

# Supporting Information

## Iodine-promoted Radical Alkyl Sulfuration of Imidazopyridines with Dialkyl Azo Compounds and Elemental Sulfur

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Yuan Tang<sup>\*ab</sup>

<sup>a</sup> Department of Applied Chemistry, College of Materials and Energy, South China Agricultural University,  
Guangzhou 510642, China.

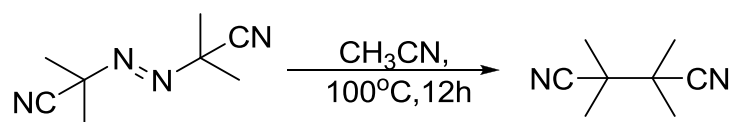
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University, Guangzhou 510642, China

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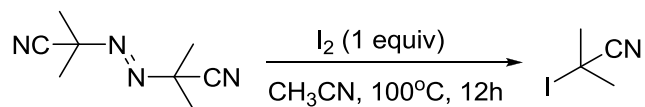
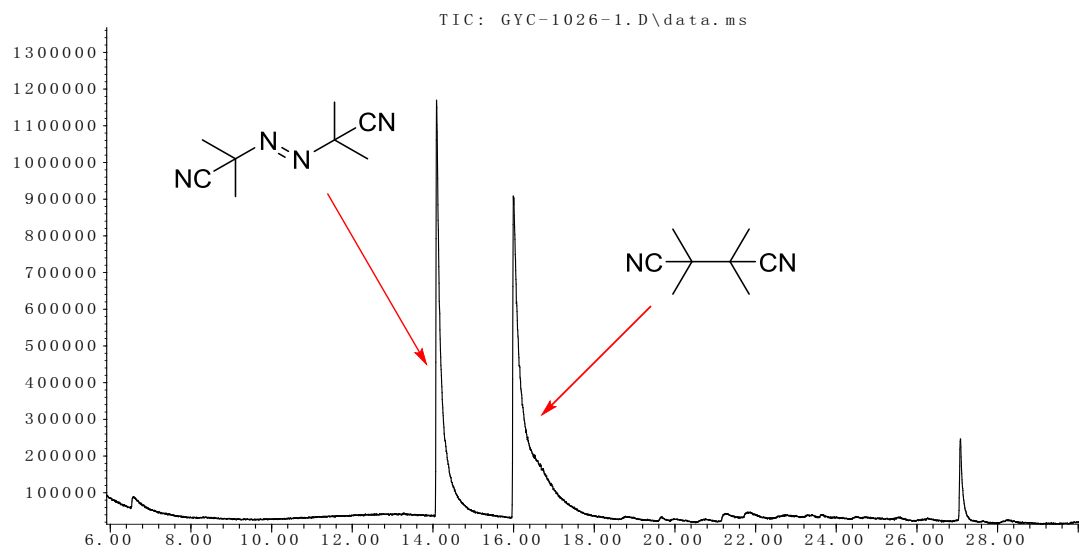
### List of Contents

<b>1. GC-MS analysis for the Control experiment (Scheme 3, eqn 6)</b>	<b>2-3</b>
<b>2. NMR Spectra for products</b>	<b>4-28</b>

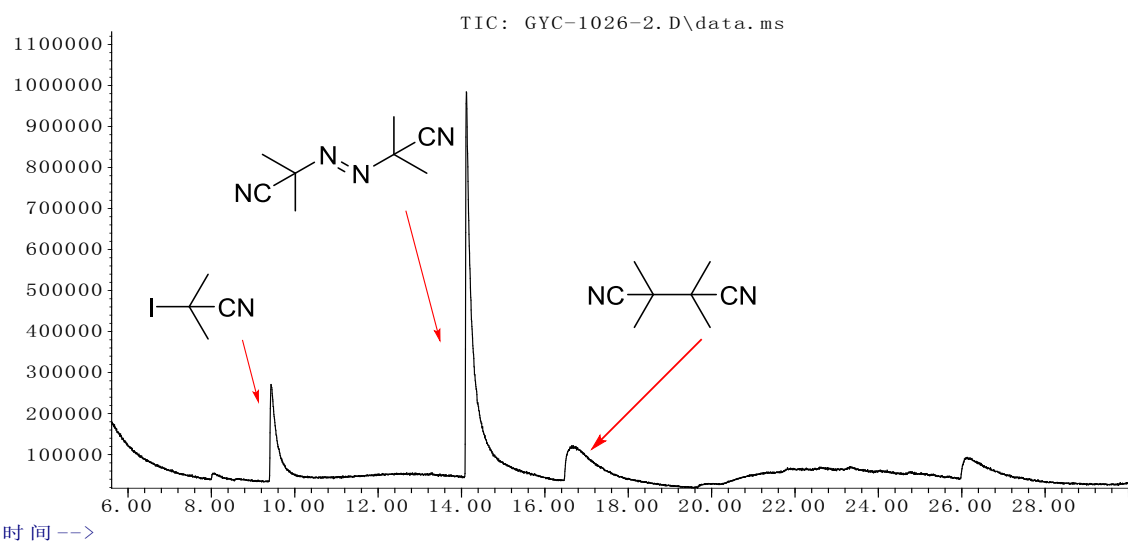
1. GC-MS analysis for the Control experiment (Scheme 3, eqn 6)

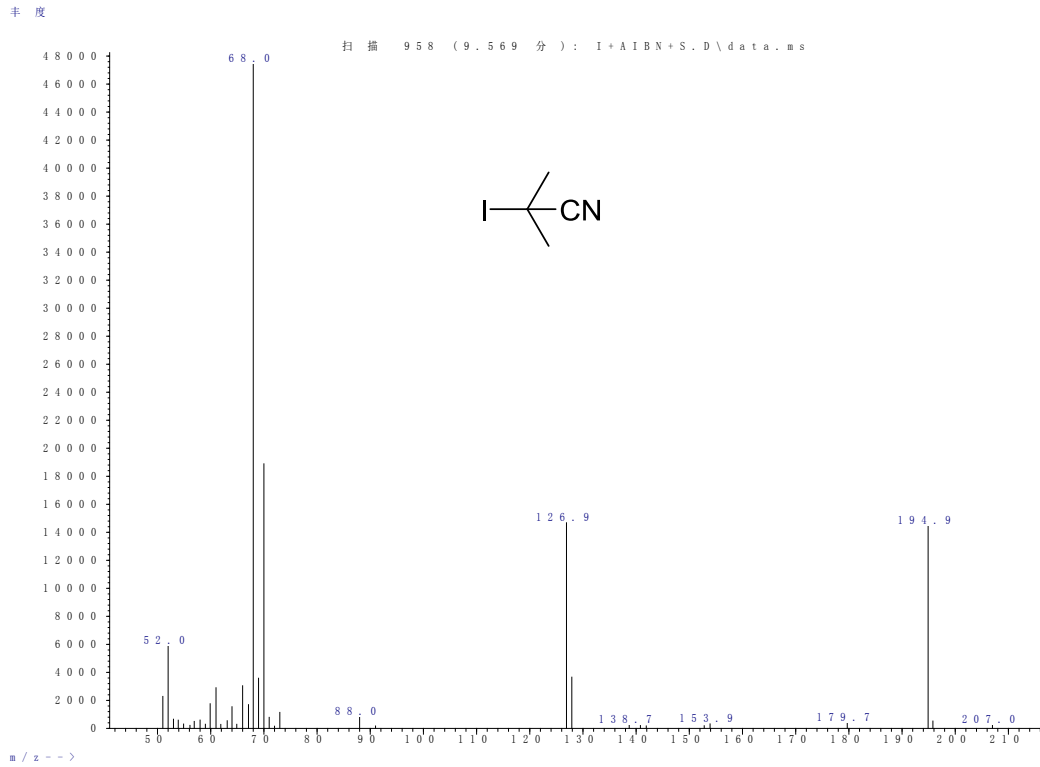


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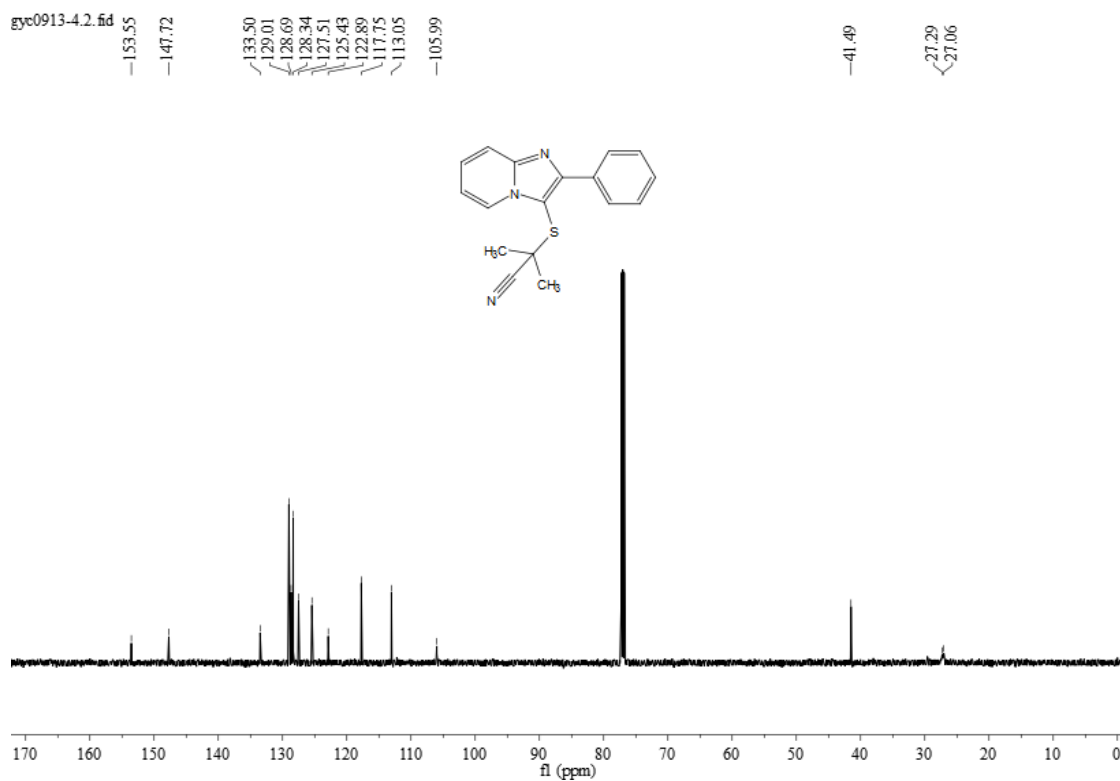
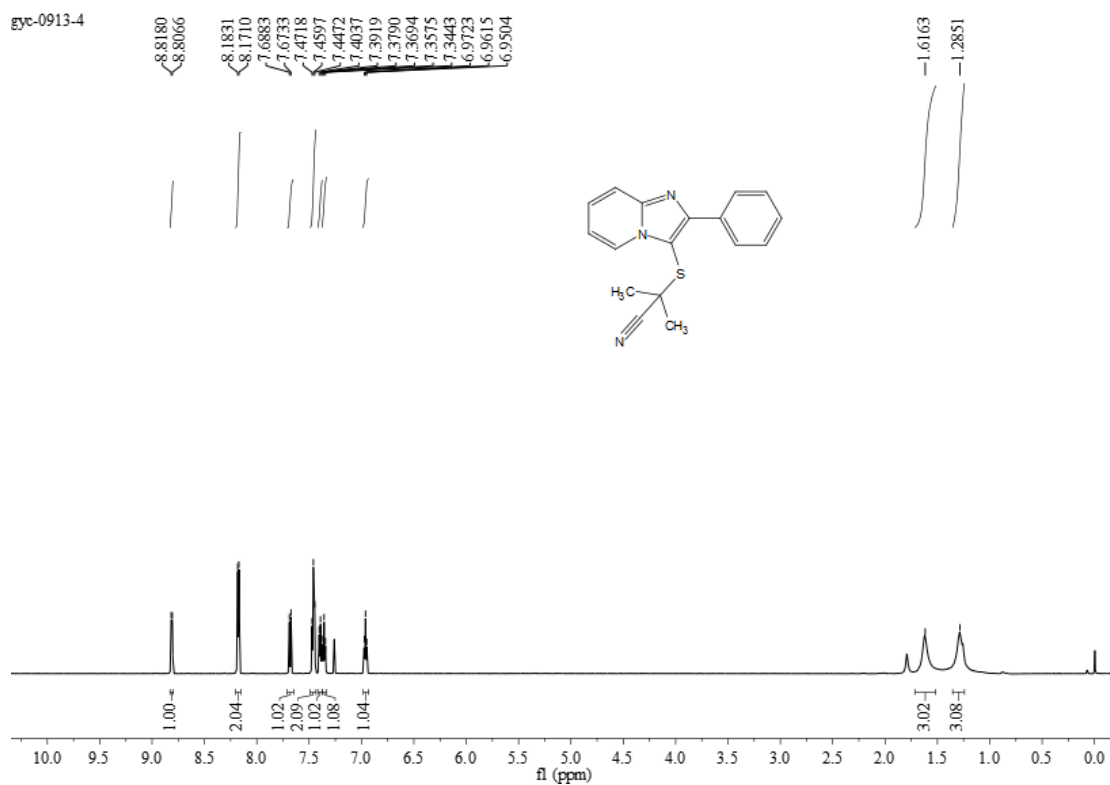




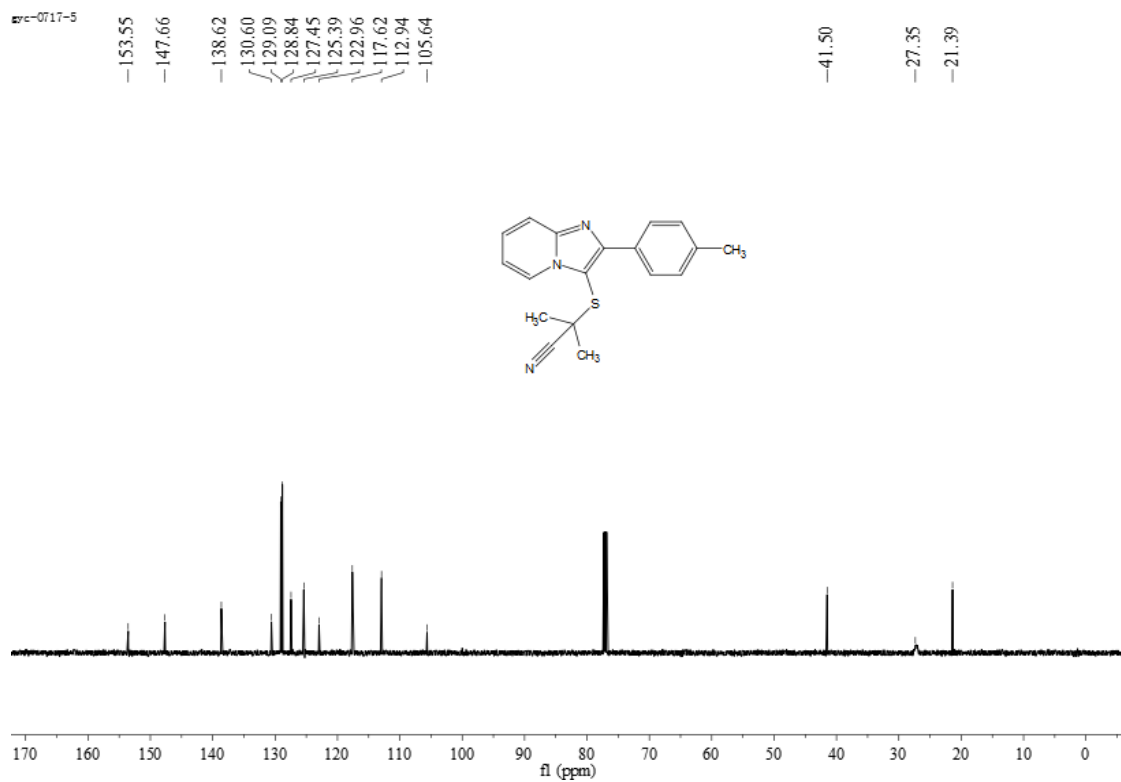
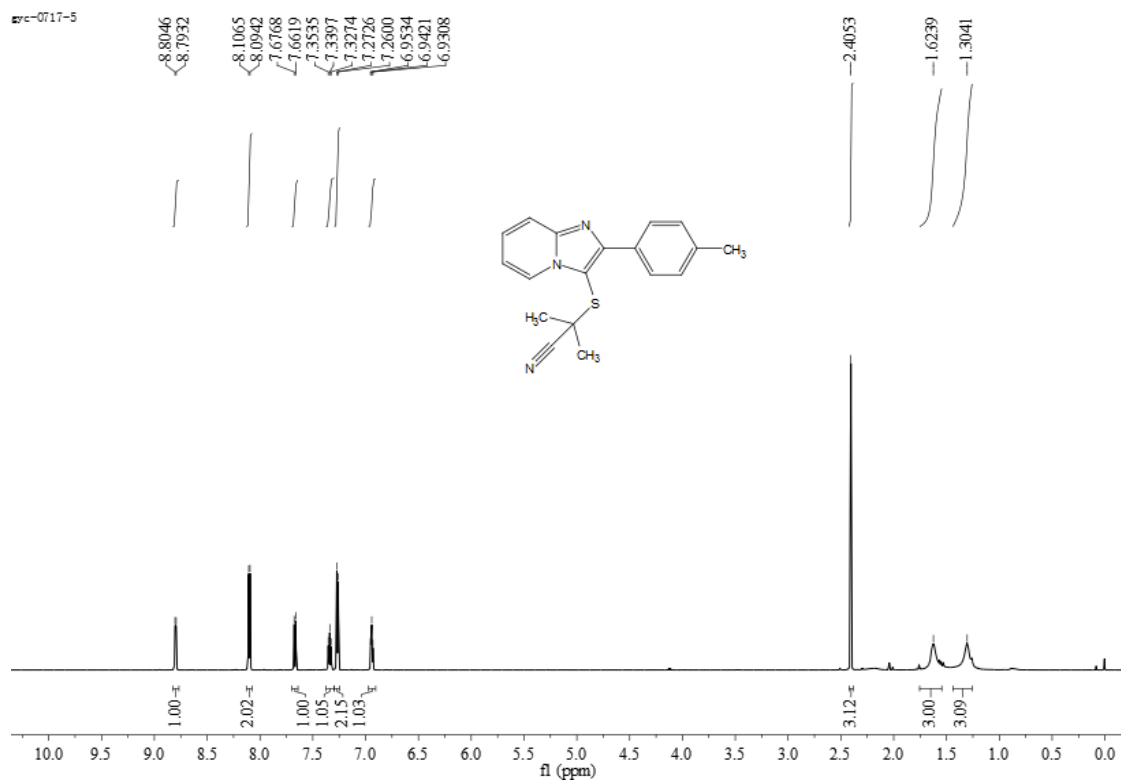
**Note:** GC-MS analysis method: initial temperature 40 °C hold for 8 minutes, temperature programming rate 8 °C/min, carrier gas flow rate 1.0 mL/min. Column model: Agilent 19091S-433; 325 °C, 30 m × 250 μm × 0.25 μm.

## 2. NMR Spectra for products

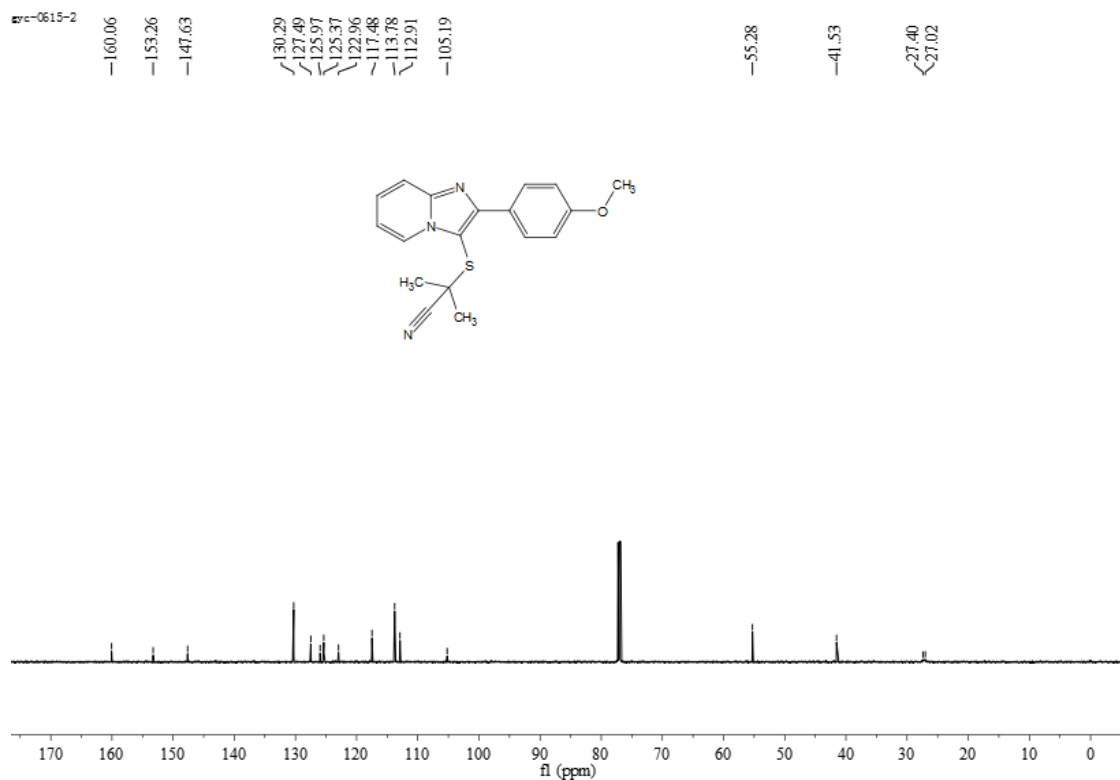
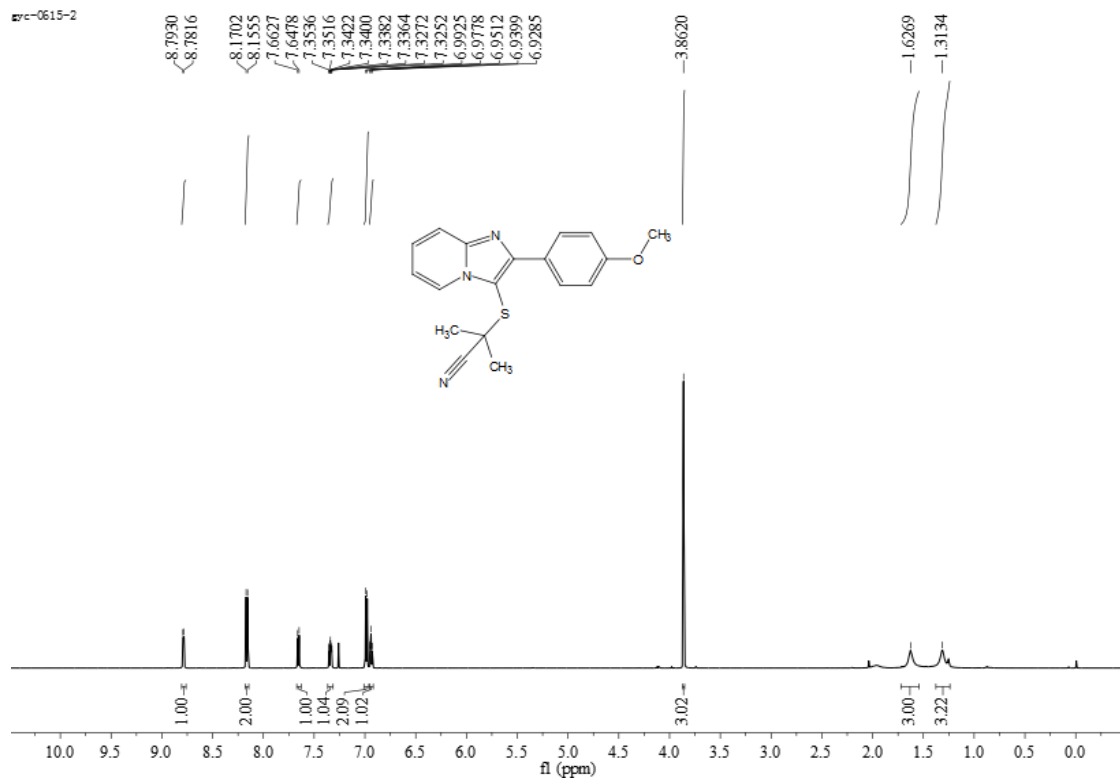
### 2-methyl-2-((2-phenylimidazo[1,2-a]pyridin-3-yl)thio)propanenitrile (3)



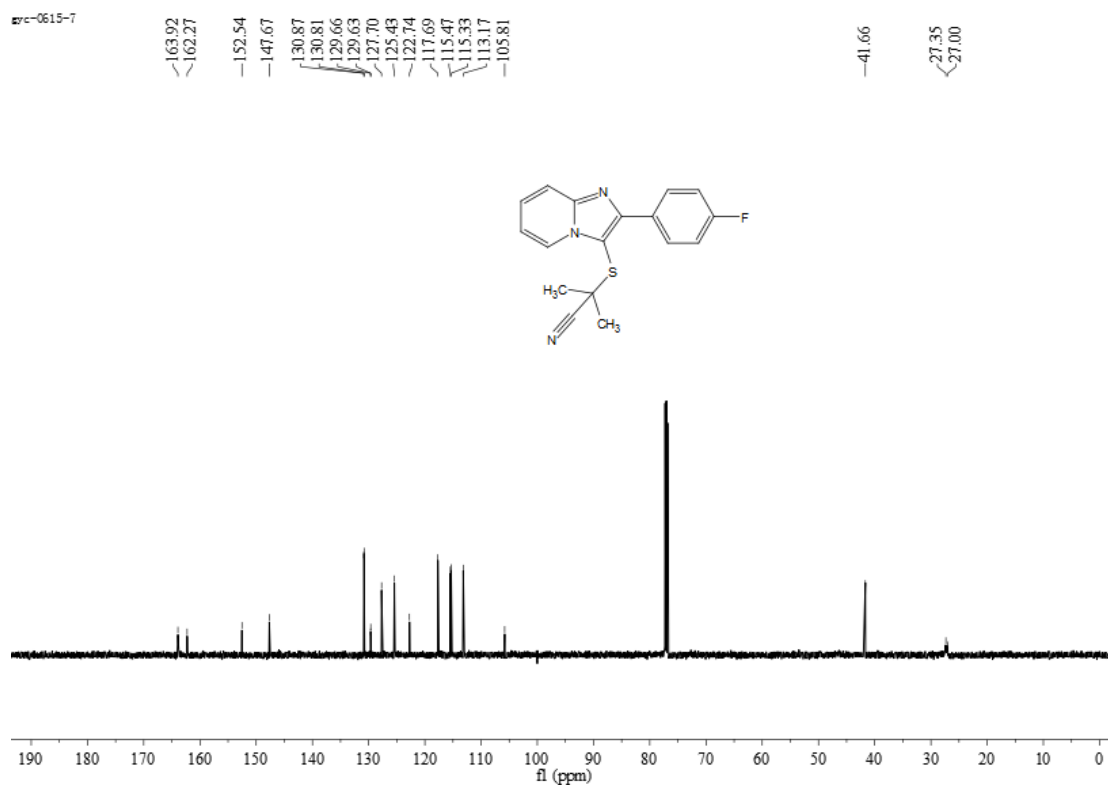
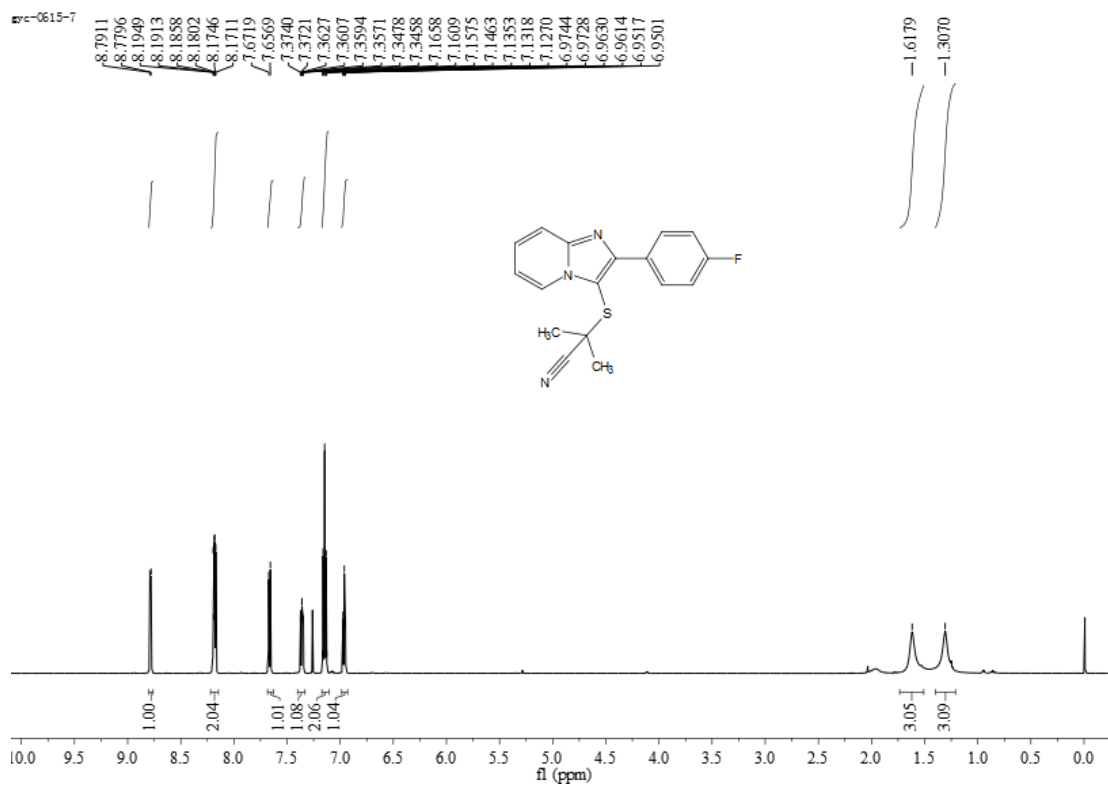
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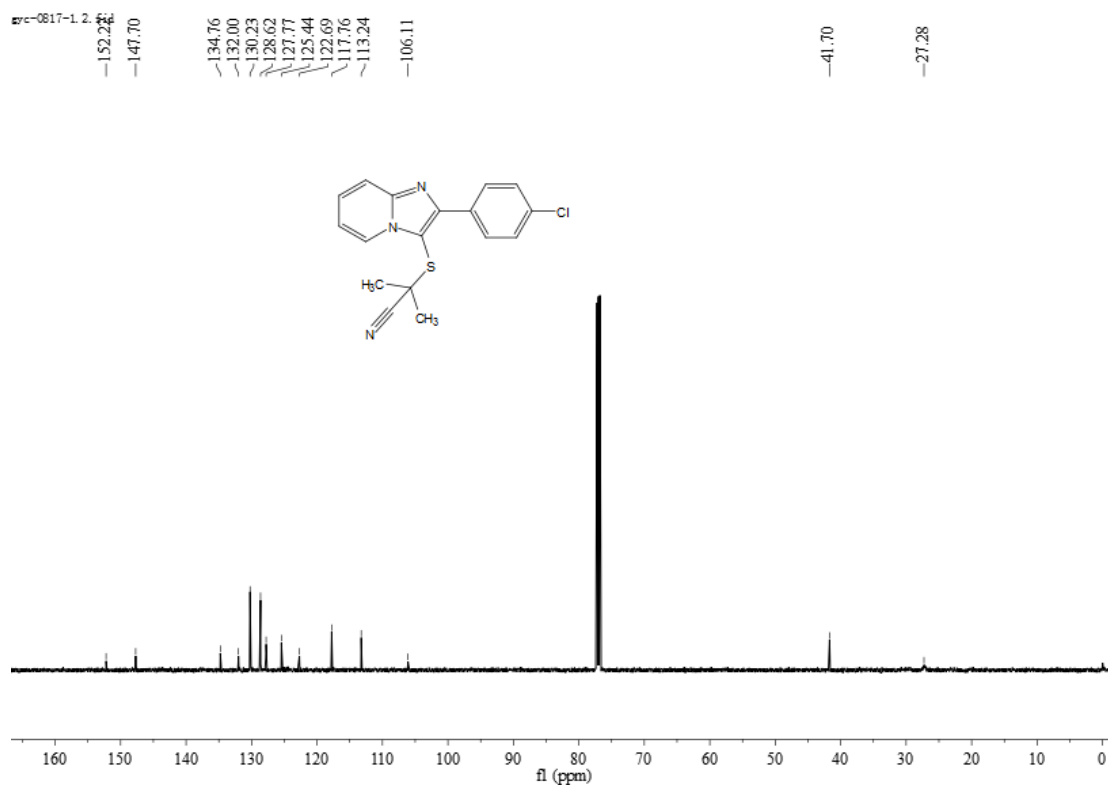
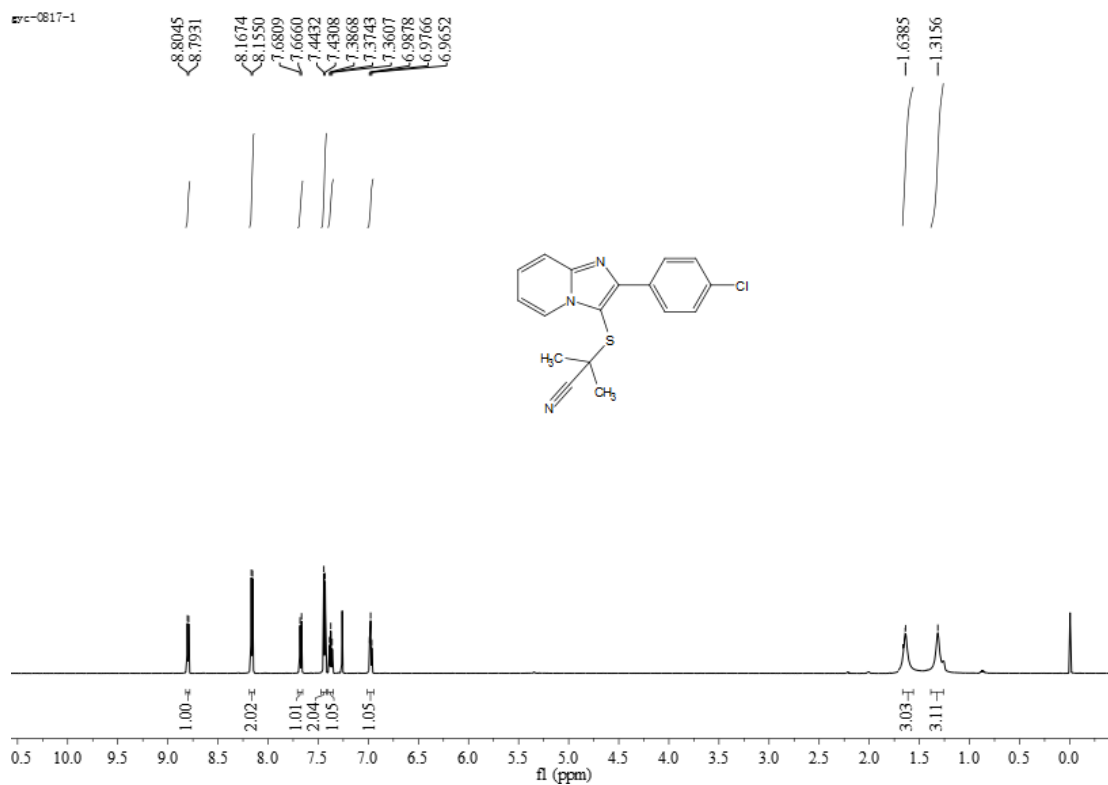
2-((2-(4-methoxyphenyl)imidazo[1,2-a]pyridin-3-yl)thio)-2-methylpropanenitrile (5)



2-((2-(4-fluorophenyl)imidazo[1,2-a]pyridin-3-yl)thio)-2-methylpropanenitrile (6)

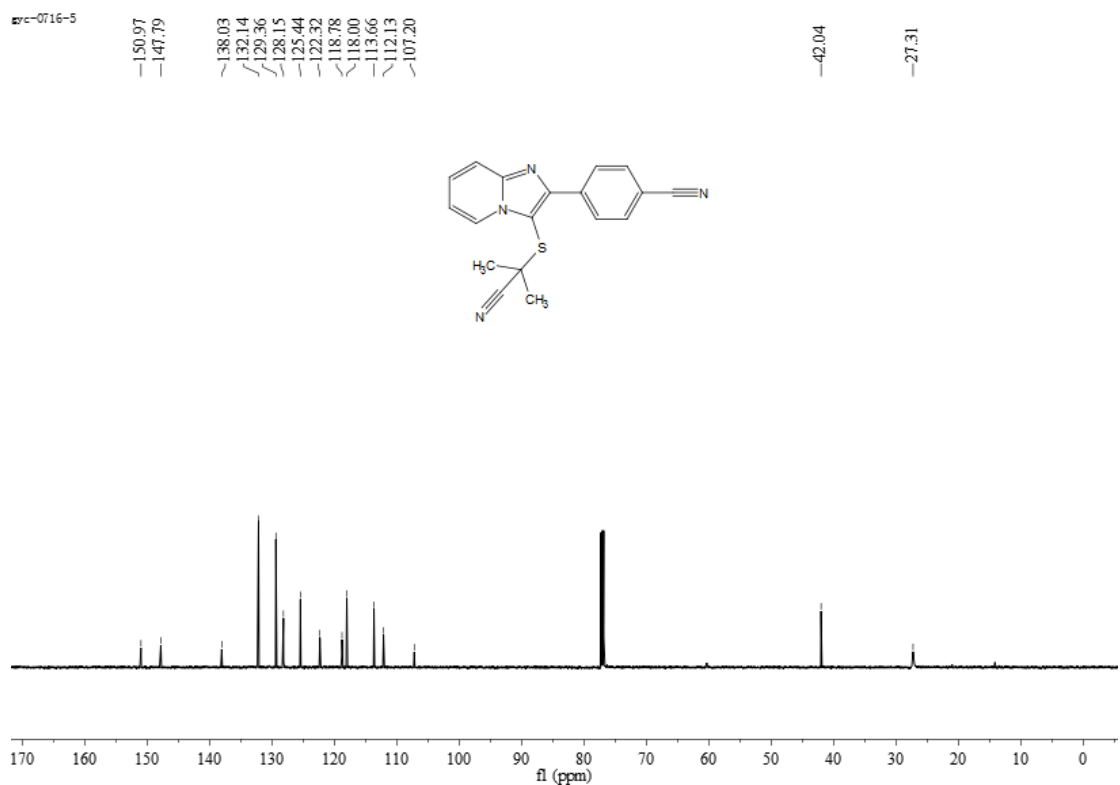
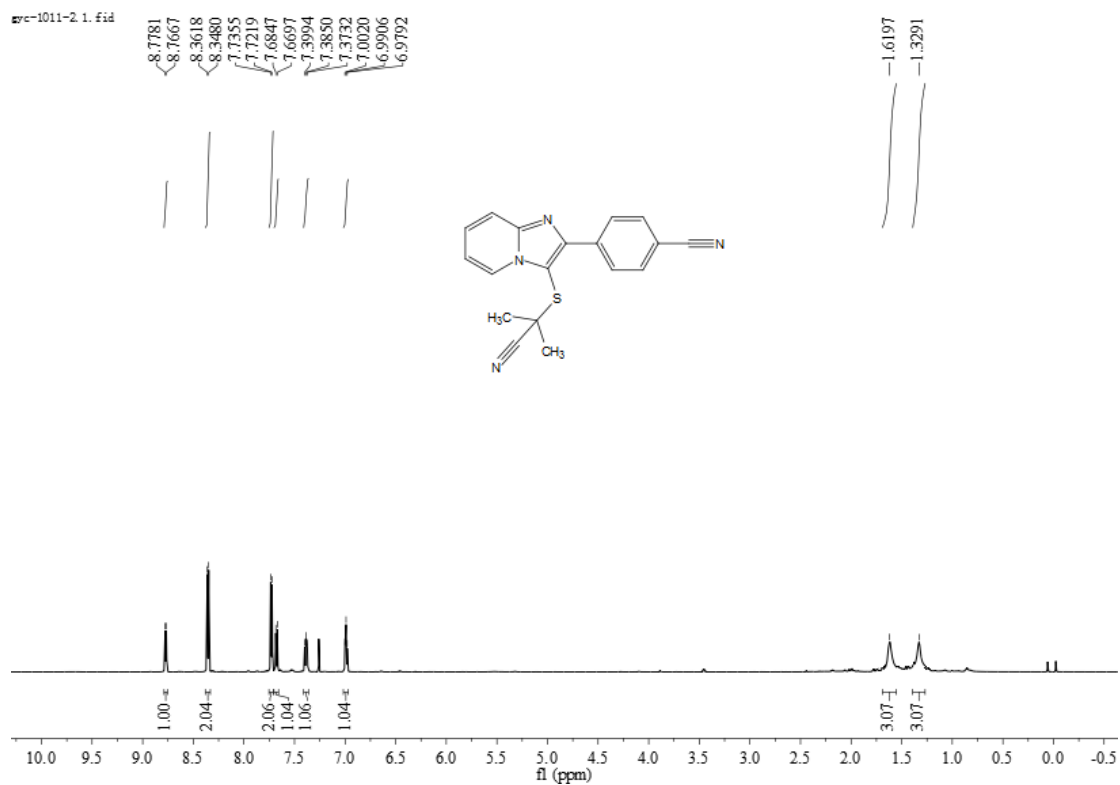


2-(2-(4-chlorophenyl)imidazo[1,2-a]pyridin-3-ylthio)-2-methylpropanenitrile (7)

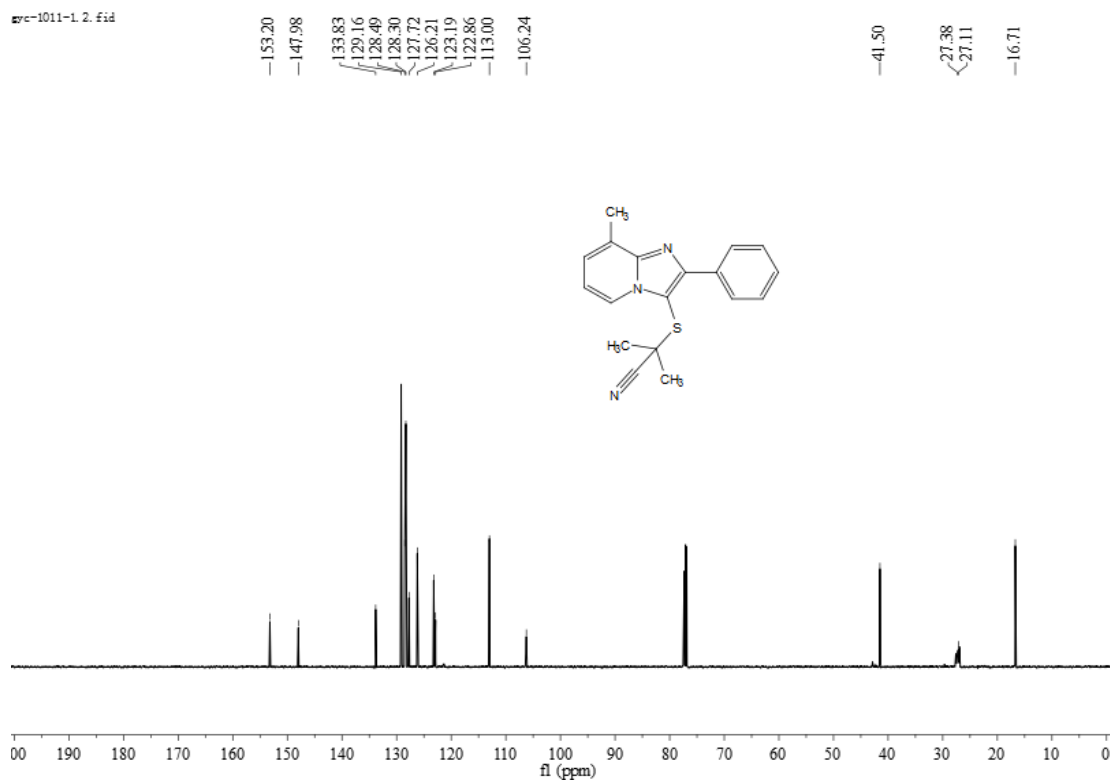
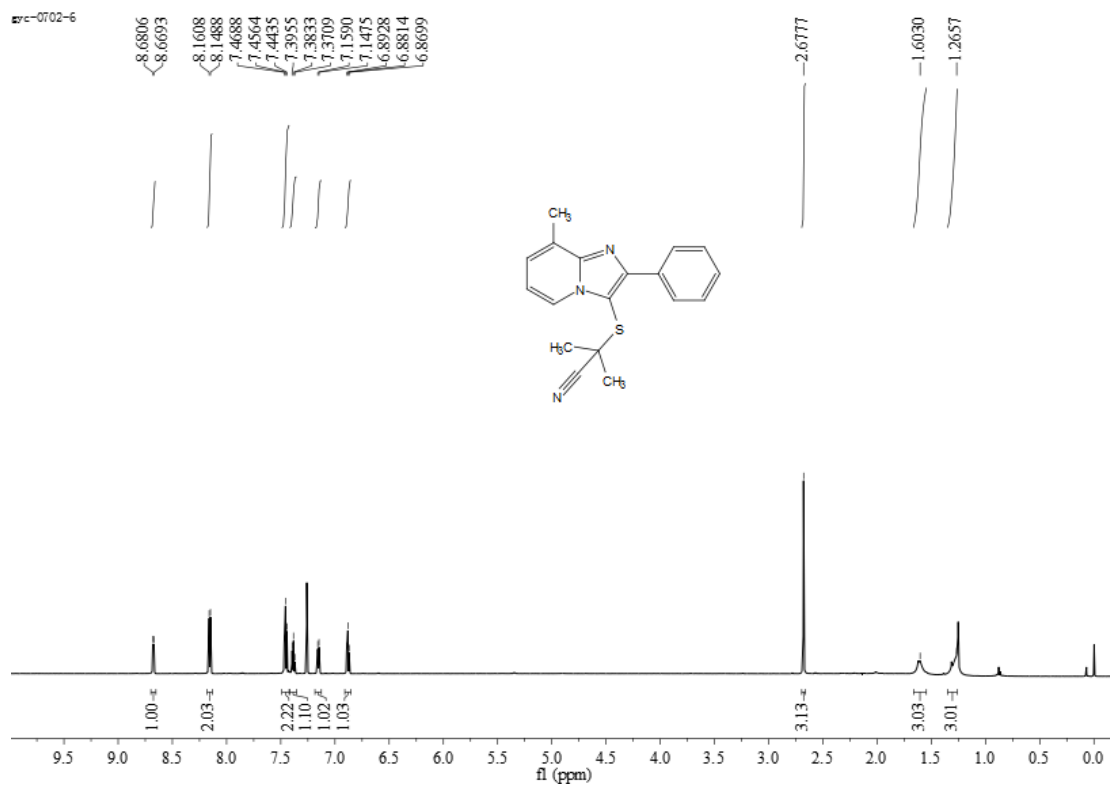




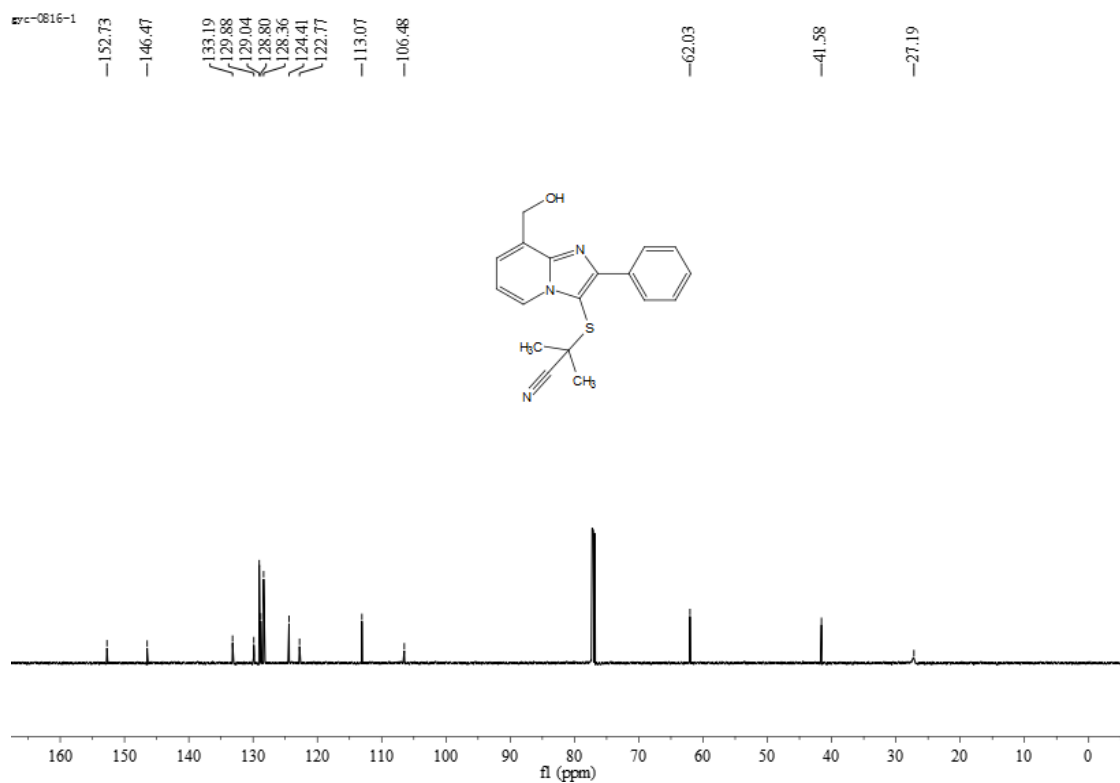
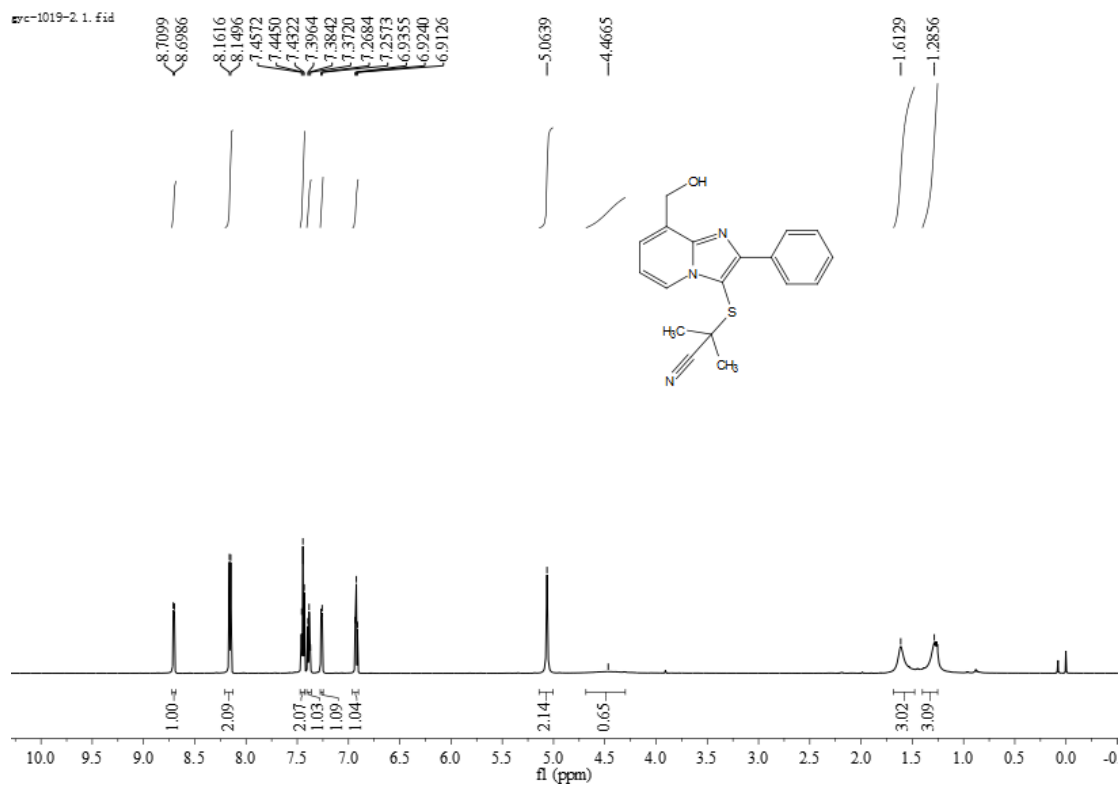
4-(3-((2-cyanopropan-2-yl)thio)imidazo[1,2-a]pyridin-2-yl)benzonitrile(8)



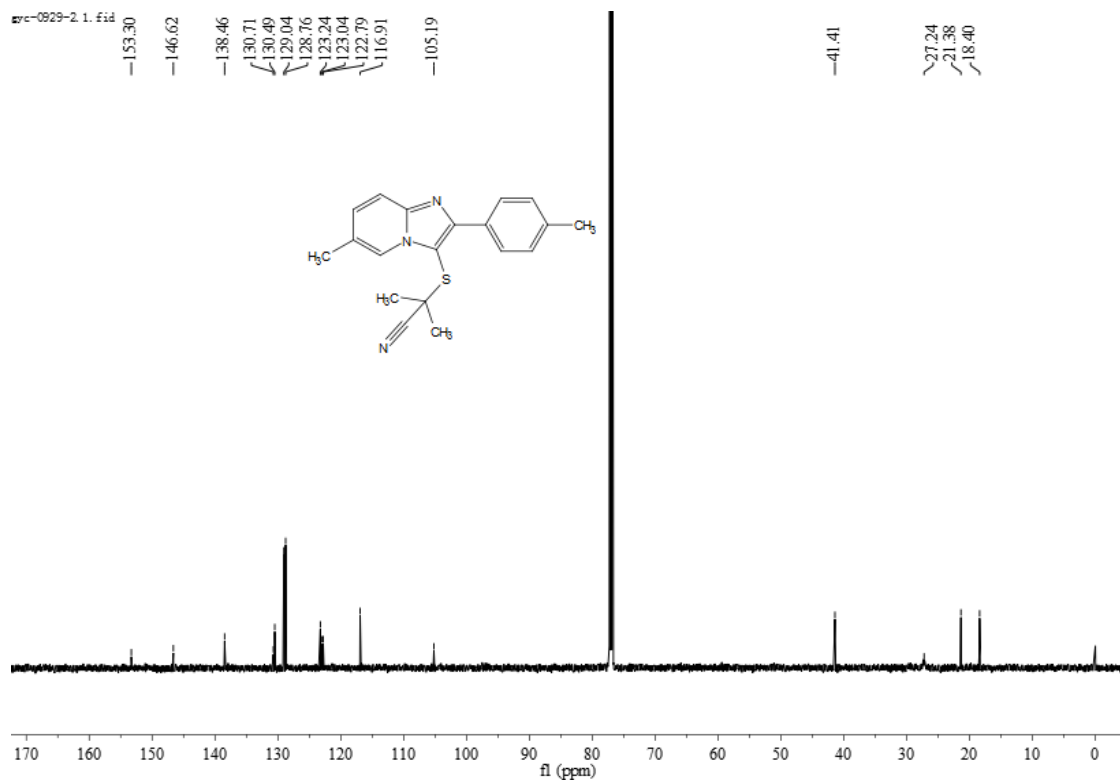
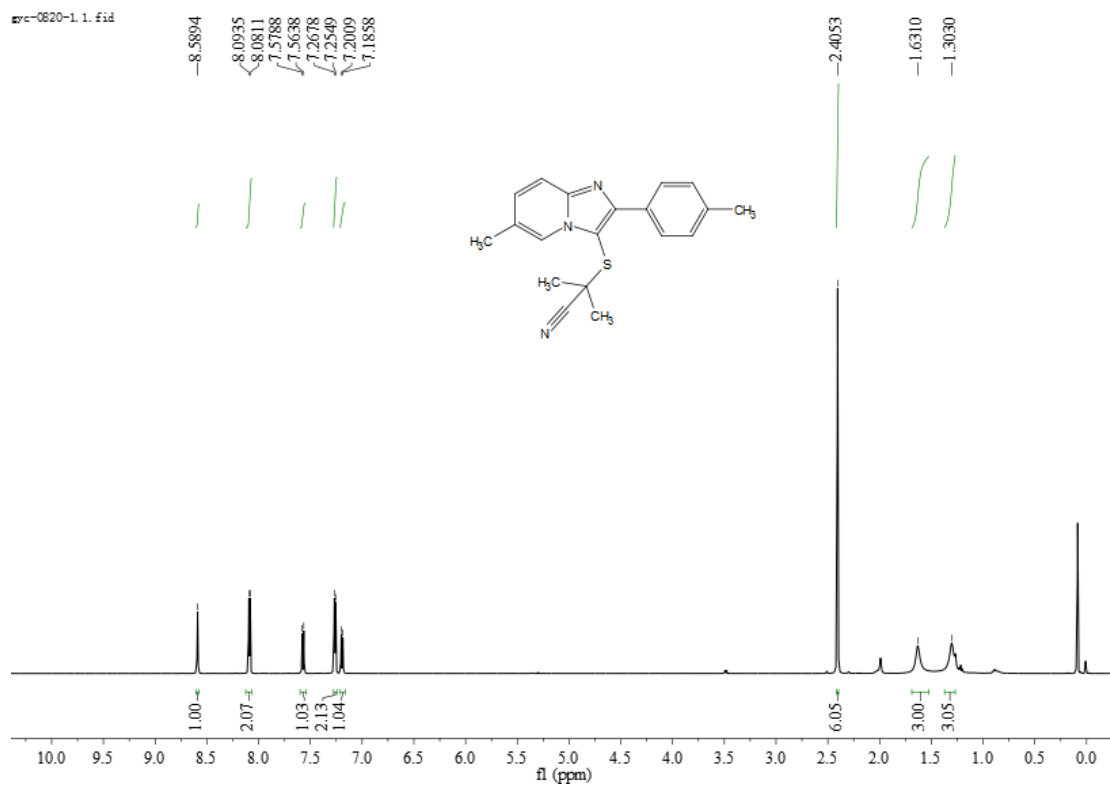
**2-methyl-2-((8-methyl-2-phenylimidazo[1,2-a]pyridin-3-yl)thio)propanenitrile (9)**



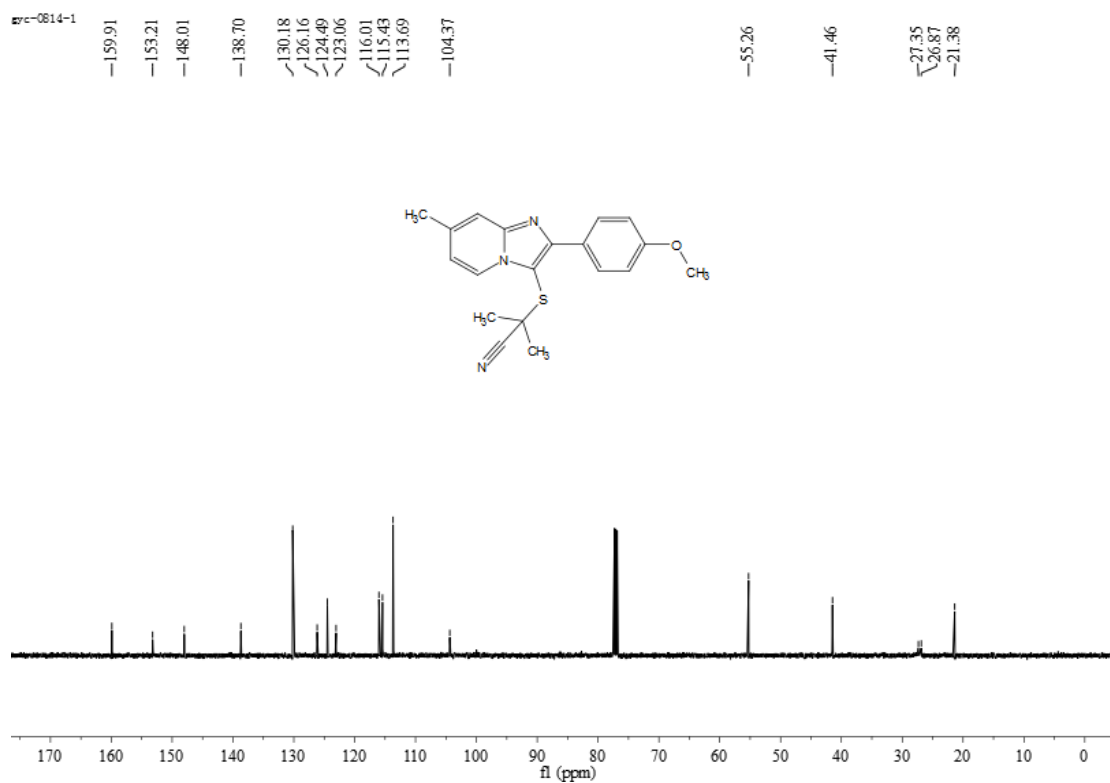
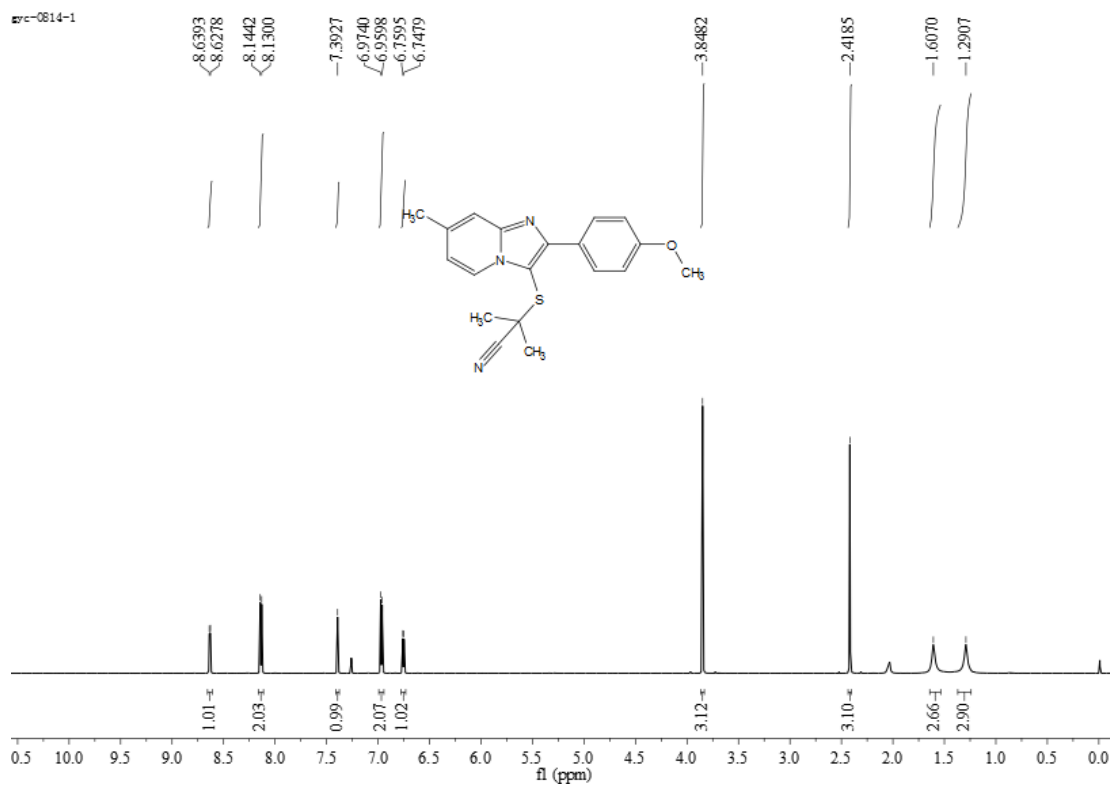
2-((8-(hydroxymethyl)-2-phenylimidazo[1,2-a]pyridin-3-yl)thio)-2-methylpropanenitrile (10)



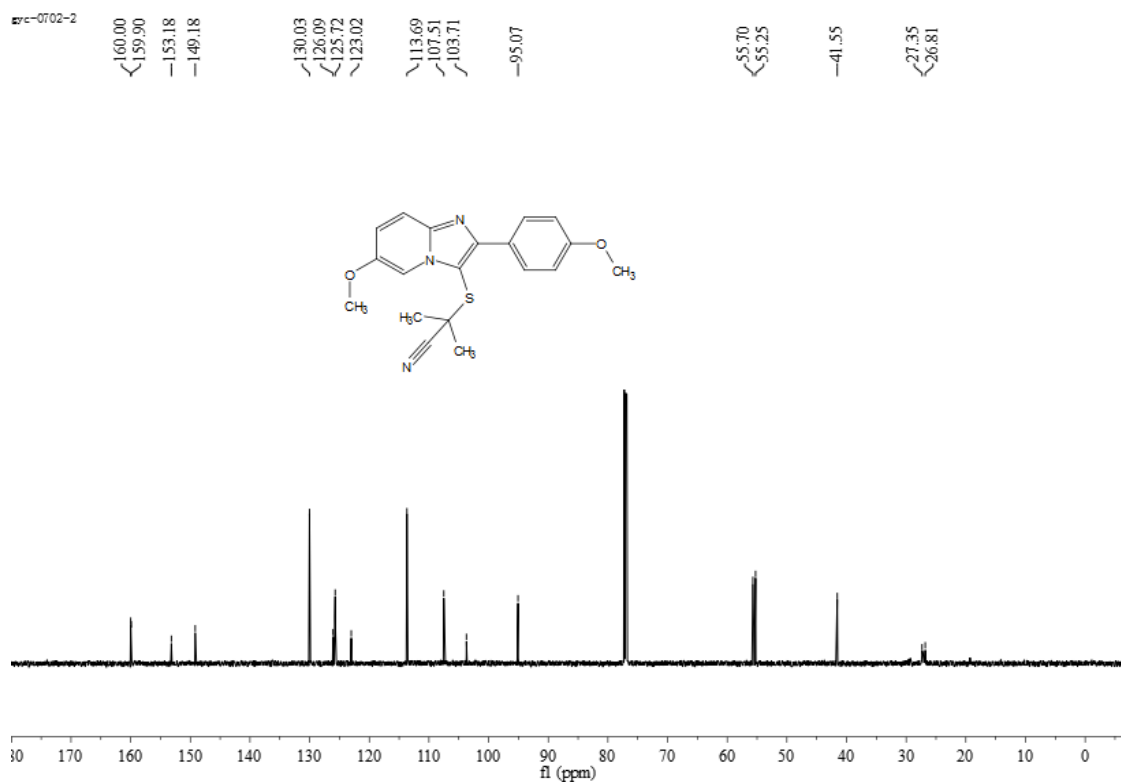
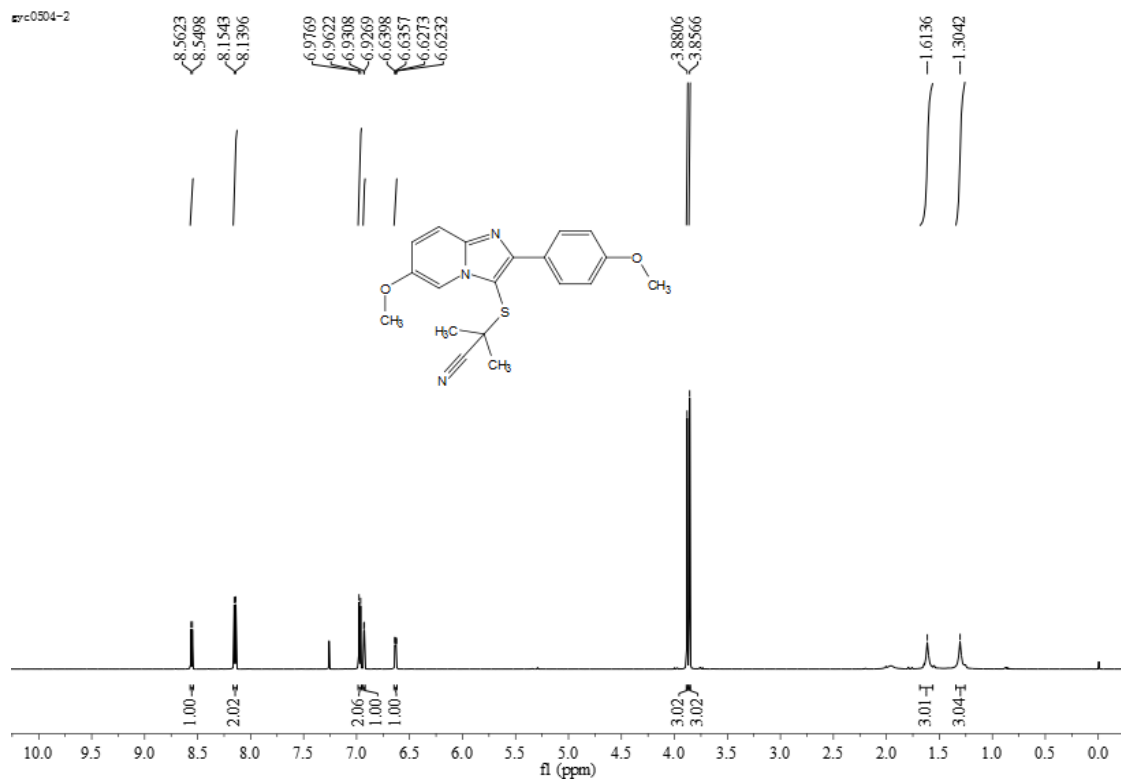
2-methyl-2-((6-methyl-2-(p-tolyl)imidazo[1,2-a]pyridin-3-yl)thio)propanenitrile (11)



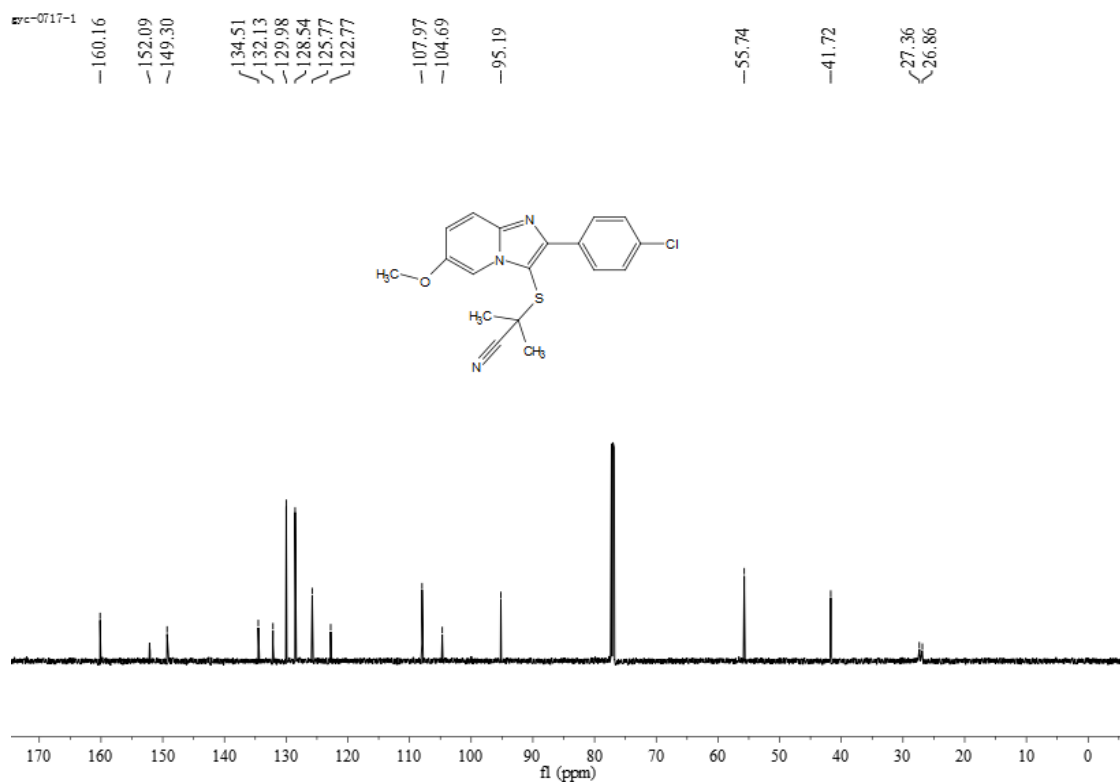
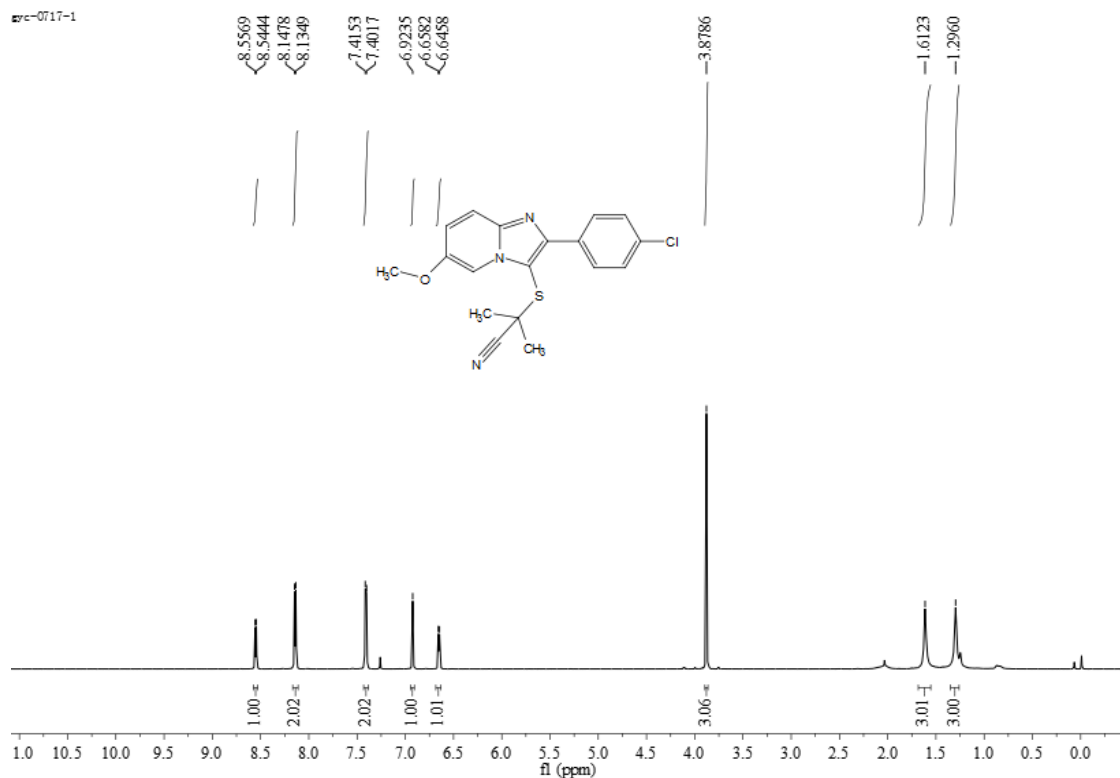
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(12)



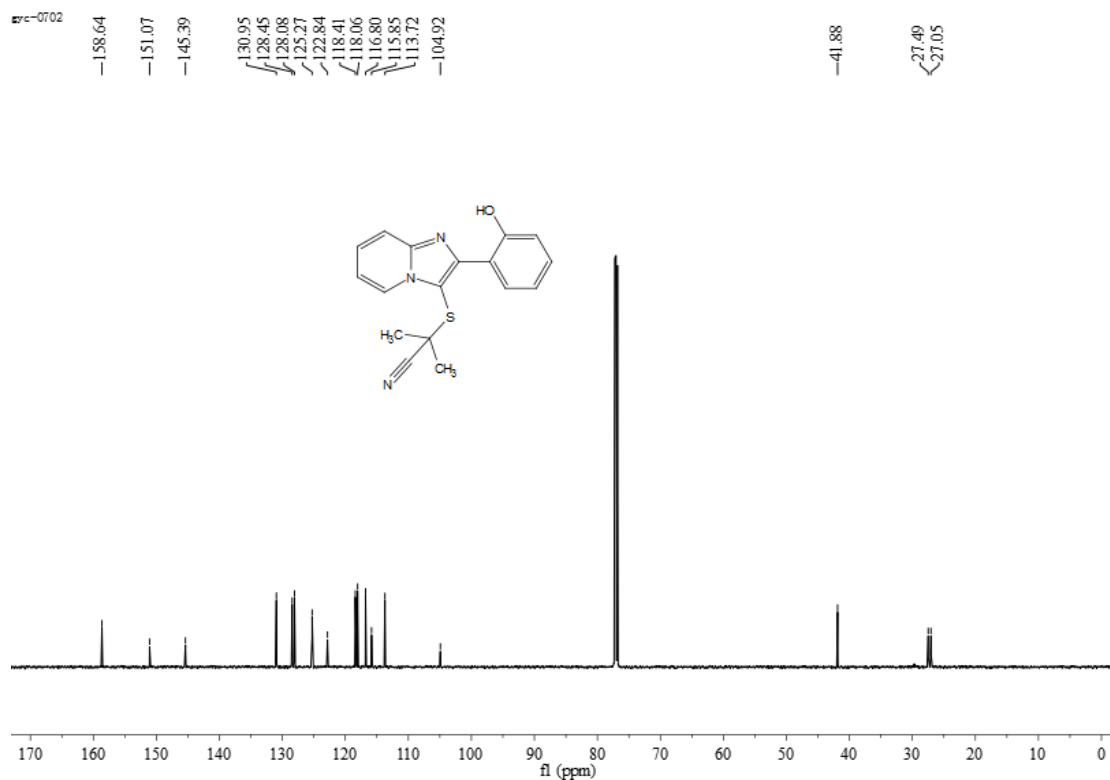
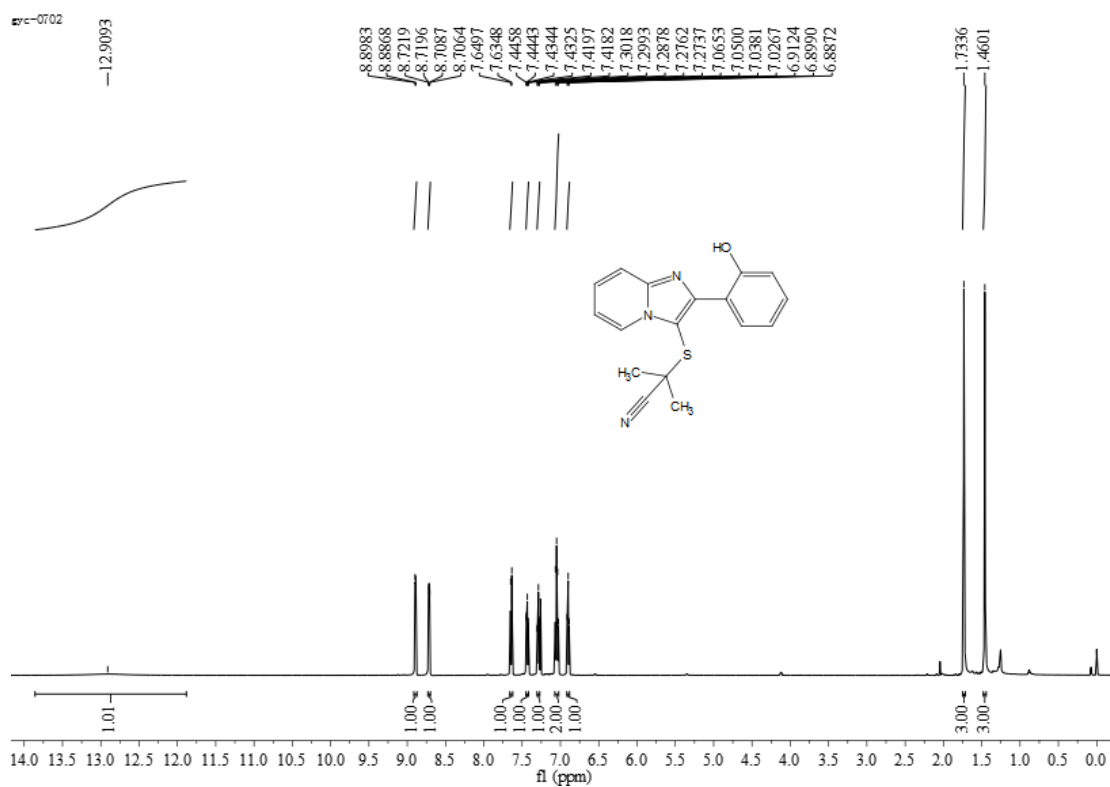
2-((6-methoxy-2-(4-methoxyphenyl)imidazo[1,2-a]pyridin-3-yl)thio)-2-methylpropanenitrile  
(13)



2-((2-(4-chlorophenyl)-6-methoxyimidazo[1,2-a]pyridin-3-yl)thio)-2-methylpropanenitrile  
(14)

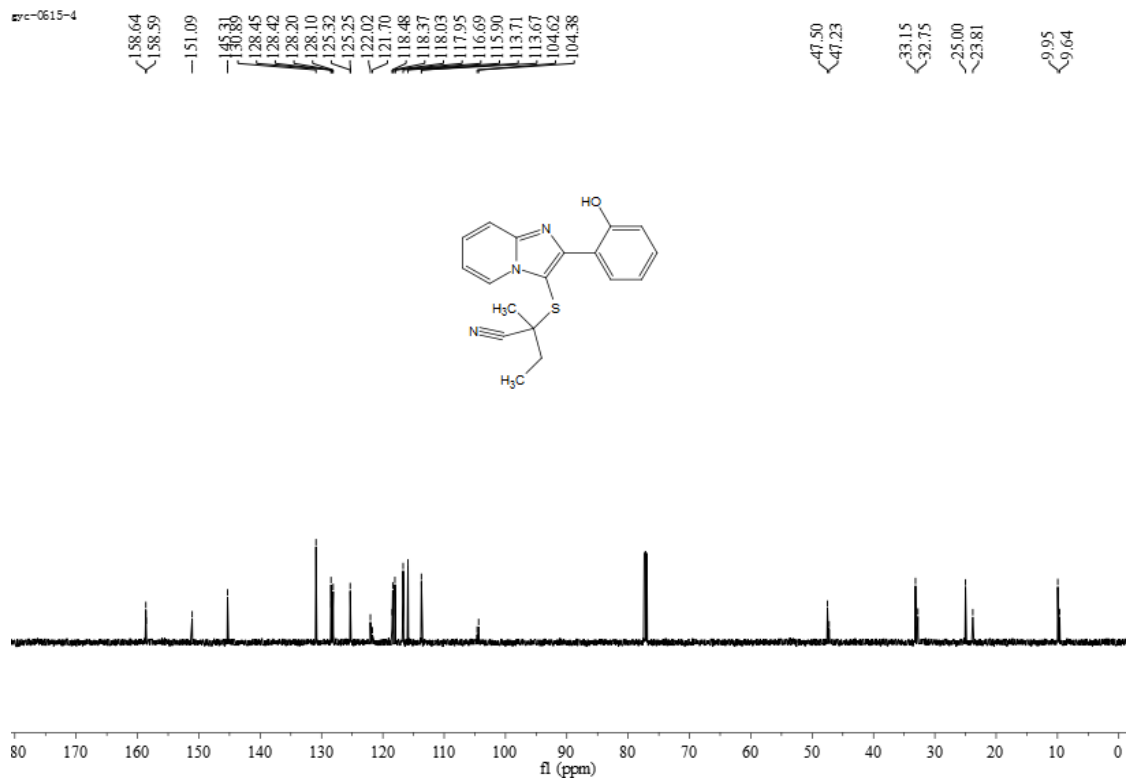
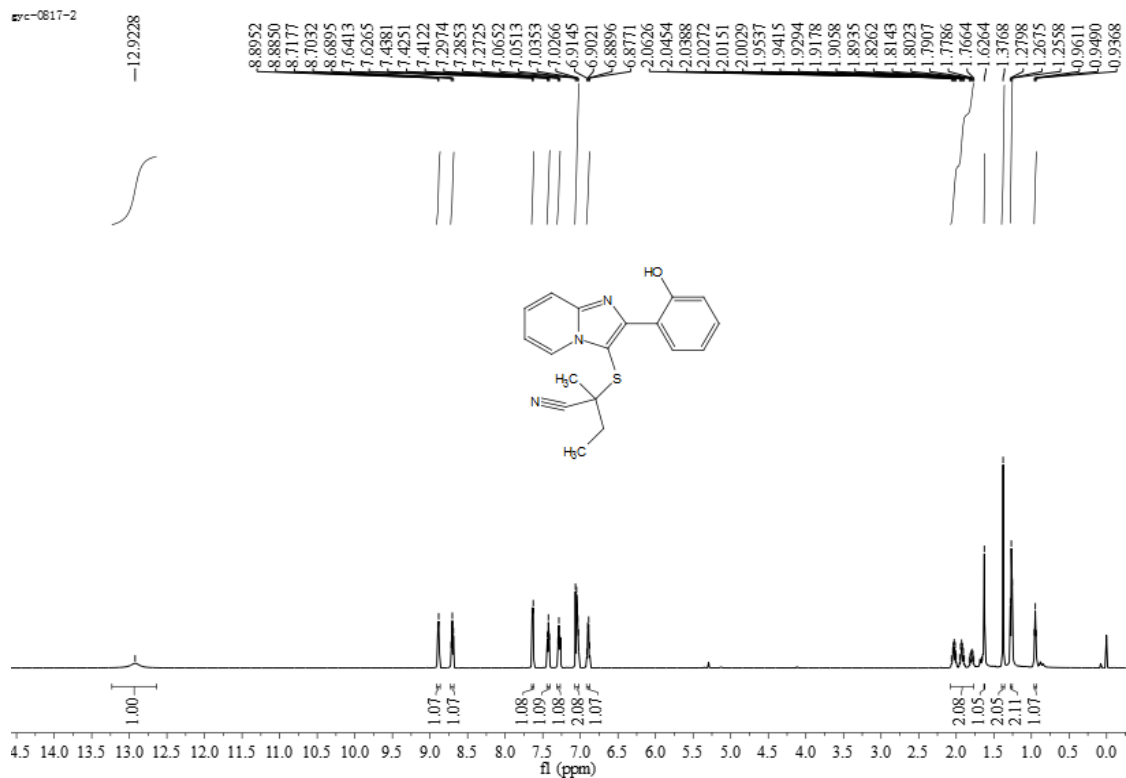


2-((2-(2-hydroxyphenyl)imidazo[1,2-a]pyridin-3-yl)thio)-2-methylpropanenitrile (15)

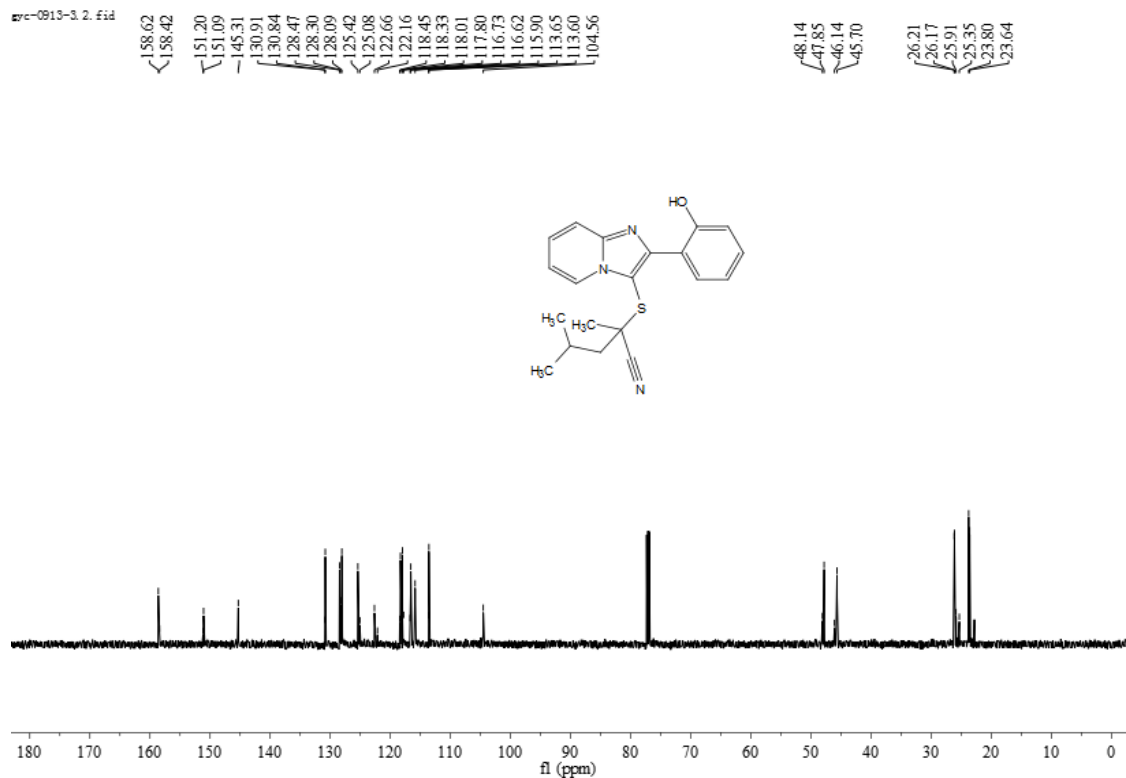
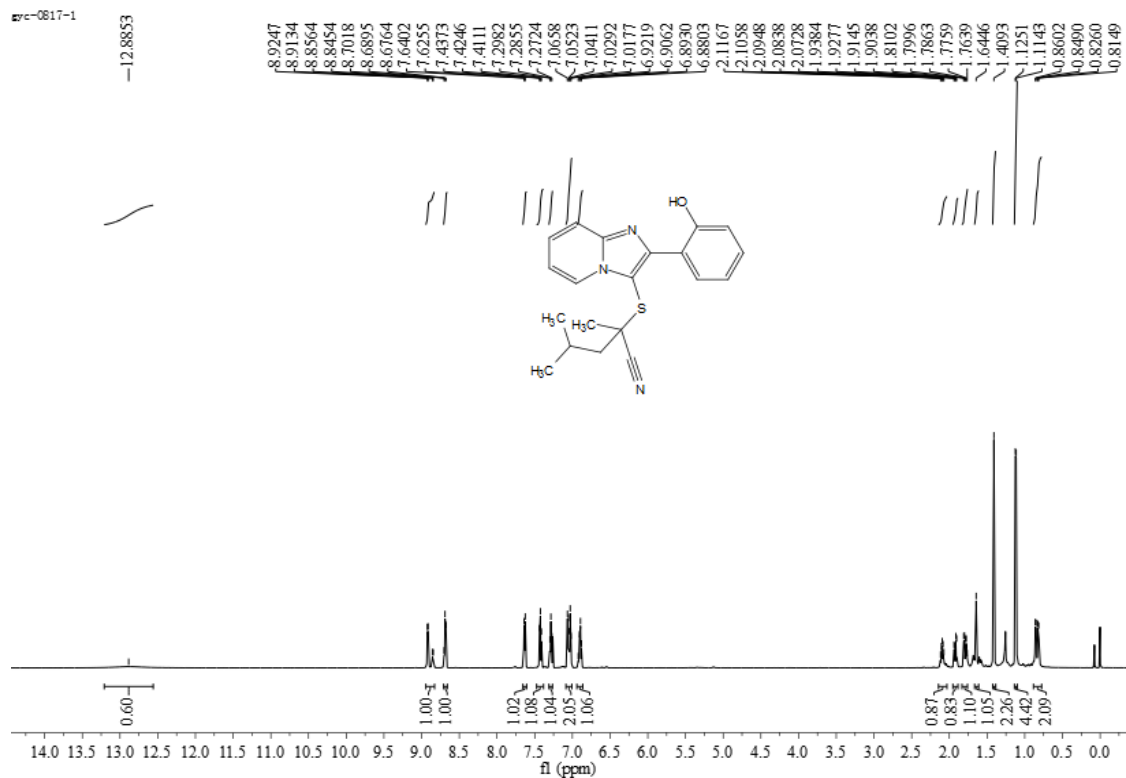




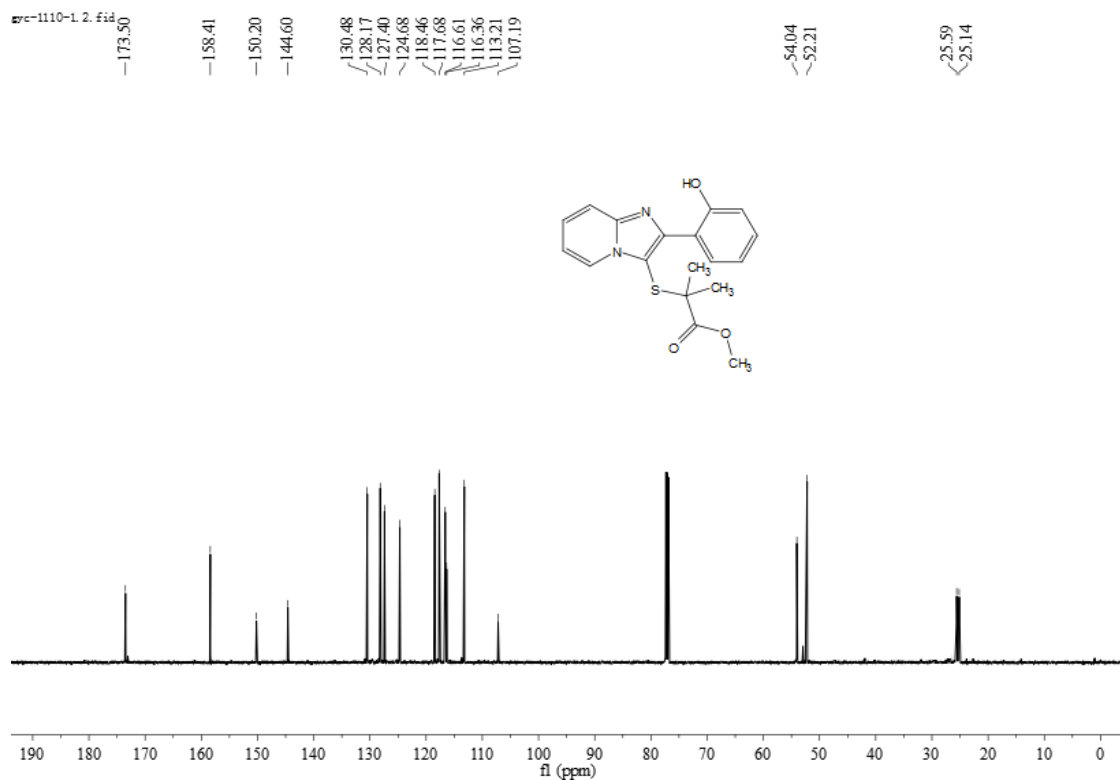
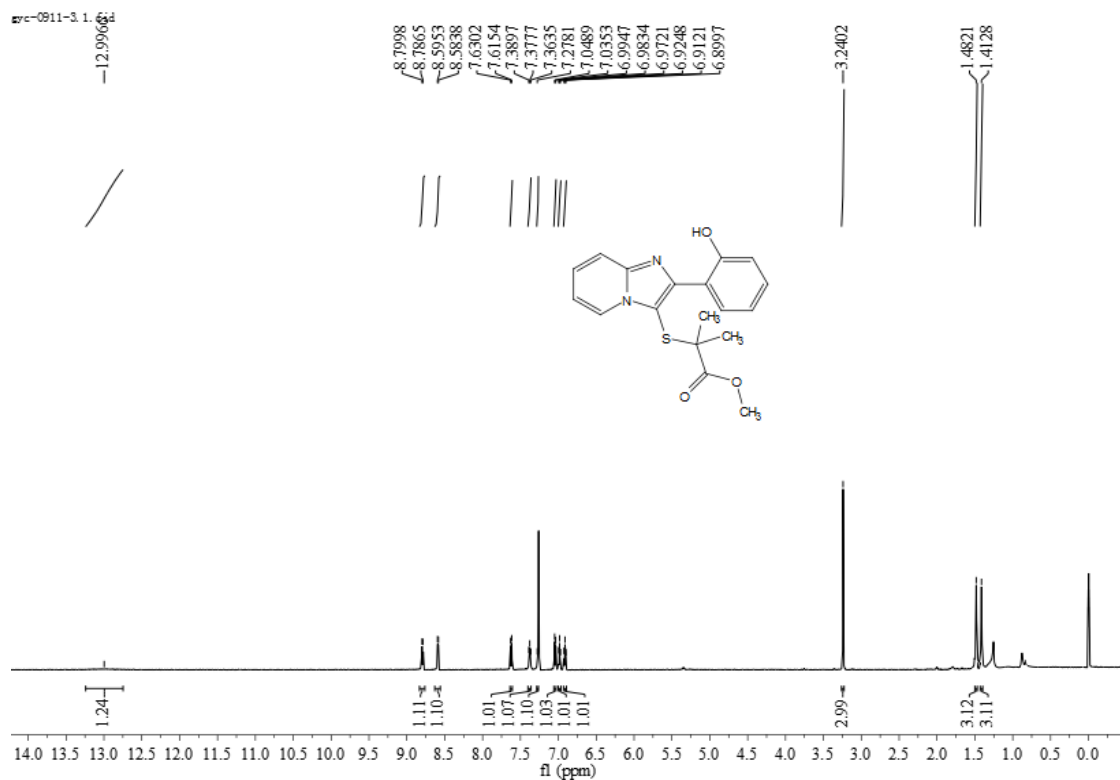
2-((2-(2-hydroxyphenyl)imidazo[1,2-a]pyridin-3-yl)thio)-2-methylbutanenitrile (16)



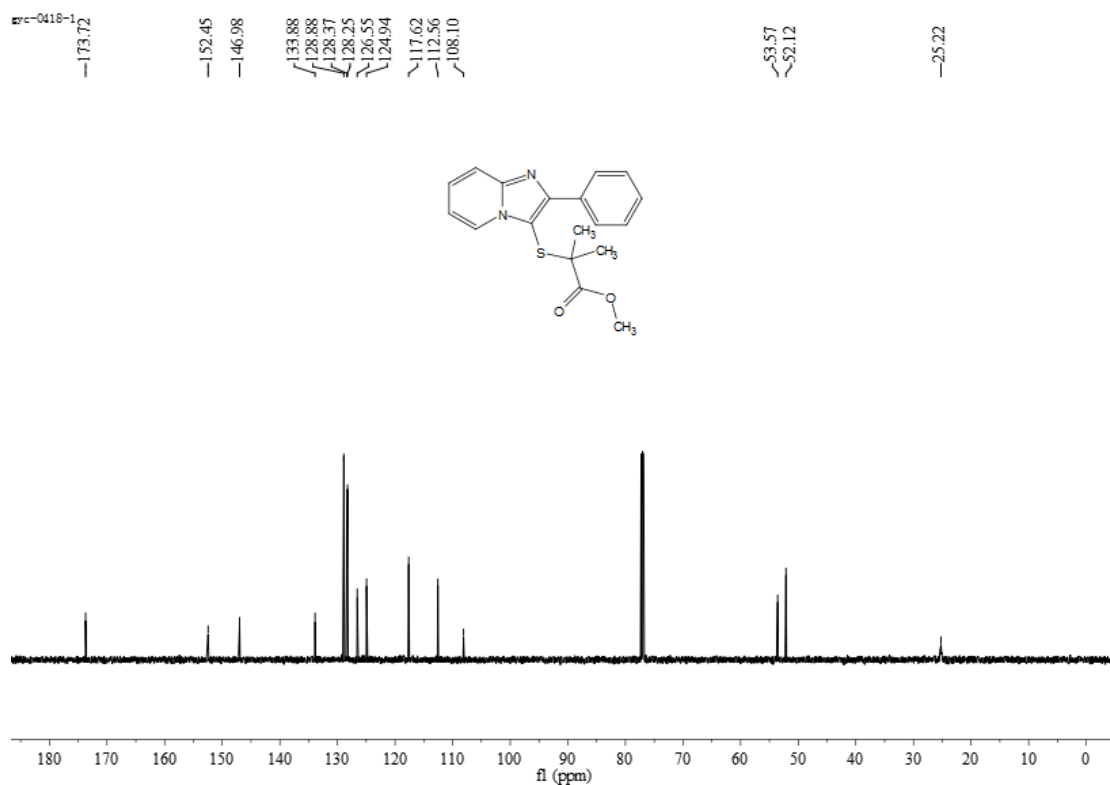
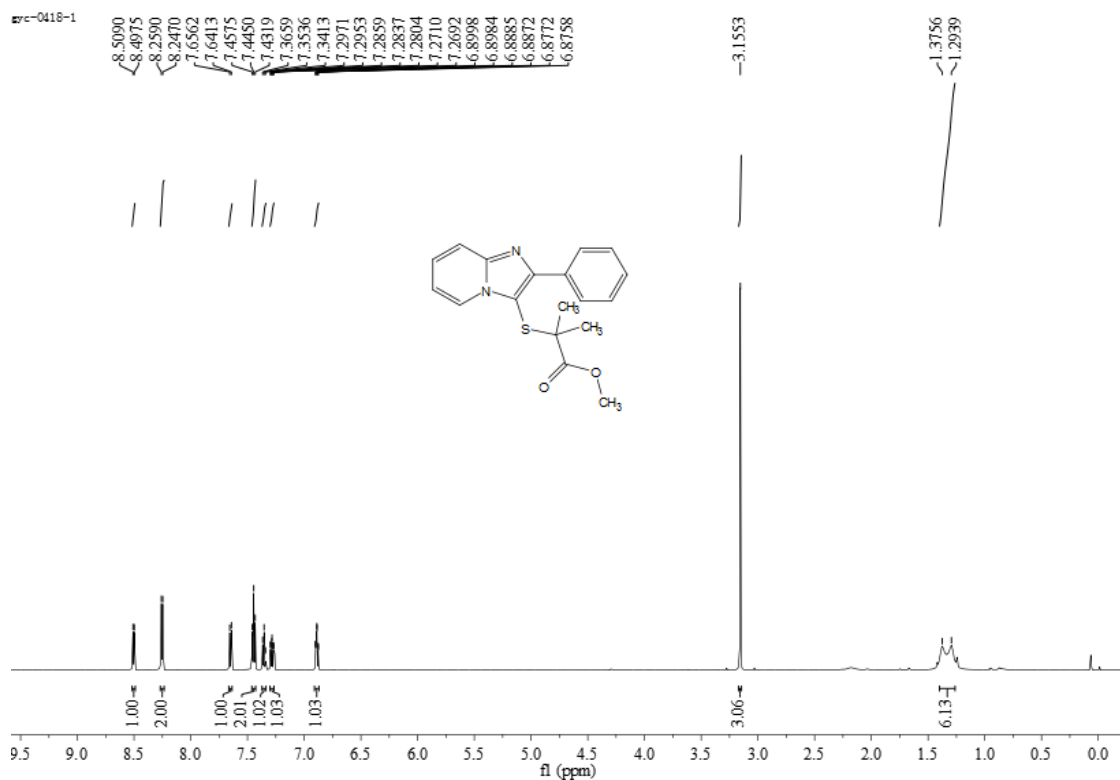
2-((2-(2-hydroxyphenyl)imidazo[1,2-a]pyridin-3-yl)thio)-2,4-dimethylpentanenitrile (17)



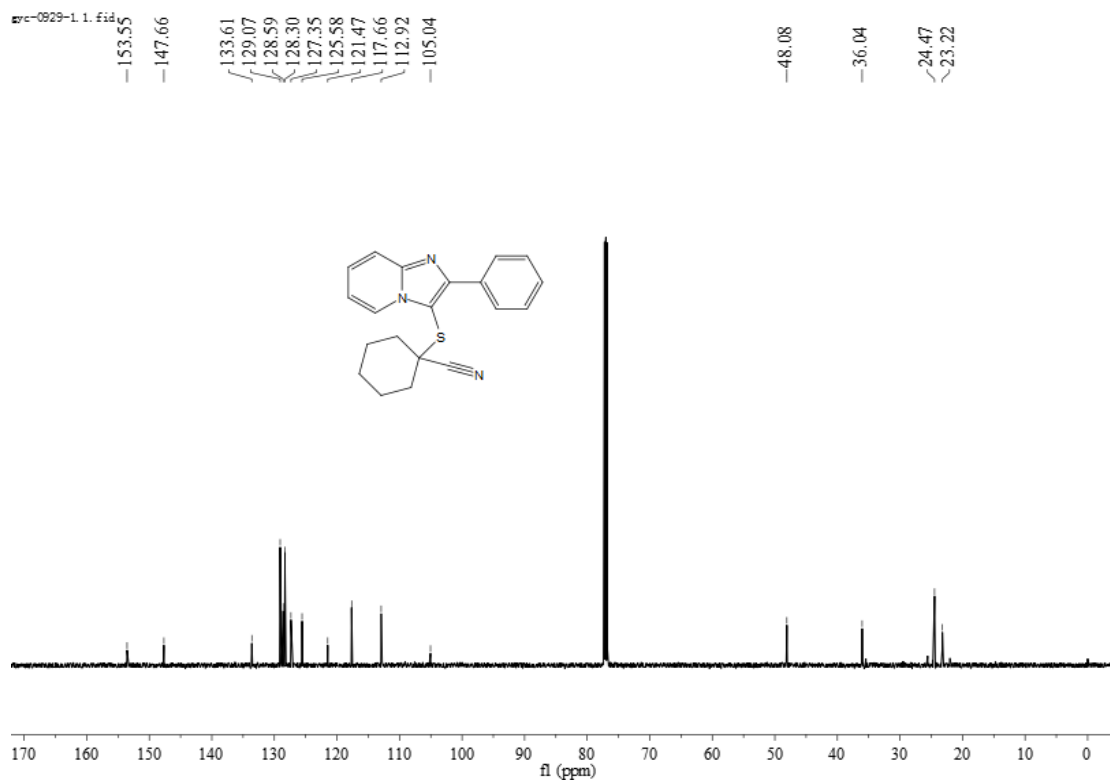
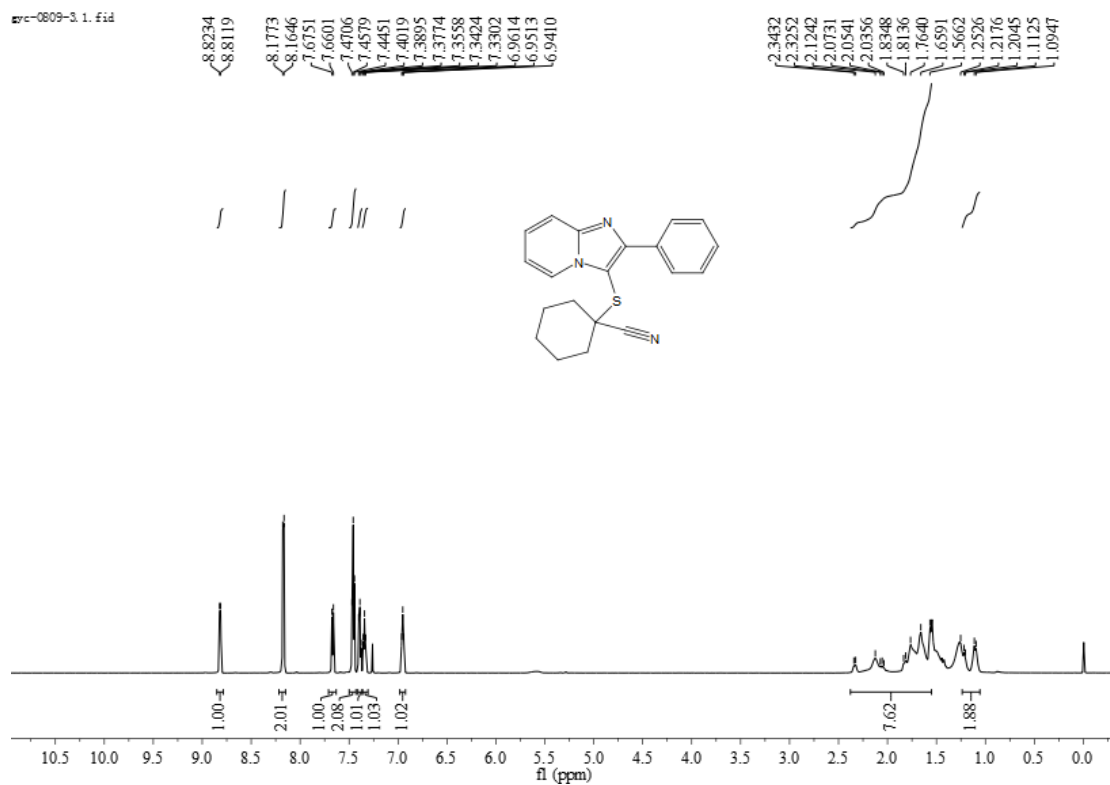
methyl 2-((2-(2-hydroxyphenyl)imidazo[1,2-a]pyridin-3-yl)thio)-2-methylpropanoate (18)



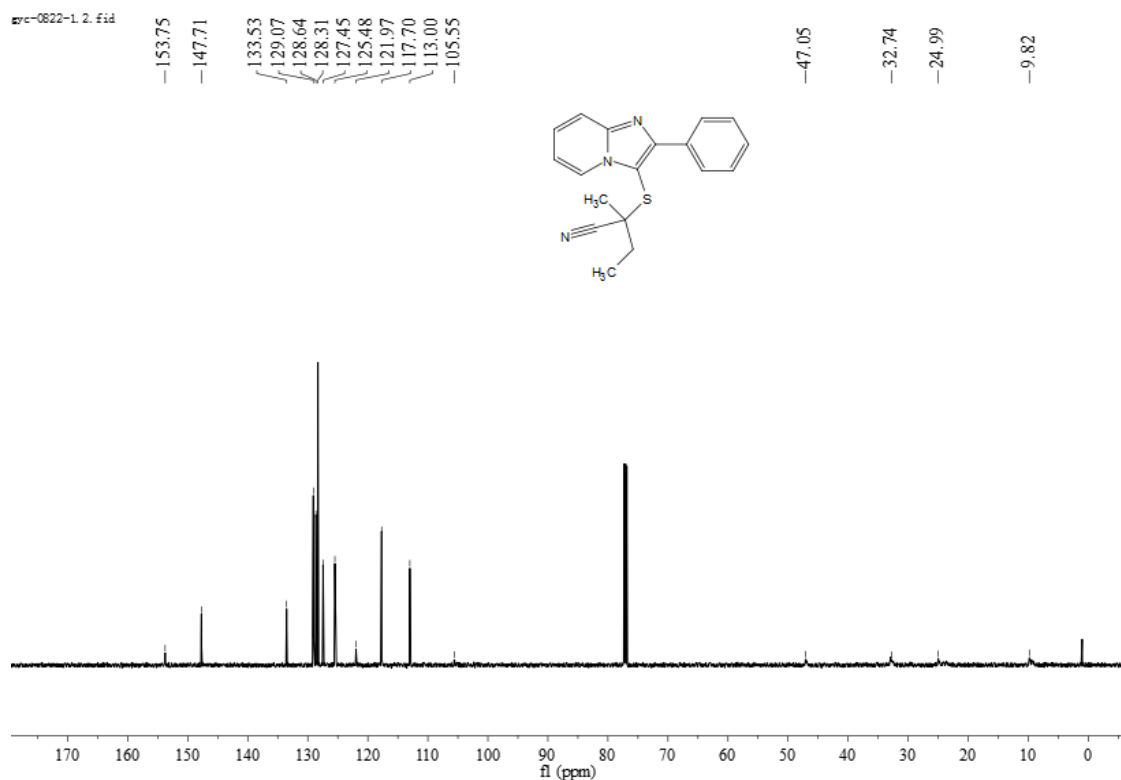
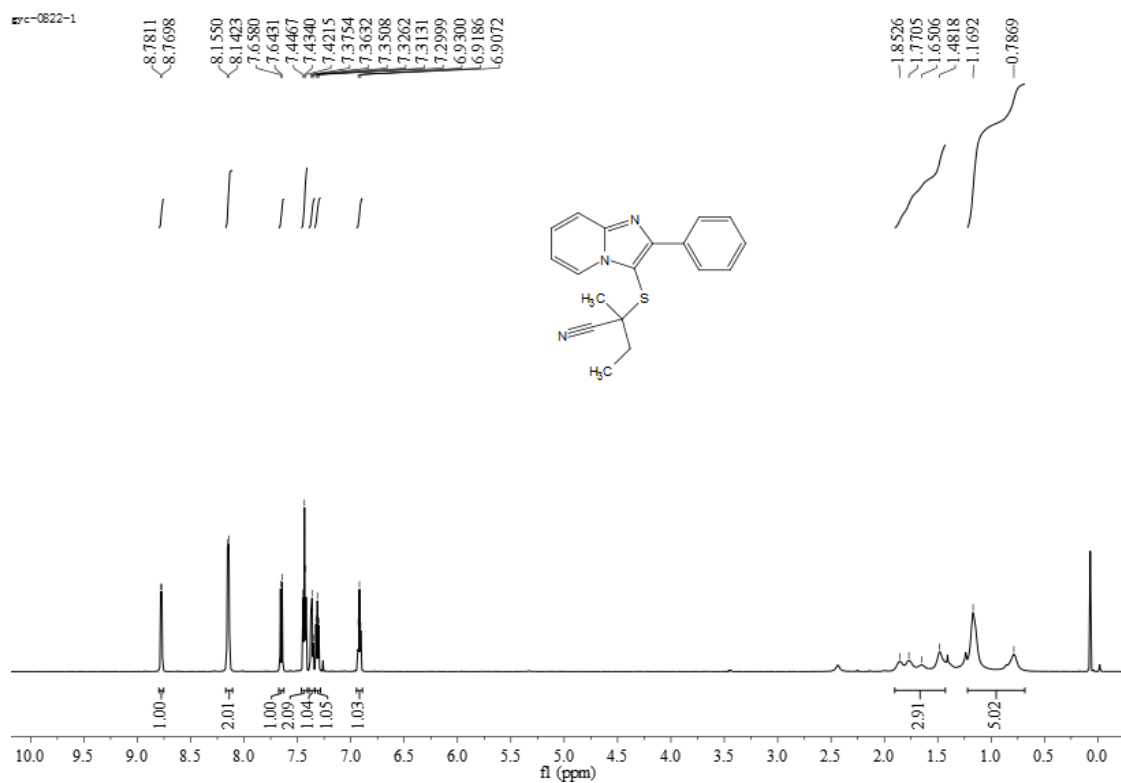
**methyl 2-methyl-2-((2-phenylimidazo[1,2-a]pyridin-3-yl)thio)propanoate (19)**



1-((2-phenylimidazo[1,2-a]pyridin-3-yl)thio)cyclohexane-1-carbonitrile (20)

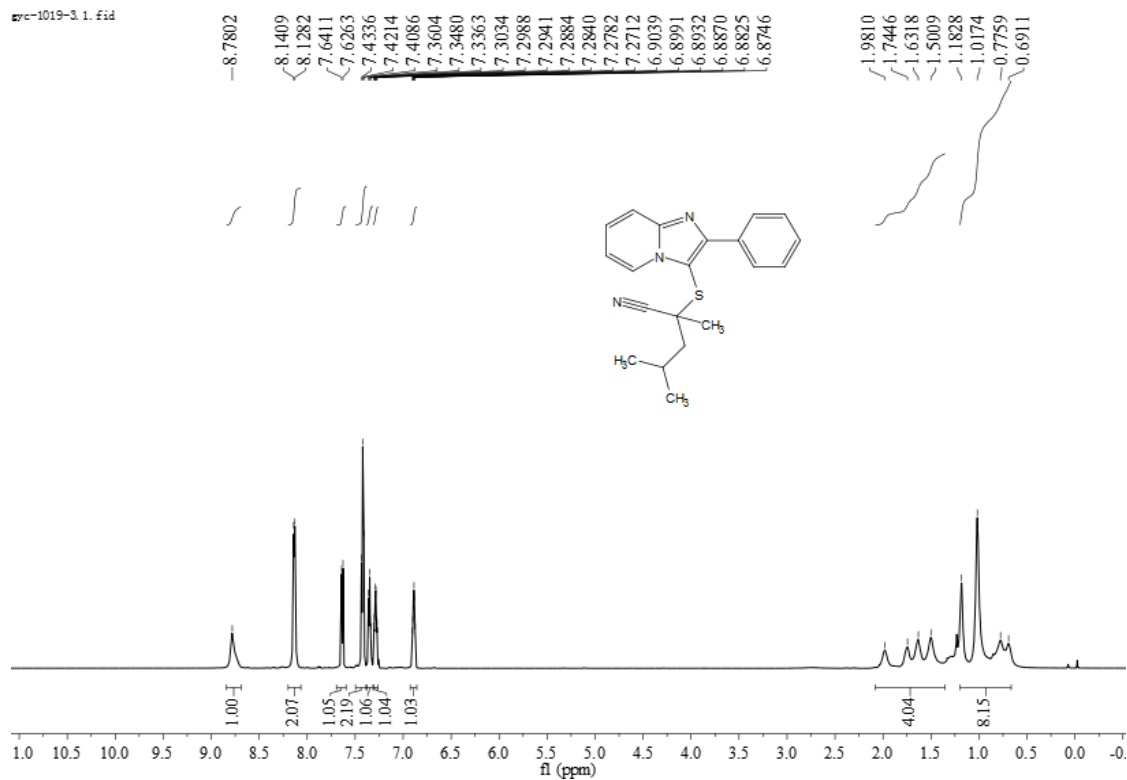


**2-methyl-2-((2-phenylimidazo[1,2-a]pyridin-3-yl)thio)butanenitrile (21)**

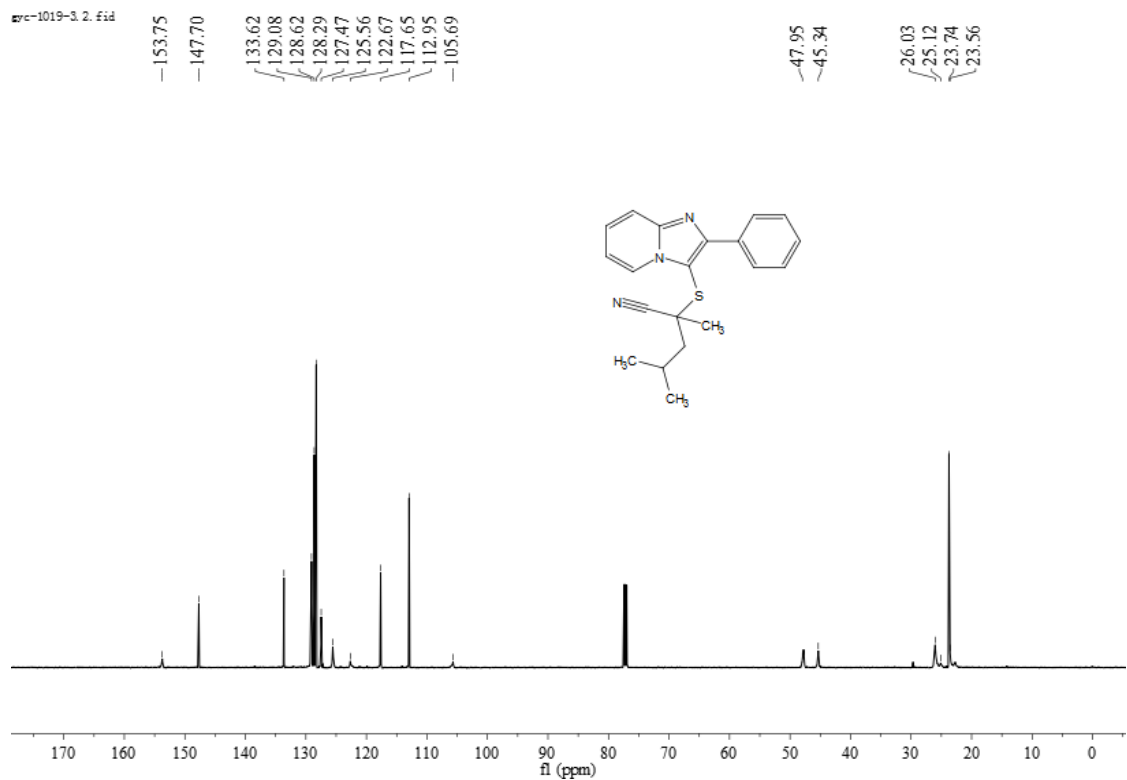


**2,4-dimethyl-2-((2-phenylimidazo[1,2-a]pyridin-3-yl)thio)pentanenitrile (22)**

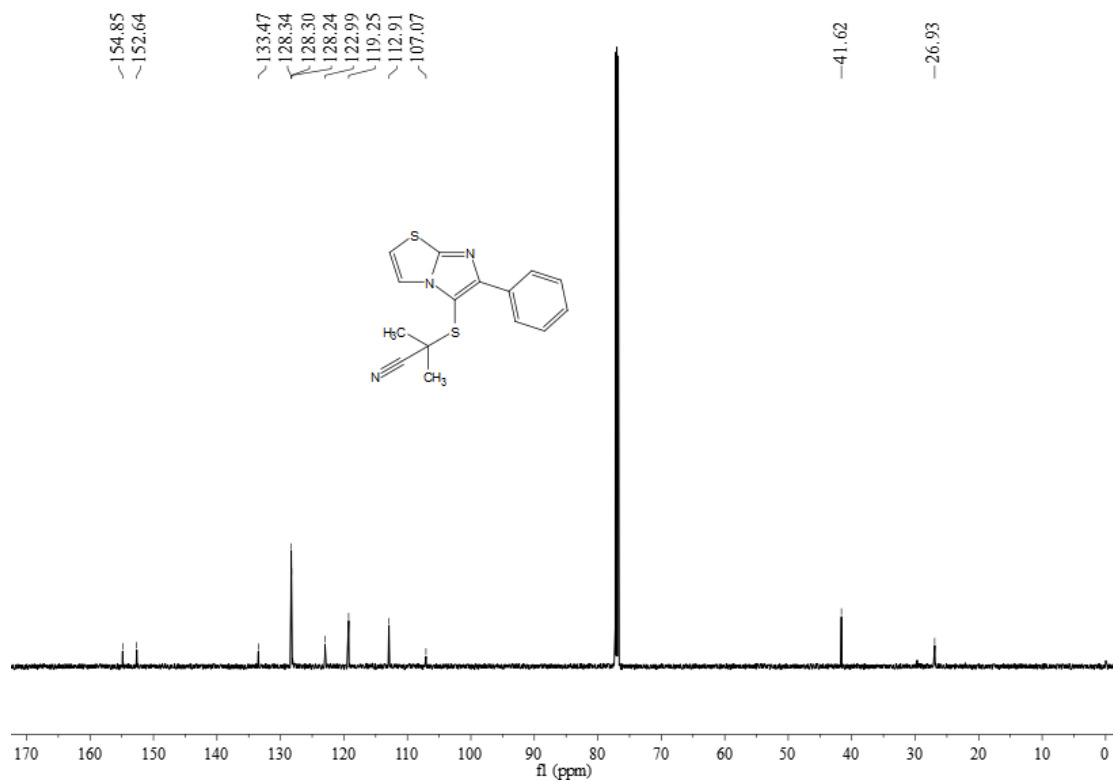
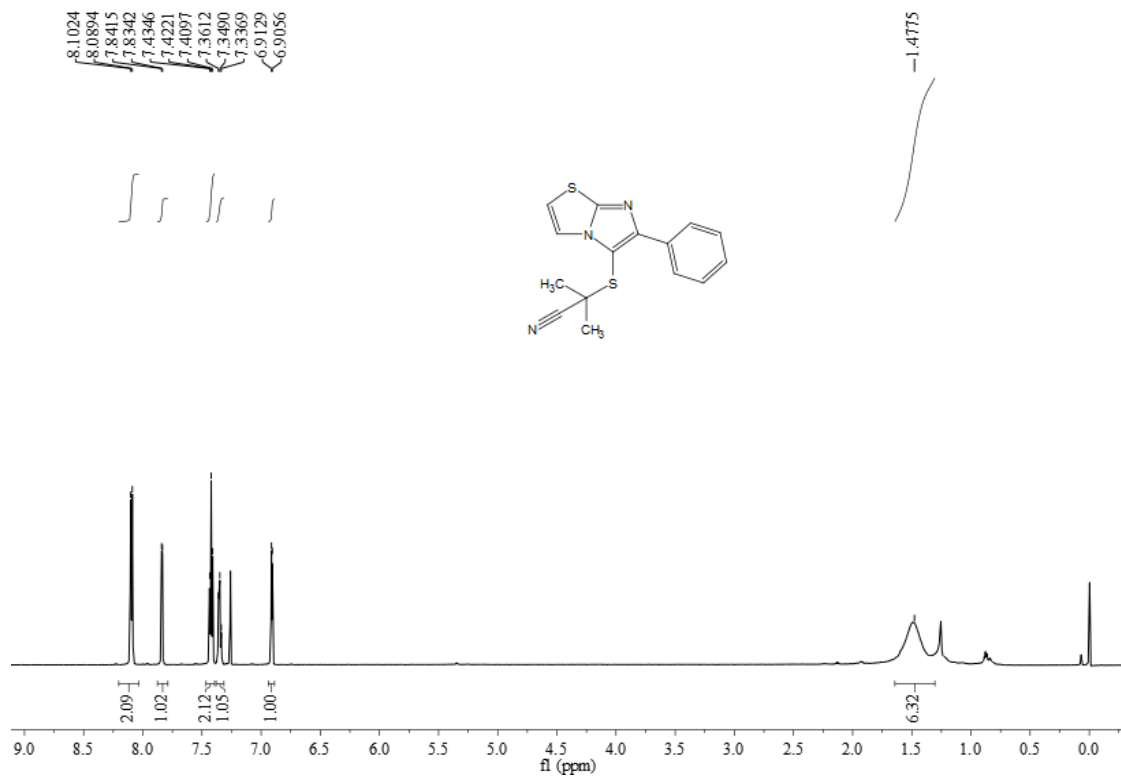
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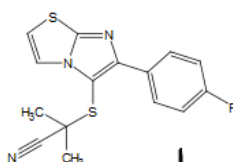
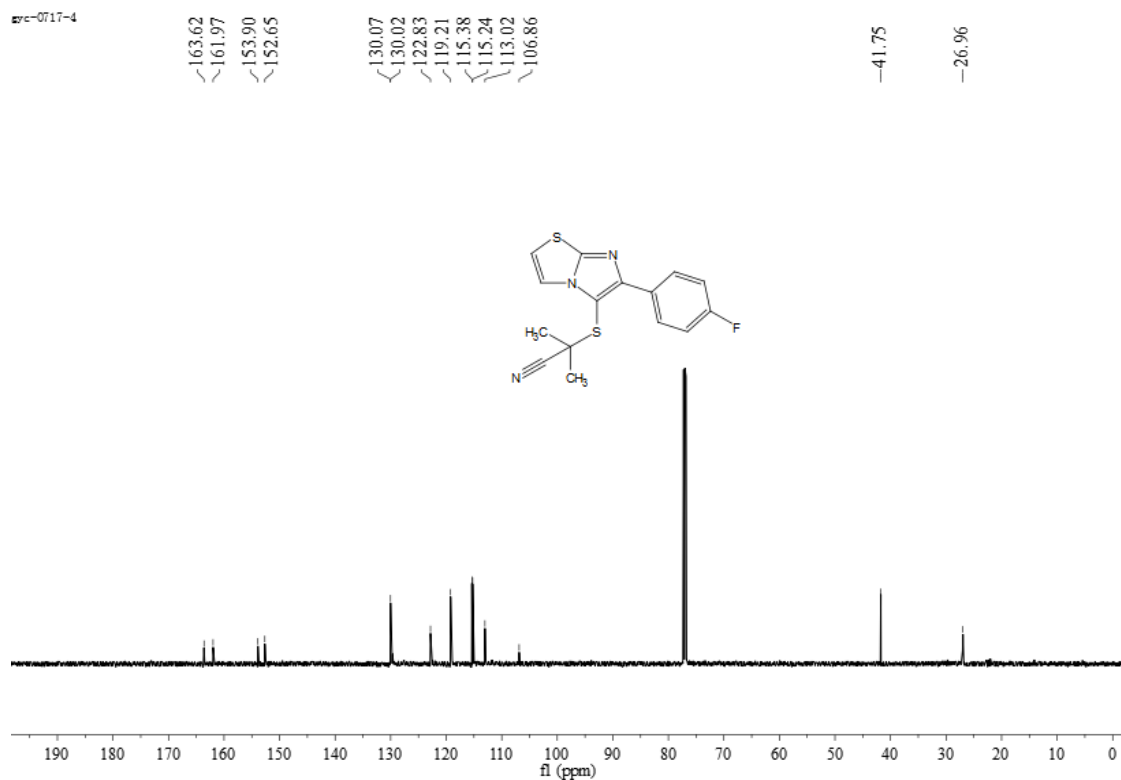
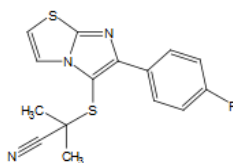
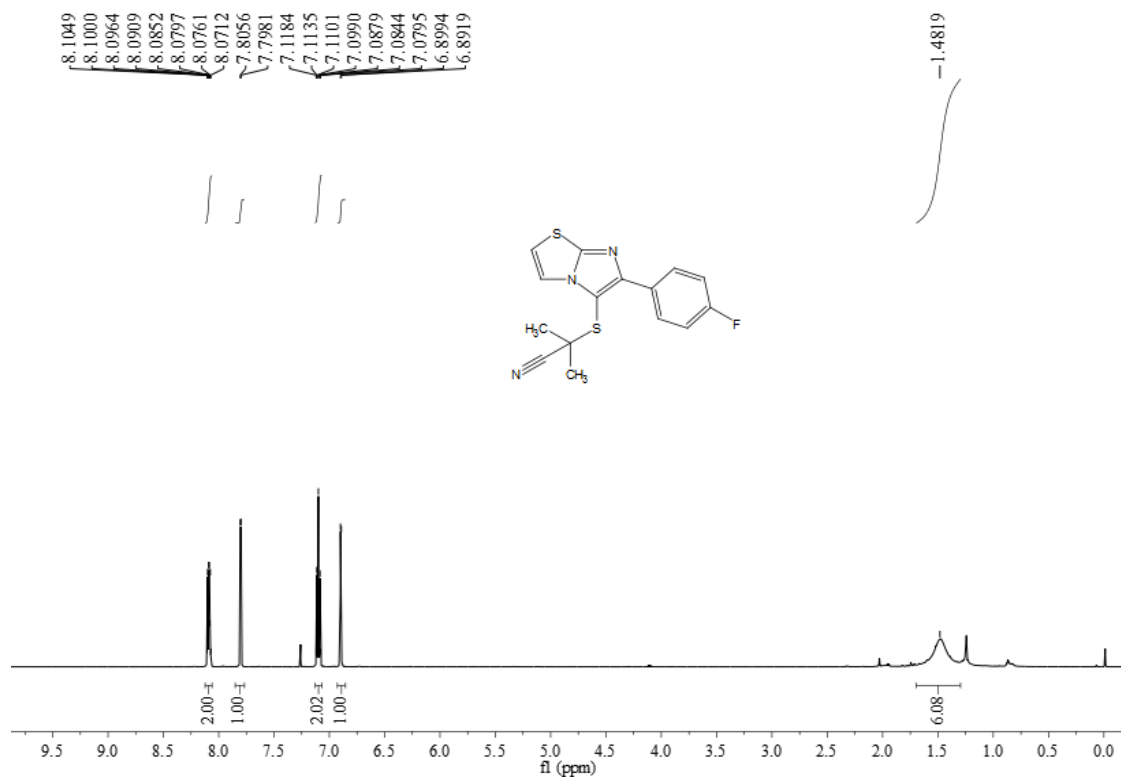


2-methyl-2-((6-phenylimidazo[2,1-b]thiazol-5-yl)thio)propanenitrile (24)



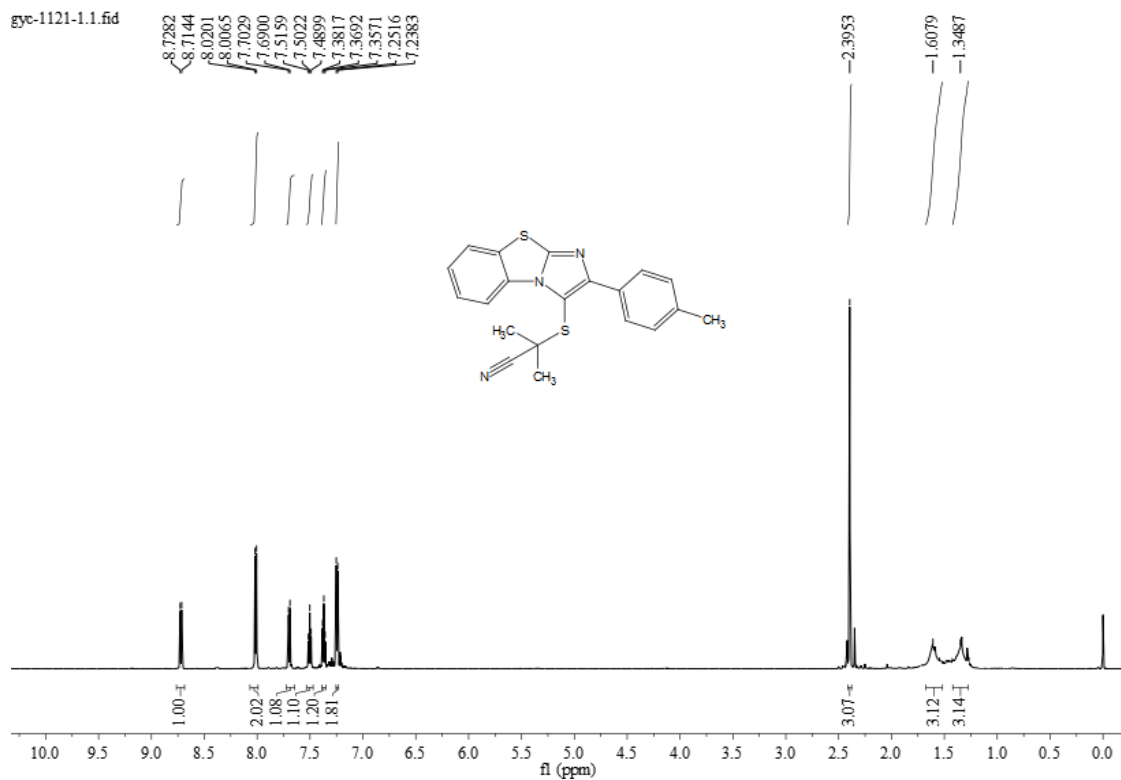


2-((6-(4-fluorophenyl)imidazo[2,1-b]thiazol-5-yl)thio)-2-methylpropanenitrile (25)

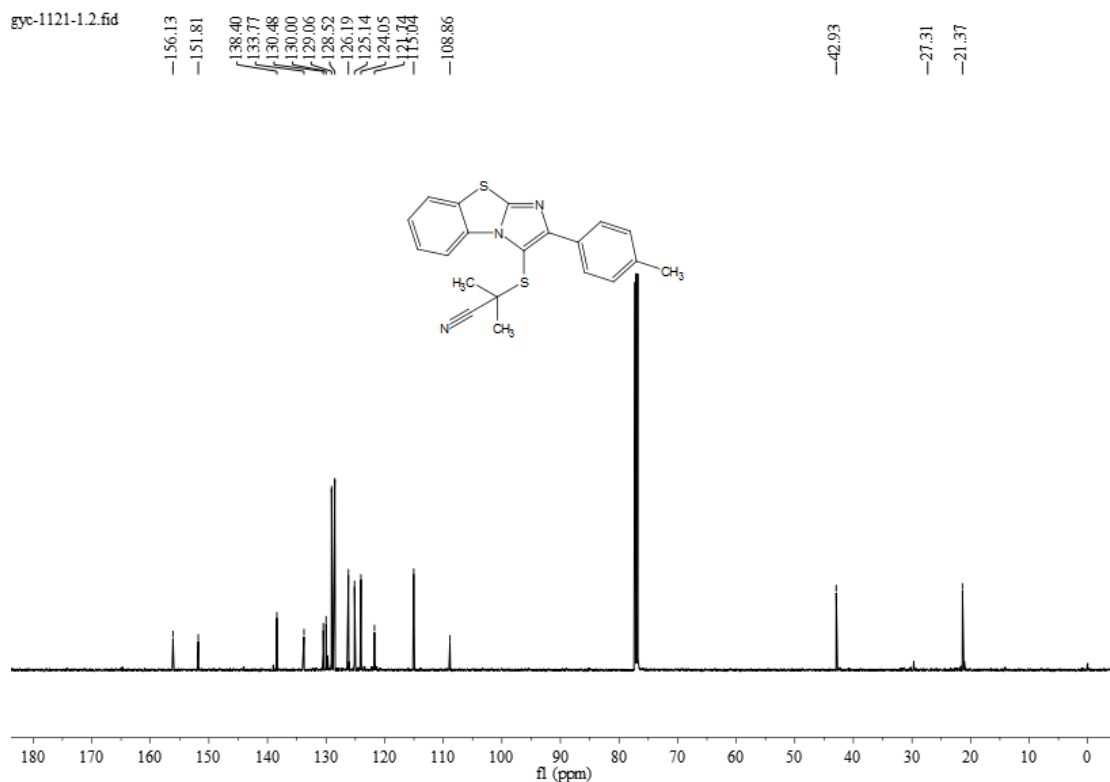


**2-methyl-2-((2-(p-tolyl)benzo[d]imidazo[2,1-b]thiazol-3-yl)thio)propanenitrile (26)**

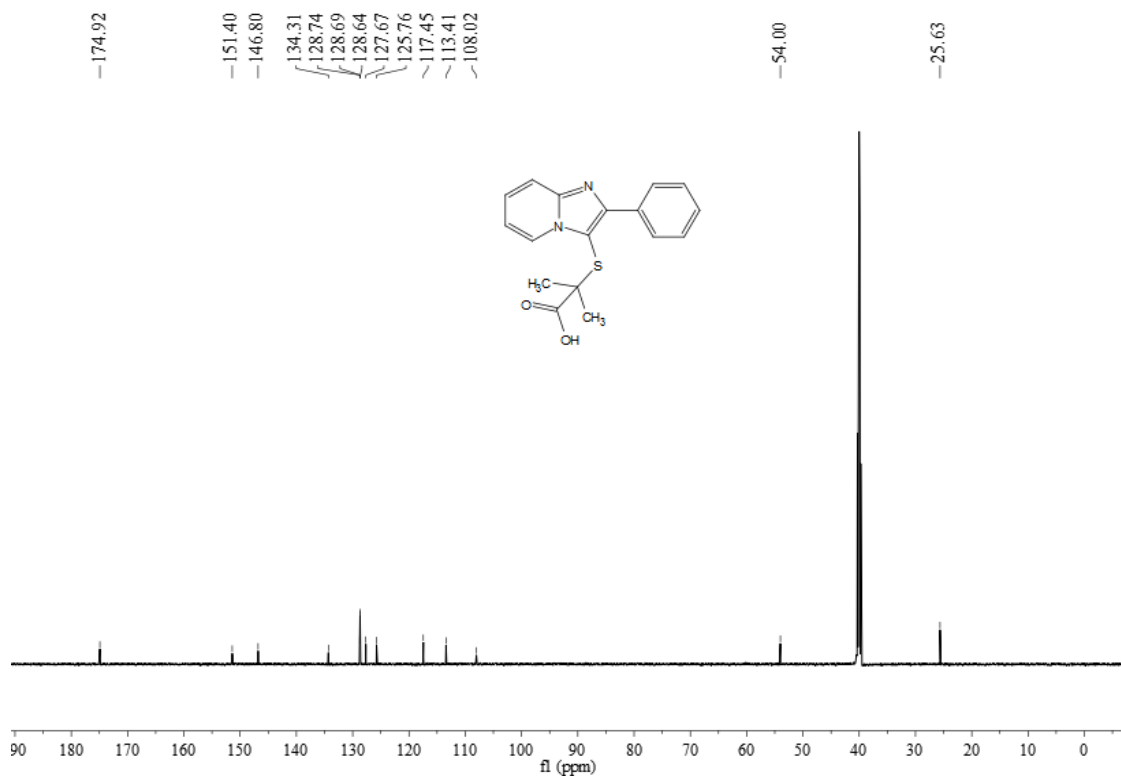
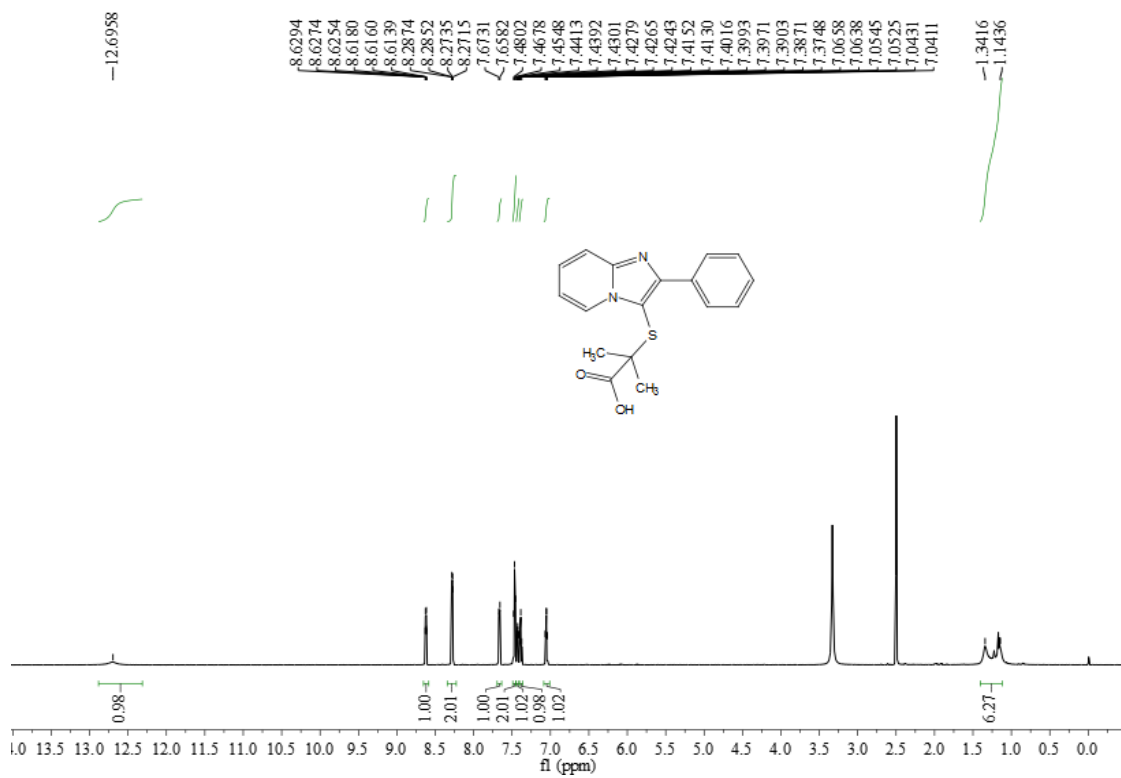
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gyc-1121-1.2.fid



2-methyl-2-((2-phenylimidazo[1,2-a]pyridin-3-yl)thio)propanoic acid (27)



2-methyl-2-((2-phenylimidazo[1,2-a]pyridin-3-yl)thio)-N-(thiazol-2-yl)propanamide (28)

