

# Supplementary Information

## Synthesis of 1,3-Diynes via Detelluration of Bis(ethynyl)tellurides

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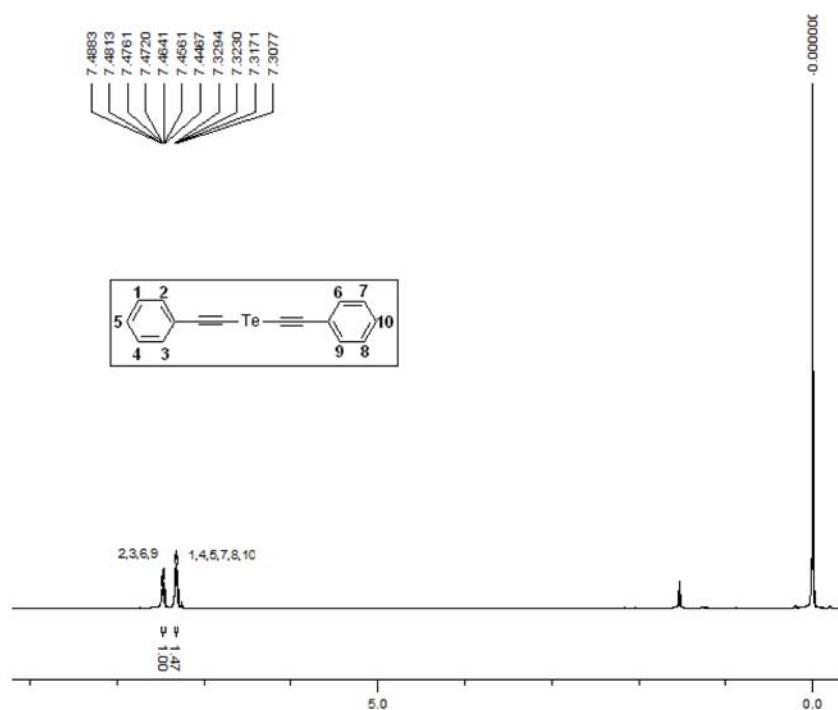
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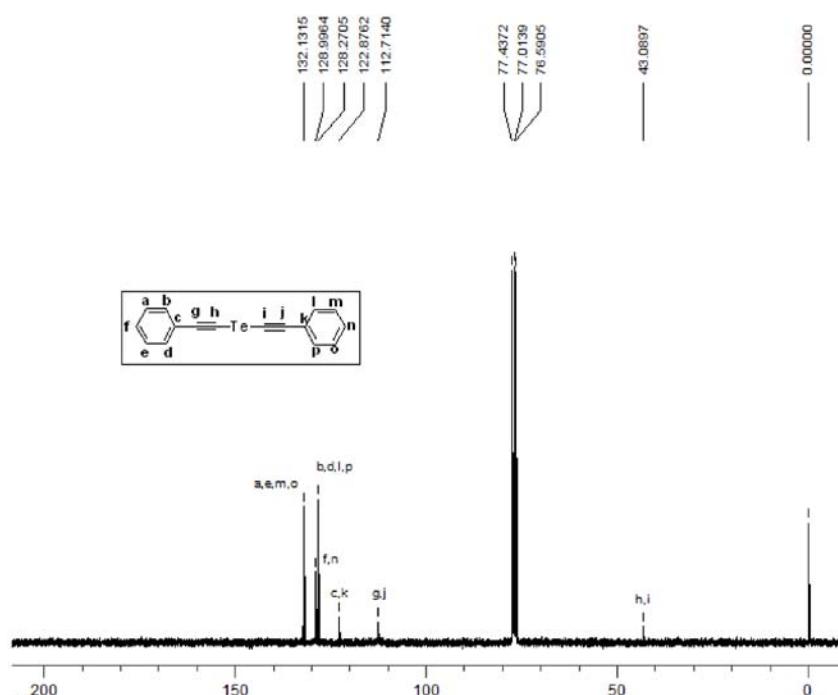
**Table S1.** Chemical shifts for  $^{125}\text{Te}$

Tellurides	$^{125}\text{Te}$ NMR ( $\delta$ ppm, $\text{CDCl}_3$ )
	364.48
	332.57
	387.55
	364.52
	374.18
	348.06
	357.60
	357.83
	362.78

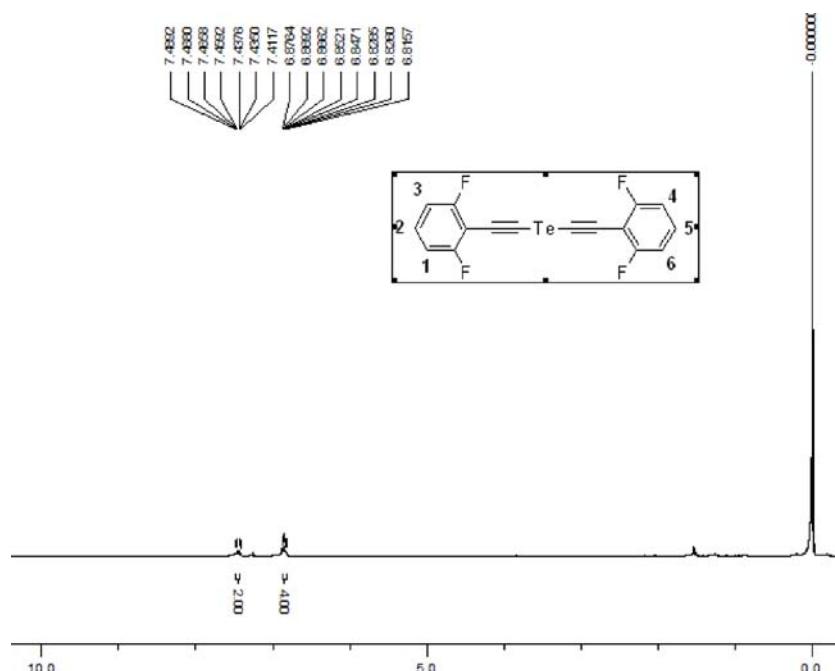
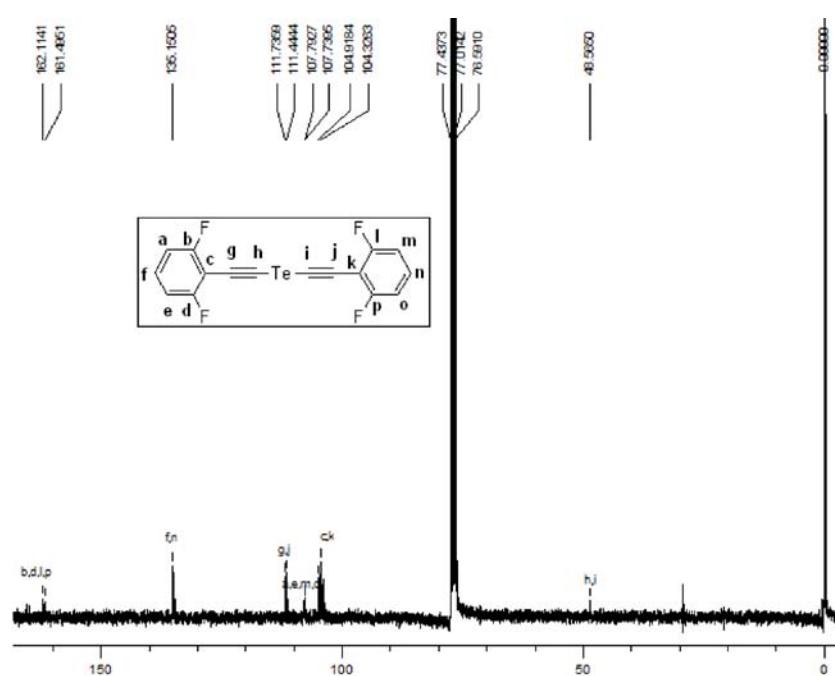
All spectra were obtained using diphenyl ditelluride as internal standard.  $\text{Te}_2\text{Ph}_2$  ( $\text{CDCl}_3$ ,  $\delta$  ( $^{125}\text{Te}$ ) = 421.8 ppm).

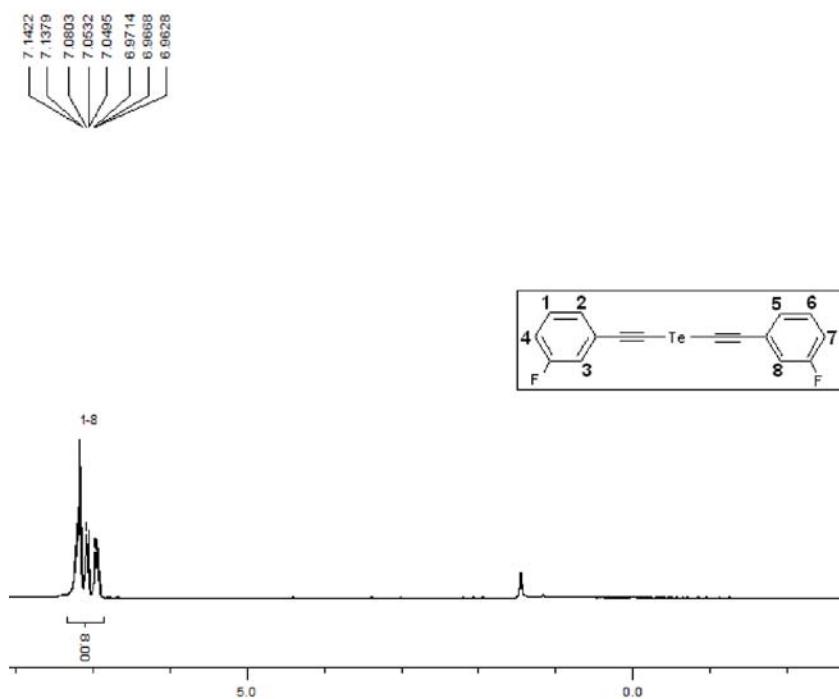


**Figure S1.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1a**.

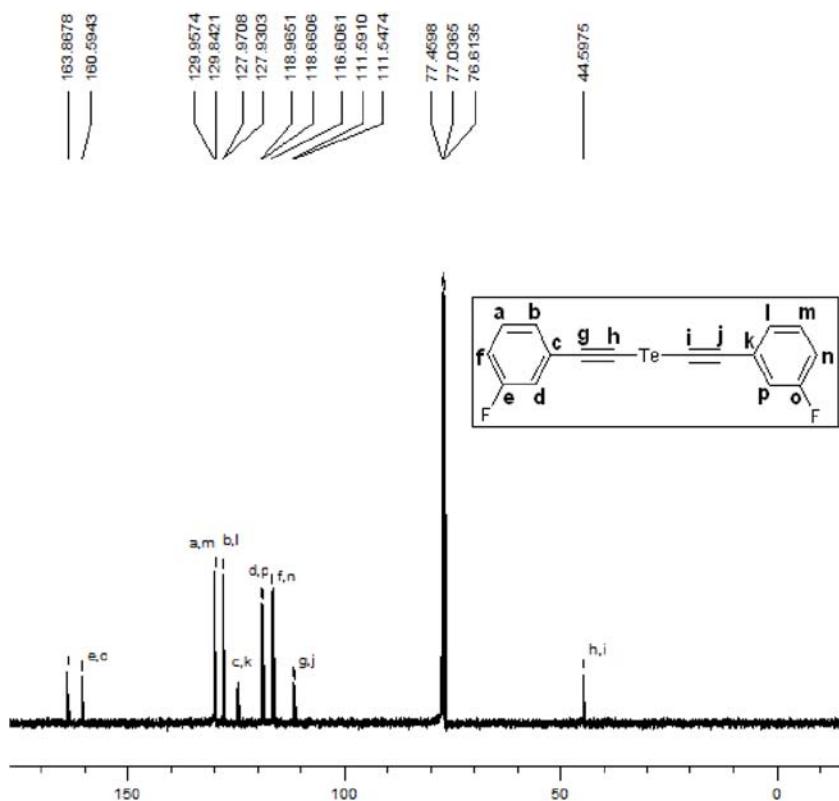


**Figure S2.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1a**.

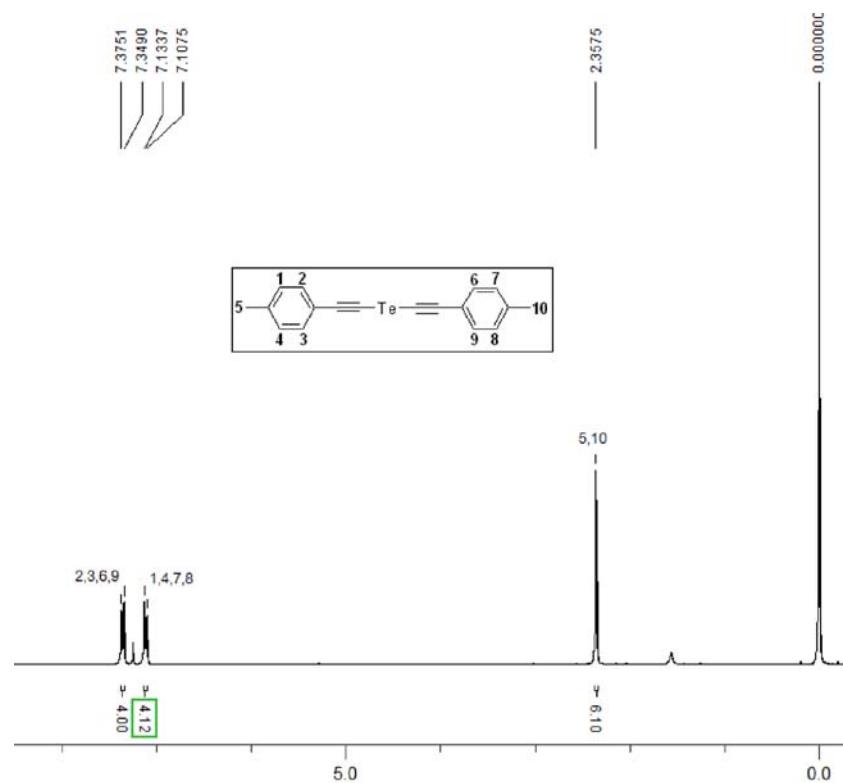
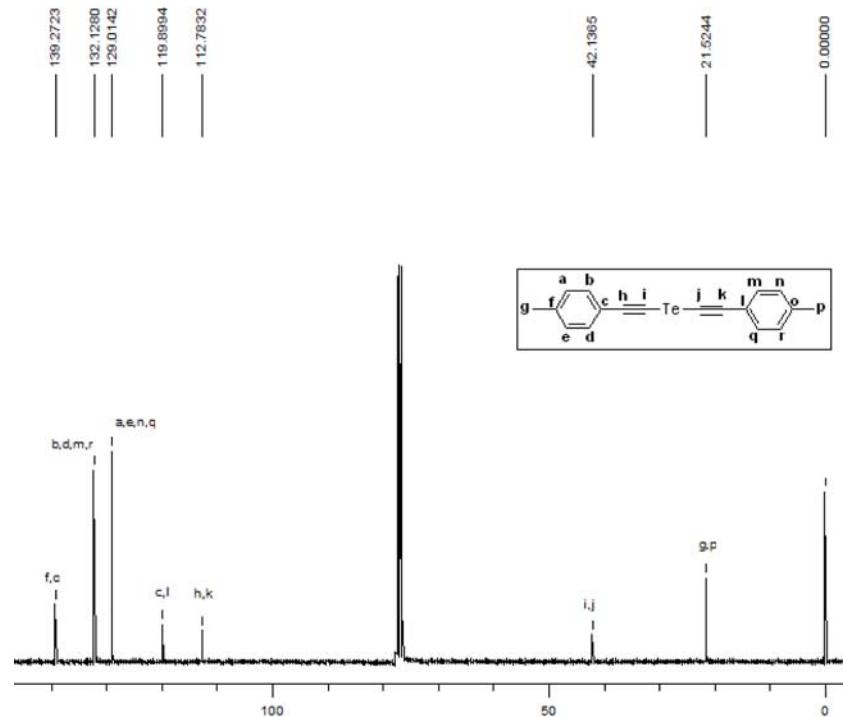
**Figure S3.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1b**.**Figure S4.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1b**.

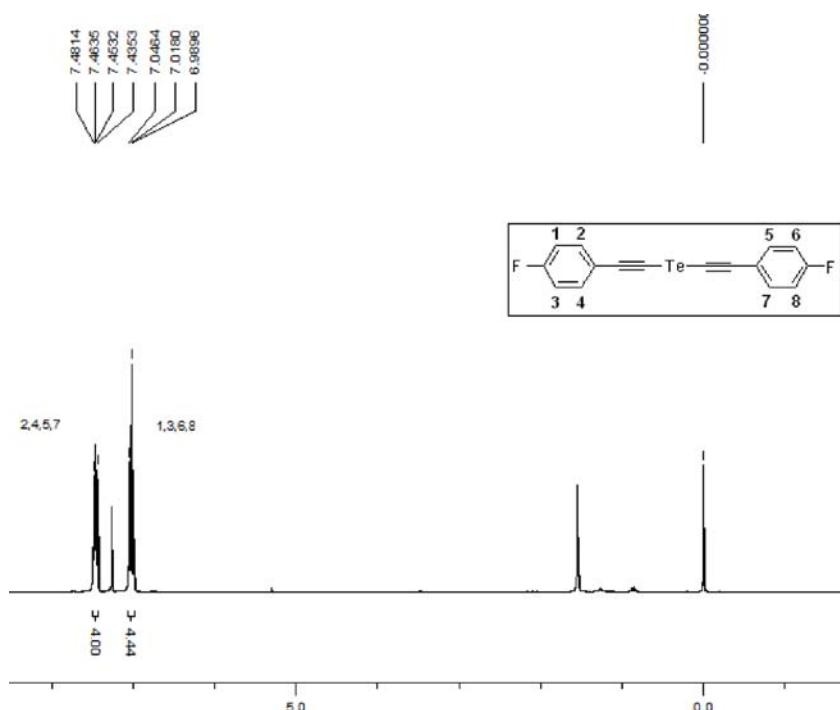


**Figure S5.** <sup>1</sup>H NMR ( $\text{CDCl}_3$ , 300 MHz) of **1c**.

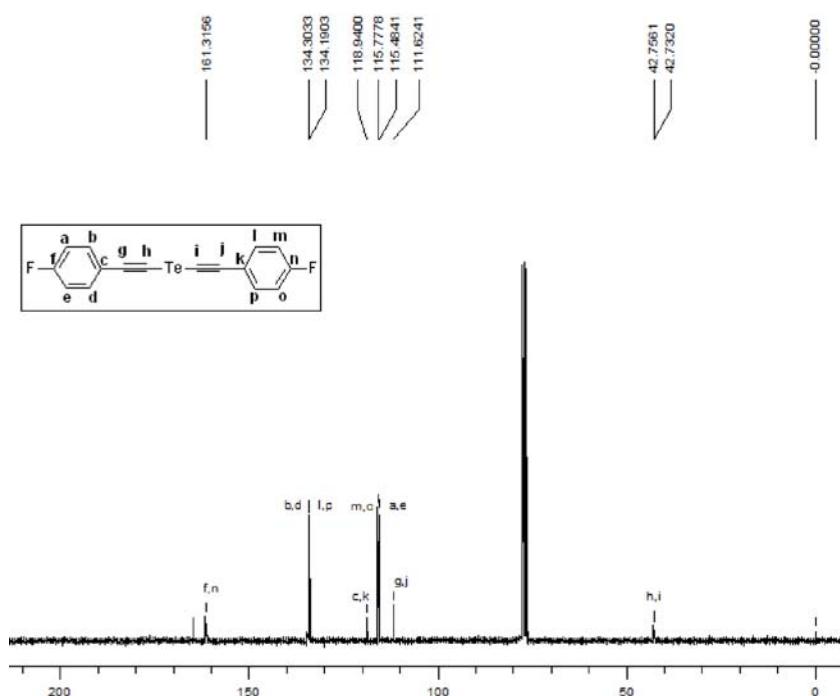


**Figure S6.** <sup>13</sup>C NMR ( $\text{CDCl}_3$ , 300 MHz) of **1c**.

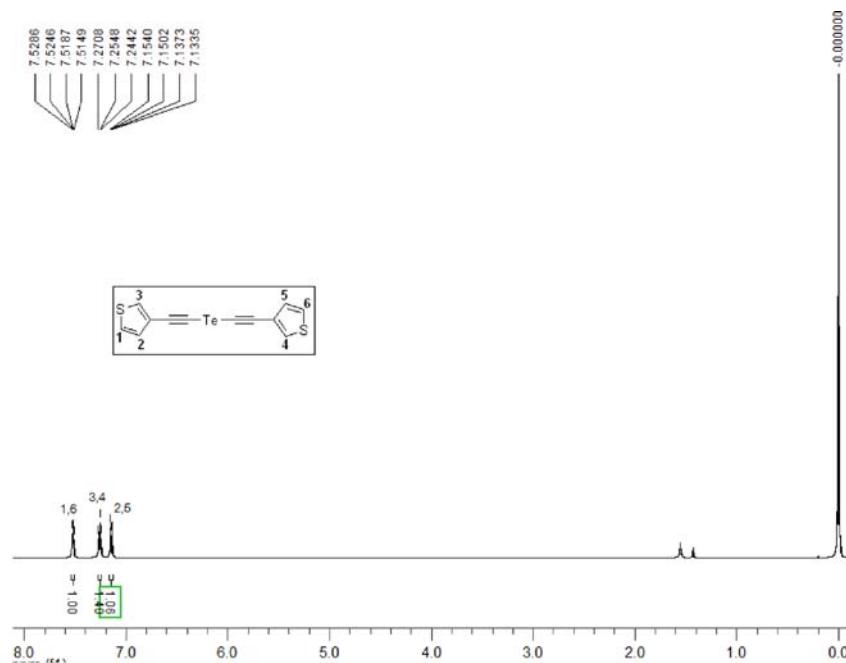
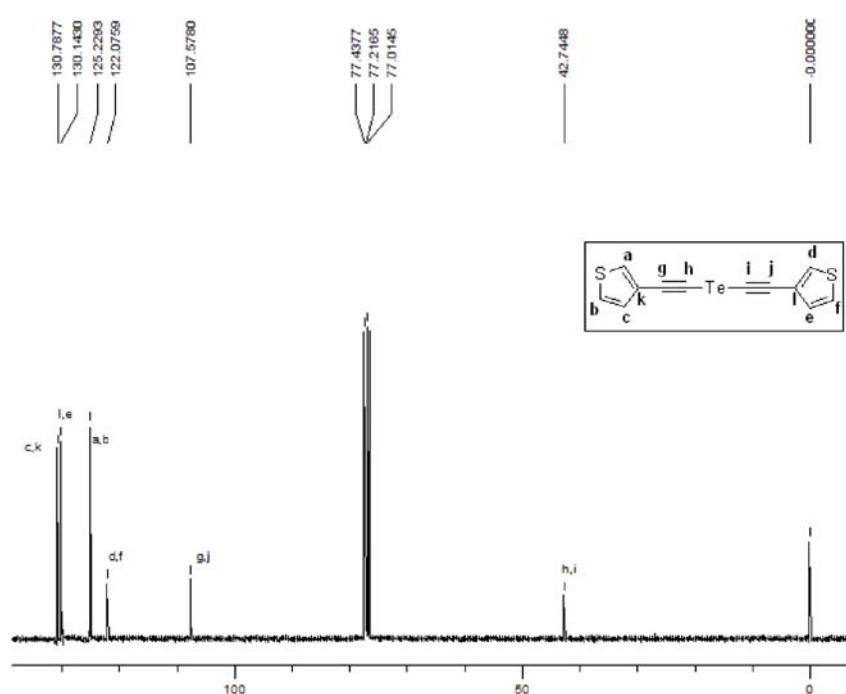
**Figure S7.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1d**.**Figure S8.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1d**.

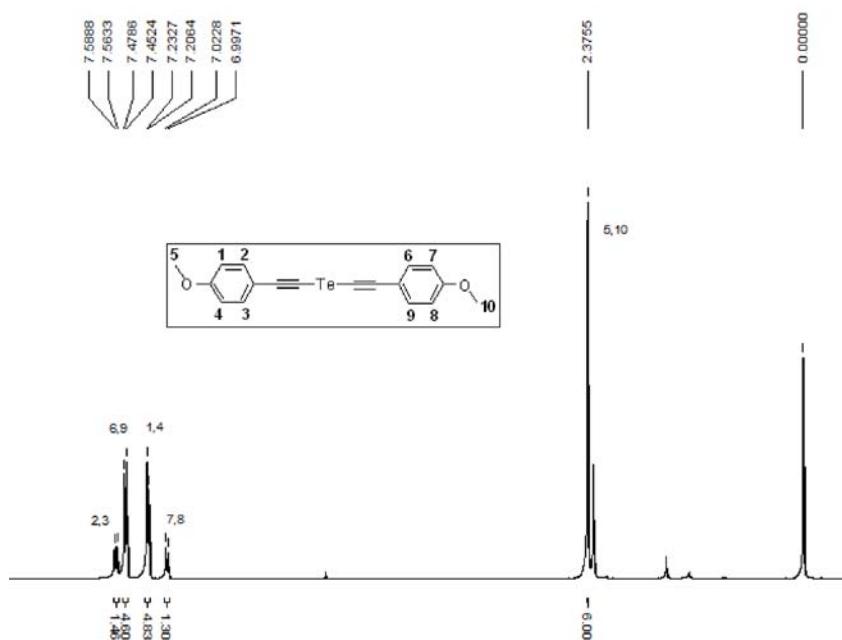


**Figure S9.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1e**.

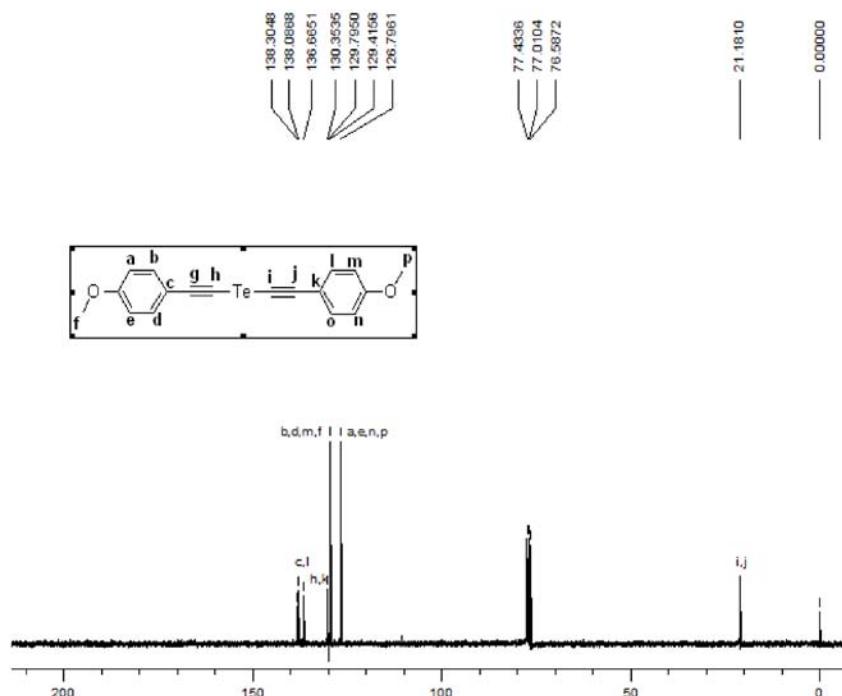


**Figure S10.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1e**.

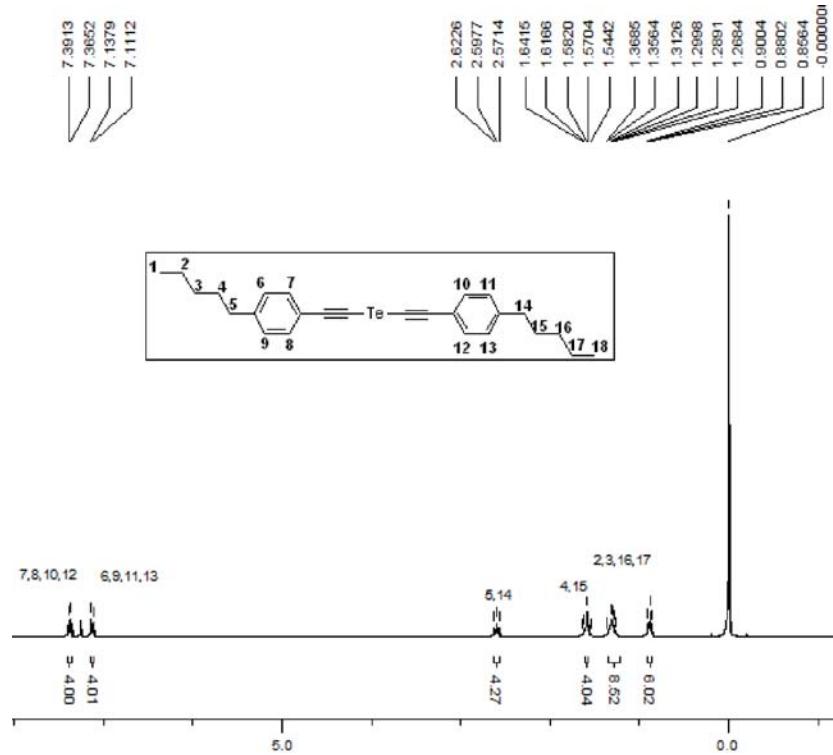
**Figure S11.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1f**.**Figure S12.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1f**.



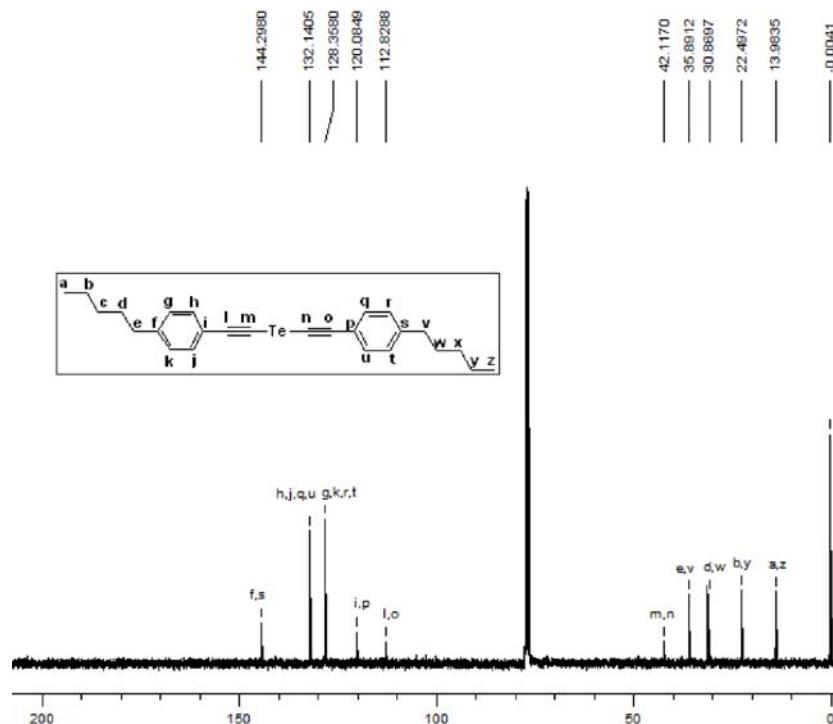
**Figure S13.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1g**.



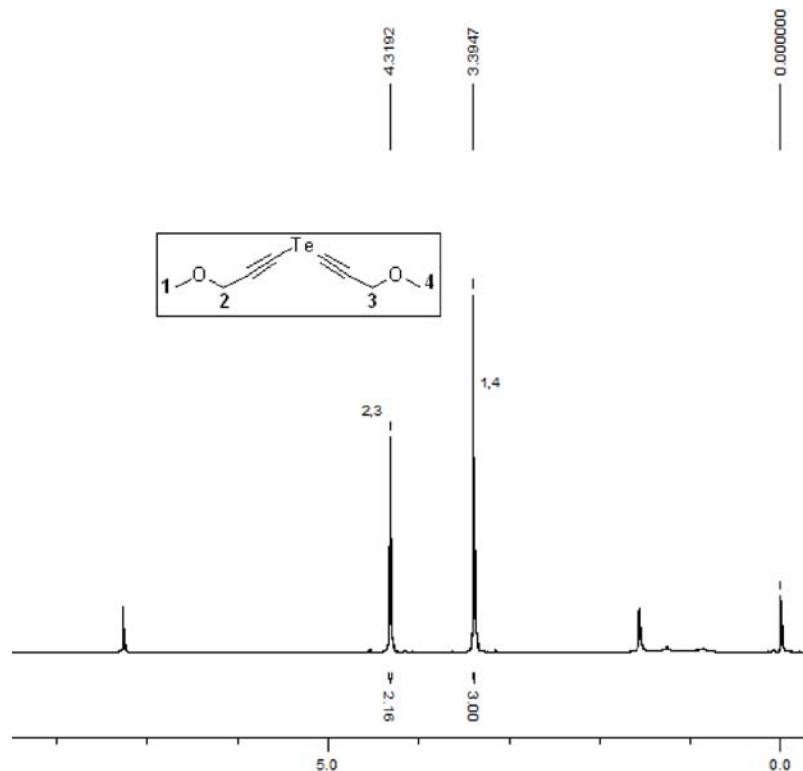
**Figure S14.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1g**.



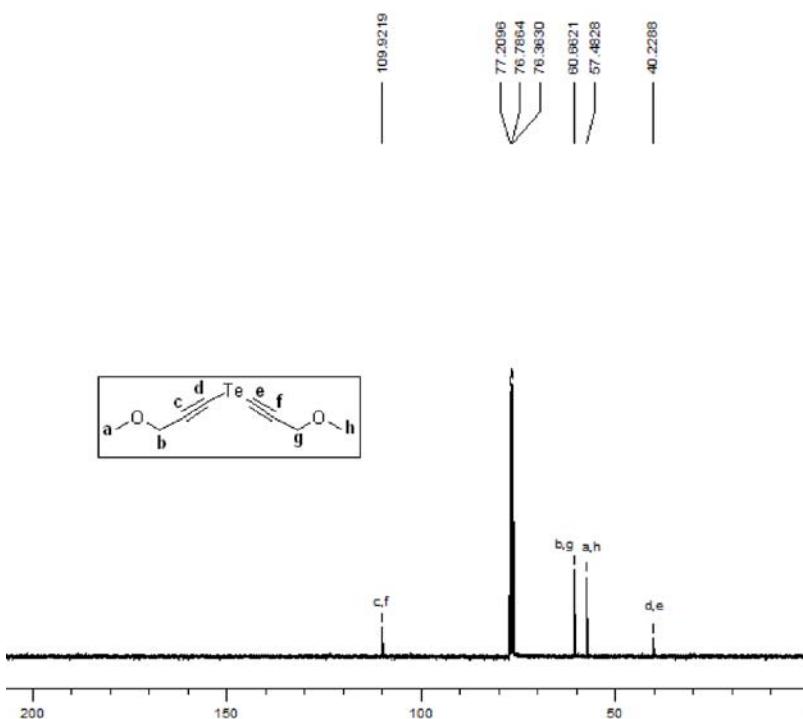
**Figure S15.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1h**.



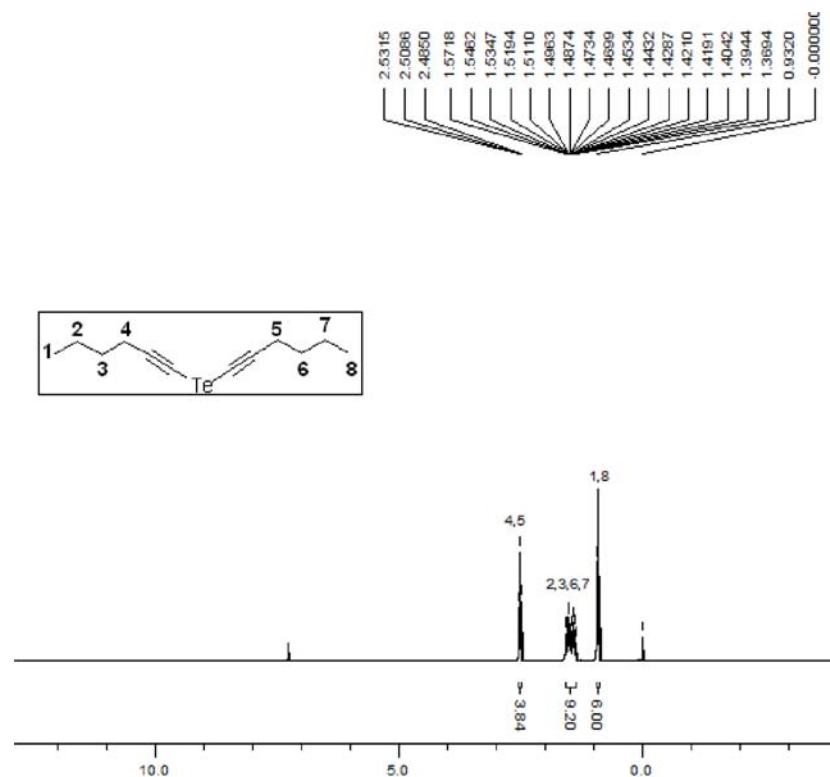
**Figure S16.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1h**.



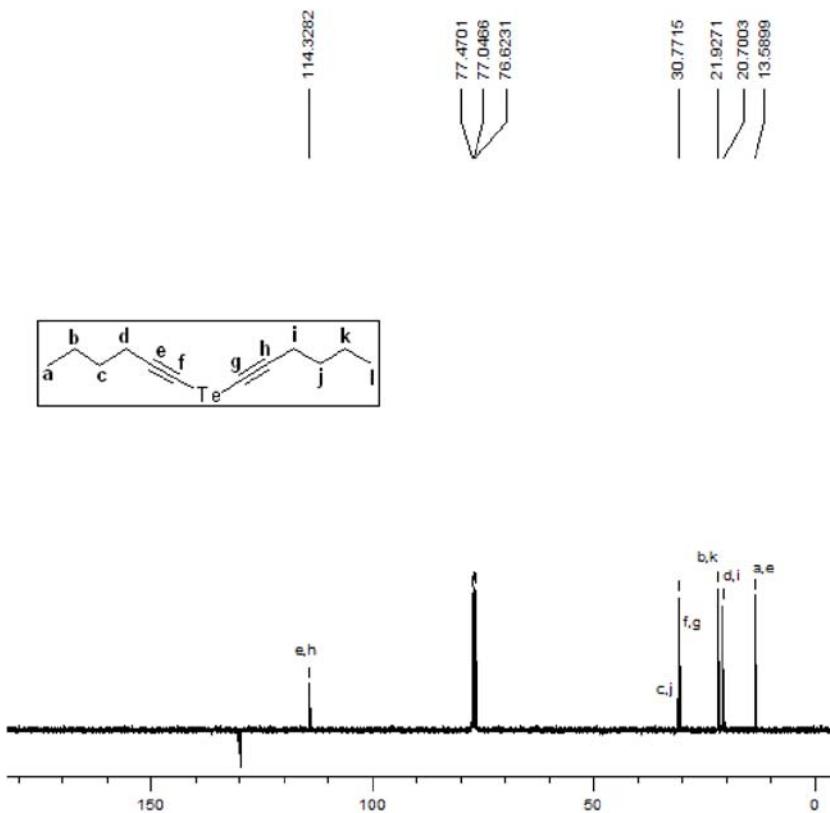
**Figure S17.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1i**.



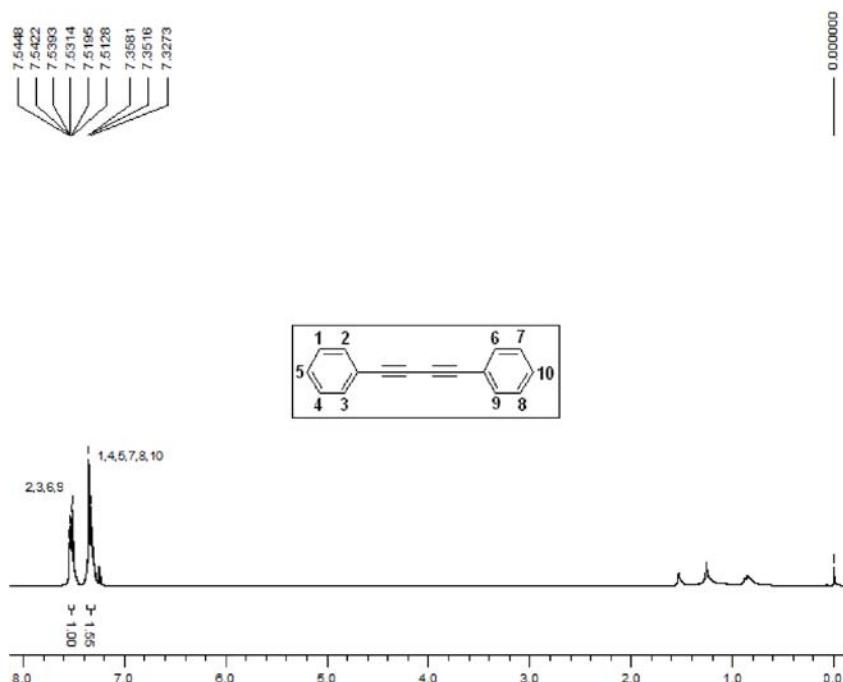
**Figure S18.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1i**.



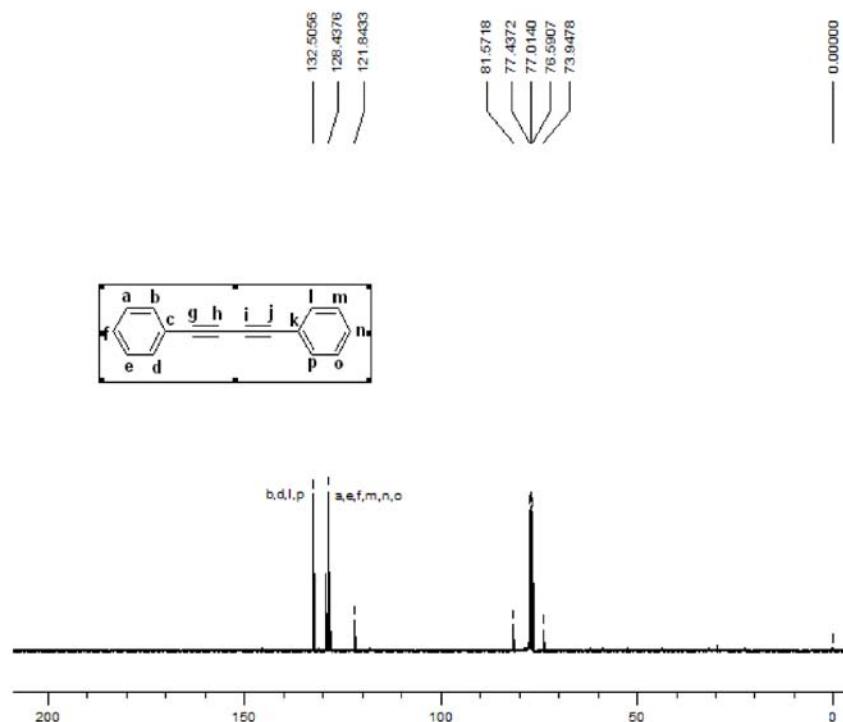
**Figure S19.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1j**.



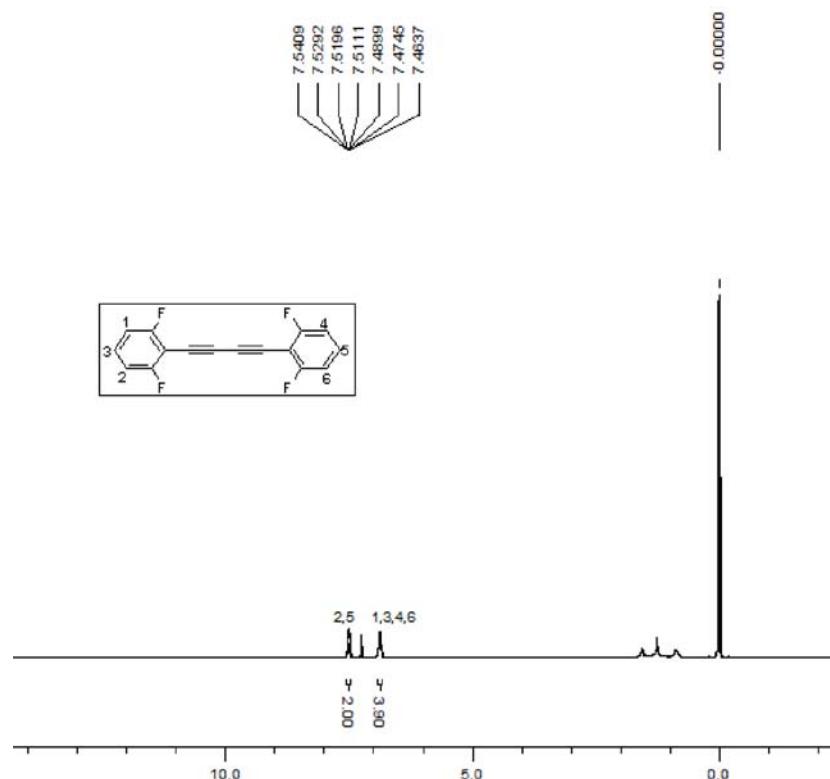
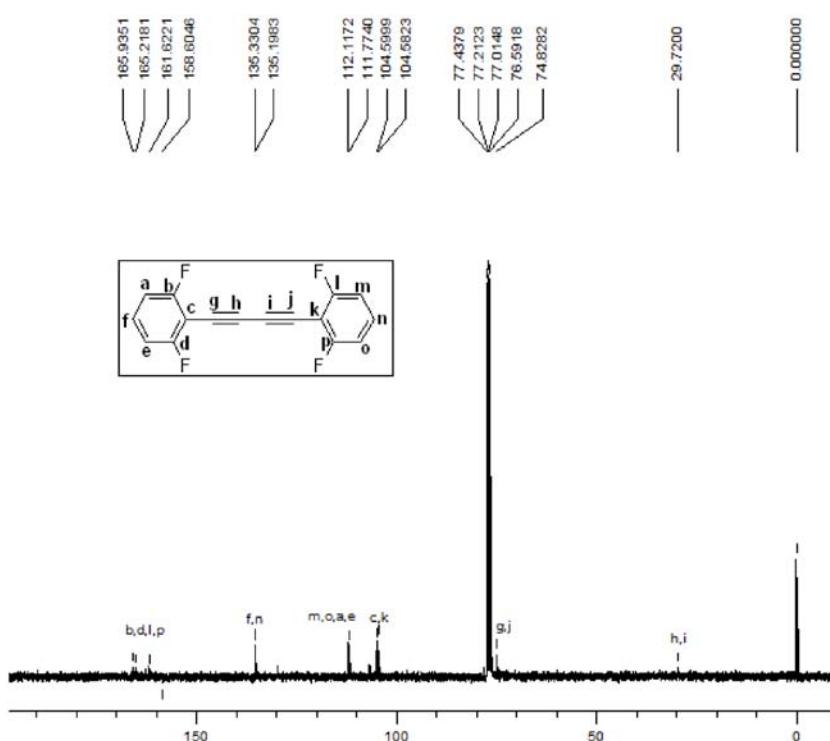
**Figure S20.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **1j**.



**Figure S21.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2a**.



**Figure S22.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2a**.

**Figure S23.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2b**.**Figure S24.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2b**.

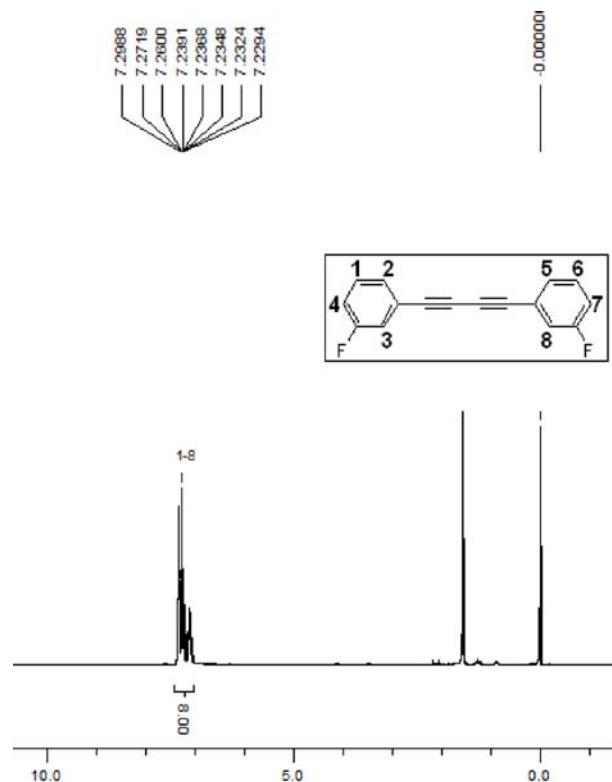


Figure S25.  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2c**.

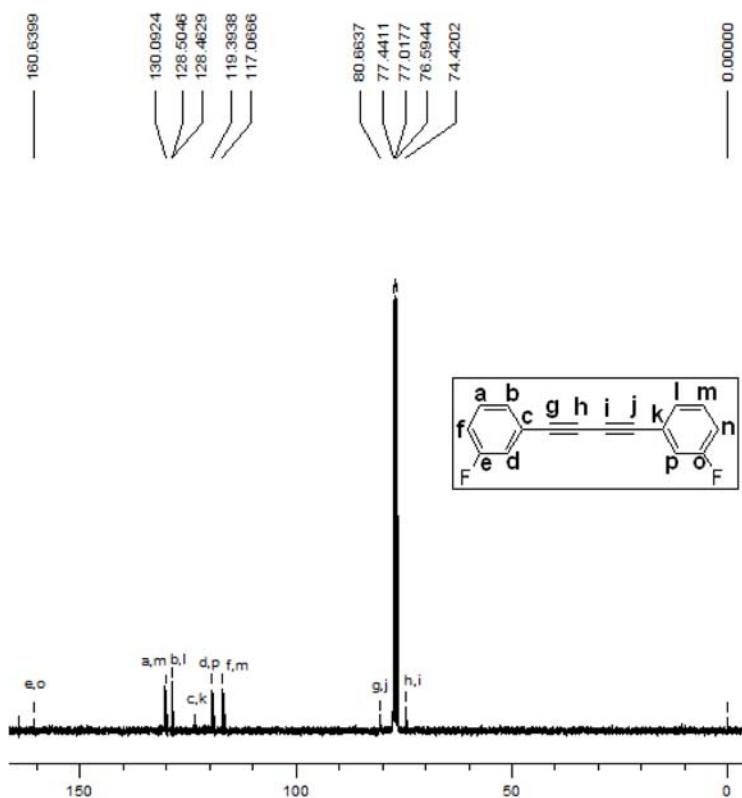
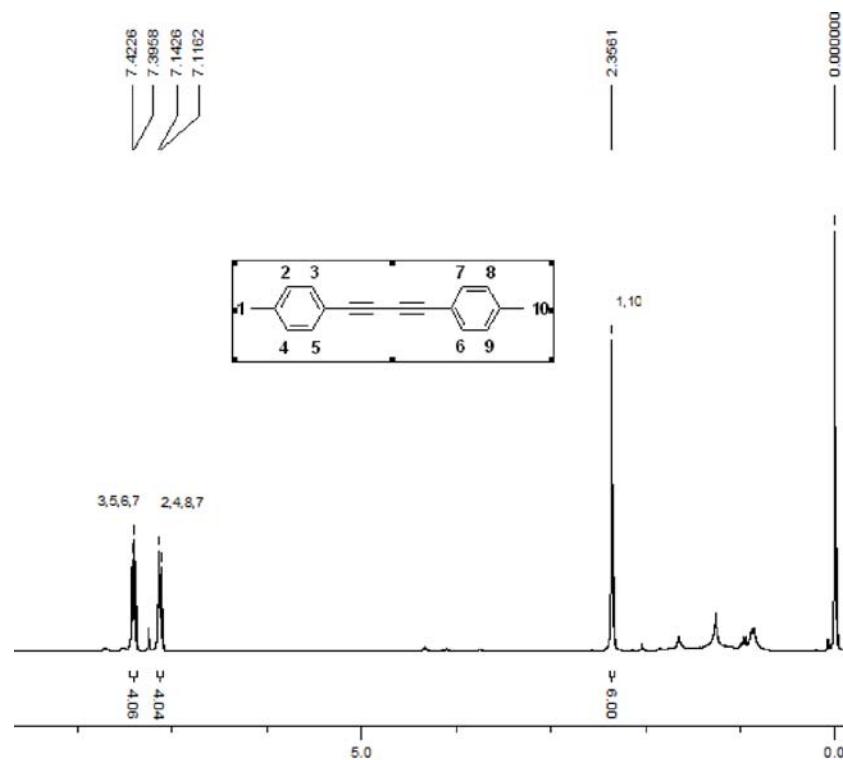
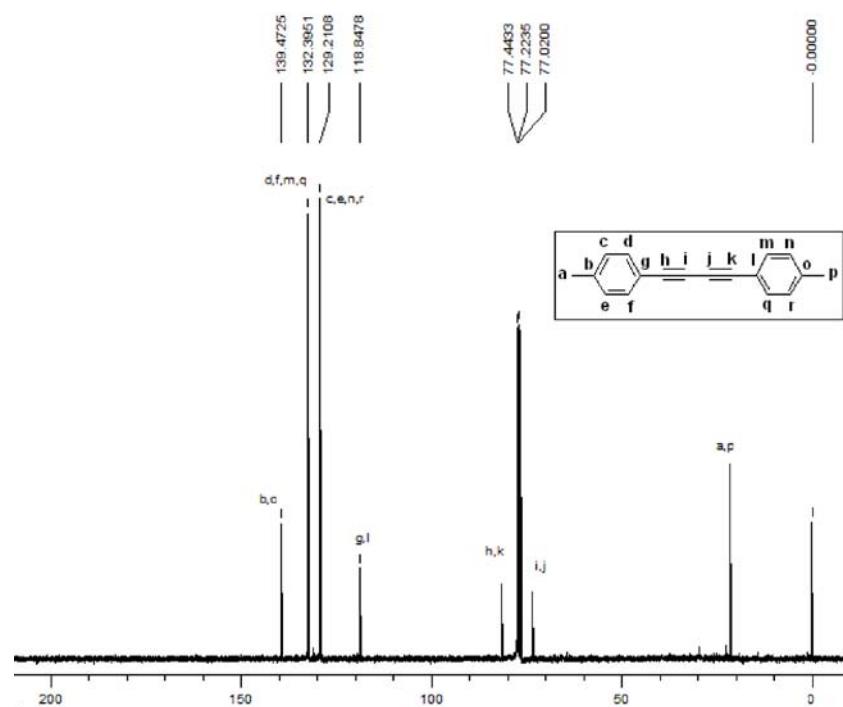
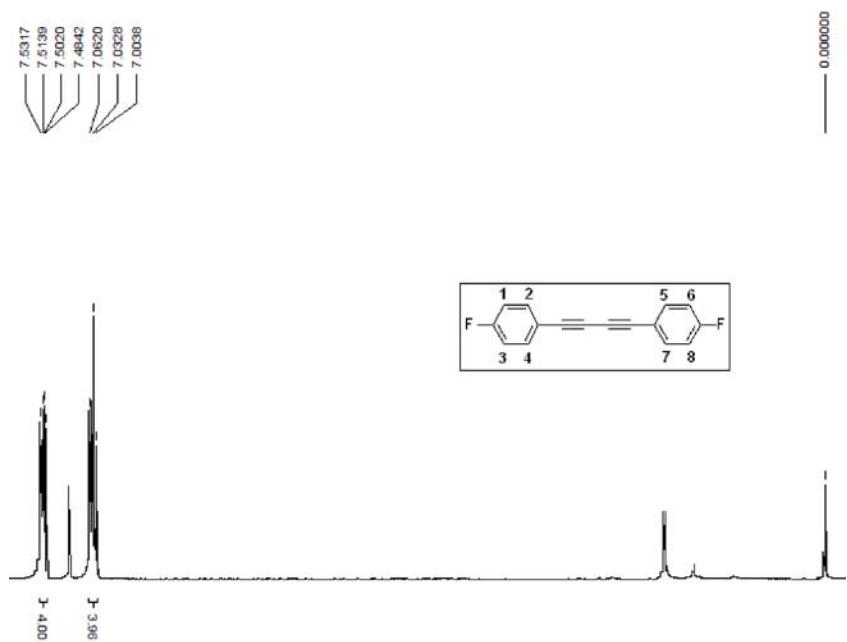
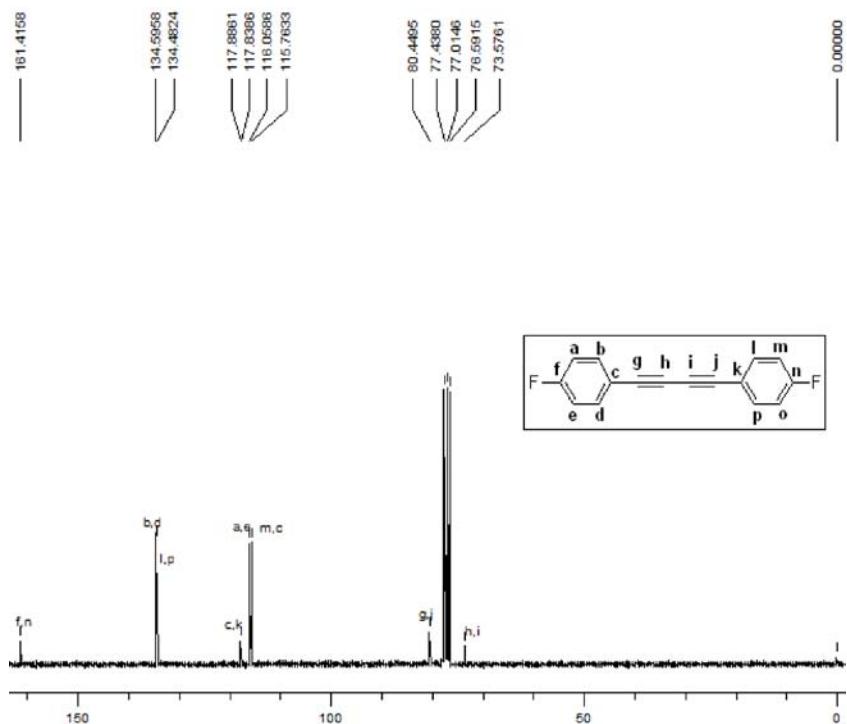


Figure S26.  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2c**.

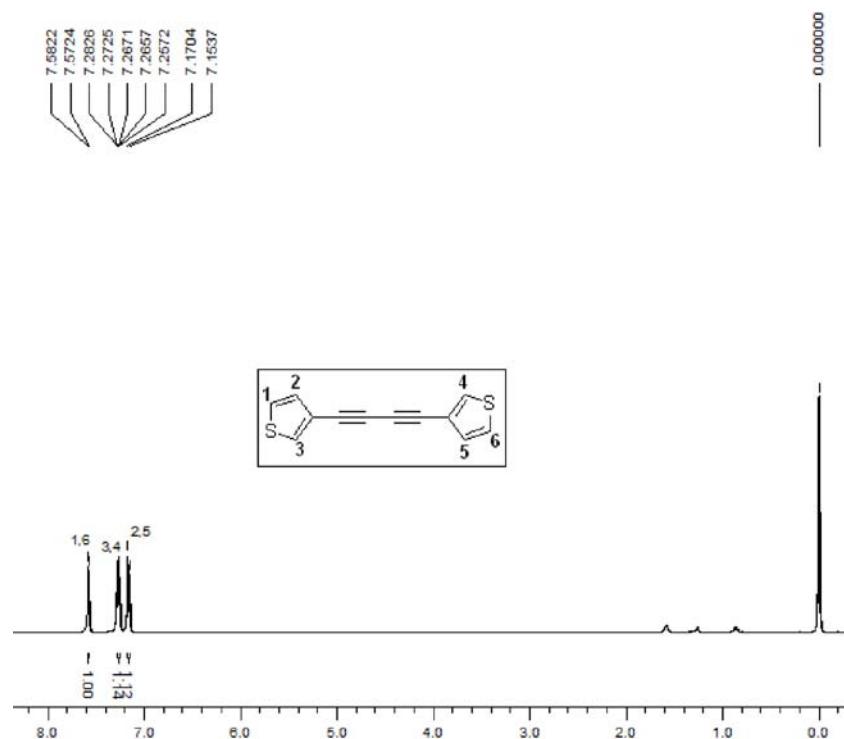
**Figure S27.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2d**.**Figure S28.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2d**.



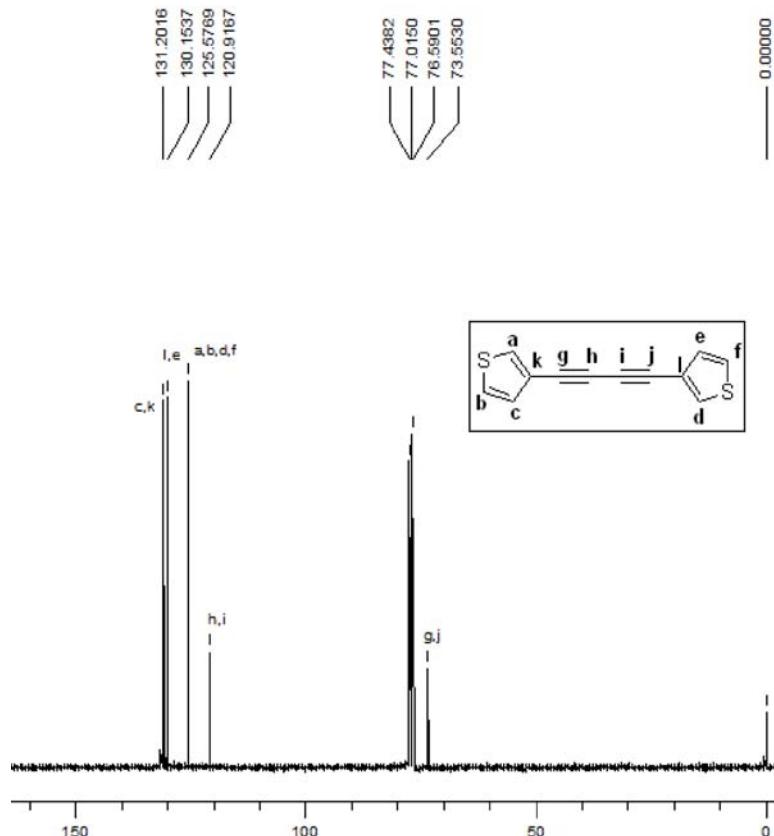
**Figure S29.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2e**.



**Figure S30.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2e**.



**Figure S31.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2f**.



**Figure S32.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2f**.

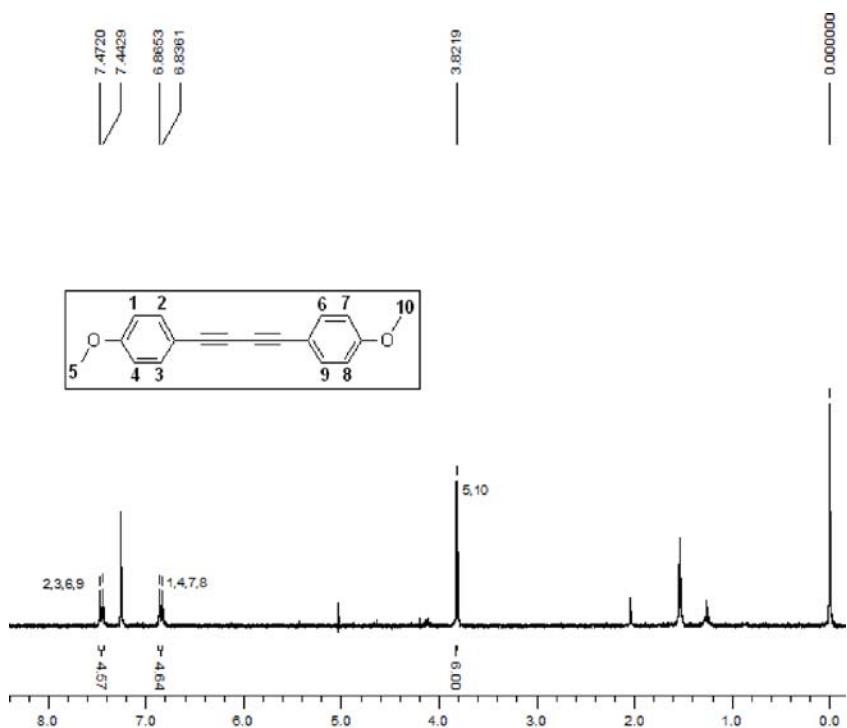


Figure S33. <sup>1</sup>H NMR (CDCl<sub>3</sub>, 300 MHz) of **2g**.

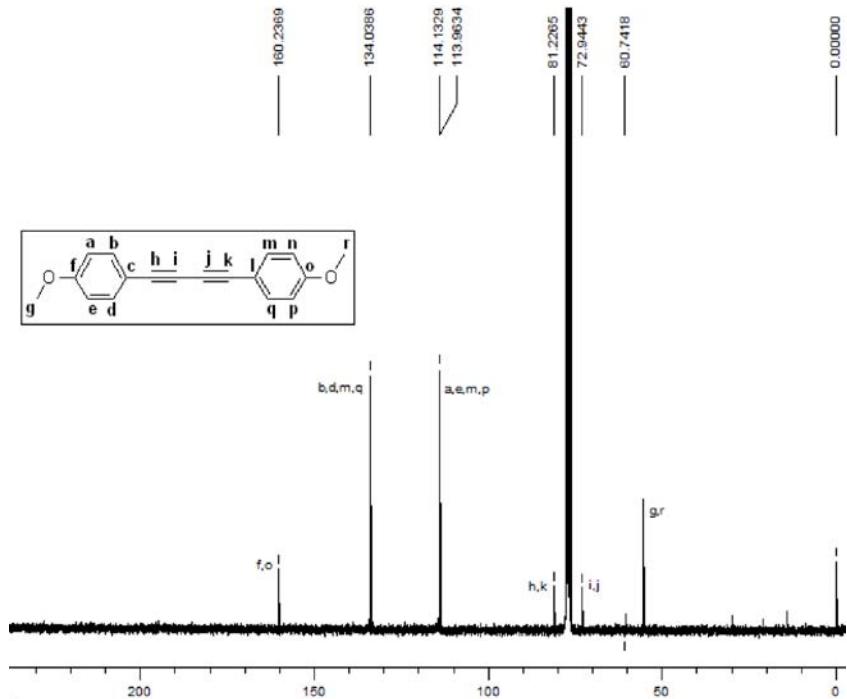
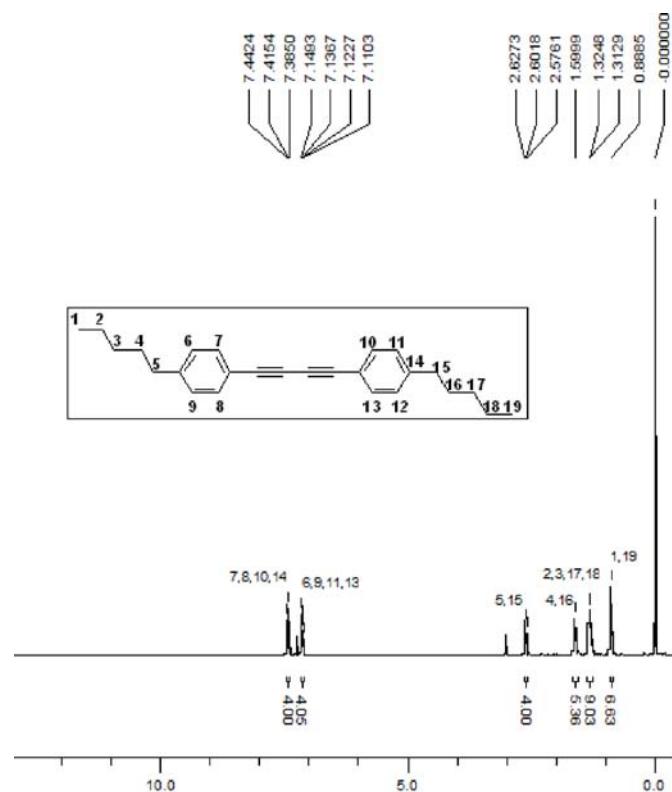
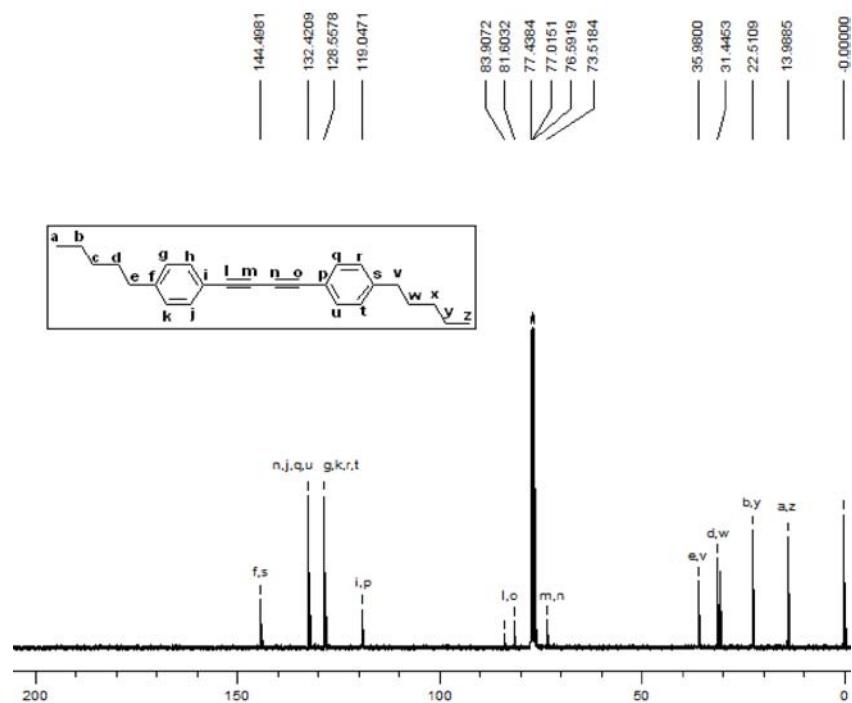
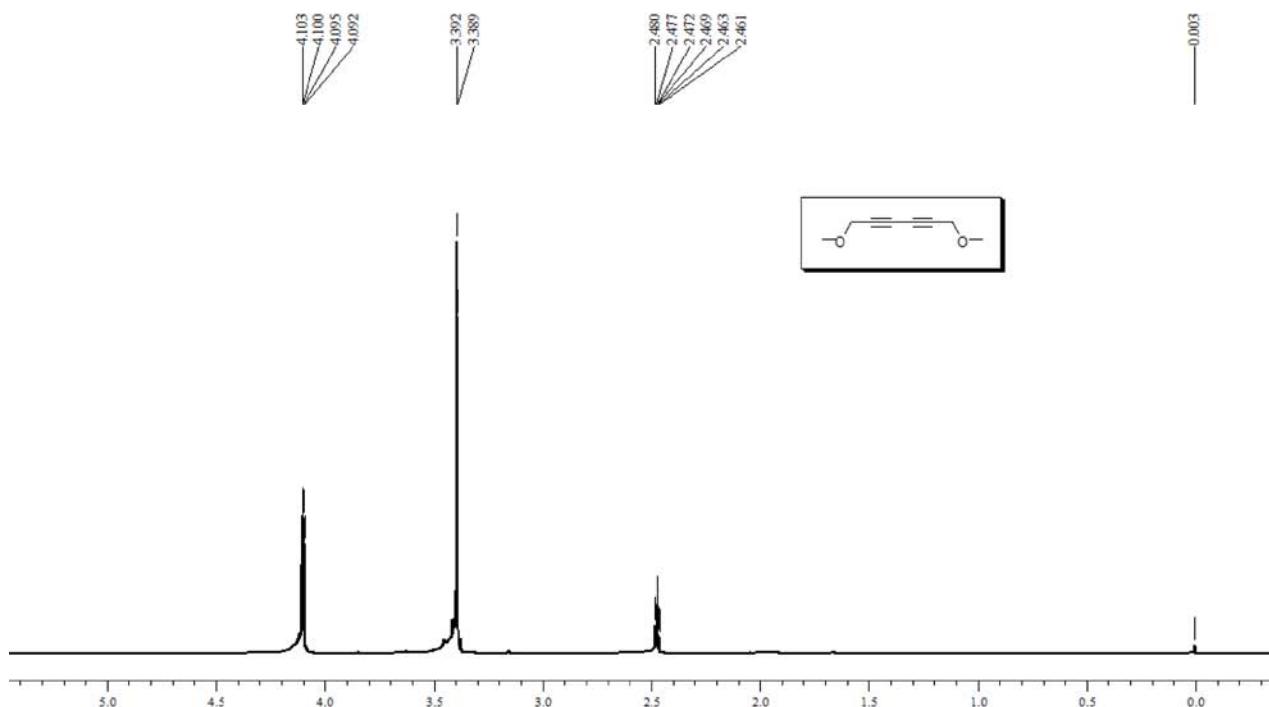
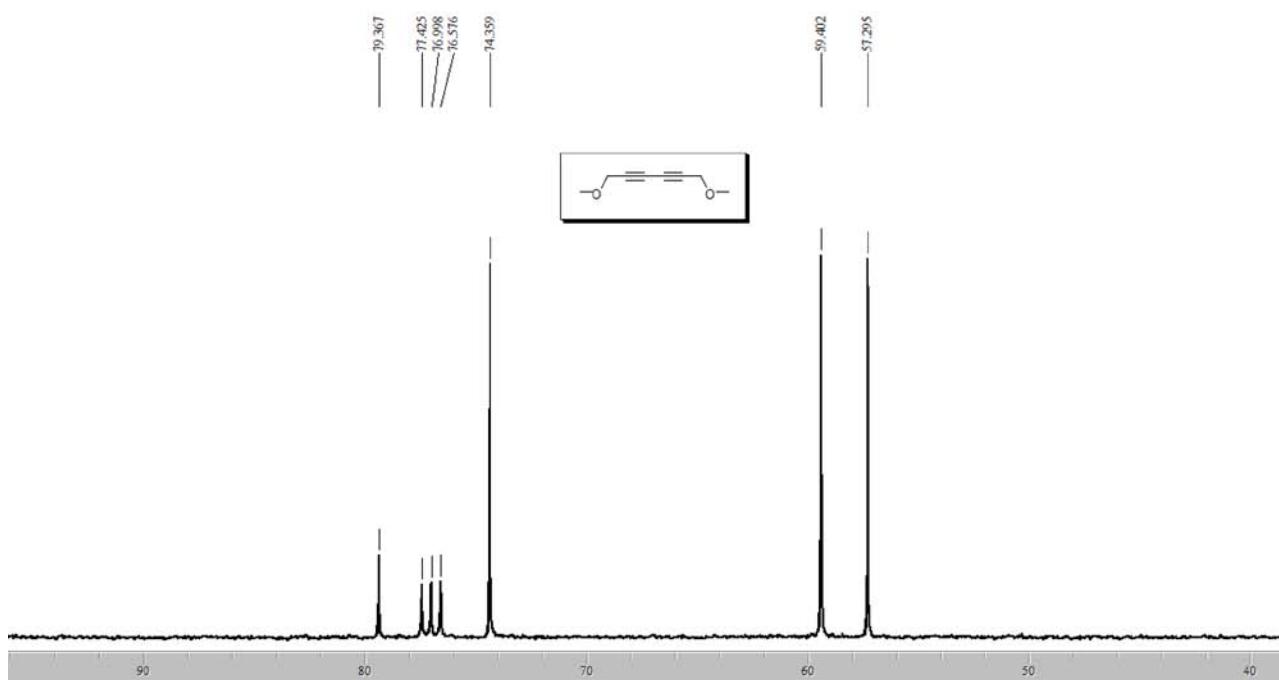


Figure S34. <sup>13</sup>C NMR (CDCl<sub>3</sub>, 300 MHz) of **2g**.

**Figure S35.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2h**.**Figure S36.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2h**.



**Figure S37.**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2i**.



**Figure S38.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 300 MHz) of **2i**.