

Synthesis of 3-((4-hydroxyphenyl)amino)propanoic Acid Derivatives as Promising Scaffolds for the Development of Antimicrobial Candidates Targeting Multidrug-Resistant Bacterial and Fungal Pathogens

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Supplementary Information

Content: Supplemental Figures S1–S66 representing ¹H and ¹³C NMR spectra (in DMSO-*d*₆) of compounds 5–37 and S67 representing mass spectra of compounds 15

((4-Hydroxyphenyl)azanediyl)dimethyl ester (5)

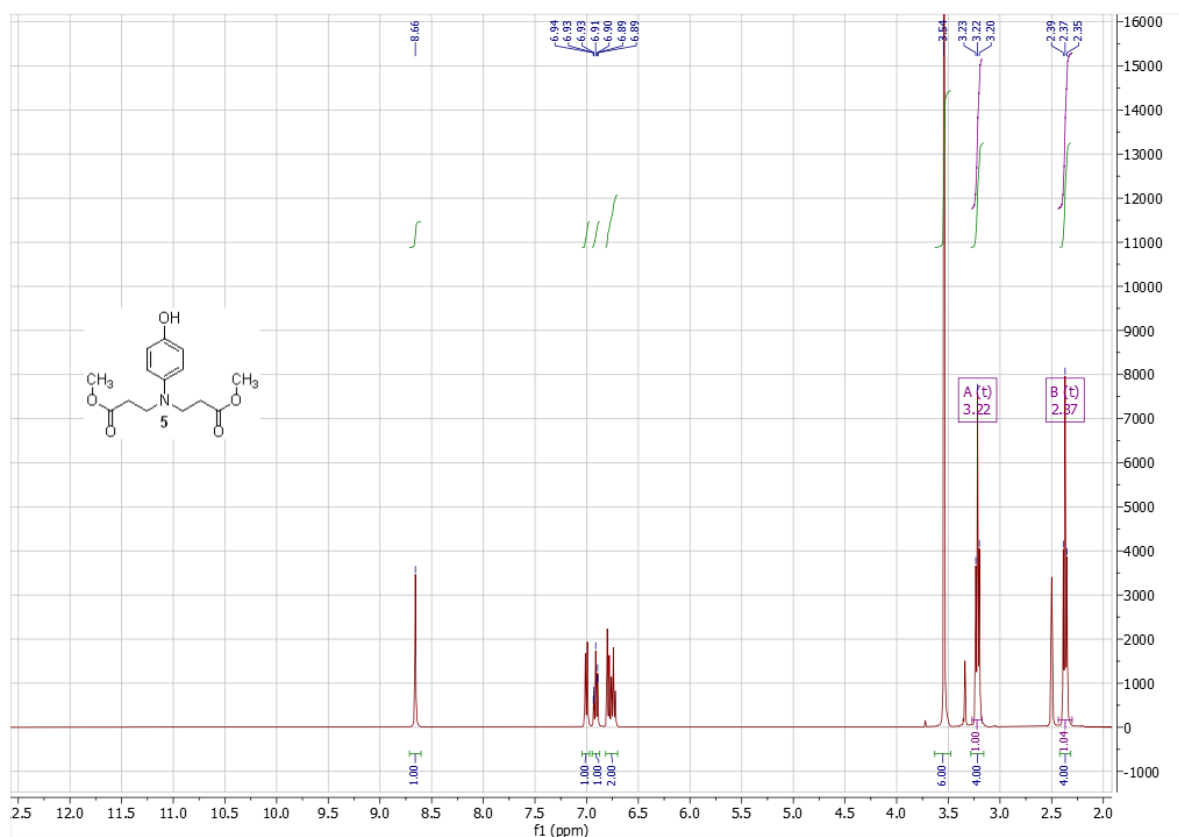


Figure S1. ¹H NMR spectrum of compound **5**

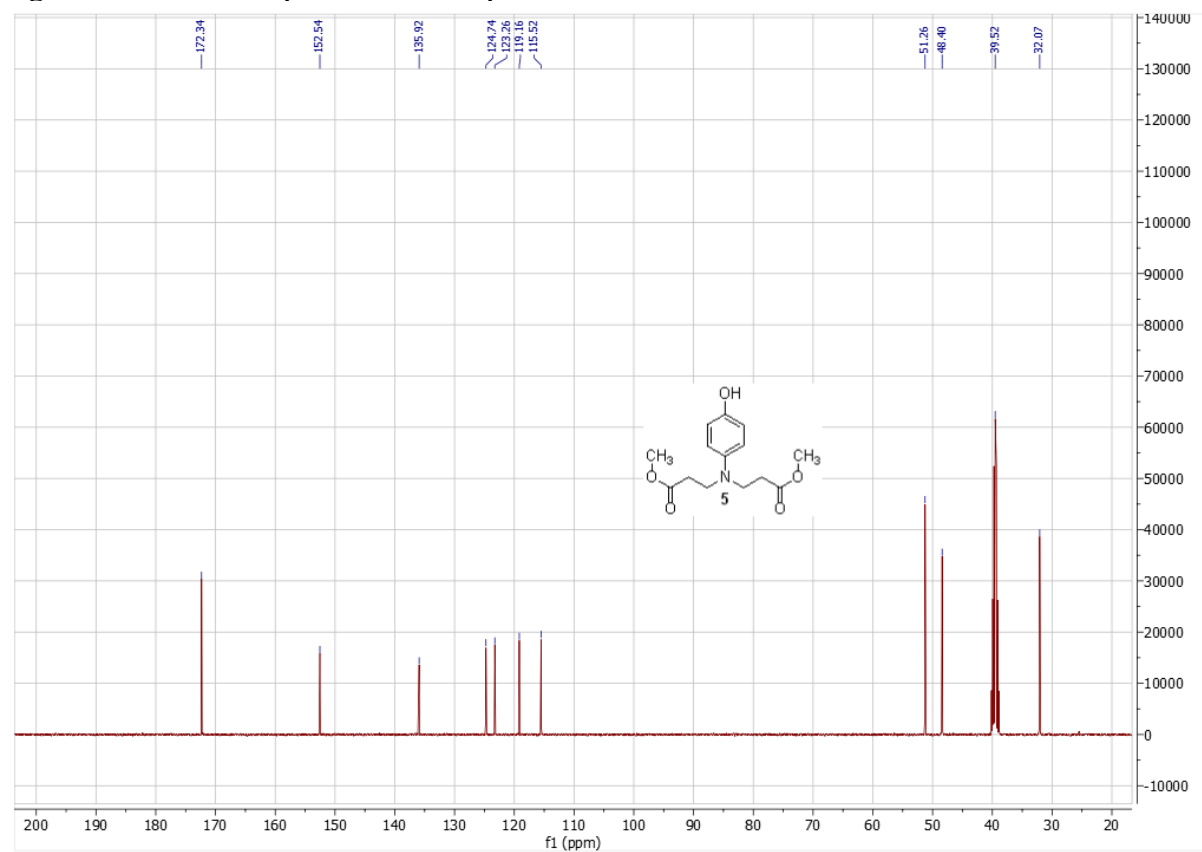


Figure S2. ¹³C NMR spectrum of compound **5**

3,3'-((4-Hydroxyphenyl)azanediyl)di(propanehydrazide) (6)

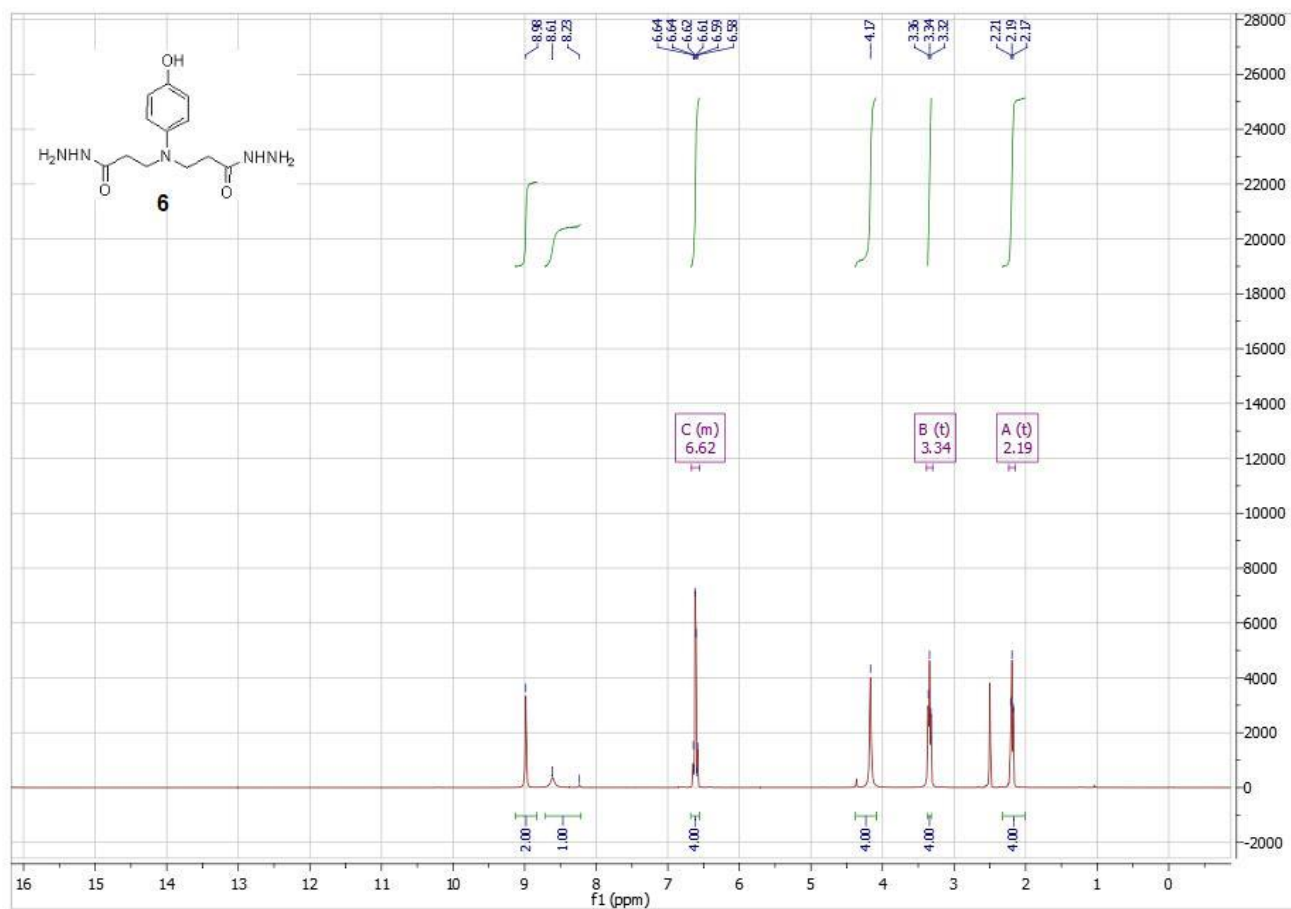


Figure S3. ¹H NMR spectrum of compound **6**

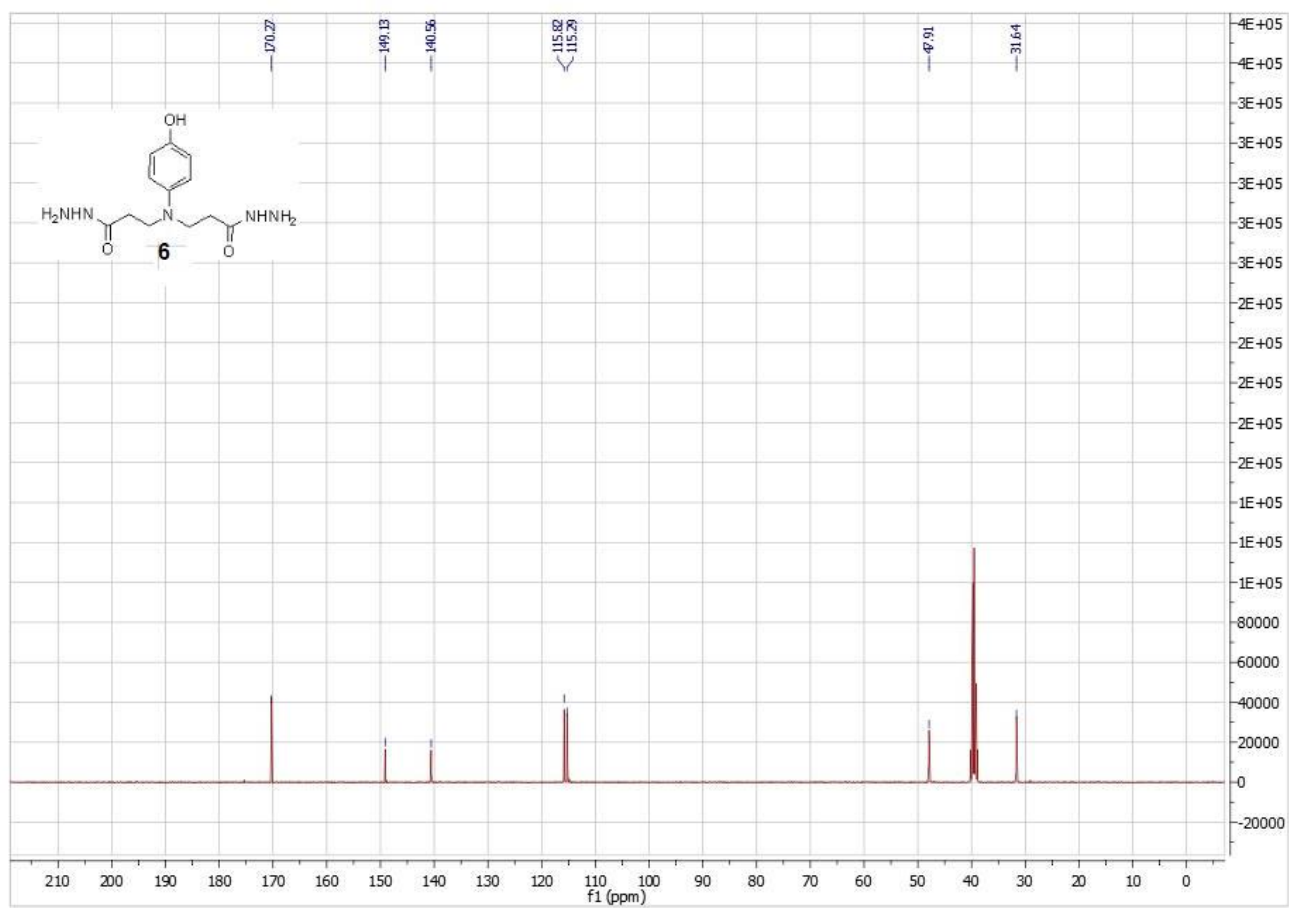


Figure S4. ¹³C NMR spectrum of compound **6**

N'-benzylidene-3-((4-hydroxyphenyl)amino)propanehydrazide (**7**)

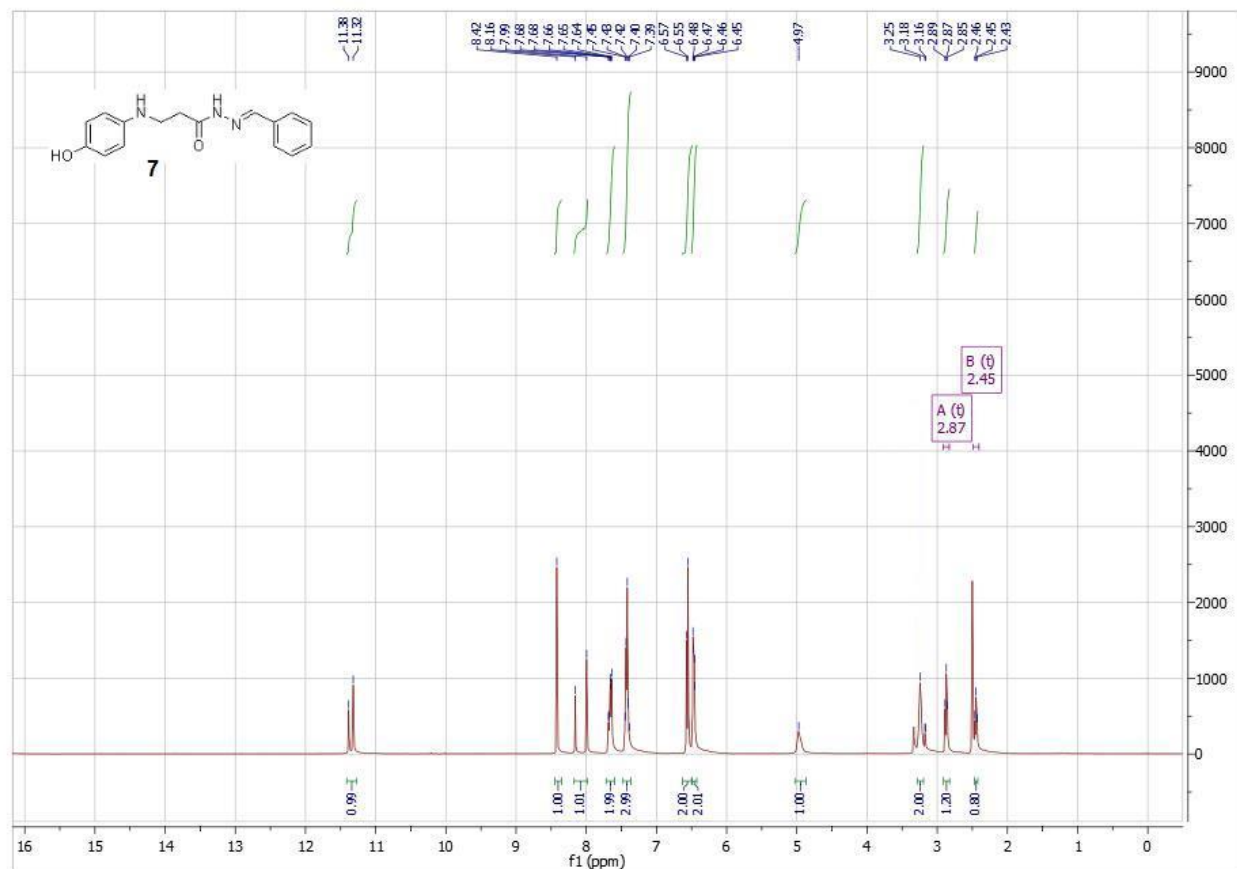


Figure S5. ¹H NMR spectrum of compound **7**

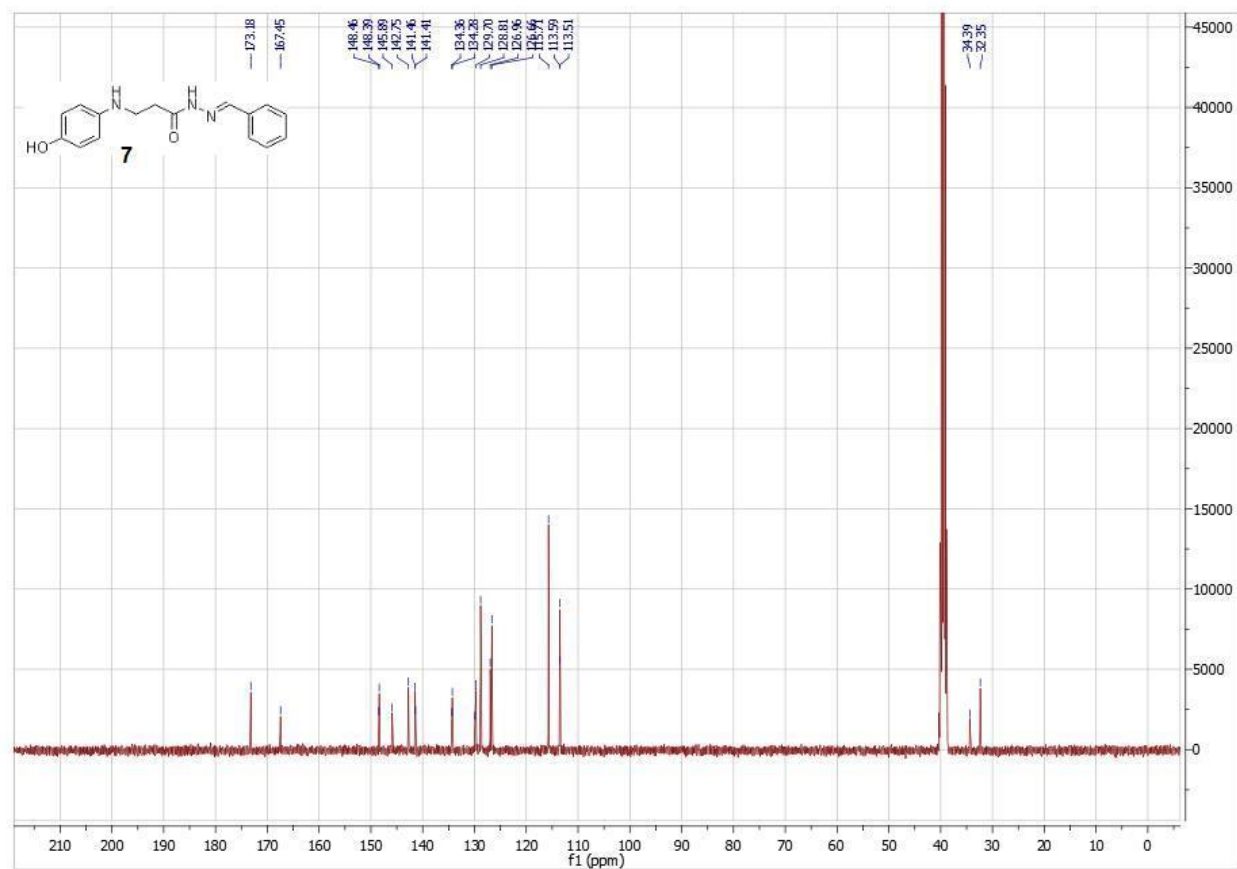


Figure S6. ¹³C NMR spectrum of compound **7**

3-((4-Hydroxyphenyl)amino)-N'-(4-nitrobenzylidene)propanehydrazide (**8**)

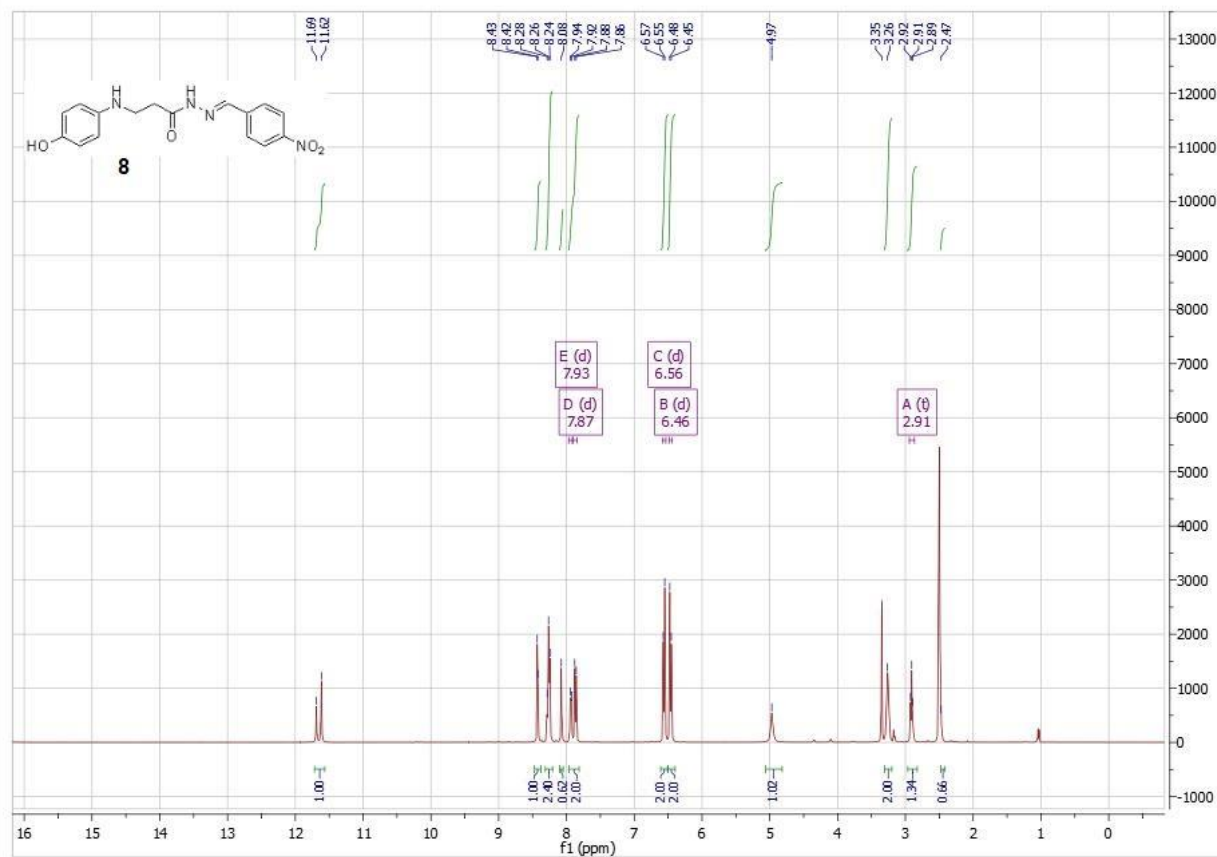


Figure S7. ^1H NMR spectrum of compound **8**

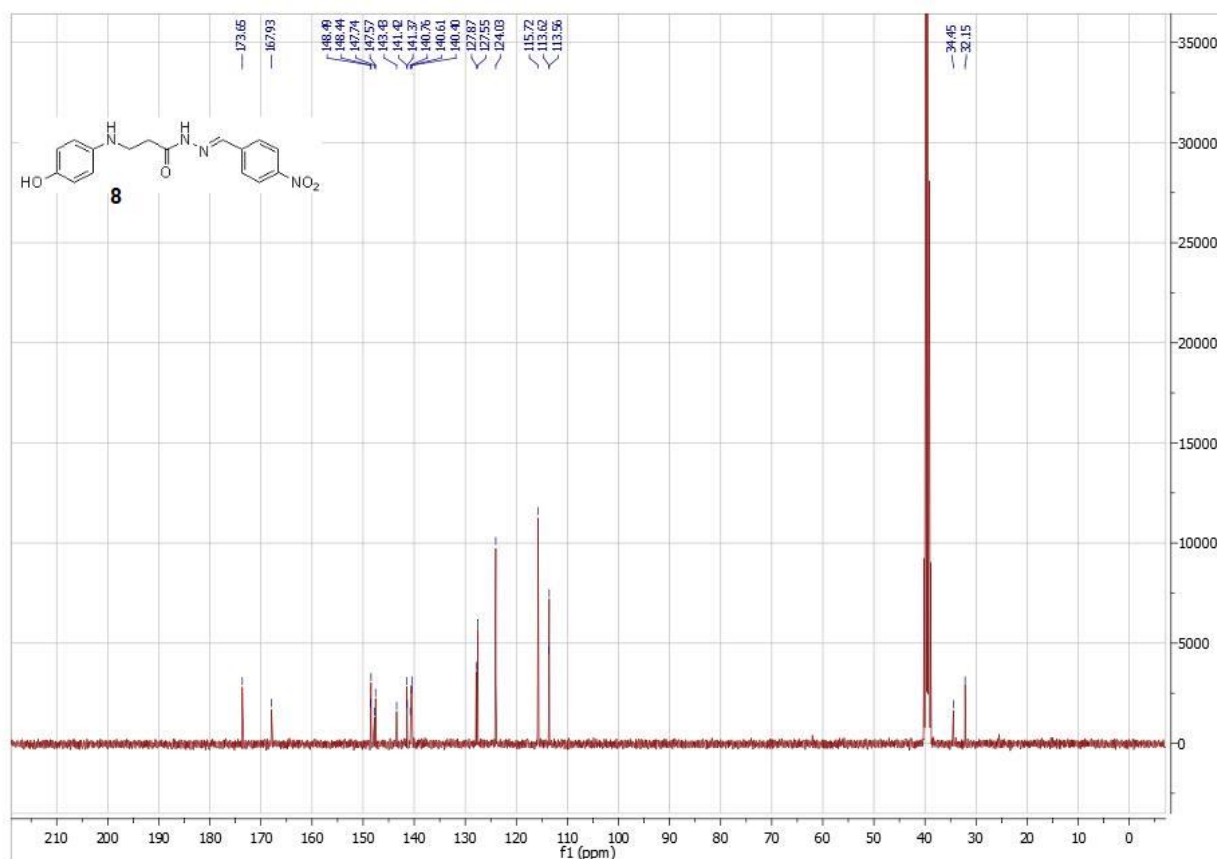


Figure S8. ^{13}C NMR spectrum of compound **8**

N'-(4-chlorobenzylidene)-3-((4-hydroxyphenyl)amino)propanehydrazide (**9**)

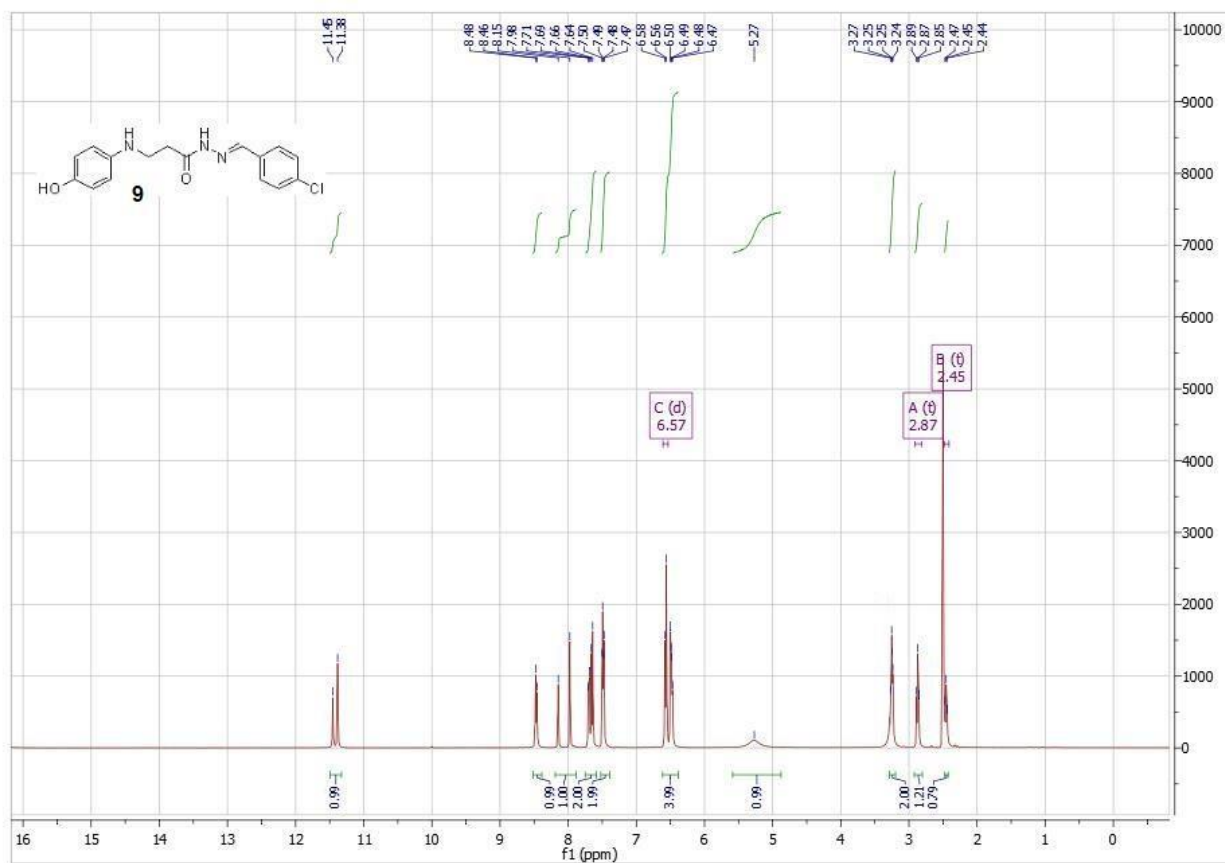


Figure S9. ¹H NMR spectrum of compound **9**

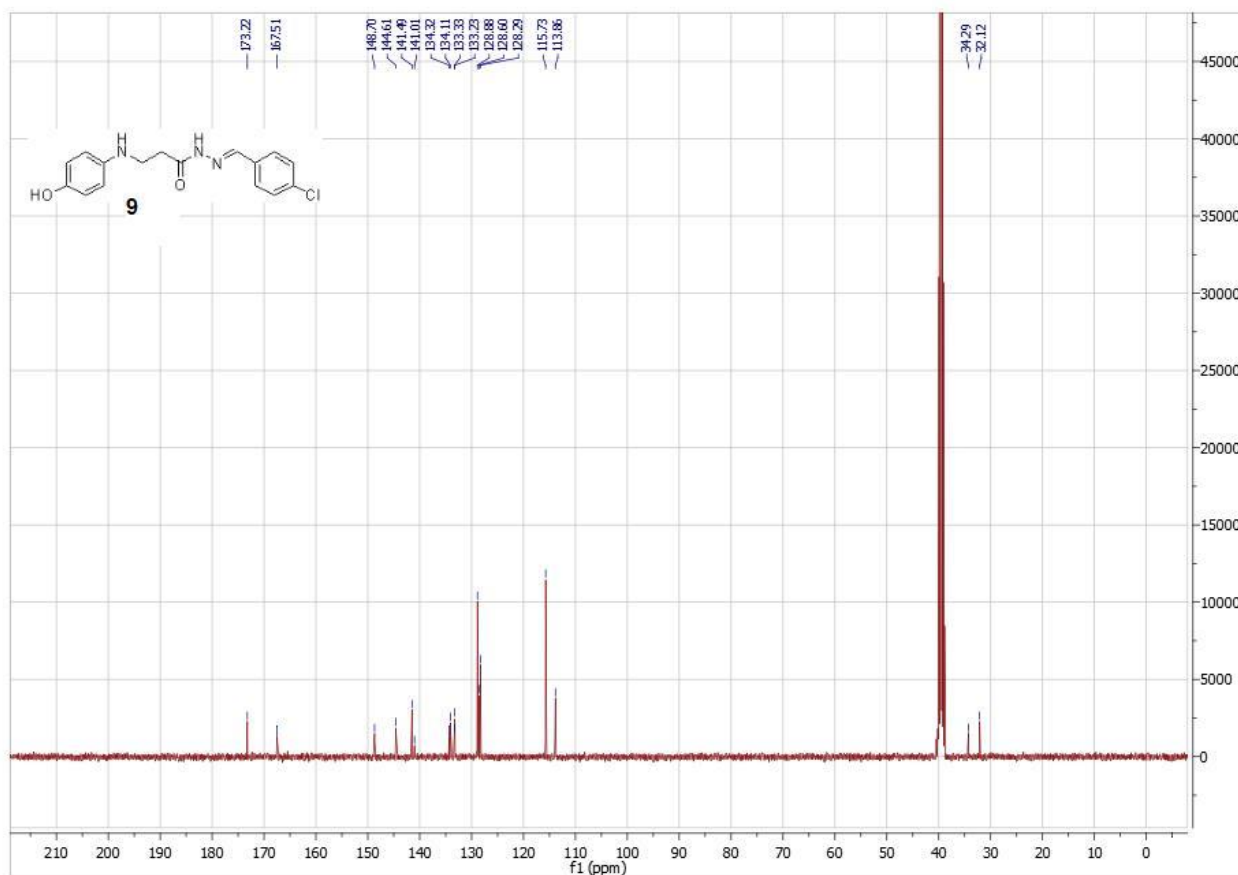


Figure S10. ¹³C NMR spectrum of compound **9**

N'-(4-(dimethylamino)benzylidene)-3-((4-hydroxyphenyl)amino)propanehydrazide (**10**)

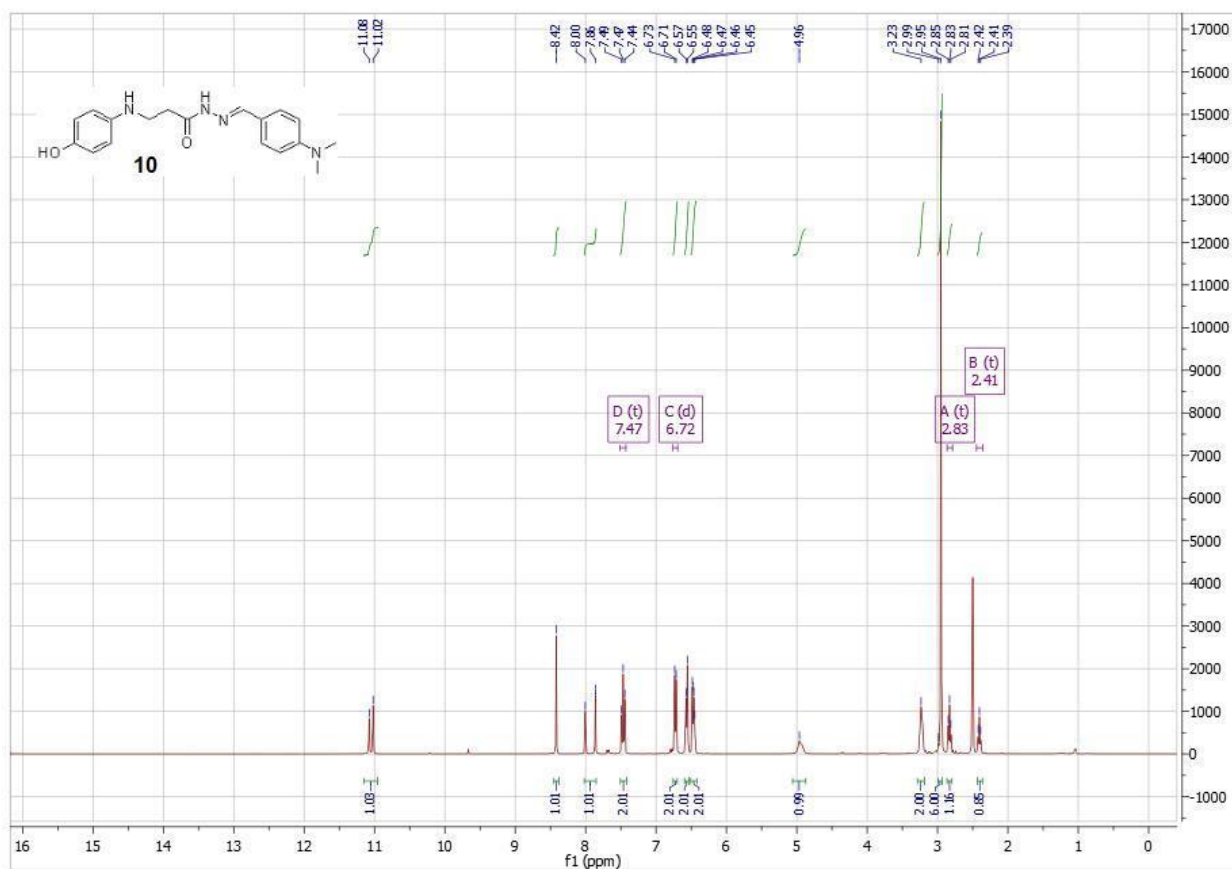


Figure S11. ^1H NMR spectrum of compound **10**

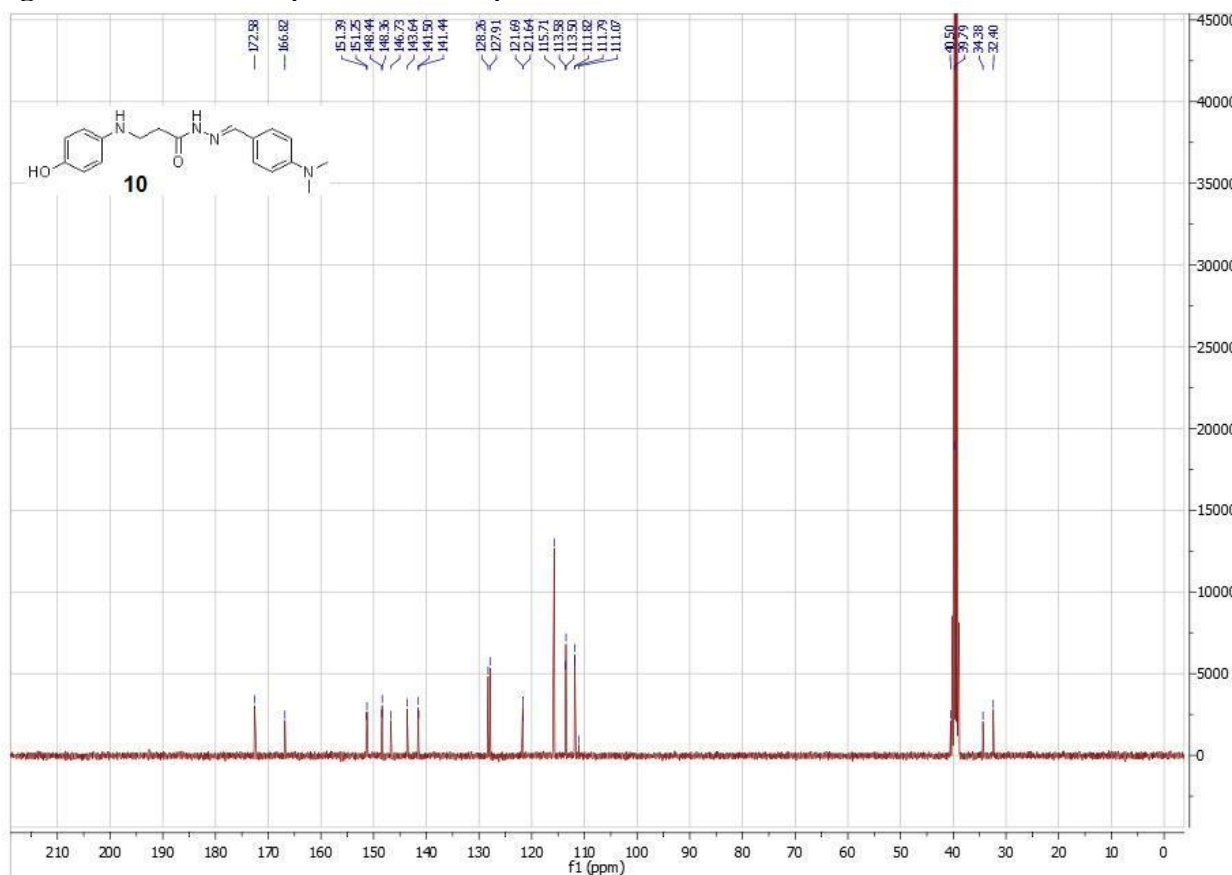


Figure S12. ^{13}C NMR spectrum of compound **10**

N'-(4-hydroxybenzylidene)-3-((4-hydroxyphenyl)amino)propanehydrazide (**11**)

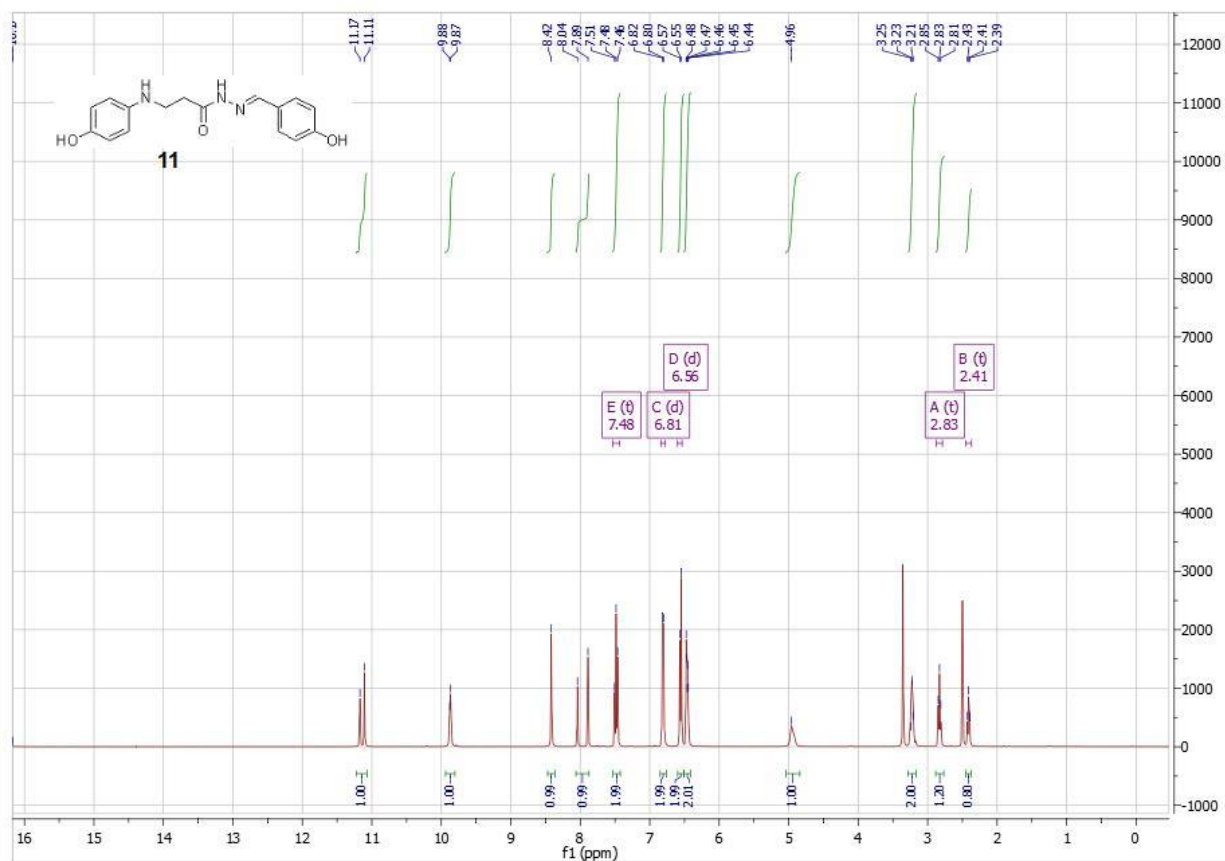


Figure S13. ¹H NMR spectrum of compound **11**

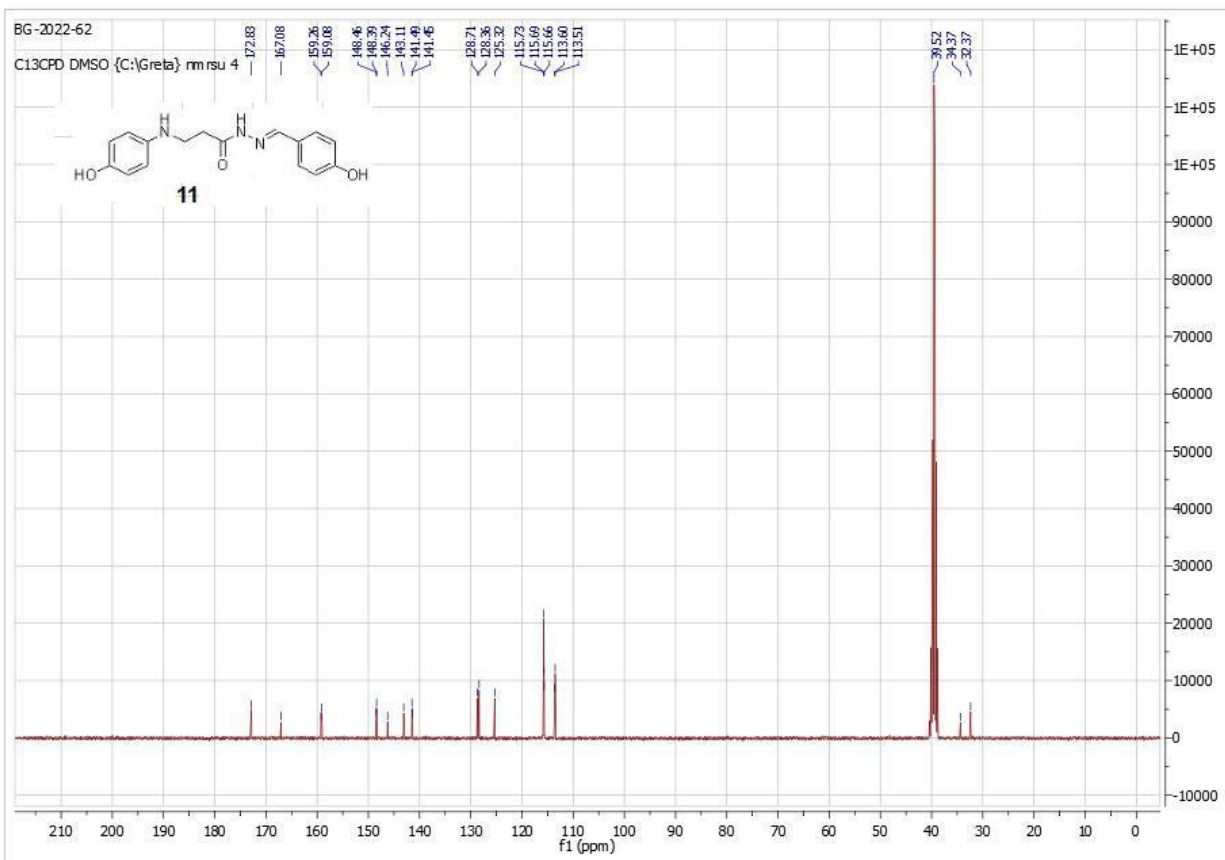


Figure S14. ¹³C NMR spectrum of compound **11**

3-((4-Hydroxyphenyl)amino)-N'-(3,4,5-trimethoxybenzylidene)propanehydrazide (12)

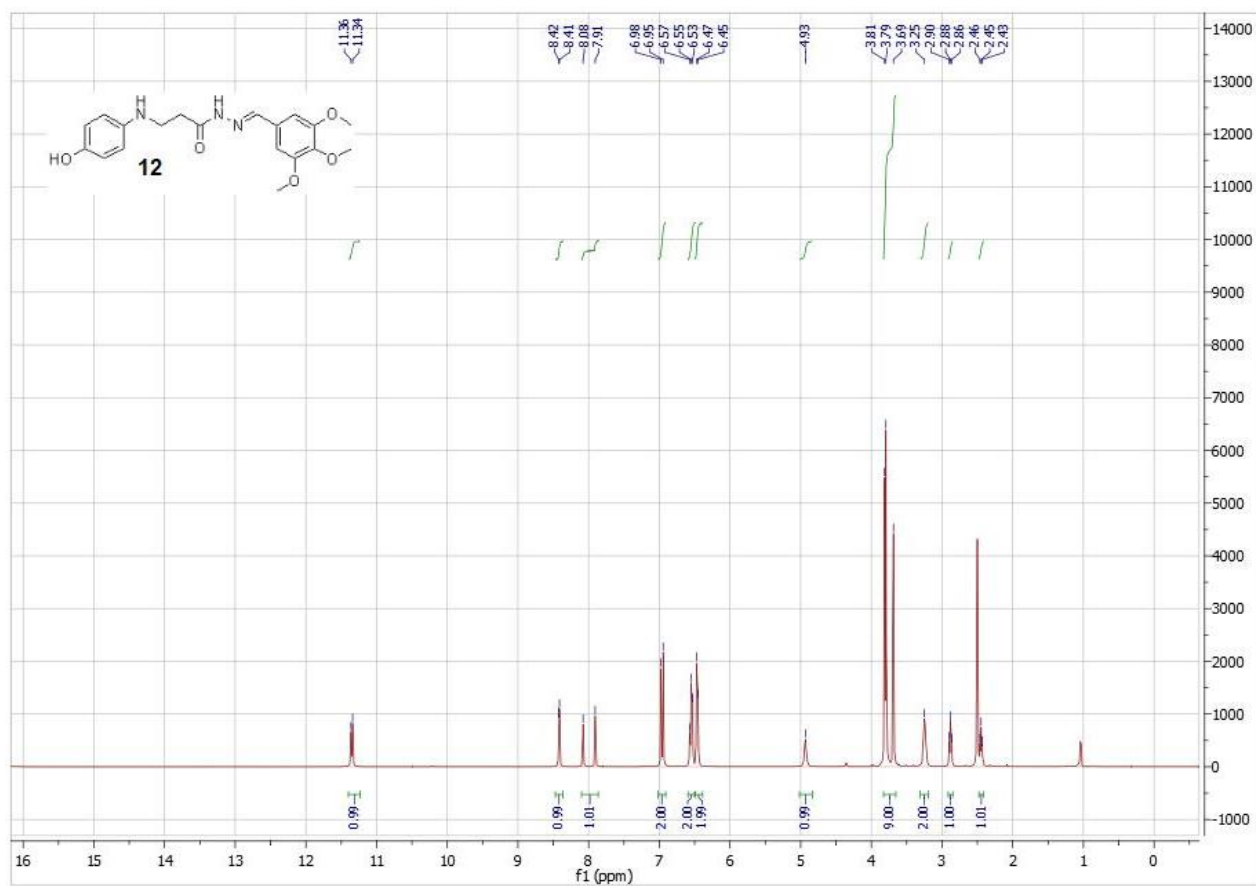


Figure S15. ¹H NMR spectrum of compound **12**

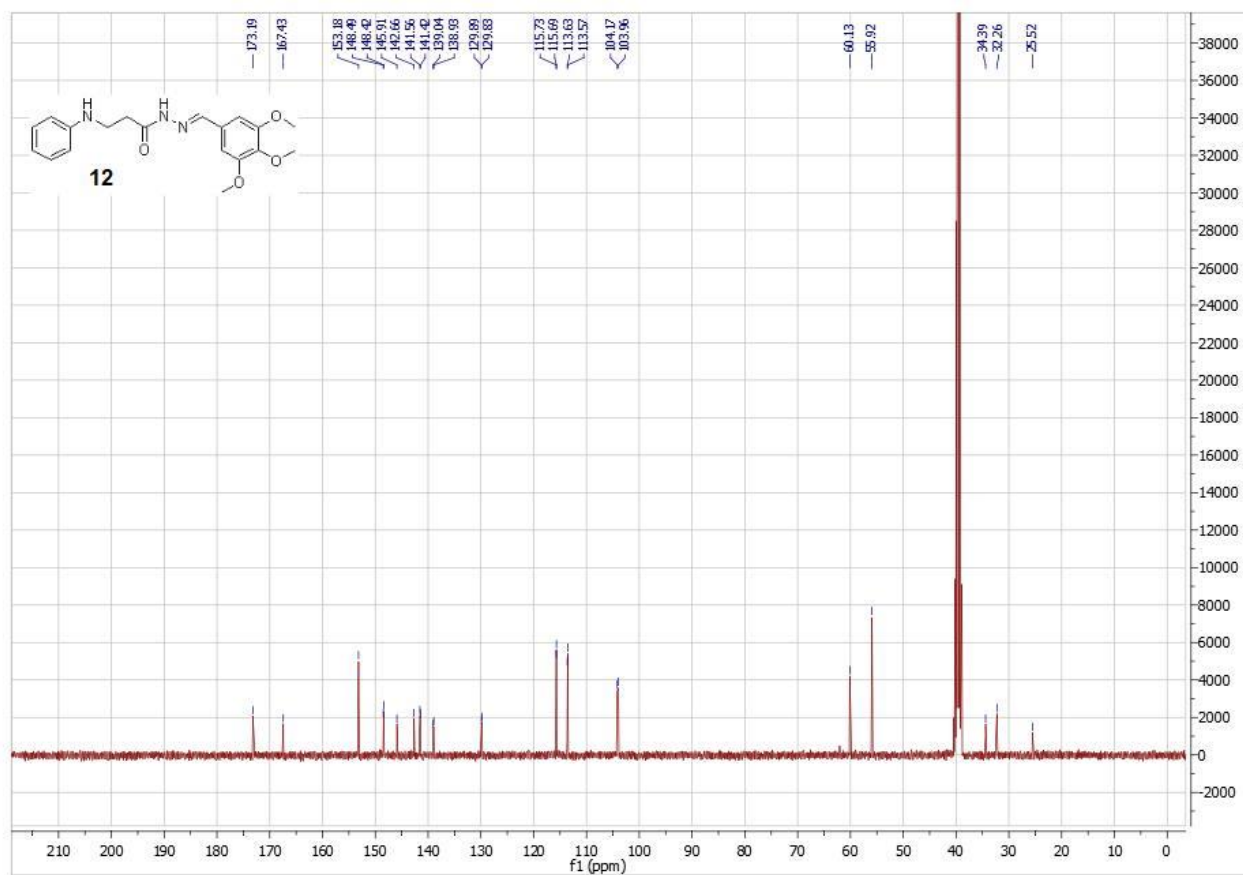


Figure S16. ¹³C NMR spectrum of compound **12**

3-((4-hydroxyphenyl)amino)-N'-(naphthalen-1-ylmethylene)propanehydrazide (**13**)

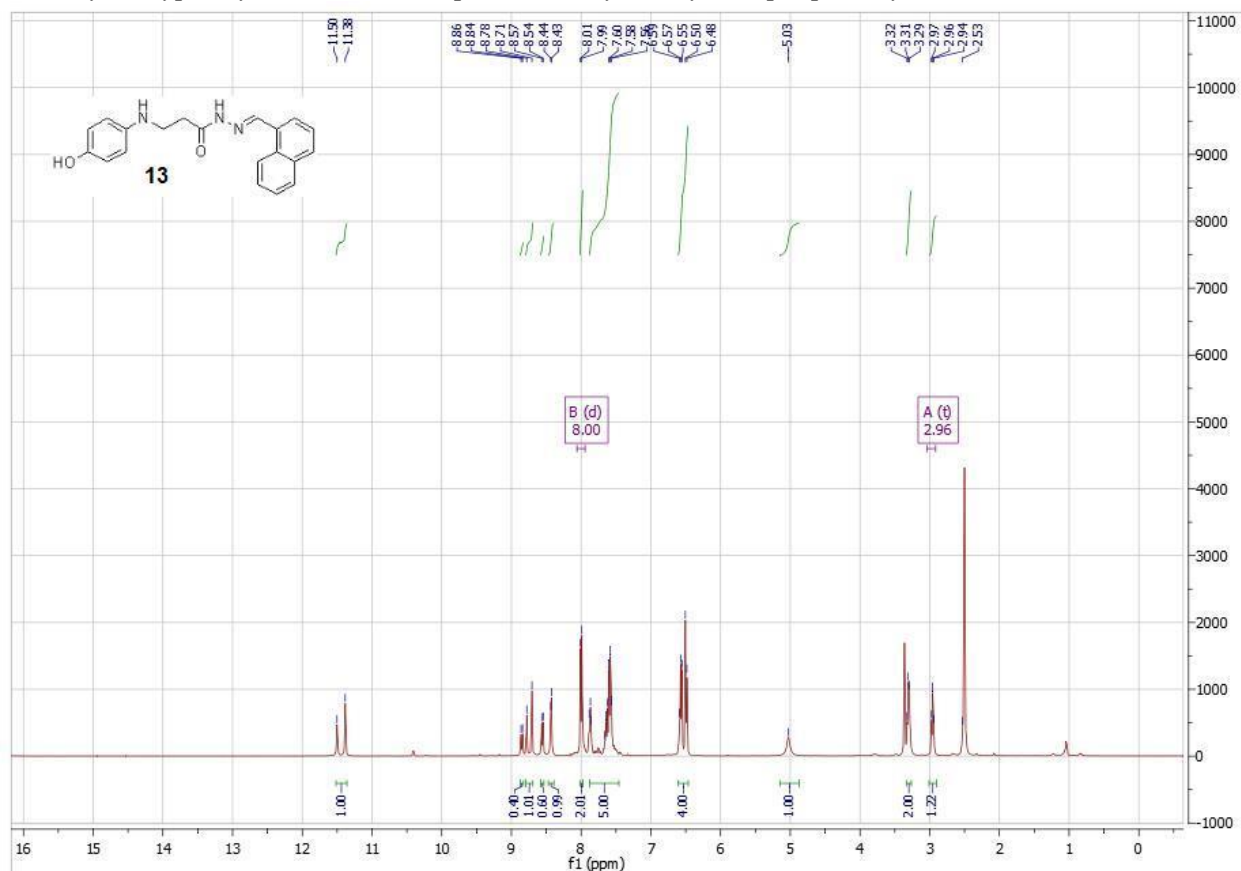


Figure S17. ¹H NMR spectrum of compound **13**

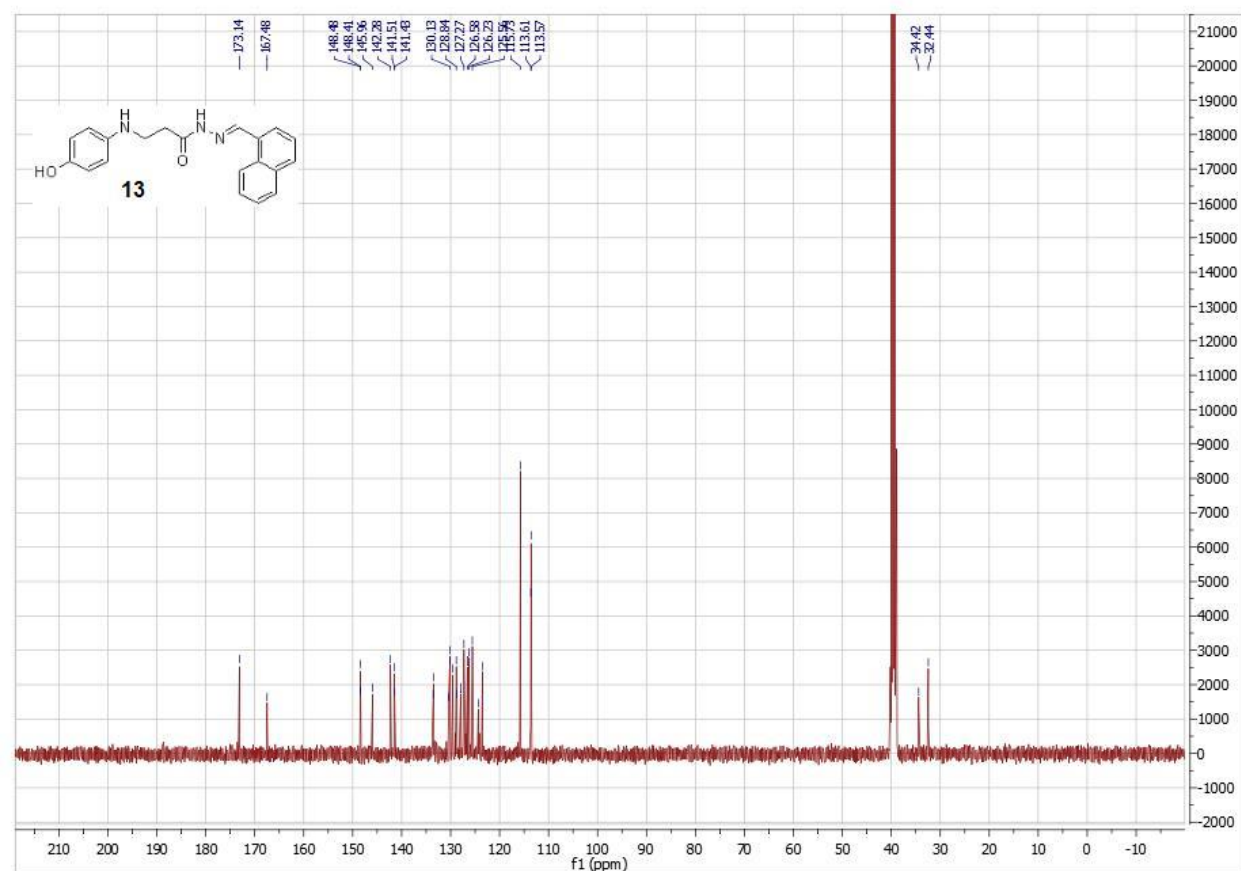


Figure S18. ¹³C NMR spectrum of compound **13**

3-((4-Hydroxyphenyl)amino)-N'-(thien-2-ylmethylene)propanehydrazide (14)

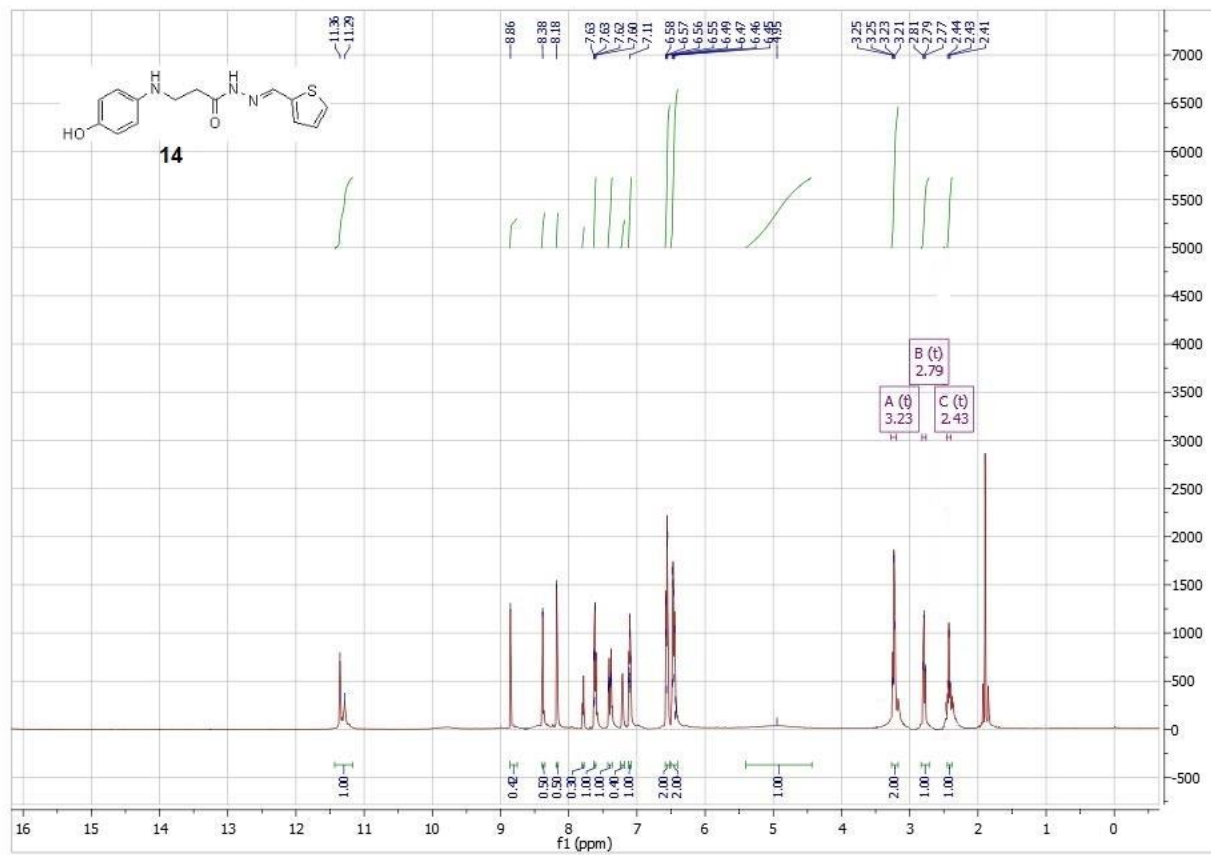


Figure S19. ^1H NMR spectrum of compound **14**

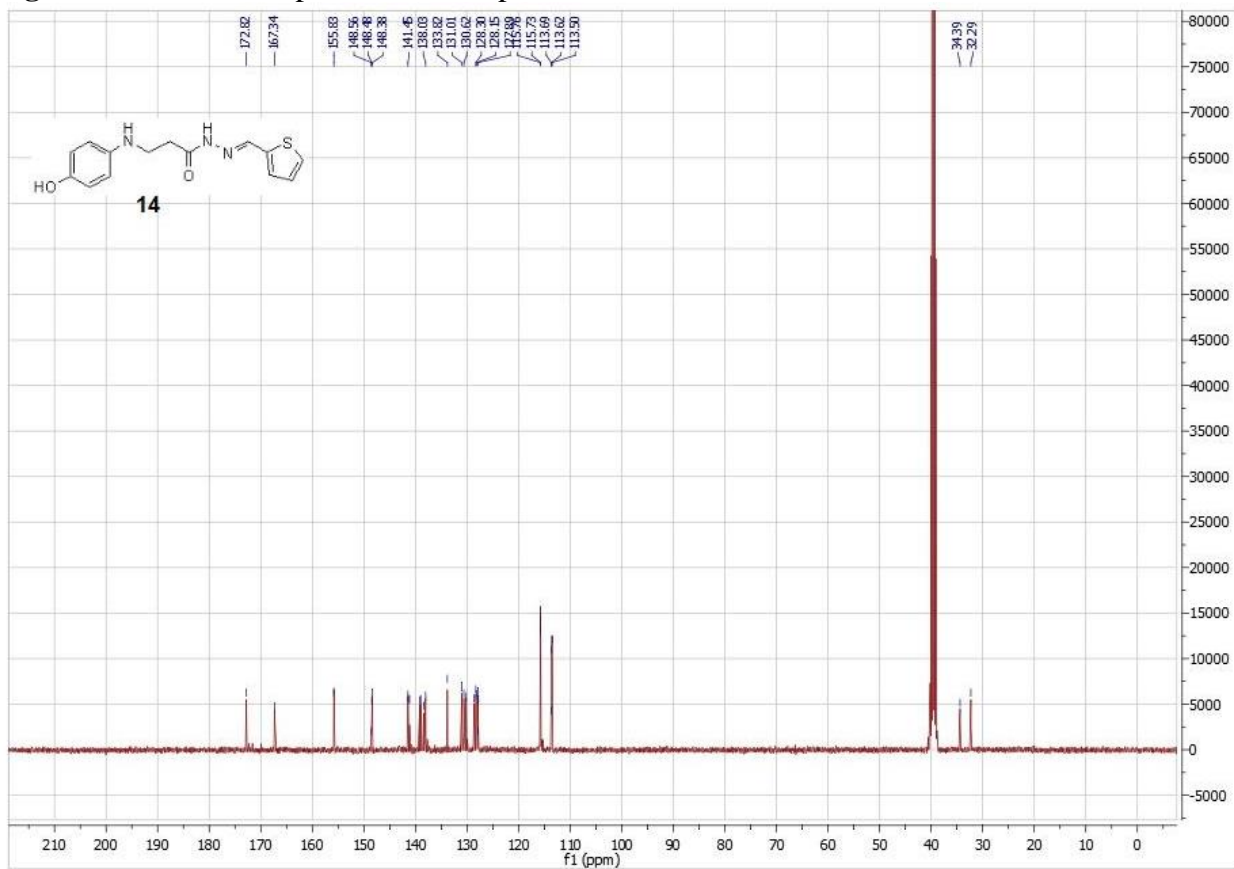


Figure S20. ^{13}C NMR spectrum of compound **14**

3-((4-Hydroxyphenyl)amino)-N'-((5-nitrothien-2-yl)methylene)propanehydrazide (**15**)

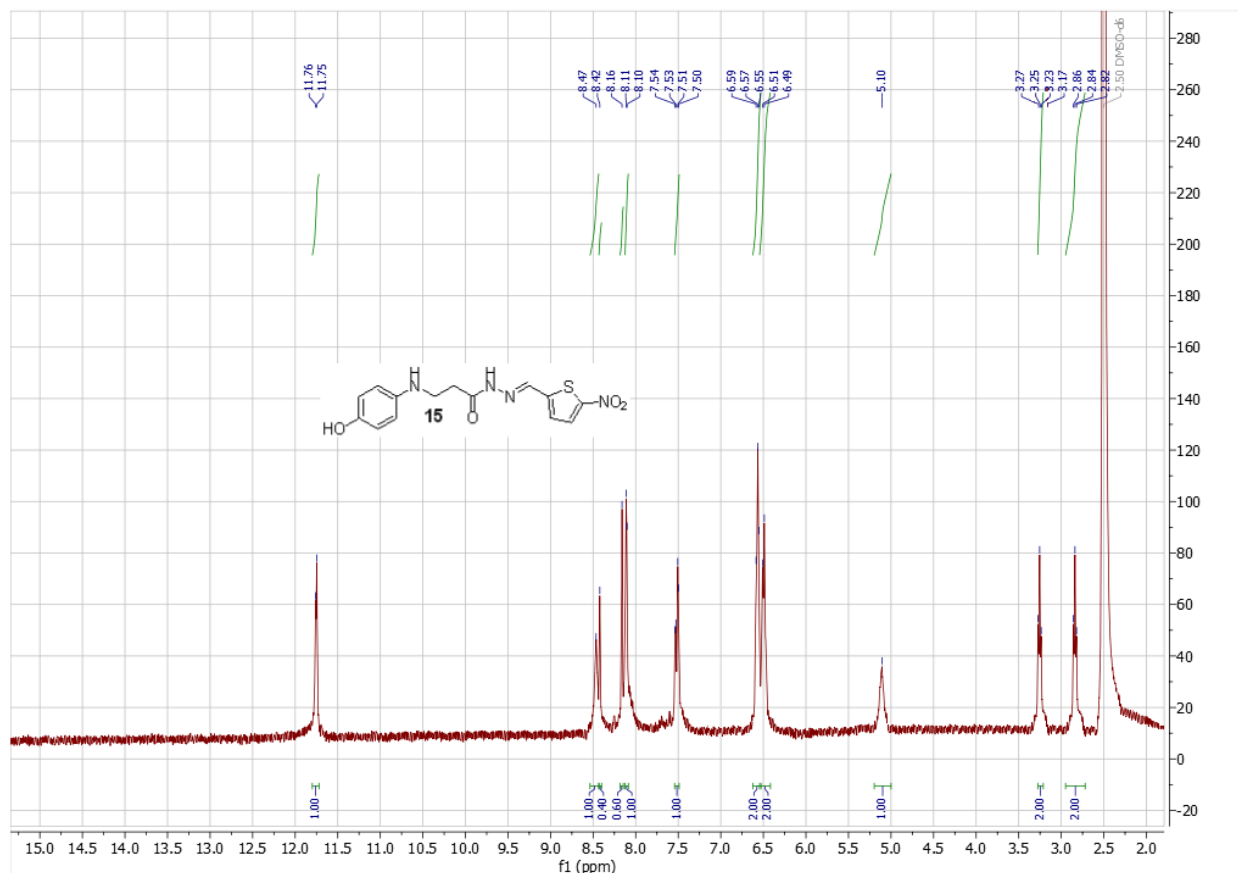


Figure S21. ¹H NMR spectrum of compound **15**

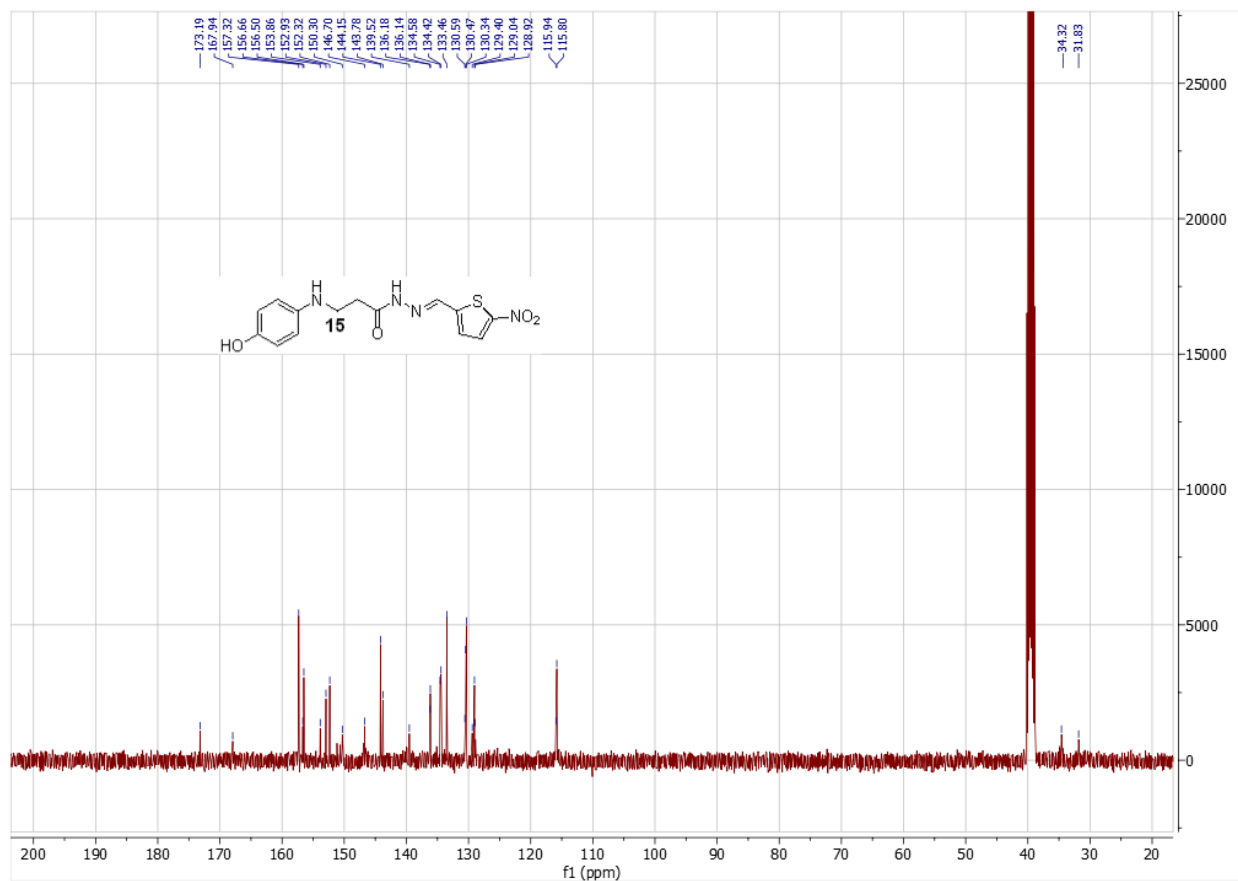


Figure S22. ¹³C NMR spectrum of compound **15**

3-((4-Hydroxyphenyl)amino)-N'-((5-nitrofuryl-2-yl)methylene)propanehydrazide (**16**)

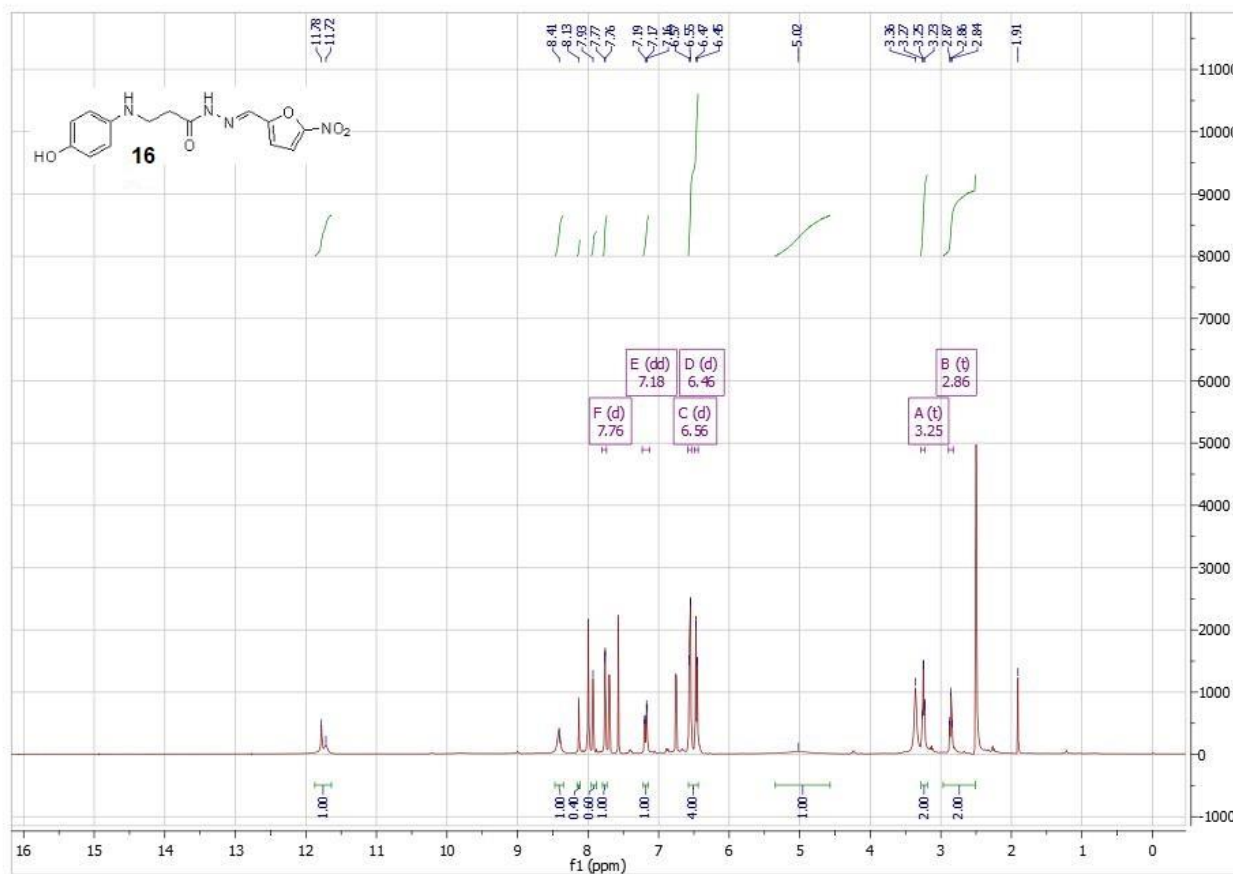


Figure S23. ¹H NMR spectrum of compound **16**

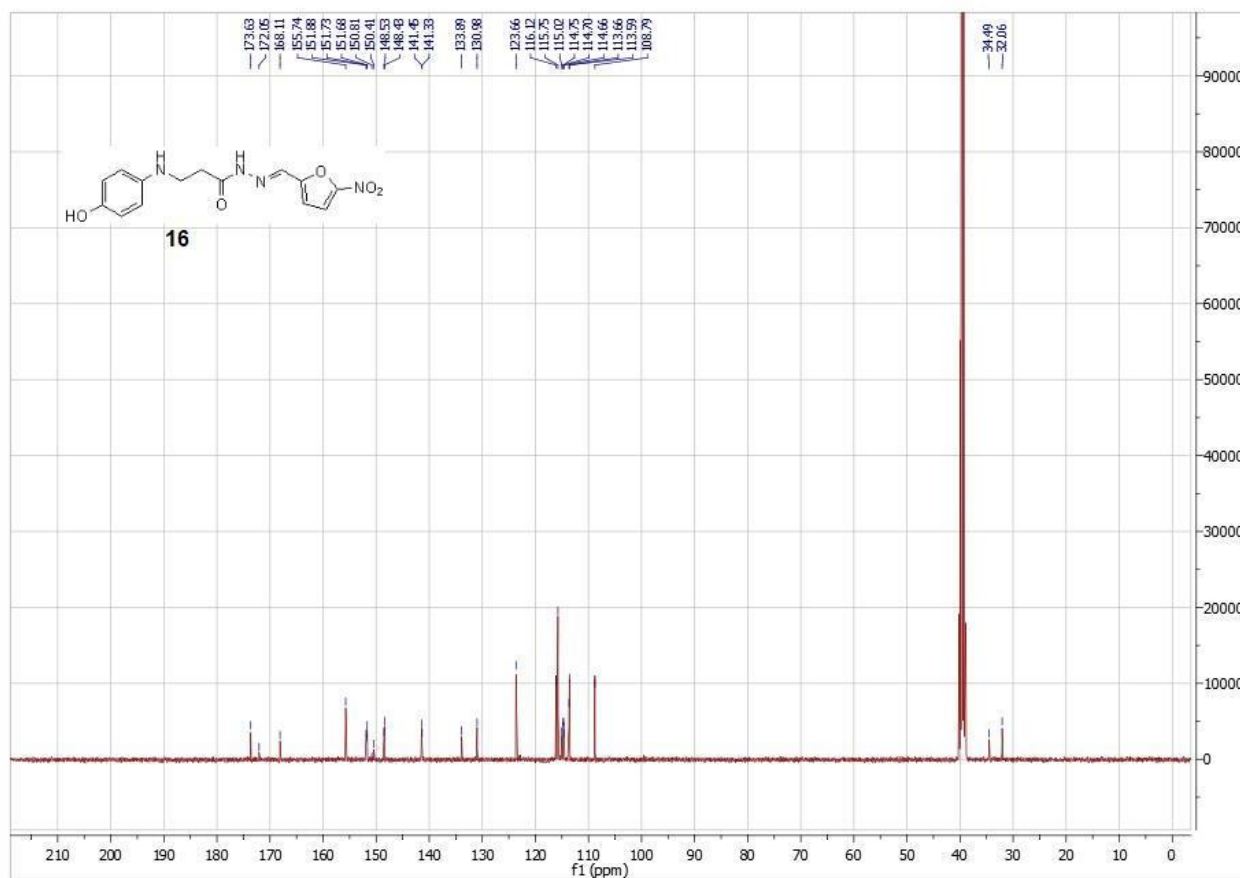


Figure S24. ¹³C NMR spectrum of compound **16**

N-(2,5-dimethyl-1*H*-pyrrol-1-yl)-3-((4-hydroxyphenyl)amino)propanamide (**17**)

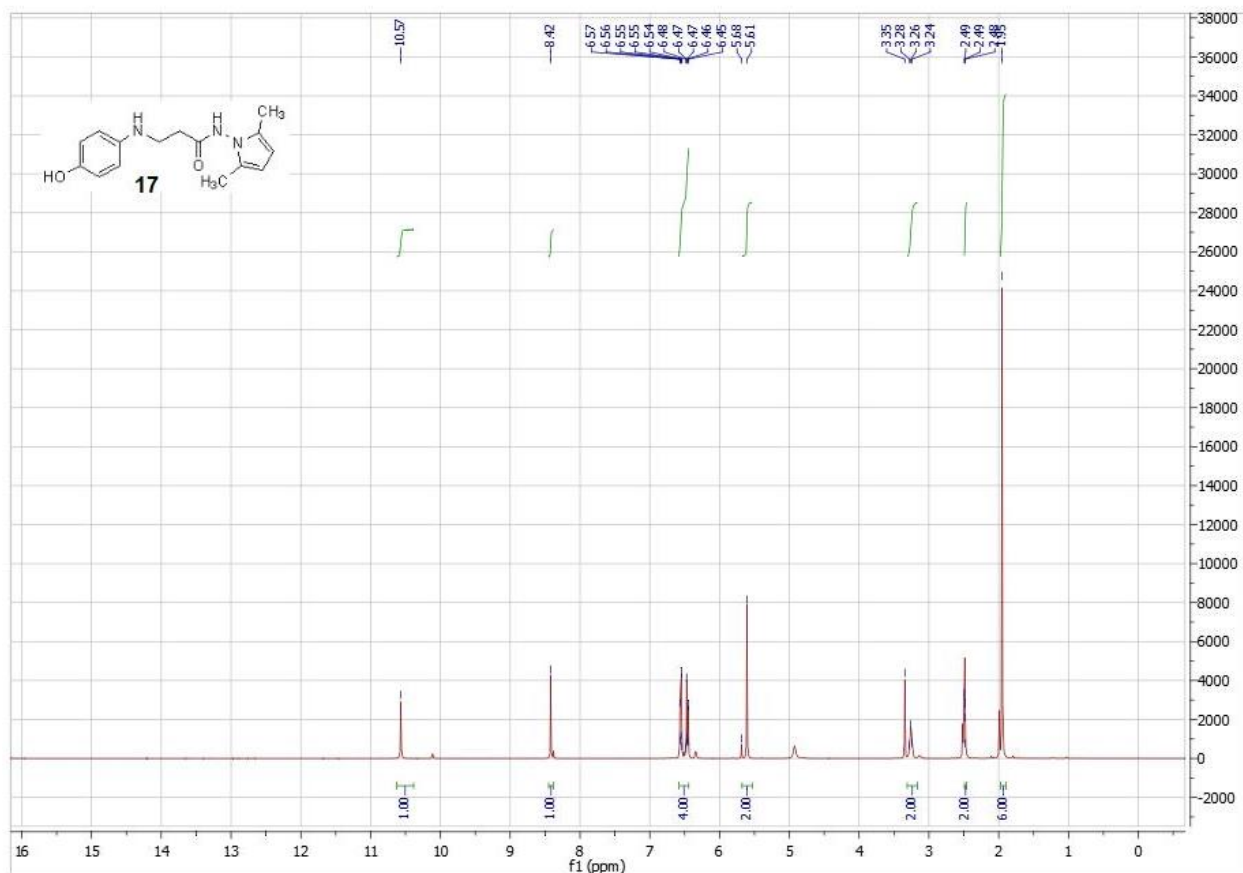


Figure S25. ¹H NMR spectrum of compound **17**

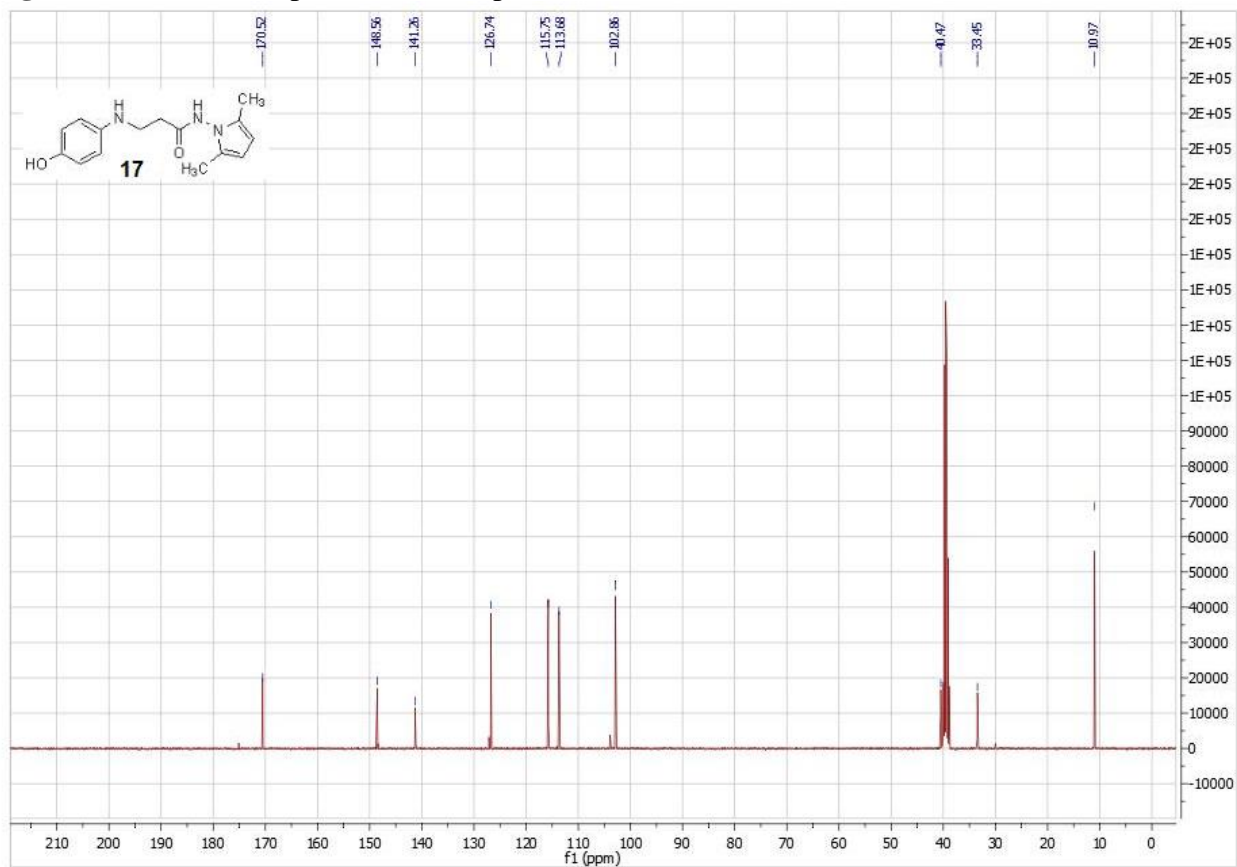


Figure S26. ¹³C NMR spectrum of compound **17**

3-((4-Hydroxyphenyl)amino)-N'-(2-oxoindolin-3-ylidene)propanehydrazide (**18**)

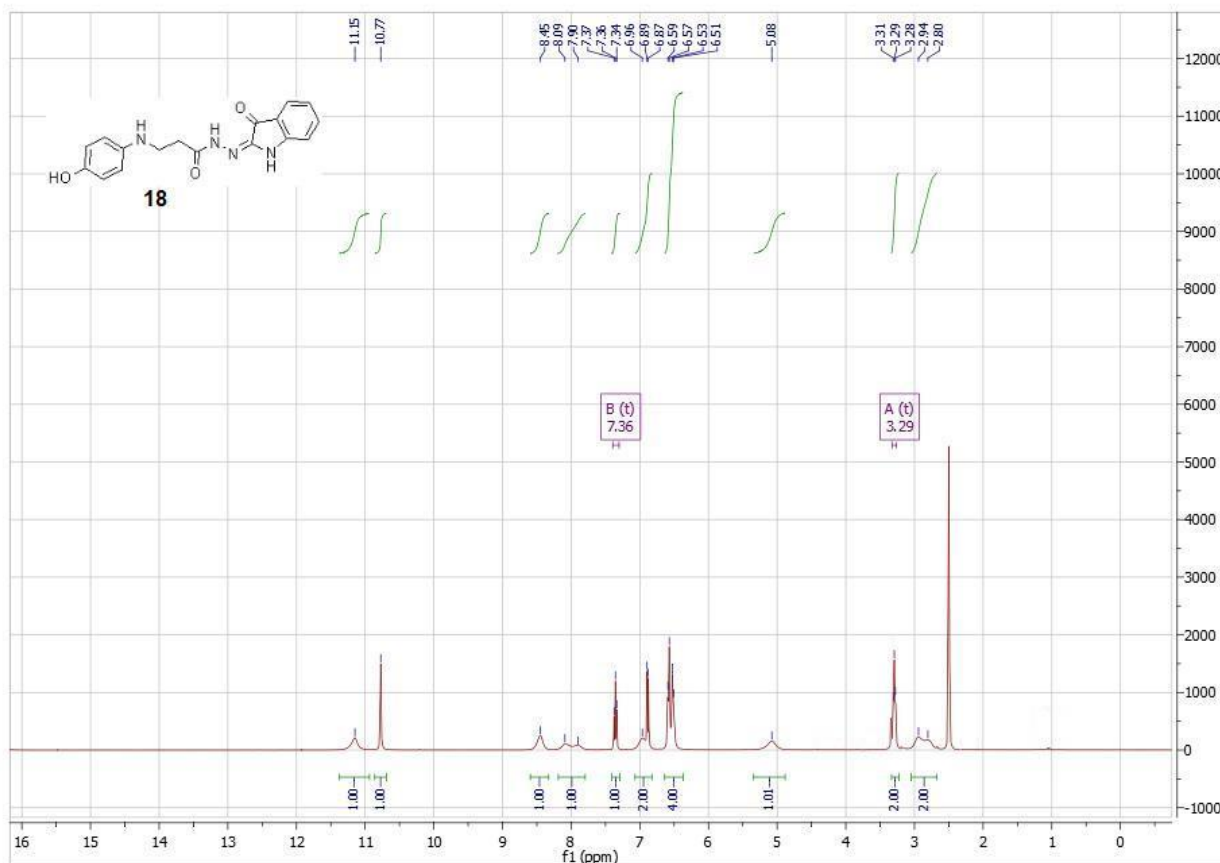


Figure S27. ¹H NMR spectrum of compound **18**

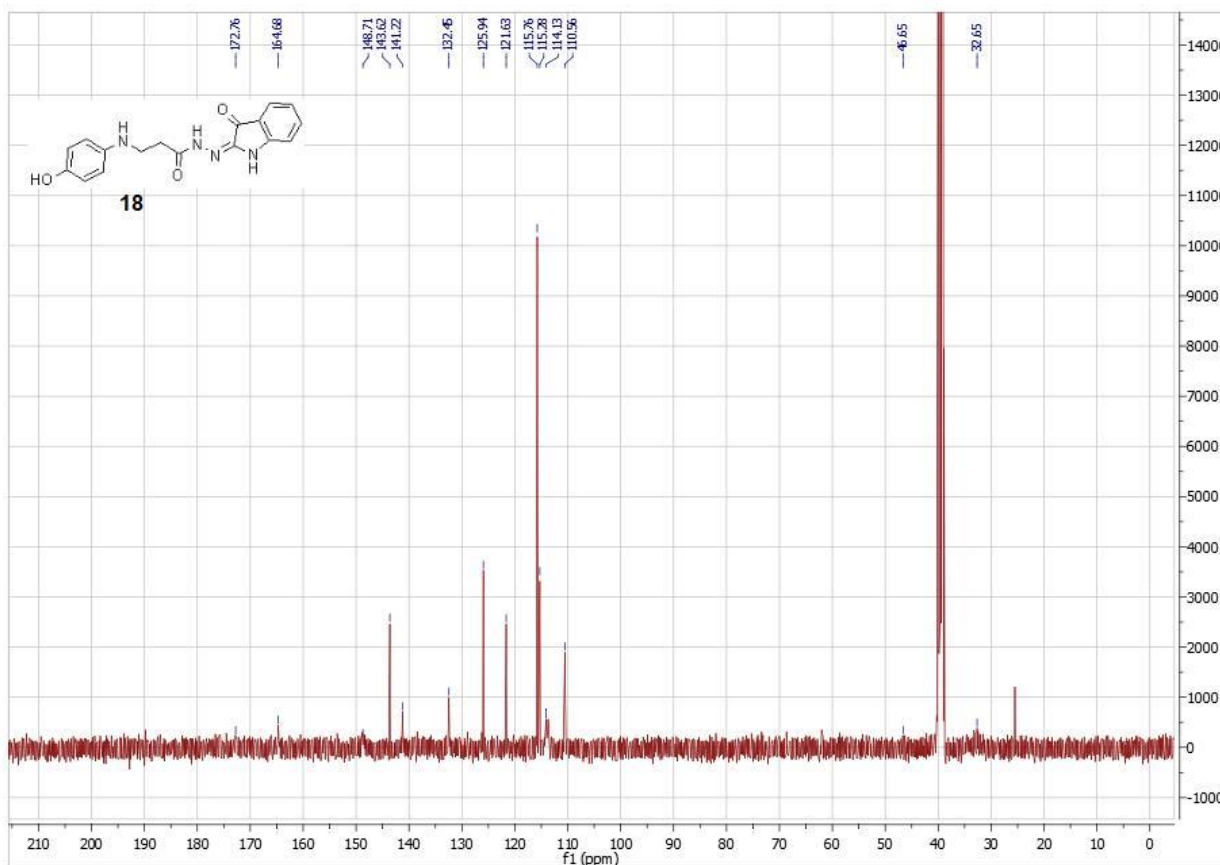


Figure S28. ¹³C NMR spectrum of compound **18**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N'*-(2-oxindolin-3-yl)methylene)propanehydrazide (**19**)

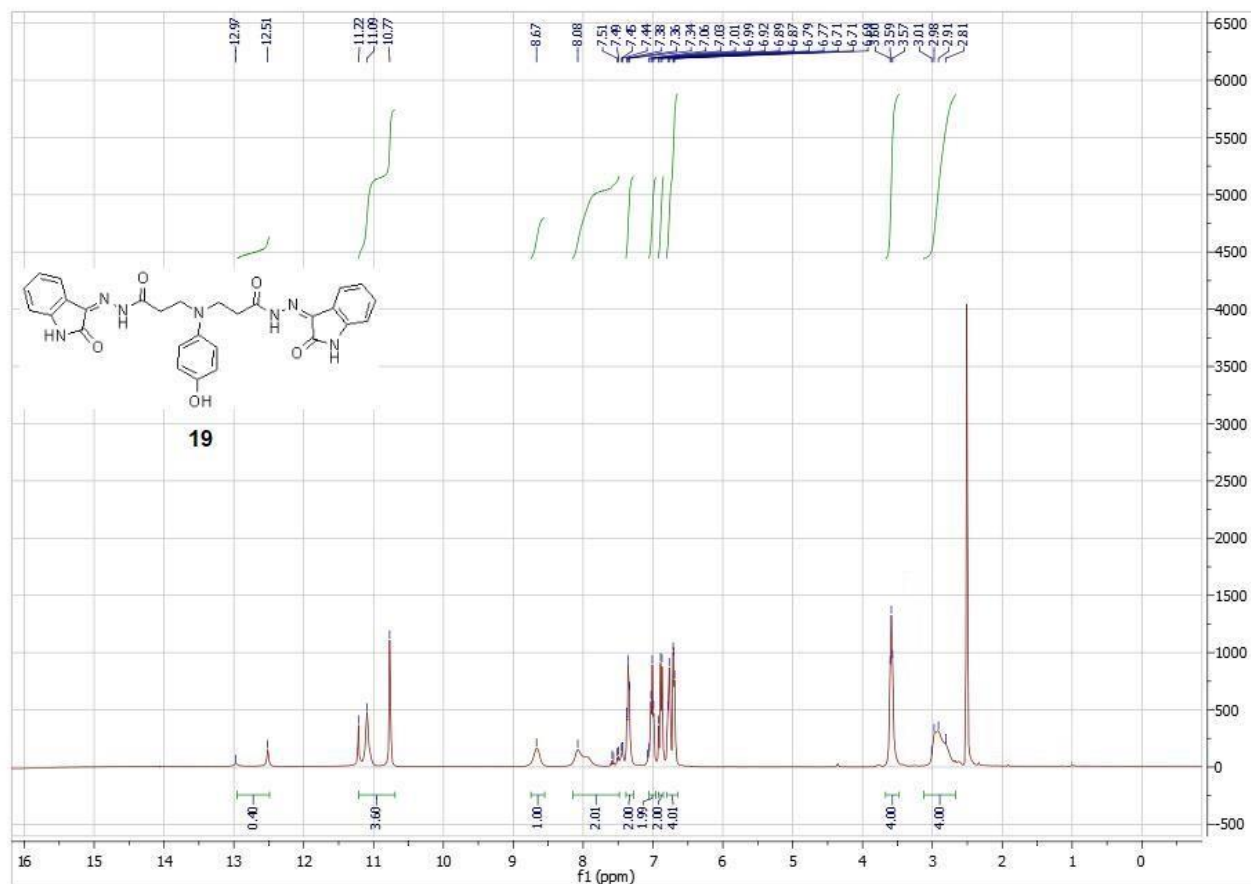


Figure S29. ¹H NMR spectrum of compound **19**

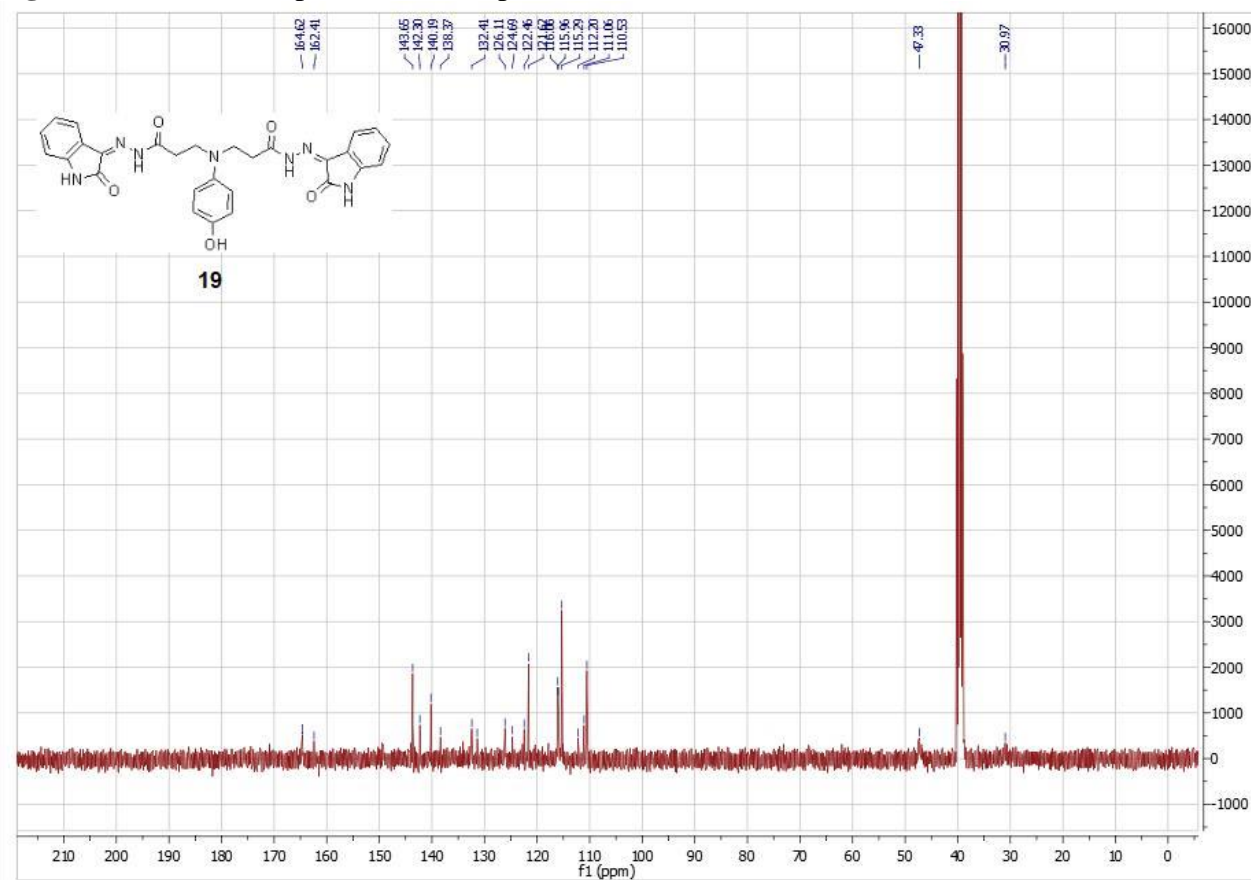


Figure S30. ¹³C NMR spectrum of compound **19**

5,5'-(((4-Hydroxyphenyl)azanediyl)bis(ethane-2,1-diyl))bis(1,3,4-oxadiazole-2(3H)-thione) (**20**)

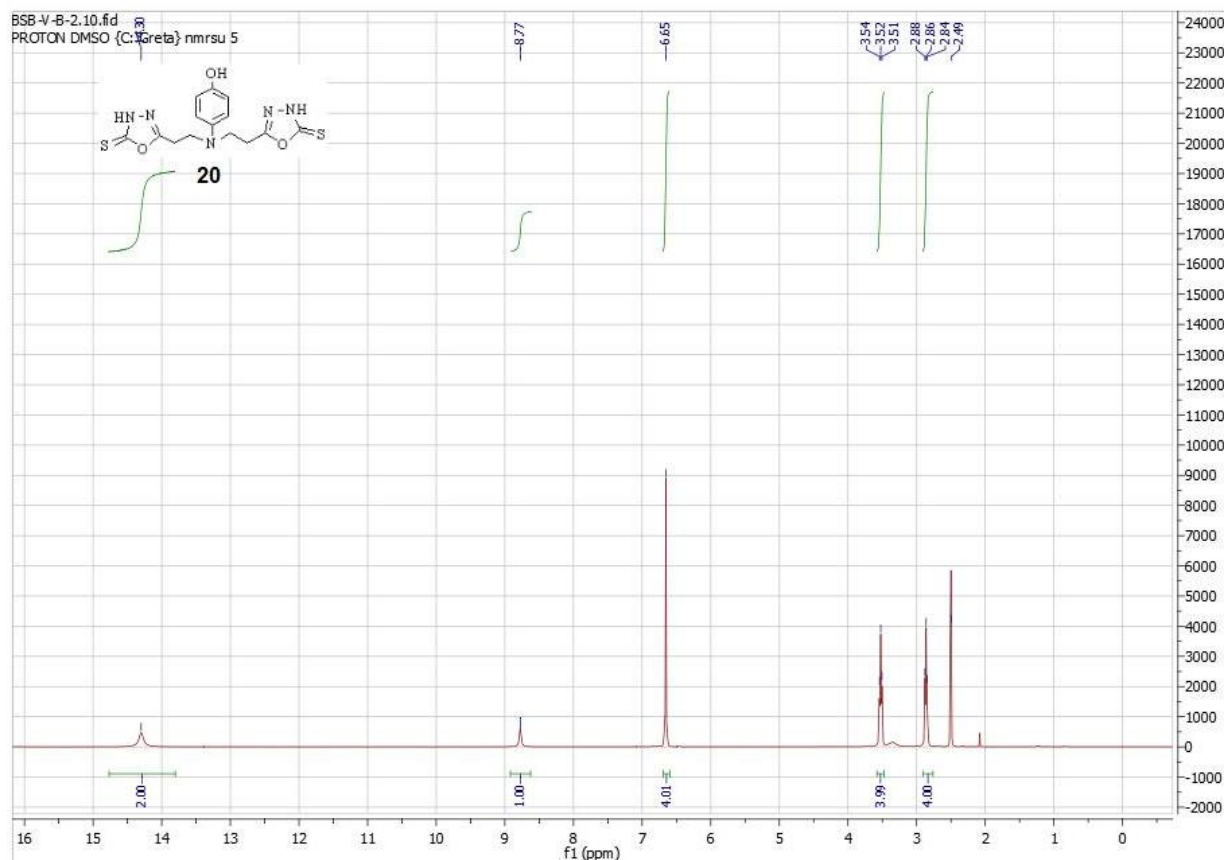


Figure S31. ^1H NMR spectrum of compound **20**

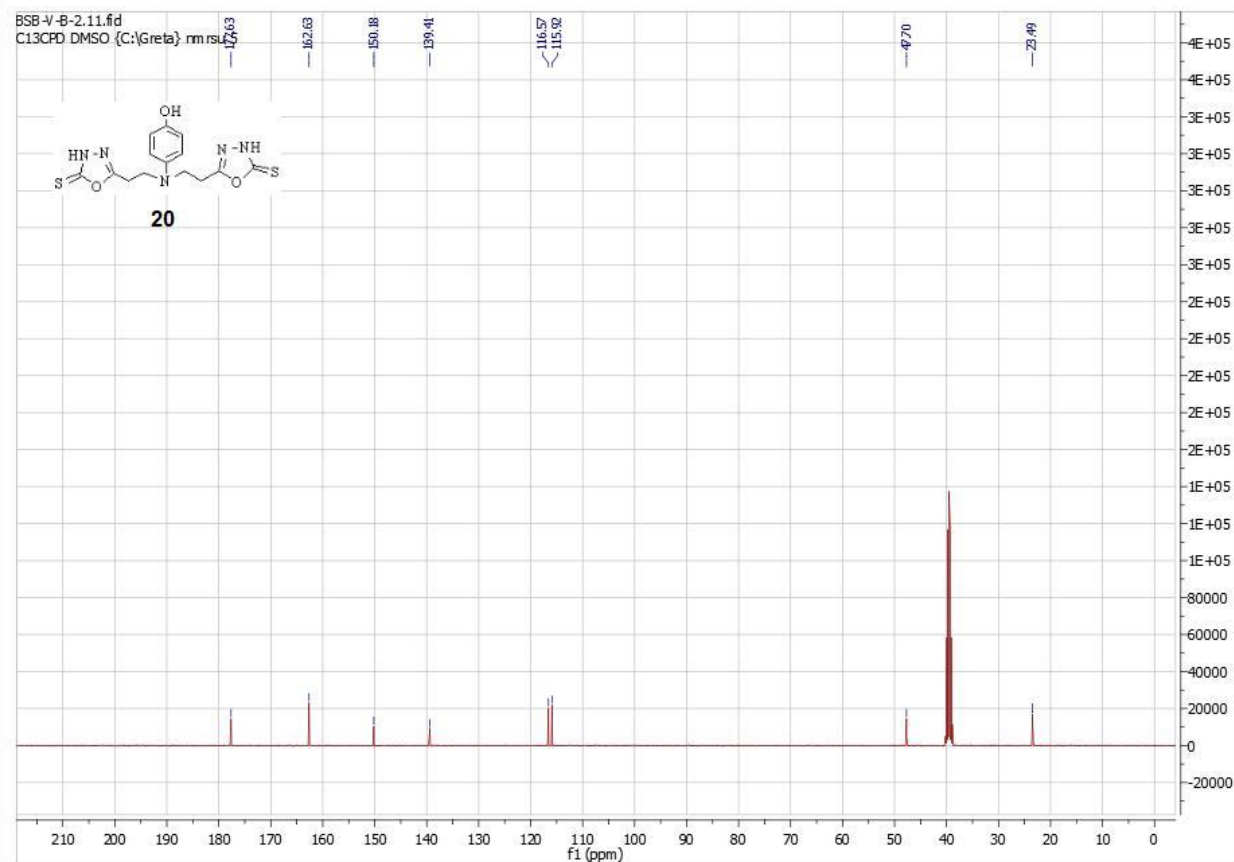


Figure S32. ^{13}C NMR spectrum of compound **20**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N'*-(furan-2-ylmethylene)propanehydrazide) (**21**)

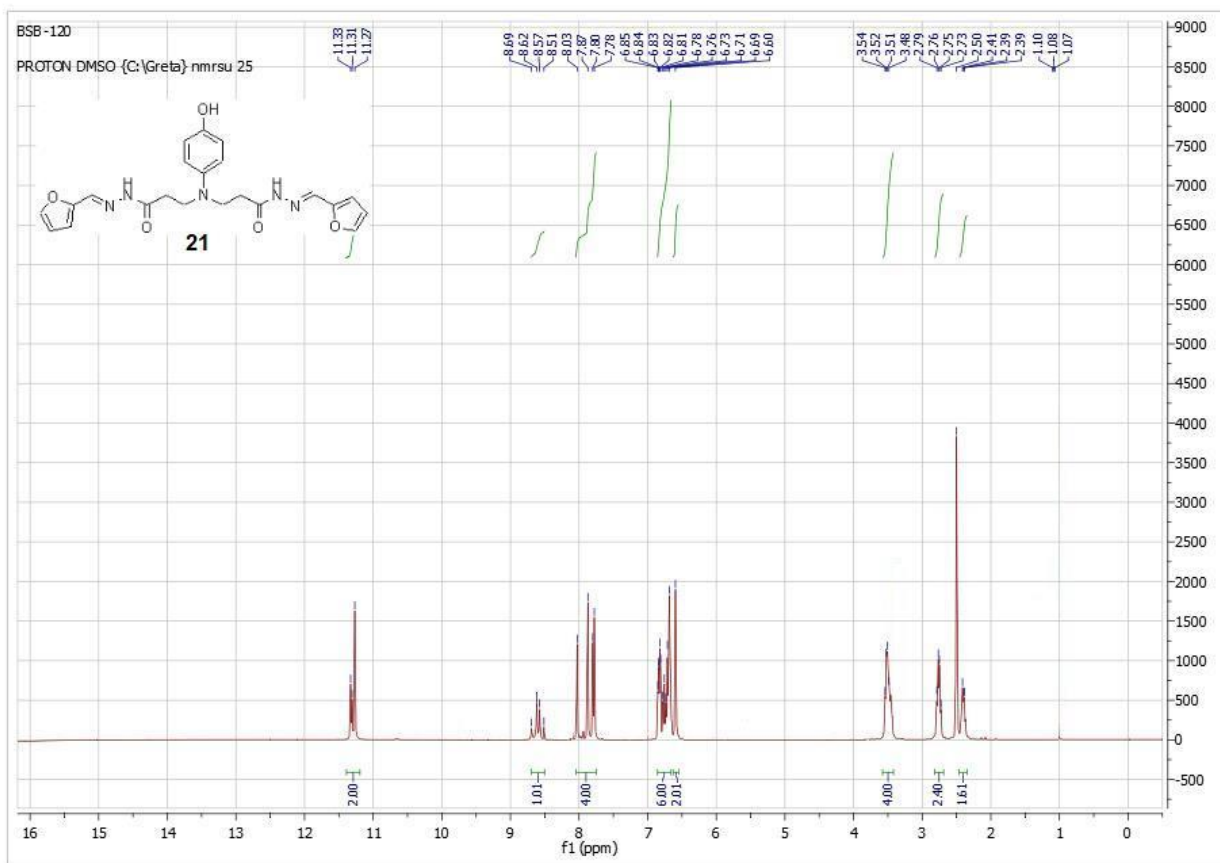


Figure S33. ^1H NMR spectrum of compound **21**

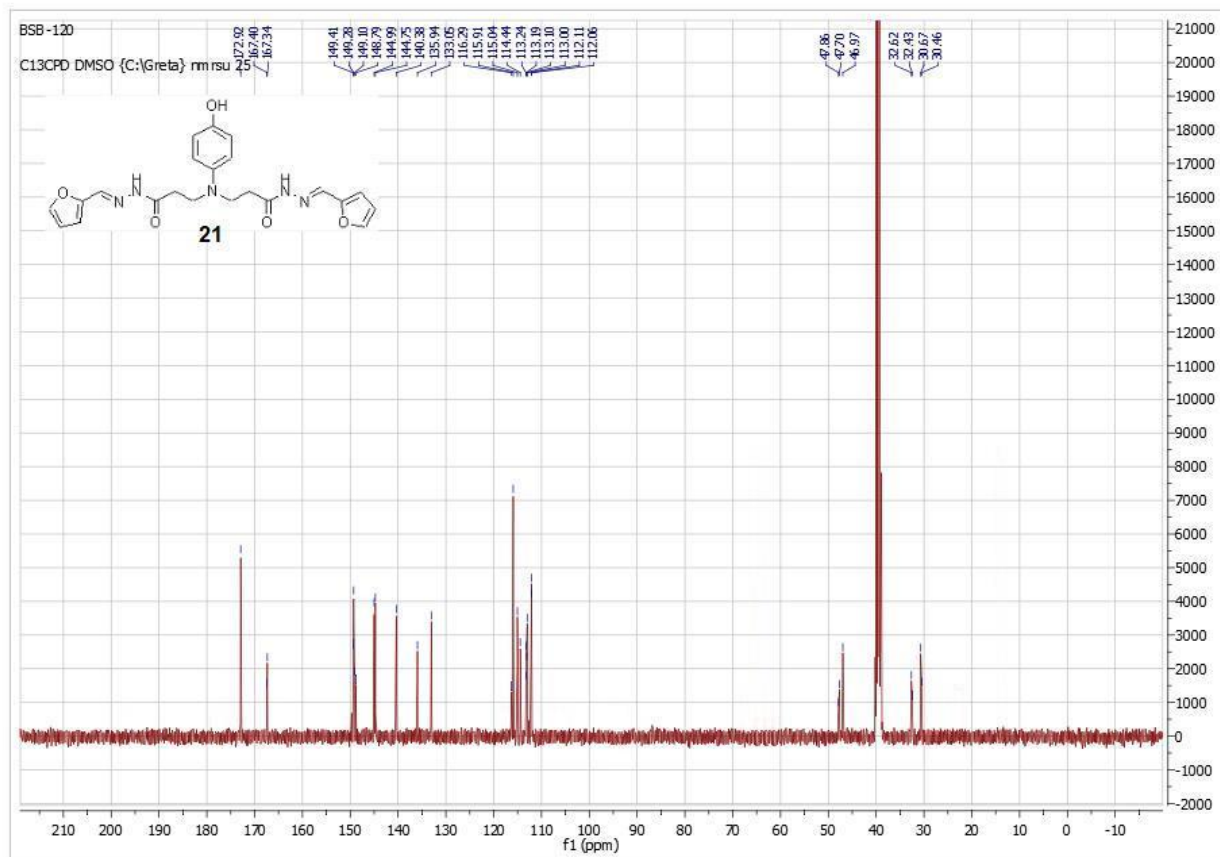


Figure S34. ^{13}C NMR spectrum of compound **21**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N*'-(thien-2-ylmethylene)propanehydrazide) (**22**)

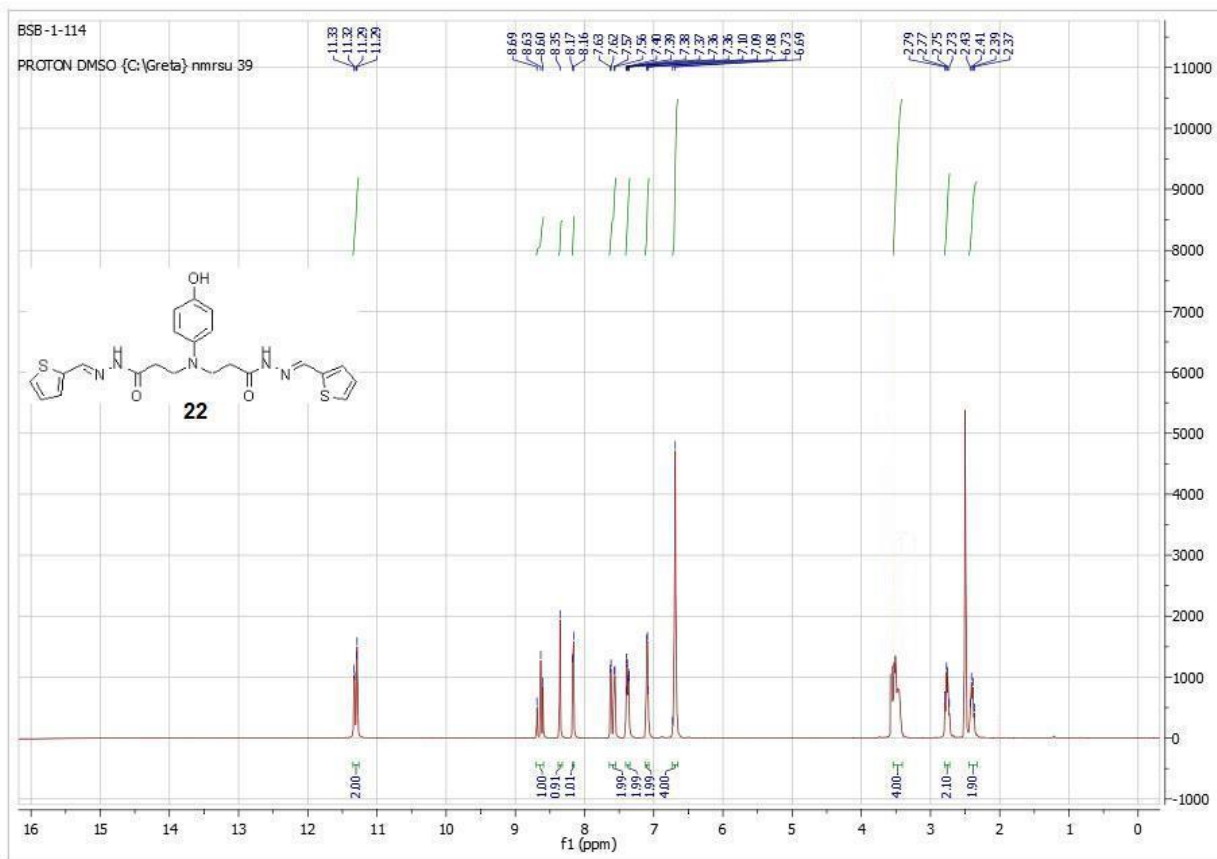


Figure S35. ^1H NMR spectrum of compound **22**

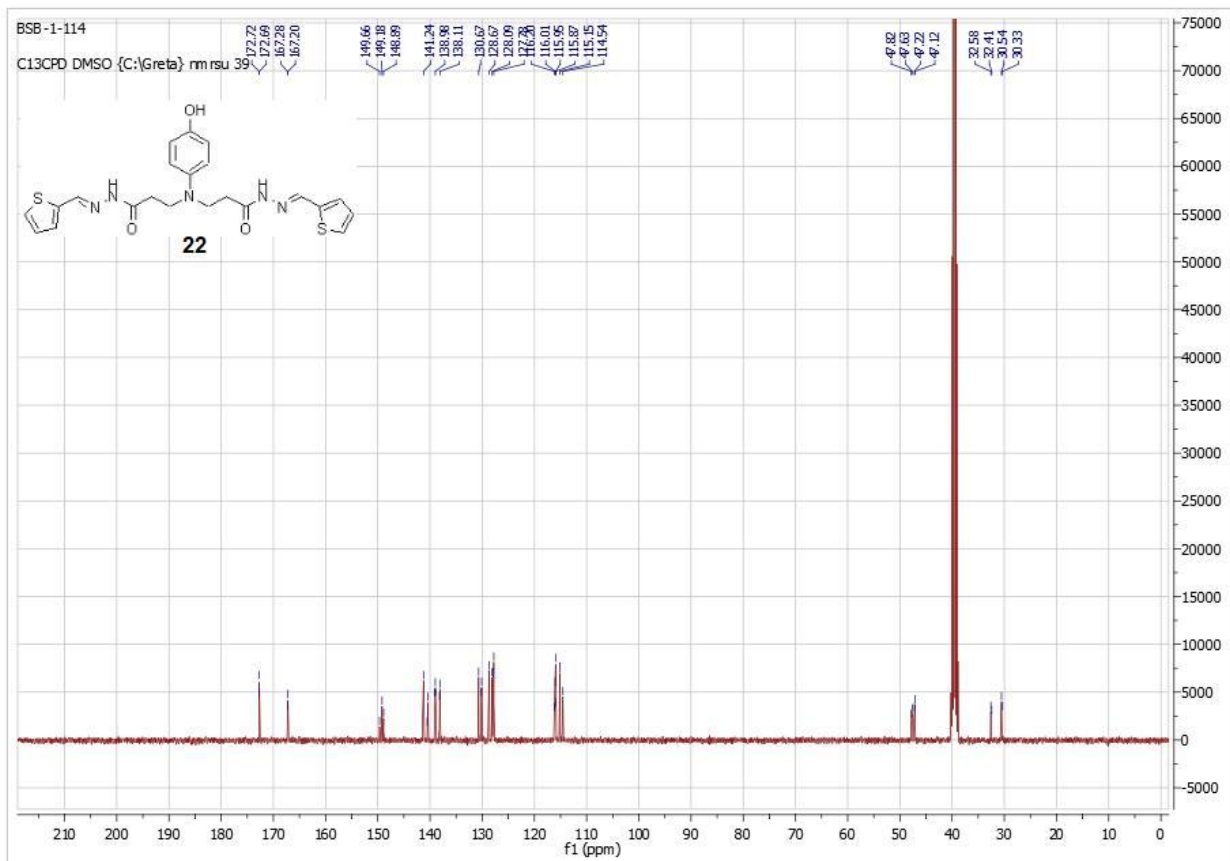


Figure S36. ^{13}C NMR spectrum of compound **22**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(N'-(-(5-nitrothien-2-yl)methylene)propanehydrazide) (**23**)

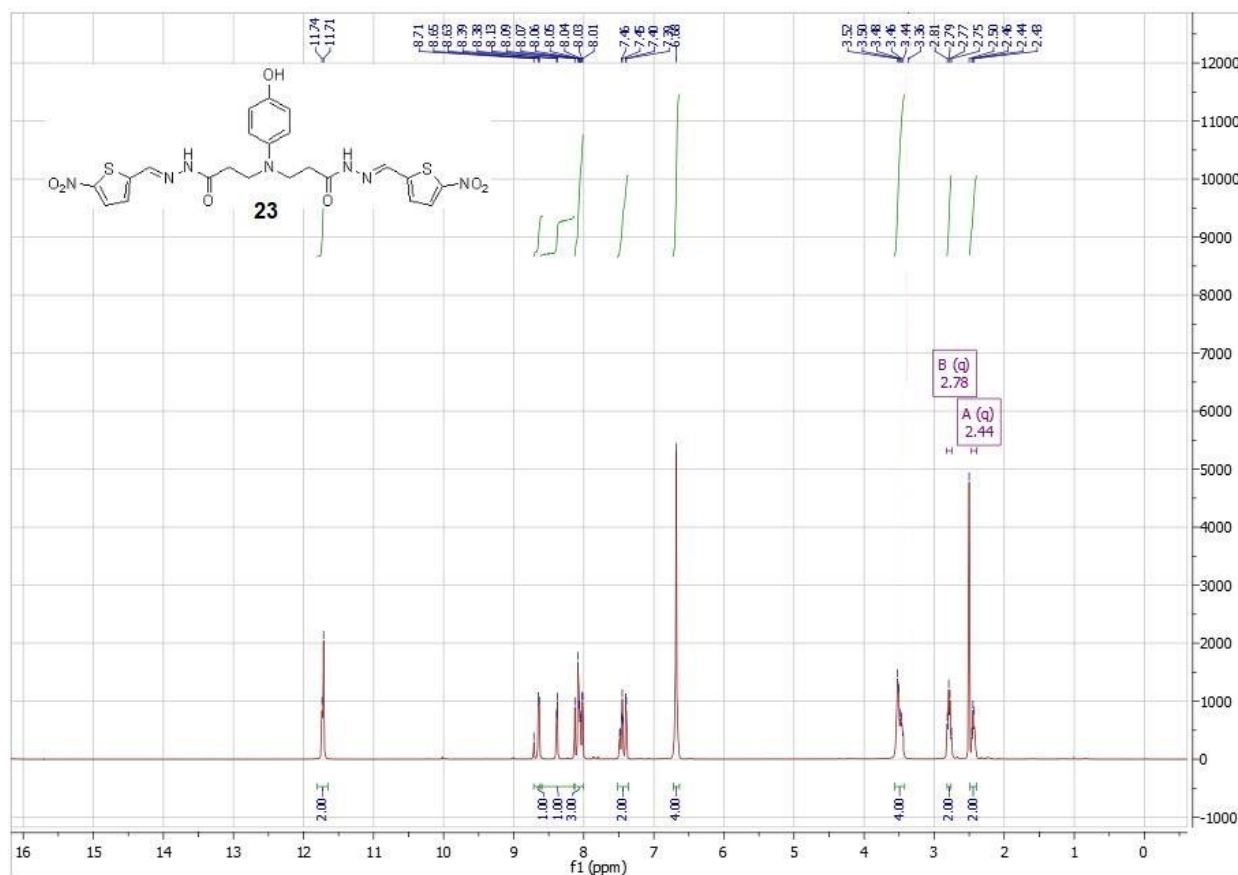


Figure S37. ¹H NMR spectrum of compound **23**

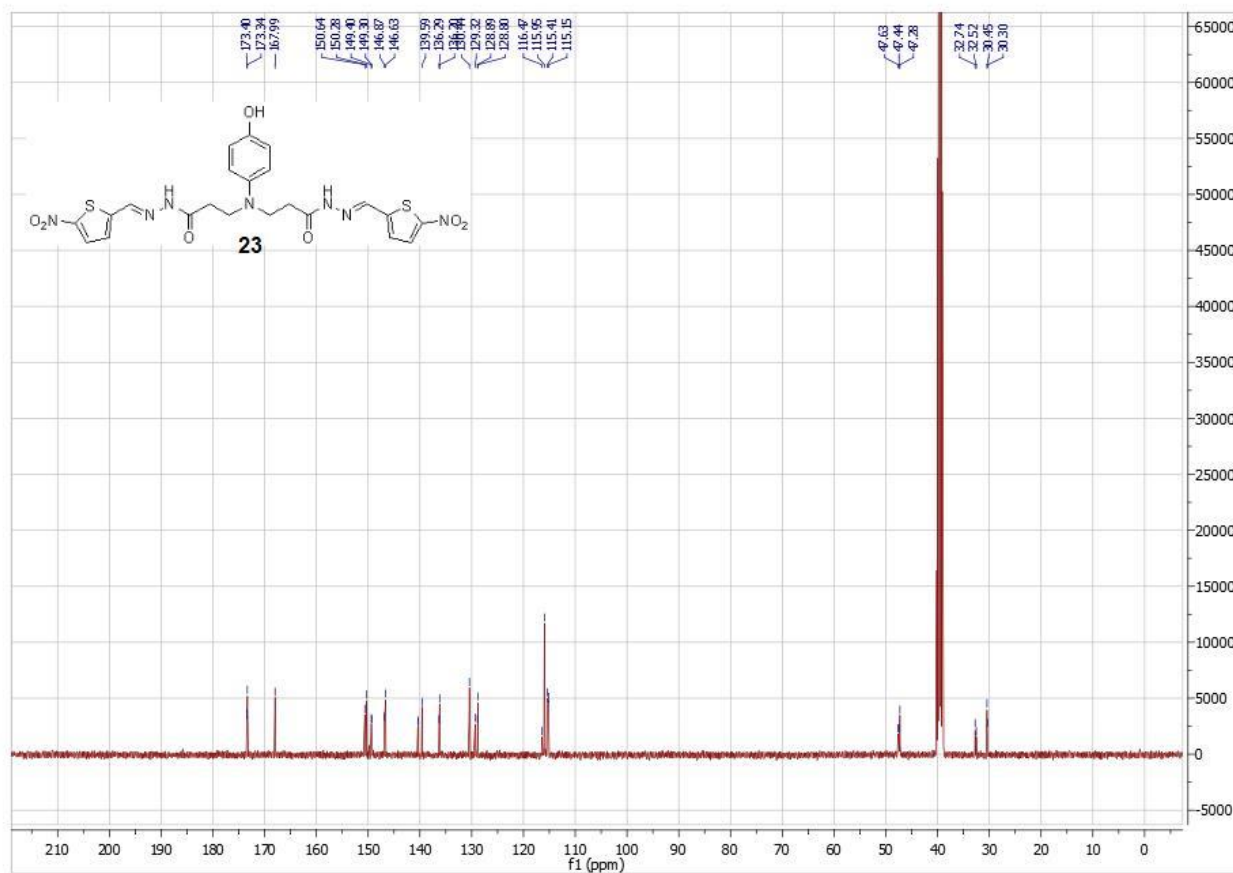


Figure S38. ¹³C NMR spectrum of compound **23**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(N'-((5-nitrofuran-2-yl)methylene)propanehydrazide) (**24**)

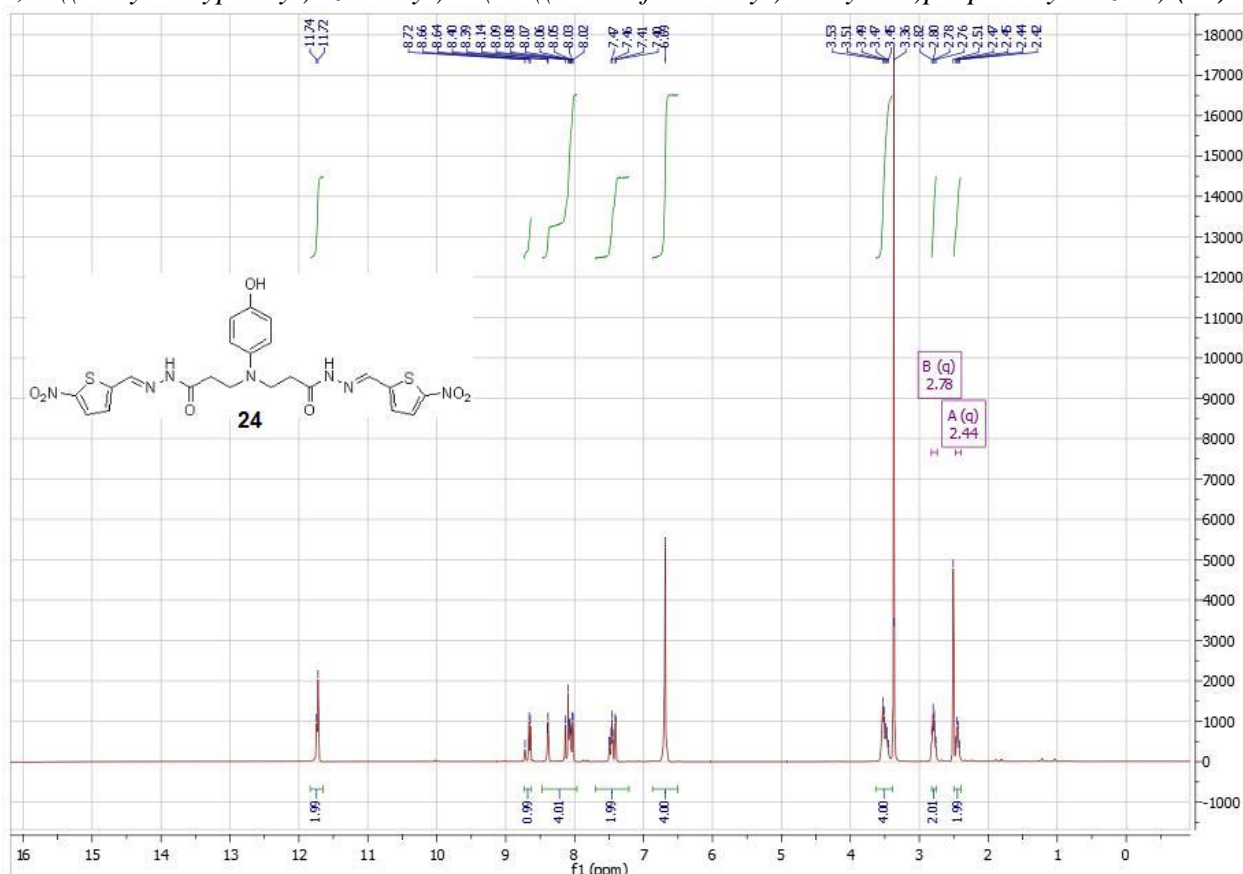


Figure S39. ¹H NMR spectrum of compound **24**

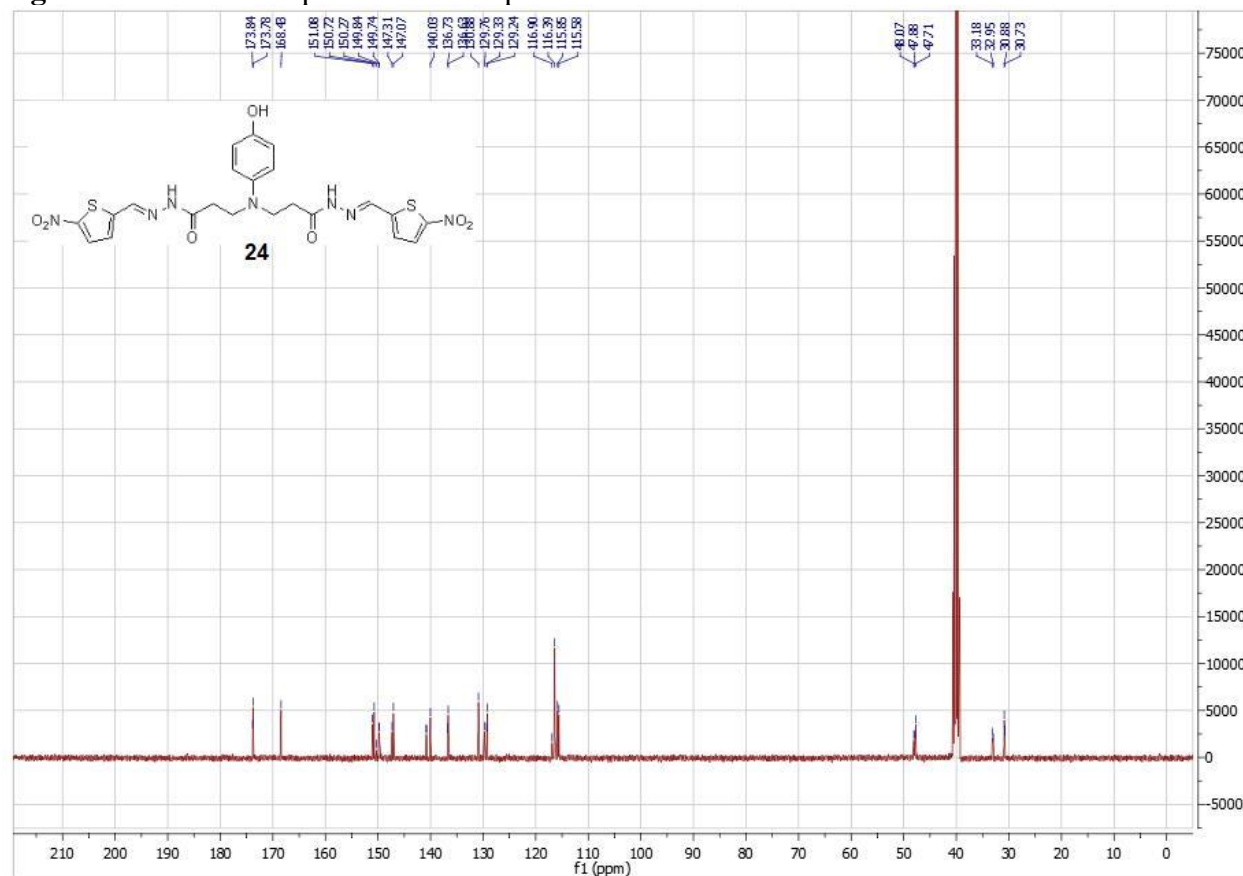


Figure S40. ¹³C NMR spectrum of compound **24**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(N'-(thien-3-ylmethylene)propanehydrazide) (**25**)

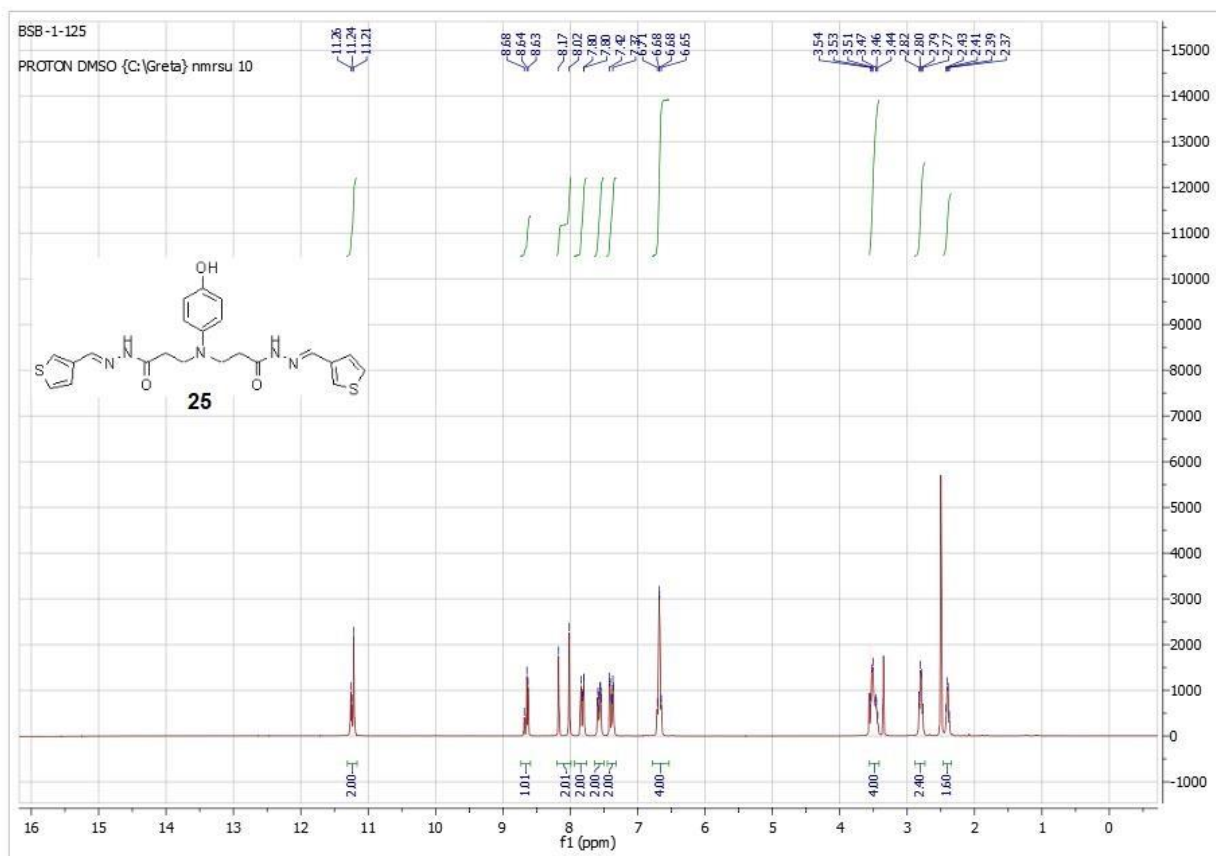


Figure S41. ¹H NMR spectrum of compound **25**

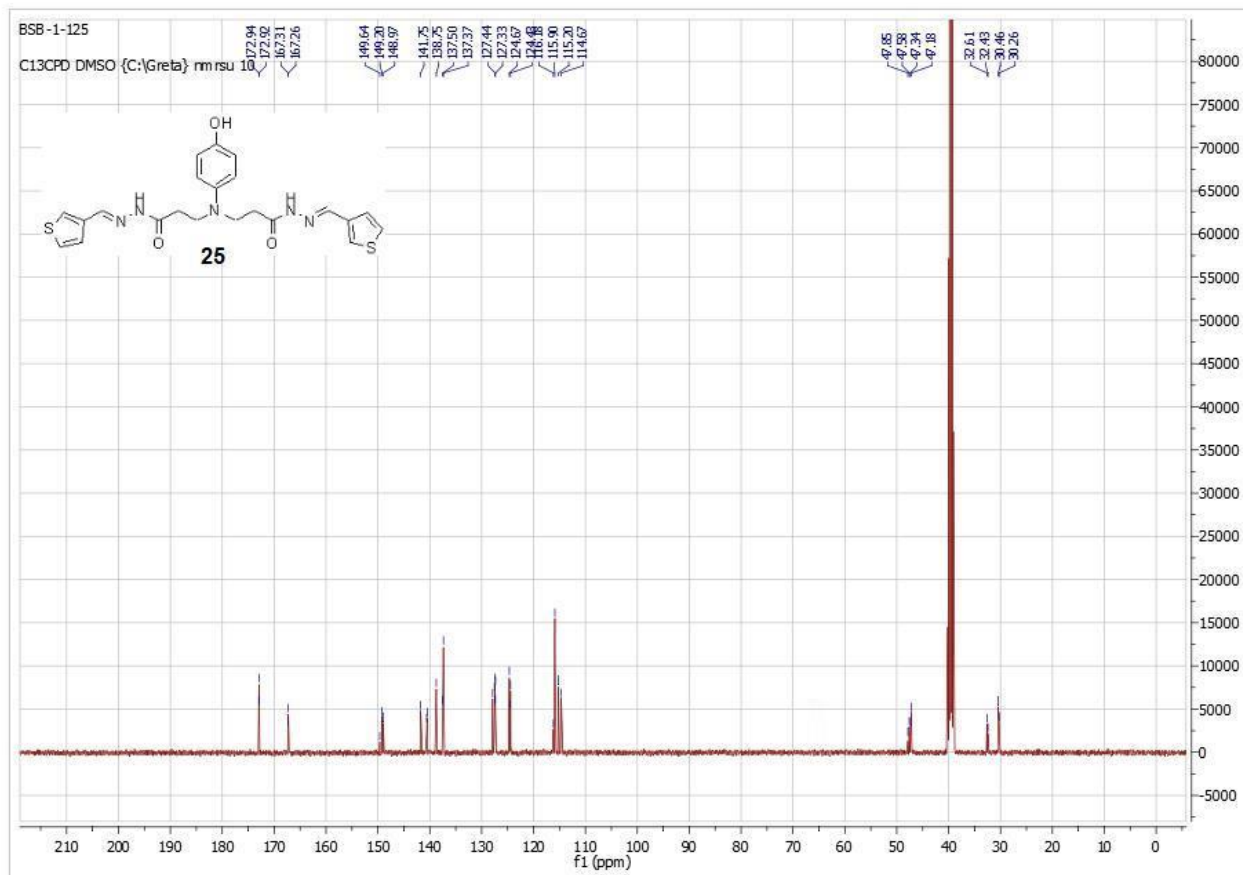


Figure S42. ¹³C NMR spectrum of compound **25**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N'*-(propan-2-ylidene)propanehydrazide) (**26**)

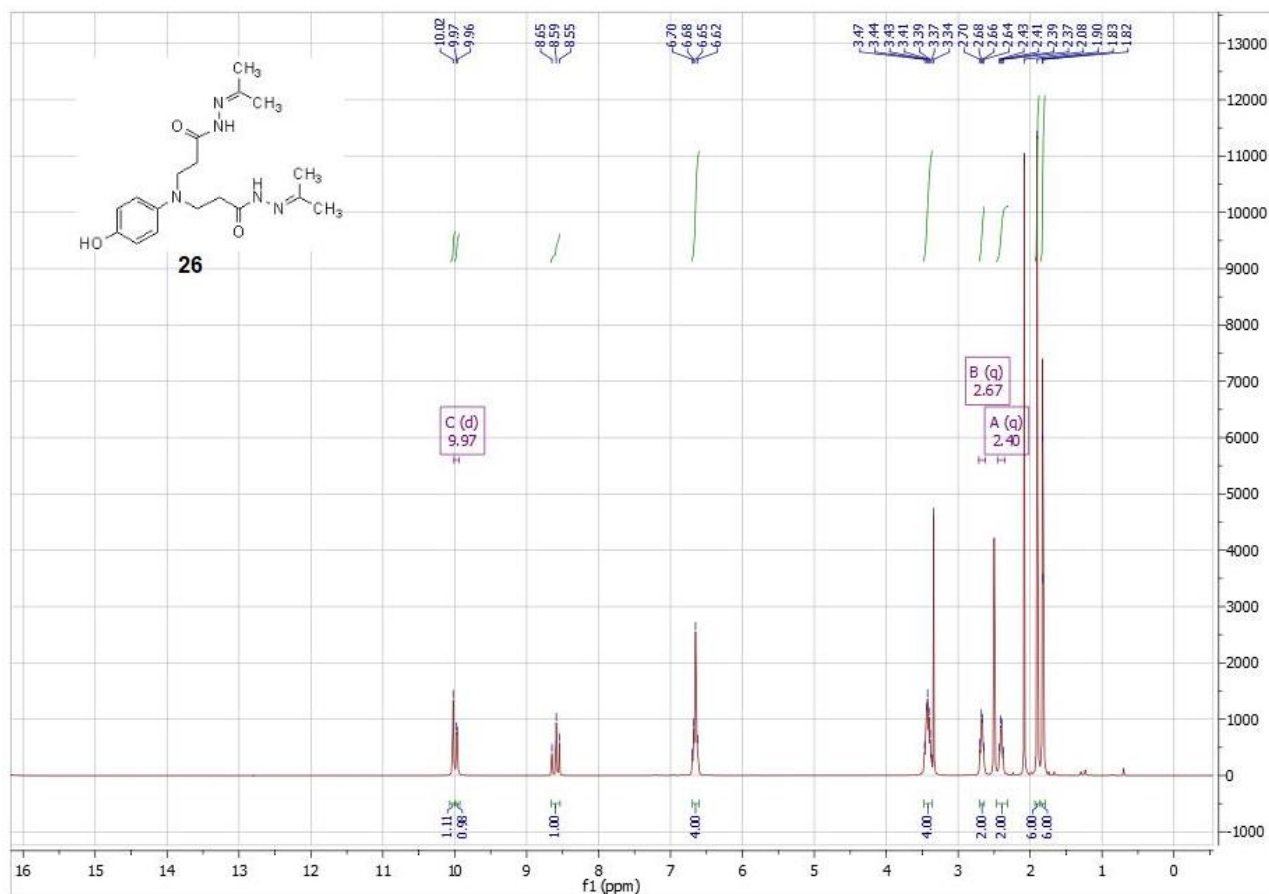


Figure S43. ¹H NMR spectrum of compound **26**

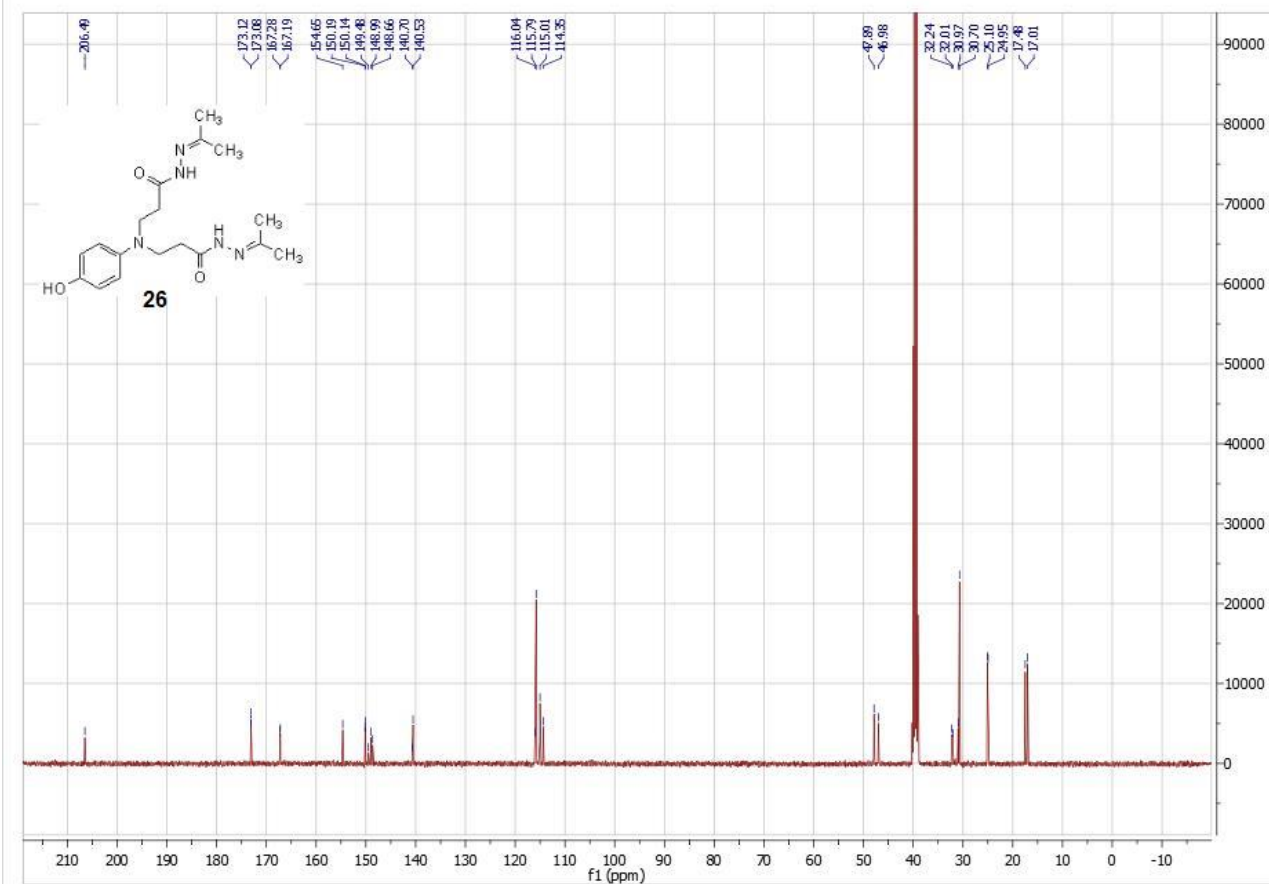


Figure S44. ¹³C NMR spectrum of compound **26**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N*'-(butan-2-ylidene)propanehydrazide) (**27**)

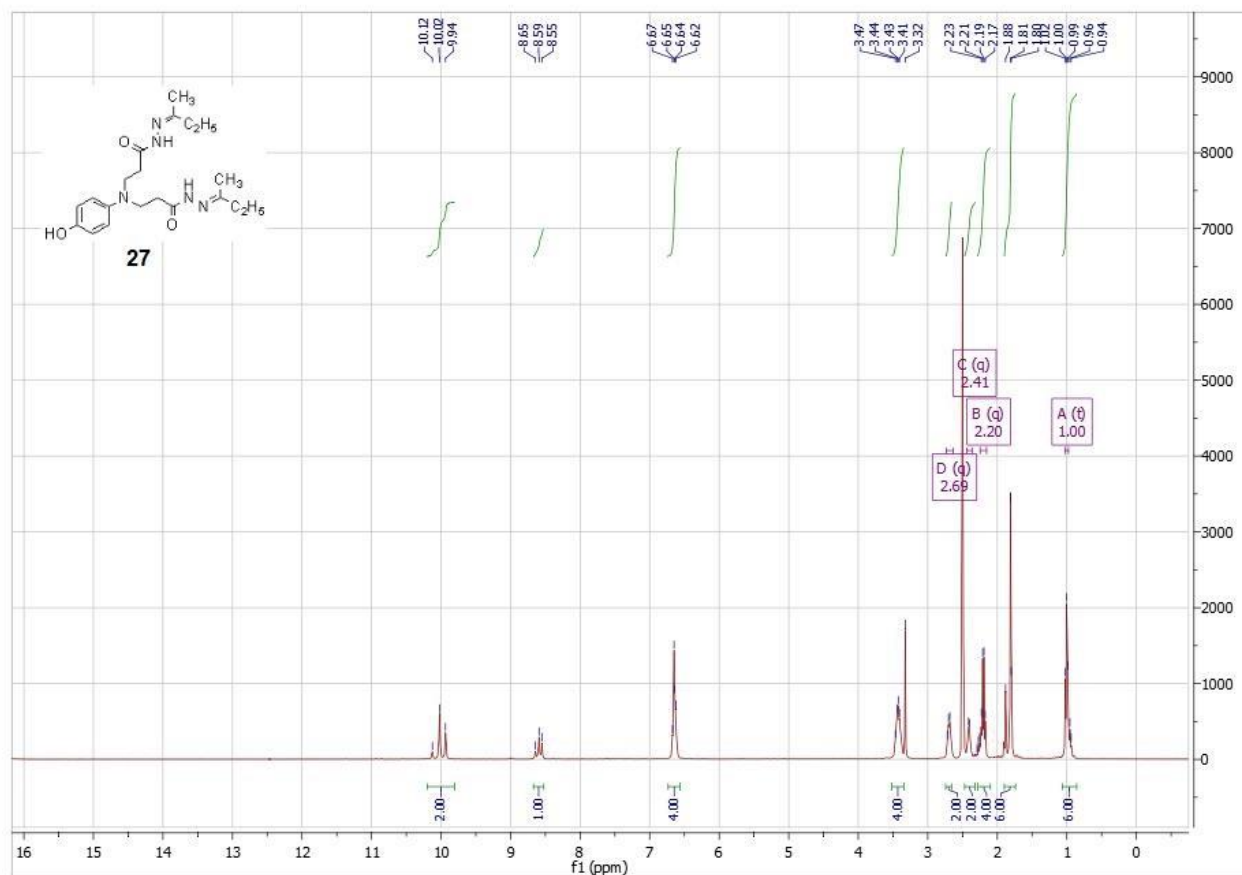


Figure S45. ¹H NMR spectrum of compound **27**

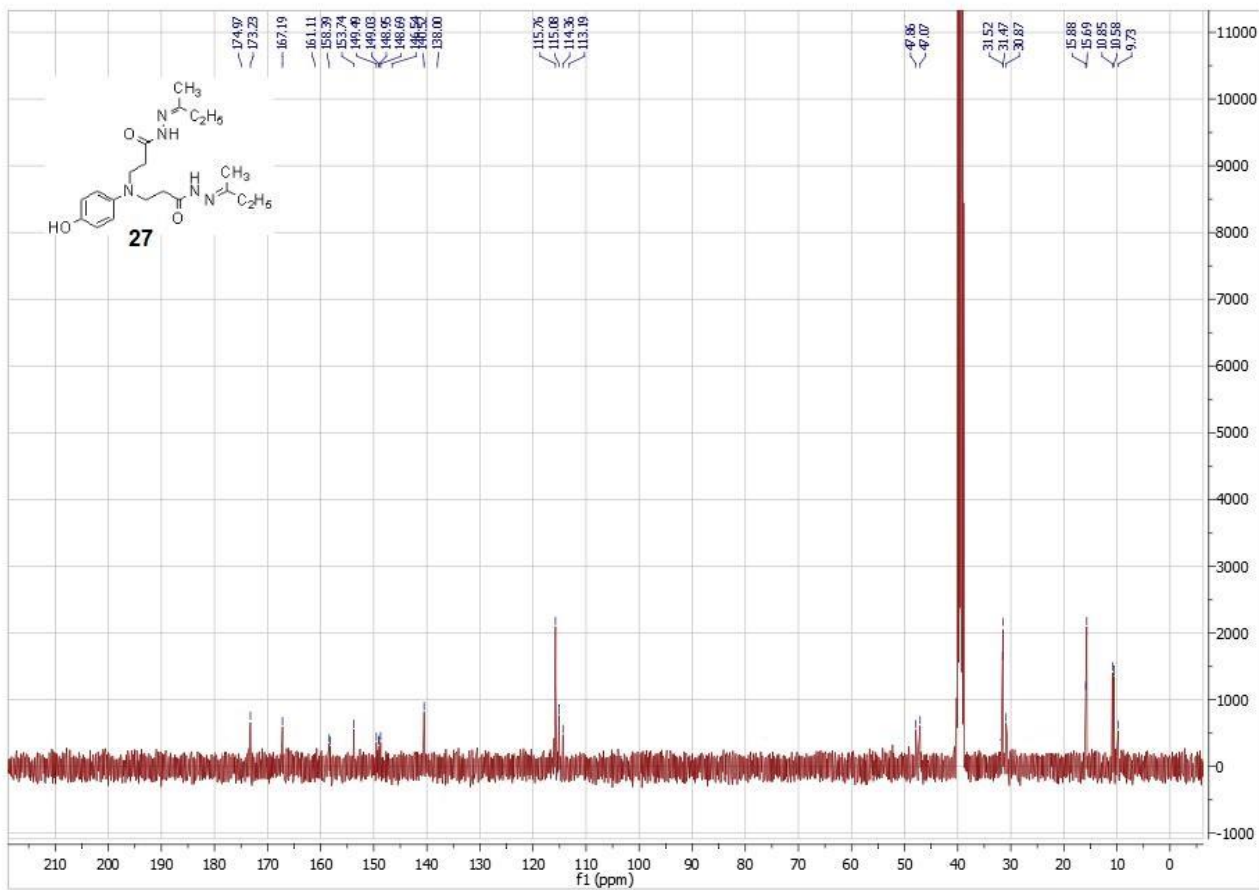


Figure S46. ¹³C NMR spectrum of compound **27**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N'*-(1-phenylethylidene)propanehydrazide) (**28**)

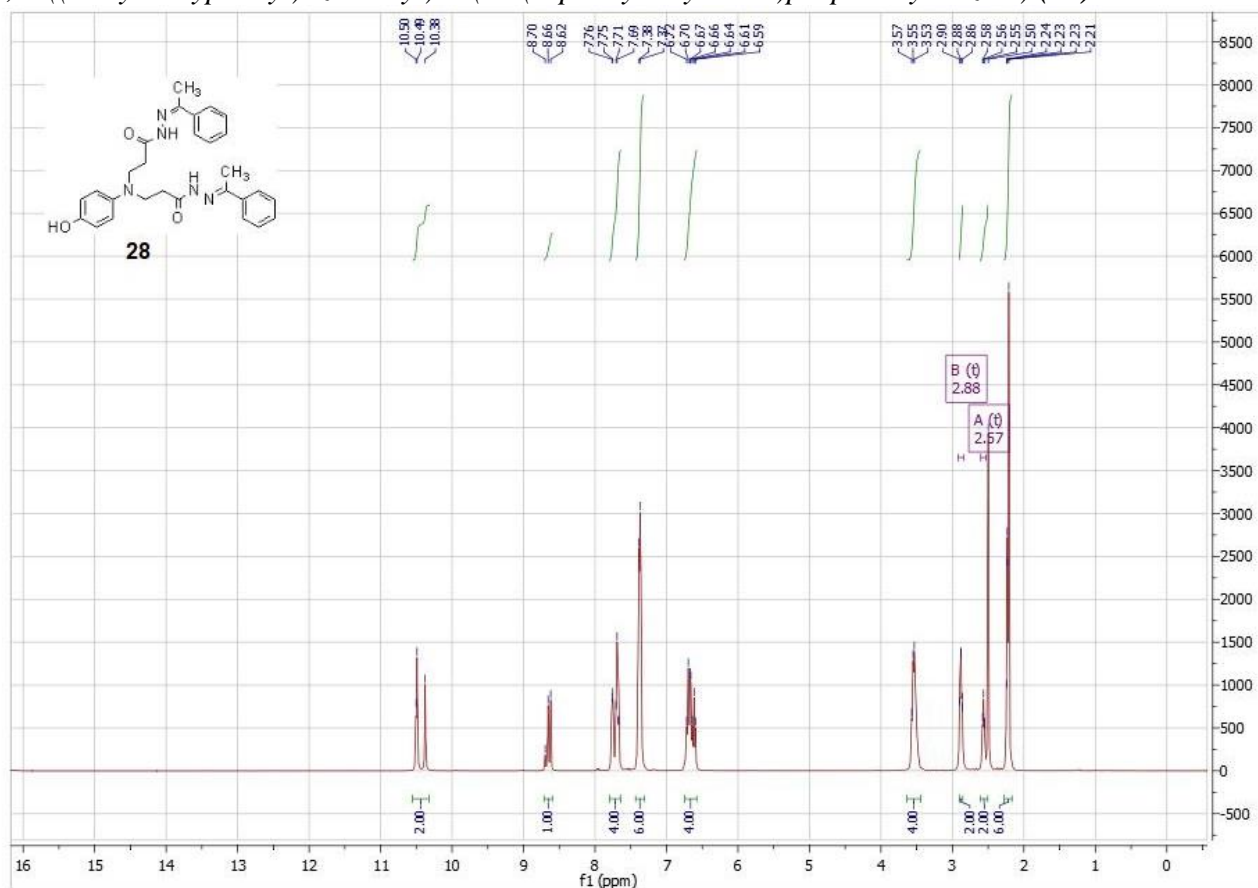


Figure S47. ¹H NMR spectrum of compound **28**

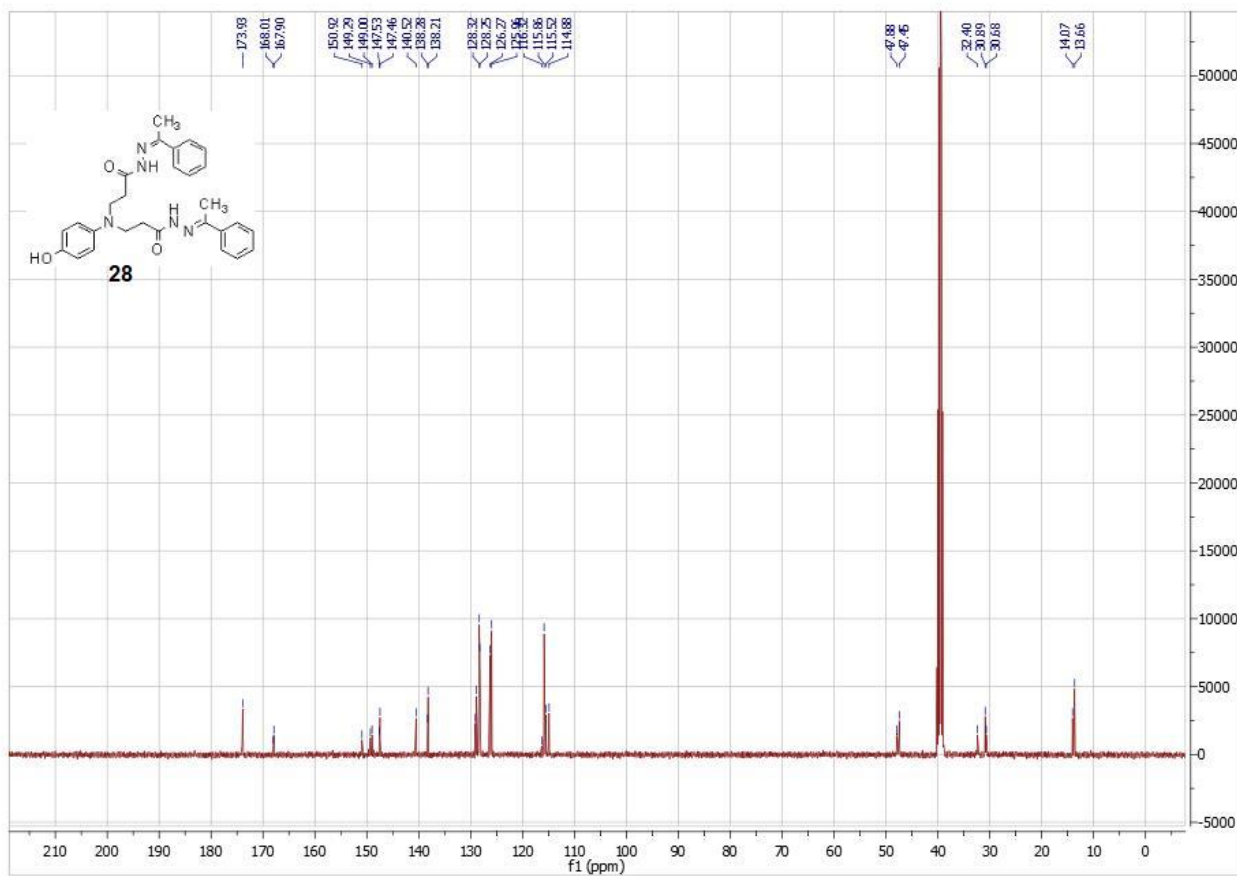


Figure S48. ¹³C NMR spectrum of compound **28**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N'*-(benzylidene)propanehydrazide) (**29**)

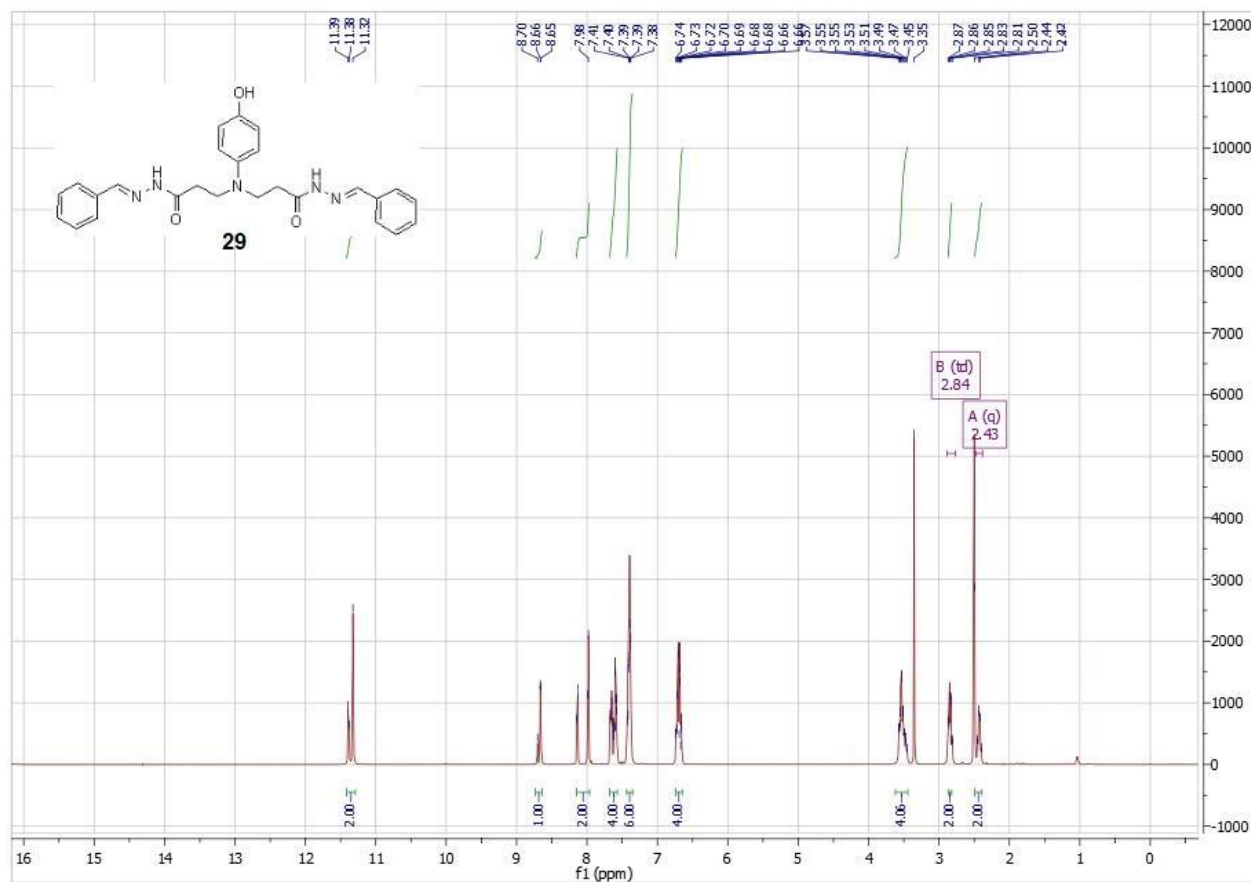


Figure S49. ¹H NMR spectrum of compound **29**

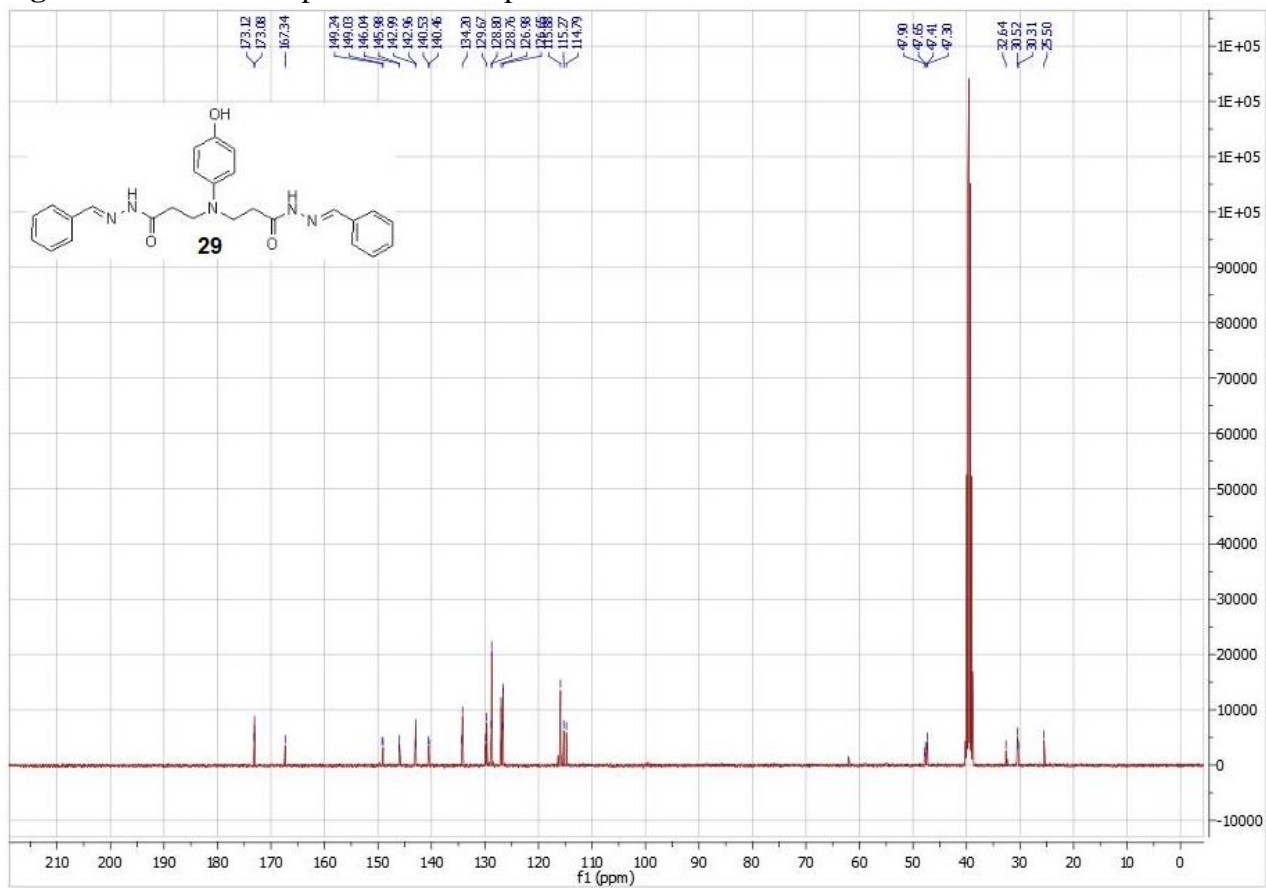


Figure S50. ¹³C NMR spectrum of compound **29**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(N'-(4-nitrobenzylidene)propanehydrazide) (**30**)

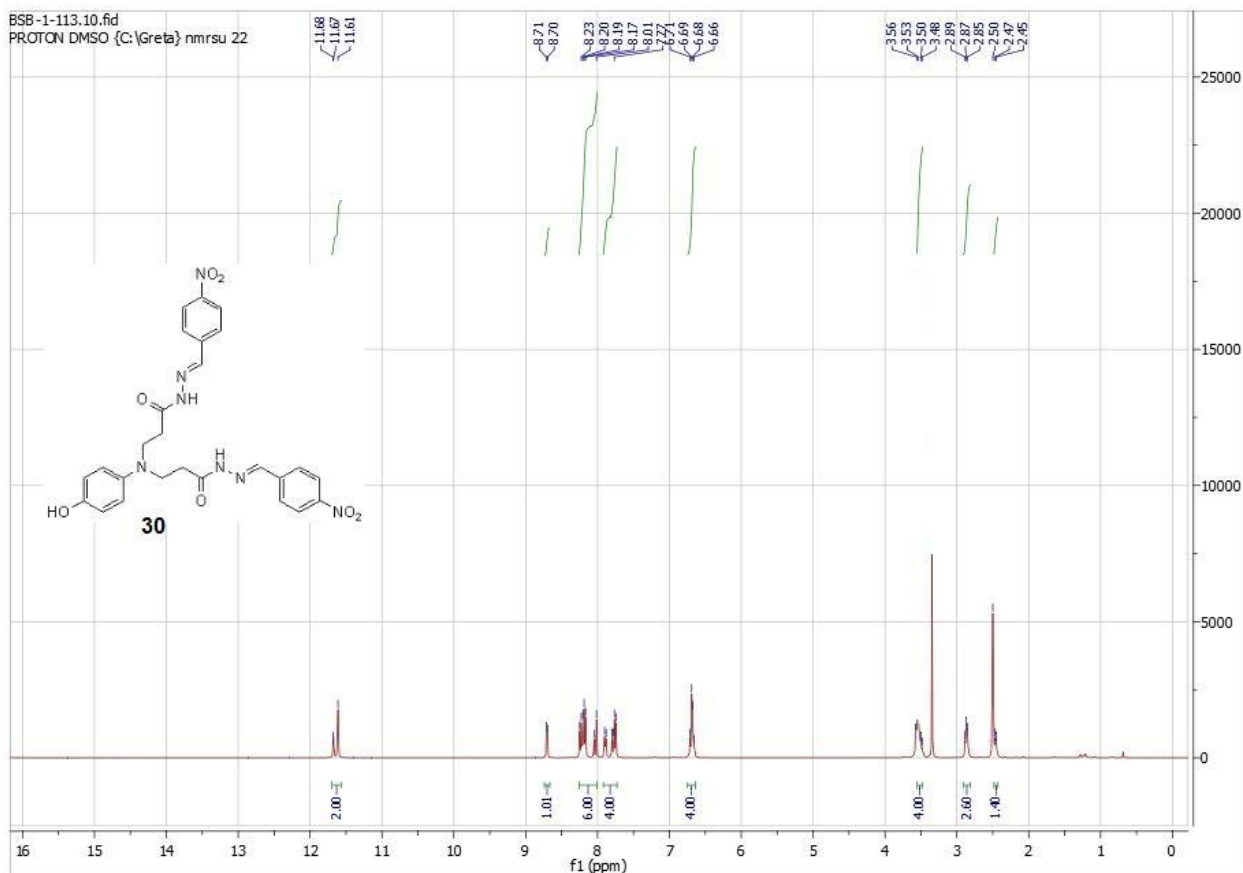


Figure S51. ^1H NMR spectrum of compound **30**

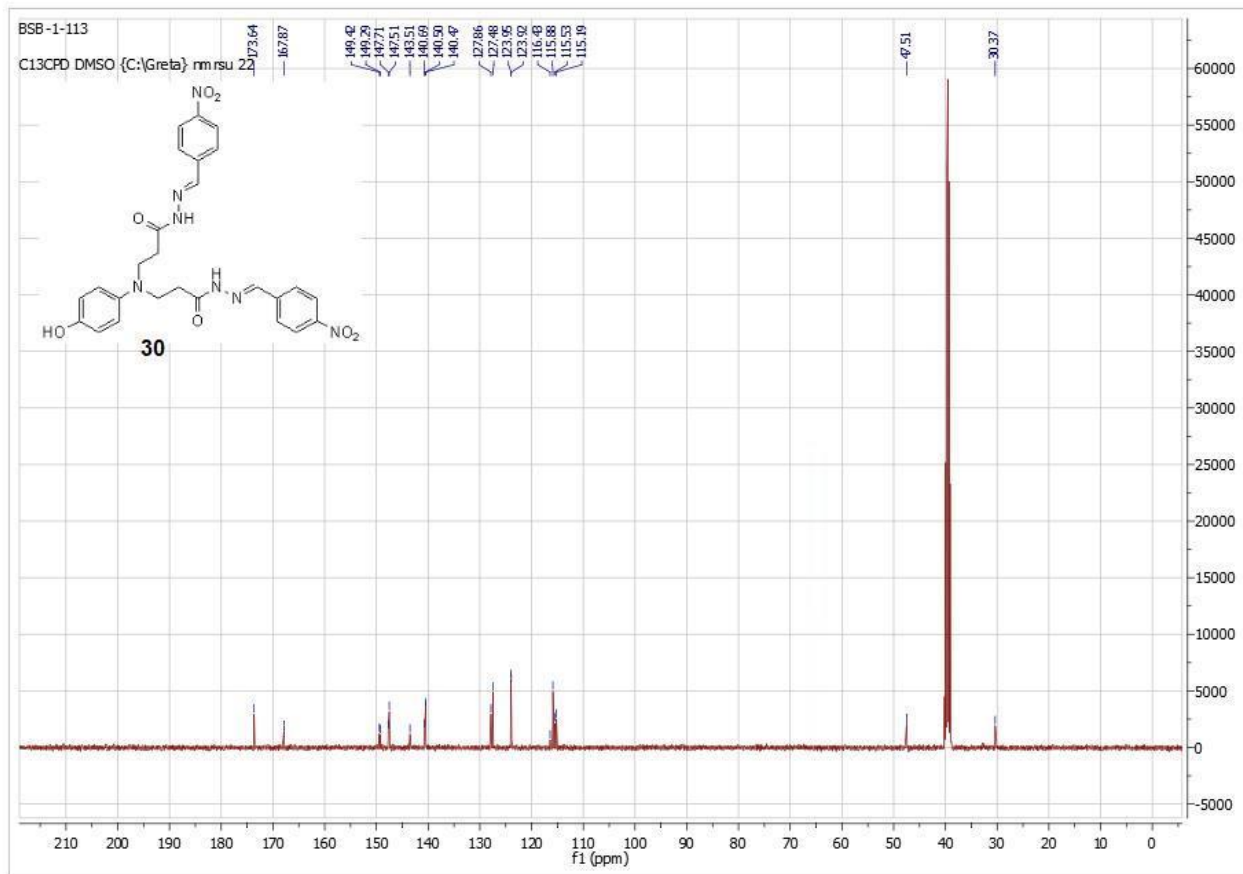


Figure S52. ^{13}C NMR spectrum of compound **30**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N*'-(benzylidene)propanehydrazide) (**31**)

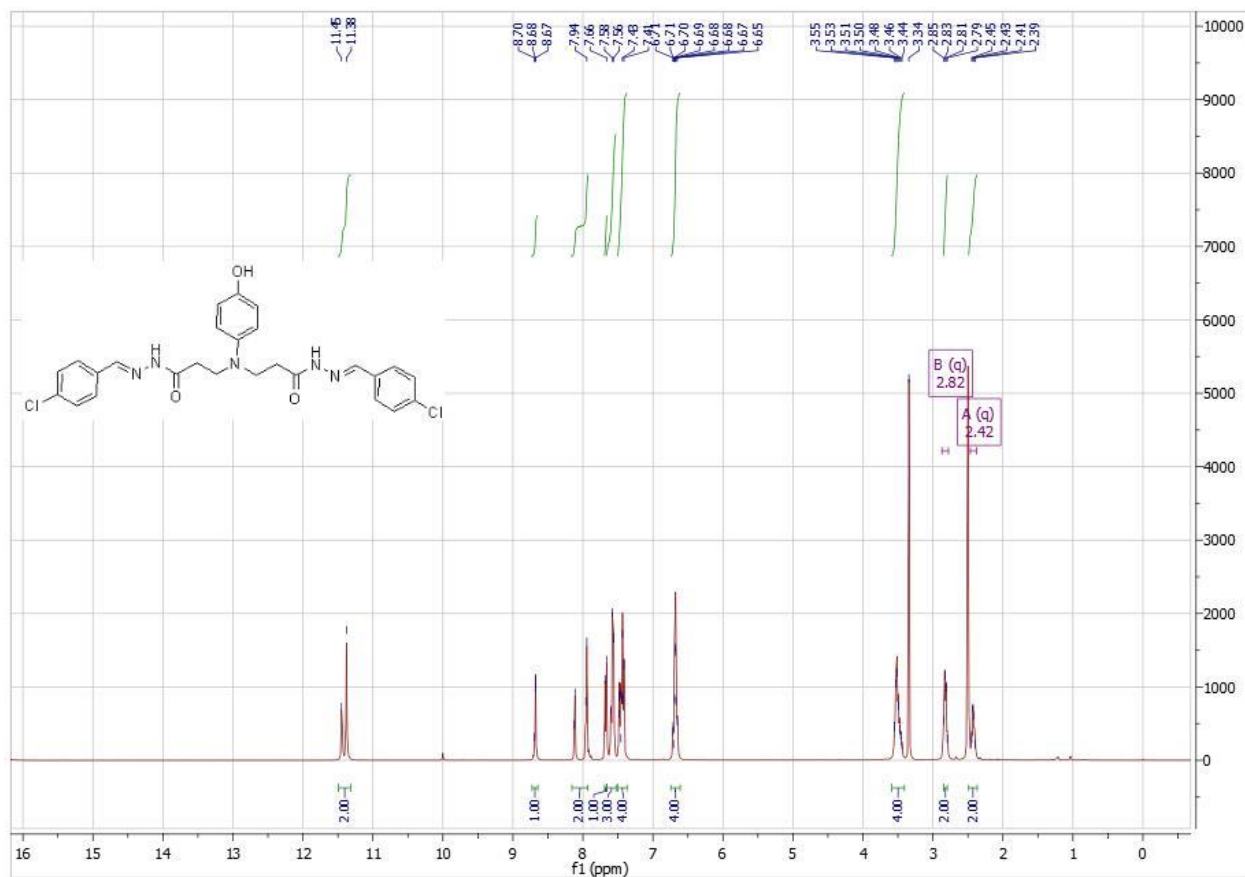


Figure S53. ¹H NMR spectrum of compound **31**

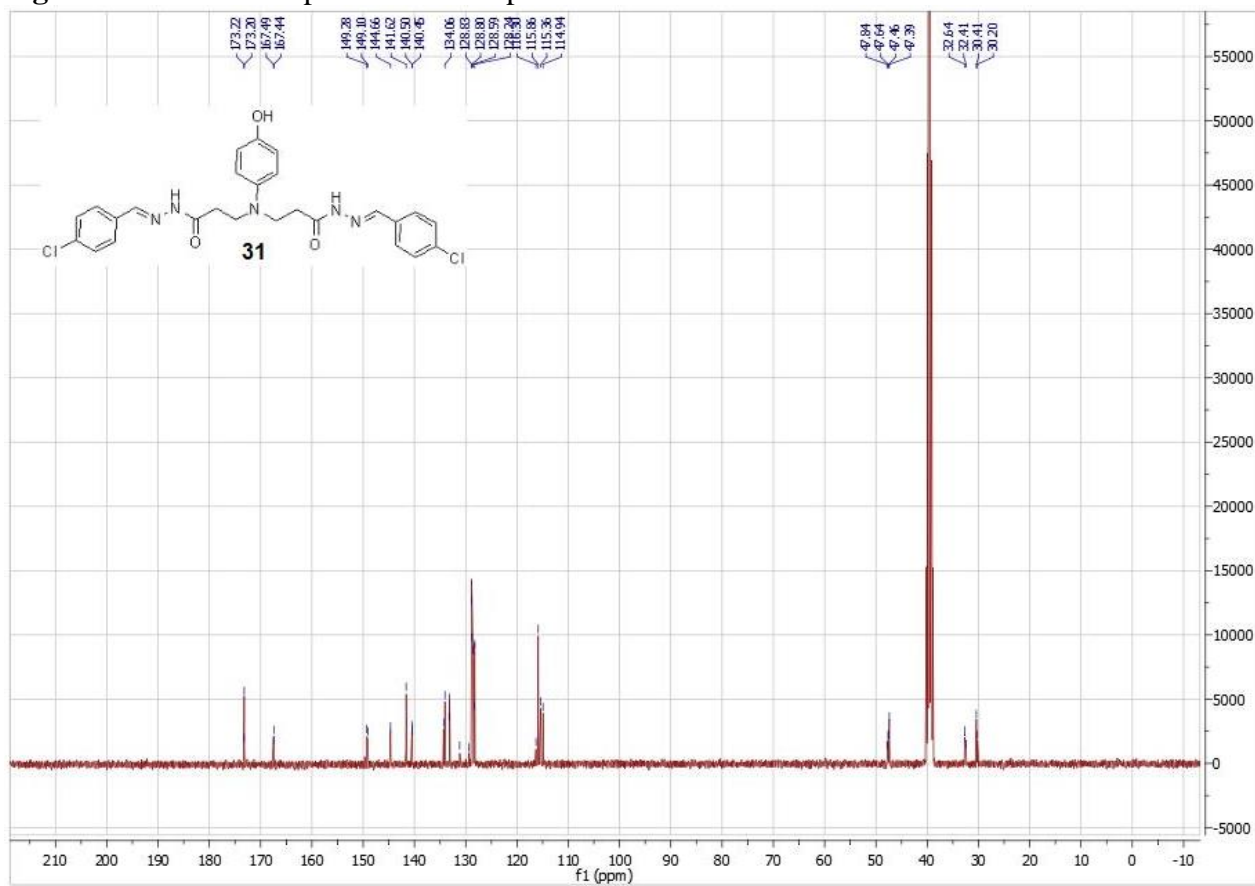


Figure S54. ¹³C NMR spectrum of compound **31**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N*'-(4-(dimethylamino)benzylidene)propanehydrazide) (**32**)

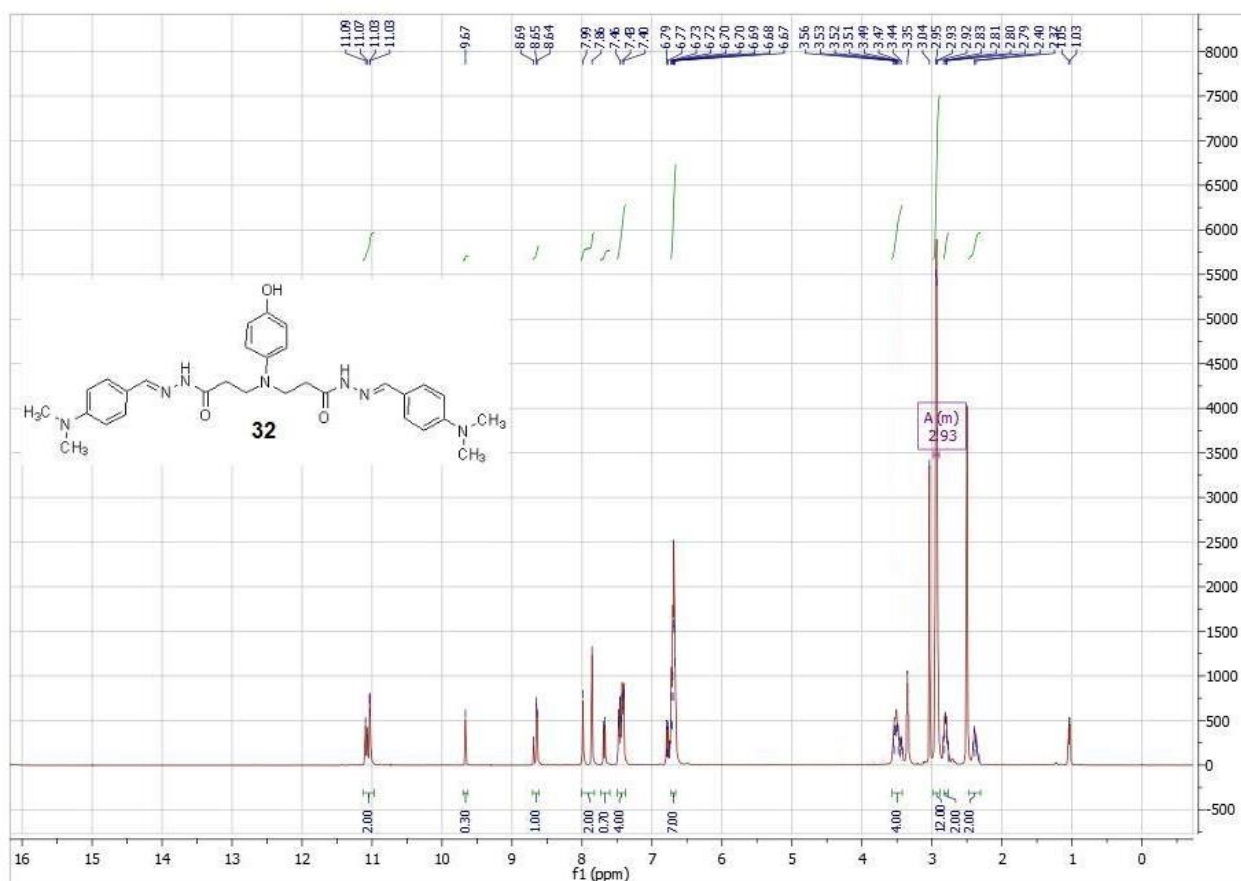


Figure S55. ¹H NMR spectrum of compound **32**

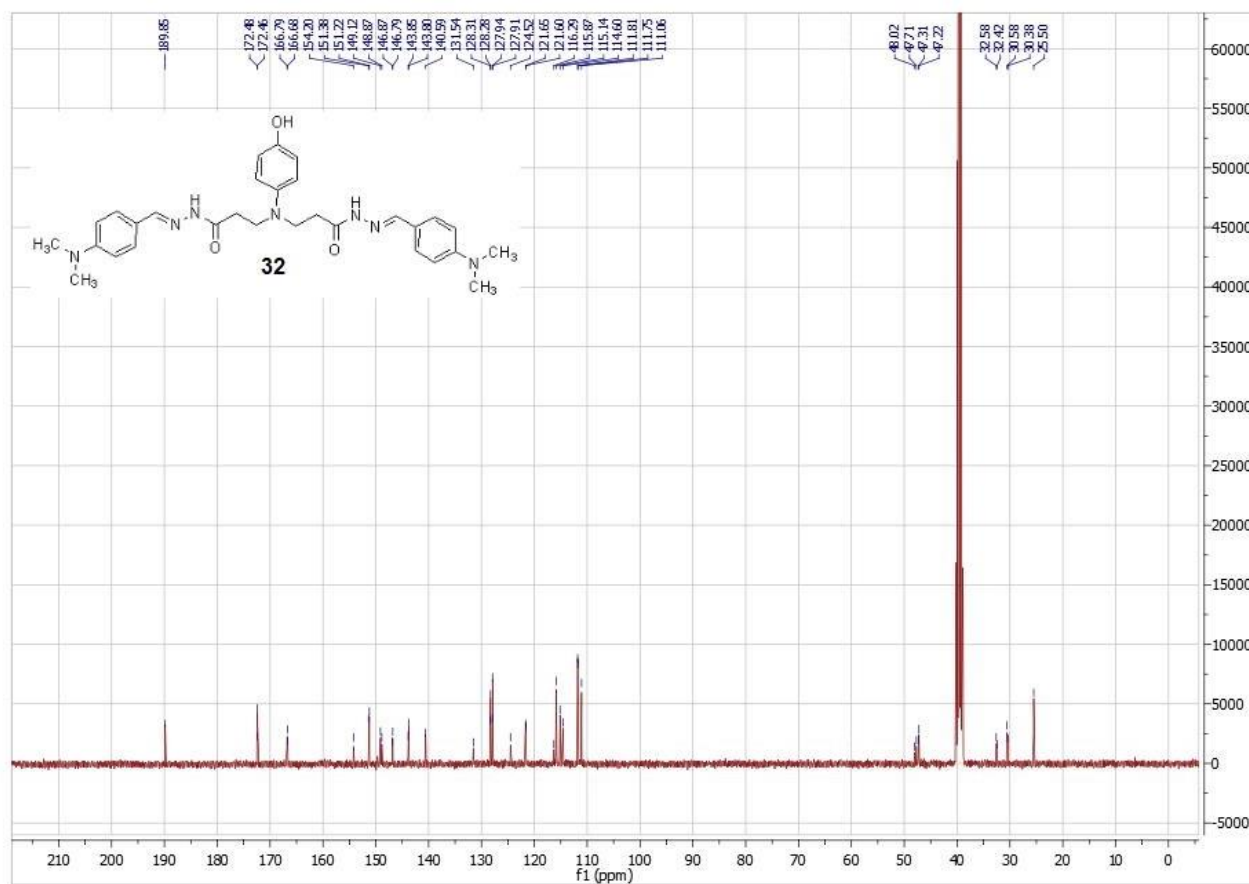


Figure S56. ¹³C NMR spectrum of compound **32**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N'*-(4-hydroxybenzylidene)propanehydrazide) (**33**)

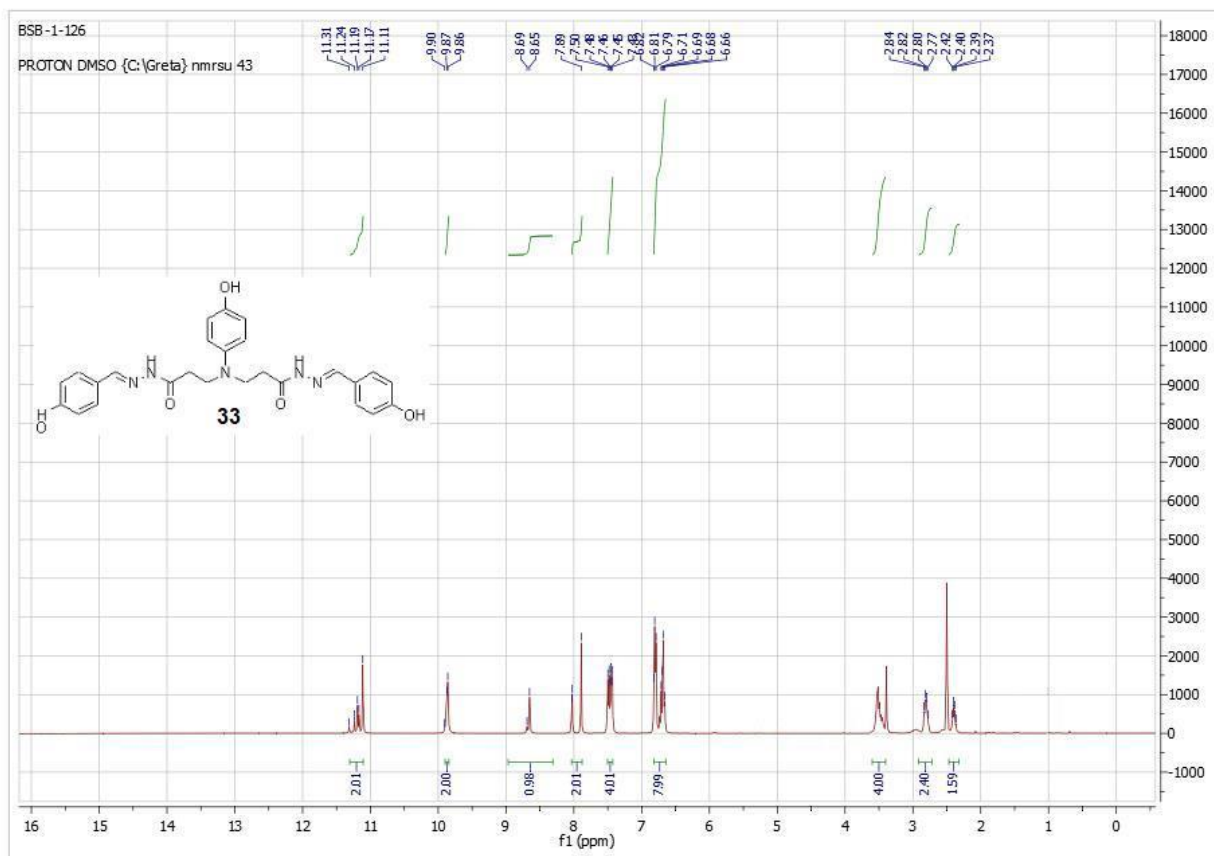


Figure S57. ¹H NMR spectrum of compound **33**

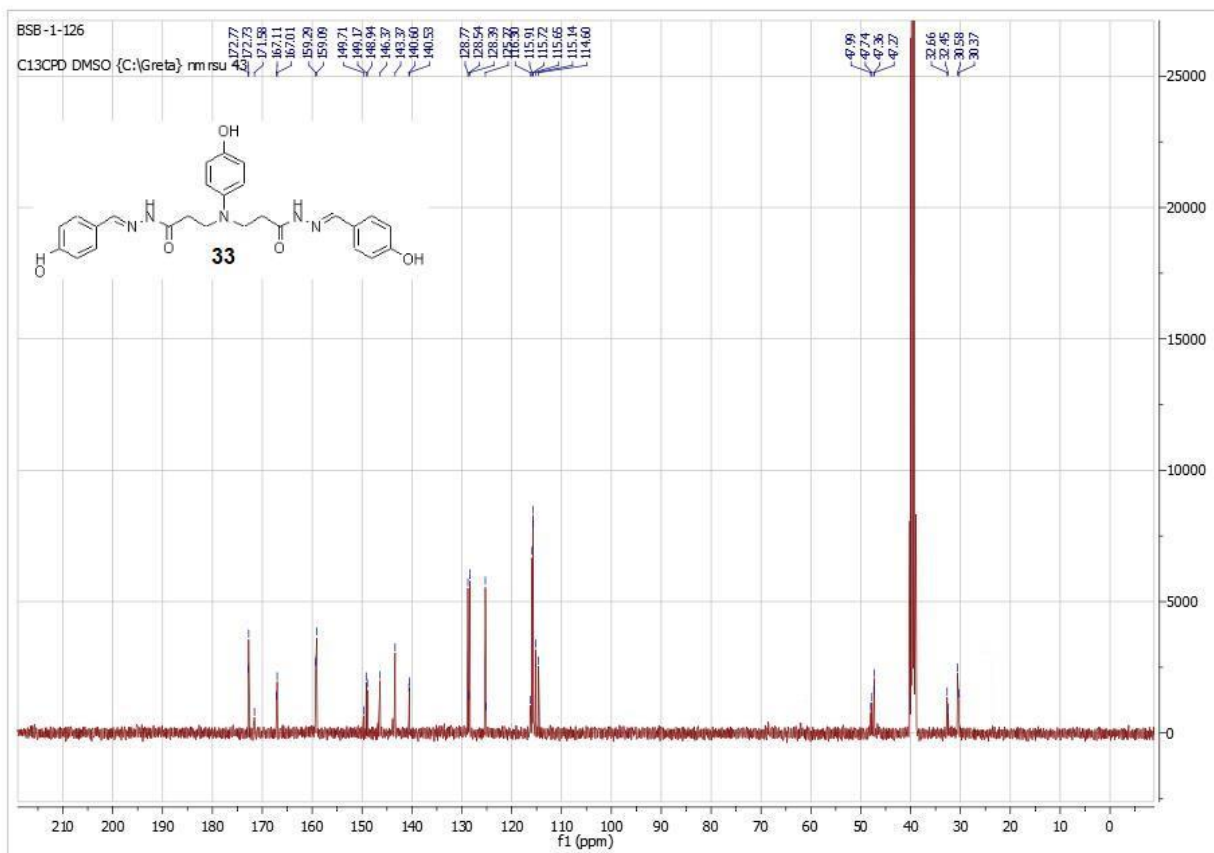


Figure S58. ¹³C NMR spectrum of compound **33**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N*'-(3,4,5-trimethoxybenzylidene)propanehydrazide) (**34**)

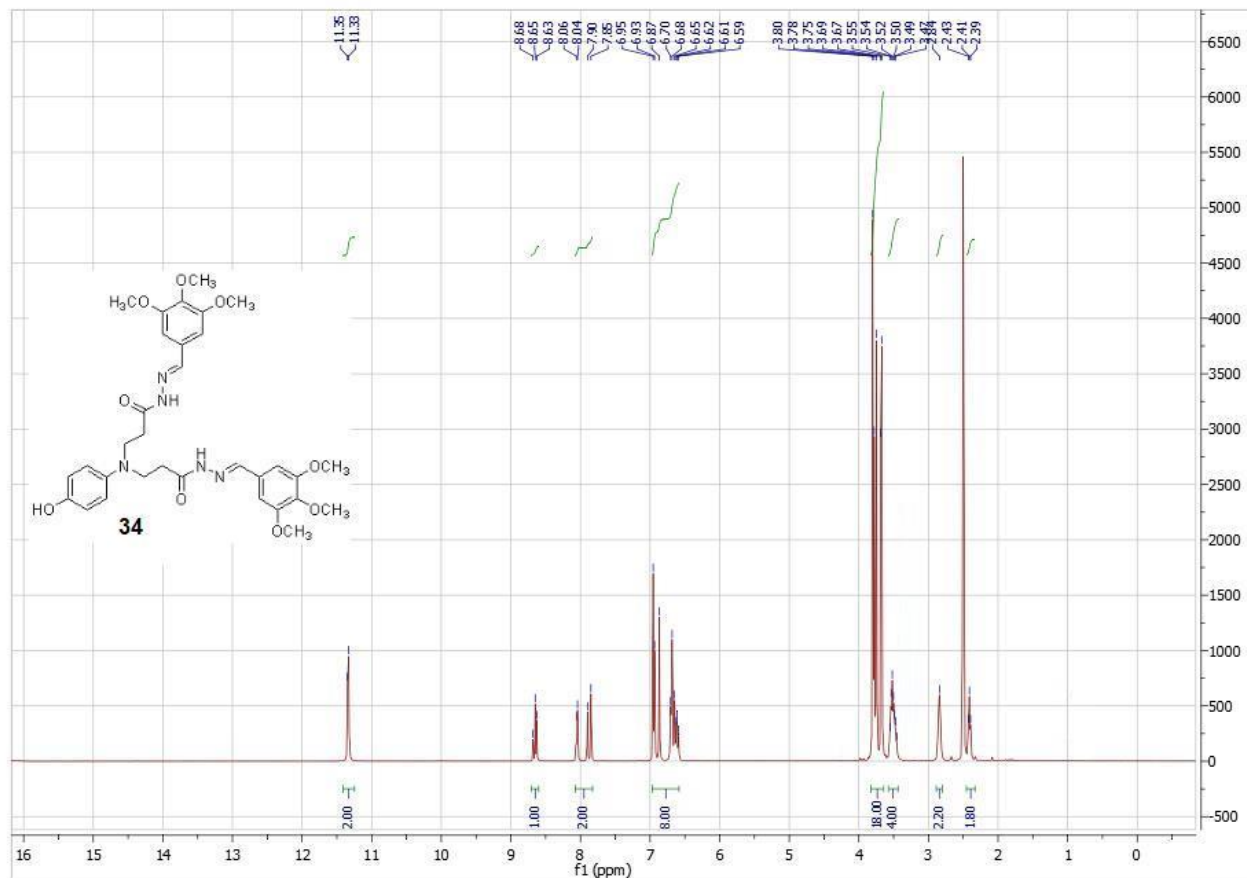


Figure S59. ¹H NMR spectrum of compound **34**

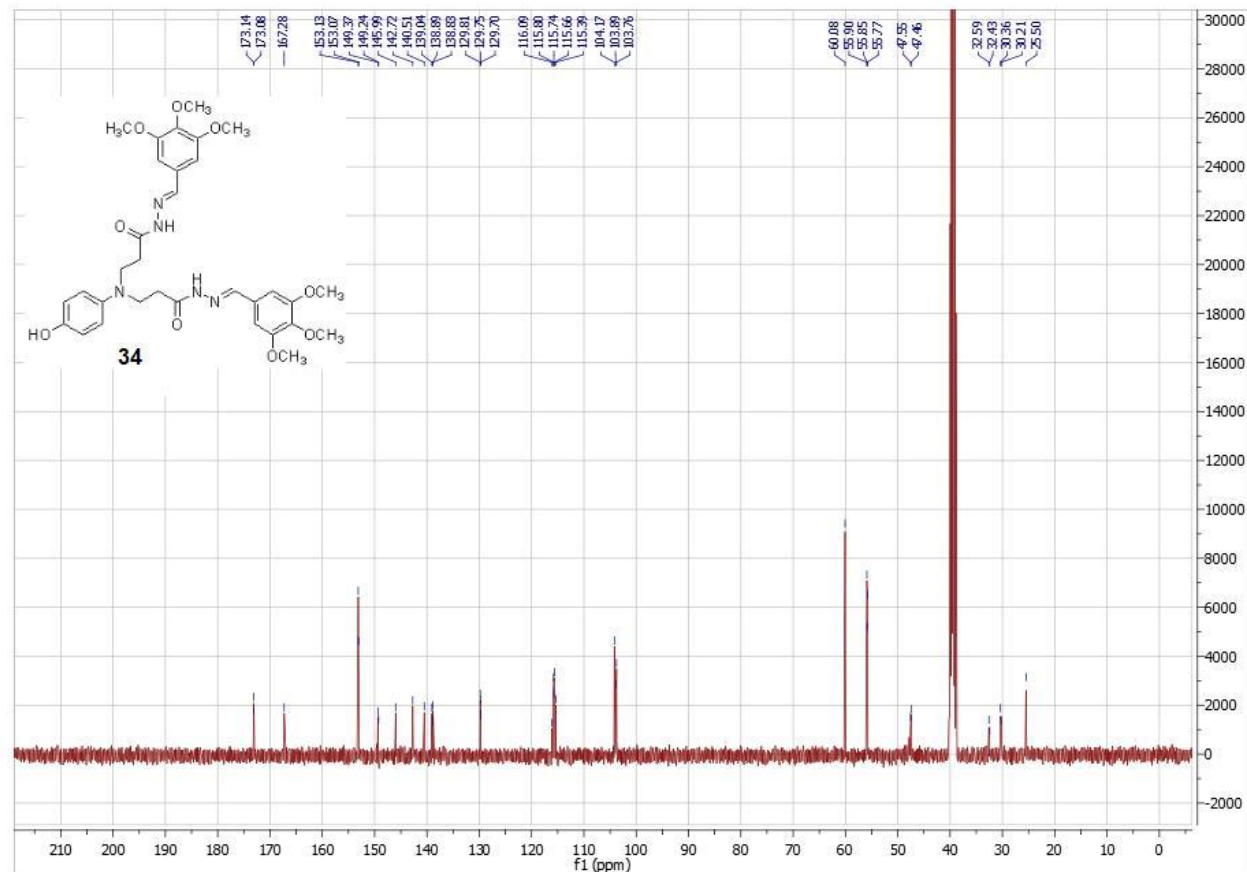


Figure S60. ¹³C NMR spectrum of compound **34**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(*N'*-(naphthalen-1-ylmethylene)propanehydrazide) (**35**)

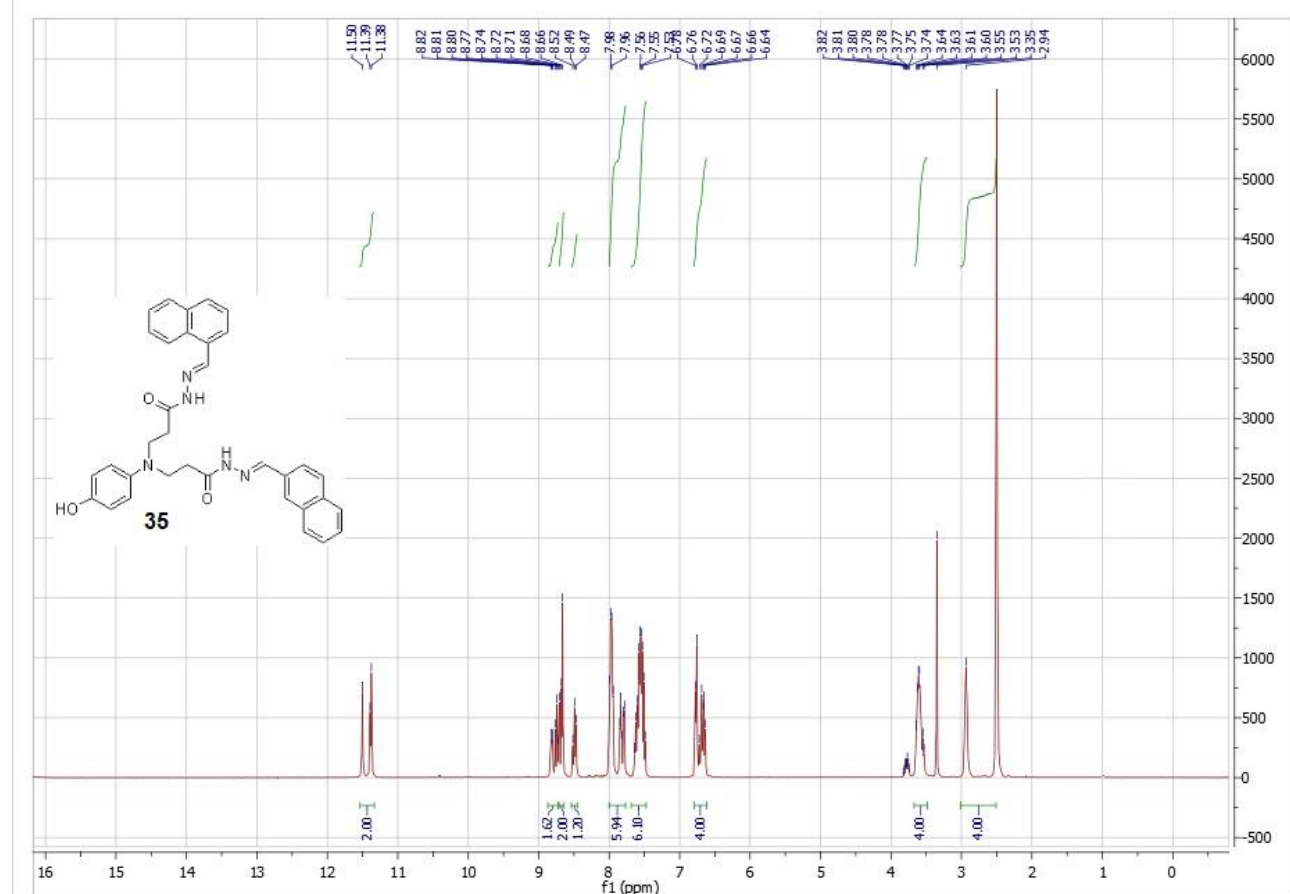


Figure S61. ¹H NMR spectrum of compound **35**

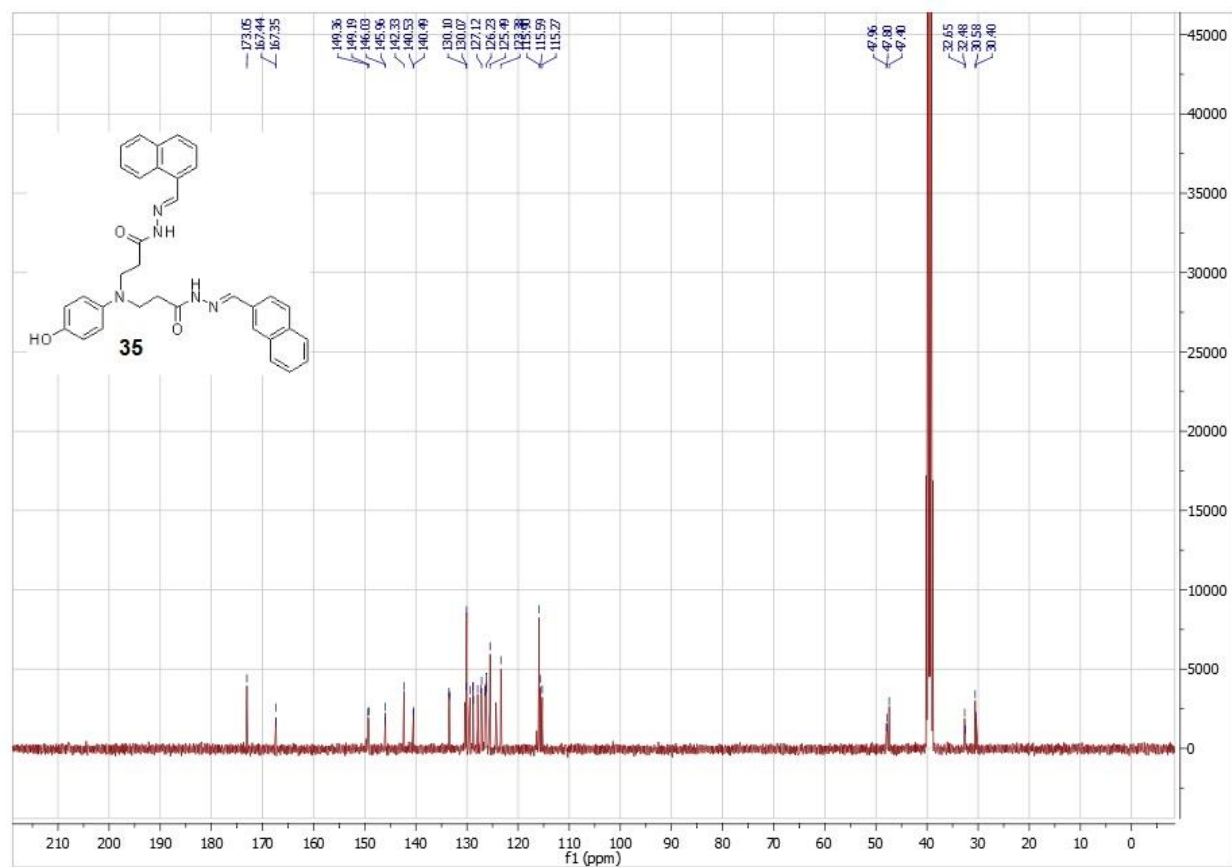


Figure S62. ¹³C NMR spectrum of compound **35**

3,3'-((4-Hydroxyphenyl)azanediyl)bis(1-(3,5-dimethyl-1H-pyrazol-1-yl)propan-1-one) (36)

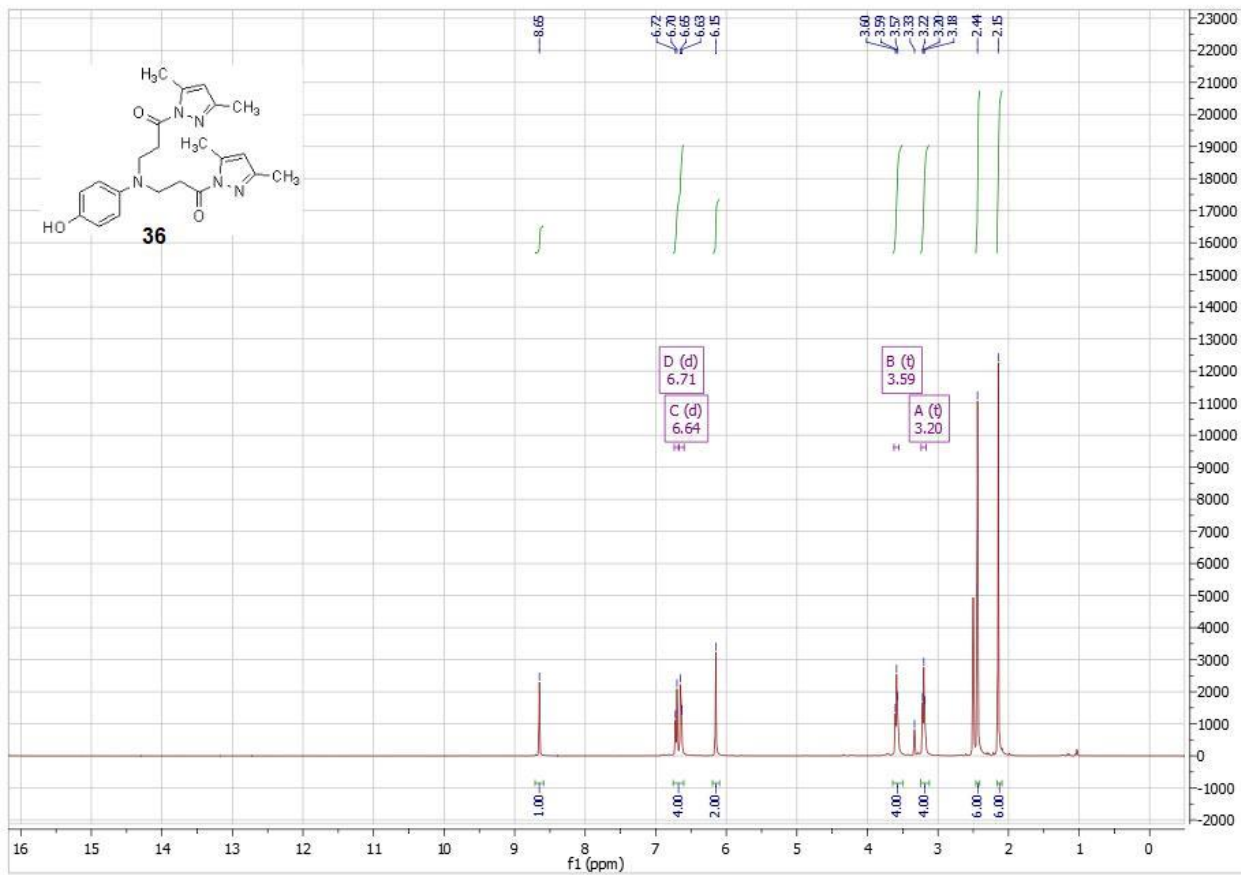


Figure S63. ^1H NMR spectrum of compound **36**

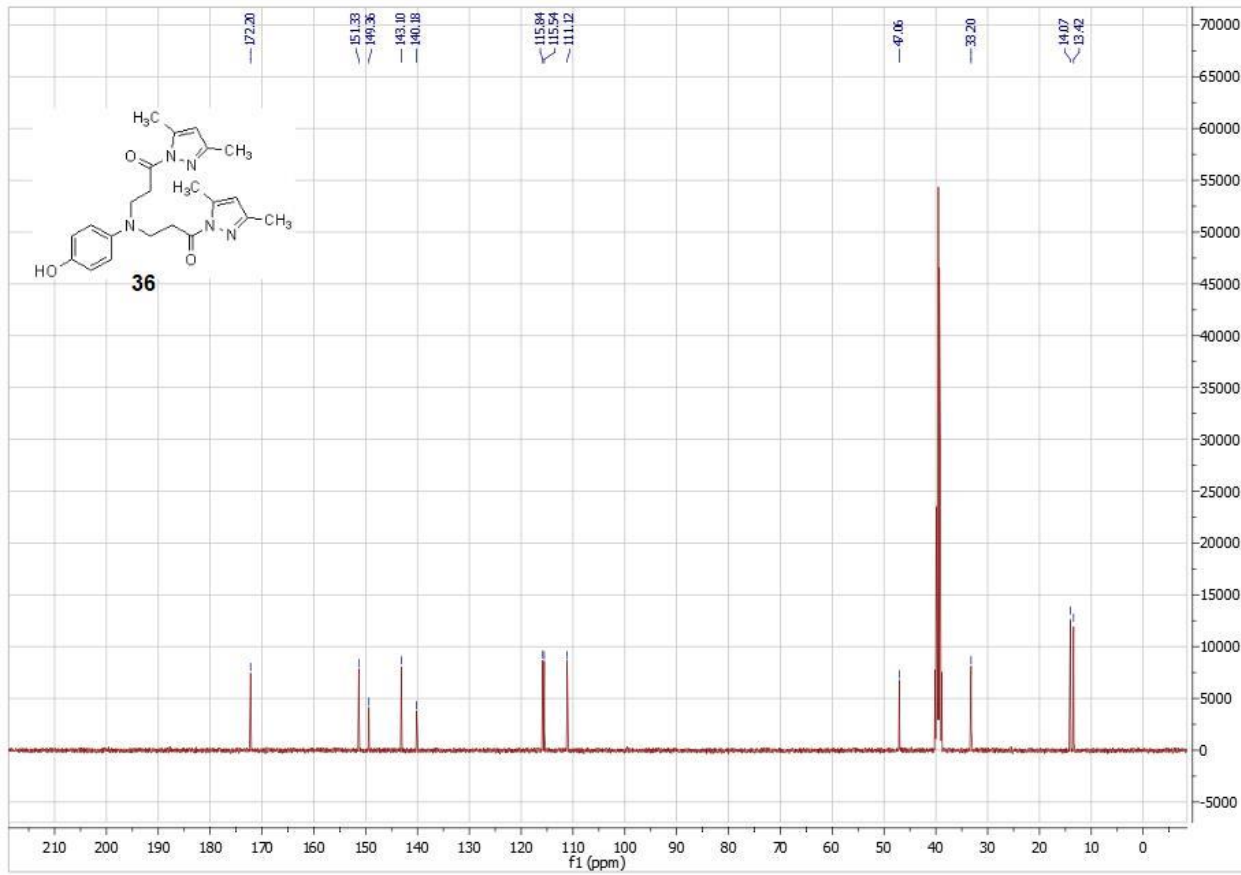


Figure S64. ^{13}C NMR spectrum of compound **36**

3,3'-((4-Hydroxyphenyl)azanediy)bis(*N*-(2,5-dimethyl-1*H*-pyrrol-1-yl)propanamide) (**37**)

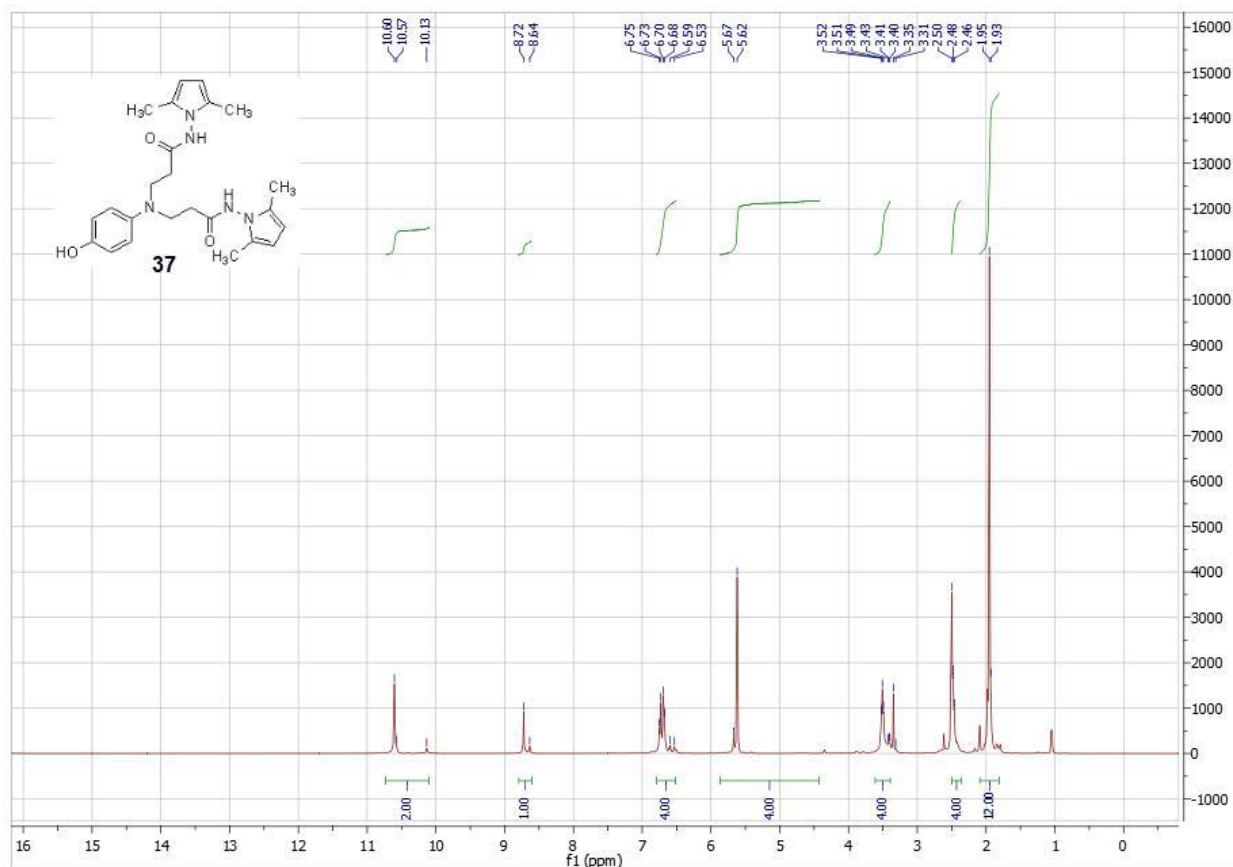


Figure S65. ¹H NMR spectrum of compound **37**

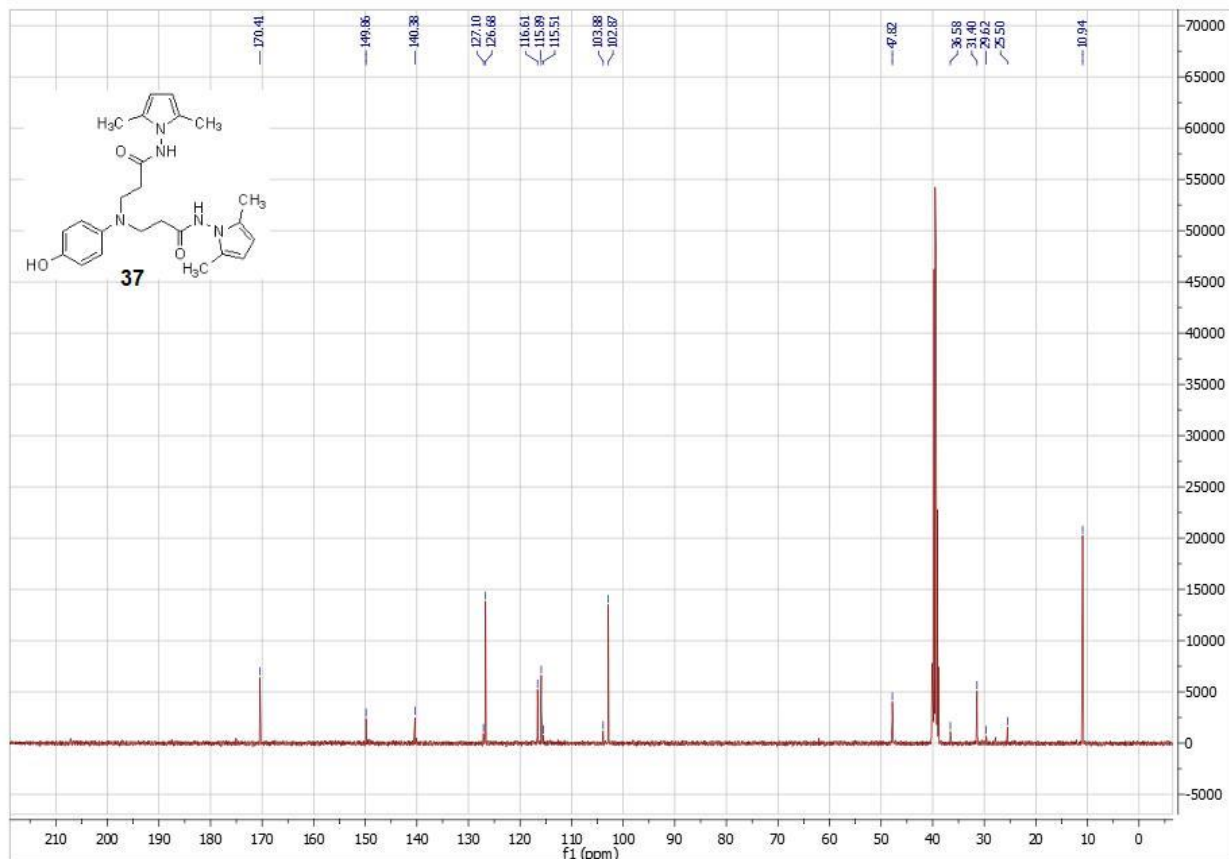


Figure S66. ¹³C NMR spectrum of compound **37**

Acquisition Parameter

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Focus	Not active	Set Capillary	4500 V	Set Dry Heater	180 °C
Scan Begin	40 m/z	Set End Plate Offset	-500 V	Set Dry Gas	8.0 l/min
Scan End	1800 m/z	Set Collision Cell RF	350.0 Vpp	Set Divert Valve	Waste

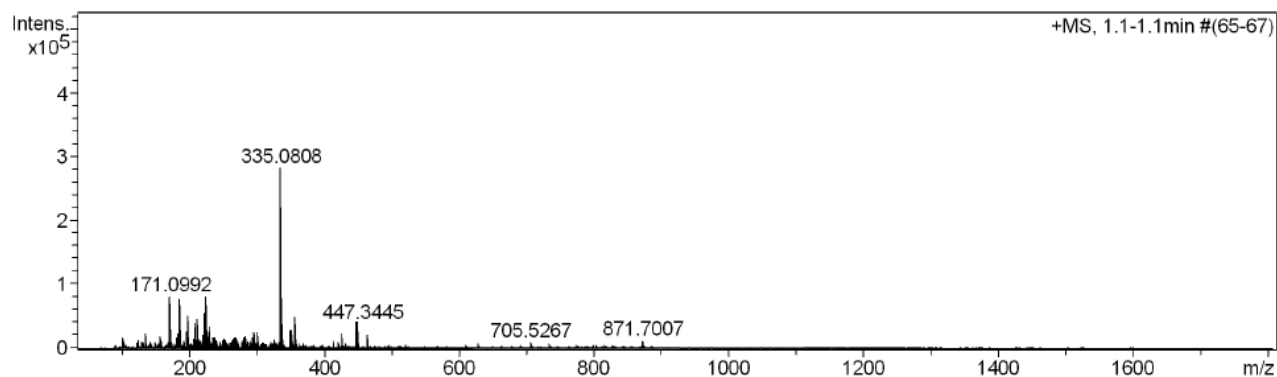
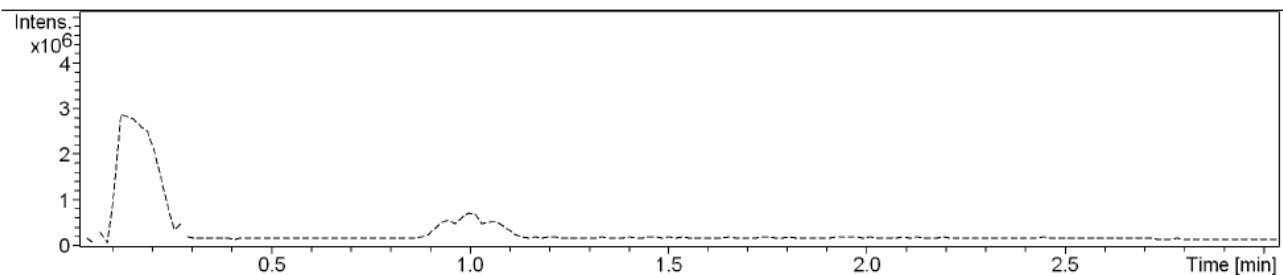


Figure S67: Mass spectrum of compound **15**