

Supporting Information

One Pot Synthesis of Aryl Nitriles from Aromatic Aldehydes in the Water Environment

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¹H NMR spectra of compound 1b-25b.

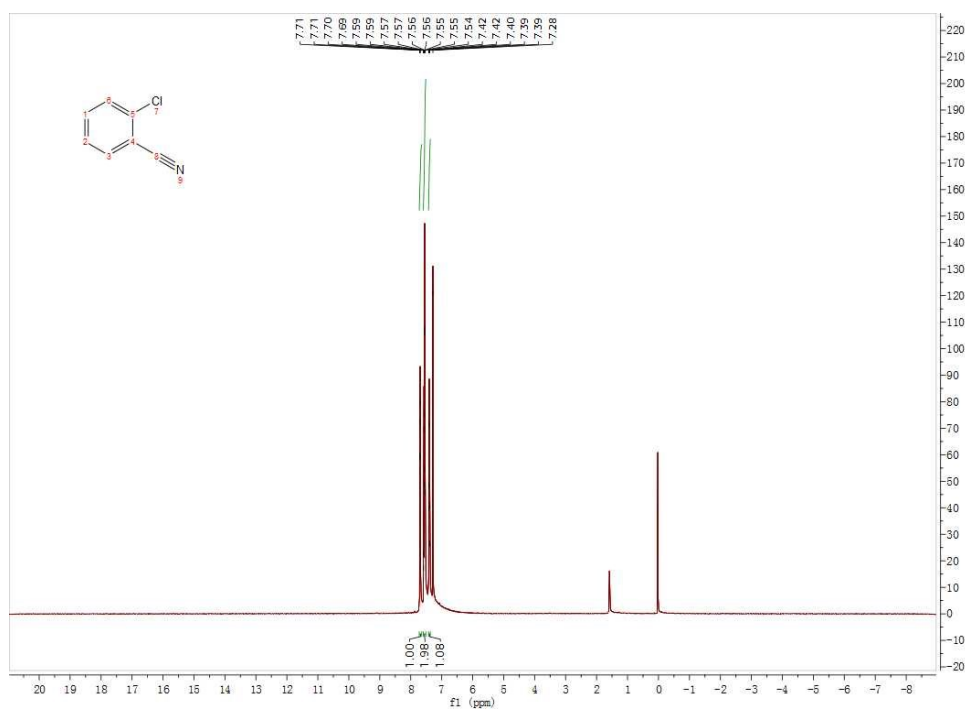


Figure S1 ¹H NMR spectra of compound 1b

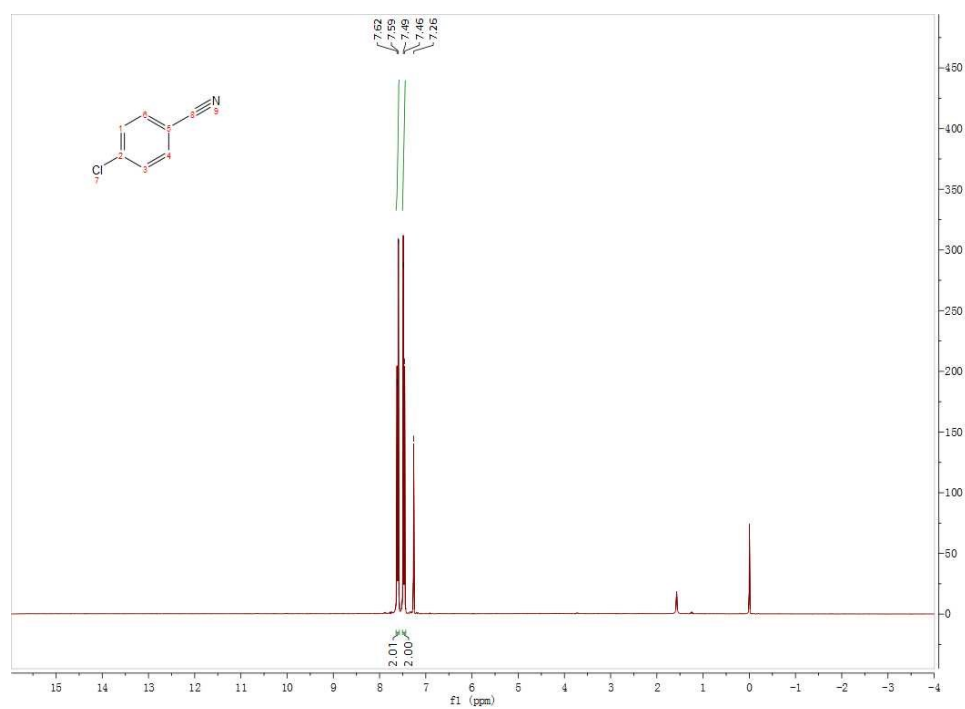


Figure S2 ¹H NMR spectra of compound 2b

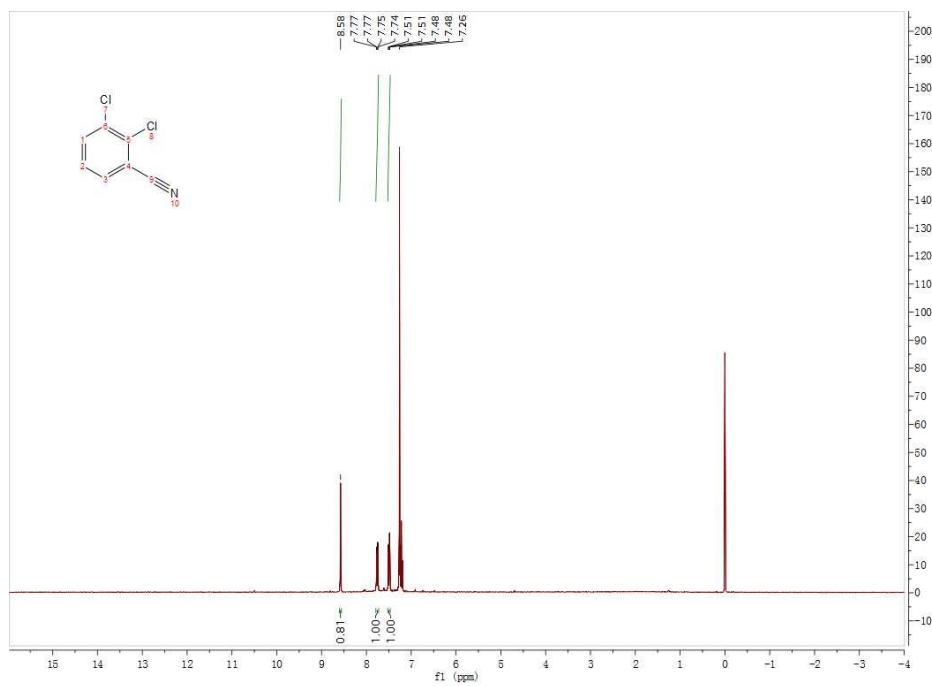


Figure S3 ^1H NMR spectra of compound 3b

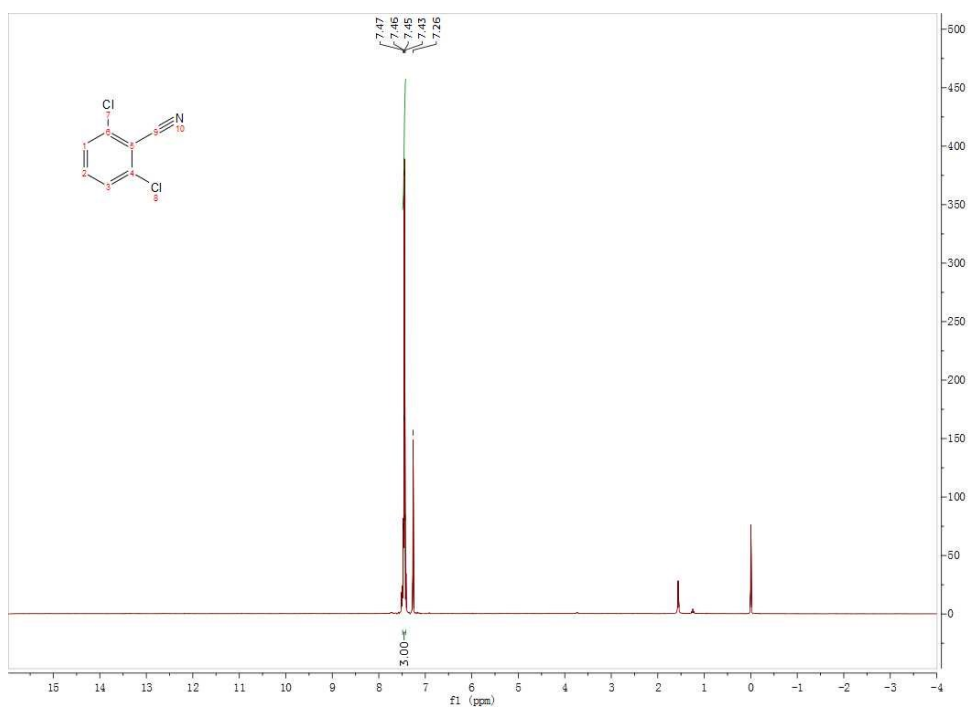


Figure S4 ^1H NMR spectra of compound 4b

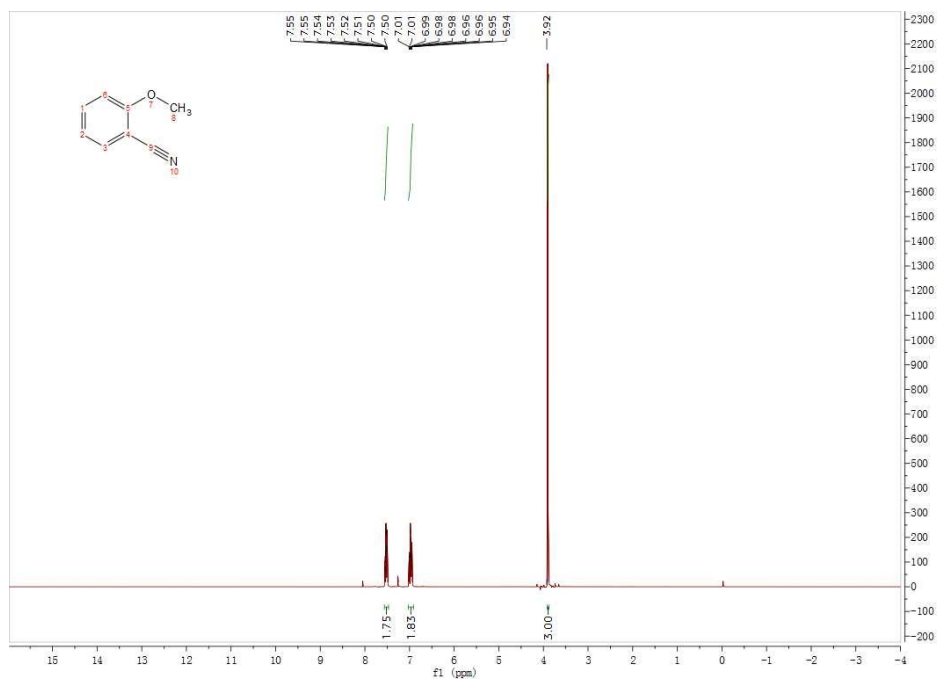


Figure S5 ^1H NMR spectra of compound 5b

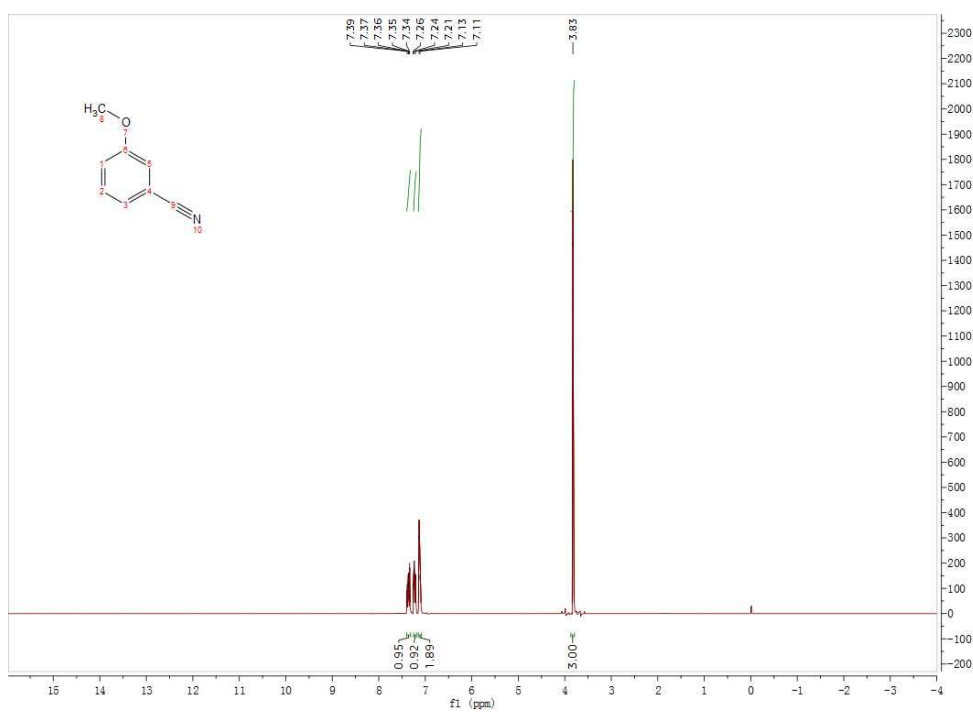


Figure S6 ^1H NMR spectra of compound 6b

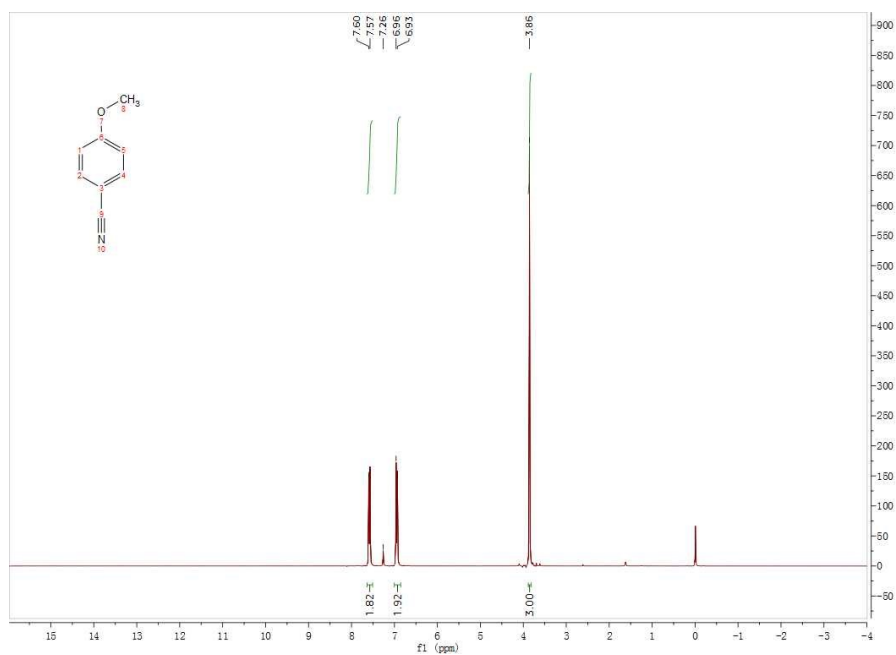


Figure S7 ^1H NMR spectra of compound 7b

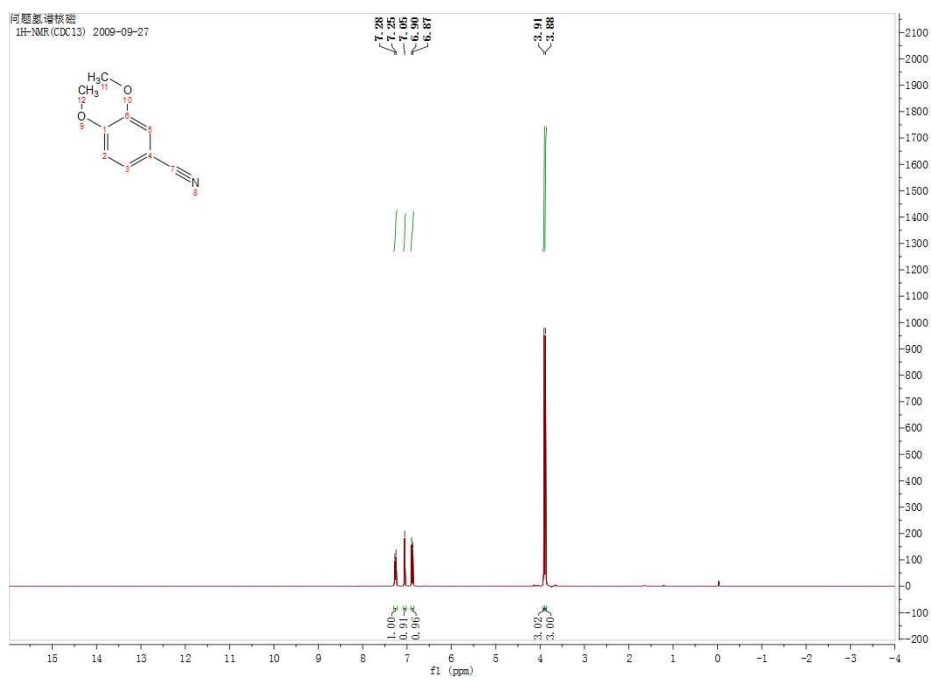


Figure S8 ^1H NMR spectra of compound 8b

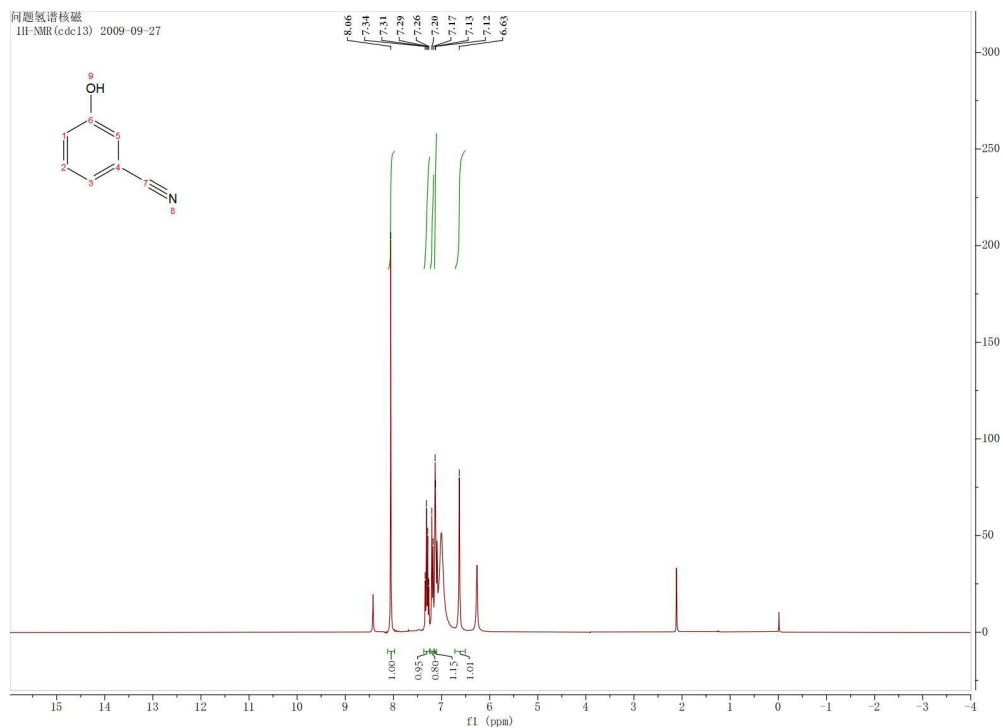


Figure S9 ¹H NMR spectra of compound 9b

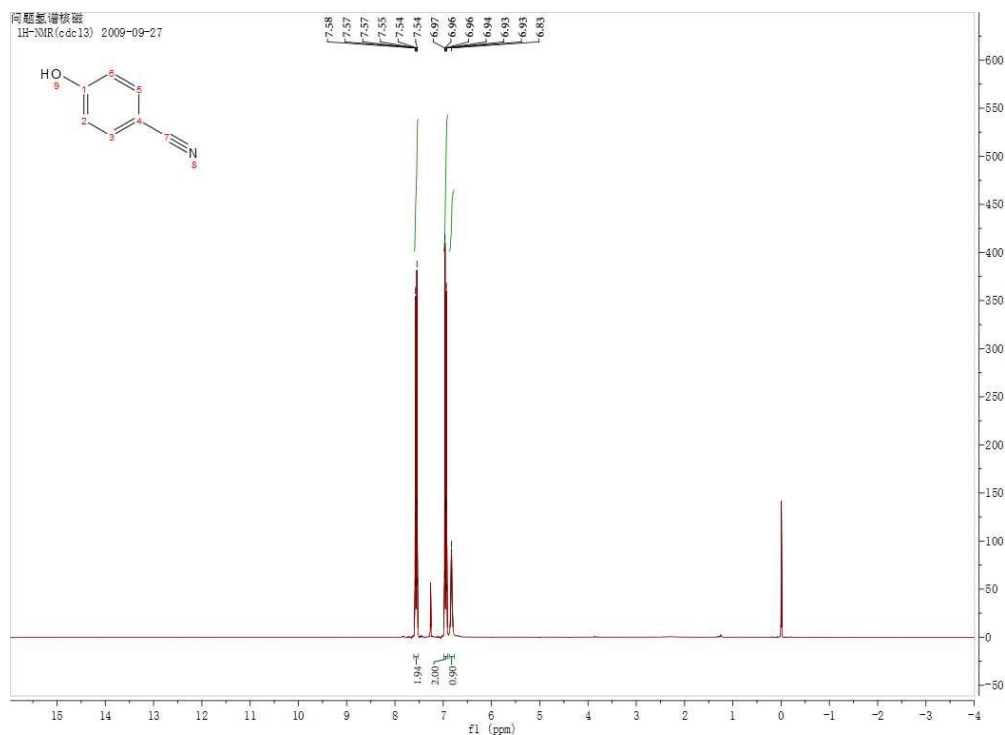


Figure S10 ¹H NMR spectra of compound 10b

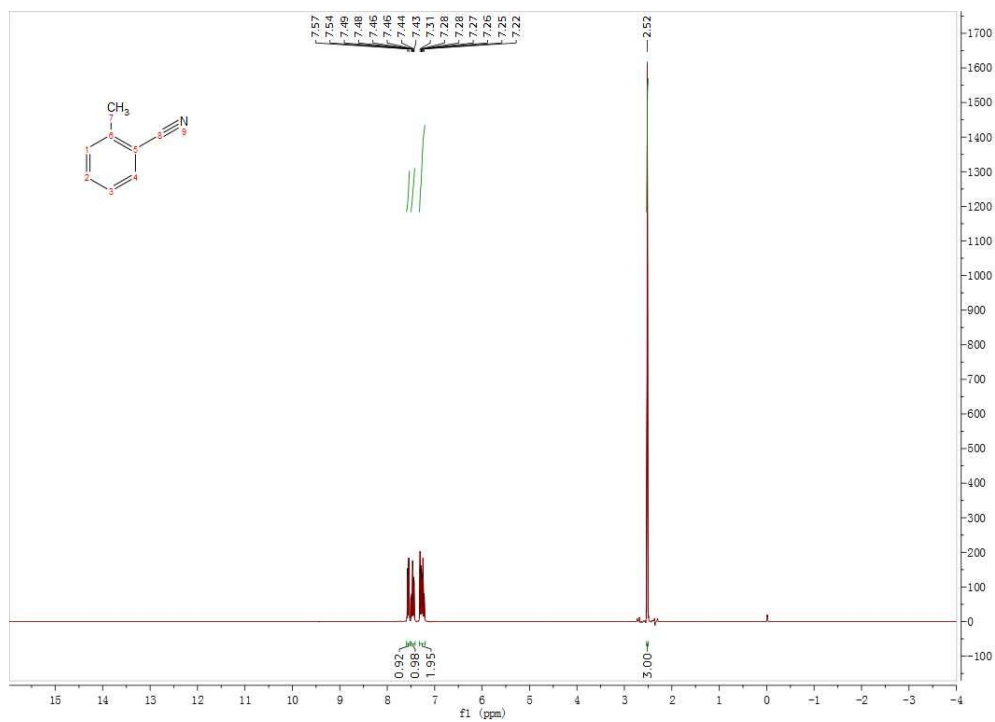


Figure S11 ^1H NMR spectra of compound 11b

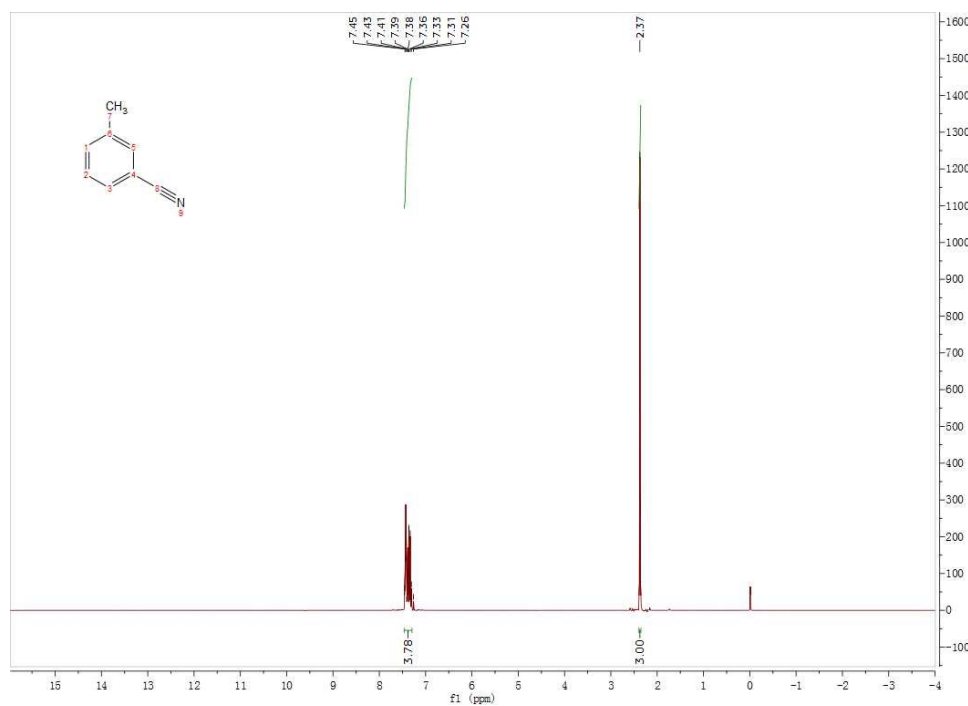


Figure S12 ^1H NMR spectra of compound 12b

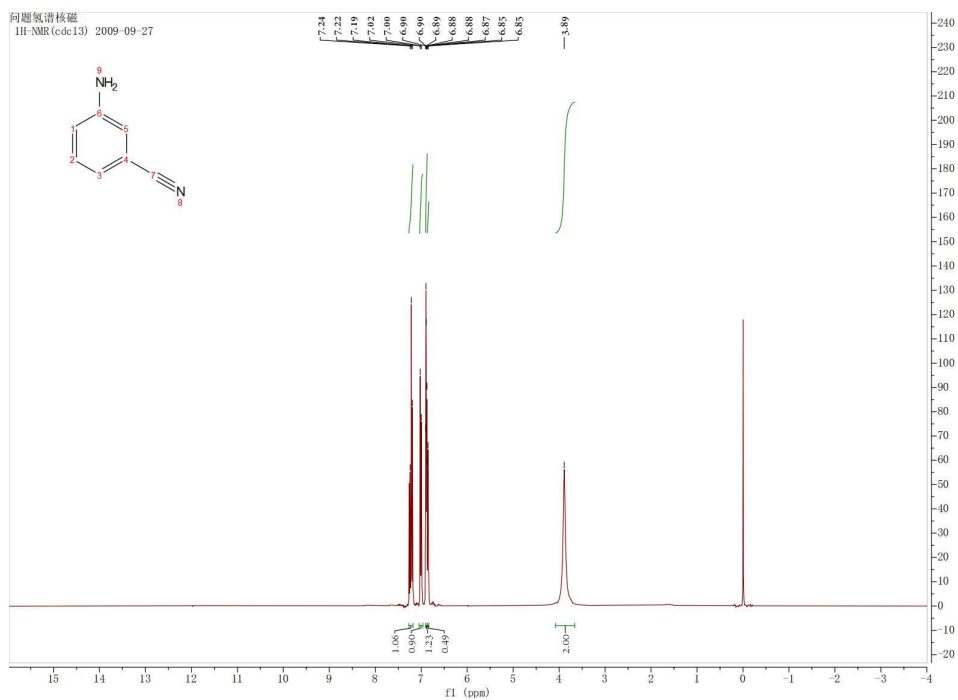


Figure S13 ¹H NMR spectra of compound 13b

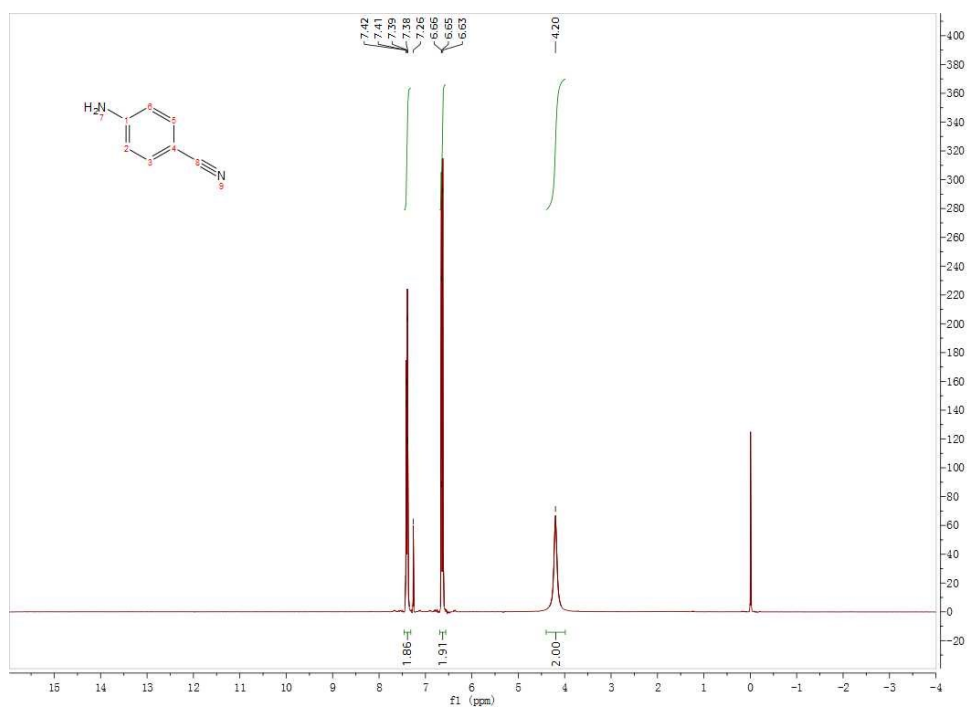


Figure S14 ¹H NMR spectra of compound 14b

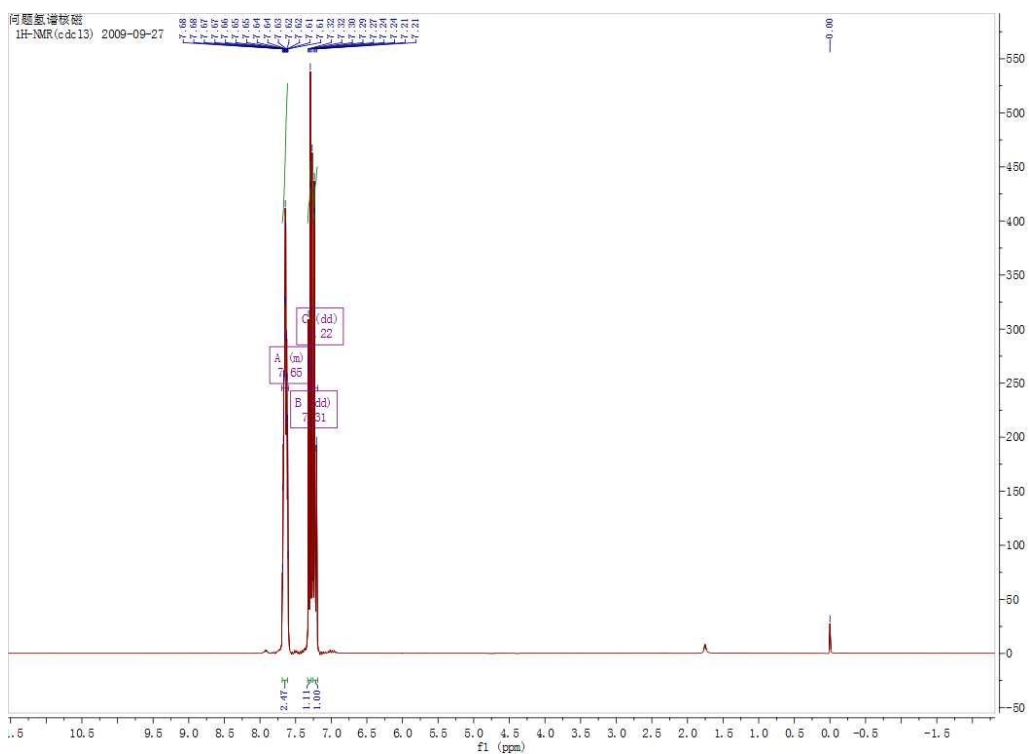


Figure S15 ^1H NMR spectra of compound 15b

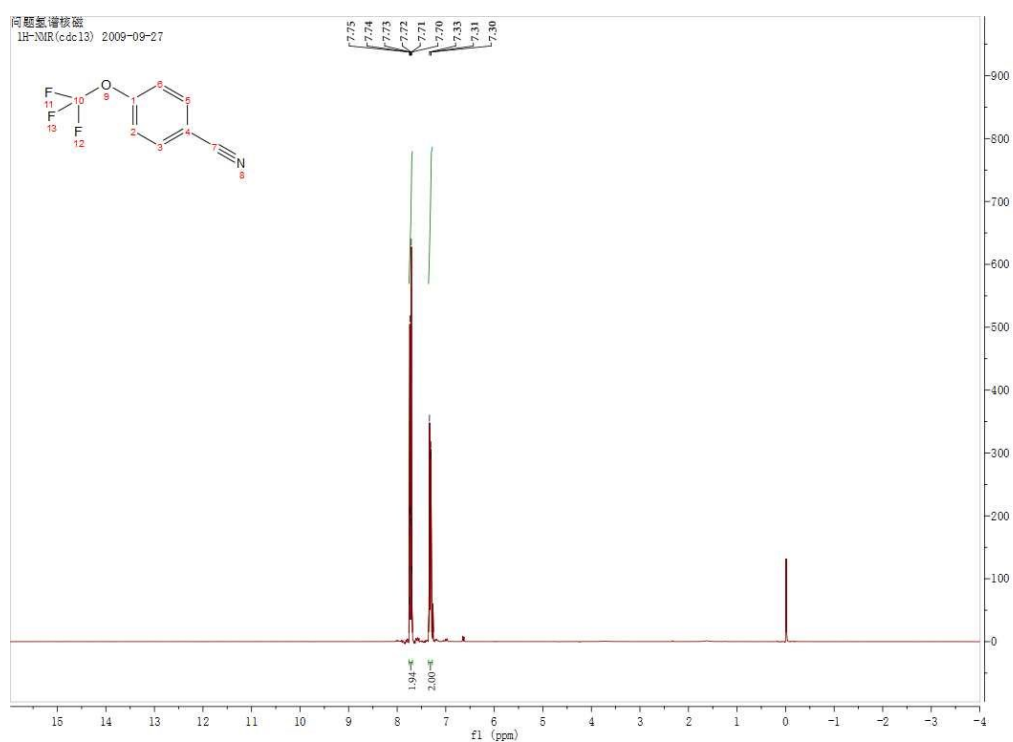


Figure S16 ^1H NMR spectra of compound 16b

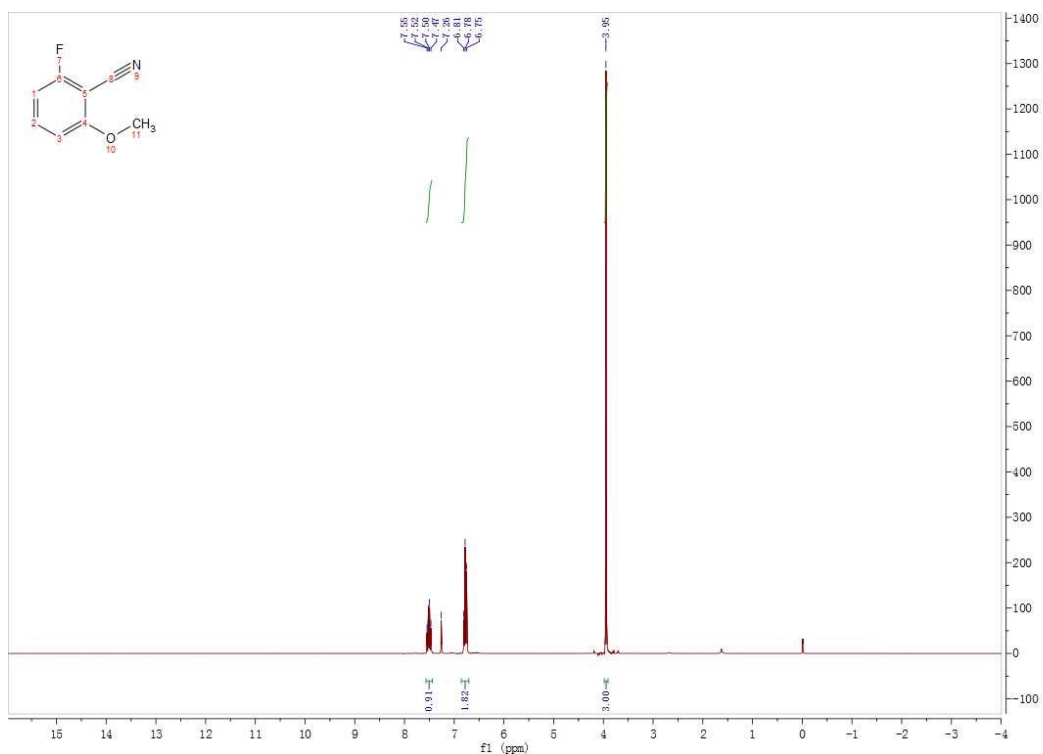


Figure S17 ¹H NMR spectra of compound 17b

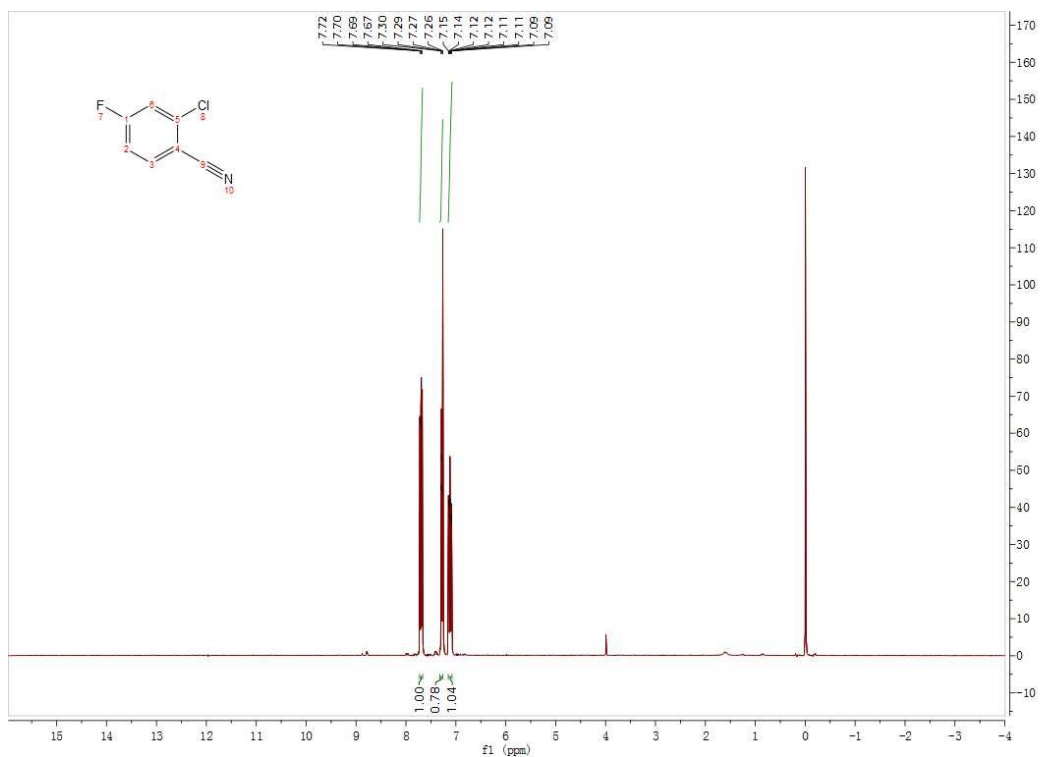


Figure S18 ¹H NMR spectra of compound 18b

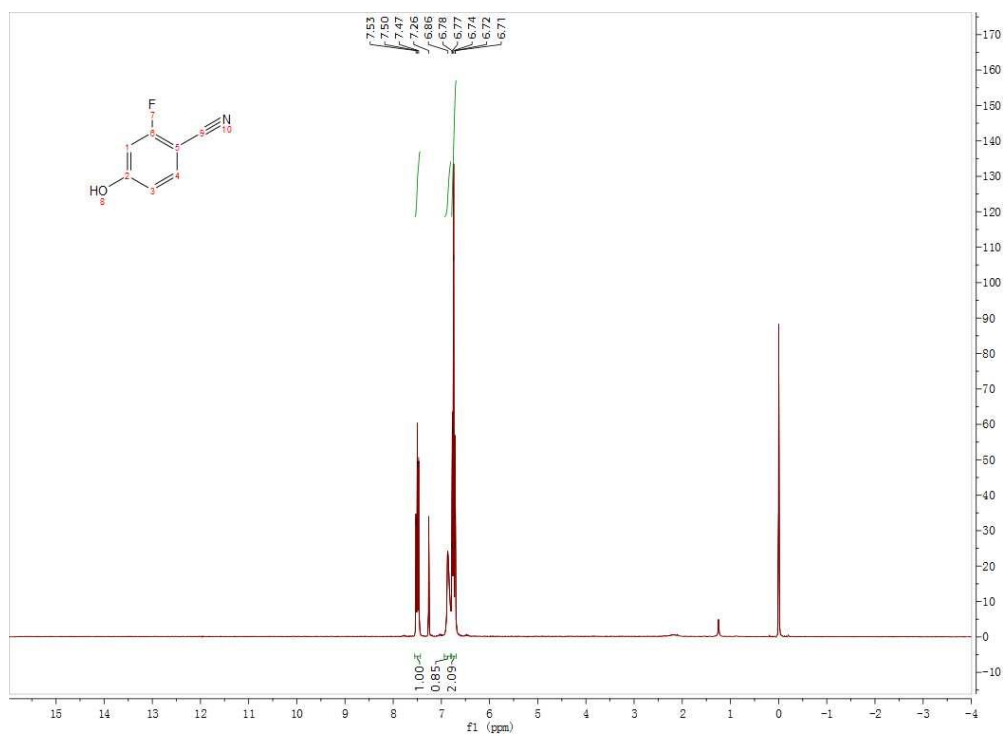


Figure S19 ^1H NMR spectra of compound 19b

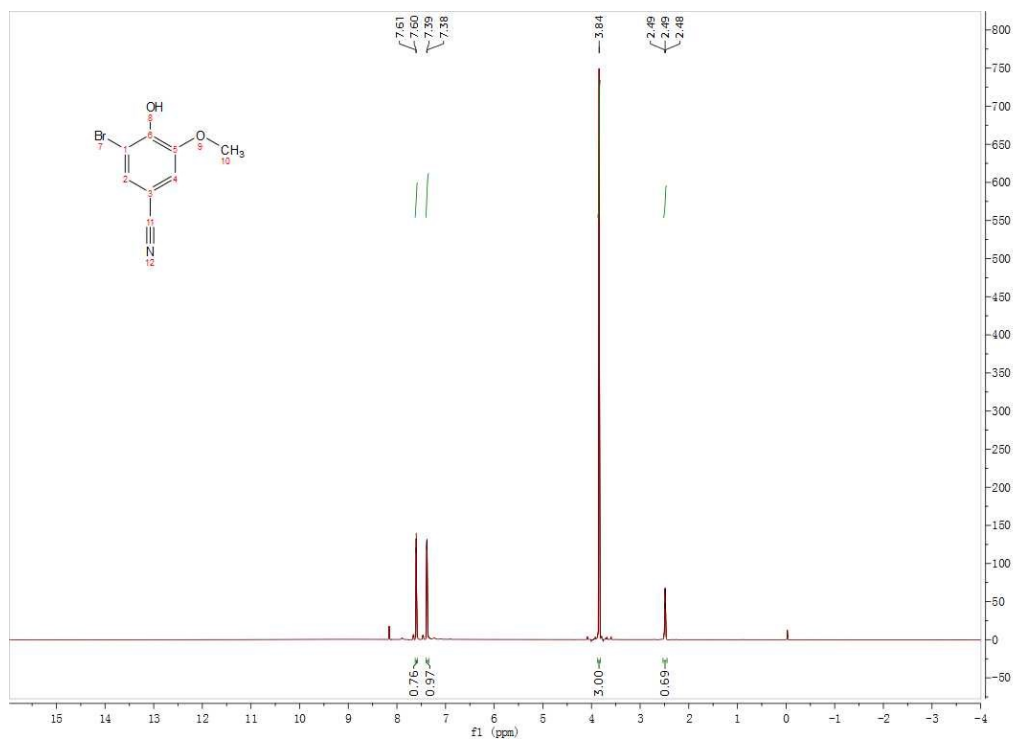


Figure S20 ^1H NMR spectra of compound 20b

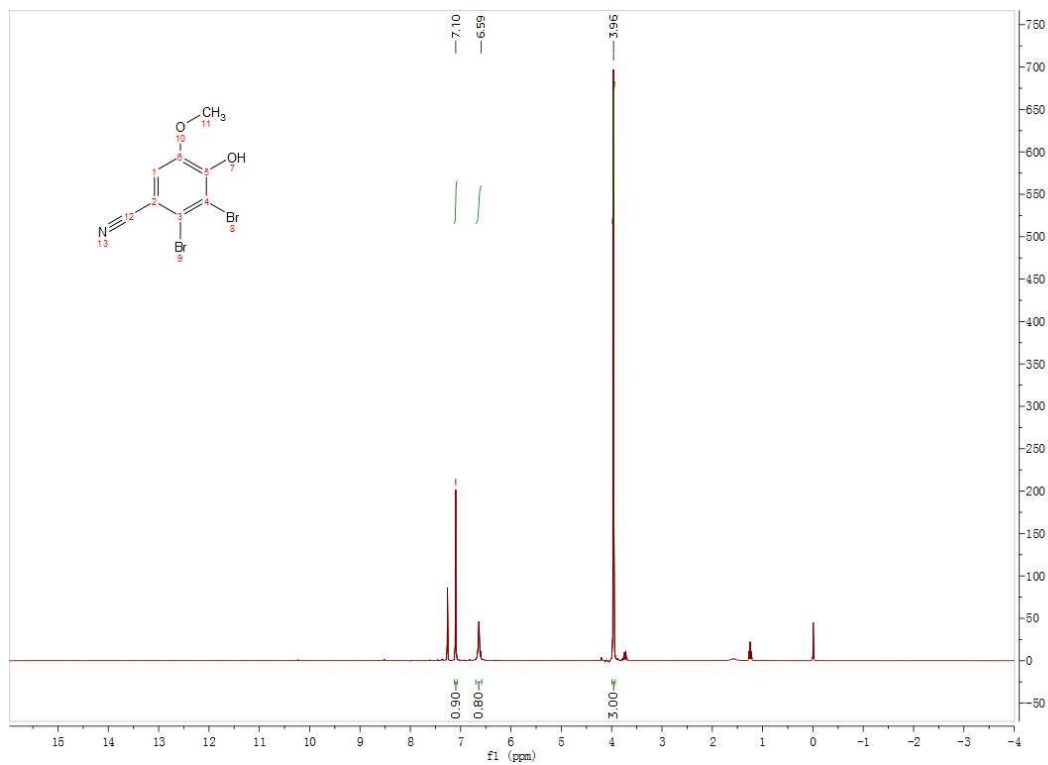


Figure S21 ¹H NMR spectra of compound 21b

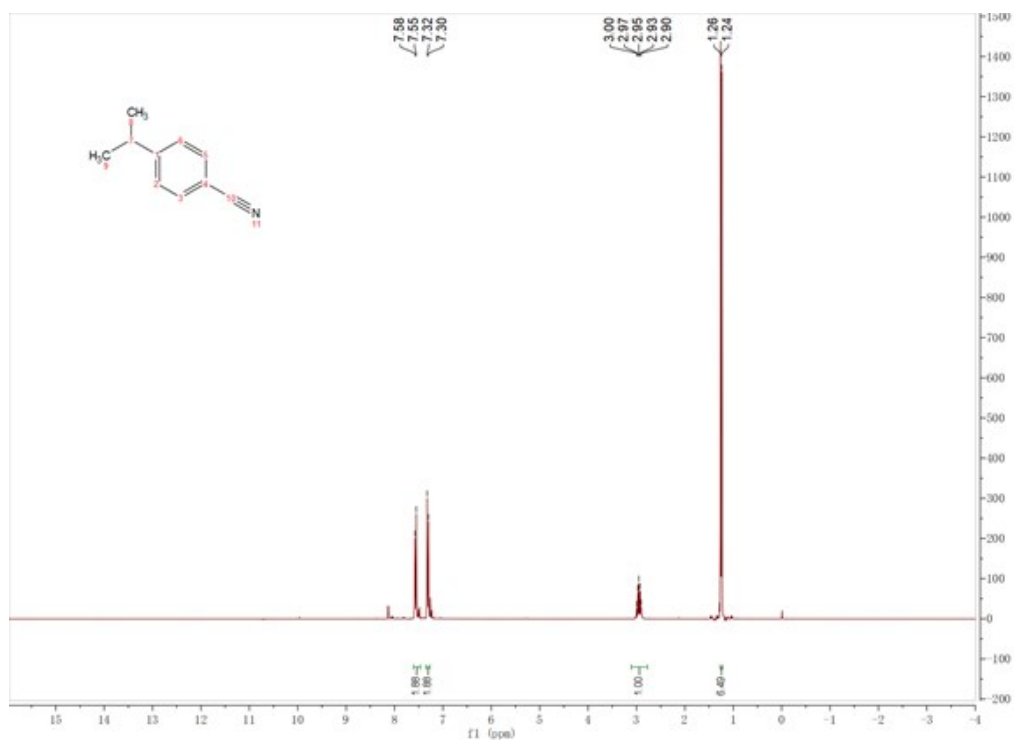


Figure S22 ¹H NMR spectra of compound 22b

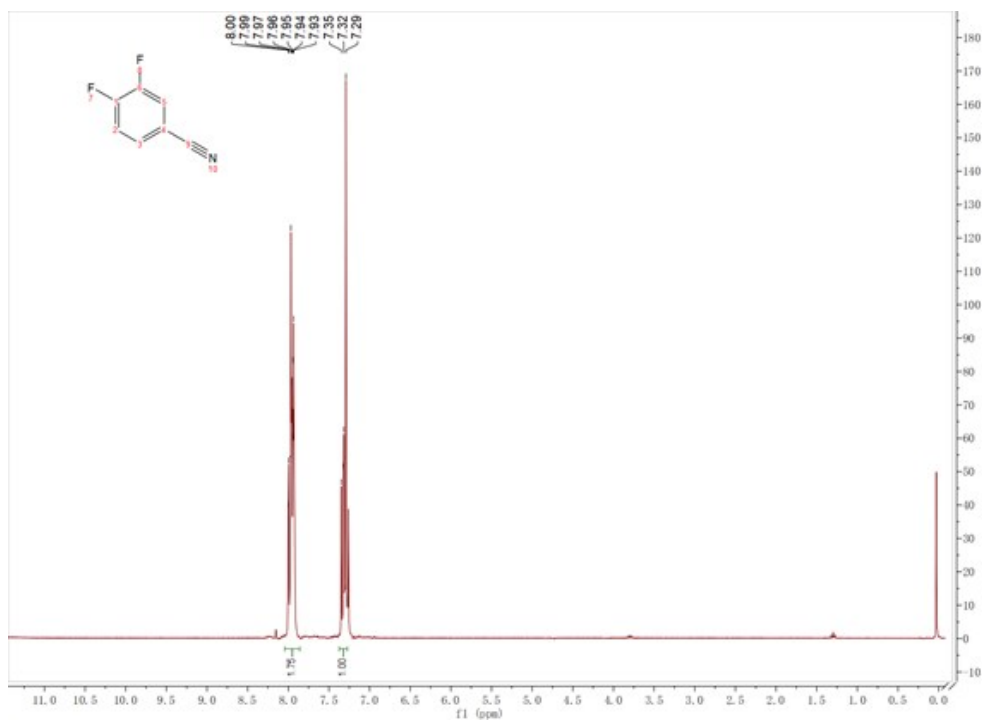


Figure S23 ^1H NMR spectra of compound 23b

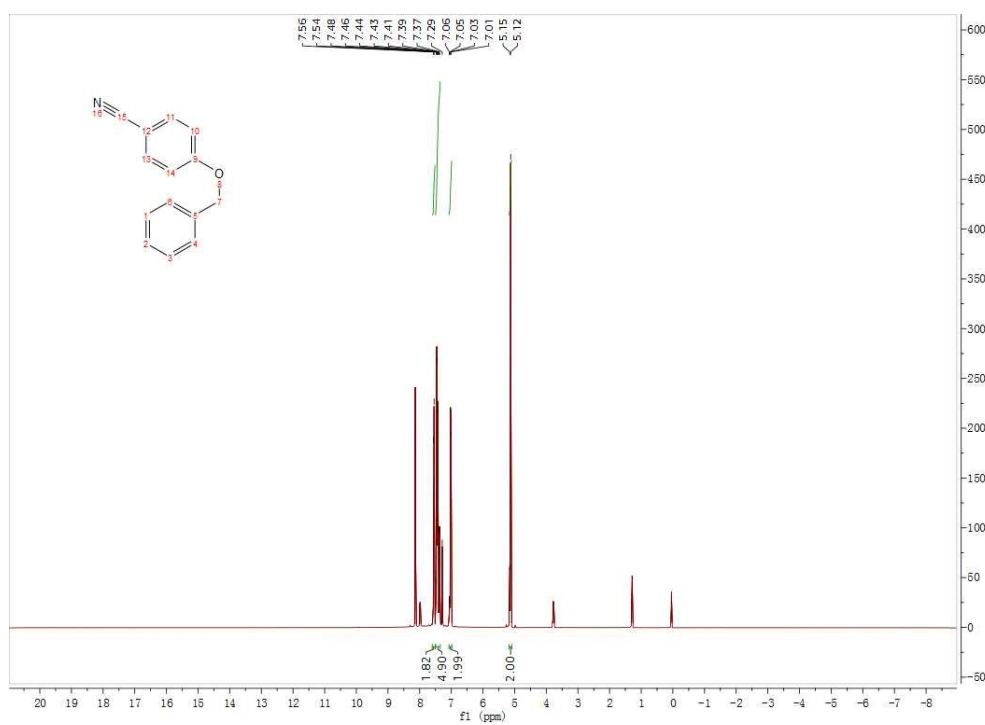


Figure S24 ^1H NMR spectra of compound 24b

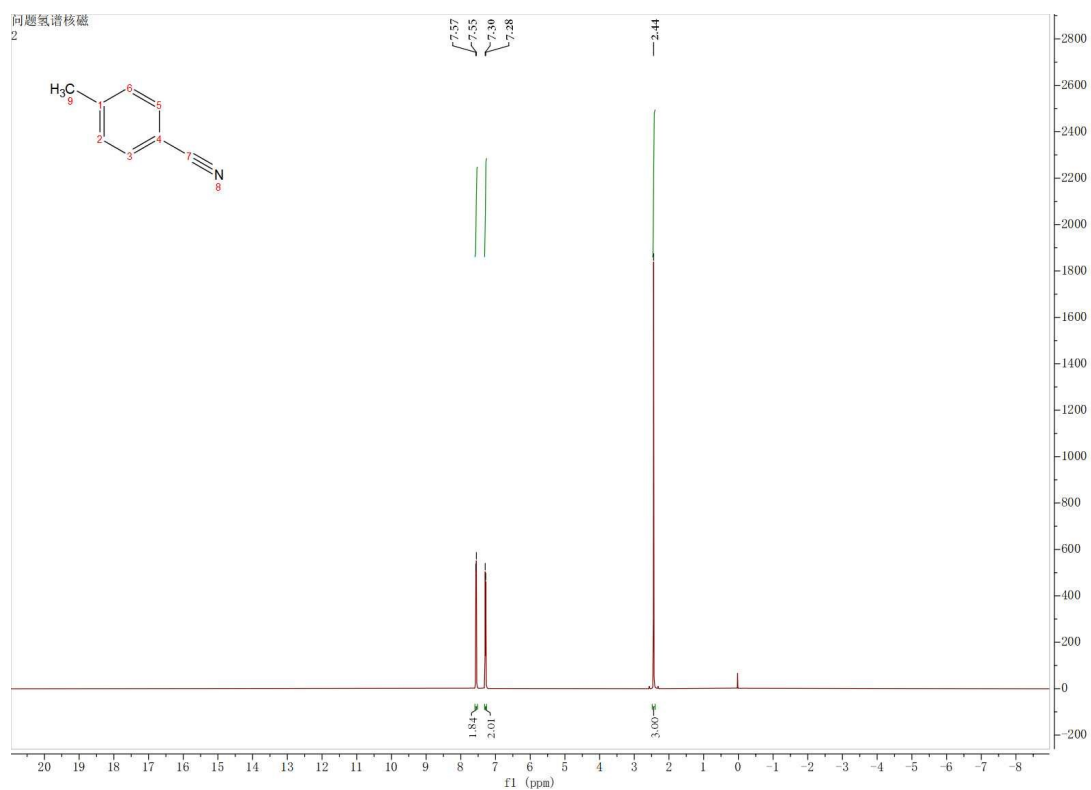


Figure S25 ^1H NMR spectra of compound 25b

^1H NMR spectra of the intermediate products.

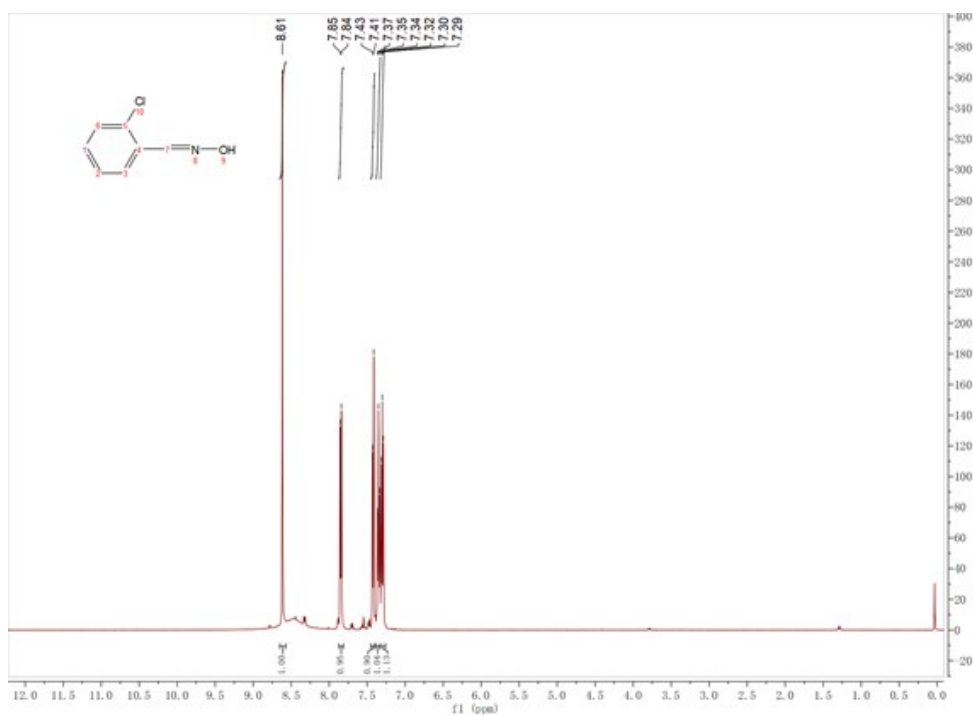


Figure S26 ^1H NMR spectra of 1A

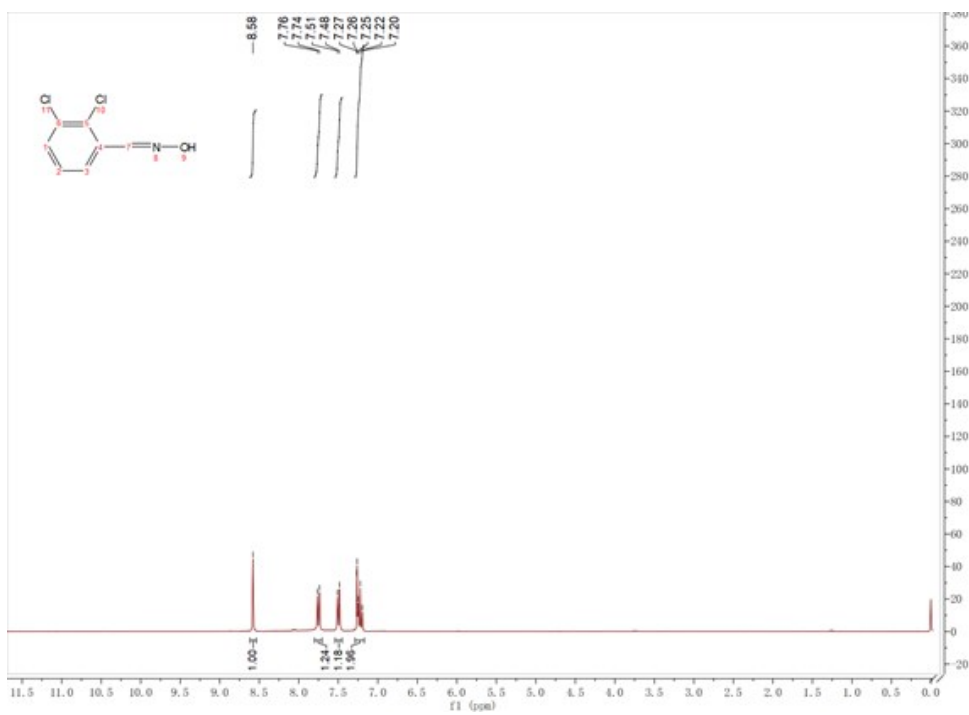


Figure S27 ¹H NMR spectra of 3A

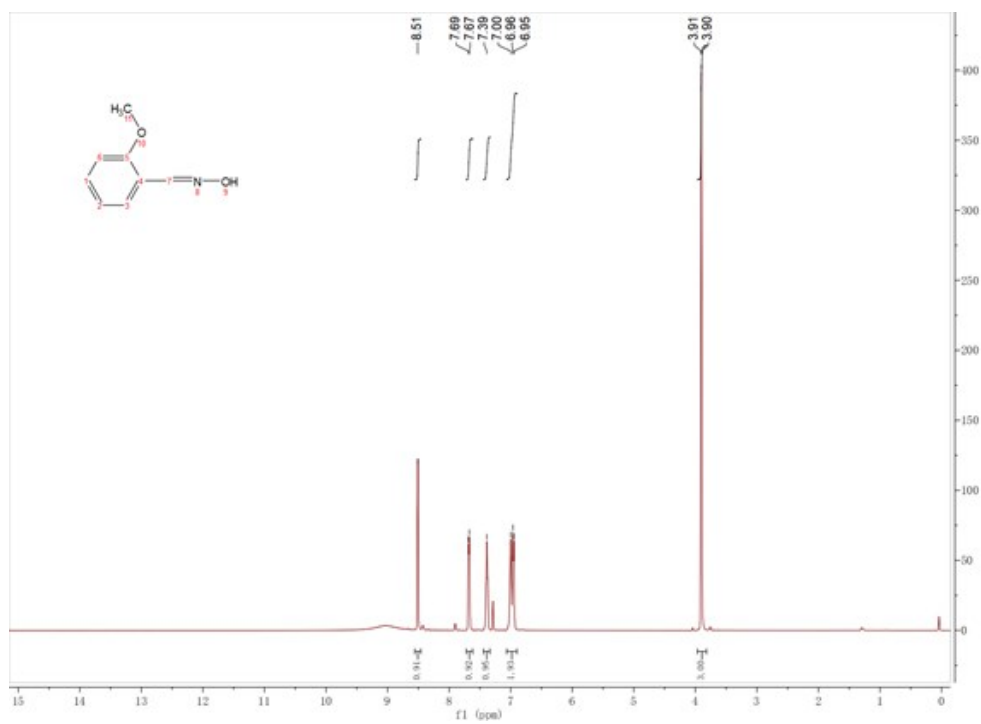


Figure S28 ¹H NMR spectra of 5A

¹³C NMR spectra of compound 1b-25b.

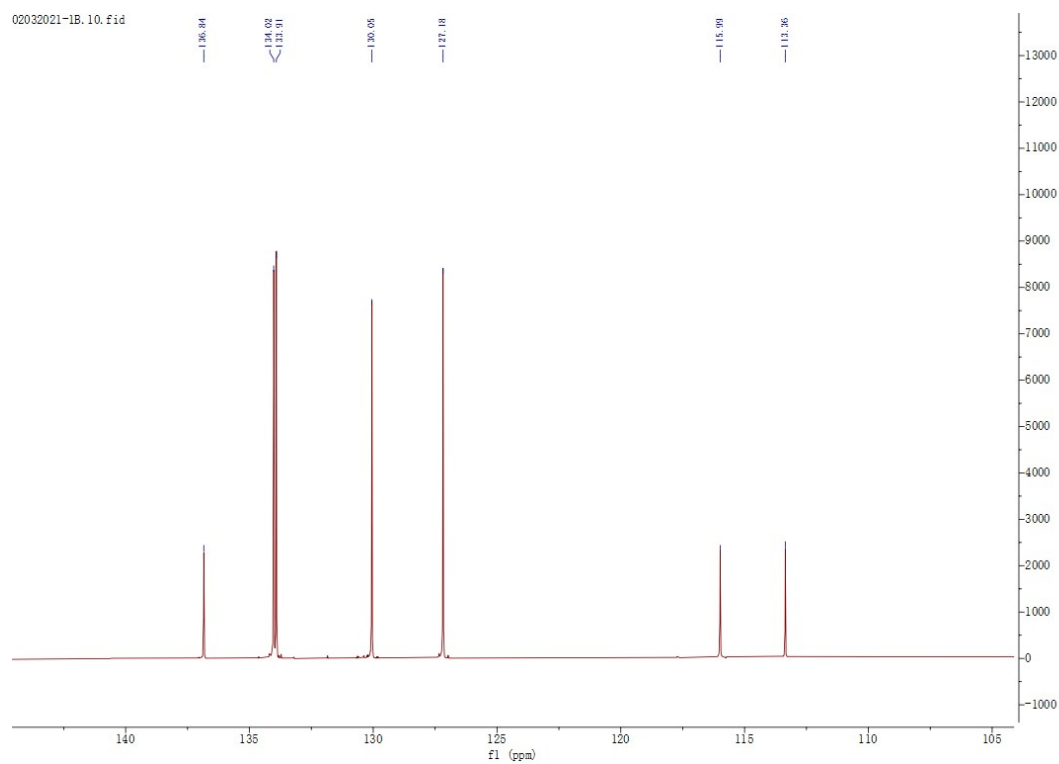


Figure S29 ¹³C NMR spectra of compound 1b

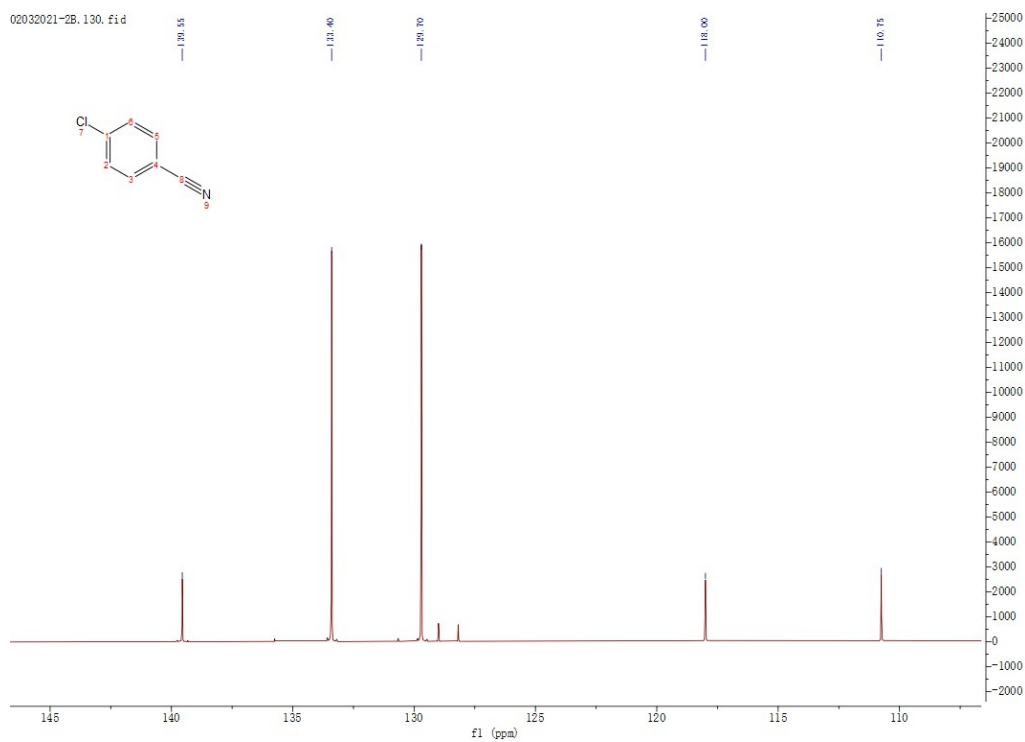


Figure S30 ¹³C NMR spectra of compound 2b

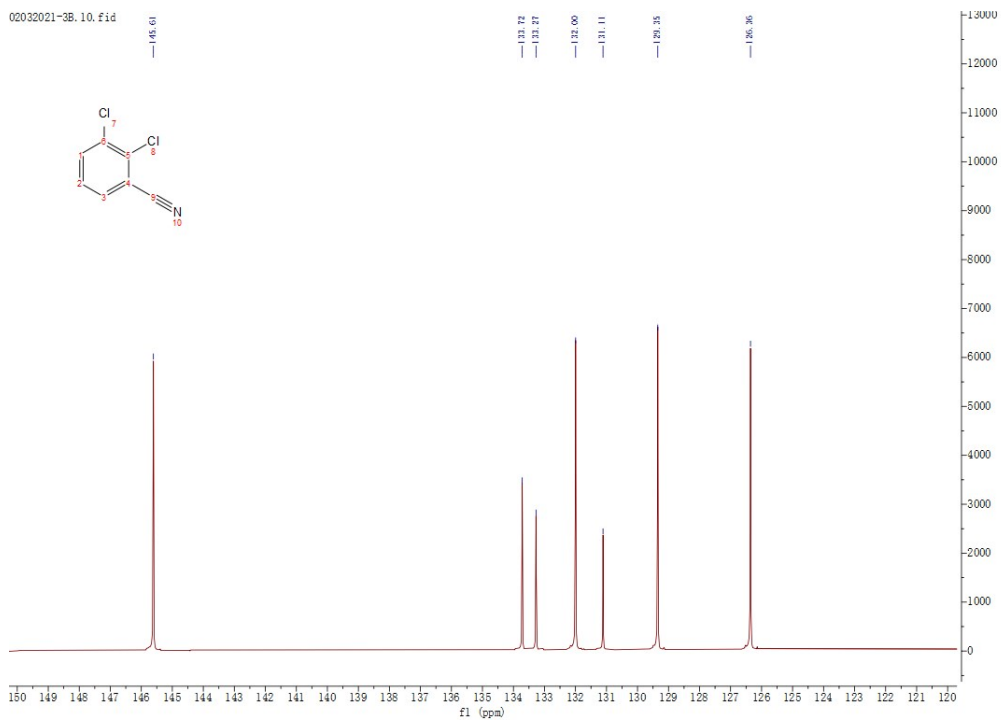


Figure S31 ^{13}C NMR spectra of compound 3b

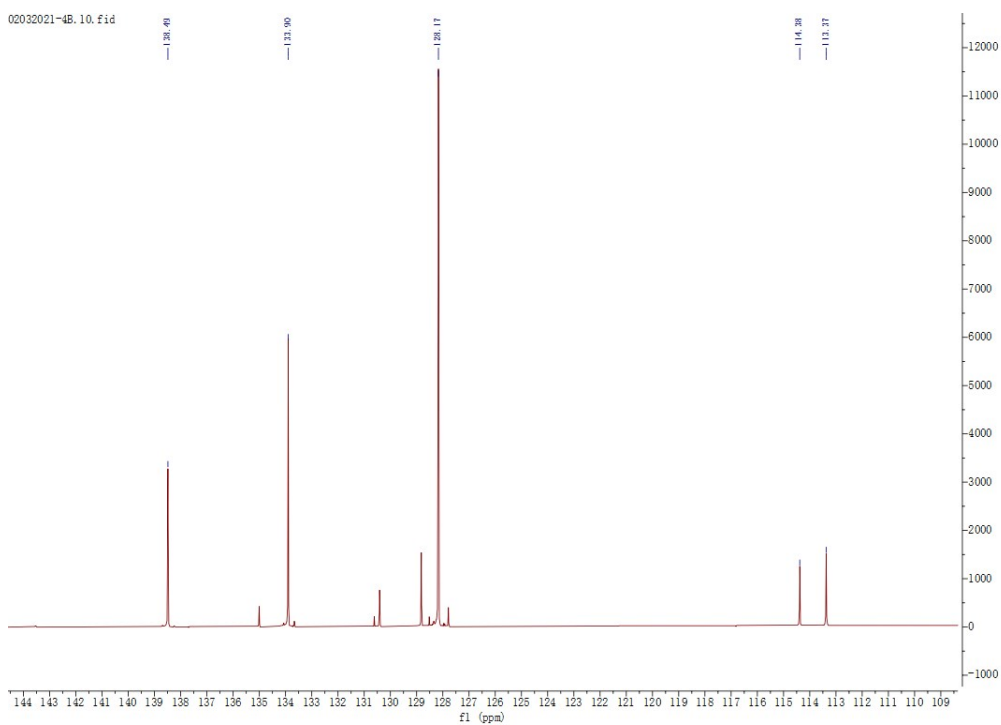


Figure S32 ^{13}C NMR spectra of compound 4b

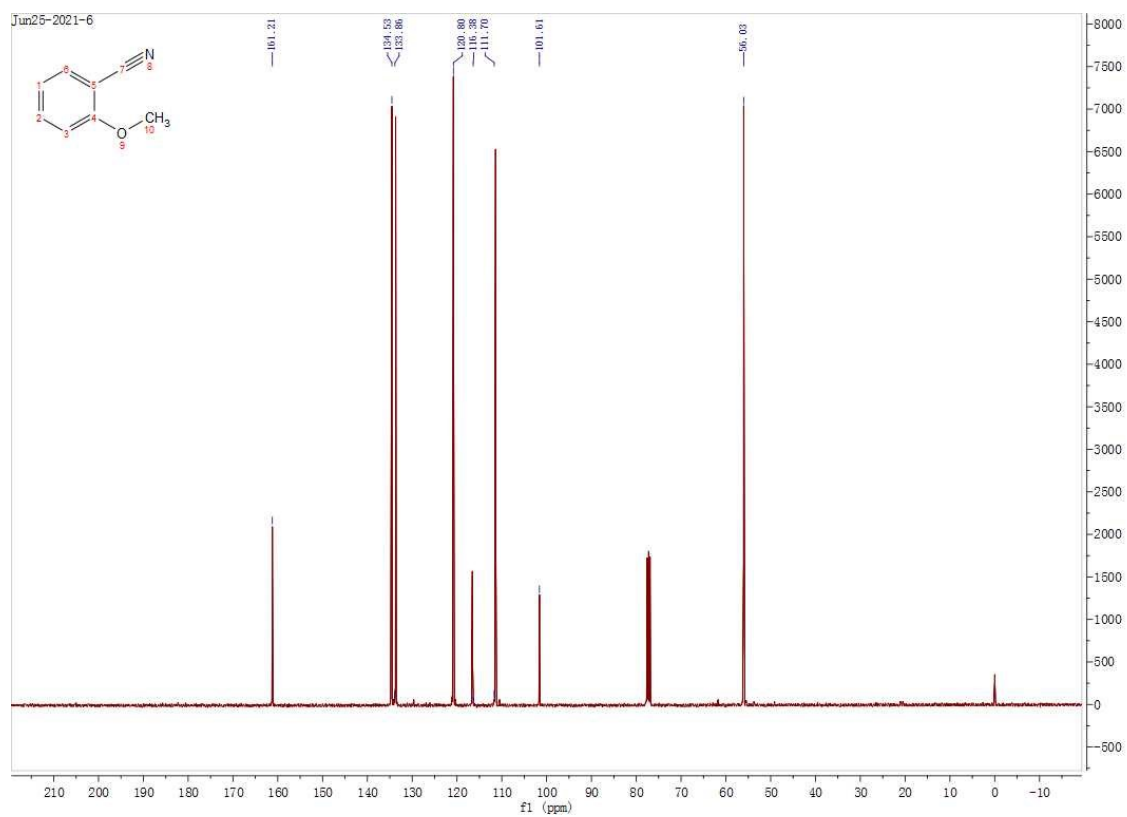


Figure S33 ^{13}C NMR spectra of compound 5b

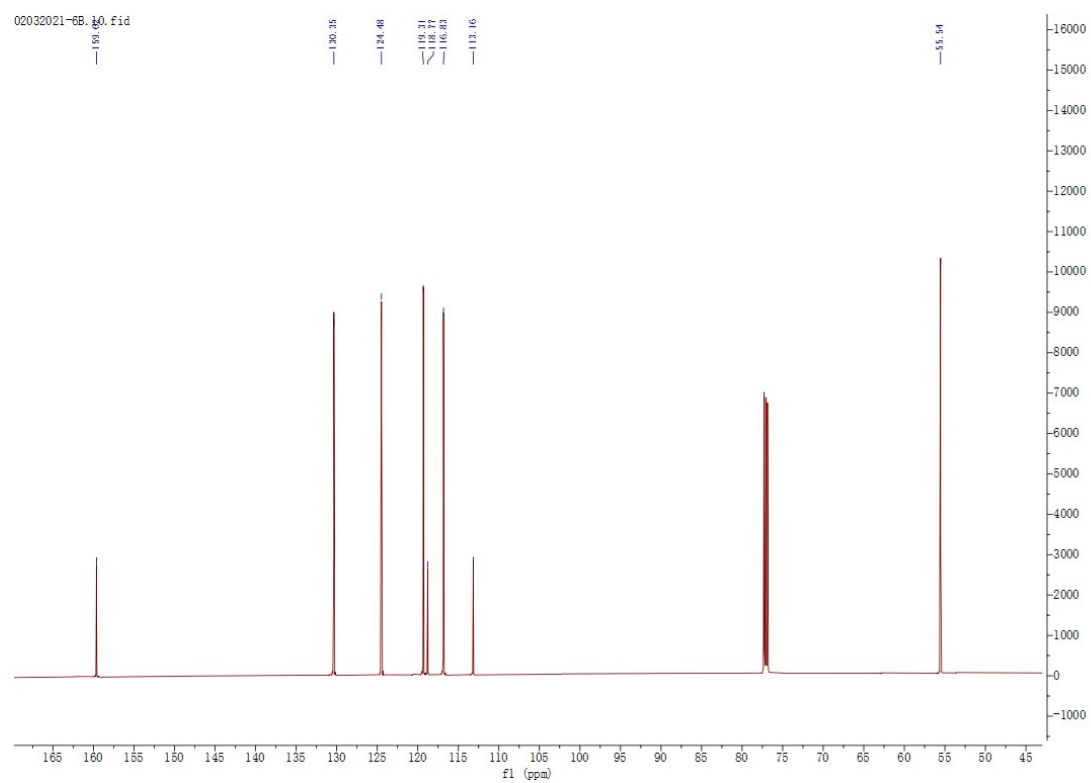


Figure S34 ^{13}C NMR spectra of compound 6b

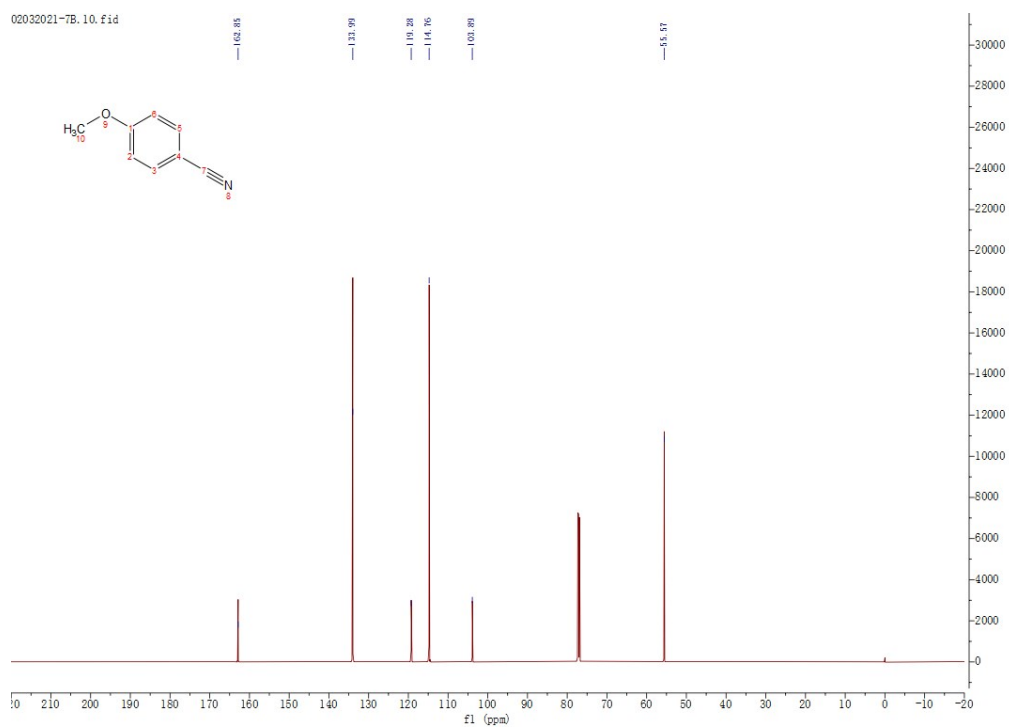


Figure S35 ^{13}C NMR spectra of compound 7b

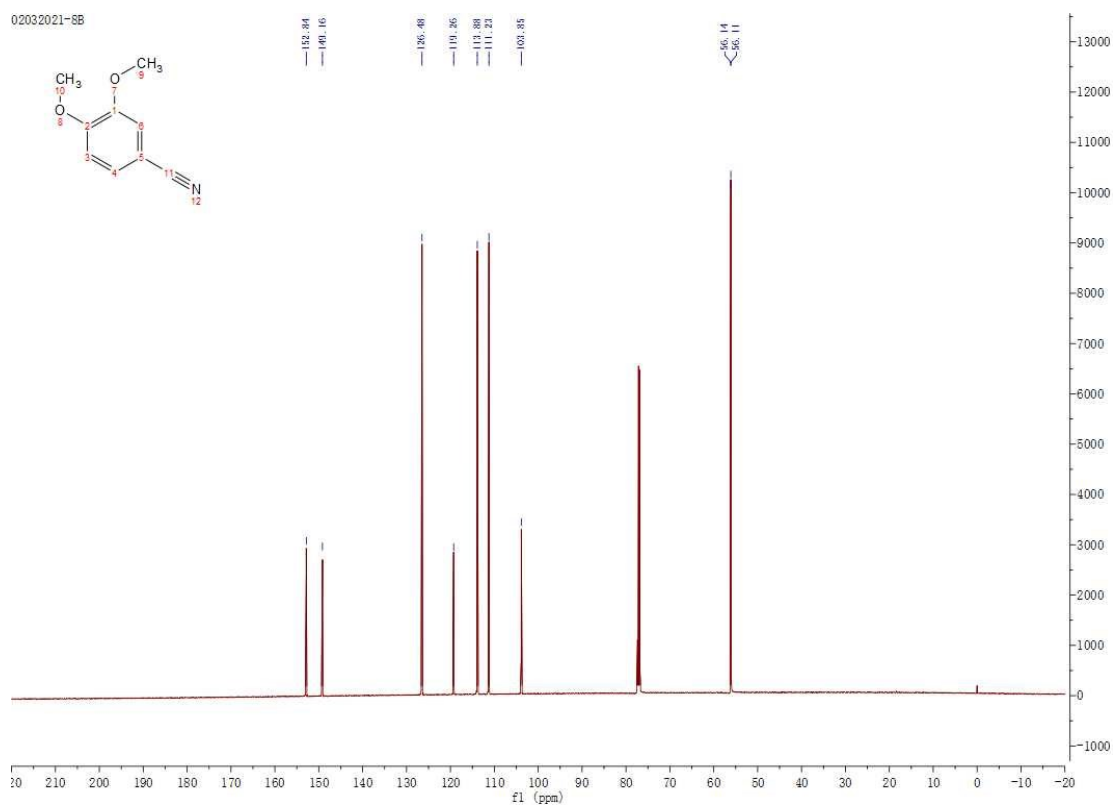


Figure S36 ^{13}C NMR spectra of compound 8b

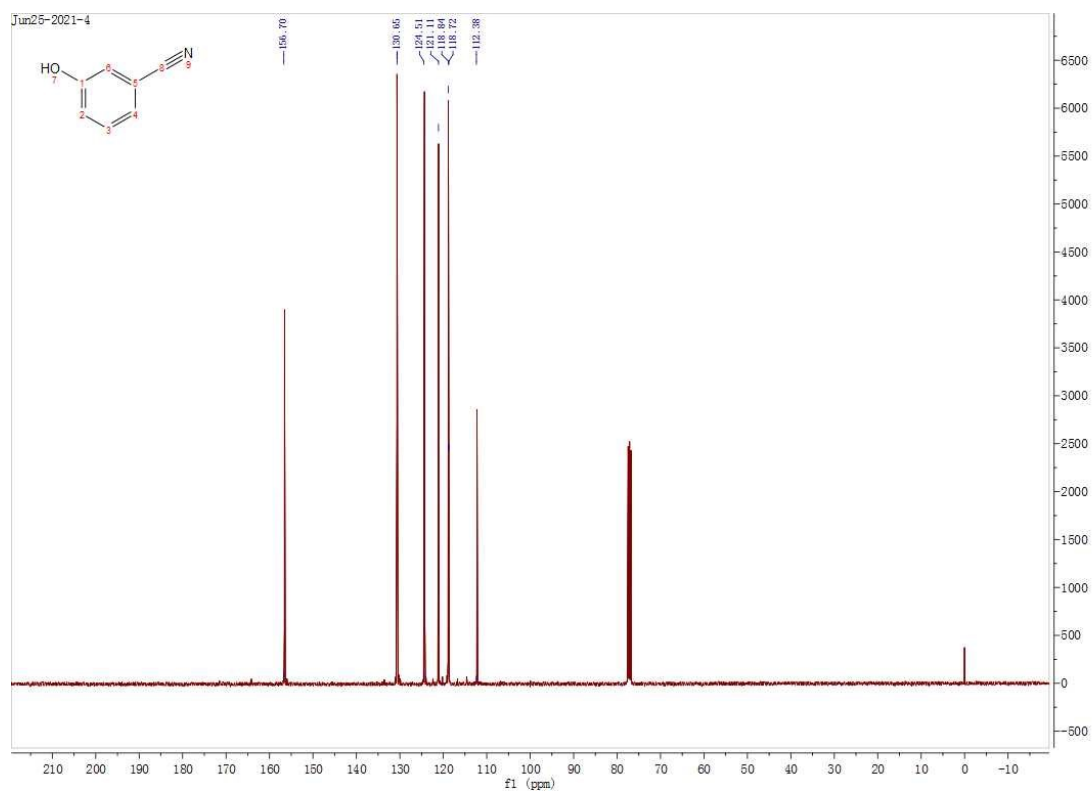


Figure S37 ^{13}C NMR spectra of compound 9b

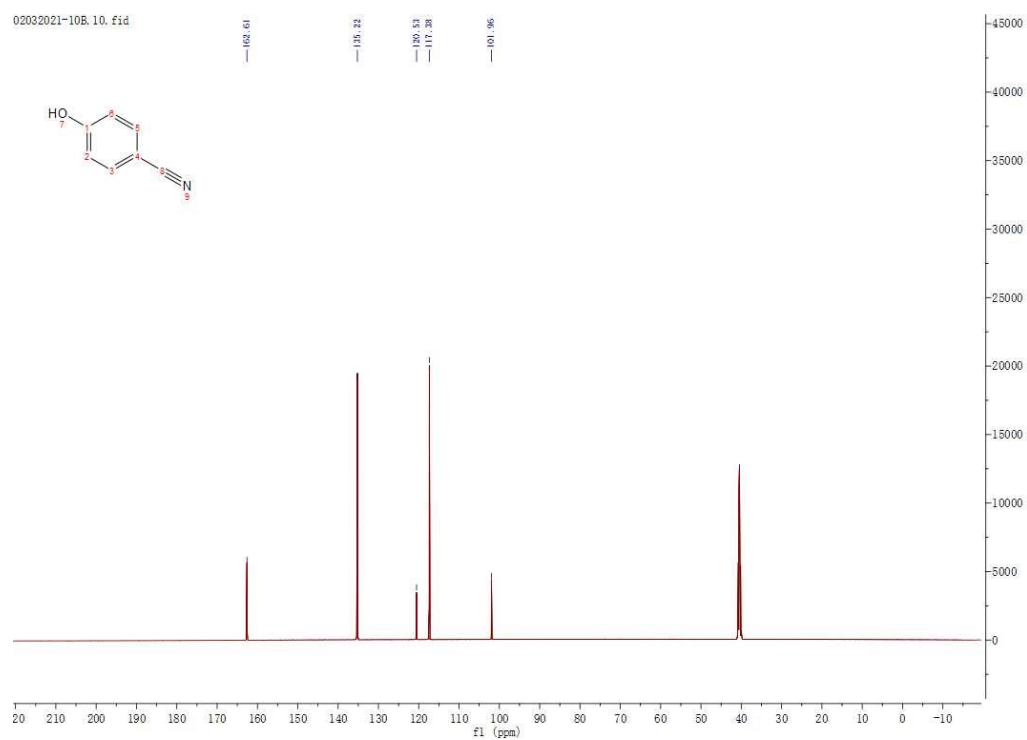


Figure S38 ^{13}C NMR spectra of compound 10b

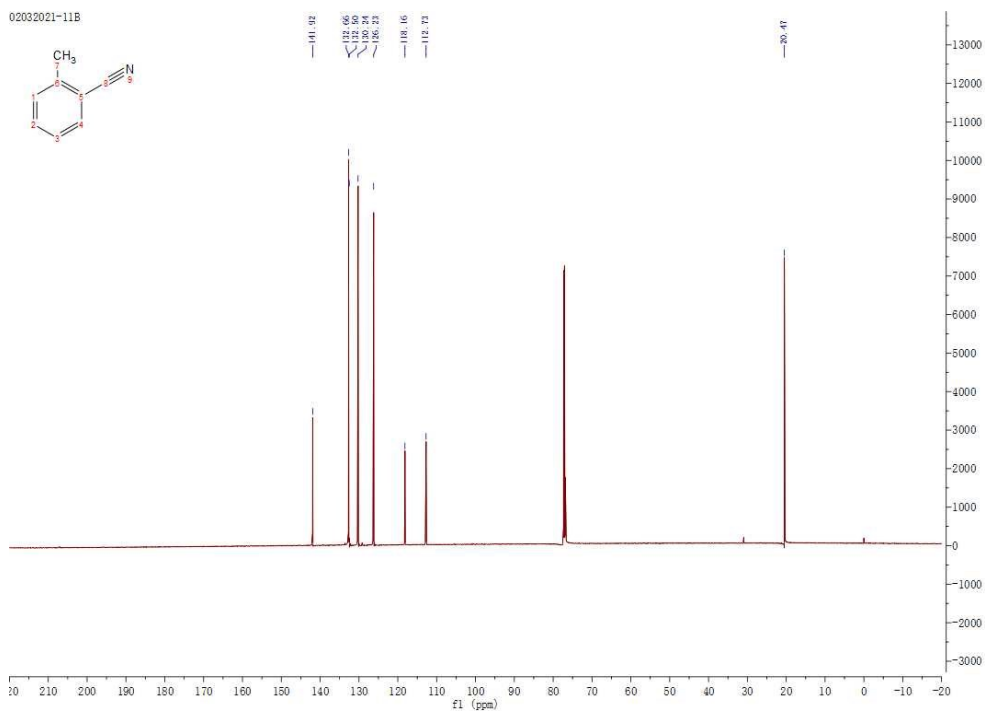


Figure S39 ¹³C NMR spectra of compound 11b

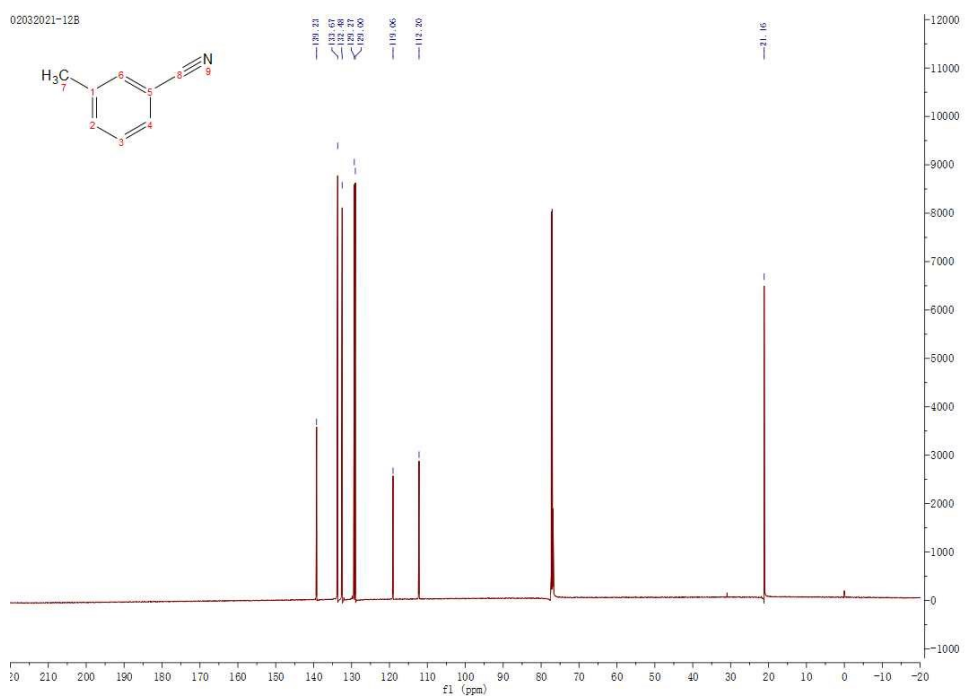
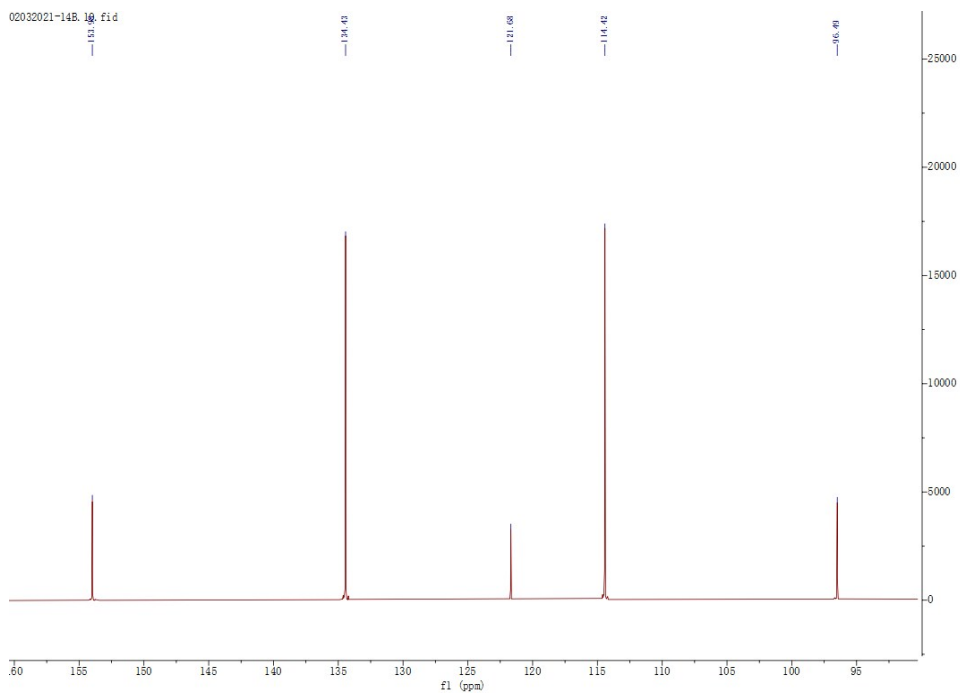
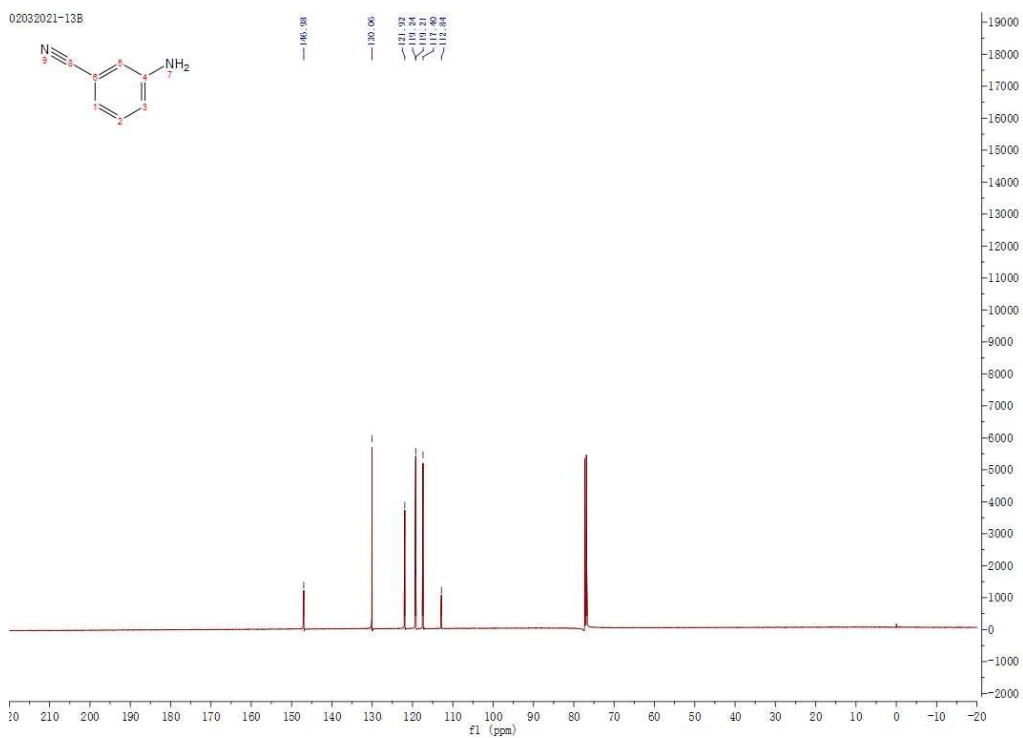


Figure S40 ¹³C NMR spectra of compound 12b



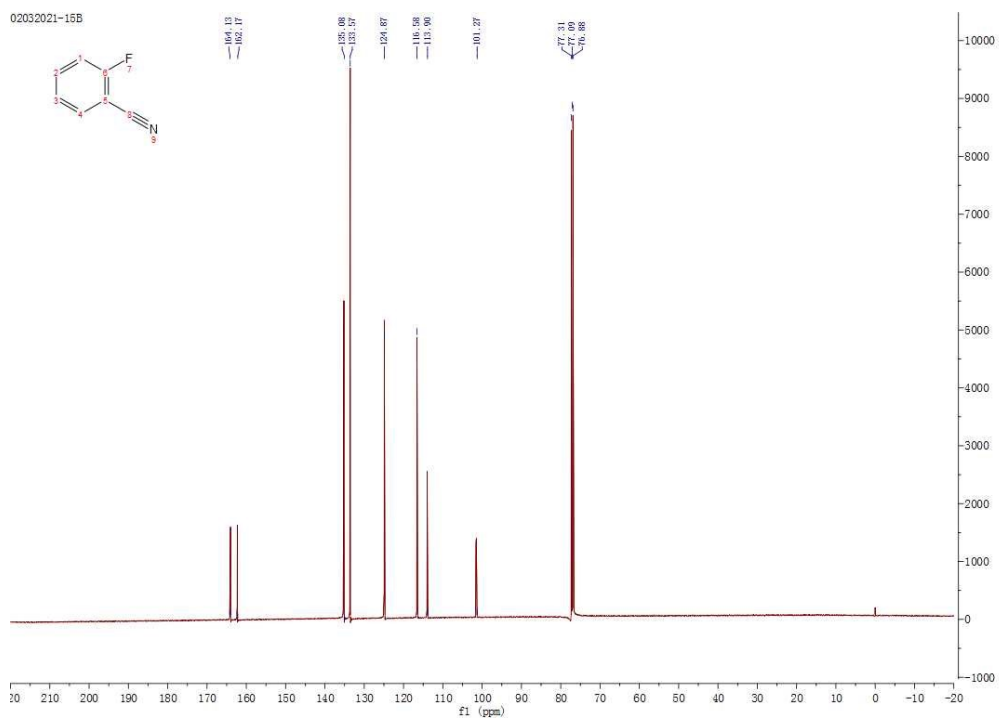


Figure S43 ^{13}C NMR spectra of compound 15b

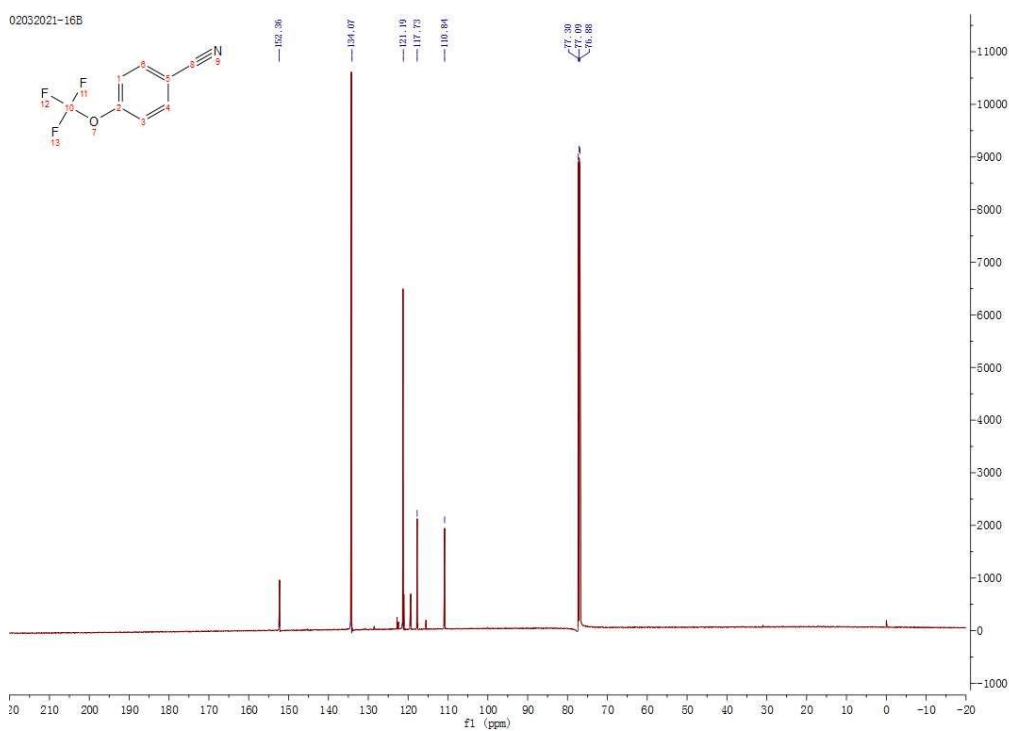


Figure S44 ^{13}C NMR spectra of compound 16b

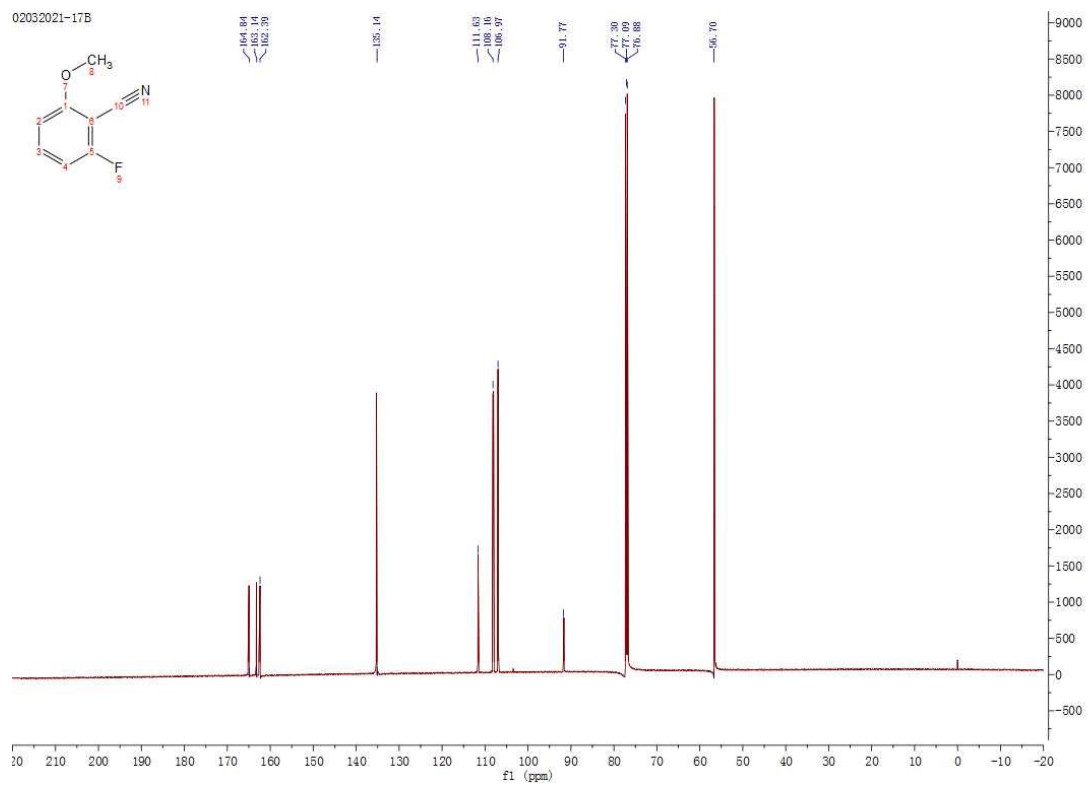


Figure S45 ^{13}C NMR spectra of compound 17b

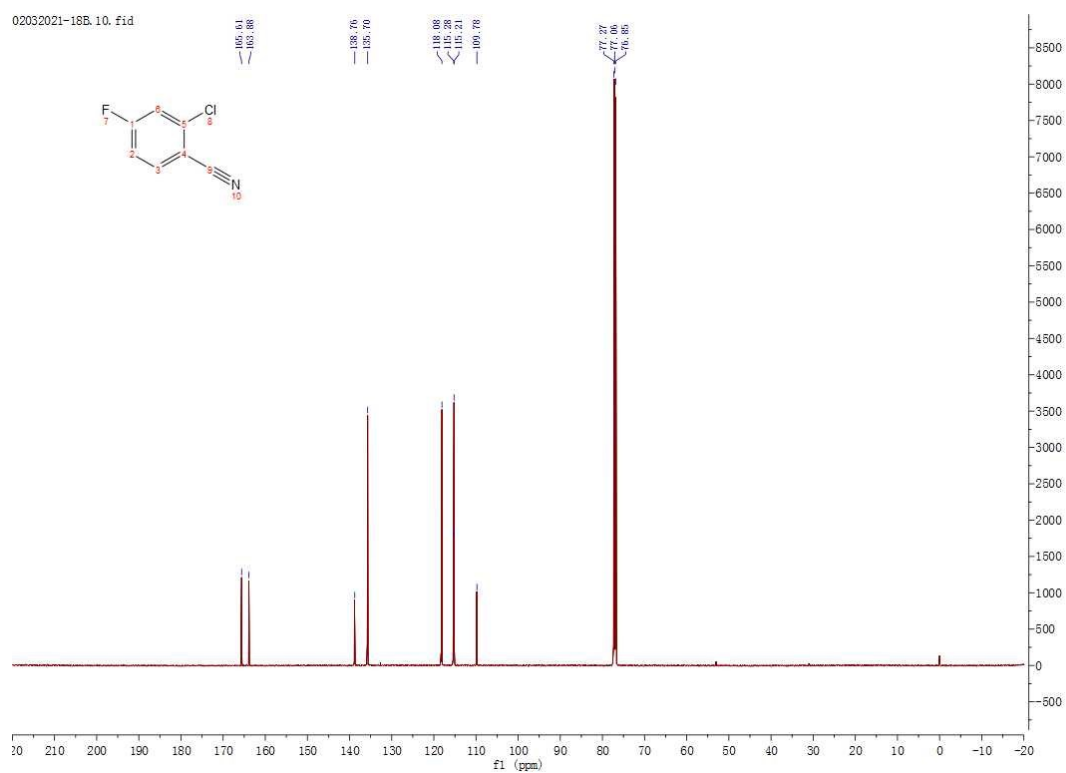


Figure S46 ^{13}C NMR spectra of compound 18b

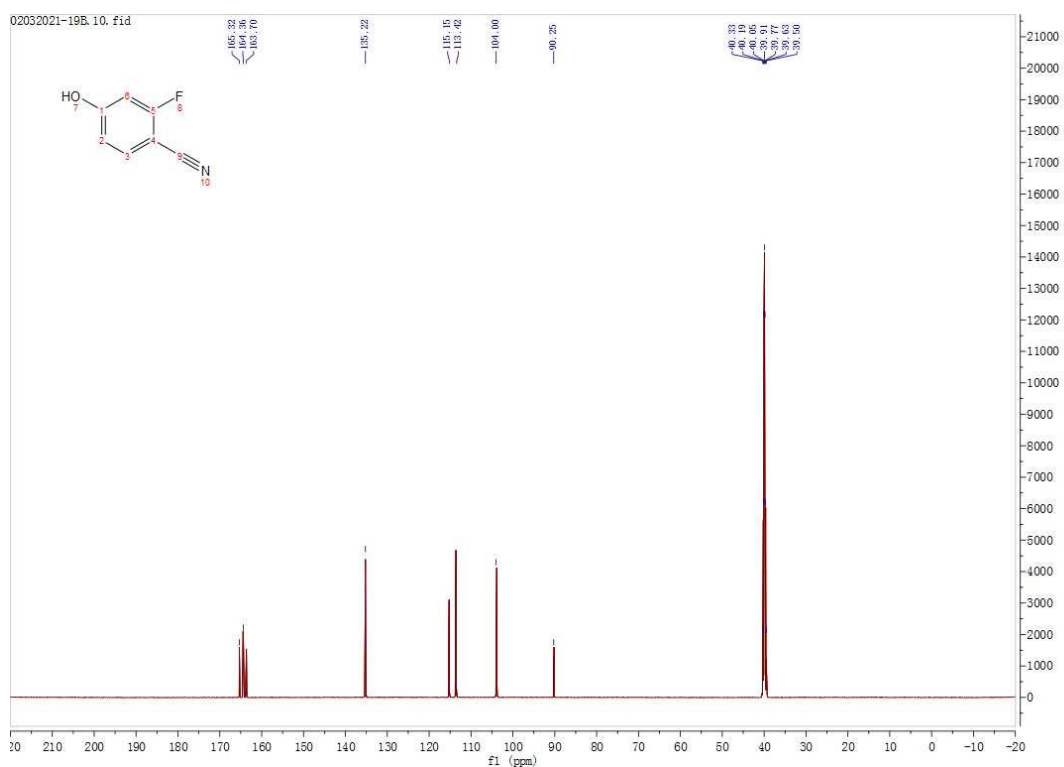


Figure S47 ^{13}C NMR spectra of compound 19b

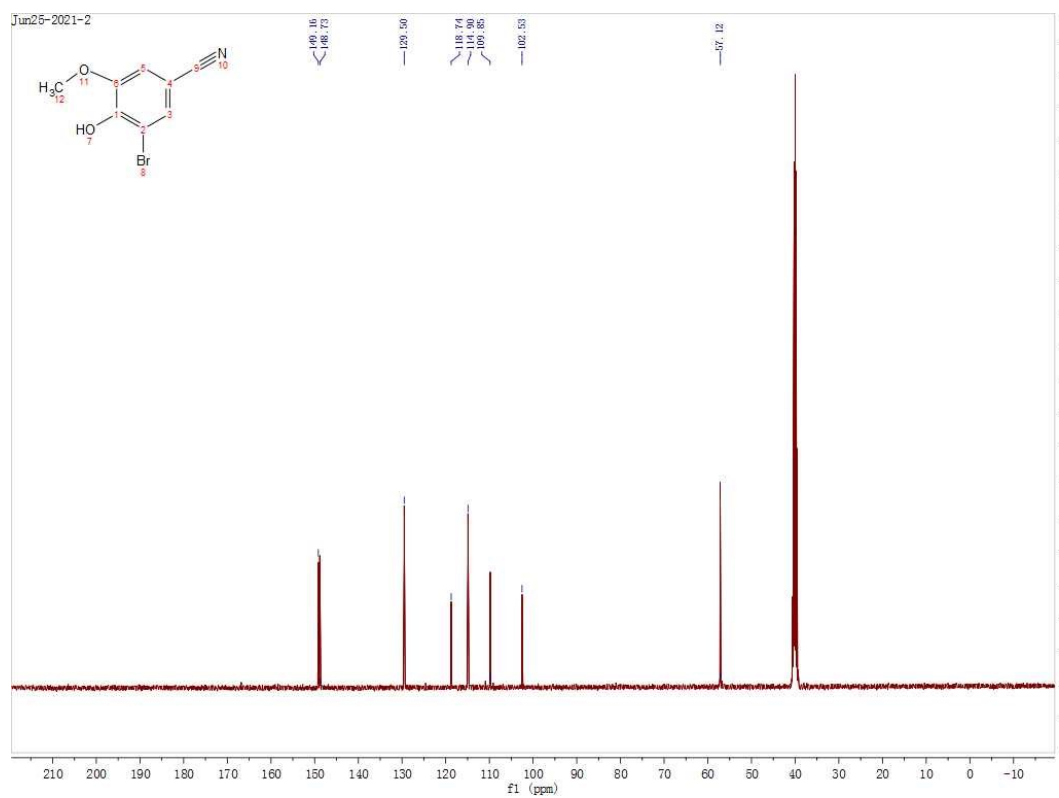


Figure S48 ^{13}C NMR spectra of compound 20b

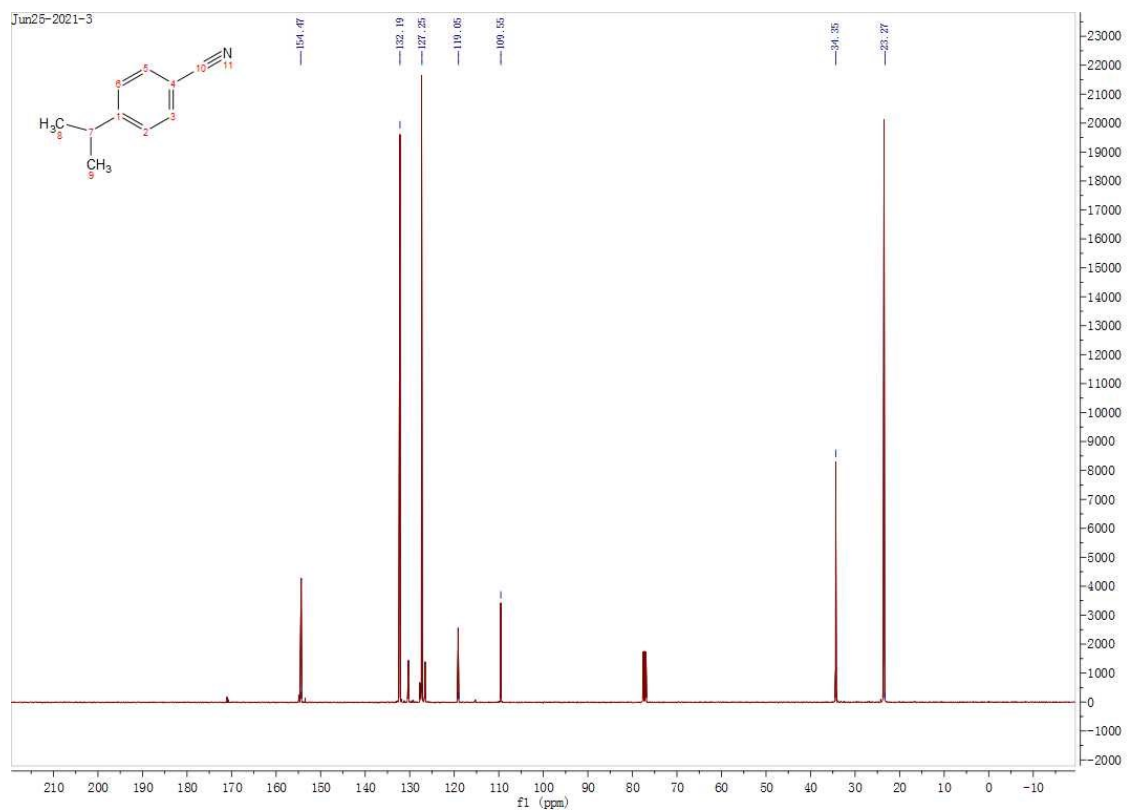


Figure S49 ^{13}C NMR spectra of compound 22b

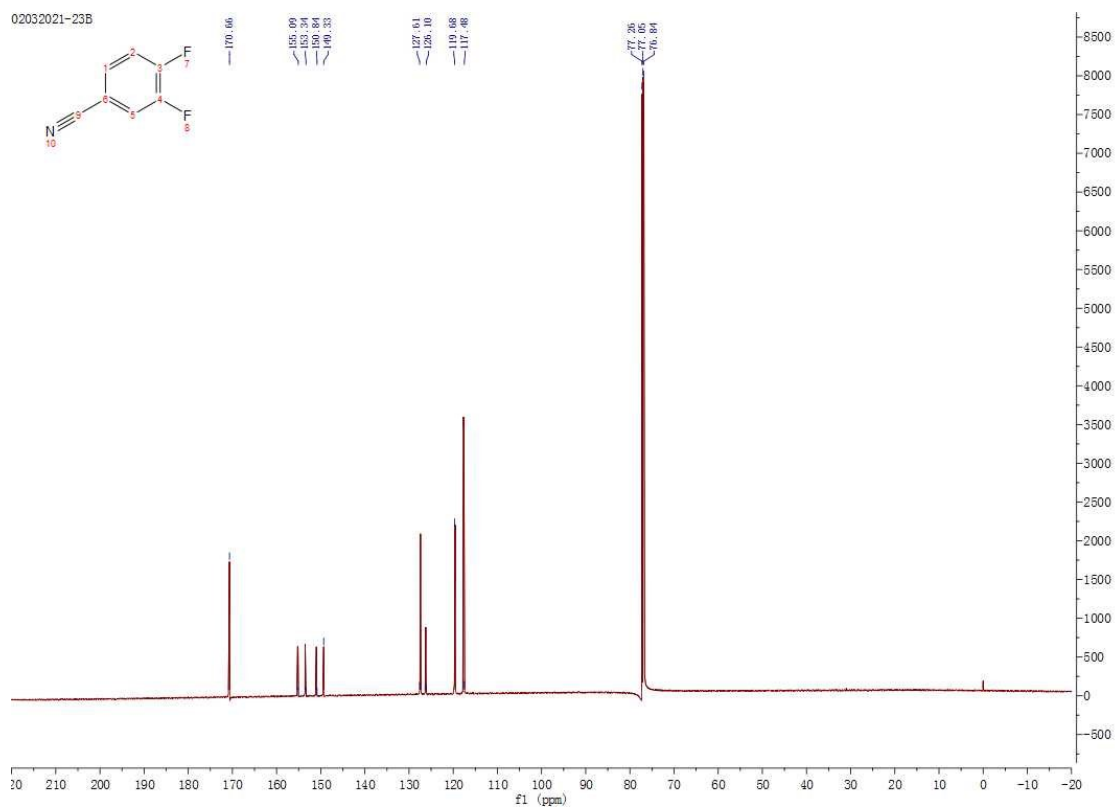


Figure S50 ^{13}C NMR spectra of compound 23b

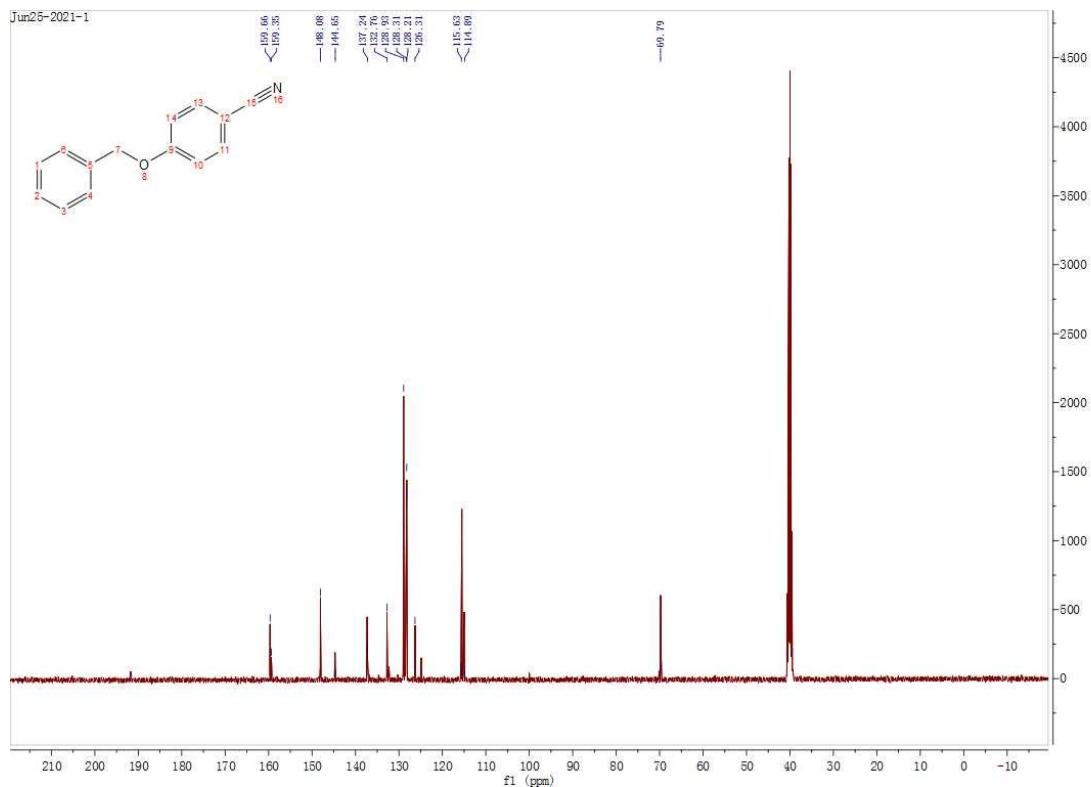


Figure S51 ^{13}C NMR spectra of compound 24b

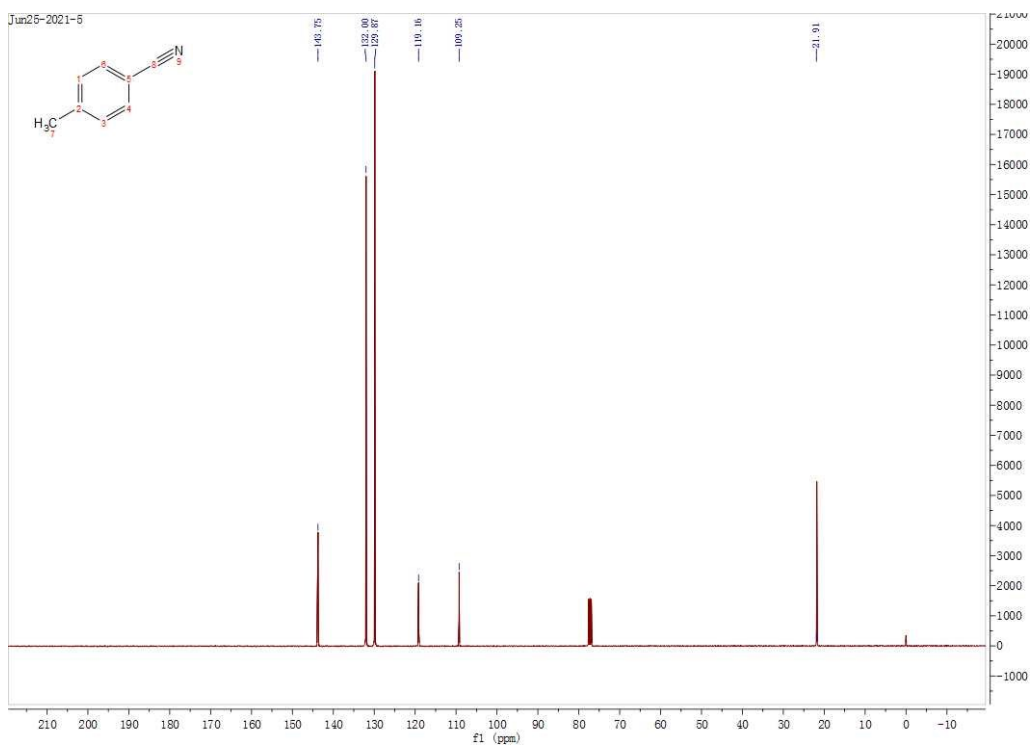
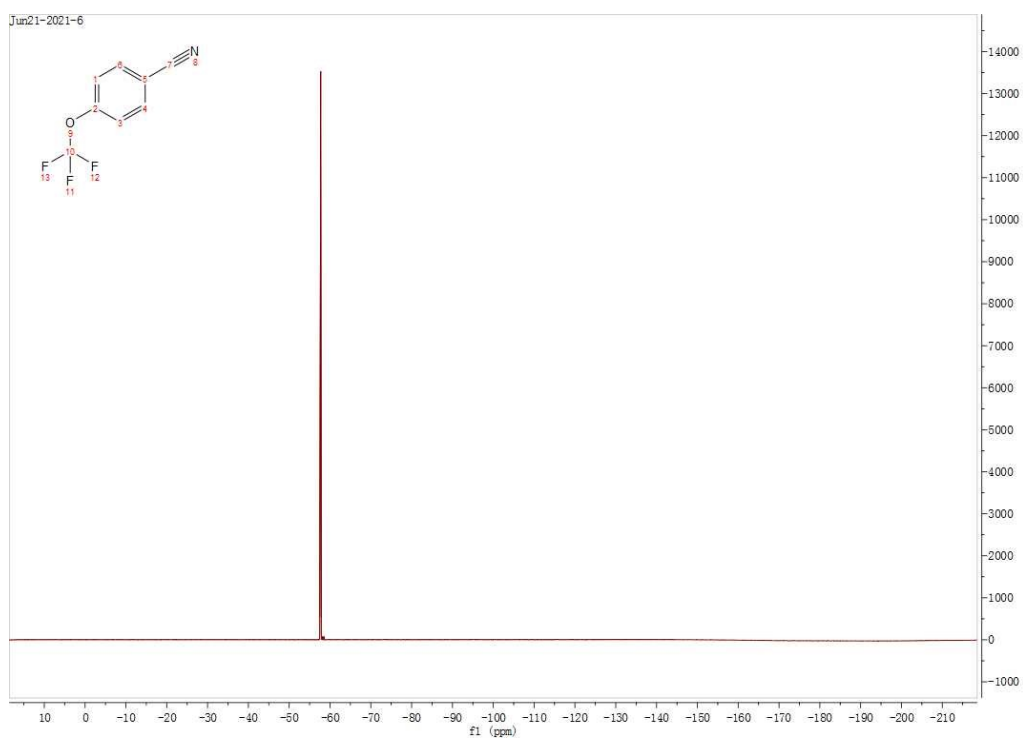
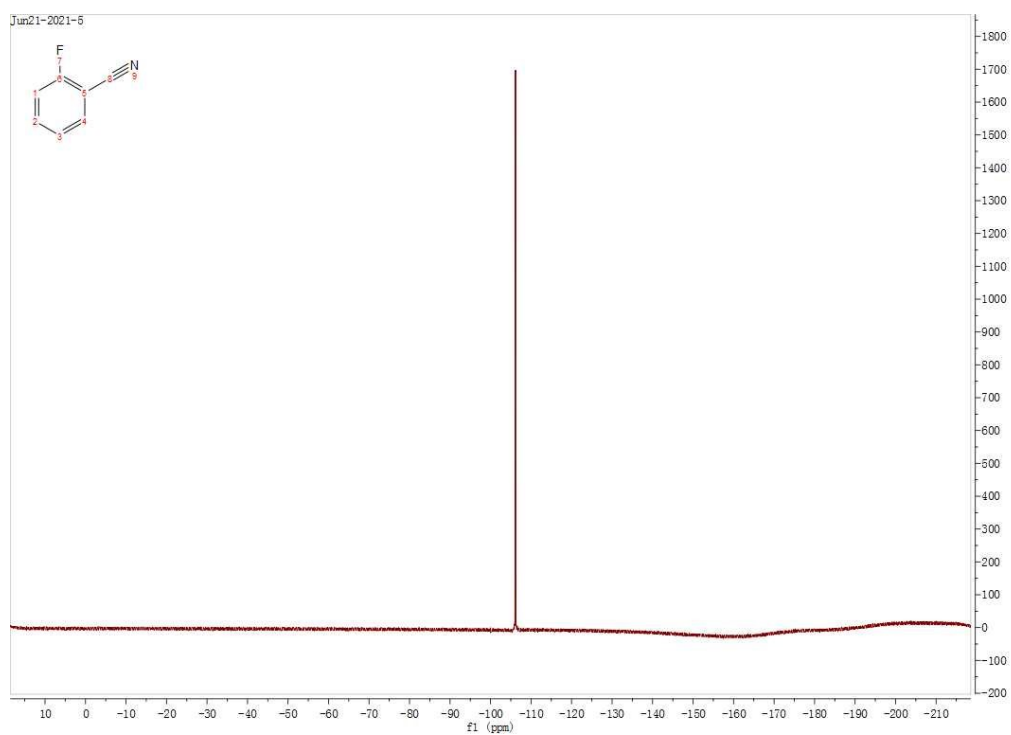
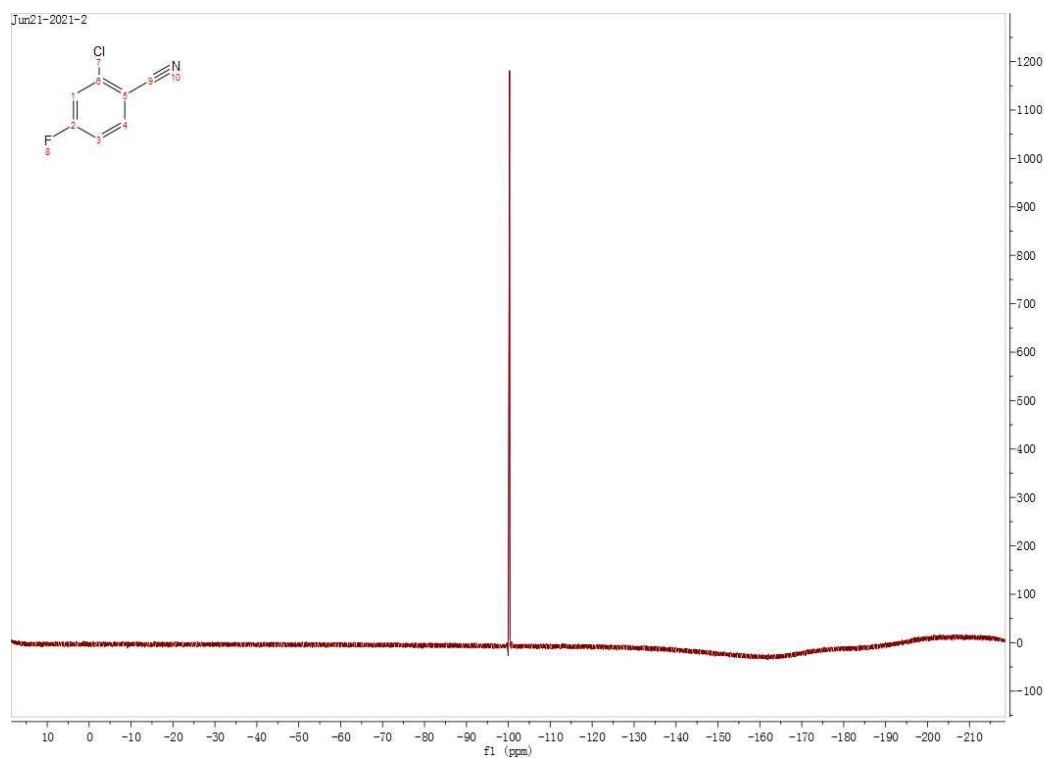
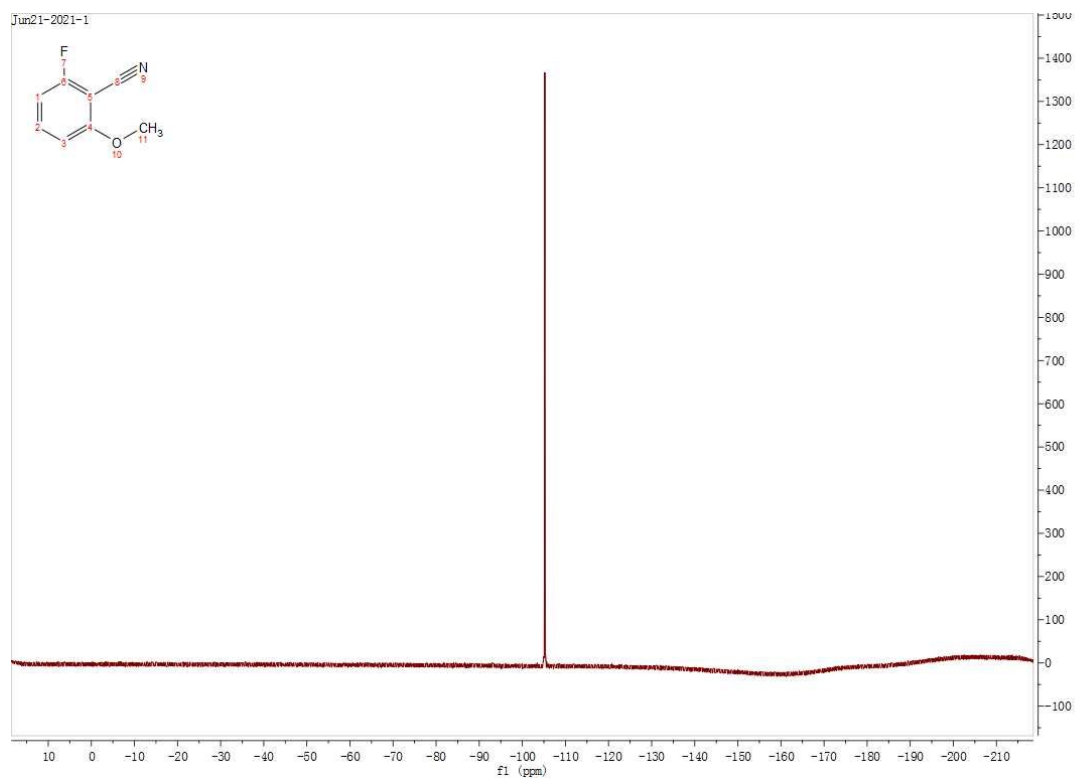
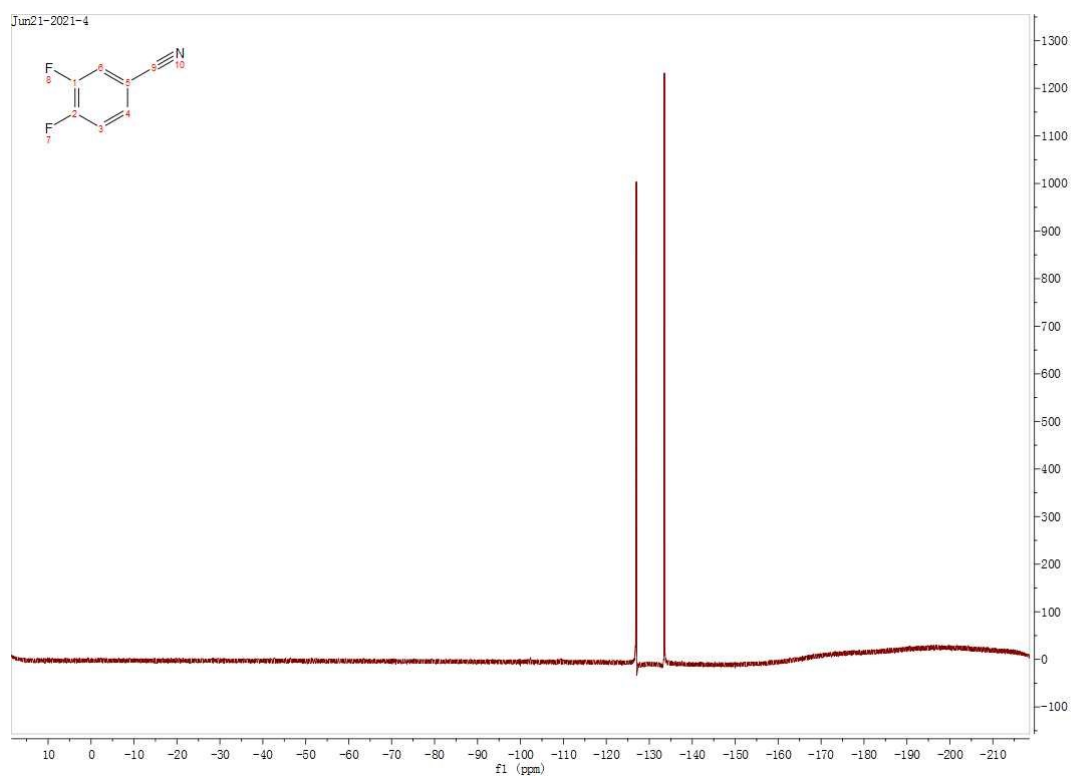
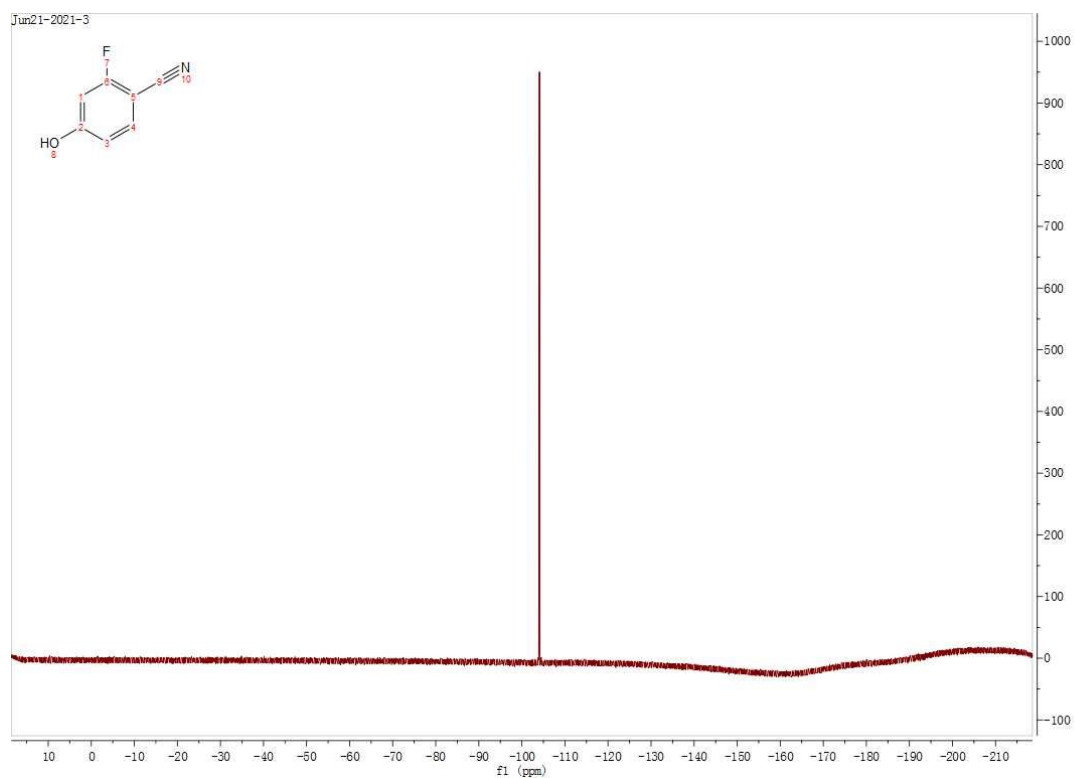


Figure S52 ^{13}C NMR spectra of compound 25b

¹⁹F NMR spectra of compound 15b, 16b, 17b, 18b, 19b and 23b







Reference m.p. of compounds 1b-25b.

1b: 43-45°C¹
2b: 90-93 °C²/ 92-94 °C³/ 91.2-93.1 °C⁴
3b: 60-61 °C⁵/56-57 °C⁶/51-53.5 °C⁷
4b: 144-145 °C⁸/140-143 °C⁹/144-145 °C¹⁰
5b: 59 °C²/21.5-22 °C (ethanol)¹¹/24.5 °C¹²
6b: 24-25 °C¹³/23 °C¹⁴
7b: 58-59 °C¹⁵/55-57 °C¹⁶/59.2-60.4 °C⁴/56-58 °C¹⁷/59-60 °C¹⁸
8b: 68.6-70.5 °C⁴/65-67 °C¹⁹/66-67 °C²⁰/62-65 °C/65-66 °C²¹/64.9-66.4 °C²²
9b: 74.8-77.2 °C²³/57-59.5 °C²⁴/78-80 °C²⁵/68 °C²⁶/76-78 °C²⁷
10b: 110-113 °C²⁸/111-112 °C²⁹/109-111 °C³⁰/108.8-110.2 °C²³/100.7-103.2 °C²⁴/107-109 °C³¹
11b: liquid
12b: liquid
13b: 52-54 °C³²/50-52 °C³³/50-54 °C³⁴
14b: 83-85 °C^{34, 35}/83-86 °C³⁴/85-87 °C³²/85-86 °C³⁰
15b: liquid
16b: liquid
17b: 93-95 °C³⁶
18b: 63.0-65.0 °C³³
19b: 124-125 °C²⁵/123.5 °C³⁷/117-118 °C³⁸
20b: 159-160 °C³⁹/134-136 °C⁴⁰/144 °C⁴¹
21b: 179 °C⁴²
22b: liquid
23b: 51-53 °C⁴³
24b: 86 °C⁴⁴/91-93 °C⁴⁵/86 °C⁴⁶/86-88 °C⁴⁷/97-99 °C²¹/93-94 °C⁴⁸/96-98 °C⁴⁹
25b: 26-28 °C²⁸/26 °C⁵⁰/27-29 °C⁵¹/28-29 °C(patent)/26-27 °C⁵²/27.1-27.7 °C⁵³

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