

Synthesis and Biological Evaluation of Hydroxylated Monocarbonyl Curcumin Derivatives as Potential Inducers of Neprilysin Activity

Dimitris Matiadis¹, See-Ting Ng², Eric H.-L. Chen², Georgia Nigianni^{1,3}, Veroniki P. Vidali³, Aleksander Canko³, Rita P.-Y. Chen^{2,4,5,*} and Marina Sagnou^{1,*}

¹NCSR "Demokritos", Institute of Biosciences & Applications, Patr. Grigoriou & Neapoleos 27, Athens, 153 41, Greece

²Institute of Biological Chemistry, Academia Sinica, No. 128, Sec. 2, Academia Rd., Nankang, Taipei 115, Taiwan

³NCSR "Demokritos", Institute of Nanoscience & Nanotechnology, Patr. Grigoriou & Neapoleos 27, Athens, 153 41, Greece

⁴Institute of Biochemical Sciences, National Taiwan University, No. 1, Sec. 4, Roosevelt Rd., Taipei 106, Taiwan

⁵Neuroscience Program of Academia Sinica No. 128, Sec. 2, Academia Rd., Nankang, Taipei 115, Taiwan

Supporting Information

Contents

NMR spectra

2

NMR spectra

(1E,4E)-1,5-bis(4-hydroxyphenyl)penta-1,4-dien-3-one **1**

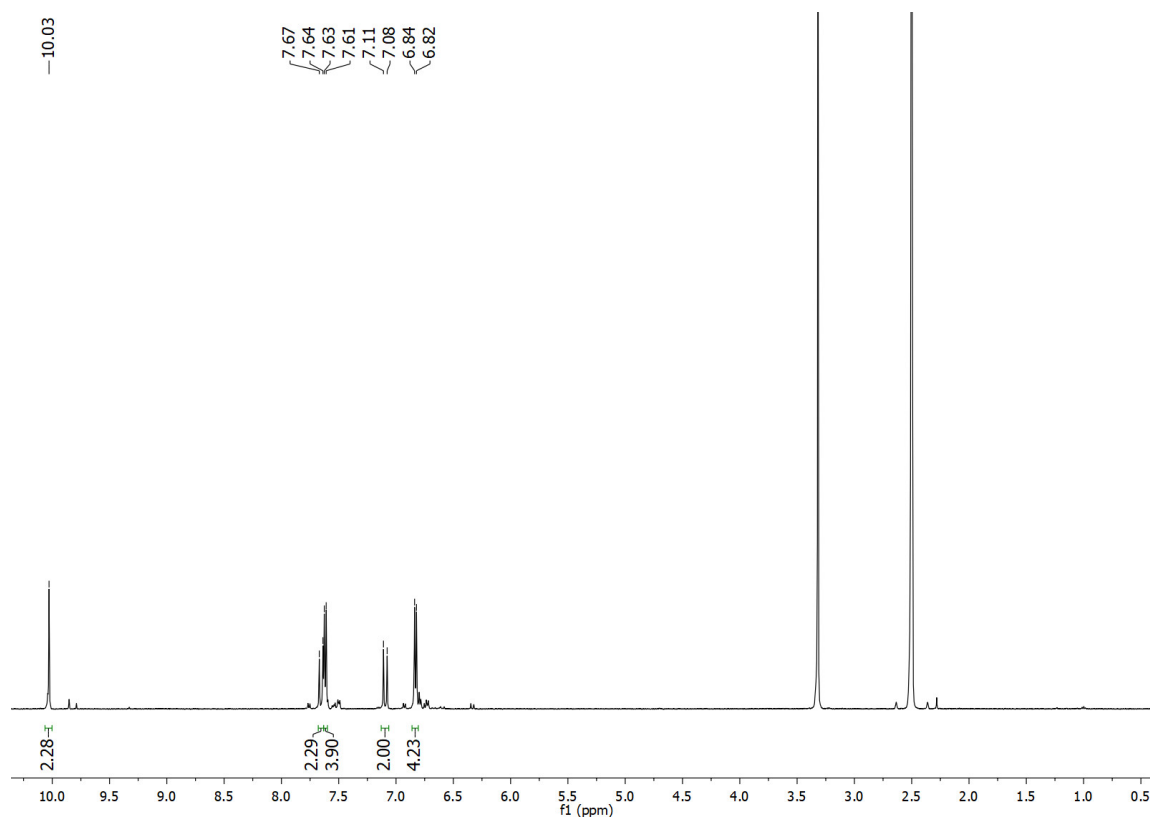


Figure S1. ^1H NMR spectrum (500 MHz, $\text{DMSO}-d_6$, δ ppm)

(1E,4E)-1,5-bis(4-hydroxy-3-methoxyphenyl)penta-1,4-dien-3-one 2

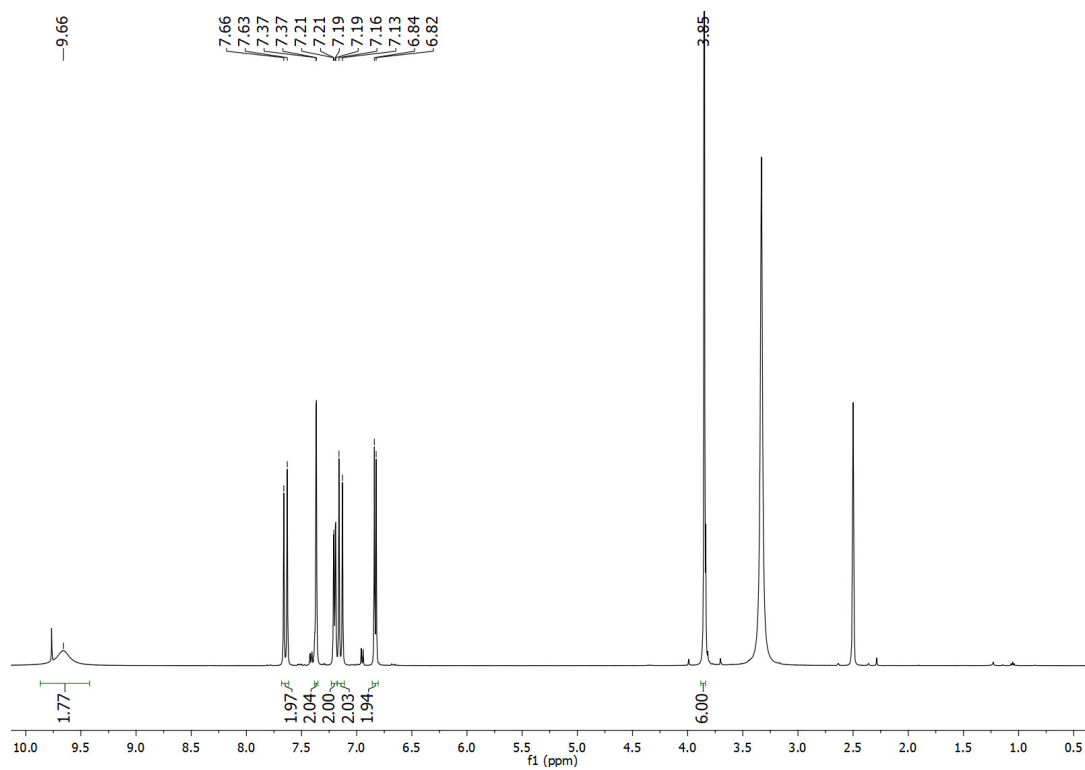


Figure S2. ¹H NMR spectrum (500 MHz, DMSO-*d*₆, δ ppm)

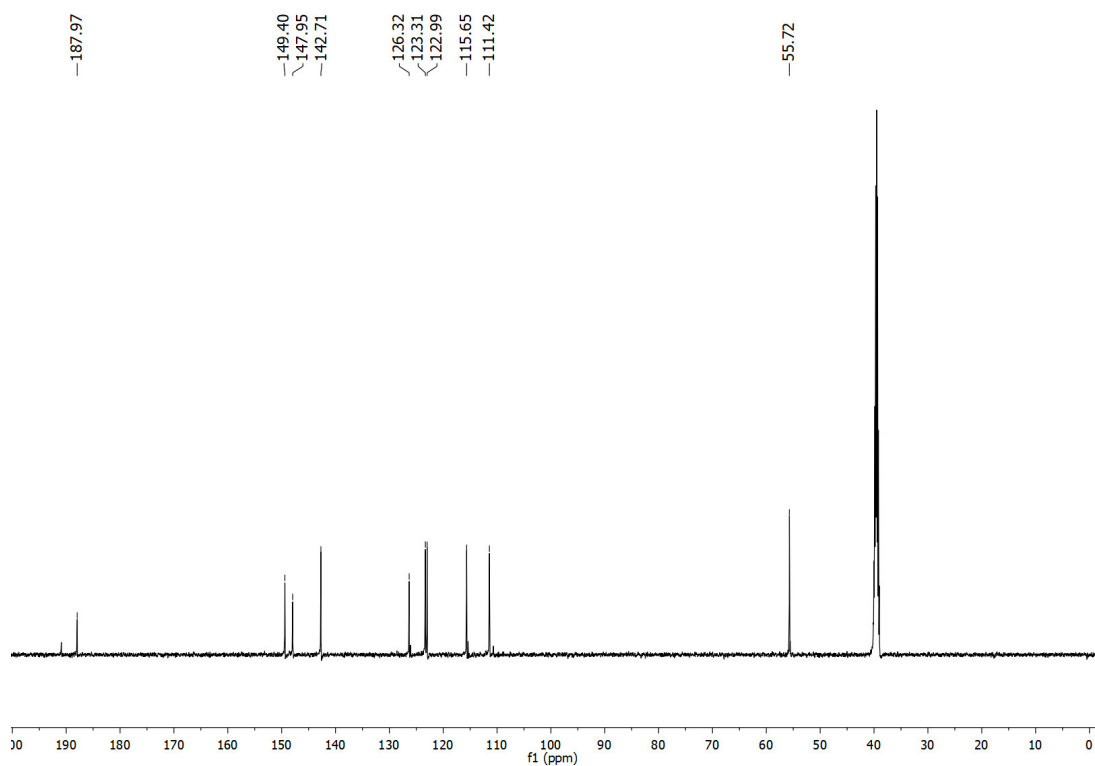


Figure S3. ^{13}C NMR spectrum (125 MHz, DMSO- d_6 , δ ppm)

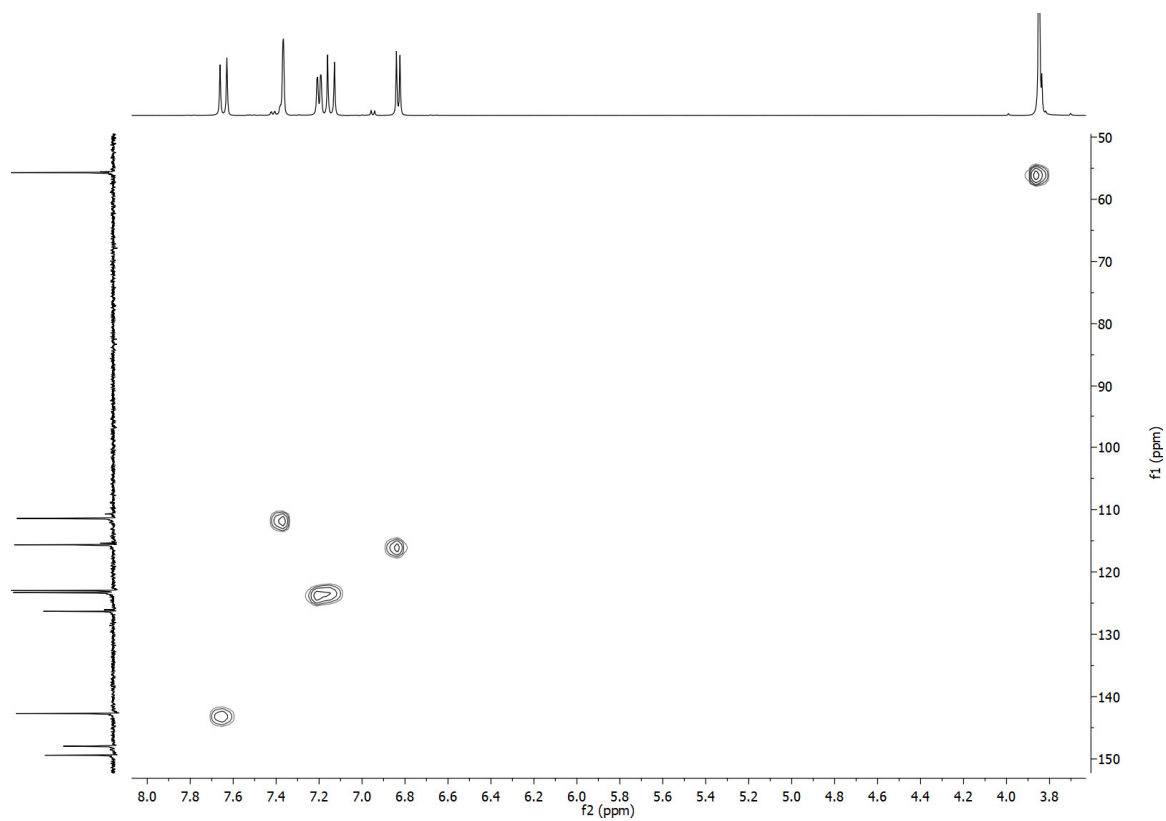


Figure S4. ^1H - ^{13}C HSQC spectrum

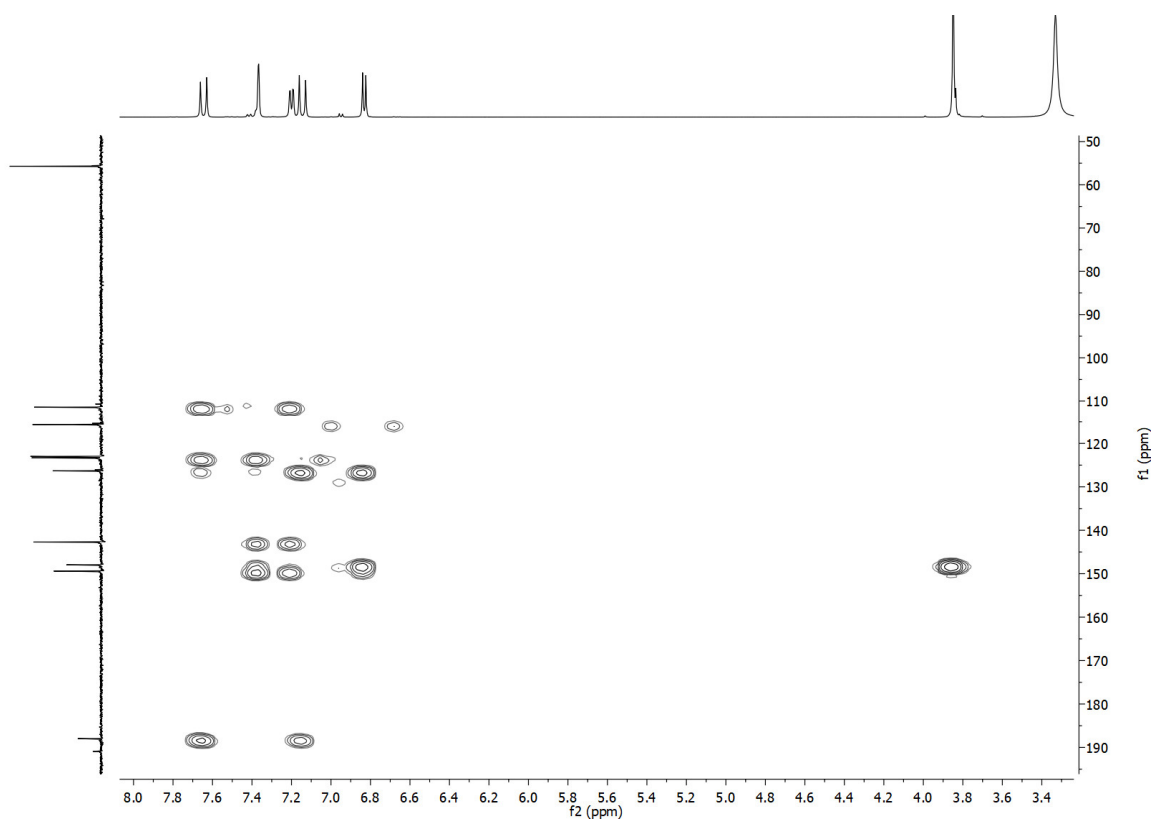


Figure S5. ^1H - ^{13}C HMBC spectrum

2,6-bis((E)-4-hydroxybenzylidene)cyclohexan-1-one 3

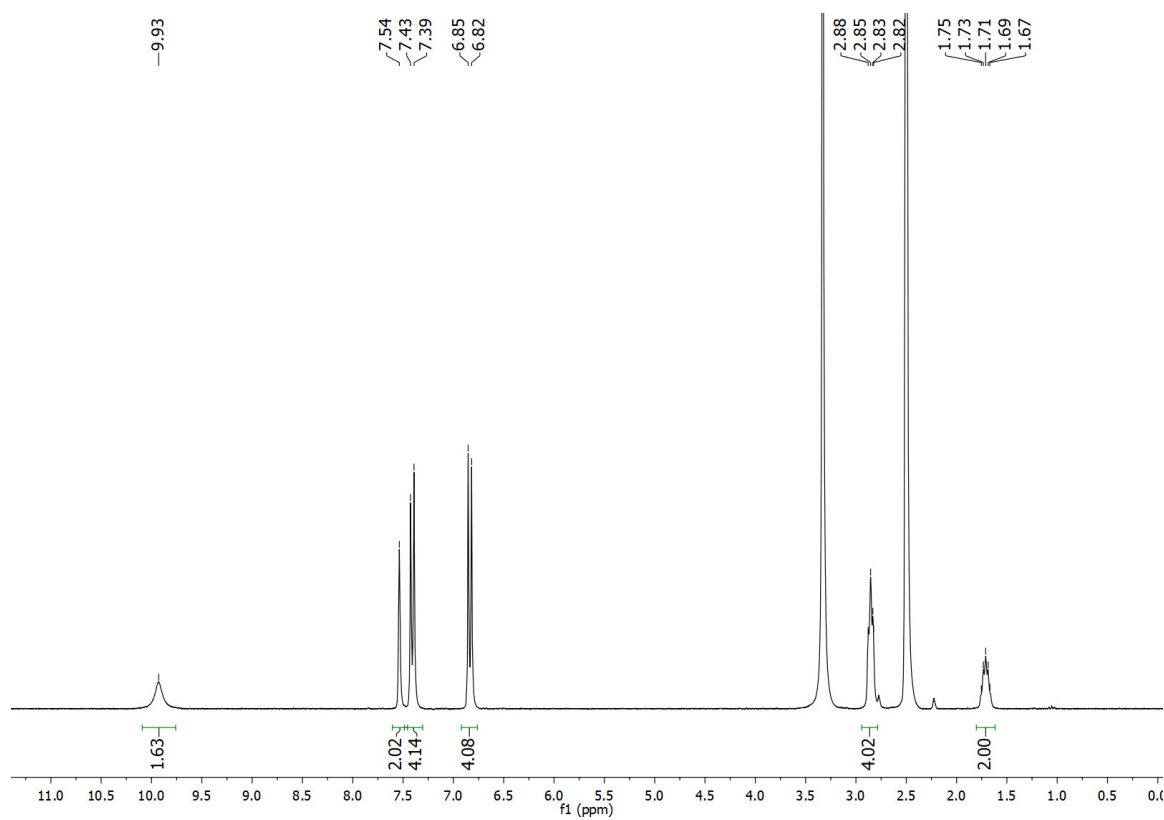


Figure S6. ^1H NMR spectrum (500 MHz, $\text{DMSO-}d_6$, δ ppm)

2,6-bis((E)-4-hydroxy-3-methoxybenzylidene)cyclohexan-1-one **4**

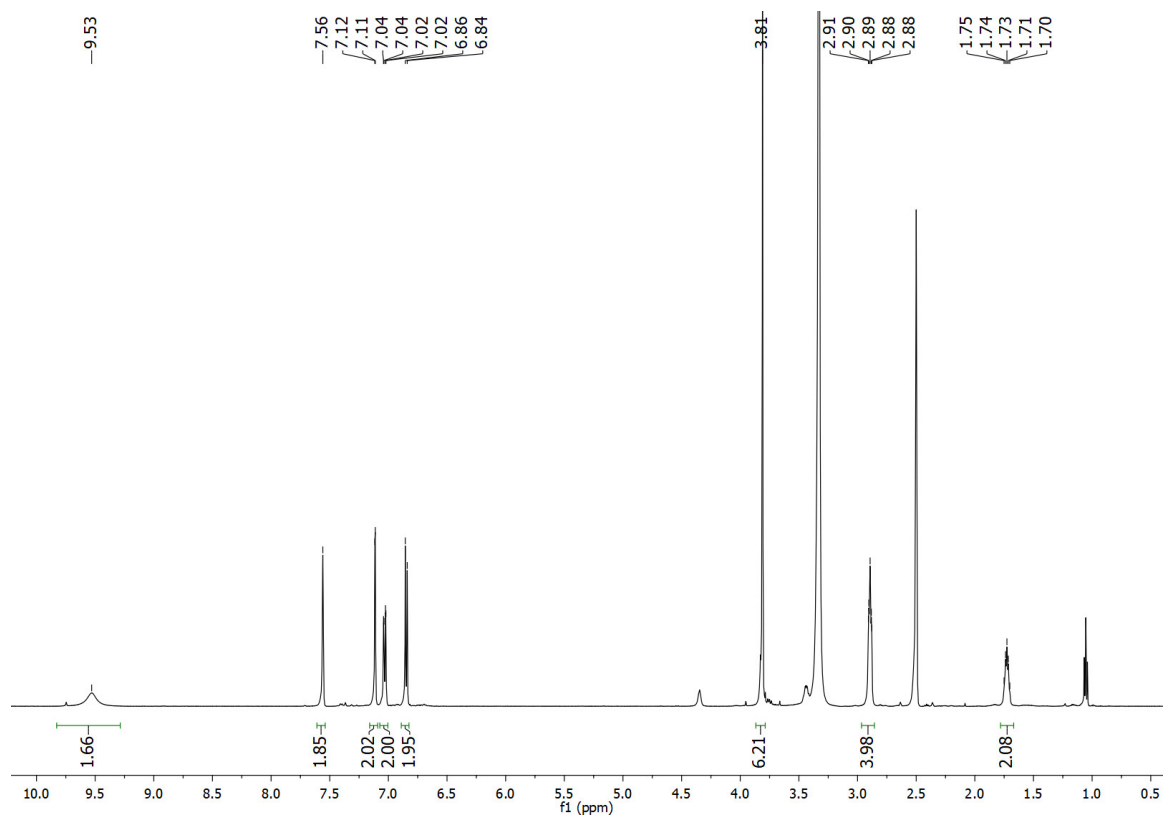


Figure S7. ^1H NMR spectrum (500 MHz, $\text{DMSO}-d_6$, δ ppm)

(1E,4E)-1,5-bis(3,4-dihydroxyphenyl)penta-1,4-dien-3-one **8**

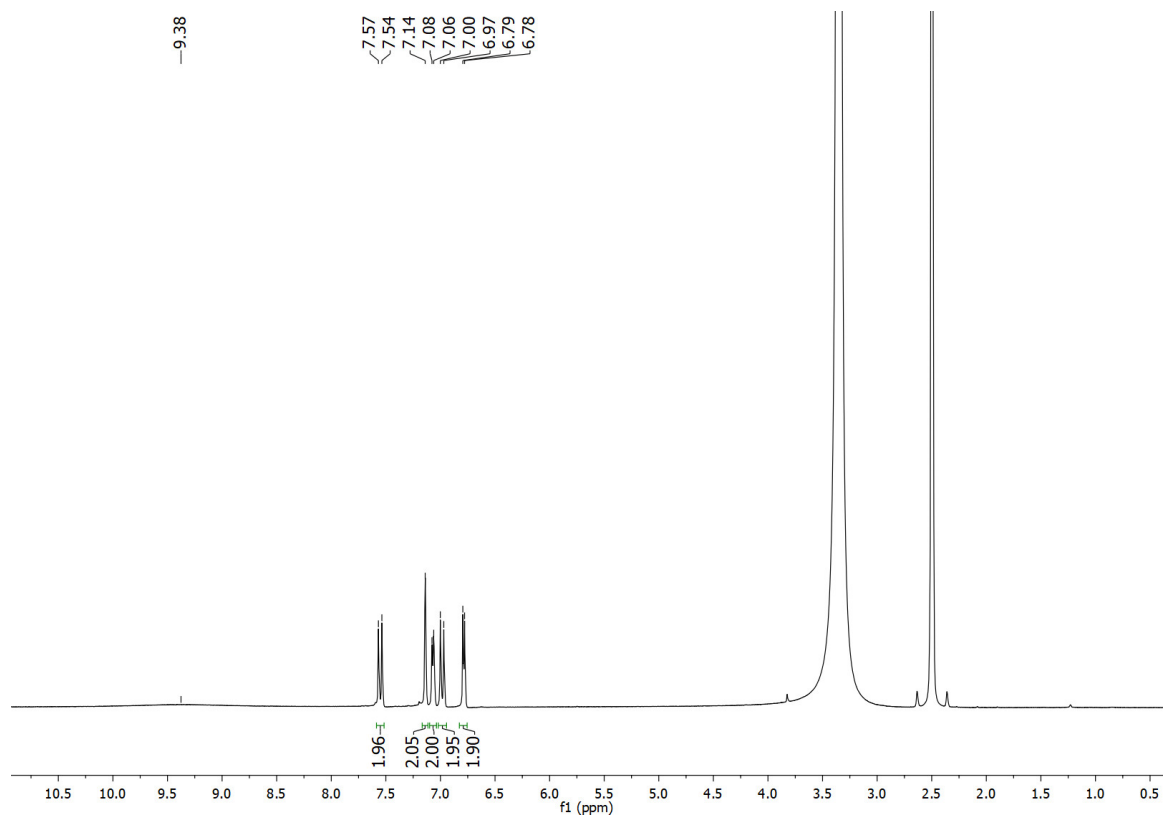


Figure S8. ^1H NMR spectrum (500 MHz, $\text{DMSO-}d_6$, δ ppm)

(2E,6E)-2,6-bis(3,4-dihydroxybenzylidene)cyclohexanone **9**

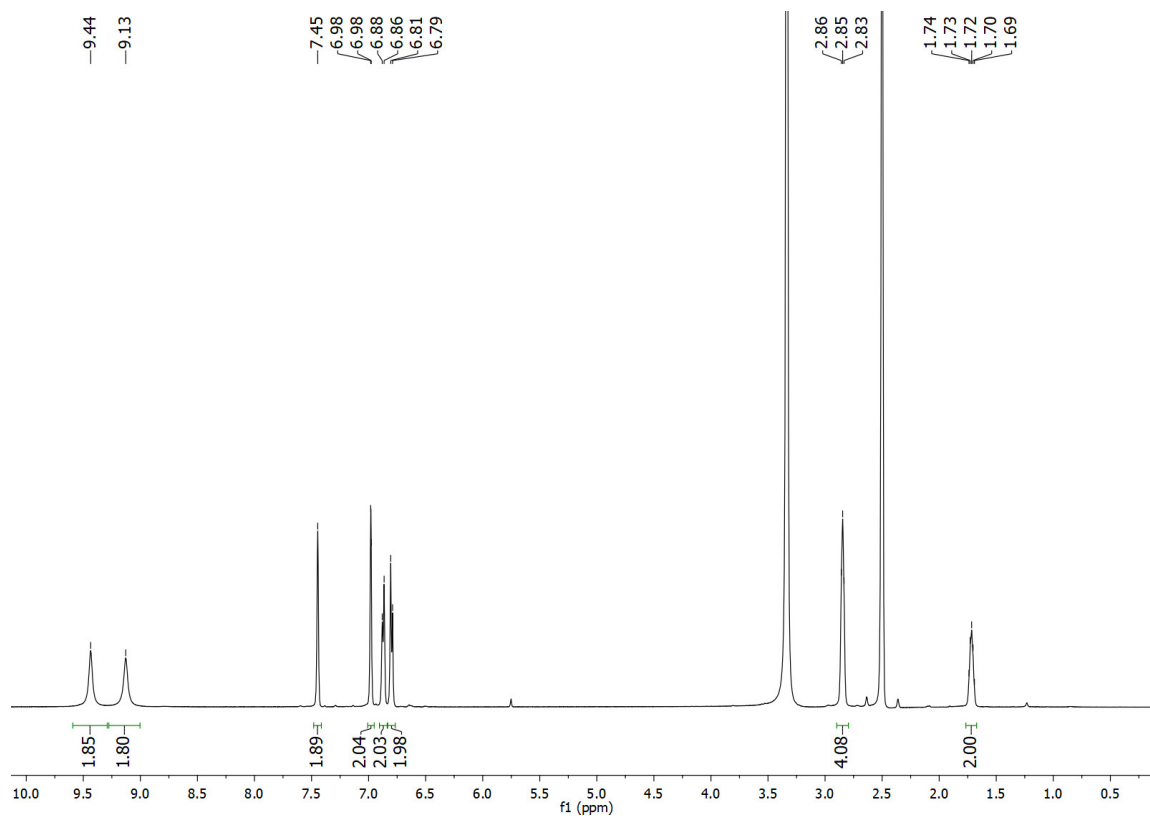


Figure S9. ^1H NMR spectrum (500 MHz, DMSO- d_6 , δ ppm)

(1E,4E)-1,5-bis(3,4,5-trihydroxyphenyl)penta-1,4-dien-3-one **10**

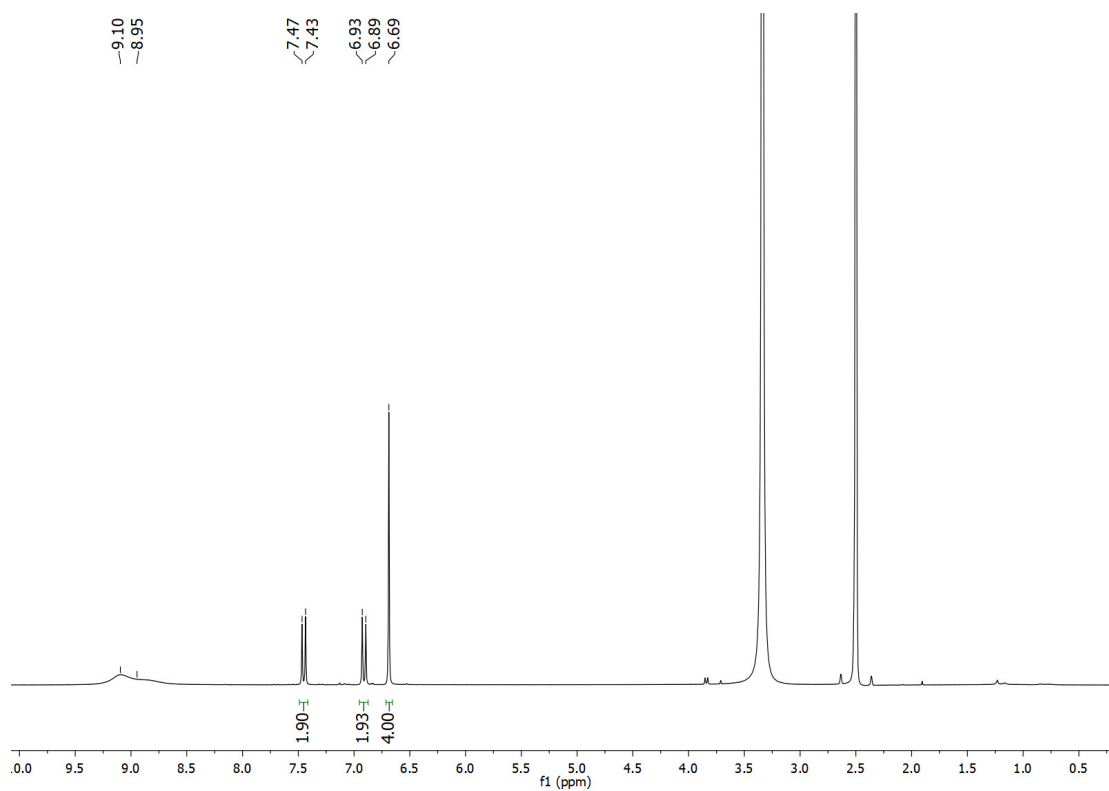


Figure S10. ^1H NMR spectrum (500 MHz, DMSO- d_6 , δ ppm)

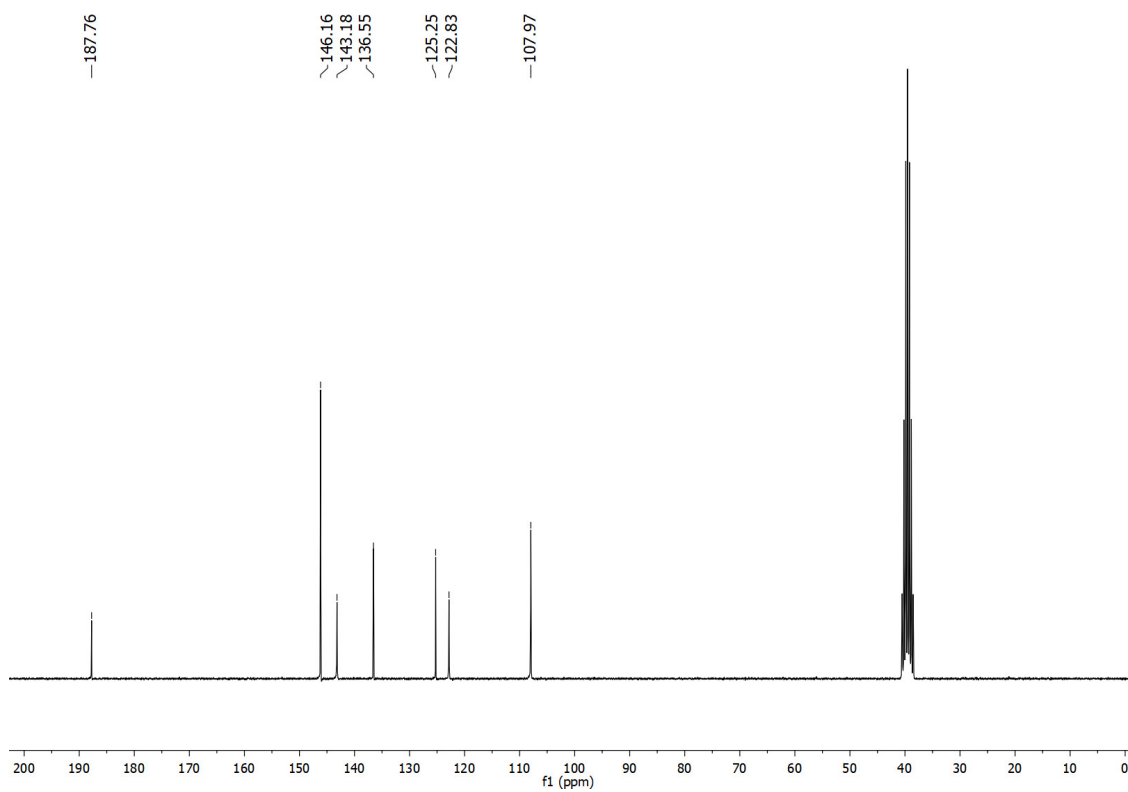


Figure S11. ¹³C NMR spectrum (62.5 MHz, DMSO-*d*₆, δ ppm)

(E)-4-(3,4-dimethoxyphenyl)but-3-en-2-one **11**

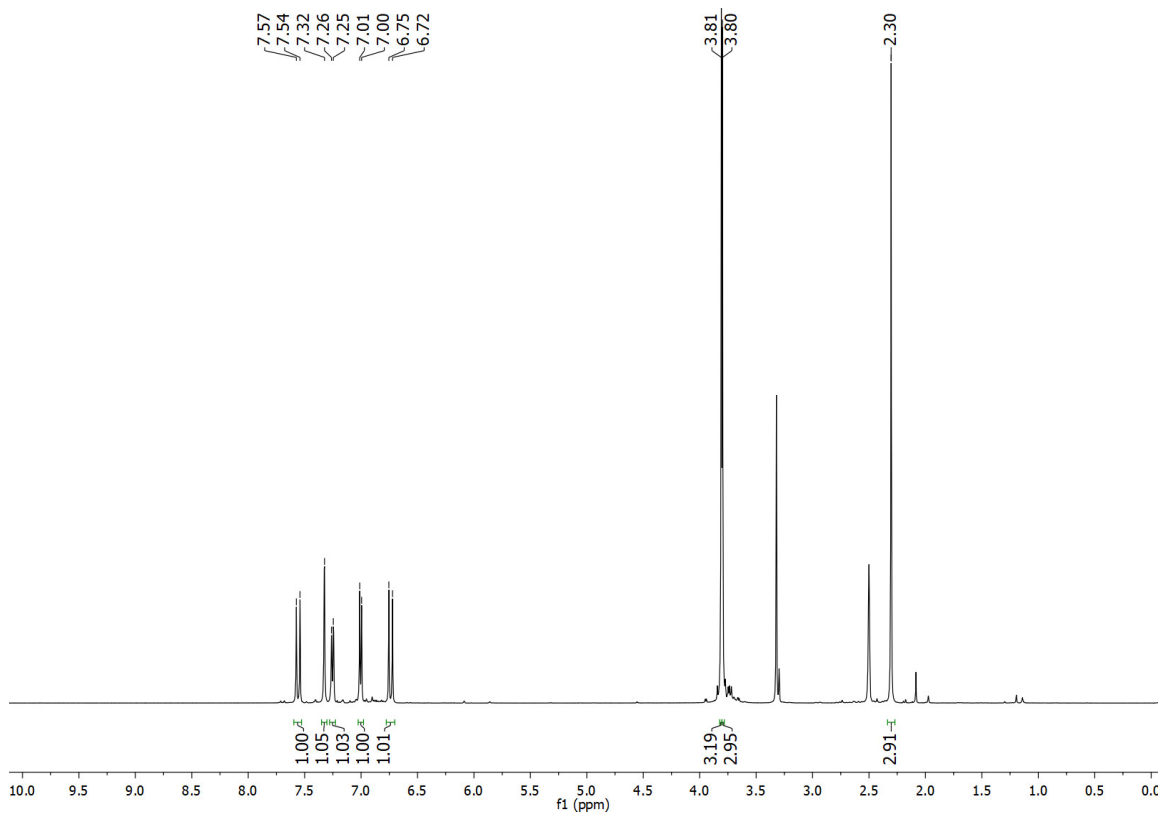


Figure S12. ^1H NMR spectrum (500 MHz, $\text{DMSO}-d_6$, δ ppm)

(E)-4-(4-hydroxy-3-methoxyphenyl)but-3-en-2-one **15**

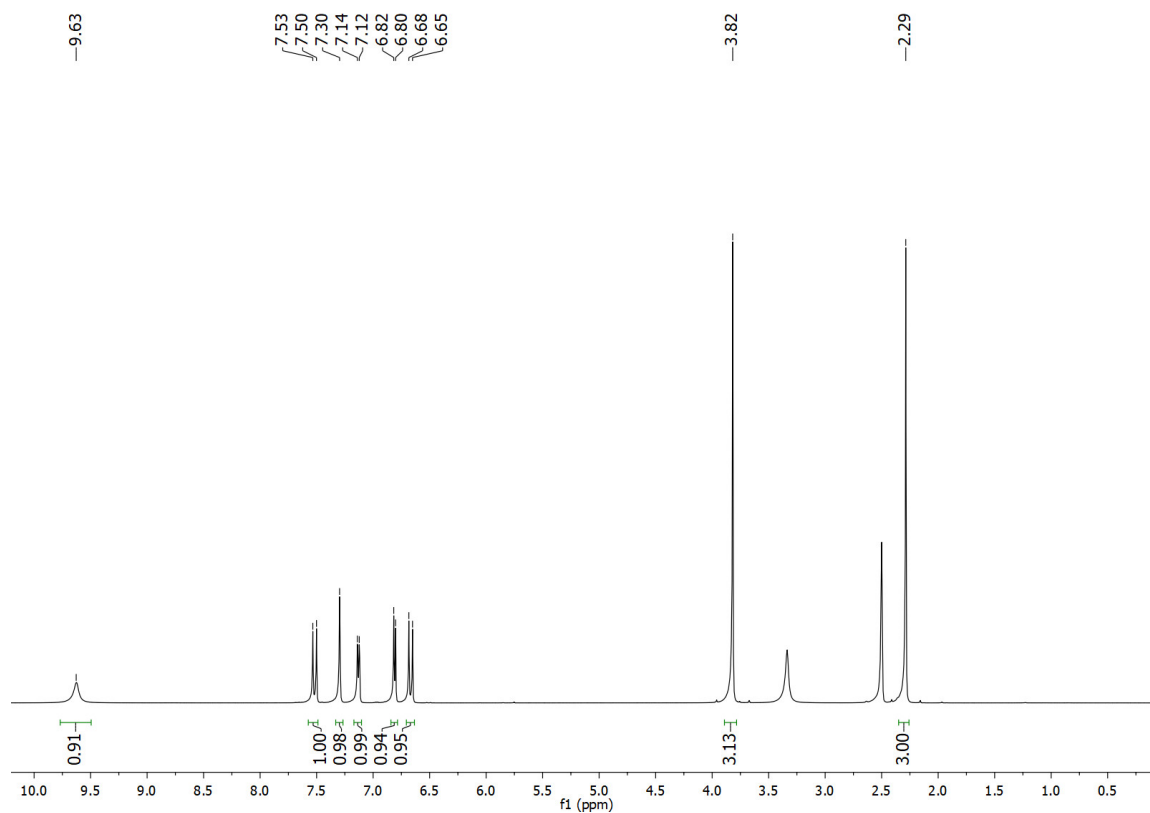


Figure S13. ^1H NMR spectrum (500 MHz, $\text{DMSO}-d_6$, δ ppm)

(E)-4-(3,4,5-trimethoxyphenyl)but-3-en-2-one **18**

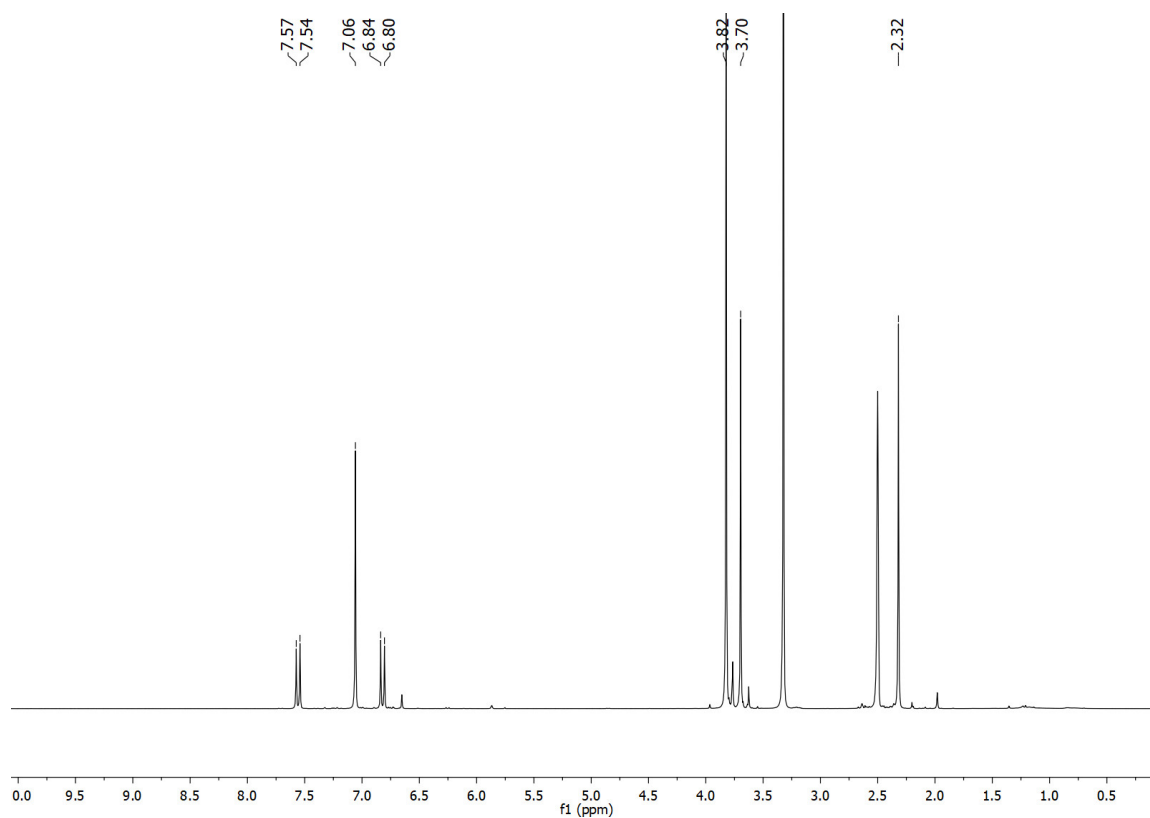


Figure S14. ^1H NMR spectrum (500 MHz, $\text{DMSO}-d_6$, δ ppm)

(1E,4E)-1-(3,4-dimethoxyphenyl)-5-(4-methoxyphenyl)penta-1,4-dien-3-one **12**

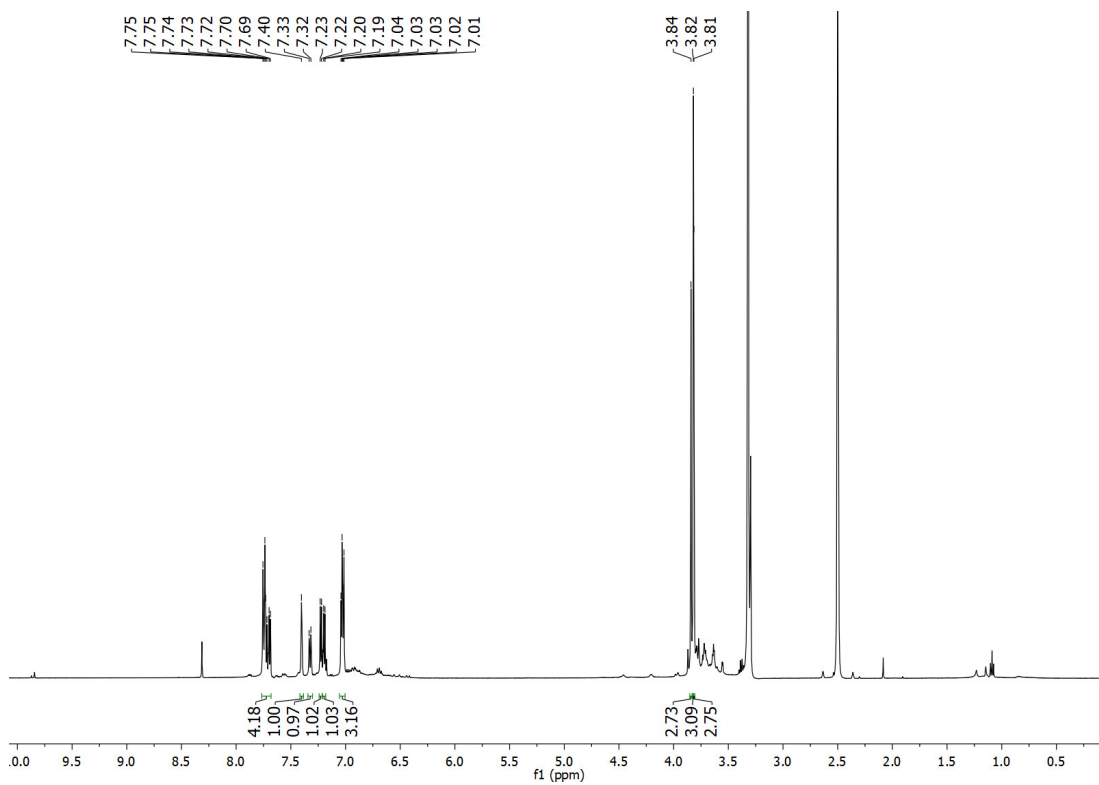


Figure S15. ^1H NMR spectrum (500 MHz, $\text{DMSO}-d_6$, δ ppm)

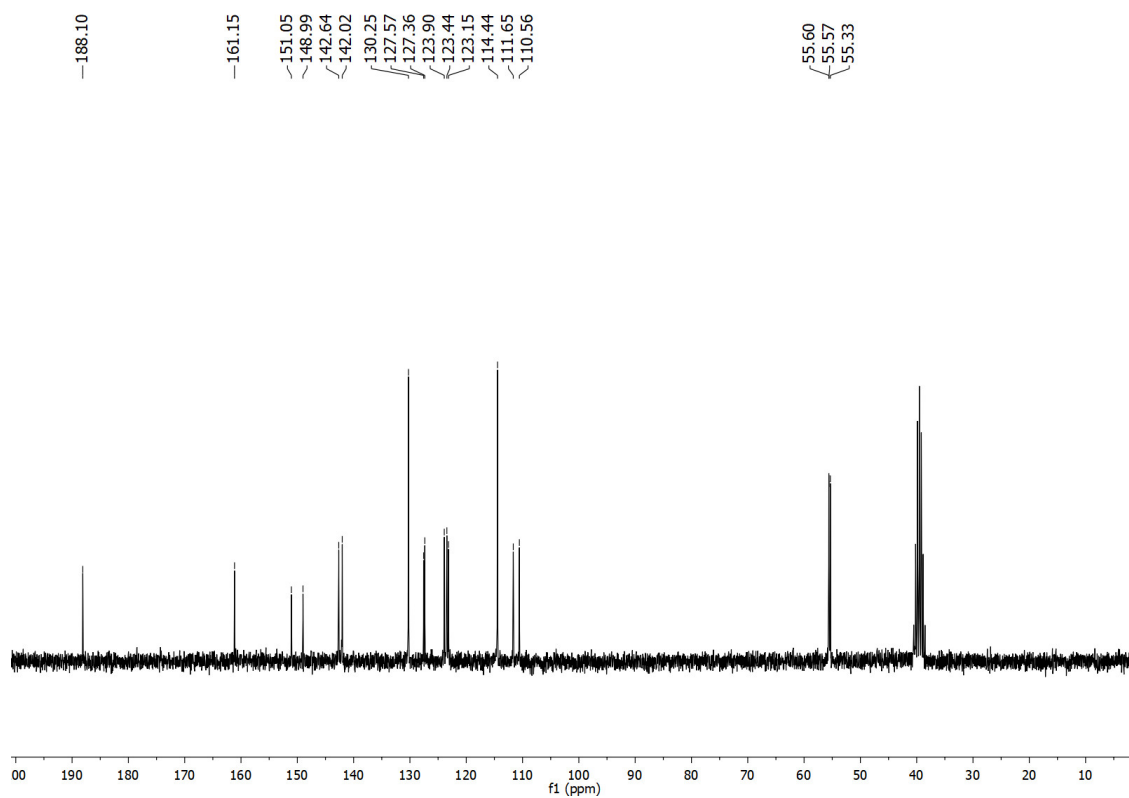


Figure S16. ^{13}C NMR spectrum (125 MHz, $\text{DMSO-}d_6$, δ ppm)

(1E,4E)-1-(3,4-dihydroxyphenyl)-5-(4-hydroxyphenyl)penta-1,4-dien-3-one **13**

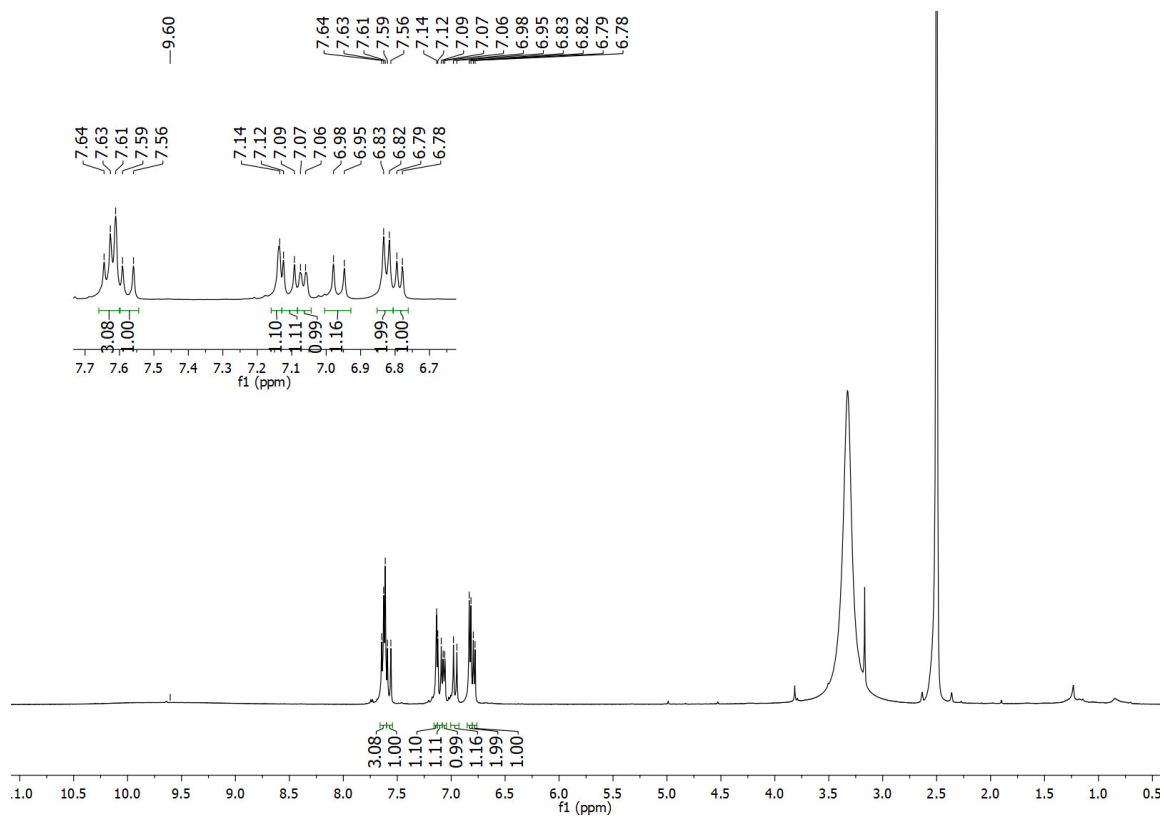


Figure S17. ^1H NMR spectrum (500 MHz, $\text{DMSO}-d_6$, δ ppm)

3,4-bis(methoxymethoxy)benzaldehyde **14**

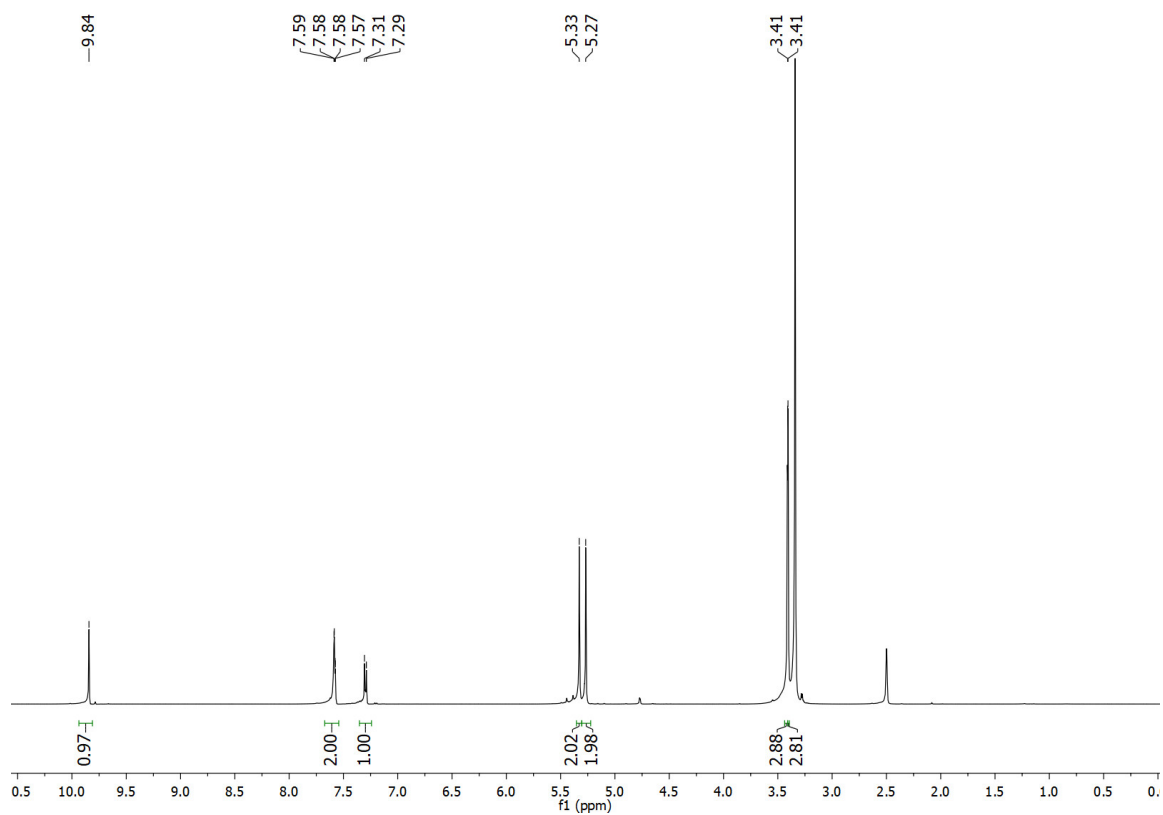


Figure S18. ^1H NMR spectrum (500 MHz, $\text{DMSO}-d_6$, δ ppm)

(1E,4E)-1-(3,4-dihydroxyphenyl)-5-(4-hydroxy-3-methoxyphenyl)penta-1,4-dien-3-one **17**

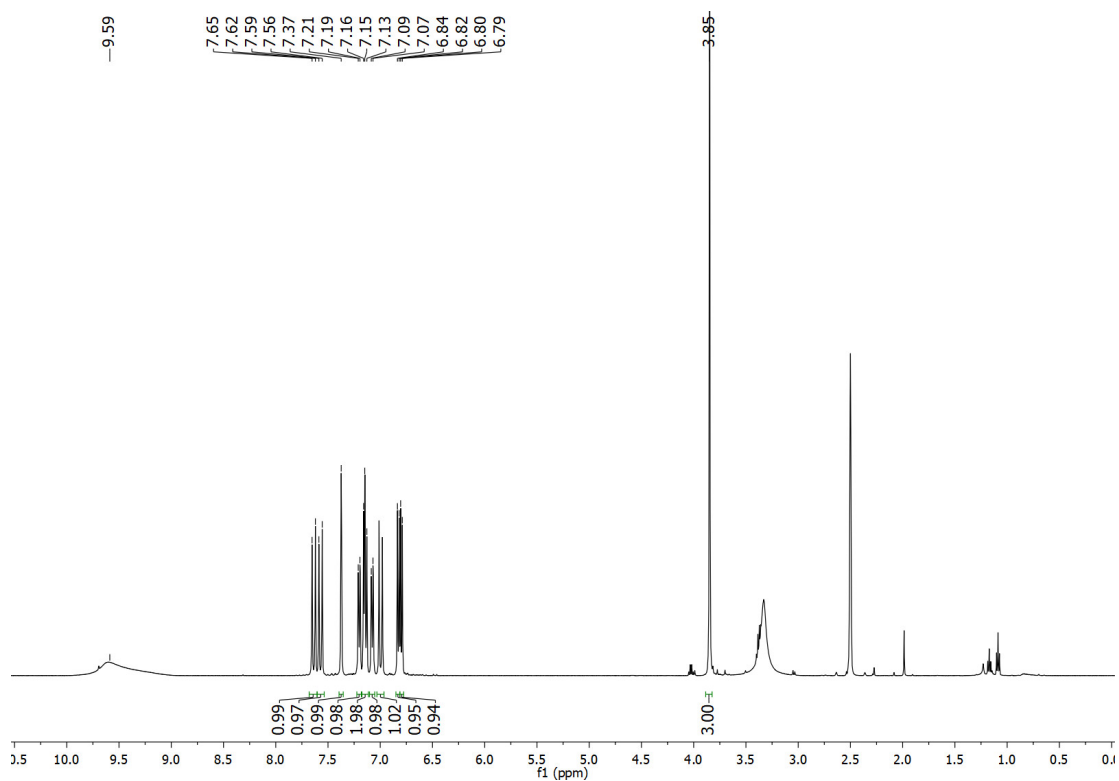


Figure S19. ¹H NMR spectrum (500 MHz, DMSO-*d*₆, δ ppm)

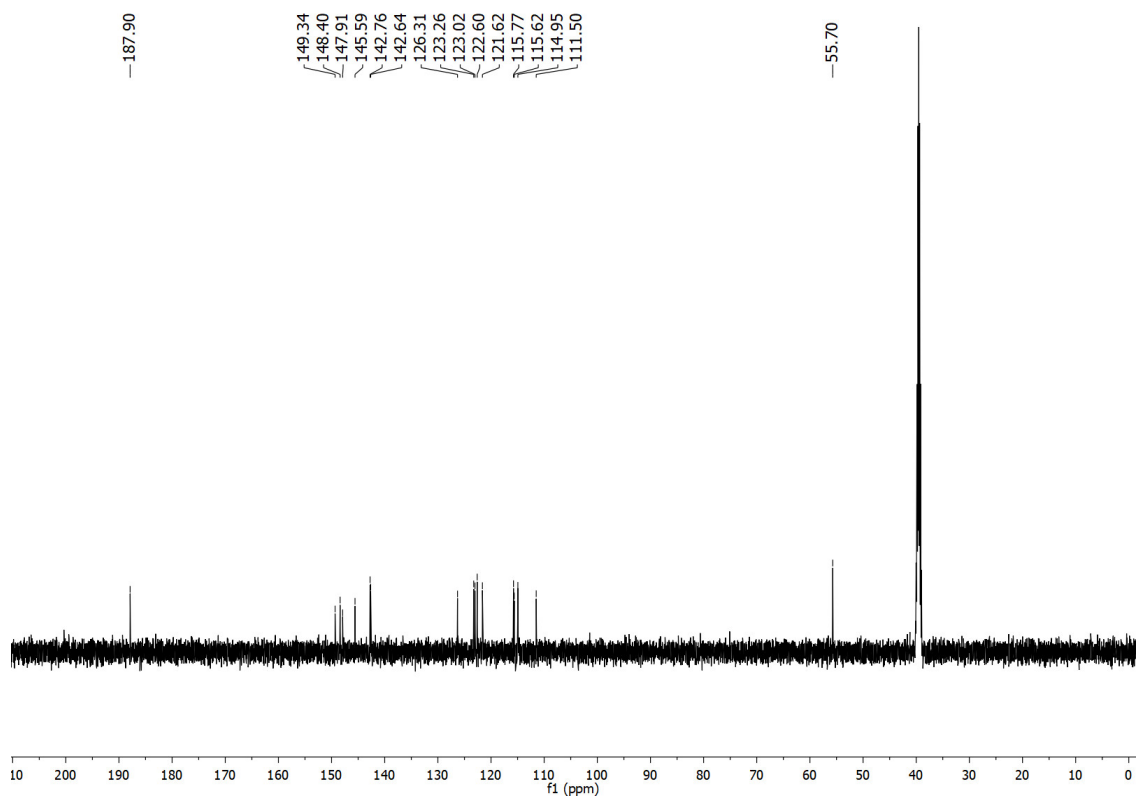


Figure S20. ¹³C NMR spectrum (125 MHz, DMSO-*d*₆, δ ppm)

(E)-4-(3,4,5-trihydroxyphenyl)but-3-en-2-one **19**

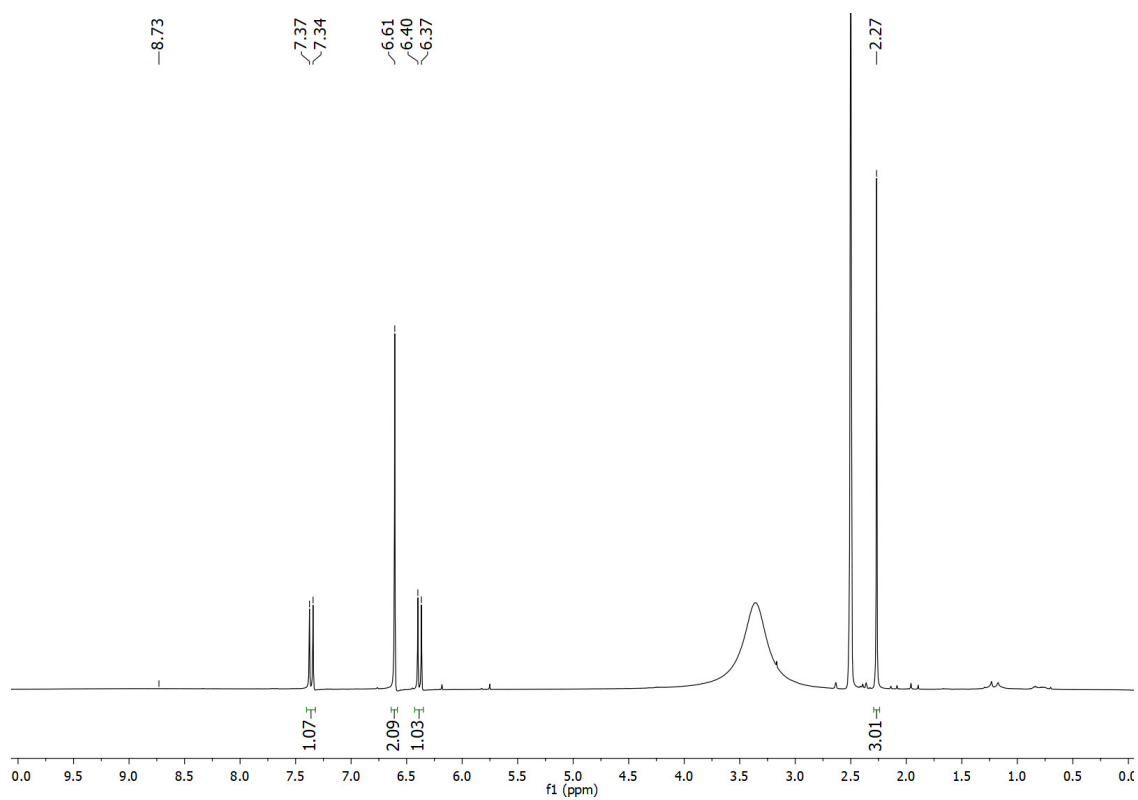


Figure S21. ¹H NMR spectrum (500 MHz, DMSO-*d*₆, δ ppm)

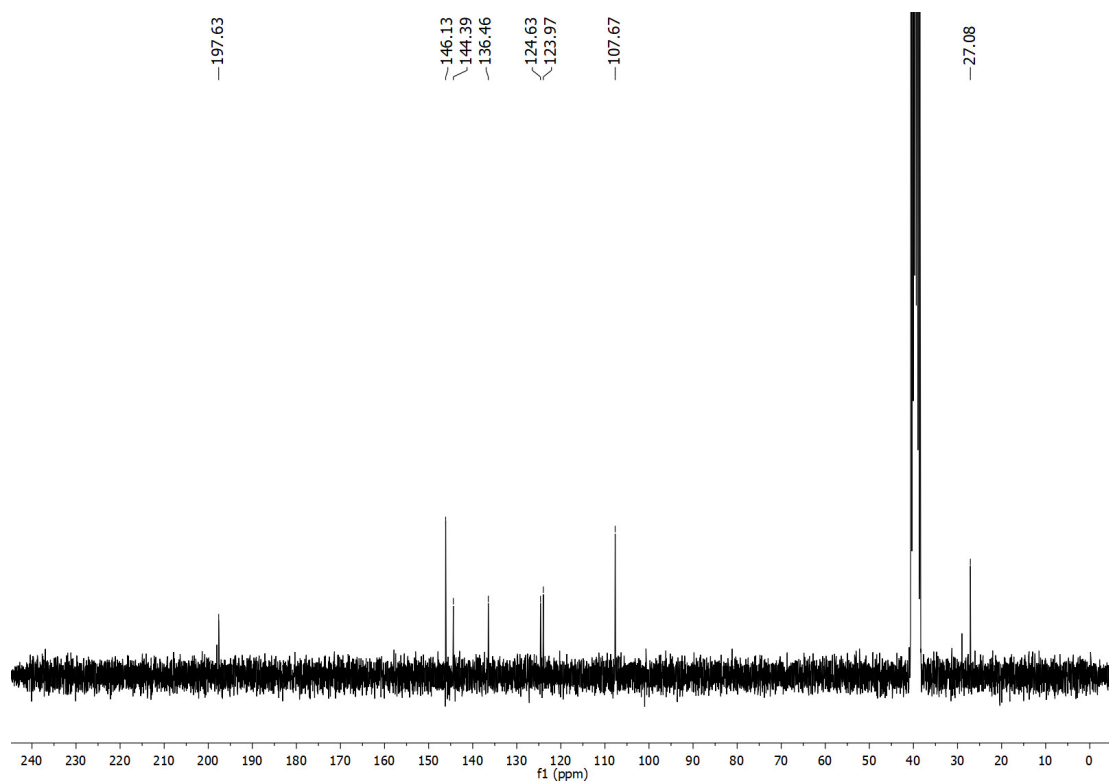


Figure S22. ¹³C NMR spectrum (125 MHz, DMSO-*d*₆, δ ppm)