

## Supplementary Material

**Metal-free addition of aliphatic carboxylic acids to cyanopropargyl alcohols: an access to new families of functionalized dihydrofurans and 3(2H)-furanones**

Olesya A. Shemyakina,<sup>a</sup> Ol'ga G. Volostnykh,<sup>a</sup> Anton V. Stepanov,<sup>a</sup> Igor' A. Ushakov,<sup>a</sup> Anastasiya G. Mal'kina,<sup>a</sup> Konstantin A. Apartsin,<sup>b,c</sup> Viktoria V. Kireeva,<sup>c</sup> and Boris A. Trofimov\*<sup>a</sup>

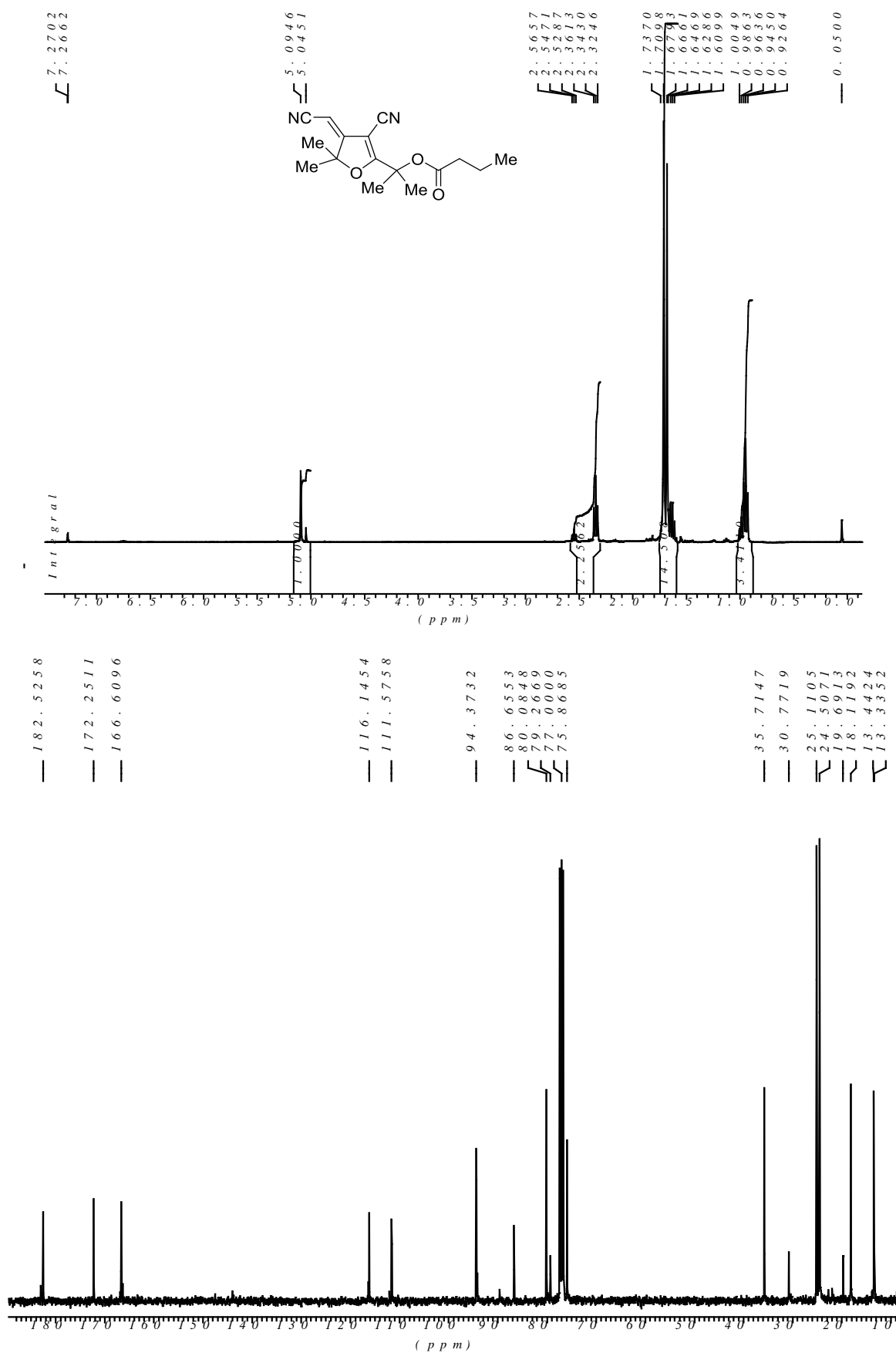
<sup>a</sup>A. E. Favorsky Irkutsk Institute of Chemistry, Siberian Branch, Russian Academy of Sciences, 1 Favorsky Str., 664033, Irkutsk, Russian Federation. Fax: (395-2)41-93-46

<sup>b</sup>The Irkutsk Scientific Center of Surgery and Traumatology, 664003 Irkutsk, Russian Federation

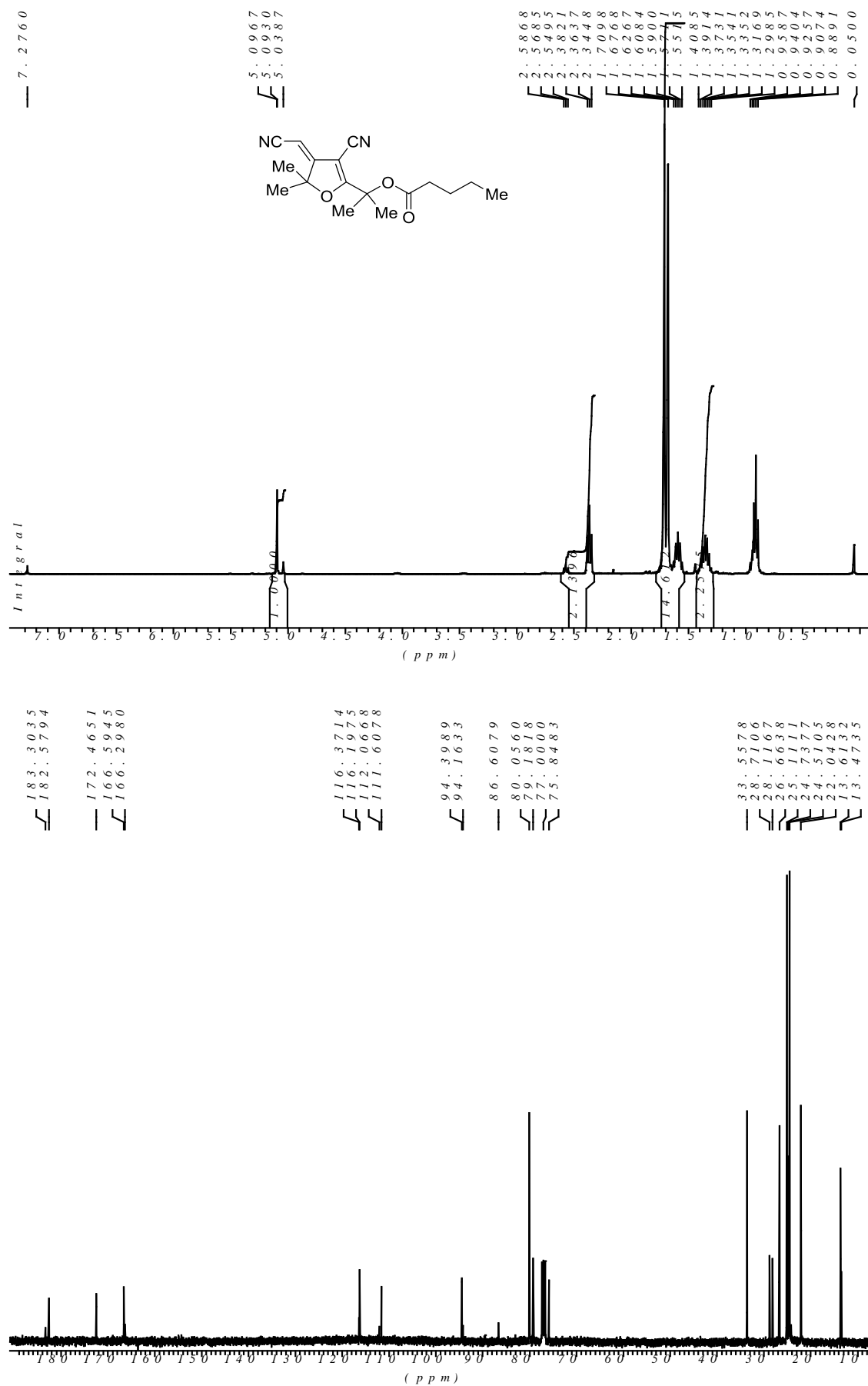
<sup>c</sup>Biomedical Research and Technology Department of the Irkutsk Scientific Center, Siberian Branch, Russian Academy of Sciences, 664003 Irkutsk, Russian Federation

Email: [boris\\_trofimov@irioch.irk.ru](mailto:boris_trofimov@irioch.irk.ru)

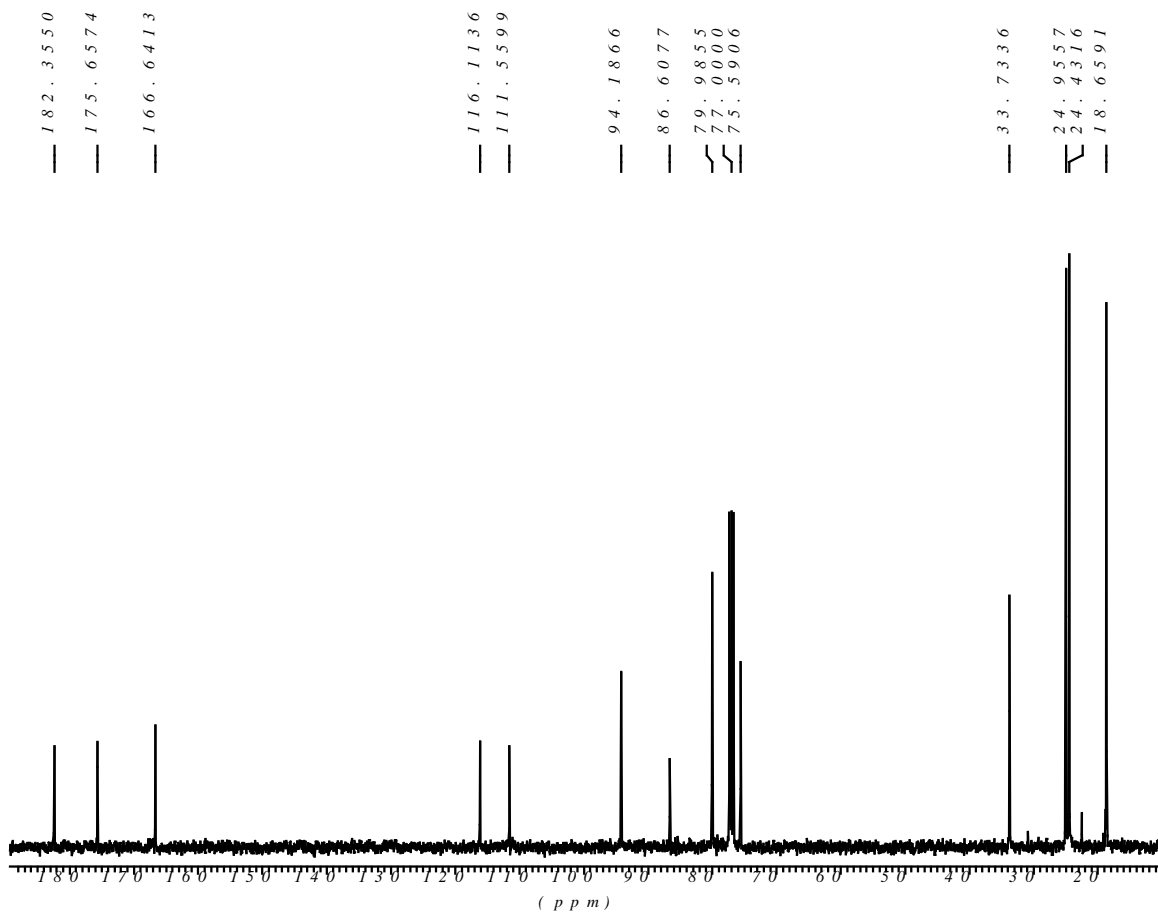
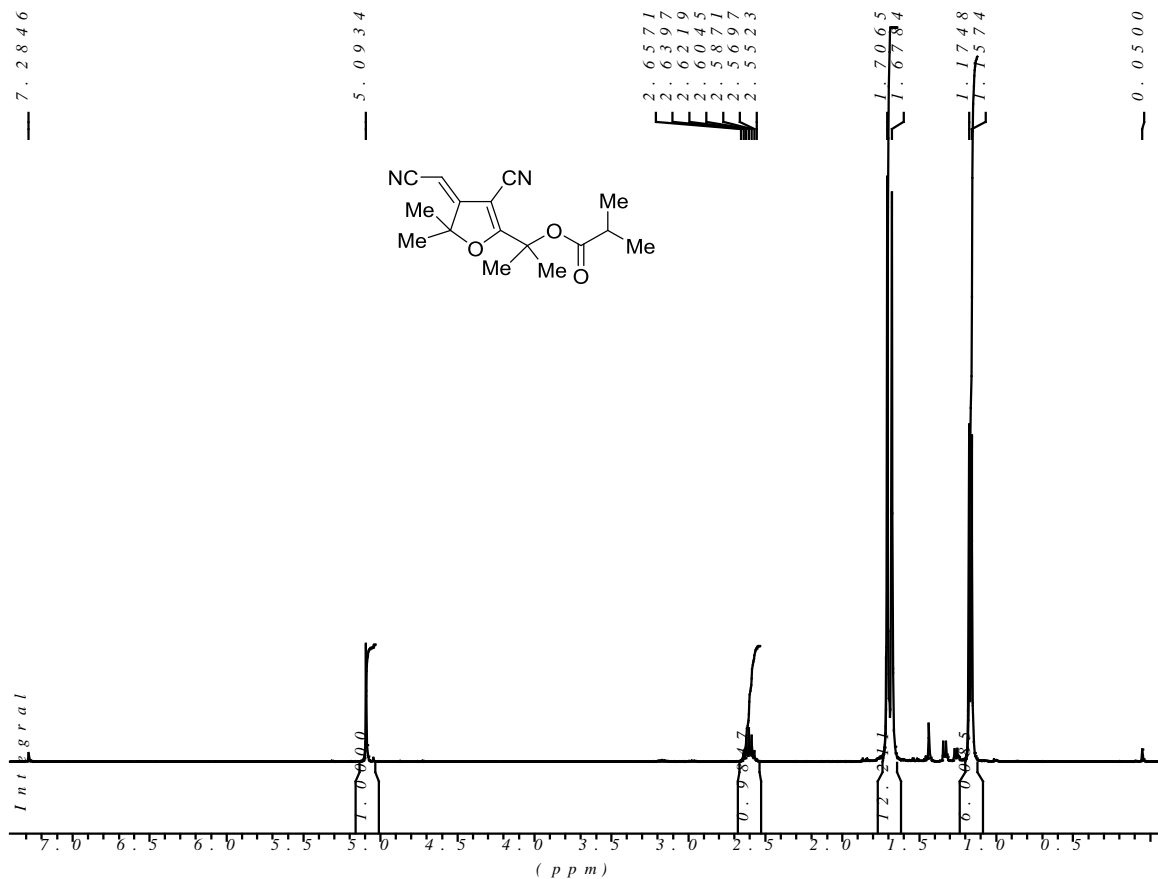
1. <sup>1</sup>H and <sup>13</sup>C spectra of the synthesized products **3b-e** S2
2. <sup>1</sup>H and <sup>13</sup>C spectra of the synthesized products **4b-e** S6

1.  $^1\text{H}$  and  $^{13}\text{C}$  spectra of the synthesized products 3b-e**(Z)-2-[3-Cyano-4-(cyanomethylene)-5,5-dimethyl-4,5-dihydrofuran-2-yl]propan-2-yl butyrate (3b)**

(Z)-2-[3-Cyano-4-(cyanomethylene)-5,5-dimethyl-4,5-dihydrofuran-2-yl]propan-2-yl pentanoate (3c)

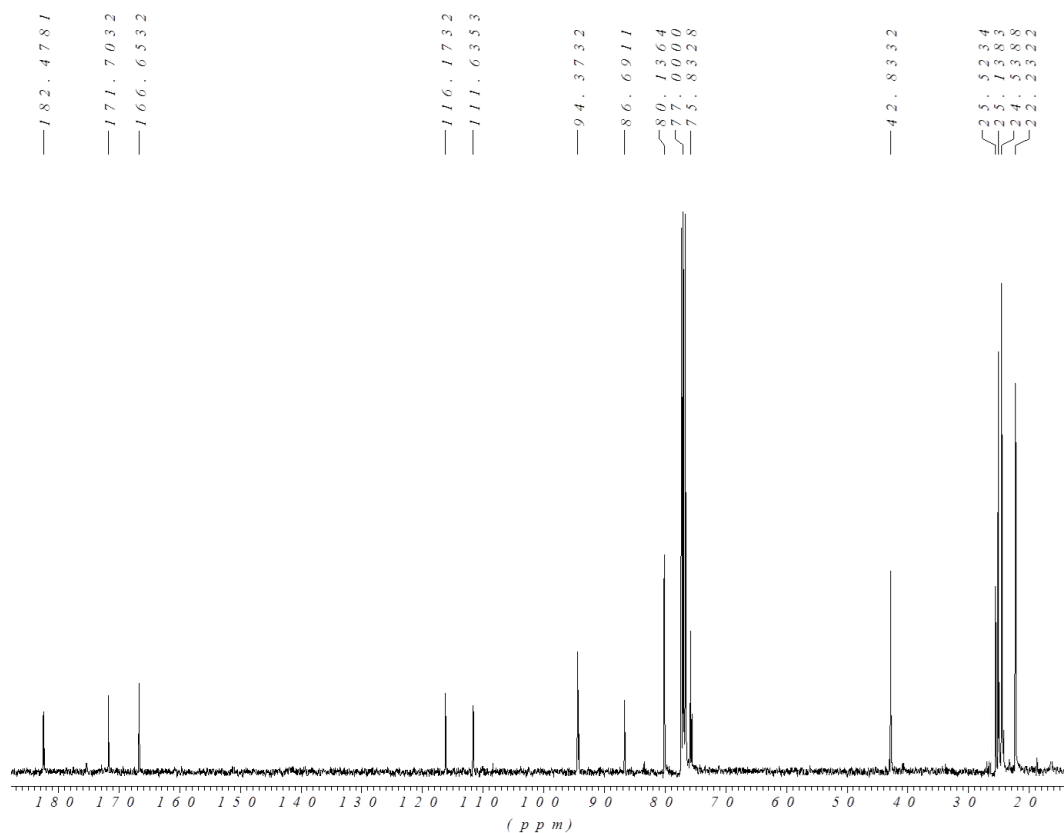
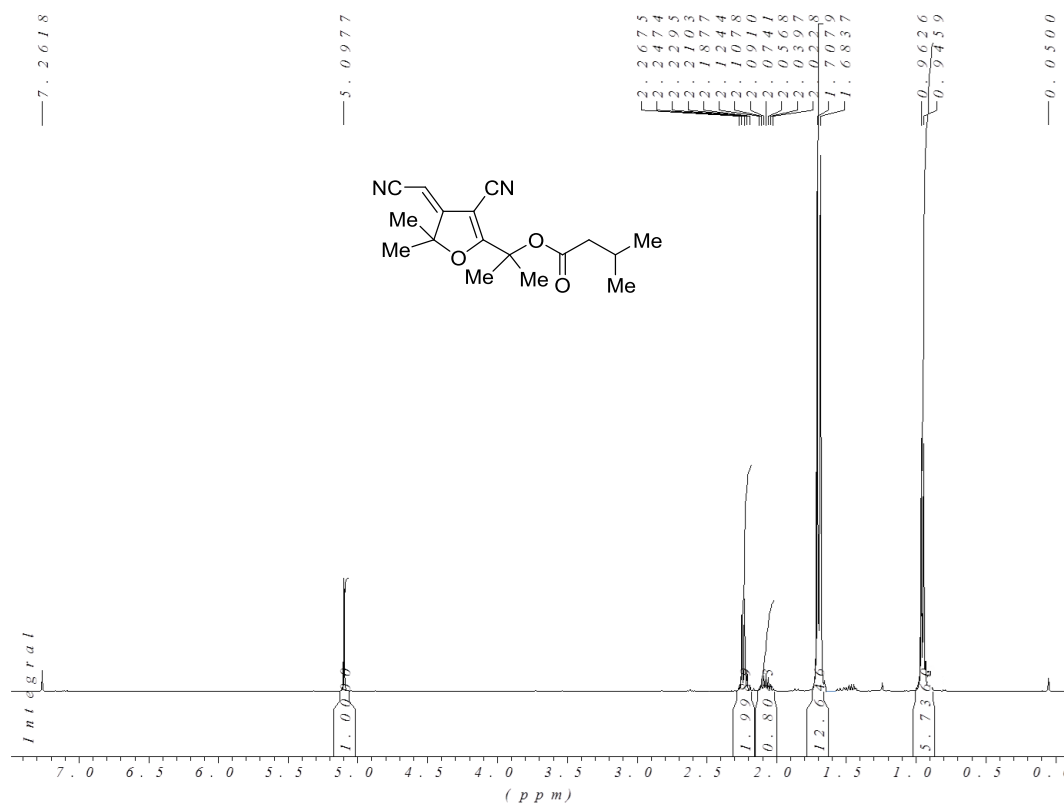


(Z)-2-[3-Cyano-4-(cyanomethylene)-5,5-dimethyl-4,5-dihydrofuran-2-yl]propan-2-yl isobutyrate (3d)



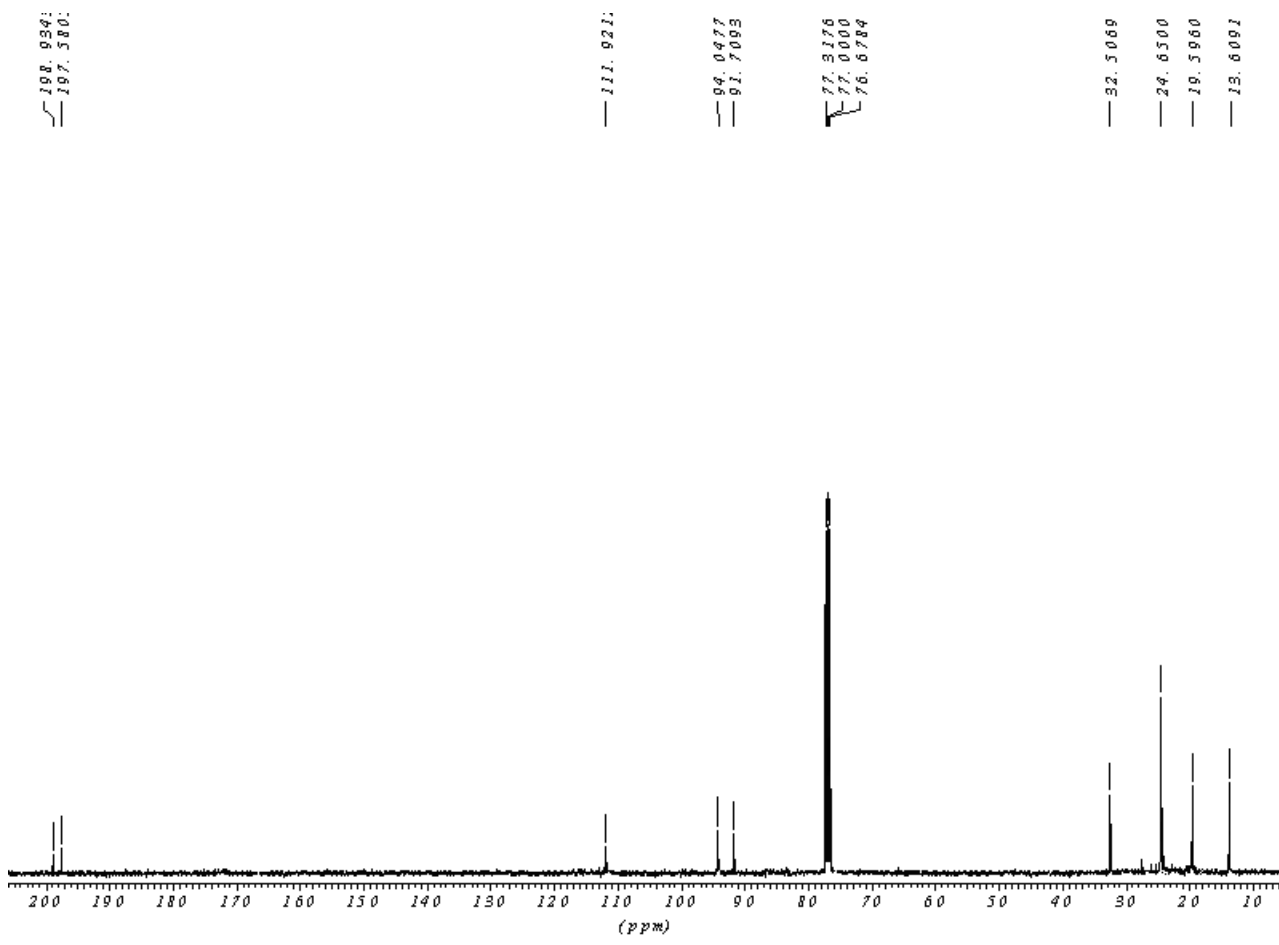
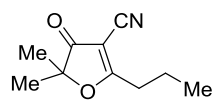
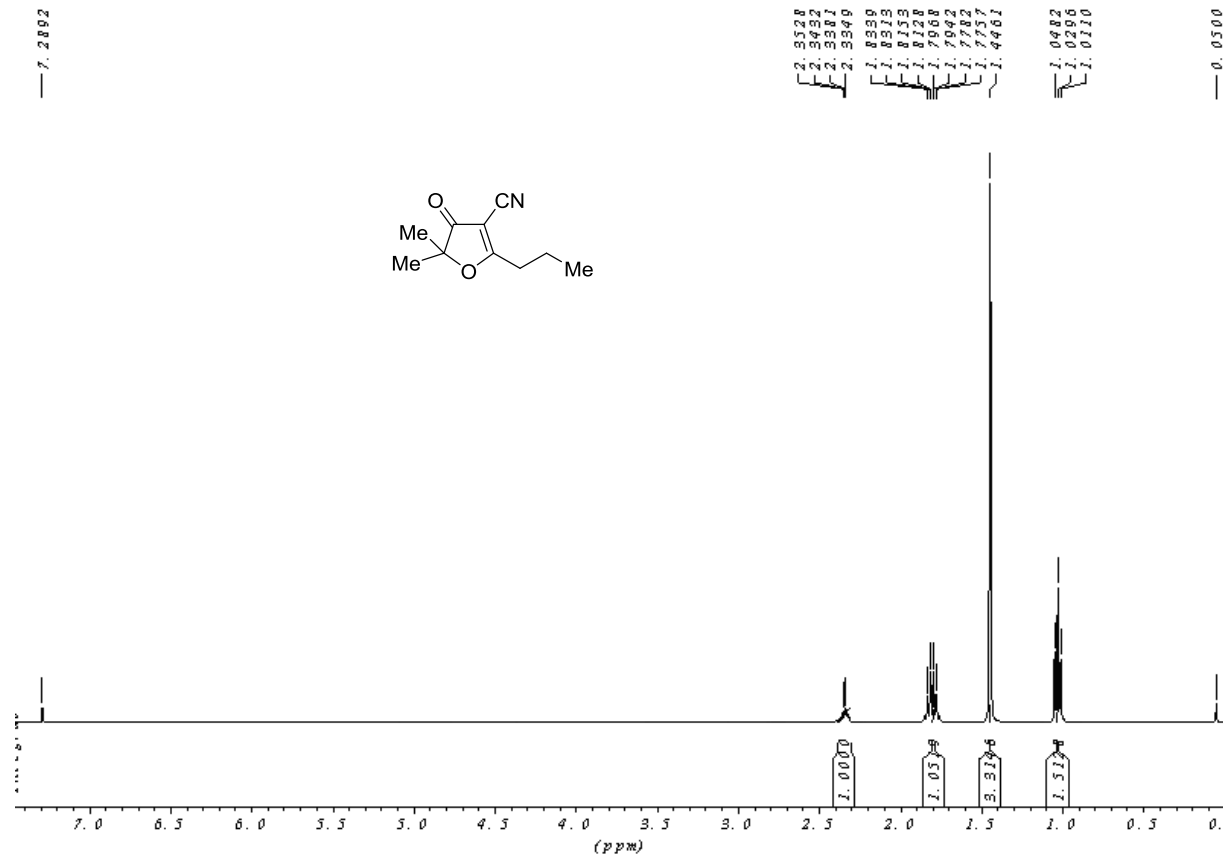
(Z)-2-[3-Cyano-4-(cyanomethylene)-5,5-dimethyl-4,5-dihydrofuran-2-yl]propan-2-yl 3-methylbutanoate

(3e)

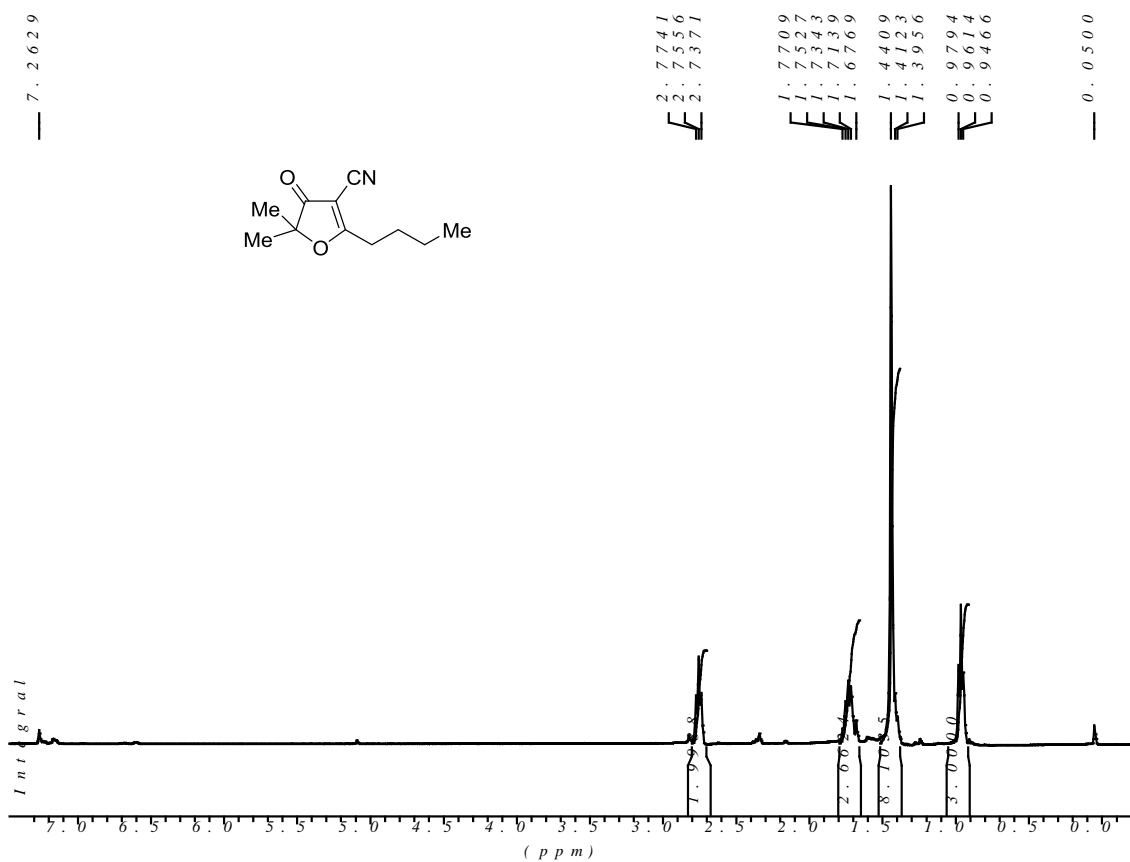


**2.  $^1\text{H}$  and  $^{13}\text{C}$  spectra of the synthesized products 4b-e**

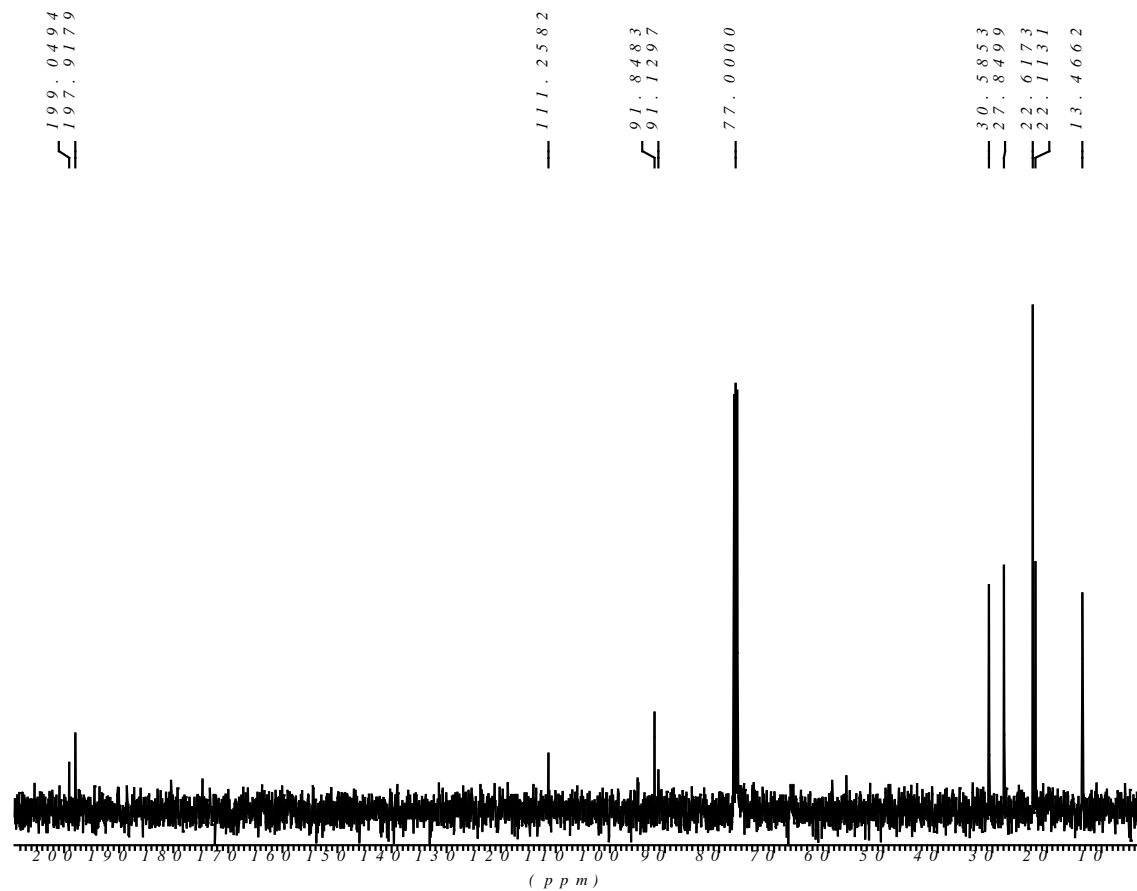
**5,5-Dimethyl-4-oxo-2-propyl-4,5-dihydro-3-furancarbonitrile (4b)**



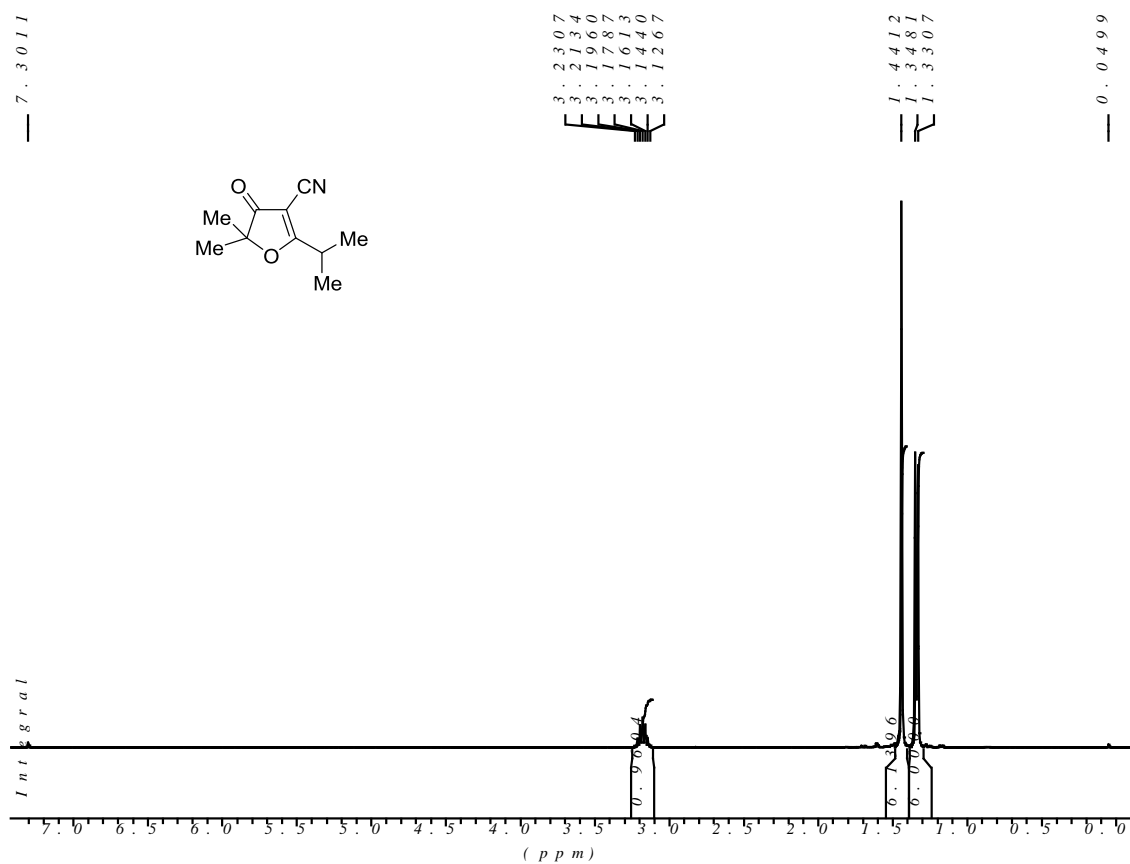
## 2-Butyl-5,5-dimethyl-4-oxo-4,5-dihydro-3-furancarbonitrile (4c)

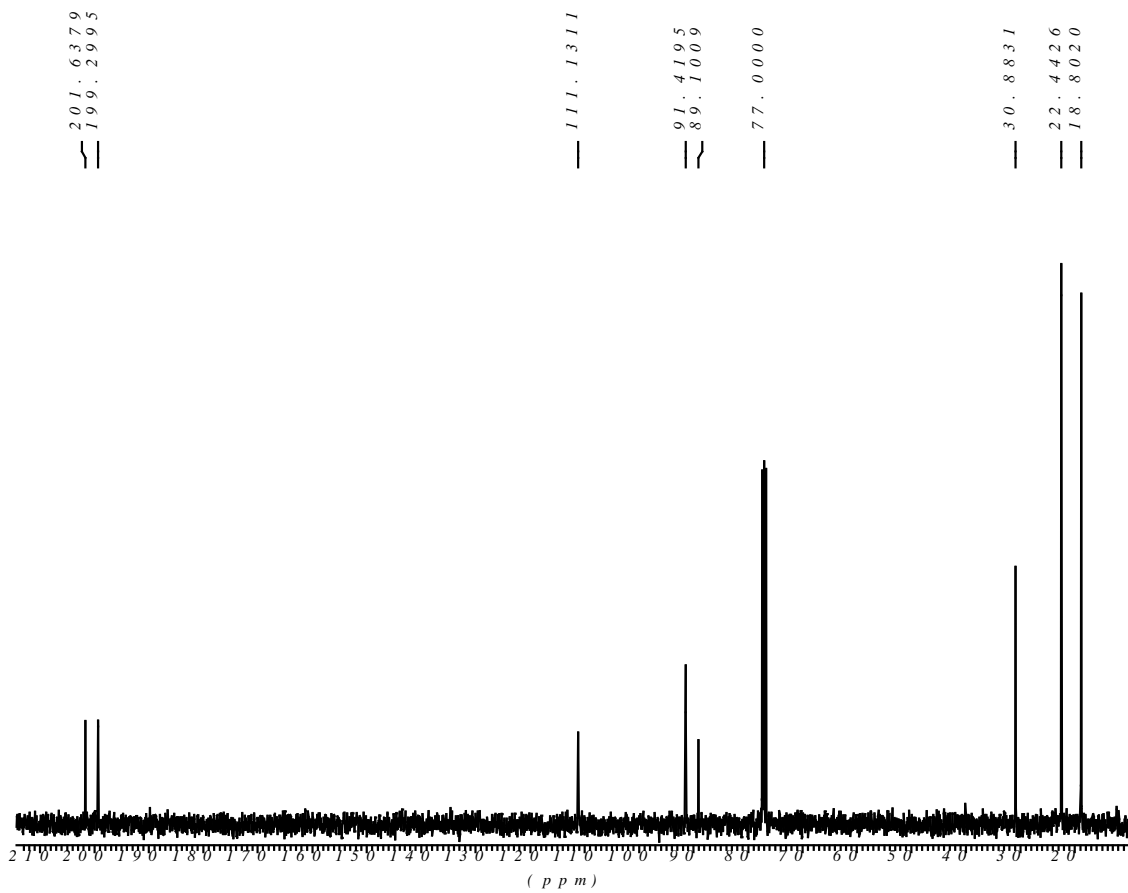






## 5,5-Dimethyl-4-oxo-2-propyl-4,5-dihydro-3-furancarbonitrile (4d)





## 2-Isobutyl-5,5-dimethyl-4-oxo-4,5-dihydro-3-furancarboxitrile (4e)

