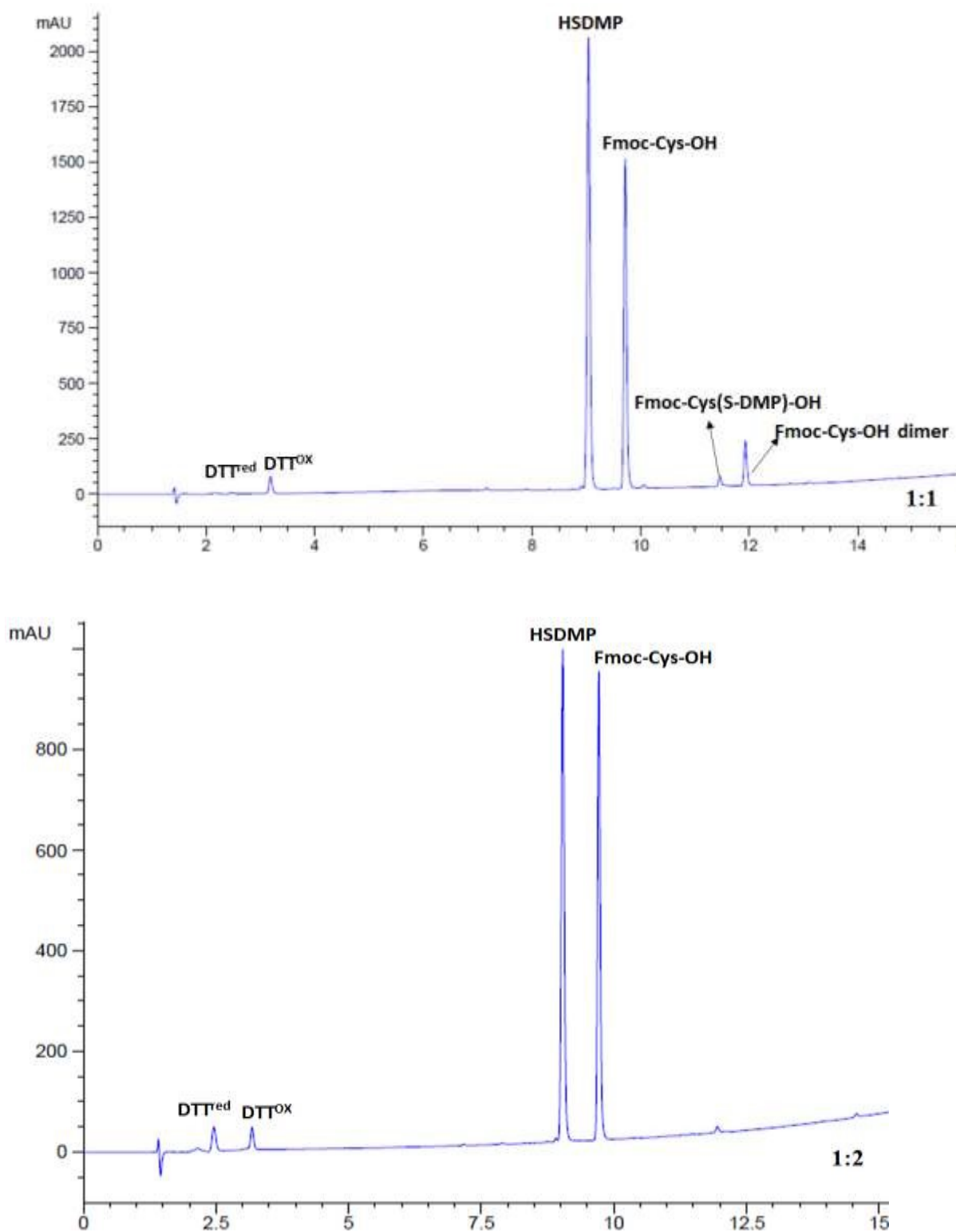


Figure S35: HPLC chromatogram of Fmoc-Cys(SDMP)-OH with DTT (1:1 and 1:2 ratio) with 2.5% DIEA and 2.5% water at 0 min.

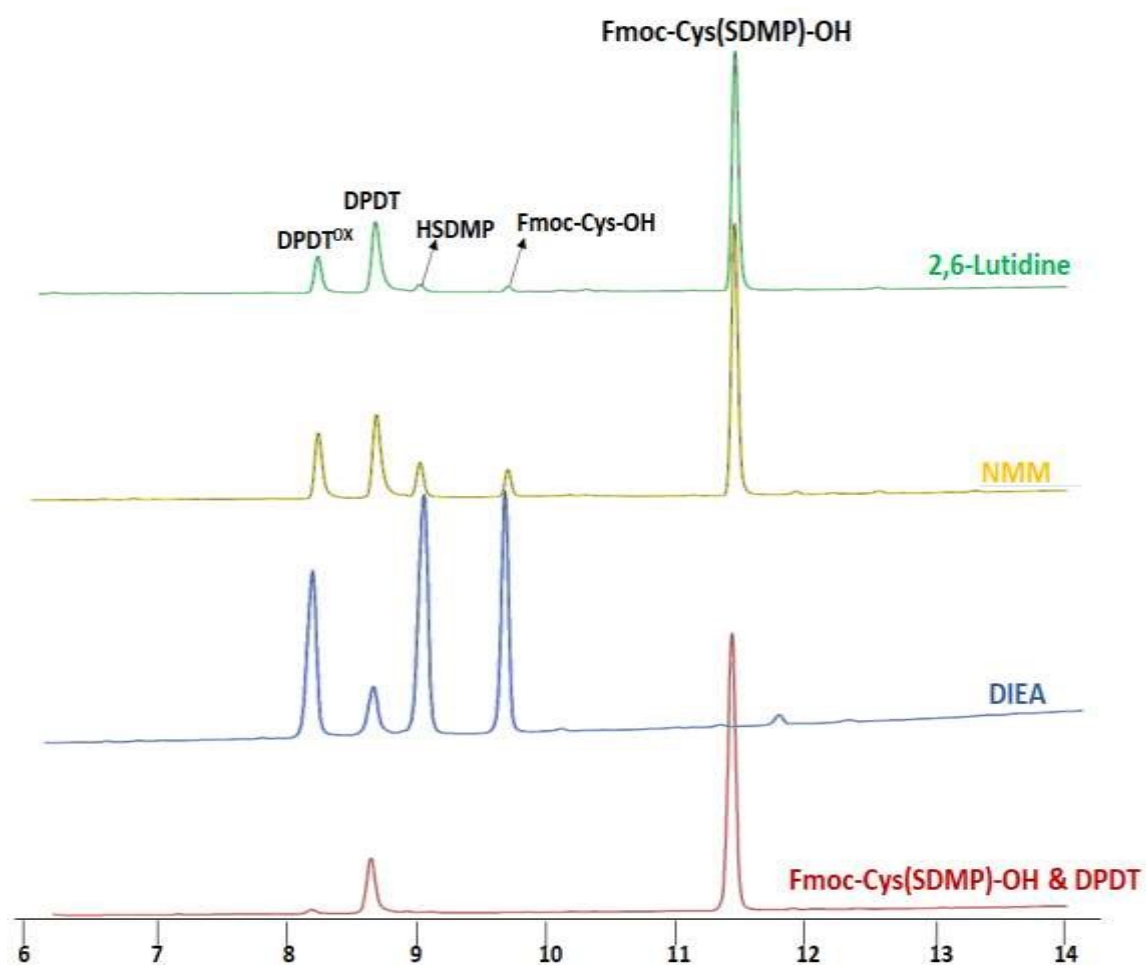


Figure S36: Effect of different bases in reduction of Fmoc-Cys(S-DMP)-OH using DPDT in ACN/base/H₂O (95:2.5:2.5).

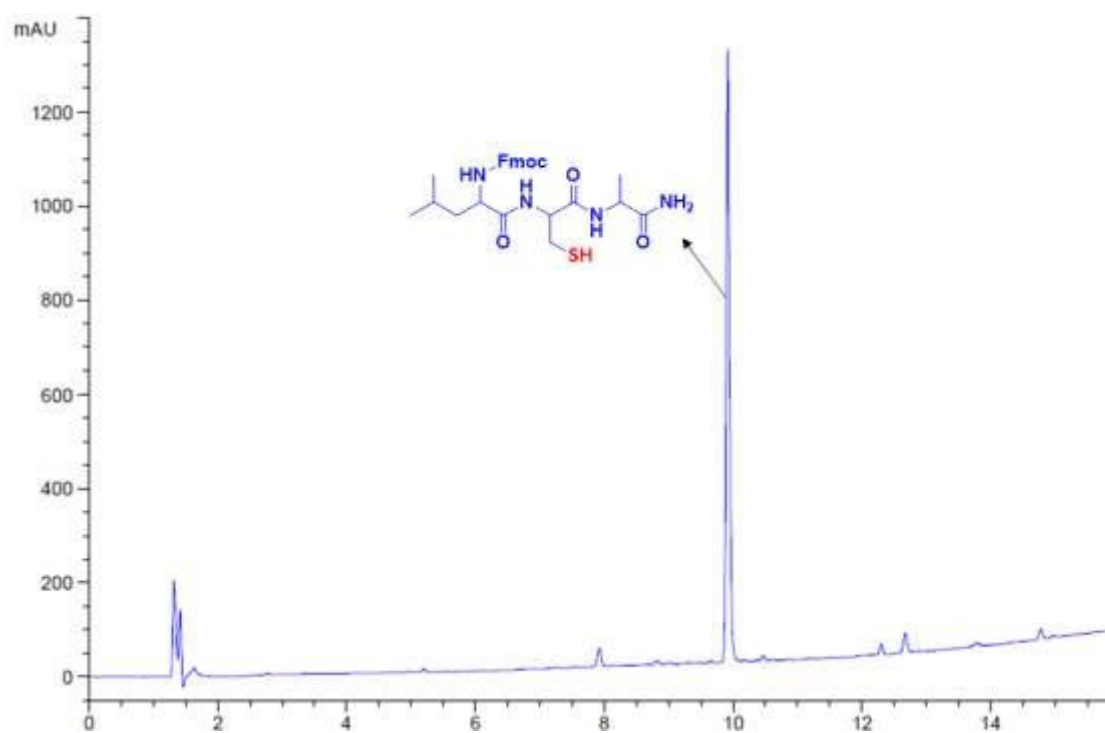


Figure S37: Fmoc-Ala-Cys(SIT)-Leu-NH-resin after treatment with DTT with 2.5% DIEA and 2.5% water in DMF.