

SYNTHESIS AND BIOLOGICAL ACTIVITY OF SULFUR COMPOUNDS SHOWING STRUCTURAL ANALOGY WITH COMBRETASTATIN A-4

Edson dos A. dos Santos, Paulo C. Prado, Wanderley R. de Carvalho, Ricardo V. de Lima, Adilson Beatriz e Dênis P. de Lima*

Departamento de Química, Universidade Federal de Mato Grosso do Sul, Av. Senador Filinto Müller, 1555, 79074-460 Campo Grande – MS, Brasil

Ernest Hamel

Screening Technologies Branch, Developmental Therapeutics Program, Division of Cancer Treatment and Diagnosis, National Cancer Institute at Frederick, National Institutes of Health, Bldg 469, Room 140, Frederick, MD 21702, USA

Marzena A. Dyba

Basic Science Program, SAIC-Frederick, Inc., Structural Biophysics Laboratory National Cancer Institute at Frederick, Bldg 538, Room 180, Frederick, MD 21702, USA

Sergio Albuquerque

Faculdade de Ciências Farmacêuticas de Ribeirão Preto, Universidade de São Paulo, Av. do Café, s/n, 14040-903 Ribeirão Preto – SP, Brasil

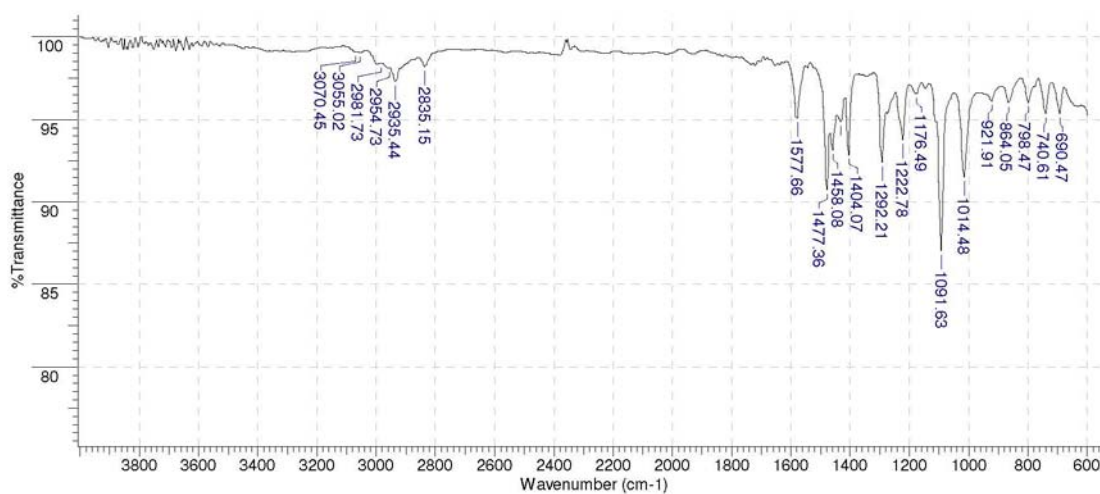


Figure 1S. IR (film) spectrum of **10**

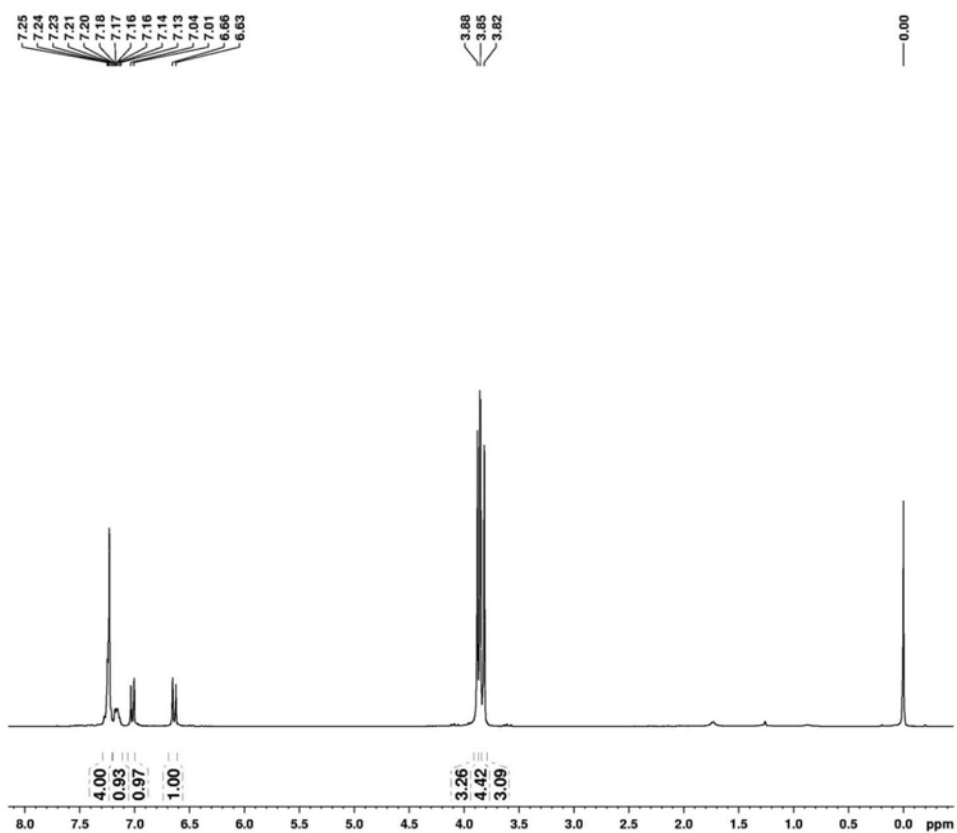


Figure 2S. ^1H NMR spectrum of **10**, 300 MHz, CDCl_3 .

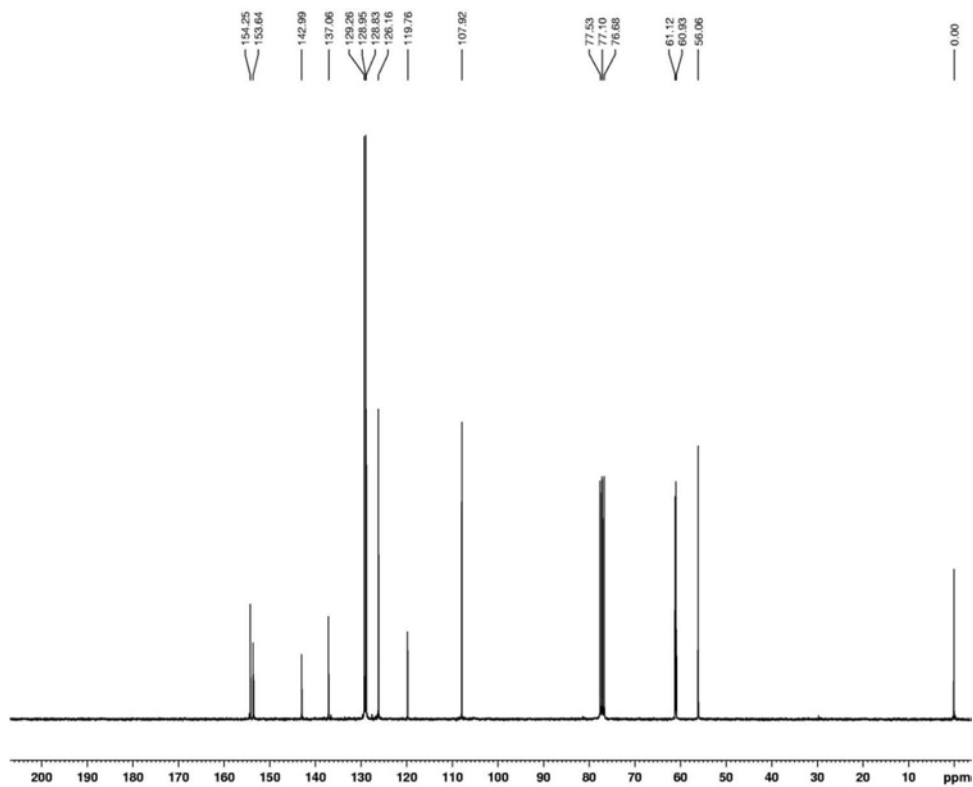


Figure 3S. ^{13}C NMR spectrum of **10**, 75 MHz, CDCl_3 .

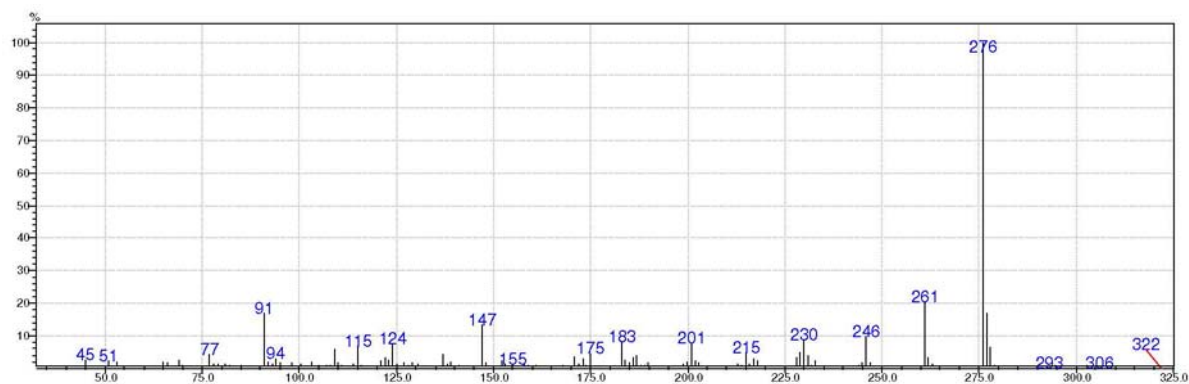


Figure 4S. EI-MS spectrum of 10

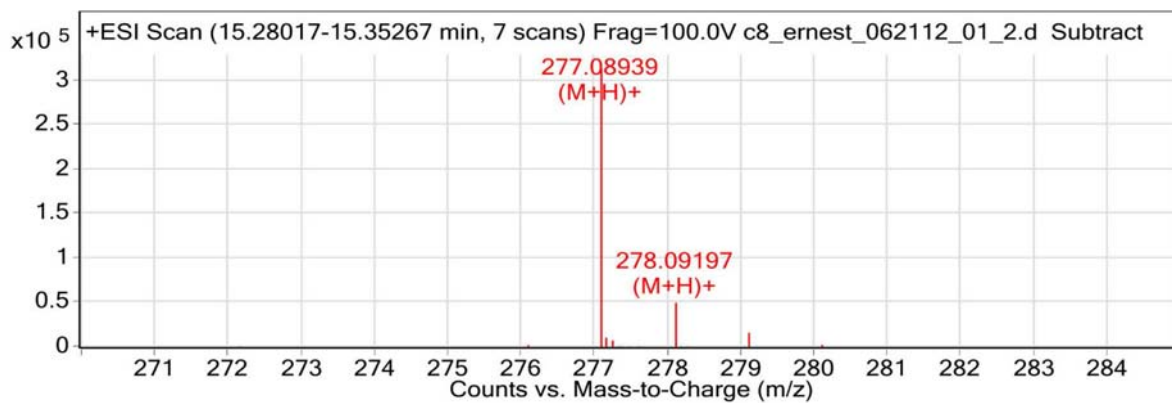


Figure 5S. HRMS (ESI-MS) spectrum of 10

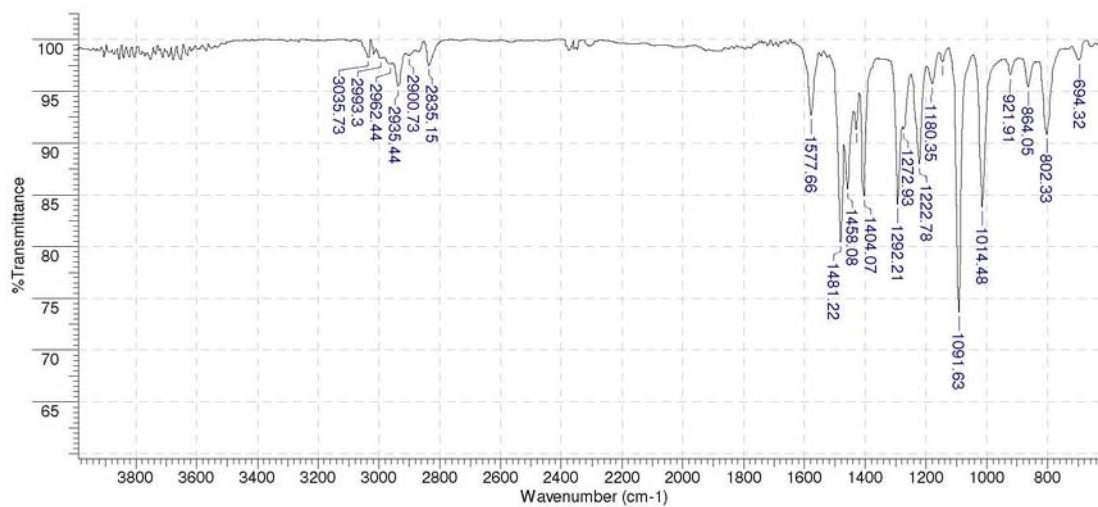


Figure 6S. IR (film) spectrum of 11

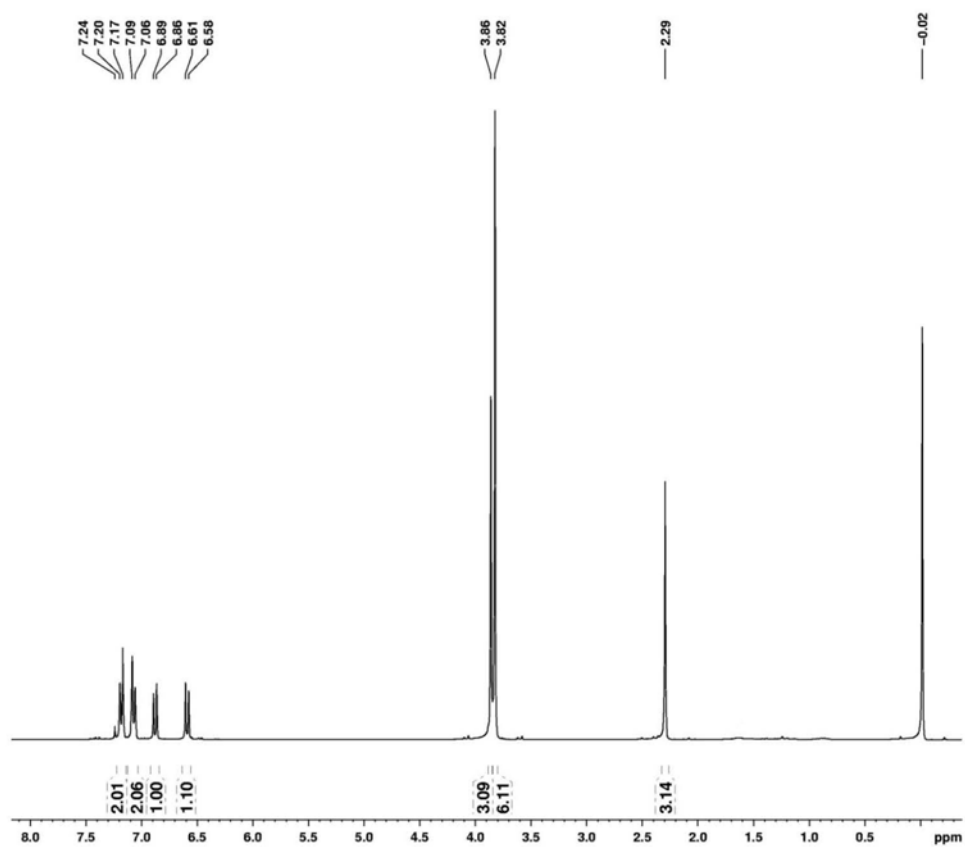


Figure 7S. ¹H NMR spectrum of **11**, 300 MHz, CDCl₃

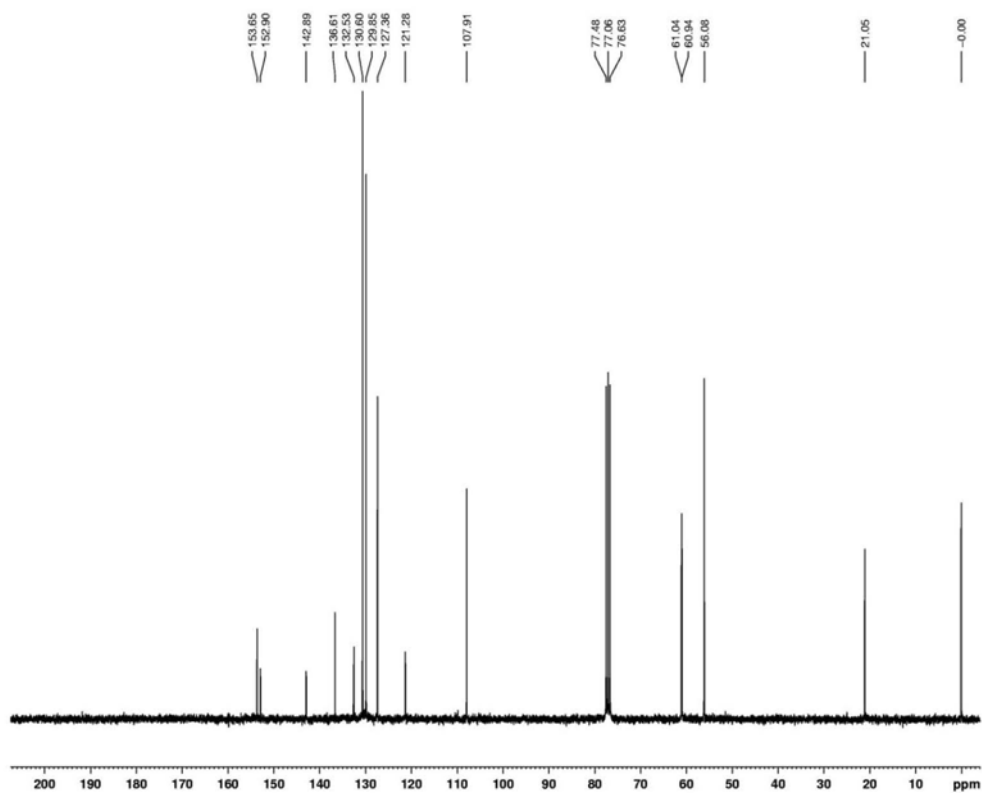


Figure 8S. ¹³C NMR spectrum of **11**, 75 MHz, CDCl₃

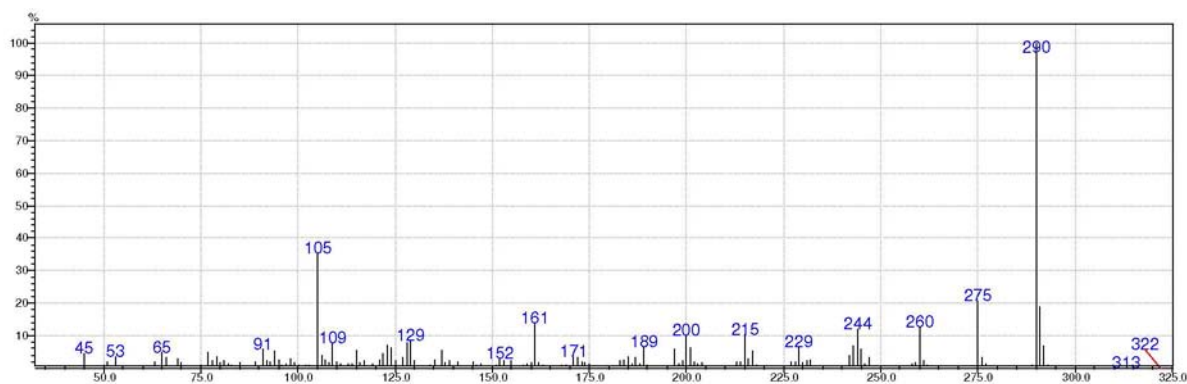


Figure 9S. EI-MS spectrum of 11

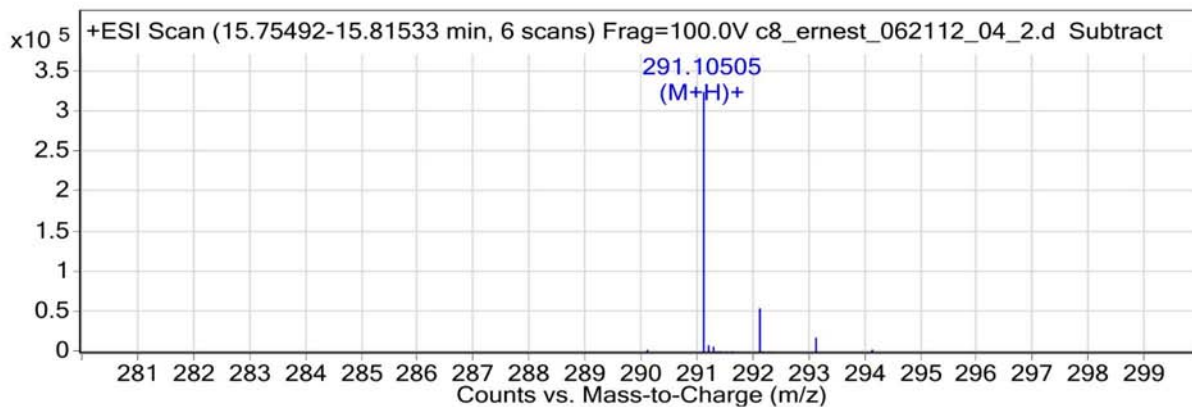


Figure 10S. HRMS (ESI-MS) spectrum of 11

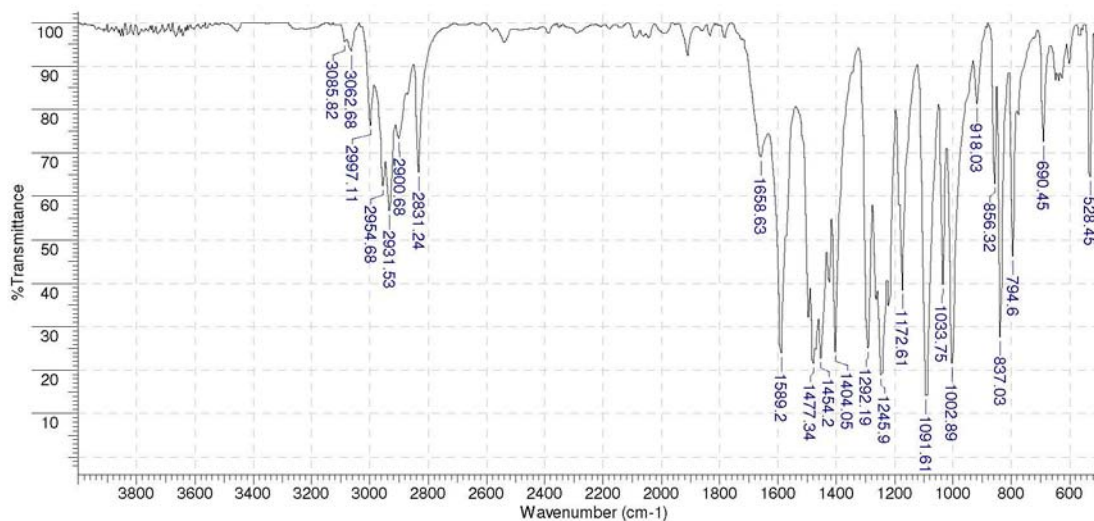


Figure 11S. IR (KBr) spectrum of 12

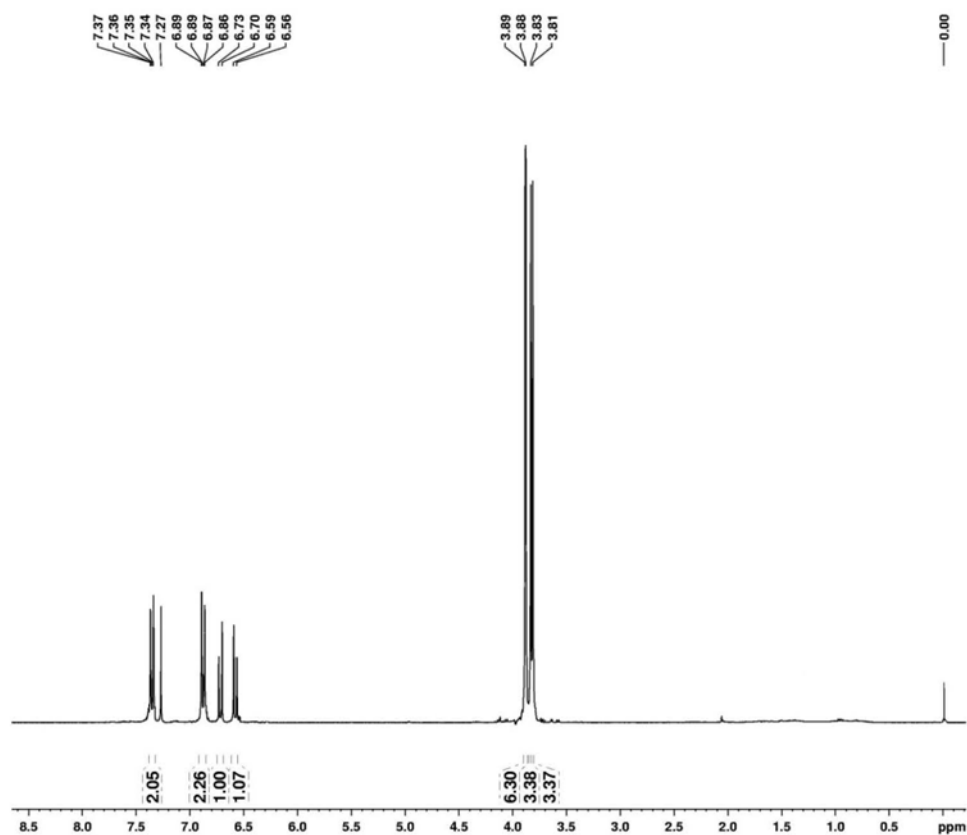


Figure 12S. ^1H NMR spectrum of **12**, 300 MHz, CDCl_3 .

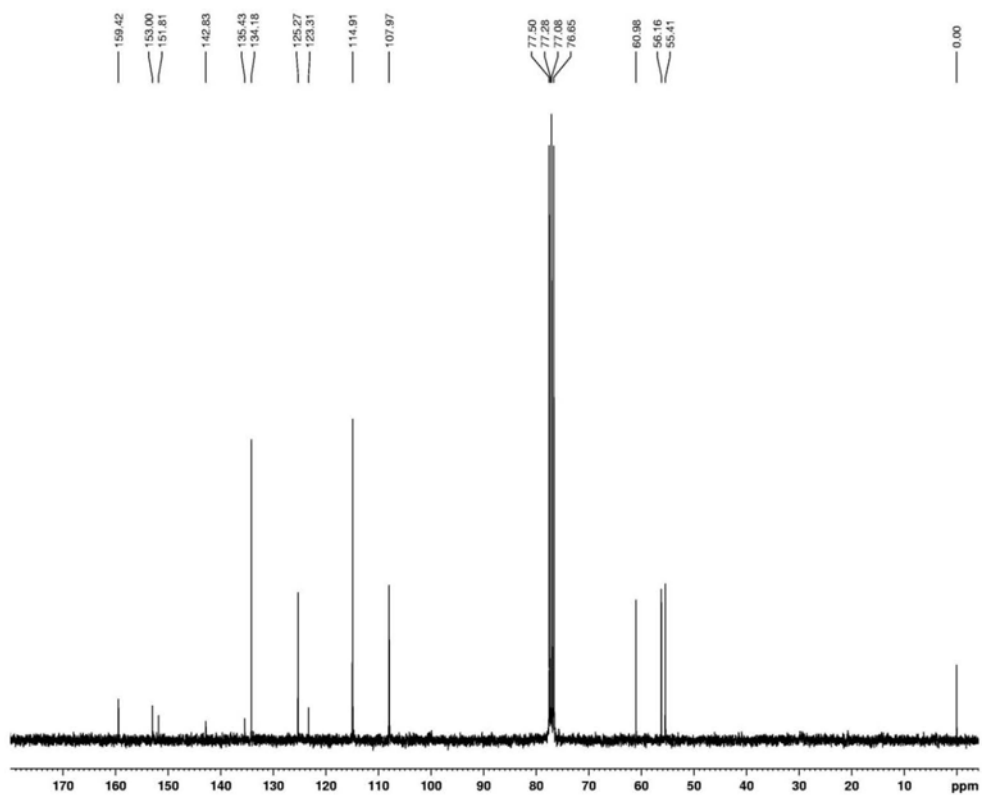


Figure 13S. ^{13}C NMR spectrum of **12**, 75 MHz, CDCl_3 .

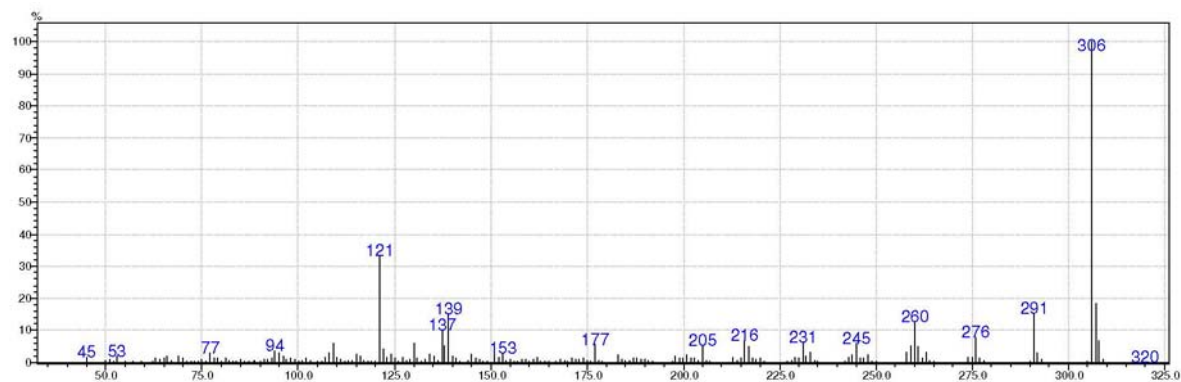


Figure 14S. EI-MS spectrum of 12

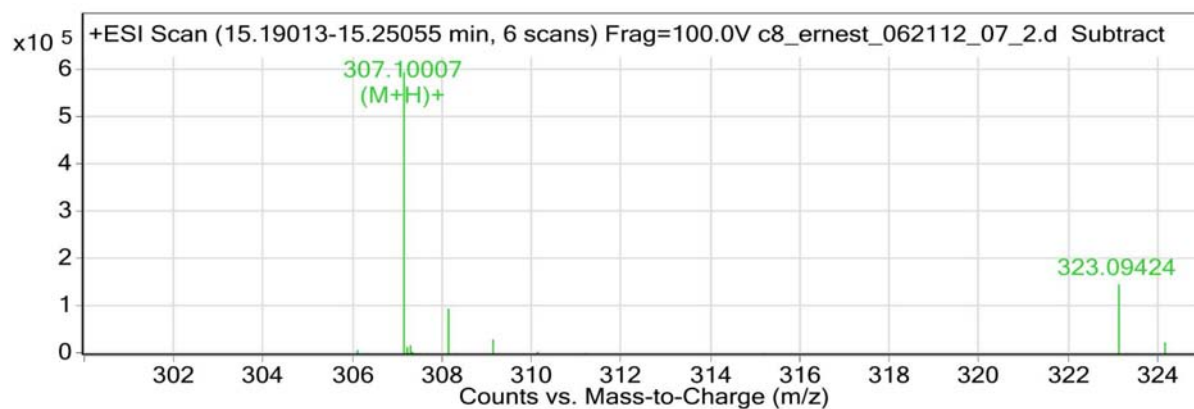


Figure 15S. HRMS (ESI-MS) spectrum of 12

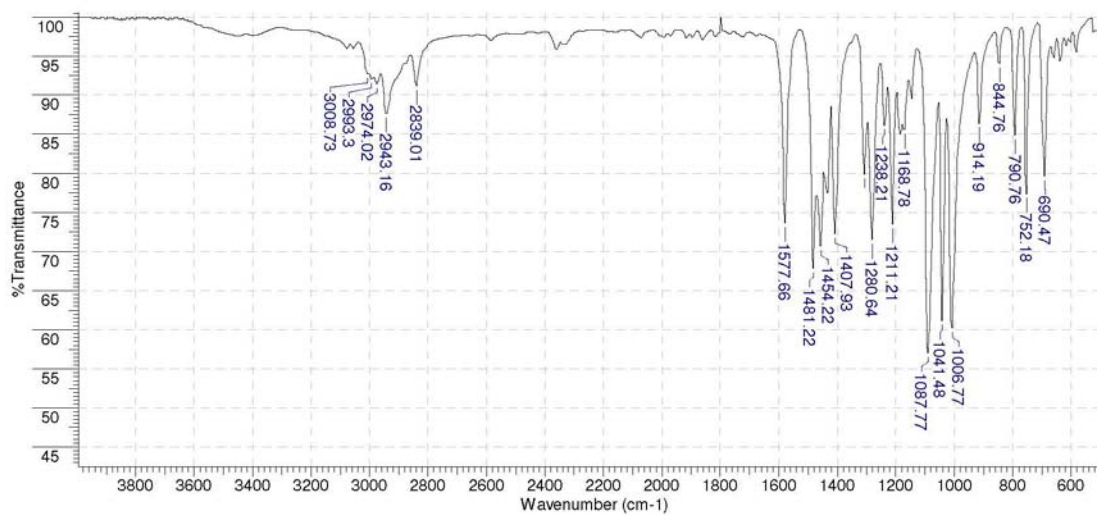


Figure 16S. IR (film) spectrum of 13

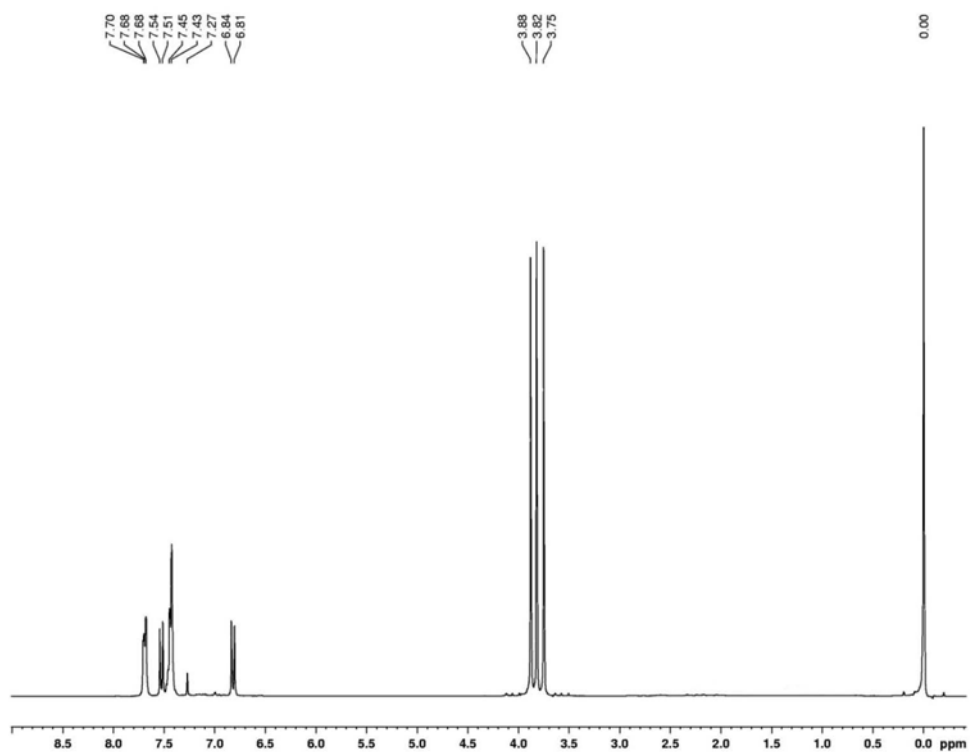


Figure 17S. ^1H NMR spectrum of **13**, 300 MHz, CDCl_3

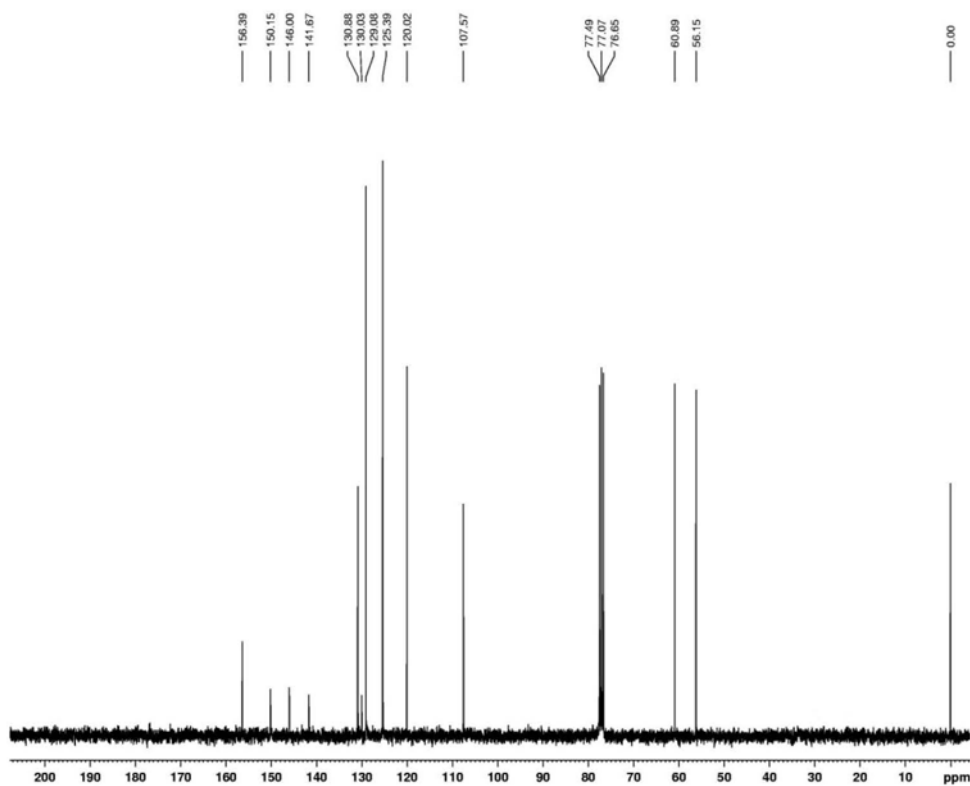


Figure 18S. ^{13}C NMR spectrum of **13**, 75 MHz, CDCl_3

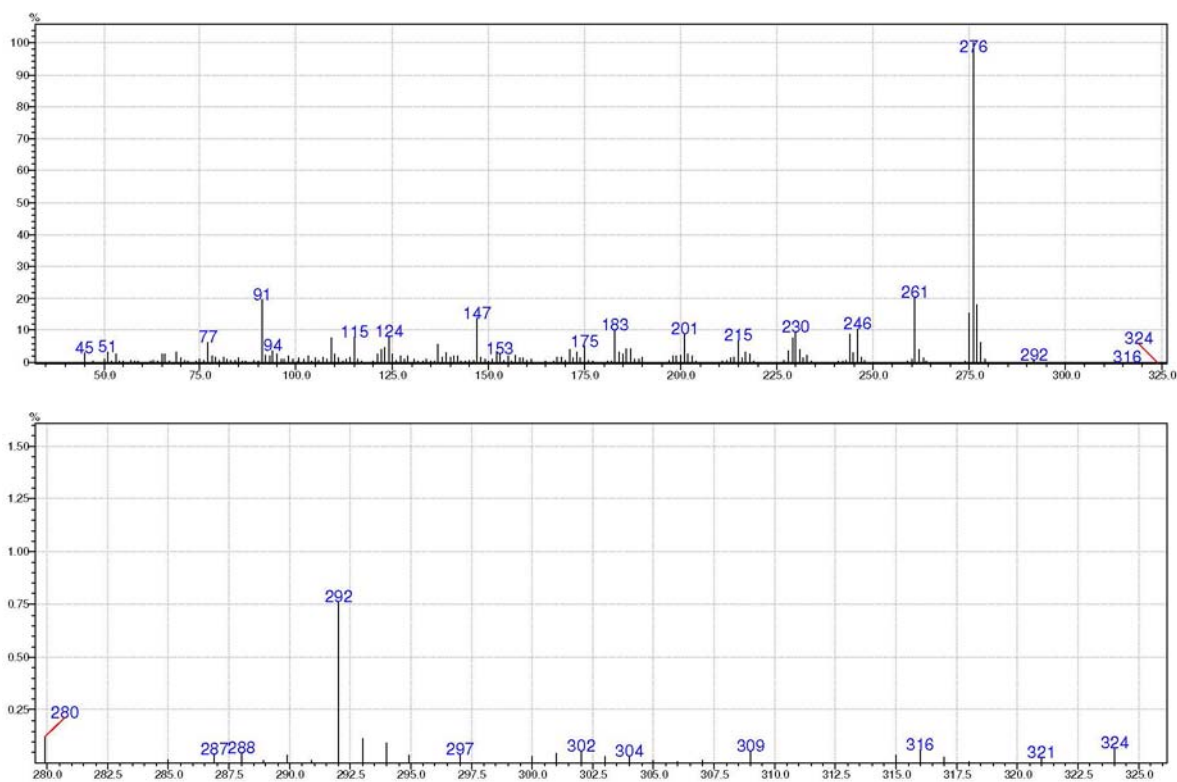


Figure 19S. EI-MS spectrum of 13

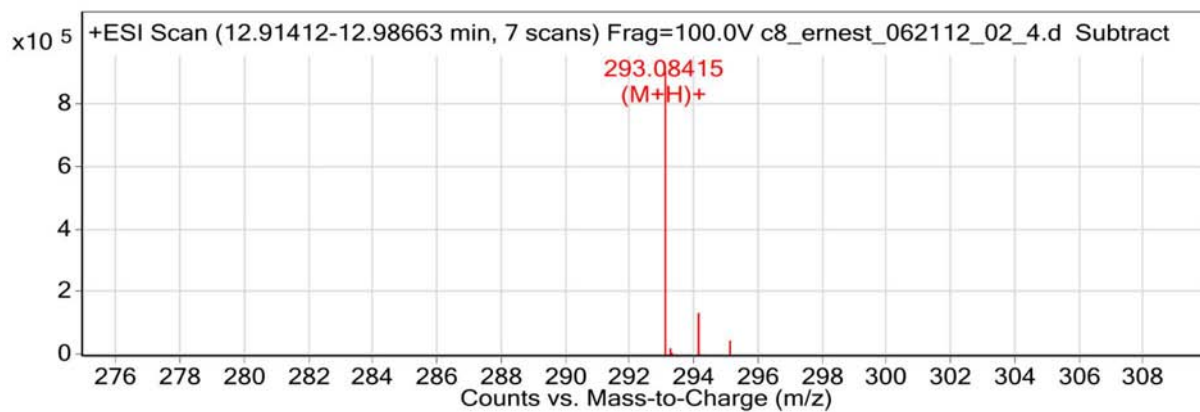


Figure 20S. HRMS (ESI-MS) spectrum of 13

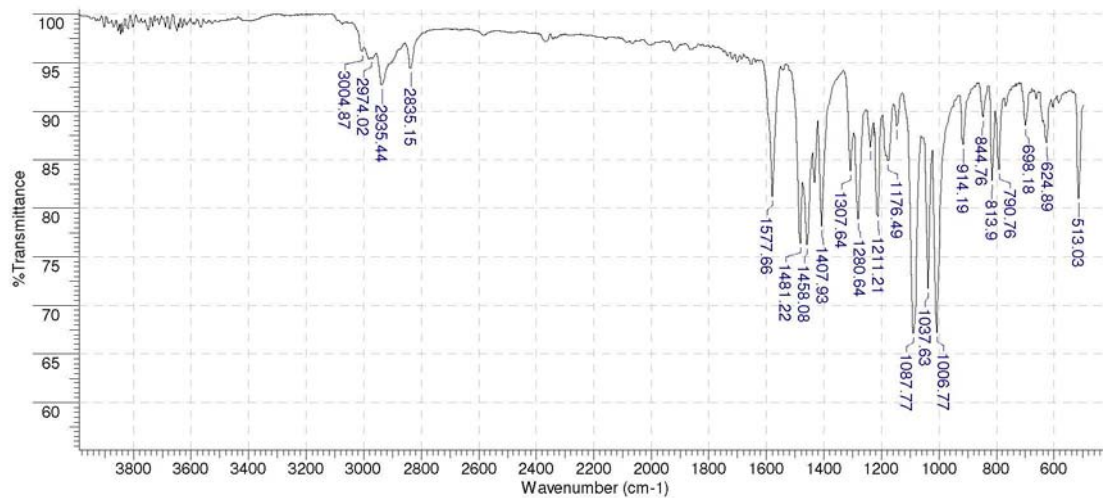


Figure 21S. IR (KBr) spectrum of 14

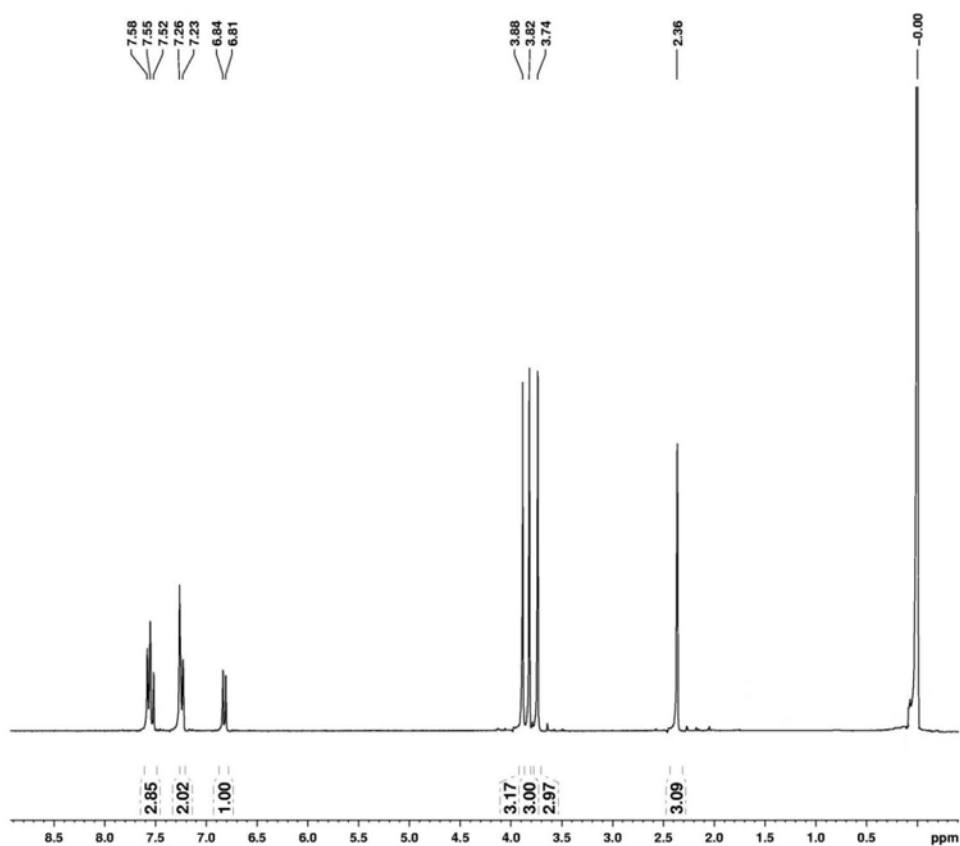


Figure 22S. ¹H NMR spectrum of 14, 300 MHz, CDCl₃

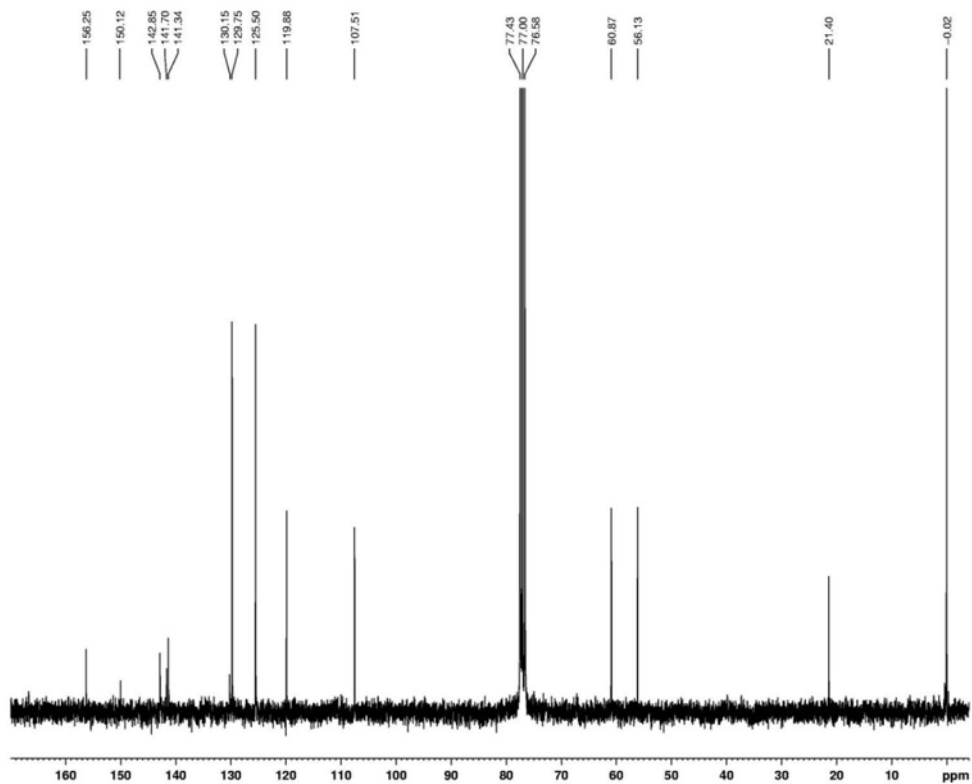


Figure 23S. ^{13}C NMR spectrum of **14**, 75 MHz, CDCl_3

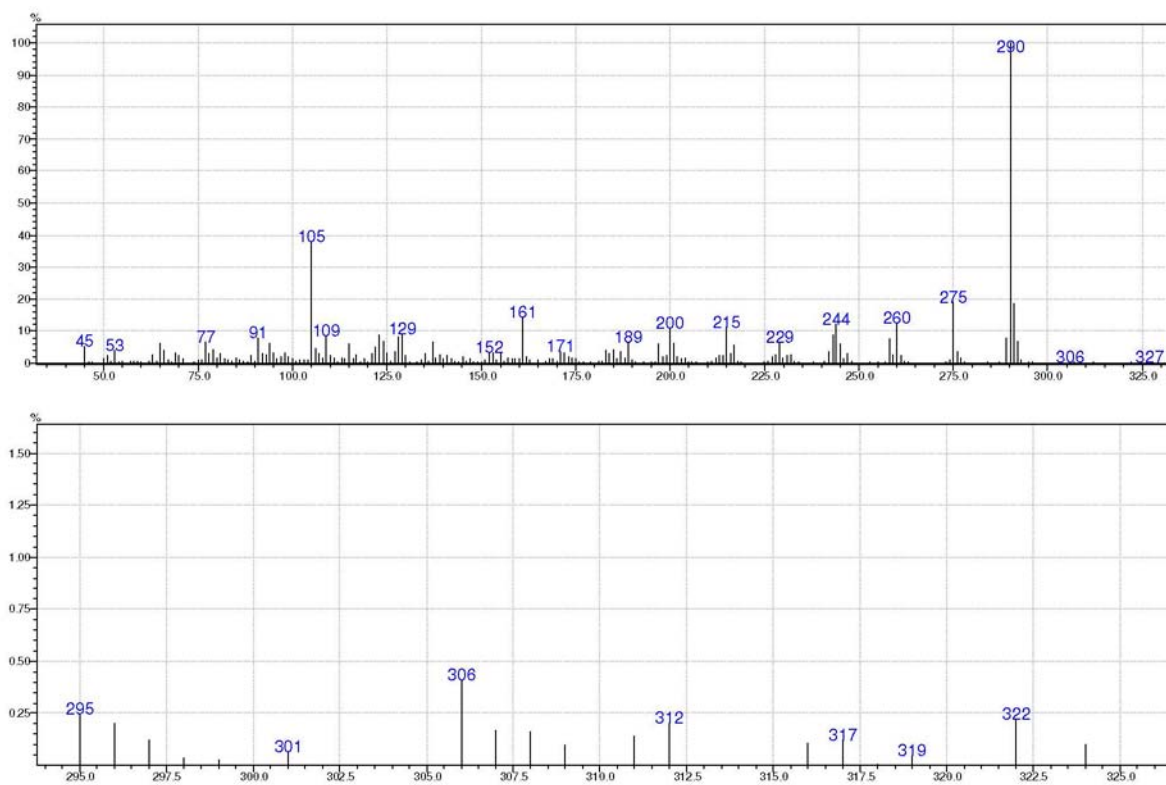


Figure 24S. EI-MS spectrum of **14**

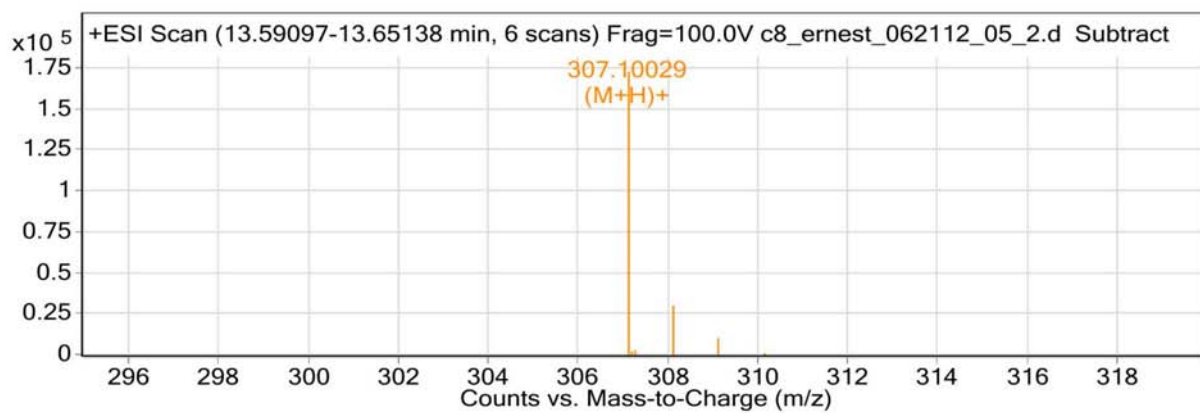


Figure 25S. HRMS (ESI-MS) spectrum of 14

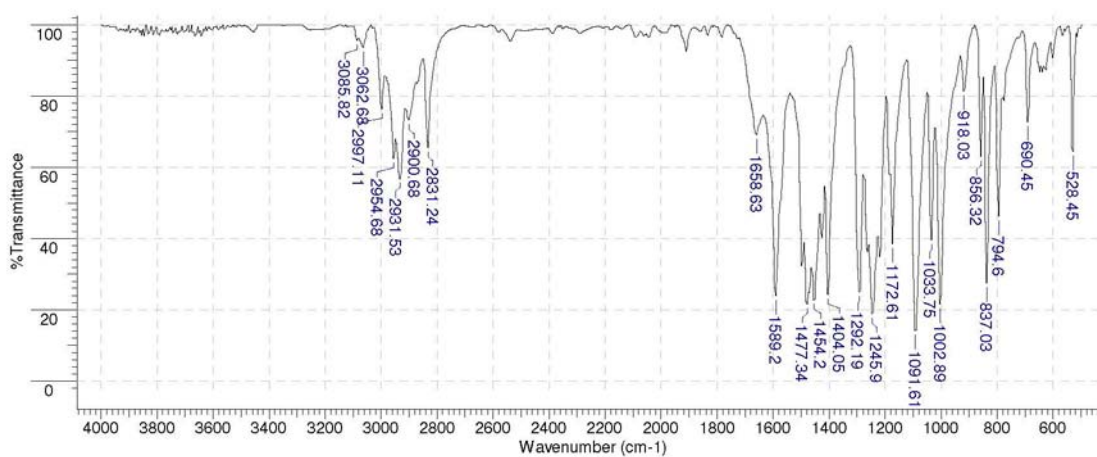


Figure 26S. IR (KBr) spectrum of 15

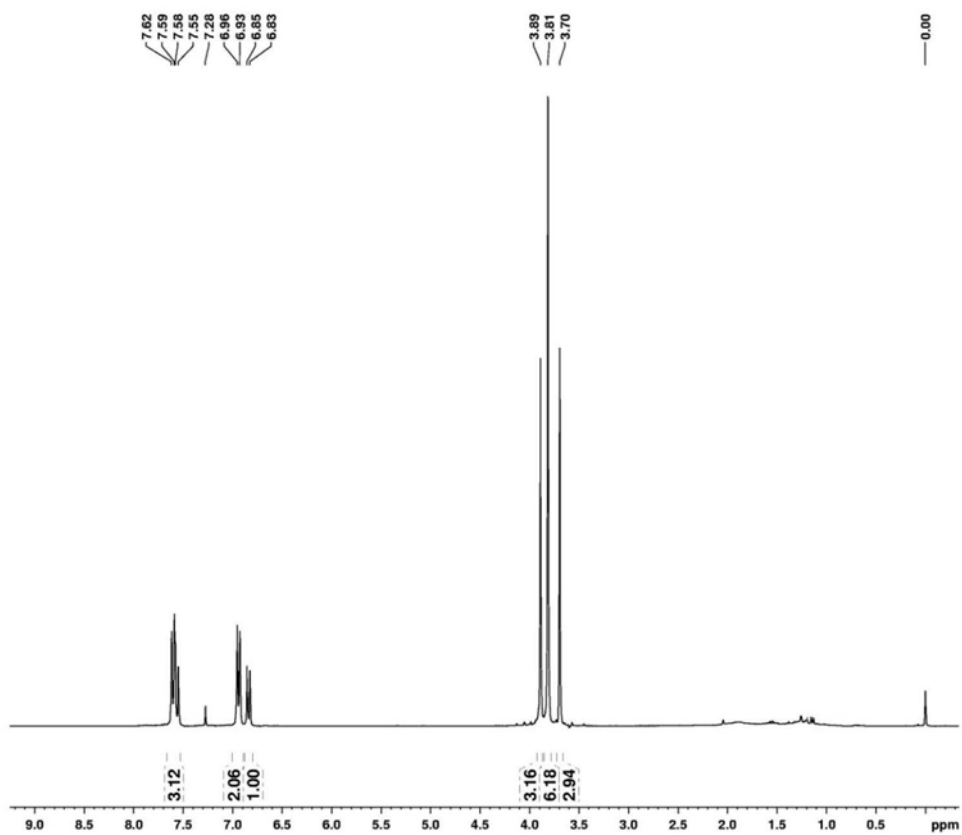


Figure 27S. ^1H NMR spectrum of **15**, 300 MHz, CDCl_3

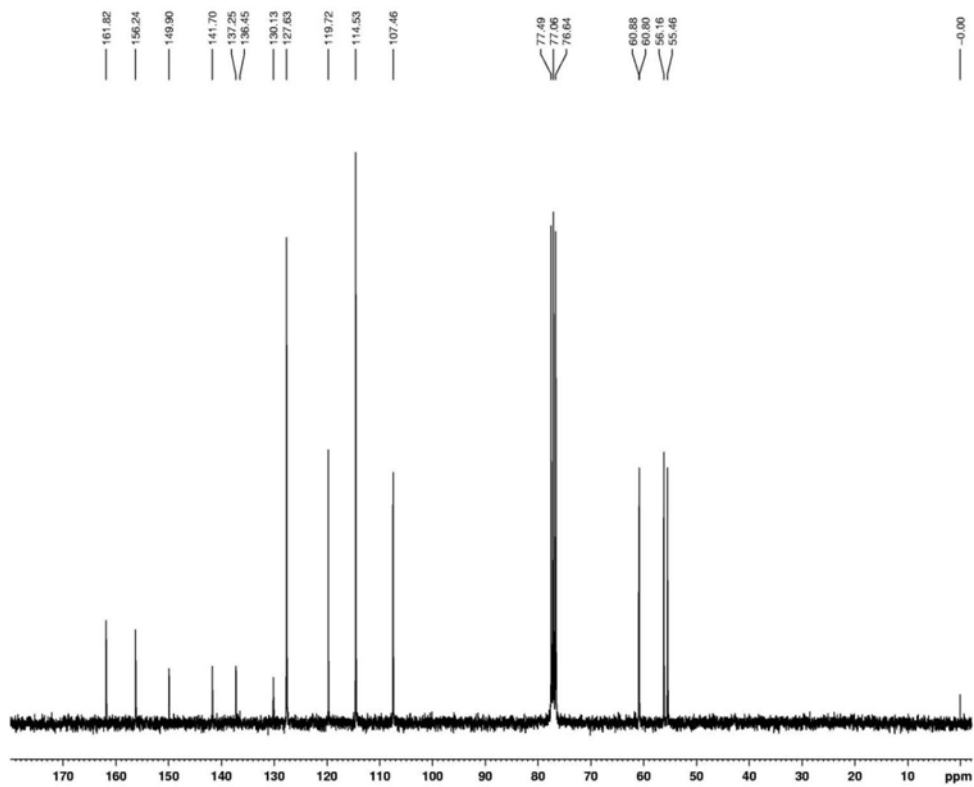


Figure 28S. ^{13}C NMR spectrum of **15**, 75 MHz, CDCl_3

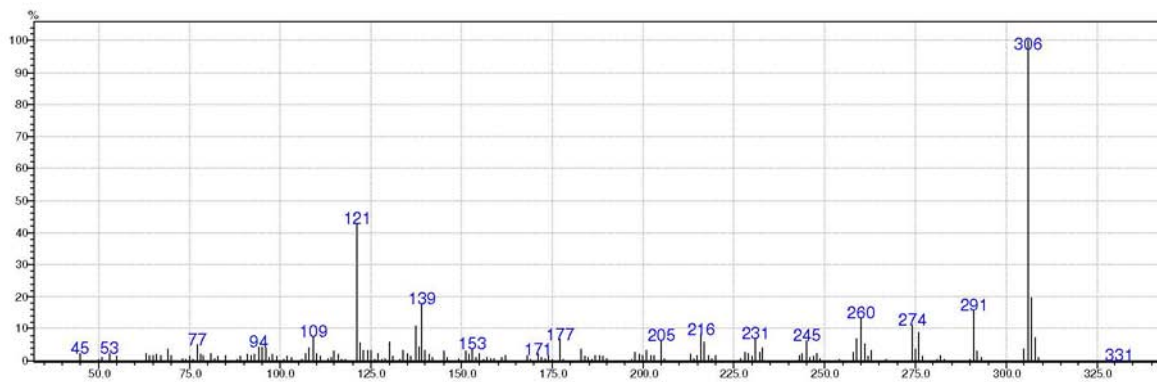


Figure 29S. EI-MS spectrum of 15

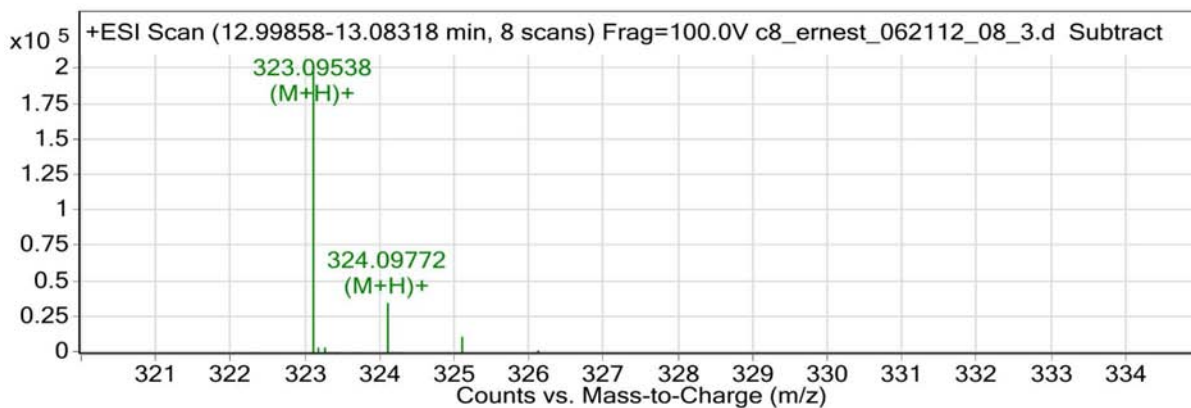


Figure 30S. HRMS (ESI-MS) spectrum of 15

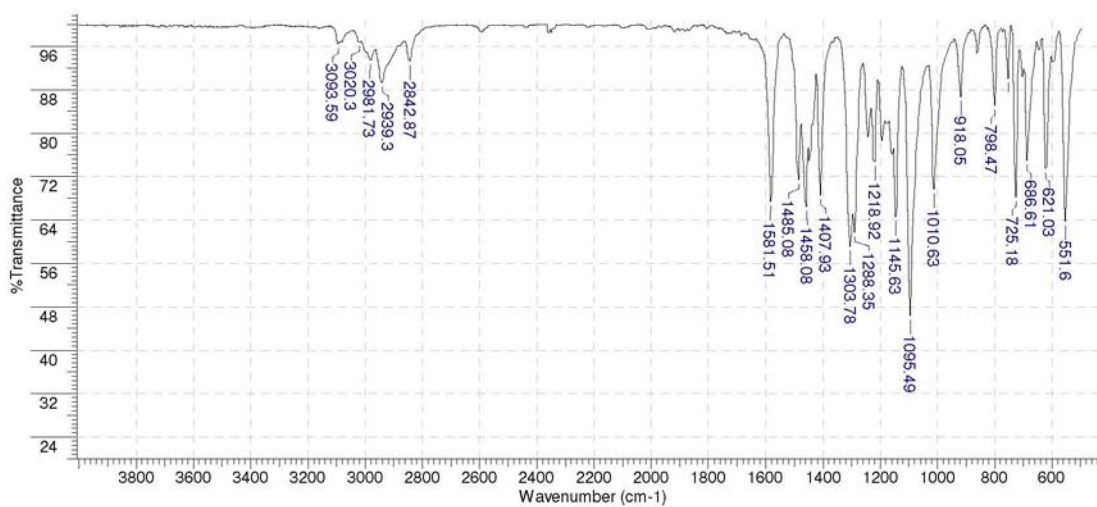


Figure 31S. IR (KBr) spectrum of 16

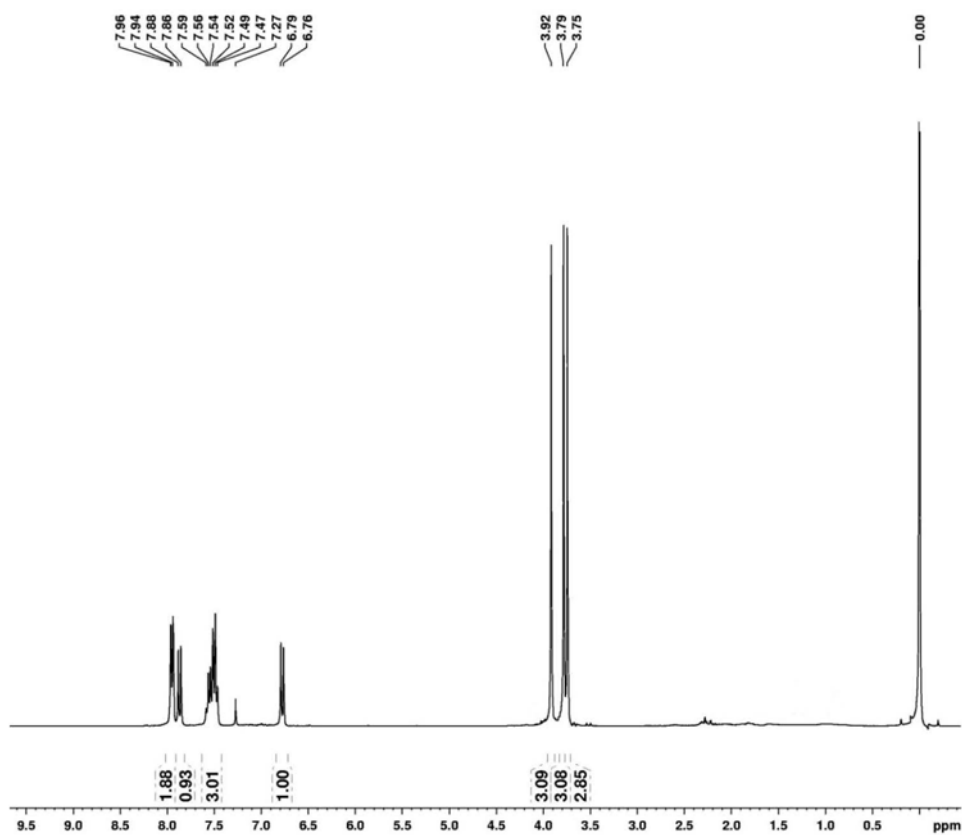


Figure 32S. ¹H NMR spectrum of **16**, 300 MHz, CDCl₃

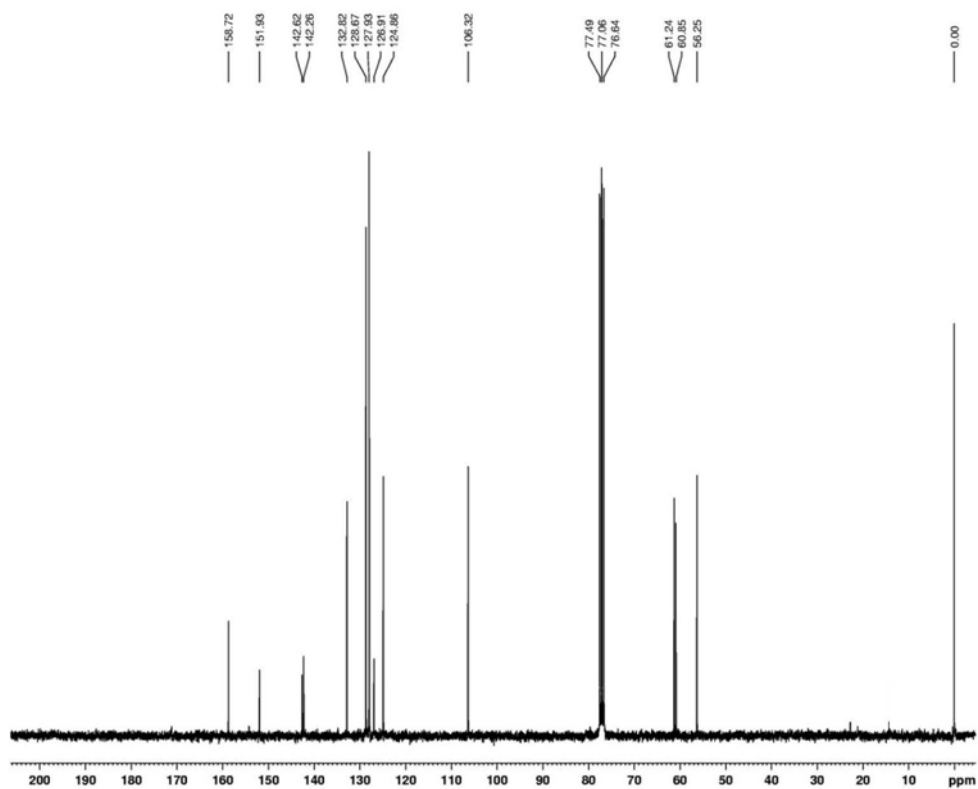


Figure 33S. ¹³C NMR spectrum of **16**, 75 MHz, CDCl₃

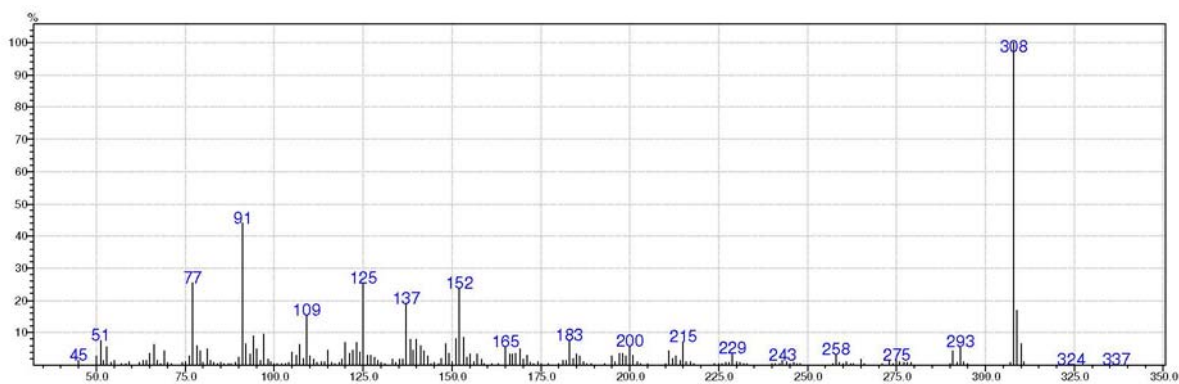


Figure 34S. EI-MS spectrum of 16

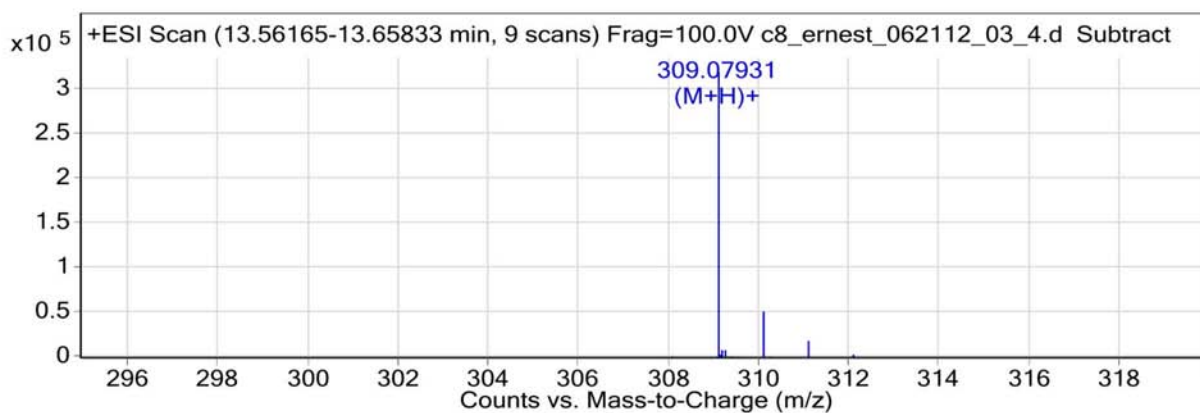


Figure 35S. HRMS (ESI-MS) spectrum of 16

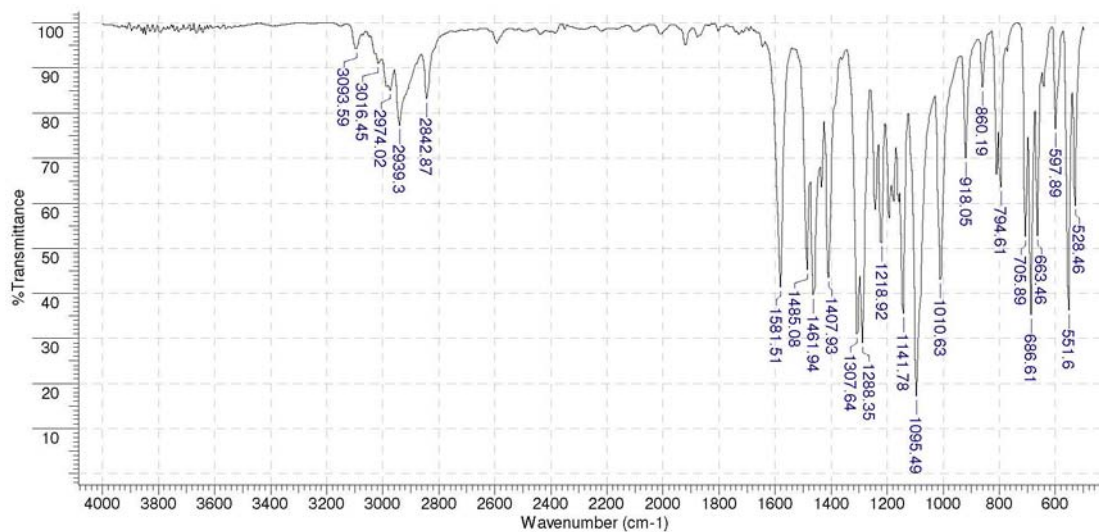


Figure 36S. IR (KBr) spectrum of 17

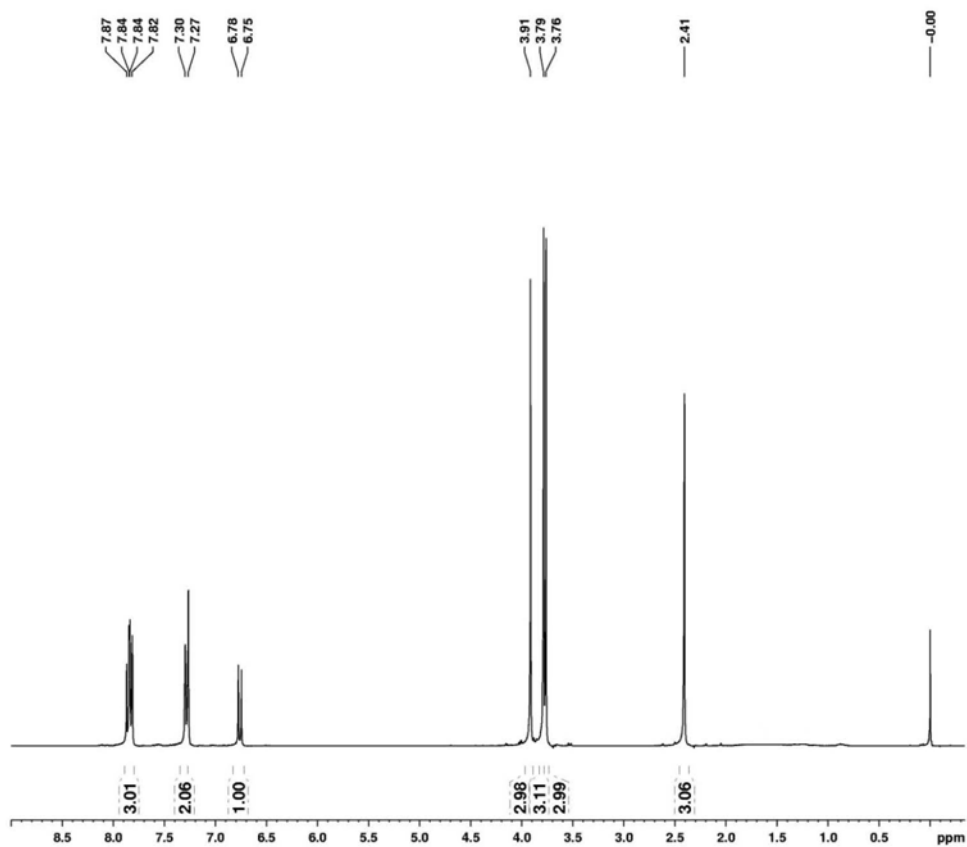


Figure 37S. ^1H NMR spectrum of **17**, 300 MHz, CDCl_3

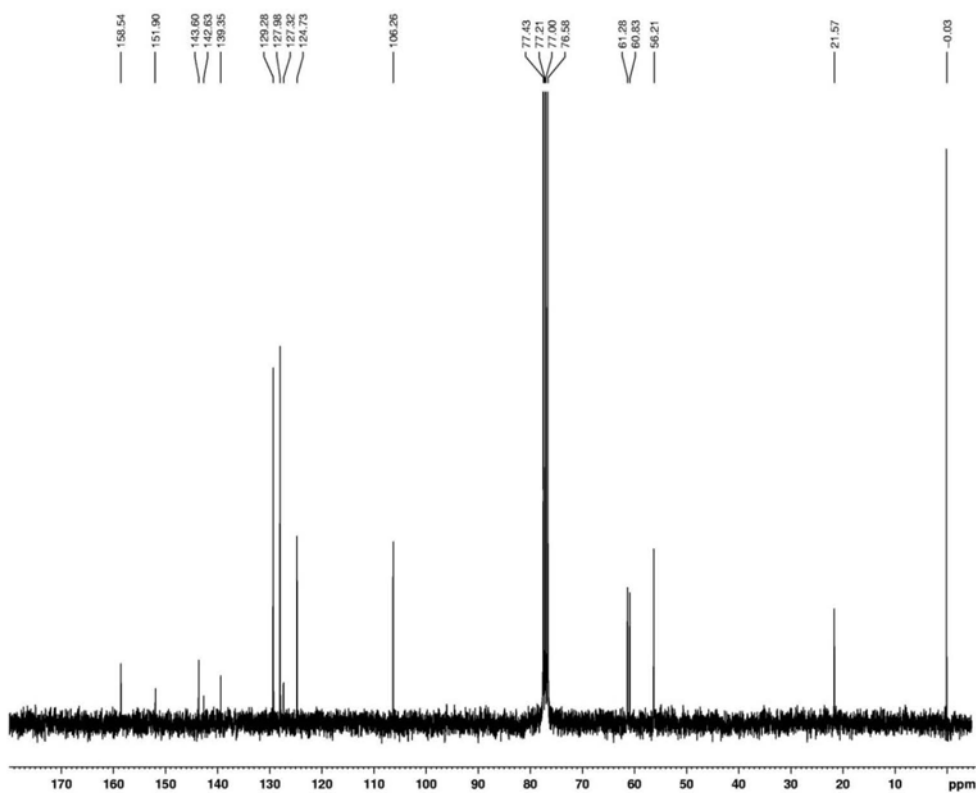


Figure 38S. ^{13}C NMR spectrum of **17**, 75 MHz, CDCl_3

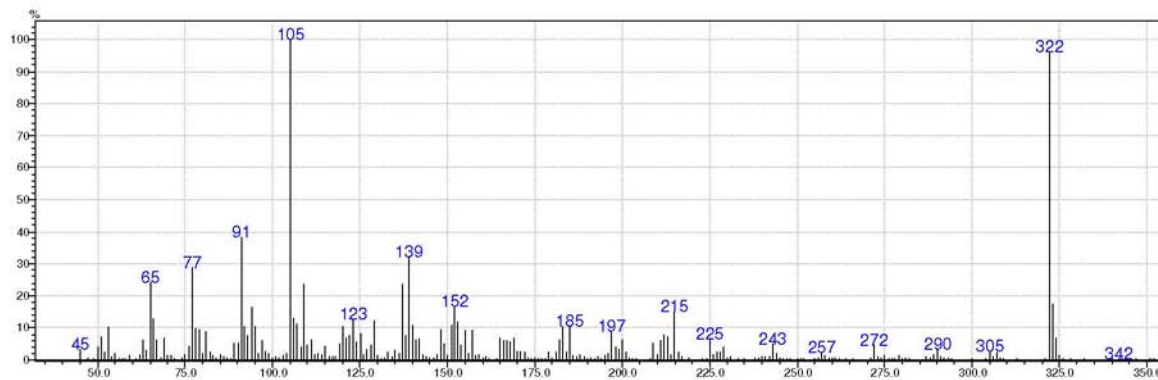


Figure 39S. EI-MS spectrum of 17

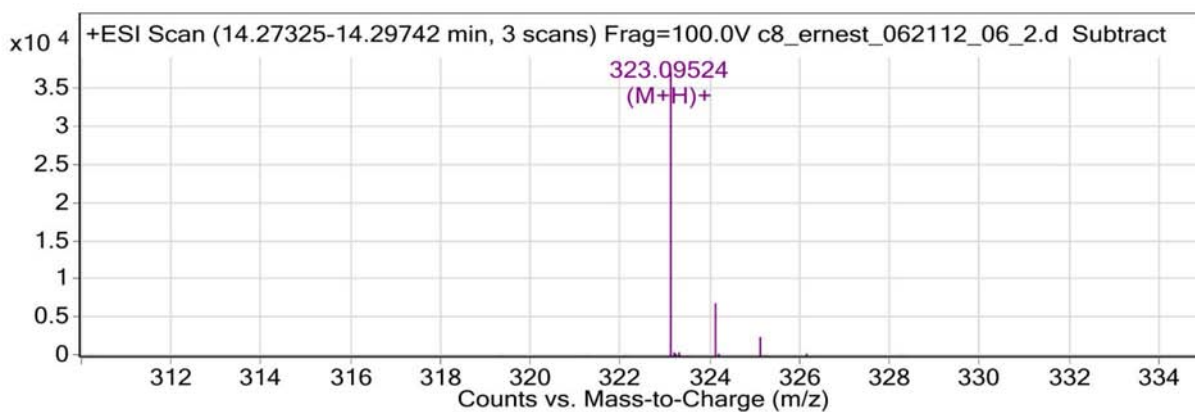


Figure 40S. HRMS (ESI-MS) spectrum of 17

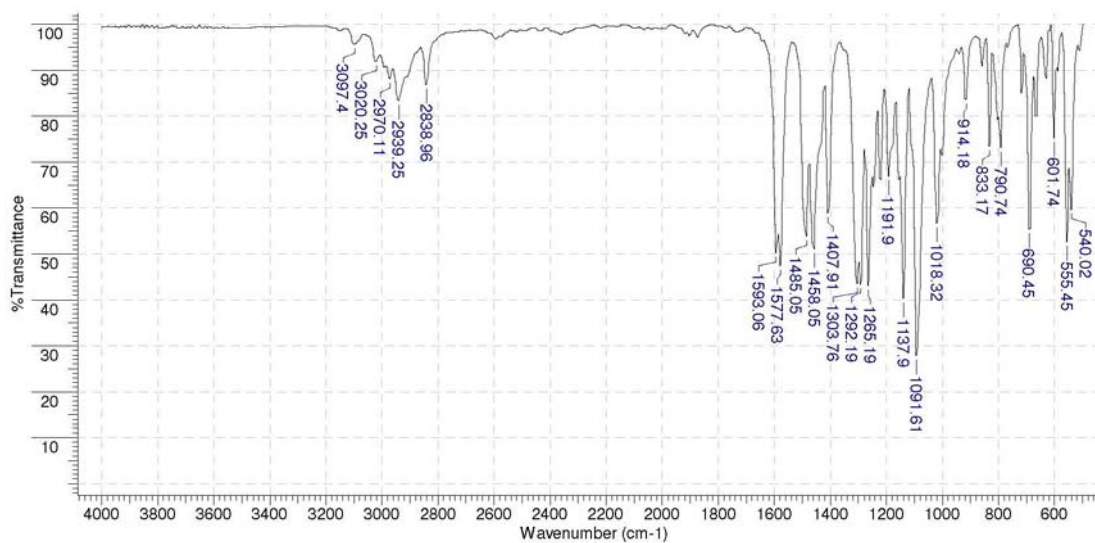


Figure 41S. IR (KBr) spectrum of 18

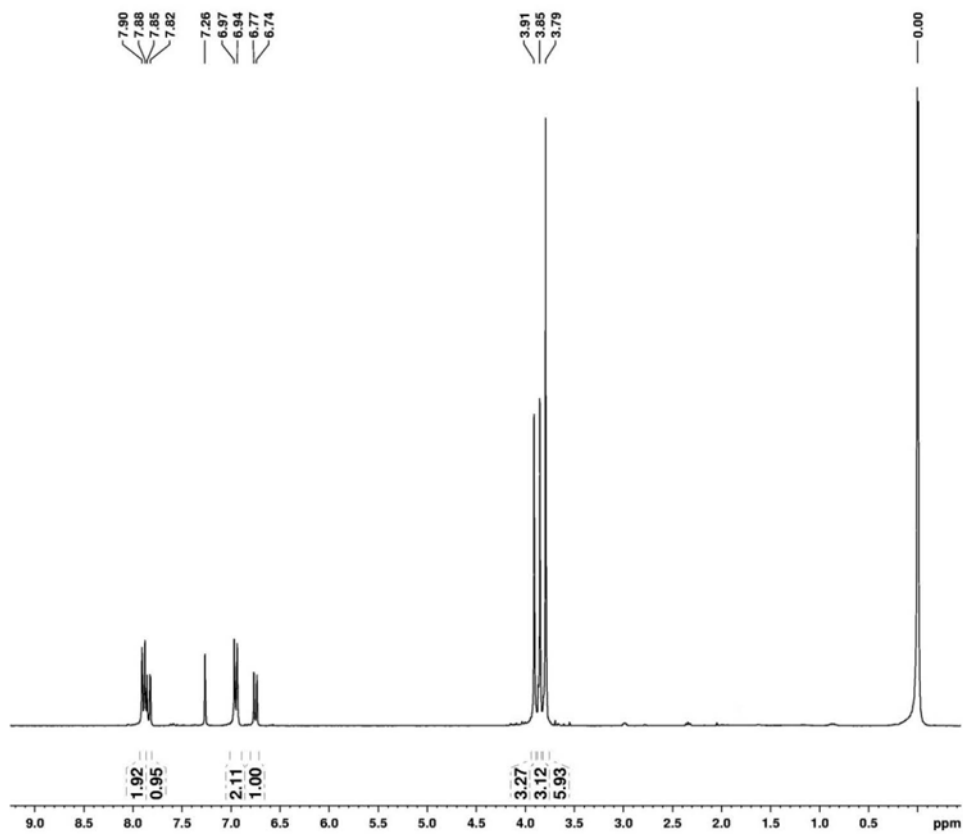


Figure 42S. ¹H NMR spectrum of 18, 300 MHz, CDCl₃.

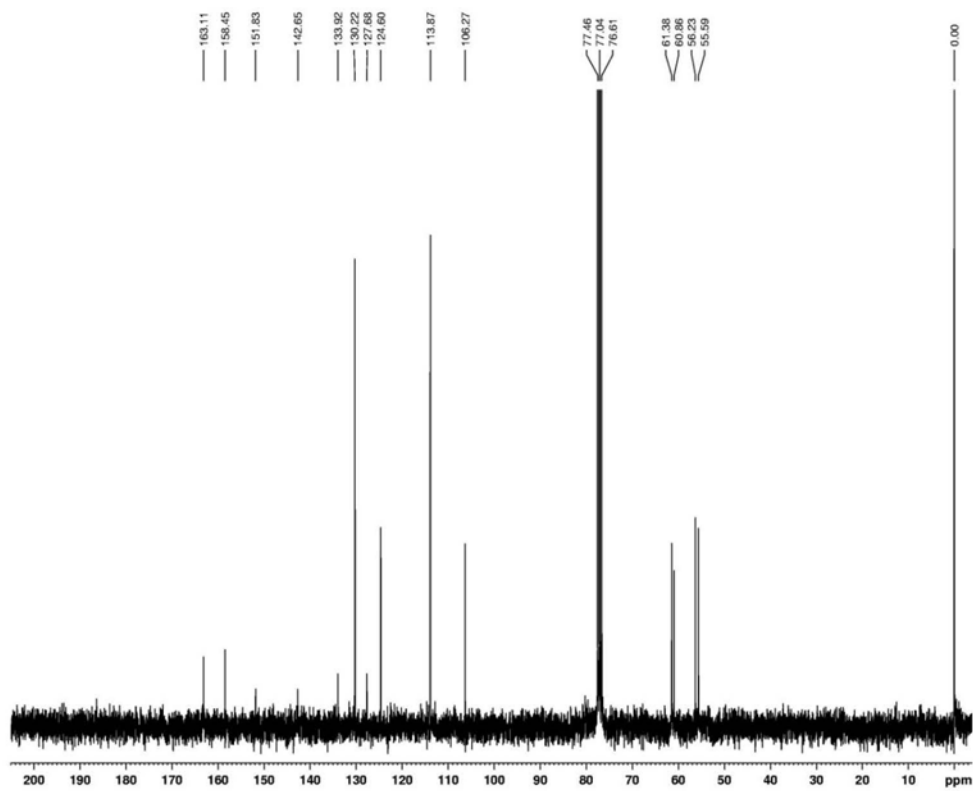


Figure 43S. ¹³C NMR spectrum of 18, 75 MHz, CDCl₃.

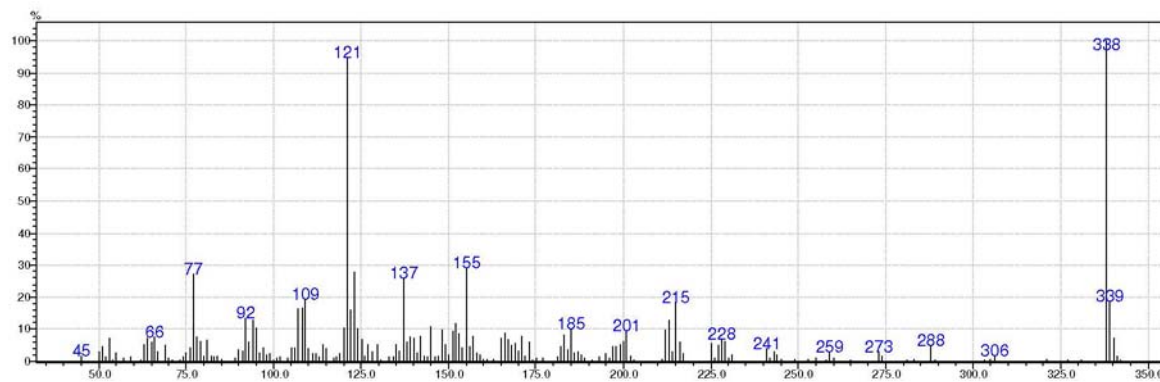


Figure 44S. EI-MS spectrum of 18

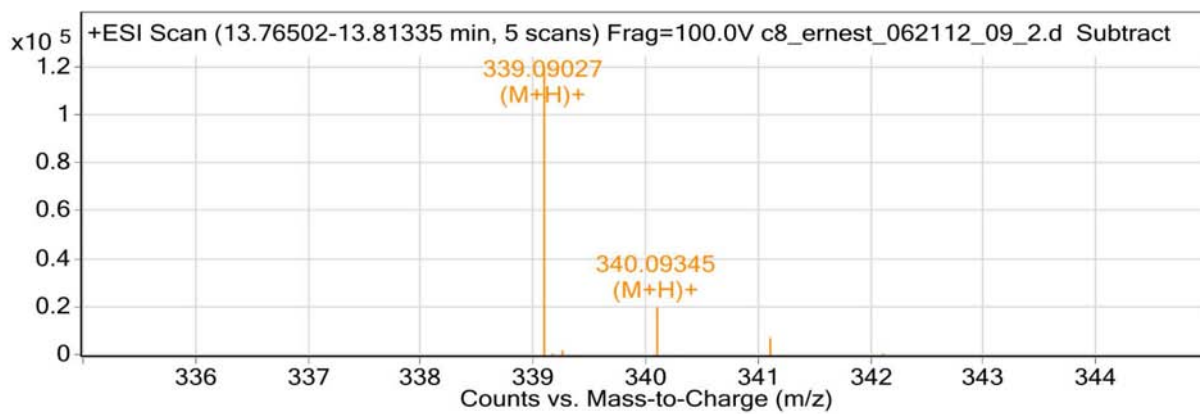


Figure 45S. HRMS (ESI-MS) spectrum of 18