Supplementary Materials

Efficient Photodynamic Killing of Gram-Positive Bacteria by Synthetic Curcuminoids

Sung-Jen Hung [1,2], Yi-An Hong [1,3], Kai-Yu Lin [4], Yi-Wen Hua [4], Chia-Jou Kuo [4], Anren Hu [1,3,*], Tzenge-Lien Shih [4,*] and Hao-Ping Chen [1,5,6,*]

1 Institute of Medical Sciences, Tzu Chi University, Hualien 97004, Taiwan; md.hong@msa.hinet.net (S.-J.H.); amyhung840809@gmail.com (Y.-A.H.)
2 Department of Dermatology, Hualien Tzu Chi Hospital, Hualien 97002, Taiwan
3 Department of Laboratory Medicine and Biotechnology, Tzu Chi University, Hualien 97004, Taiwan
4 Department of Chemistry, Tamkang University, New Taipei City 25137, Taiwan; s930608eagle@gmail.com (K.-Y.L.); a0987719278@gmail.com (Y.-W.H.); b24631839@gmail.com (C.-J.K.)
5 Department of Biochemistry, Tzu Chi University, Hualien 97004, Taiwan
6 Integration Center of Traditional Chinese and Modern Medicine, Hualien Tzu Chi Hospital, Hualien 97002, Taiwan
* Correspondence: anren@gms.tcu.edu.tw (A.H.); tlshih@mail.tku.edu.tw (T.-L.S.); hpchen@mail.tcu.edu.tw (H.-P.C.); Tel.: +886-3-856-5301 ext. 2335 (A.H); +886-2-8631-5024 (T.-L.S.); +886-3-856-5301 ext. 2433 (H.-P.C.)

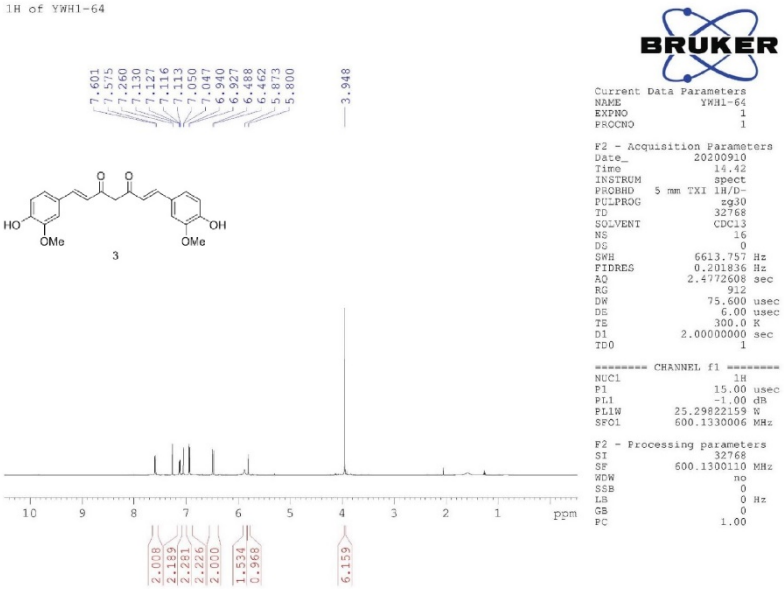

Figure S1. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **3**.

Figure S2. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **3**.

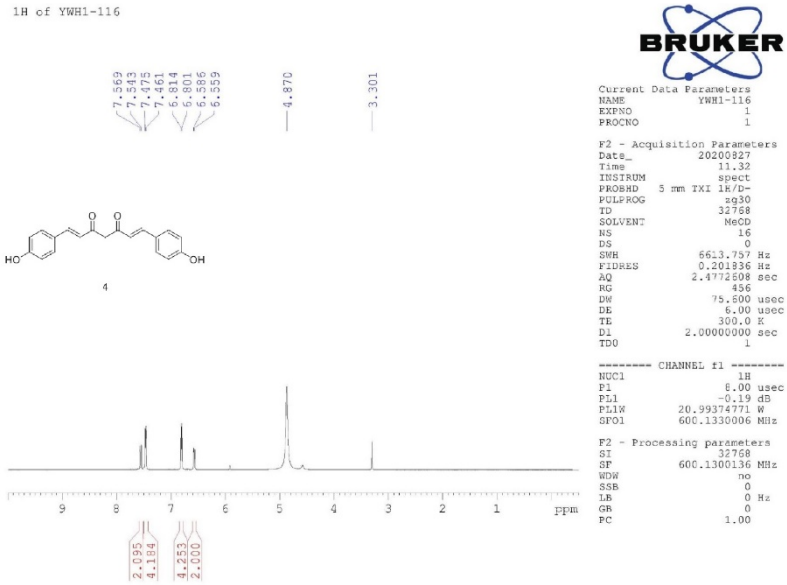

Figure S3. ^{1}H NMR (600 MHz, CD_3OD) of compound **4**.

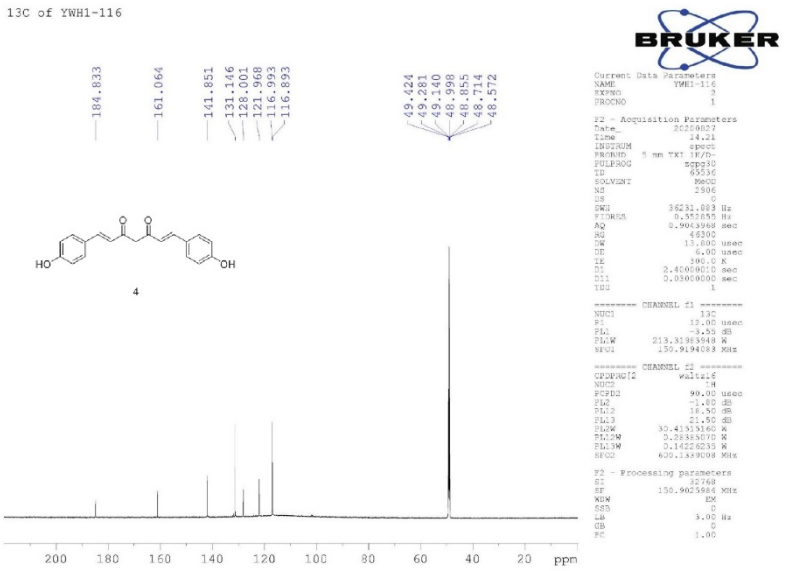

Figure S4. ^{13}C NMR (150 MHz, CD_3OD) of compound **4**.

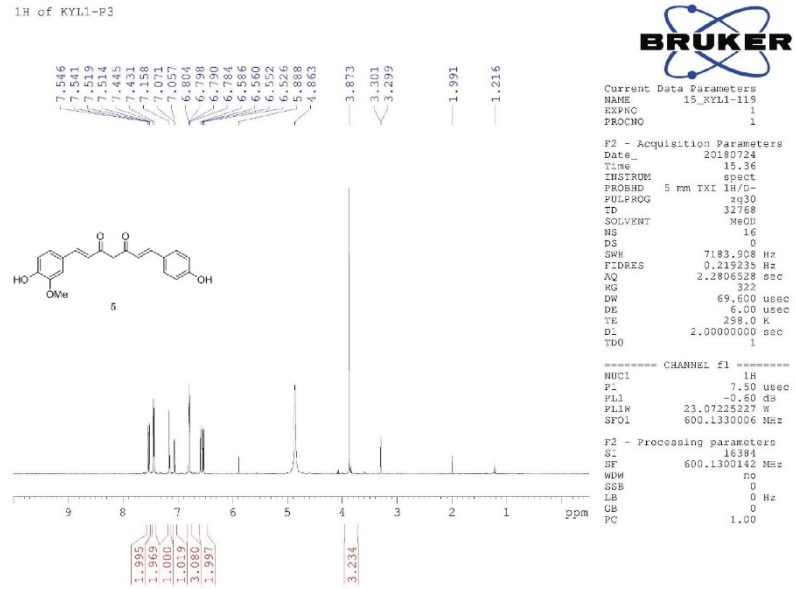

Figure S5. ^{1}H NMR (600 MHz, CD_3OD) of compound **5**.

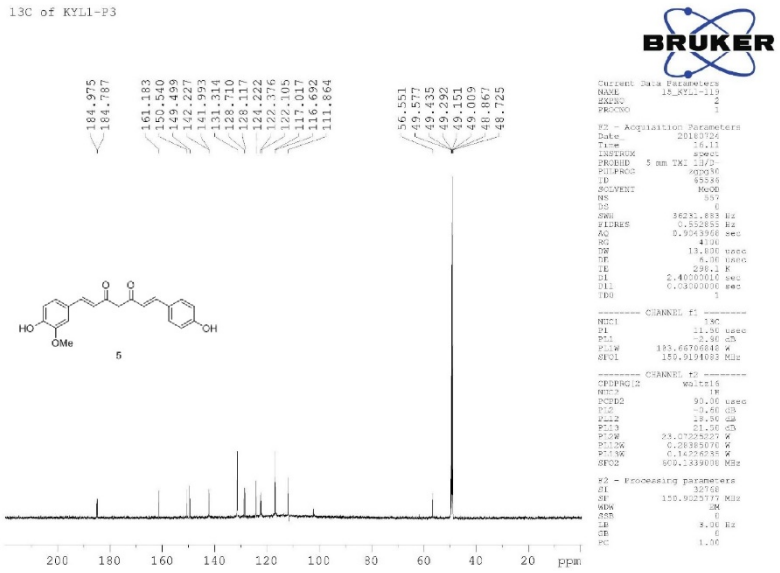

Figure S6. ^{13}C NMR (150 MHz, CD_3OD) of compound **5**.

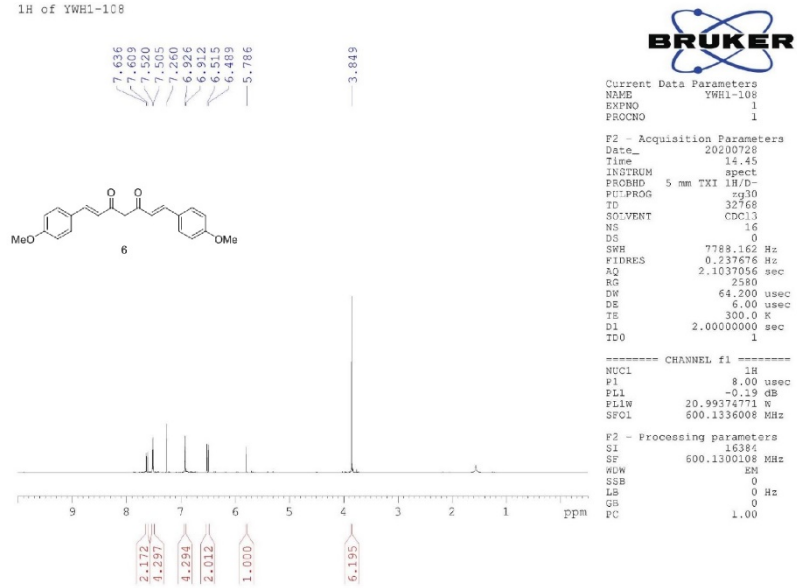

Figure S7. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **6**.

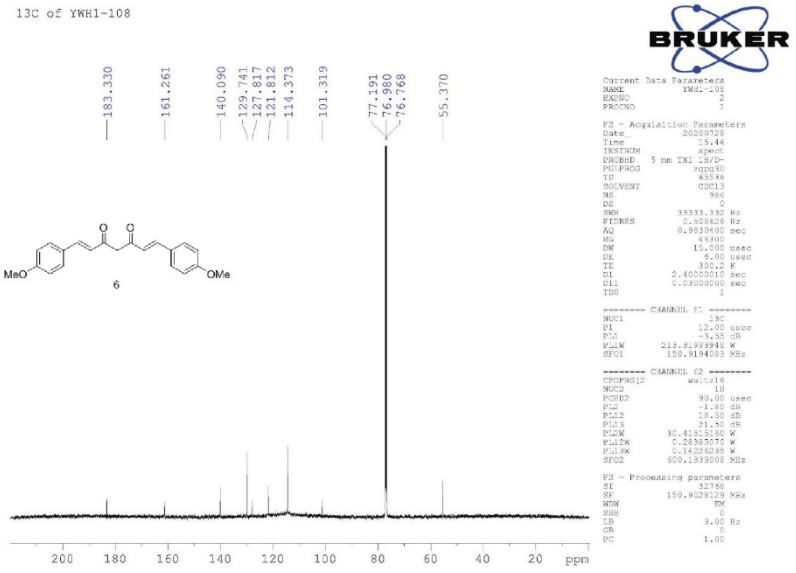

Figure S8. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **6**.

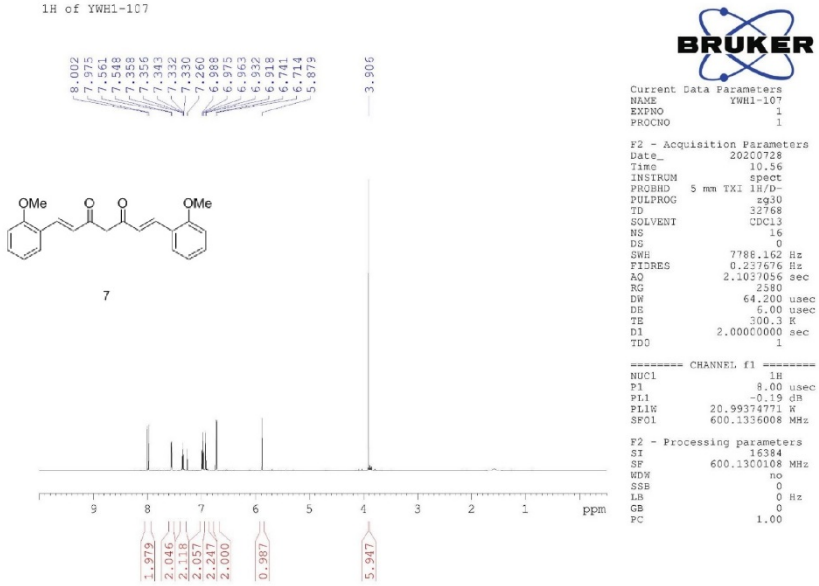

Figure S9. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **7**.

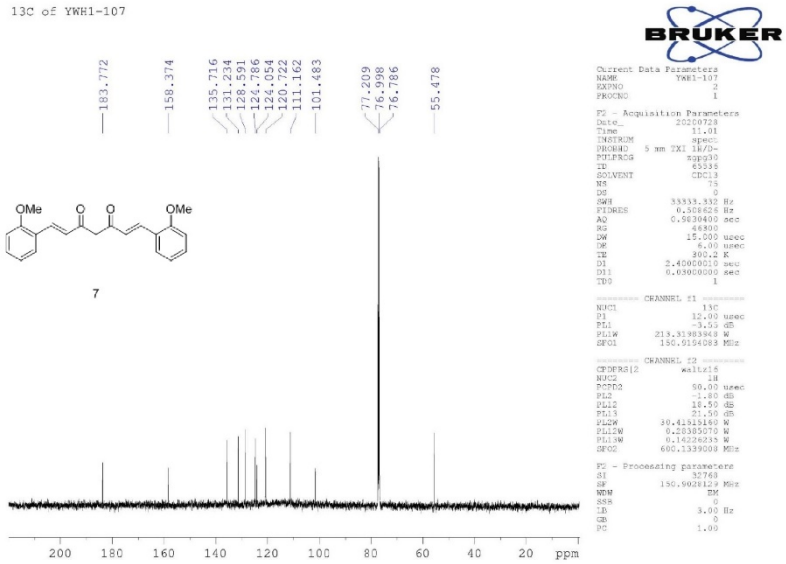

Figure S10. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **7**.

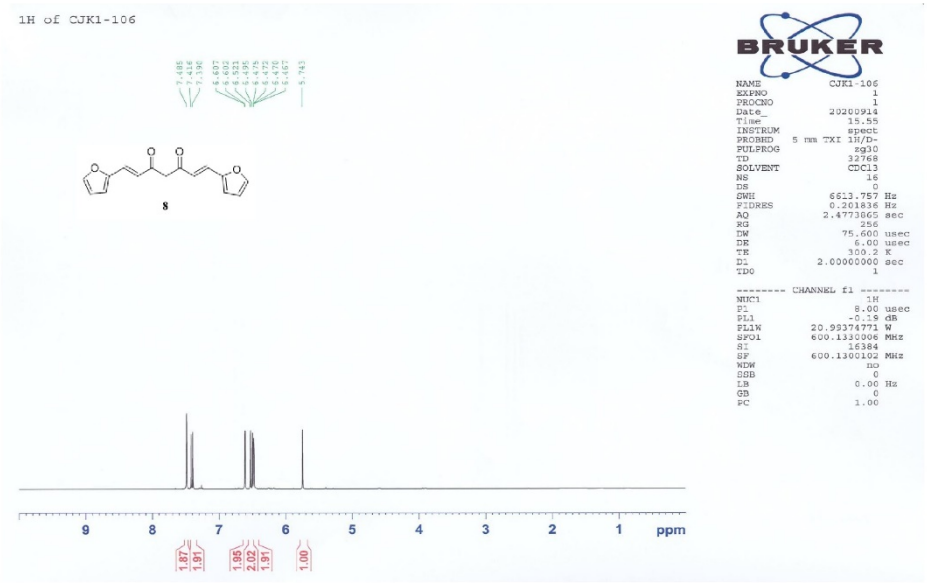

Figure S11. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **8**.

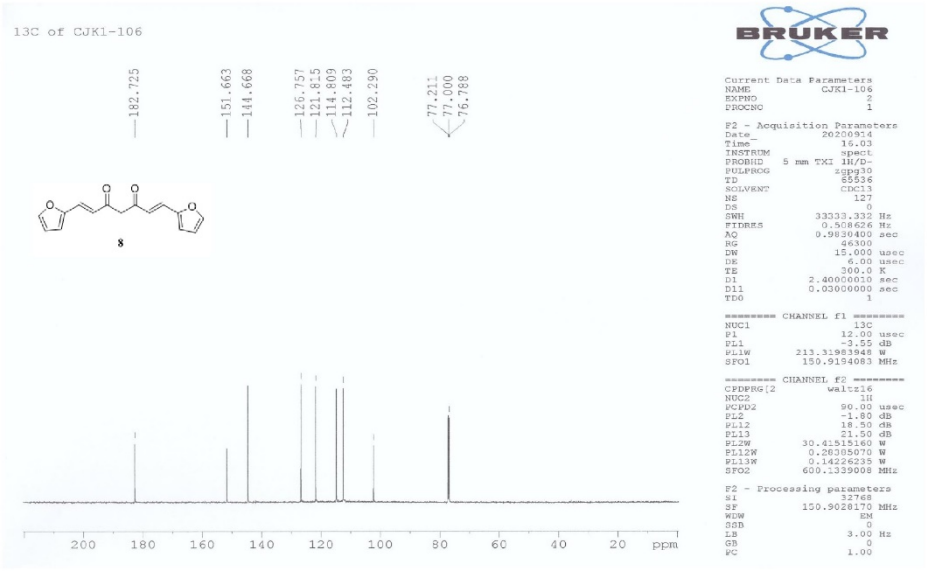

Figure S12. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **8**.

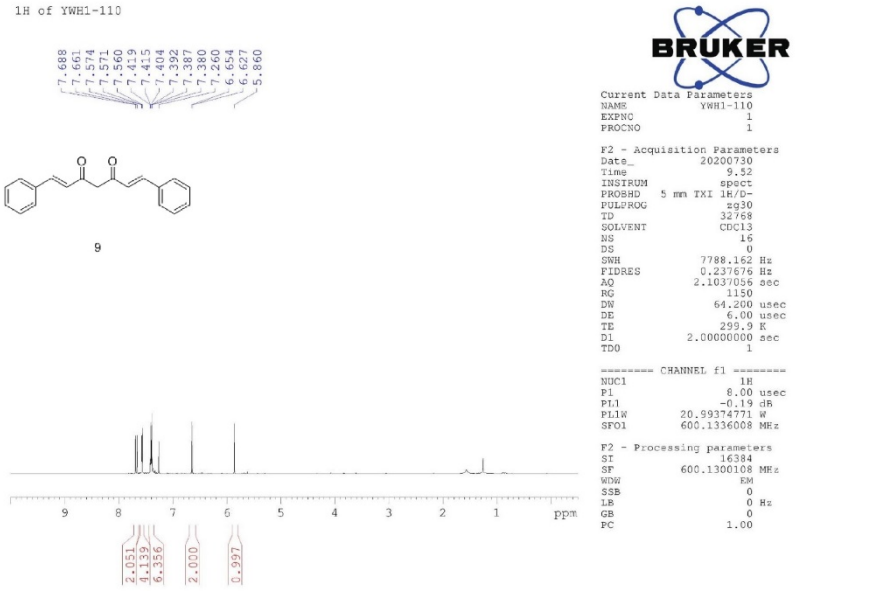

Figure S13. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **9**.

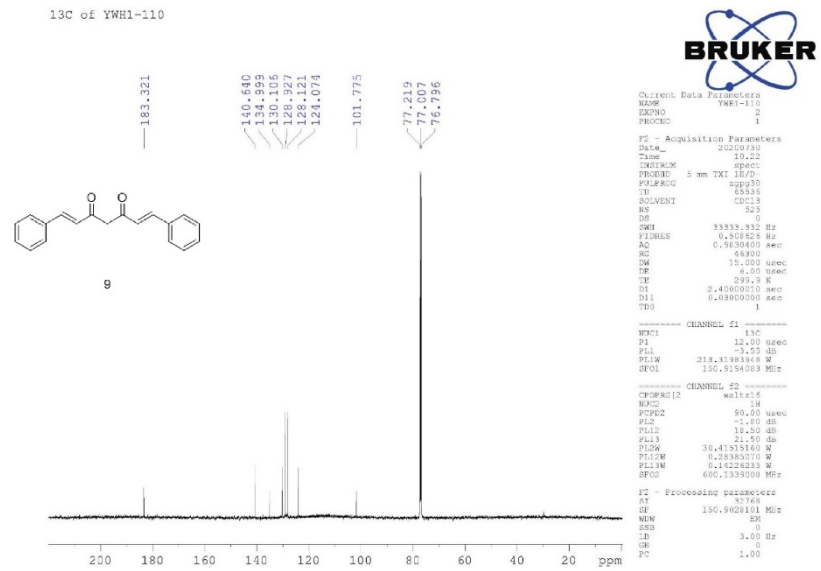

Figure S14. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **9**.

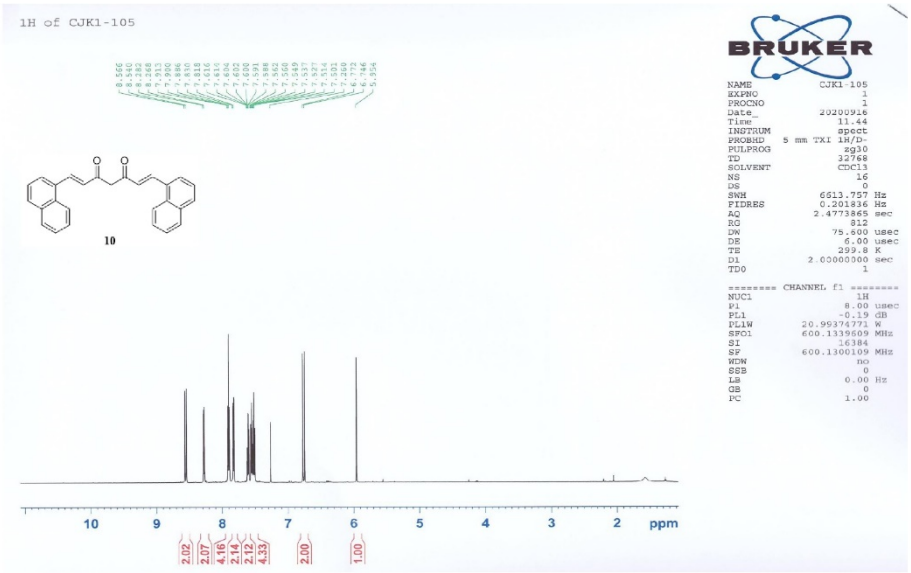

Figure S15. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **10**.

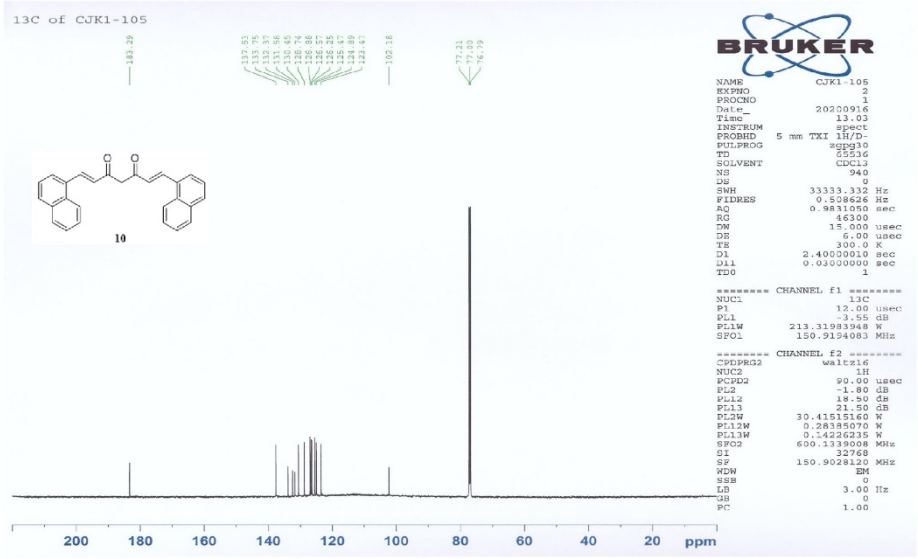

Figure S16. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **10**.

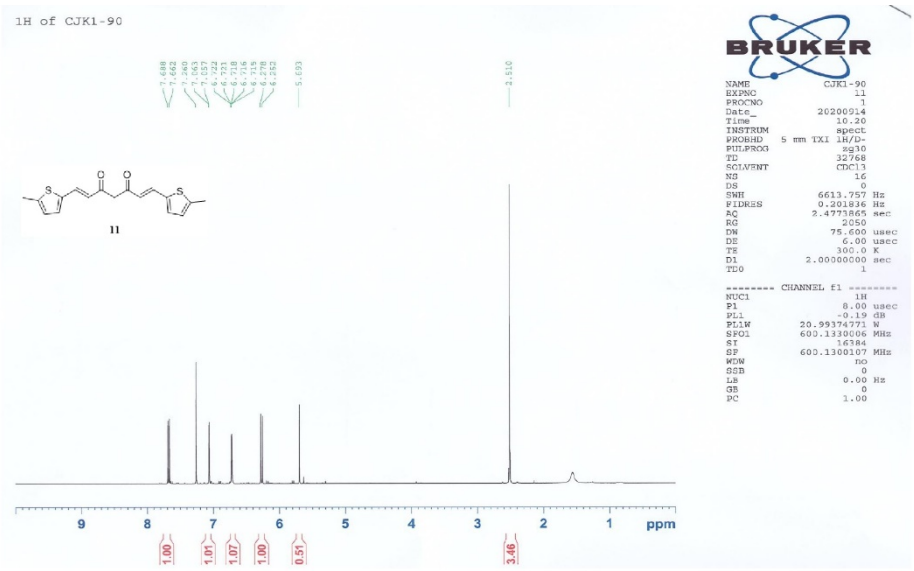

Figure S17. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **11**.

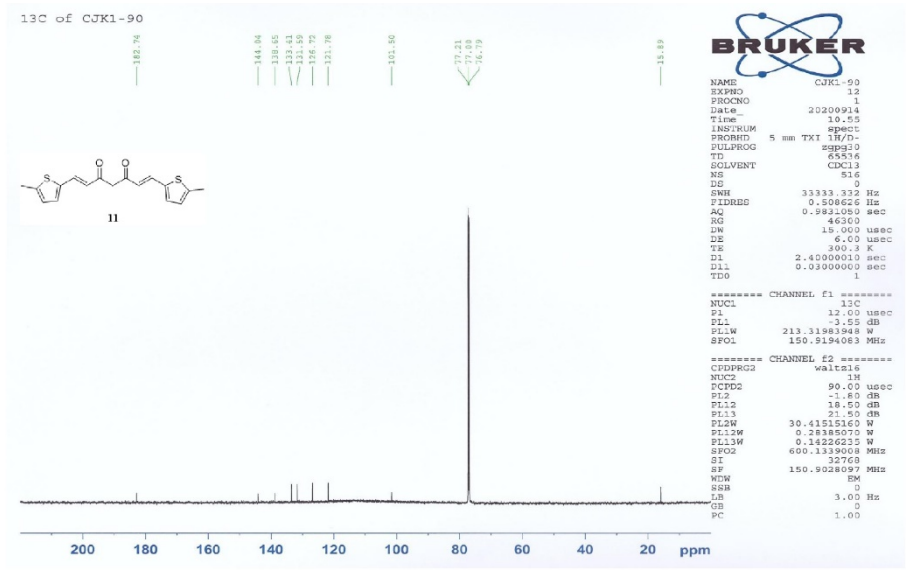

Figure S18. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **11**.

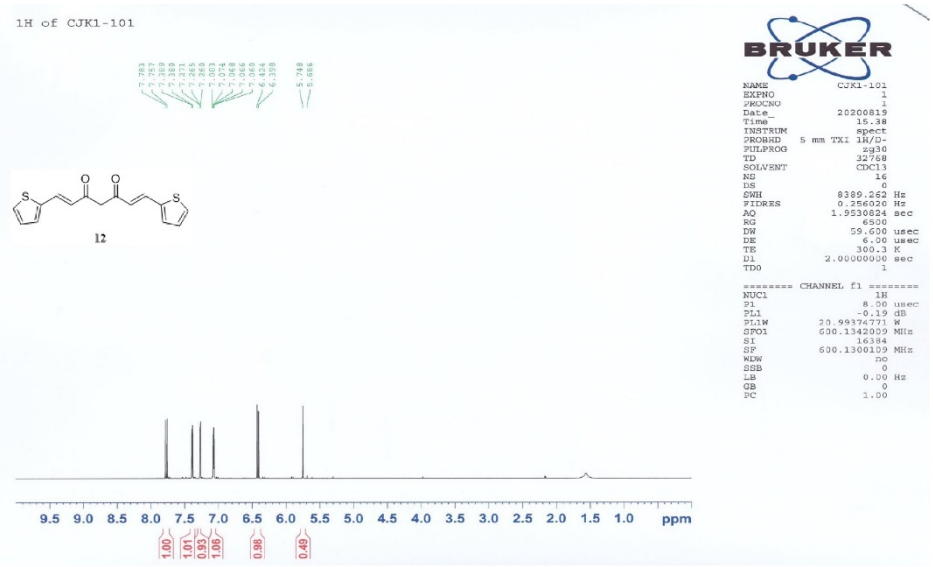

Figure S19. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **12**.

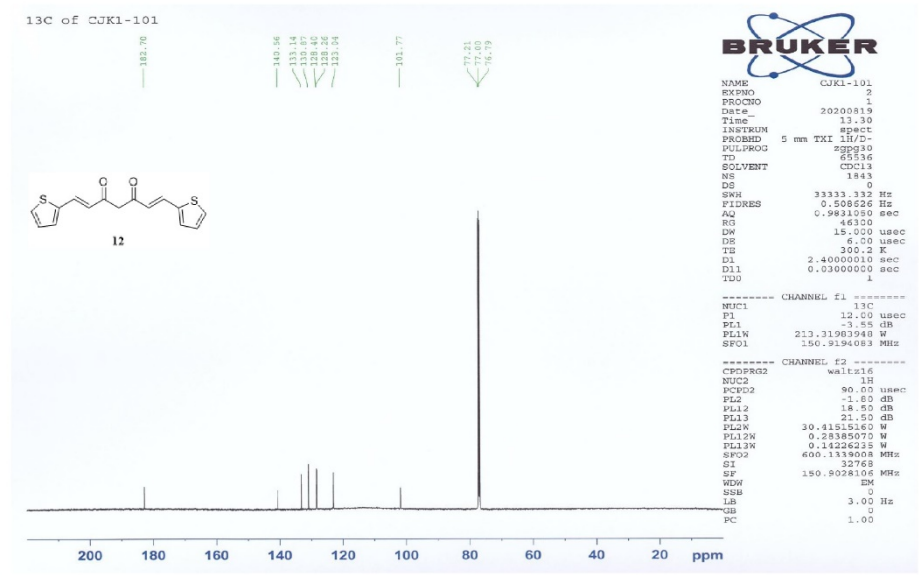

Figure S20. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **12**.

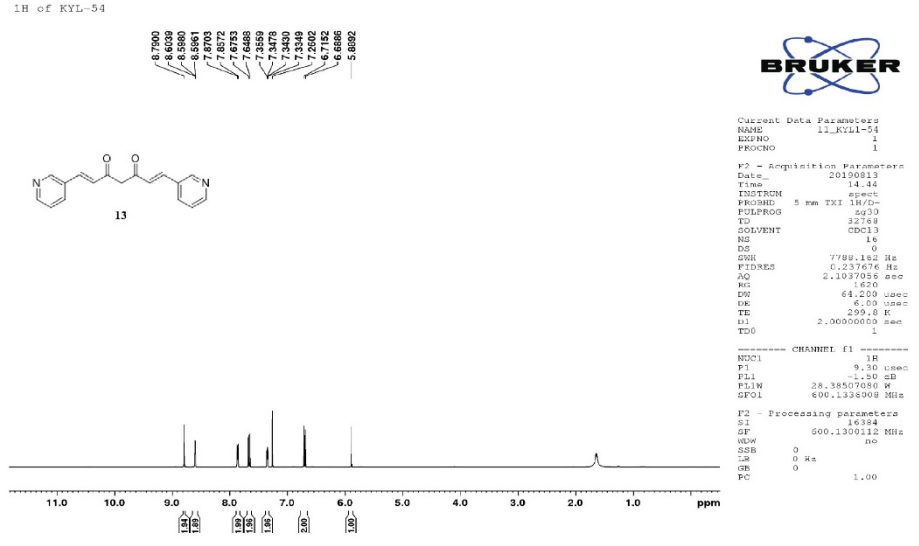

Figure S21. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **13**.

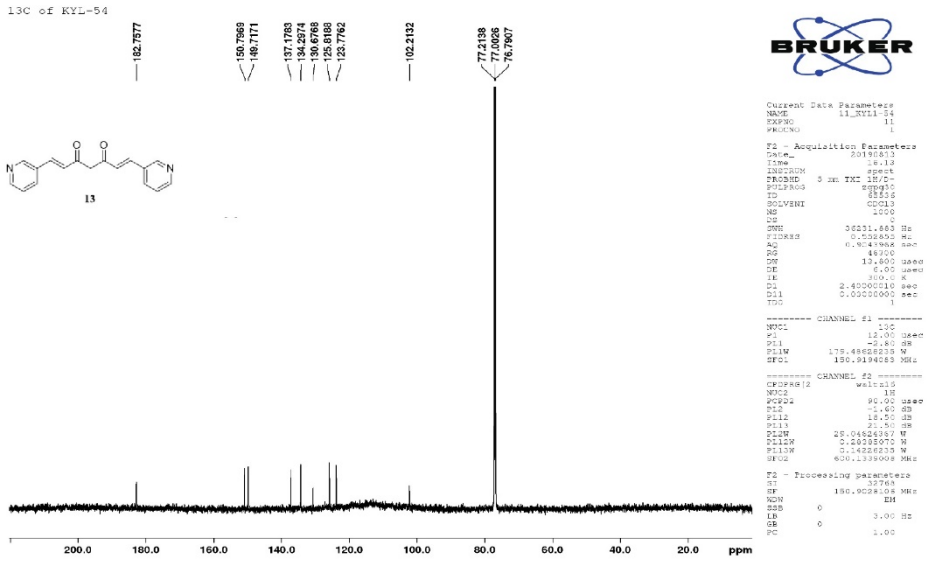

Figure S22. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **13**.

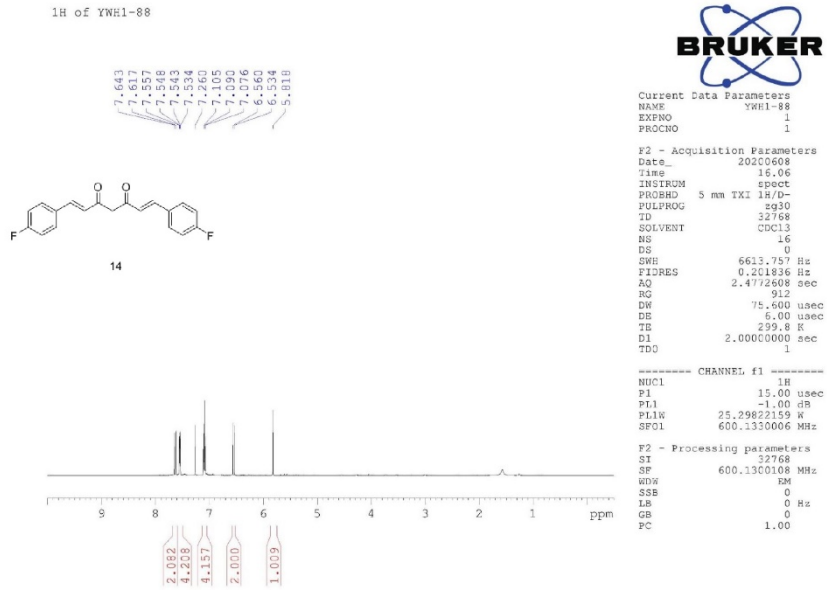

Figure S23. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **14**.

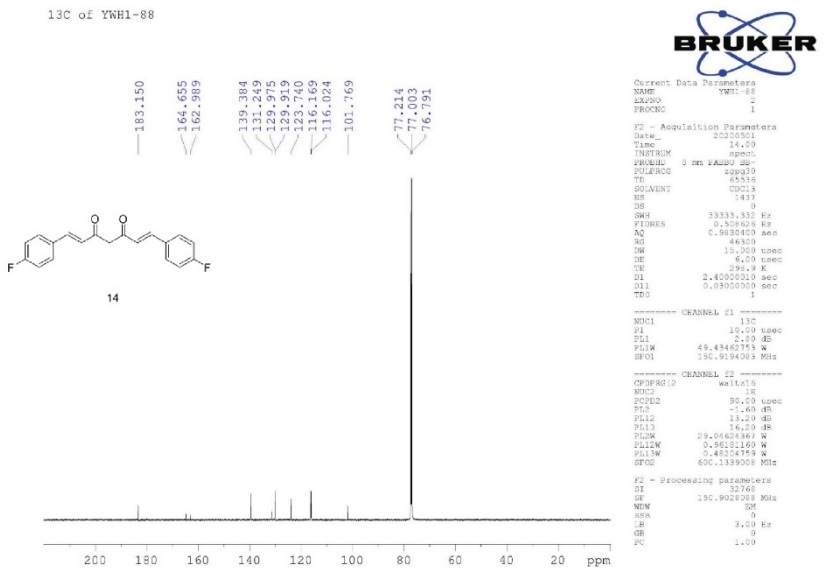

Figure S24. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **14**.

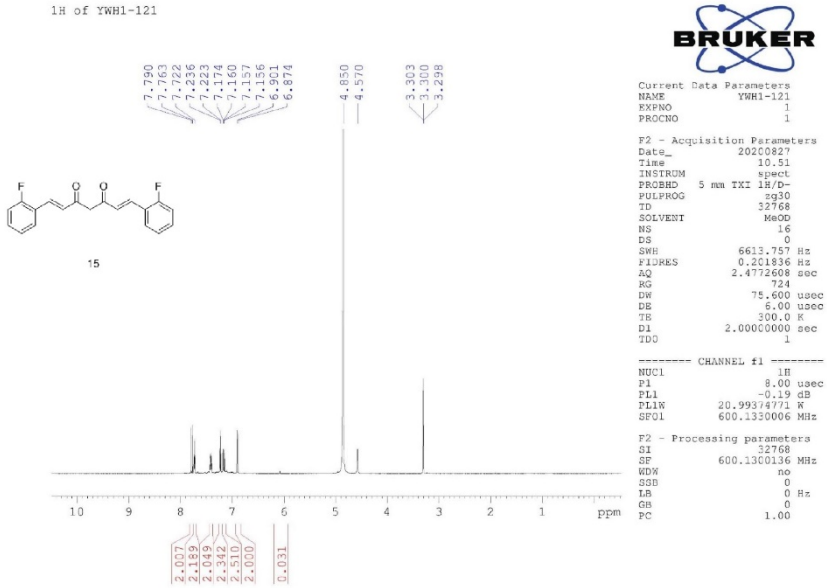

Figure S25. ^{1}H NMR (600 MHz, CD_3OD) of compound **15**.

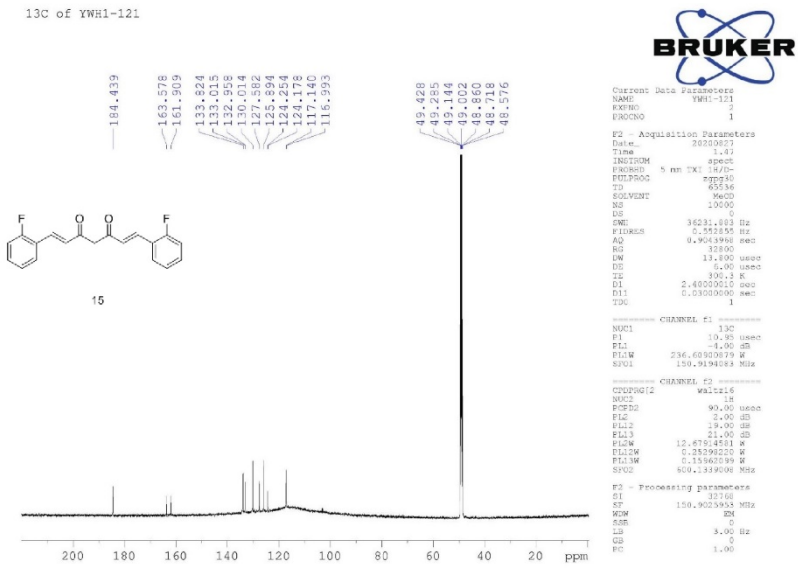

Figure S26. ^{13}C NMR (150 MHz, CD_3OD) of compound **15**.

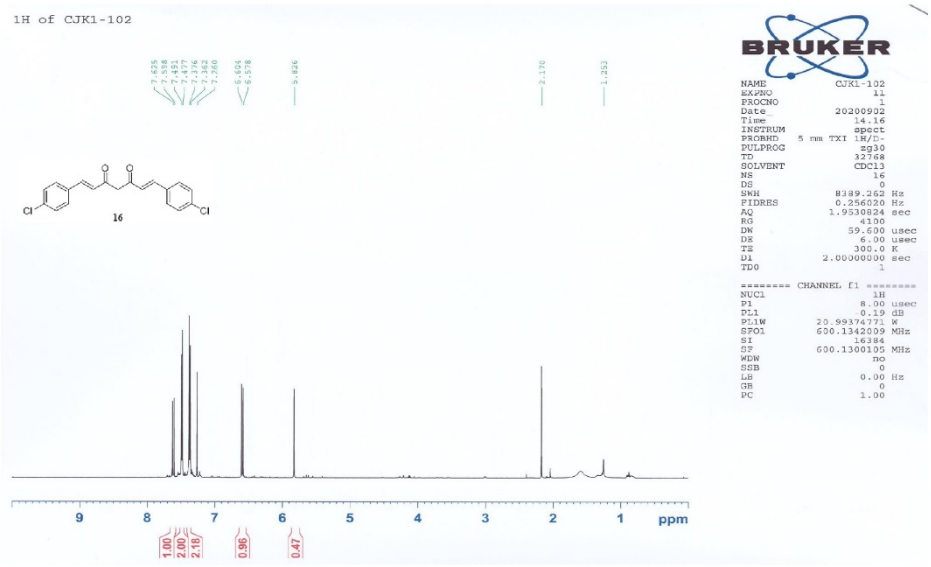

Figure S27. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **16**.

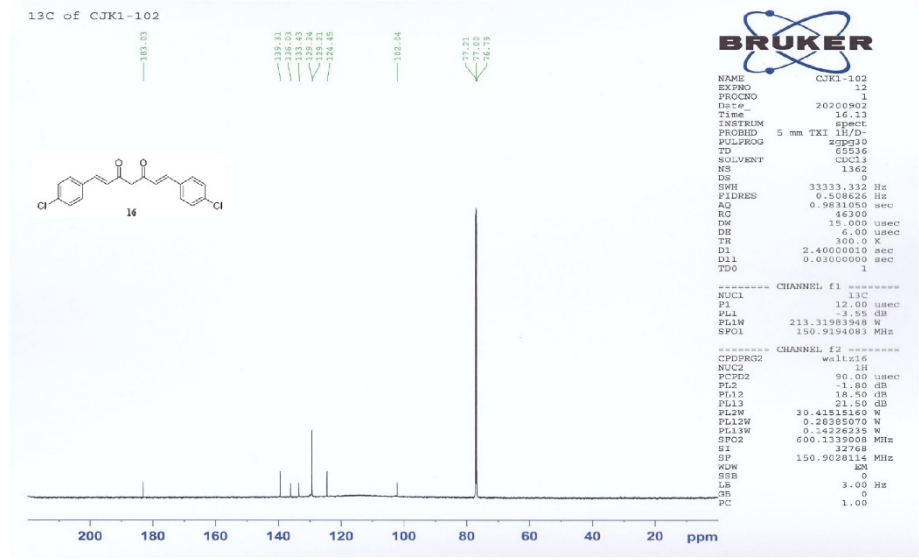

Figure S28. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **16**.

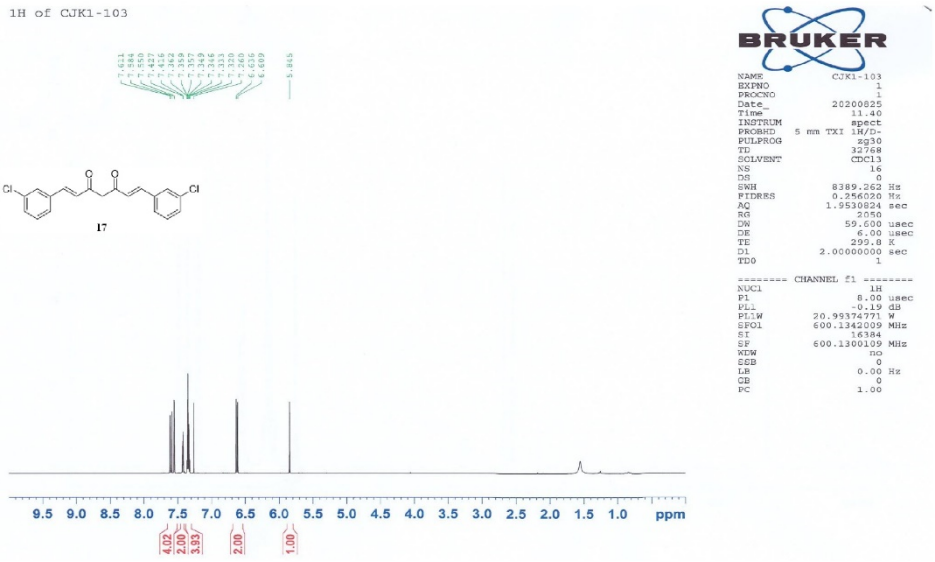

Figure S29. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **17**.

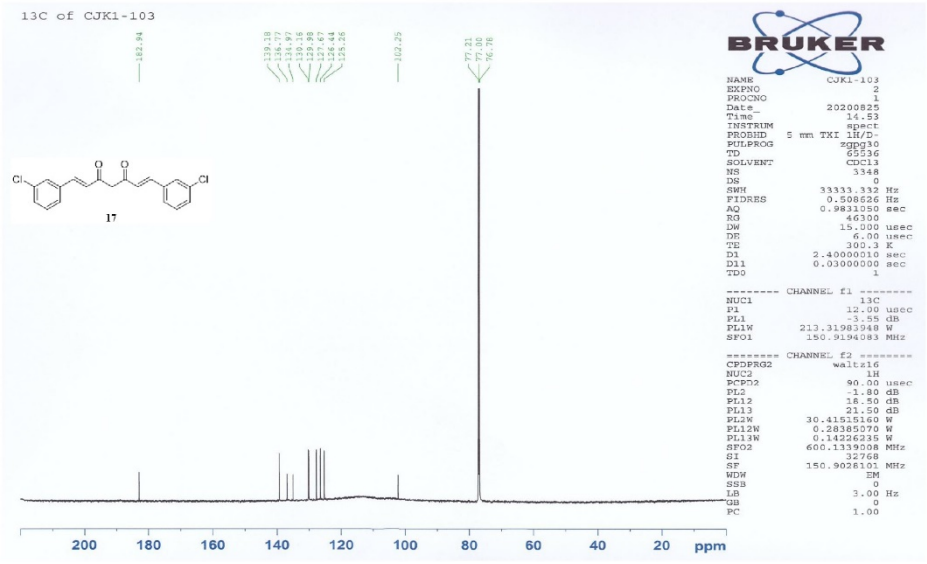

Figure S30. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **17**.

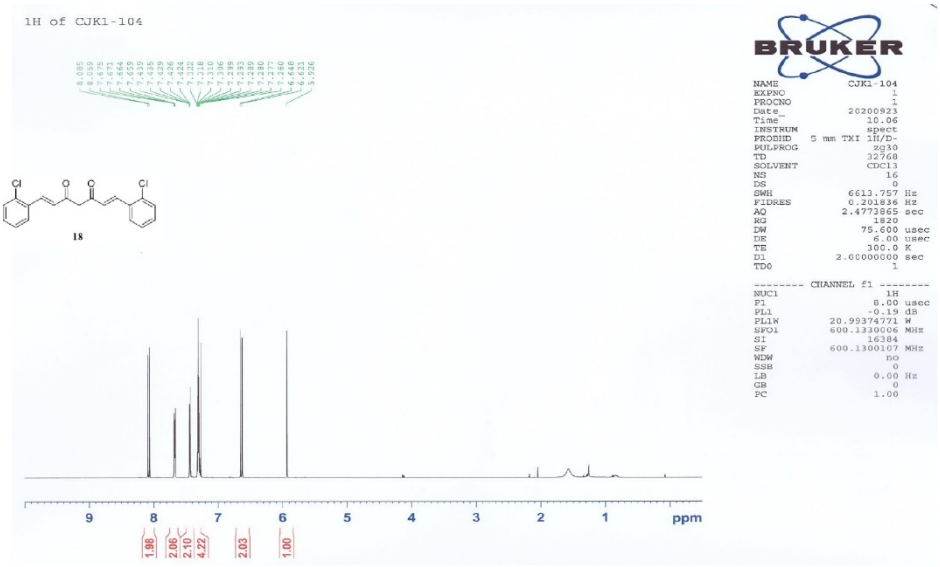

Figure S31. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **18**.

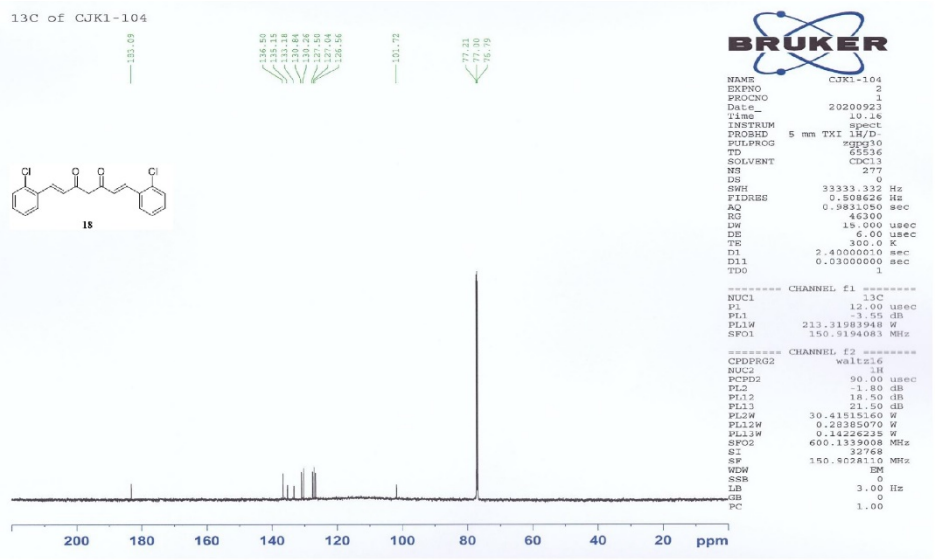

Figure S32. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **18**.

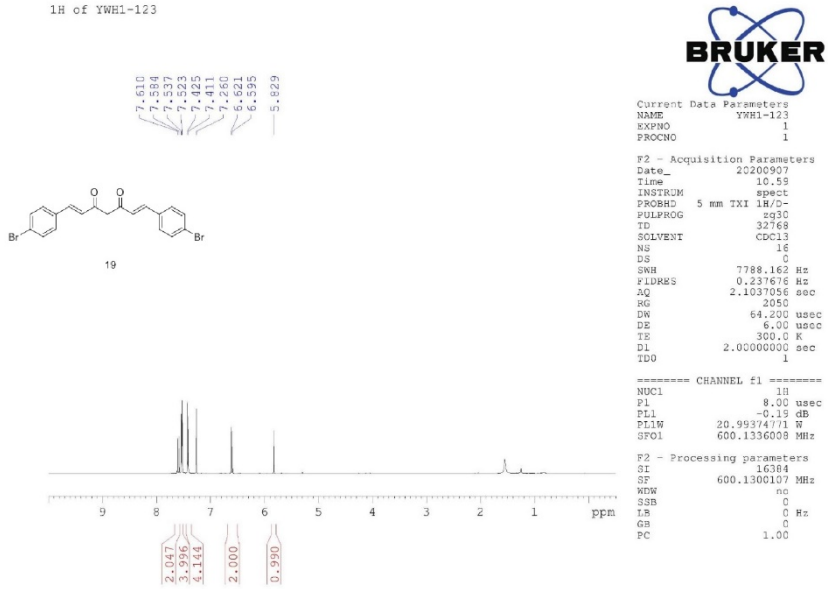

Figure S33. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **19**.

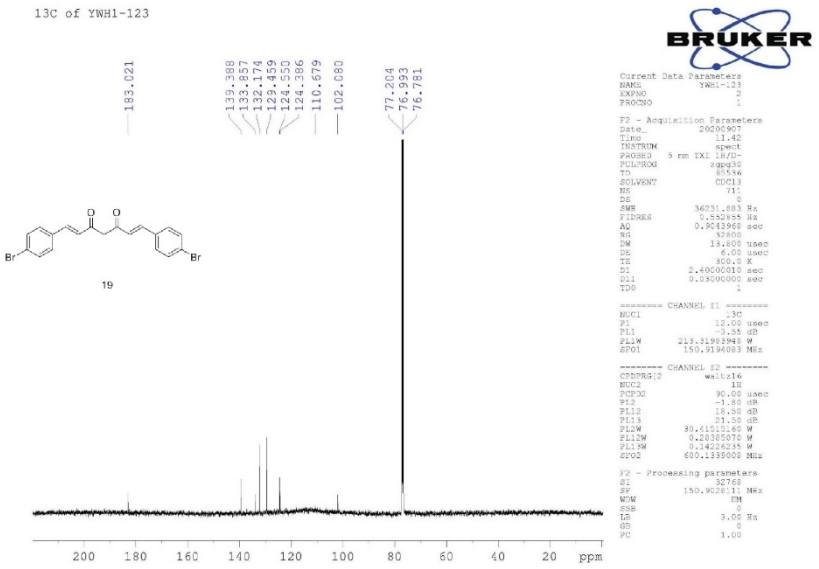

Figure S34. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **19**.

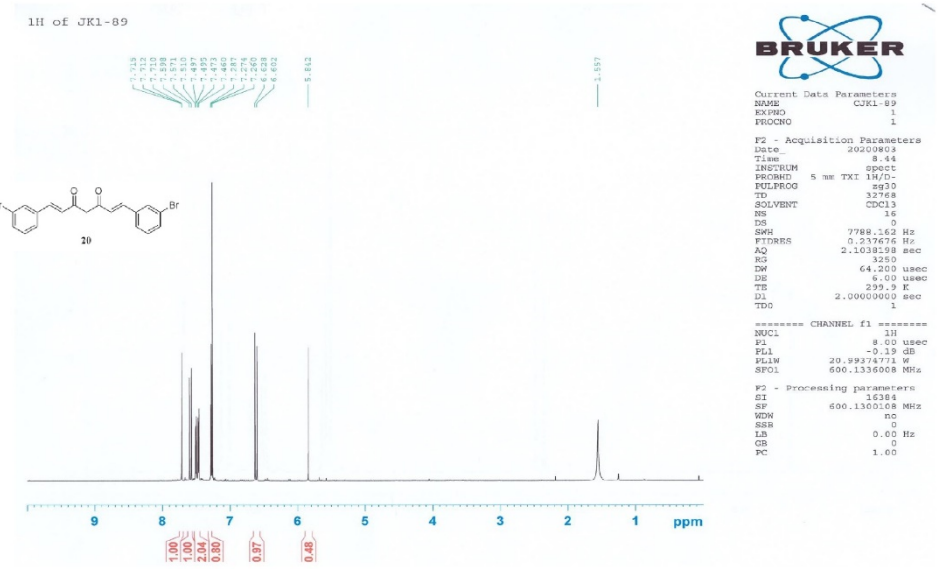

Figure S35. ^{1}H NMR (600 MHz, $CDCl_3$) of compound **20**.

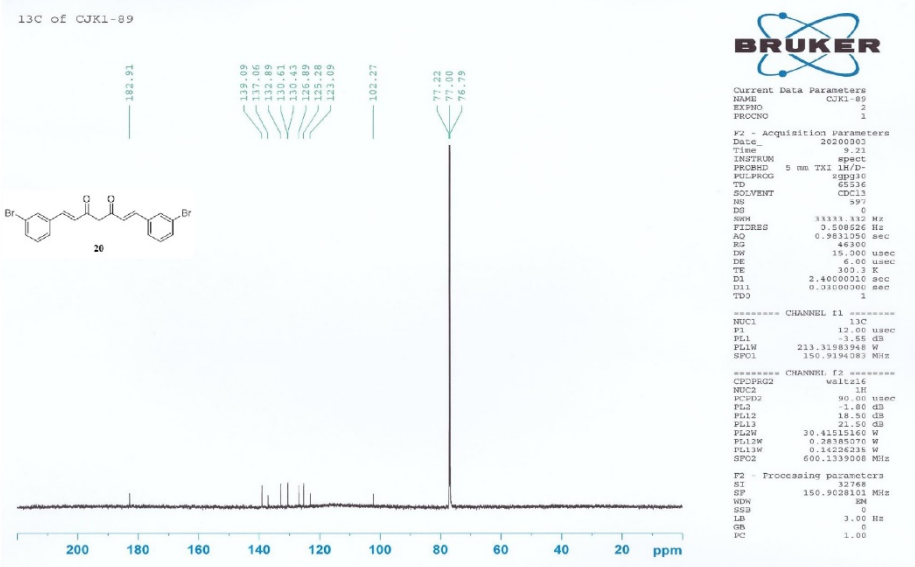

Figure S36. ^{13}C NMR (150 MHz, $CDCl_3$) of compound **20**.

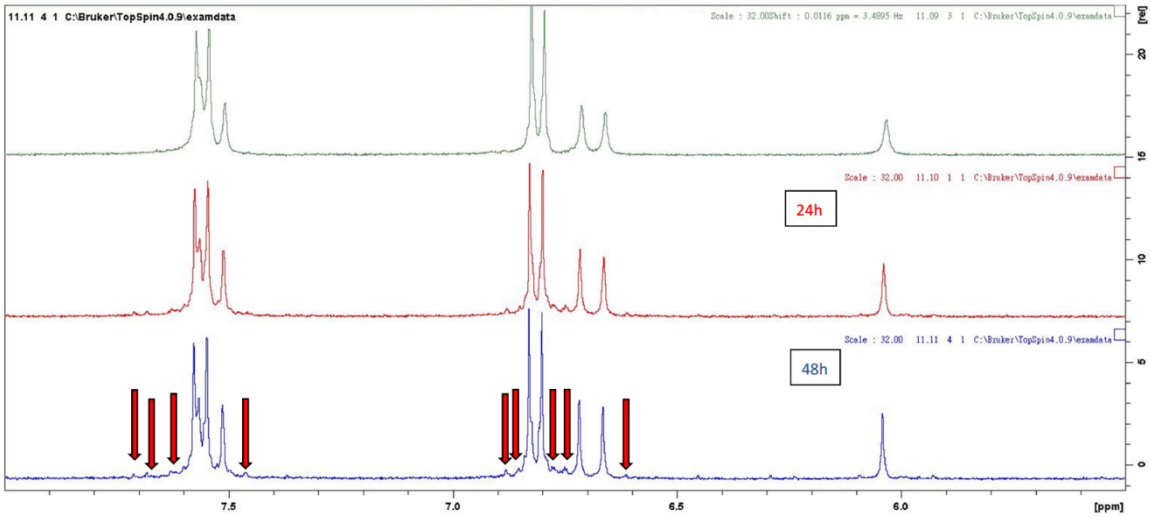

Figure S37. The NMR spectra of degraded compound **4** after storage at room temperature in the dark for 48 h. Arrows indicate the newly formed peaks.