

## Supporting Information

### **CuI-Catalyzed Synthesis of Multisubstituted Pyrido[1,2-*a*]pyrimidin-4-ones Through Tandem Ullmann-type C–N Cross-Coupling and Intramolecular Amidation Reaction**

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\*E-mail: ccx1759@163.com, jspeng1998@nefu.edu.cn

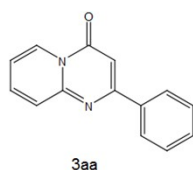
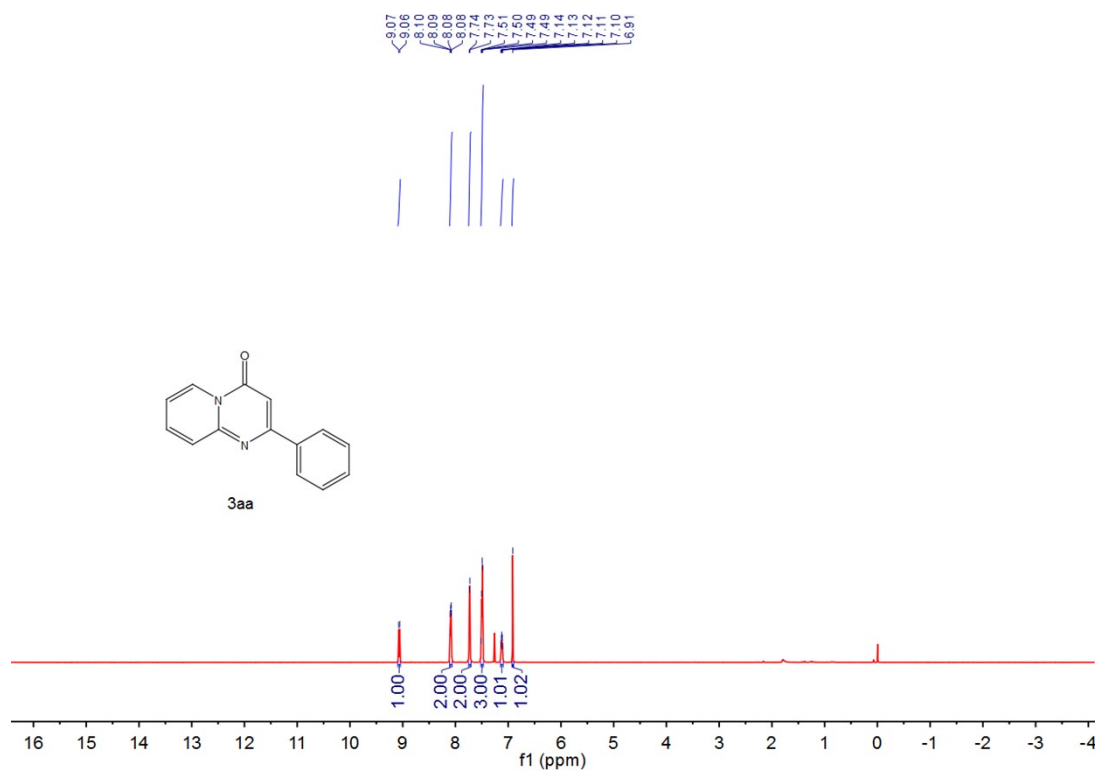
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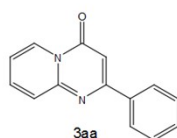
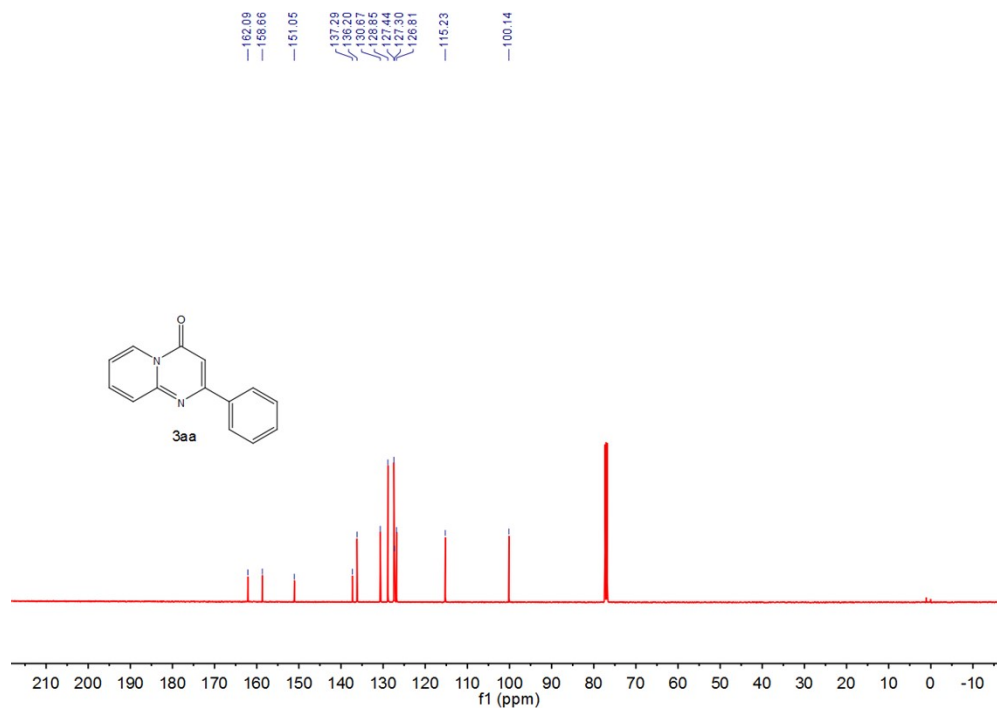
# 1. Copies of $^1\text{H}$ NMR and $^{13}\text{C}$ NMR spectra of the products

## 2-Phenyl-4H-pyrido[1,2-a]pyrimidin-4-one(3aa)

$^1\text{H}$  spectrum of 3aa

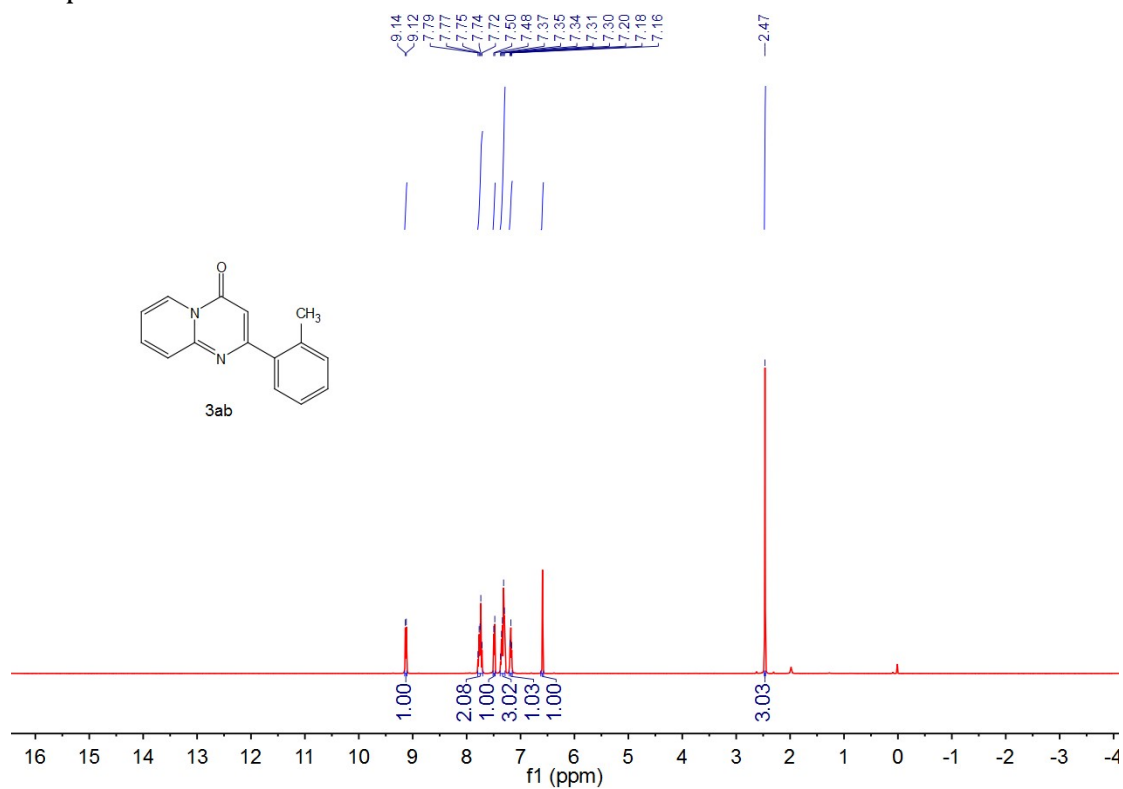


$^{13}\text{C}$  spectrum of 3aa

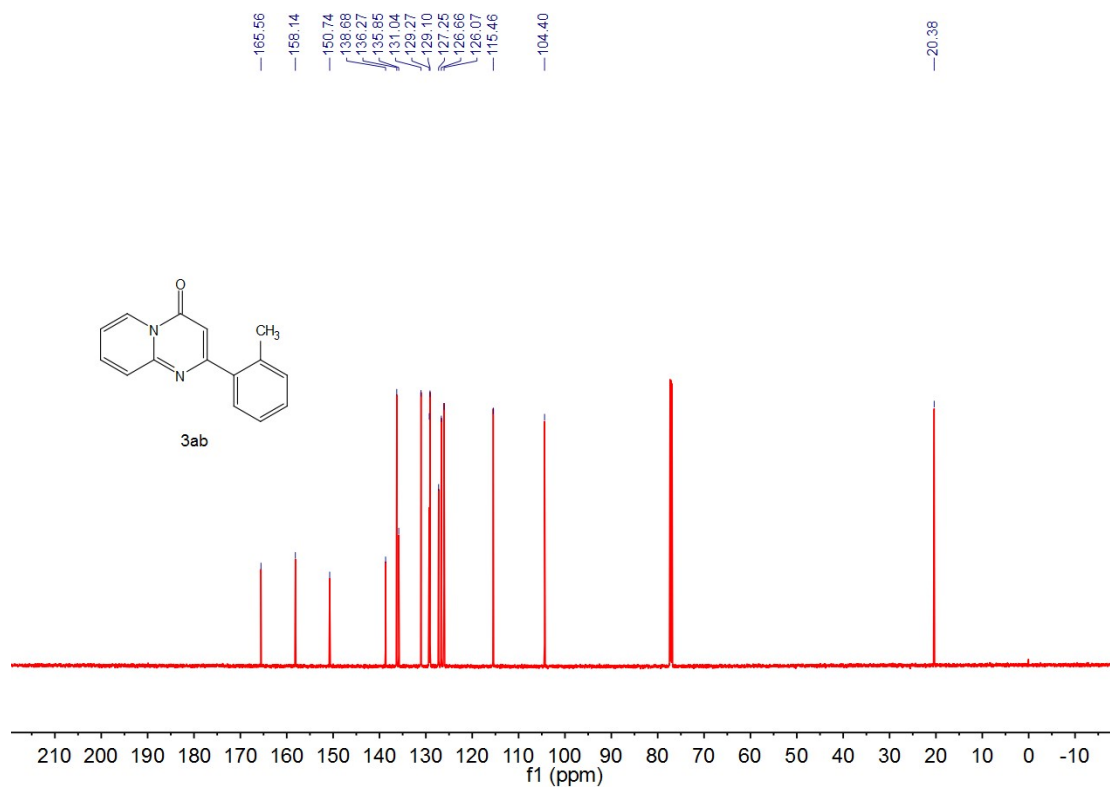


## 2-(o-tolyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3ab)

### <sup>1</sup>H spectrum of **3ab**

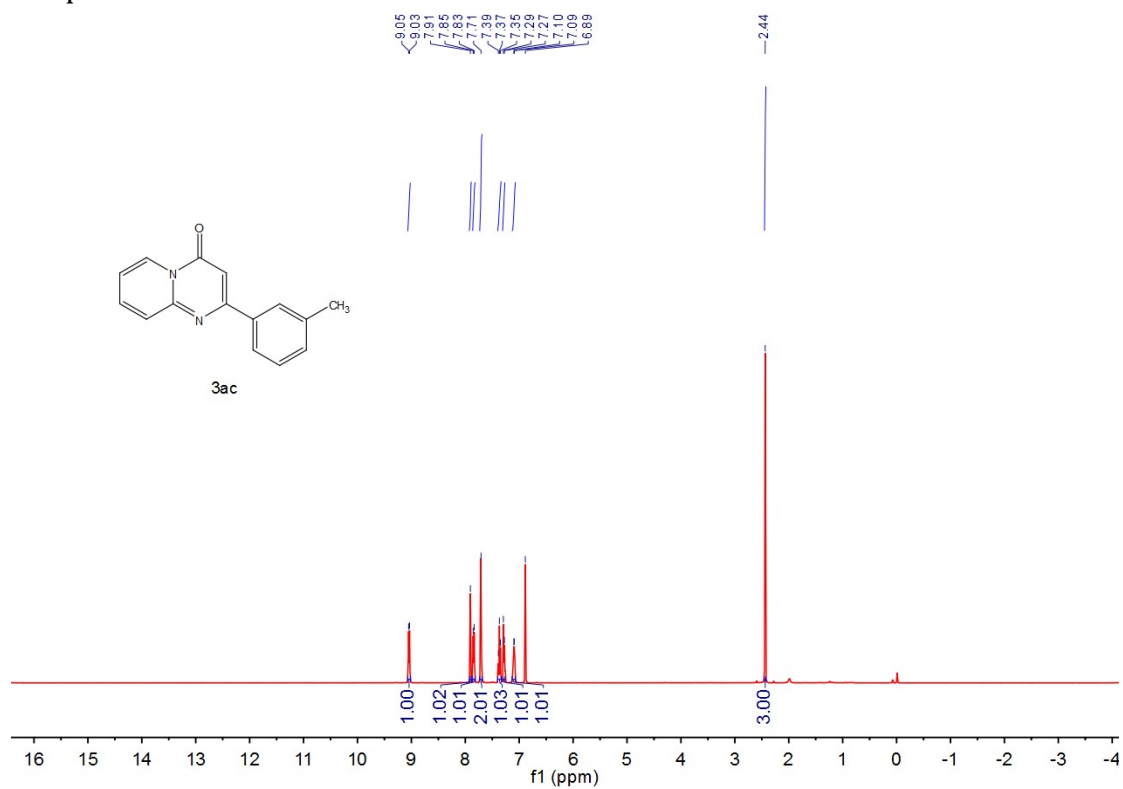


### <sup>13</sup>C spectrum of **3ab**

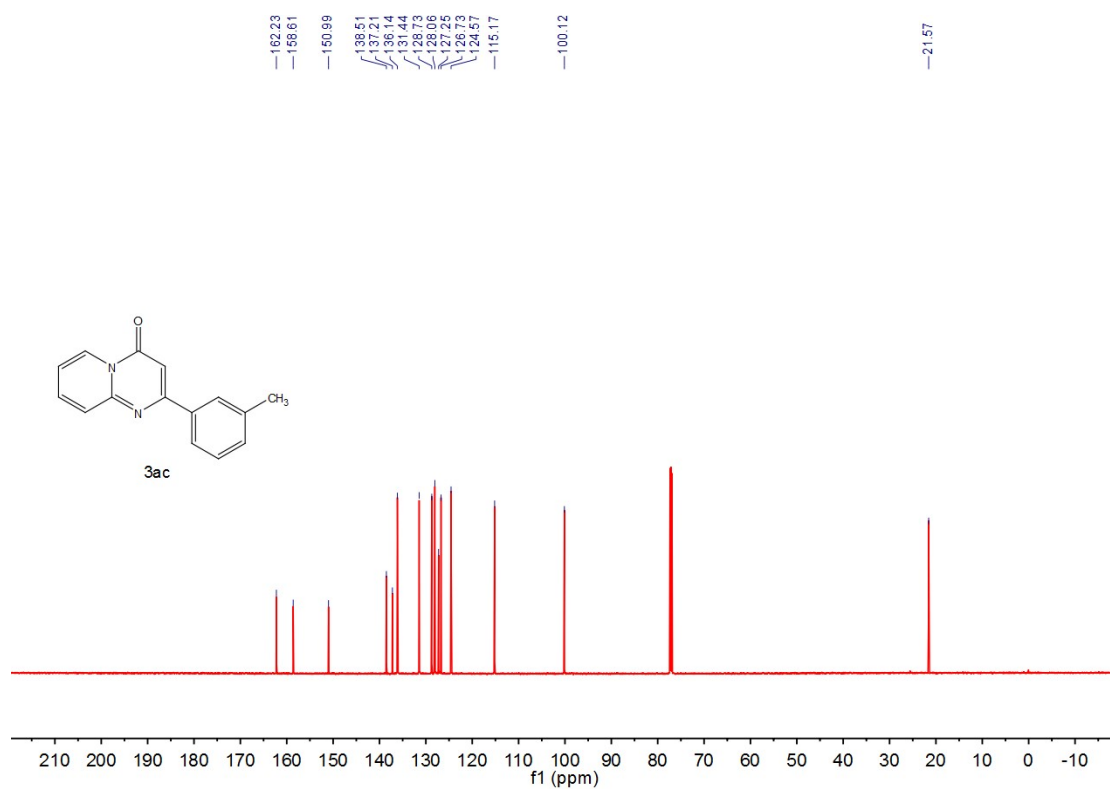


### 2-(*m*-tolyl)-4H-pyrido[1,2-*a*]pyrimidin-4-one (**3ac**)

### <sup>1</sup>H spectrum of **3ac**

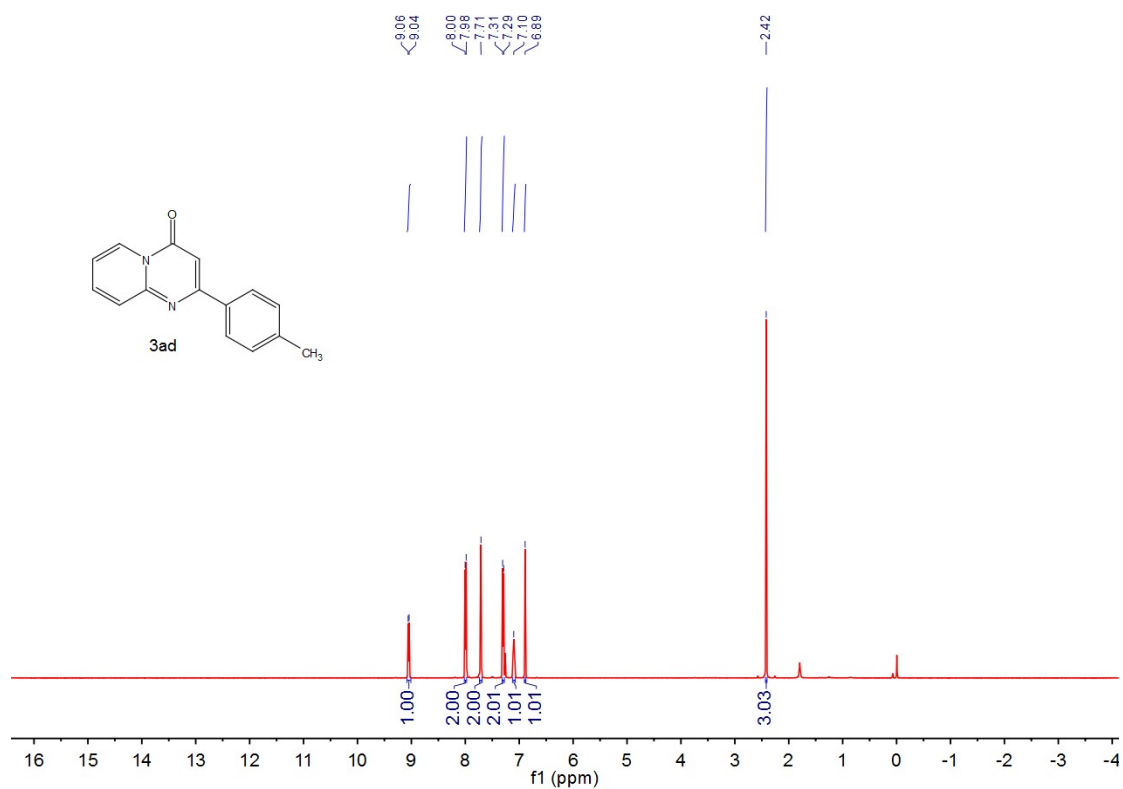


### <sup>13</sup>C spectrum of **3ac**

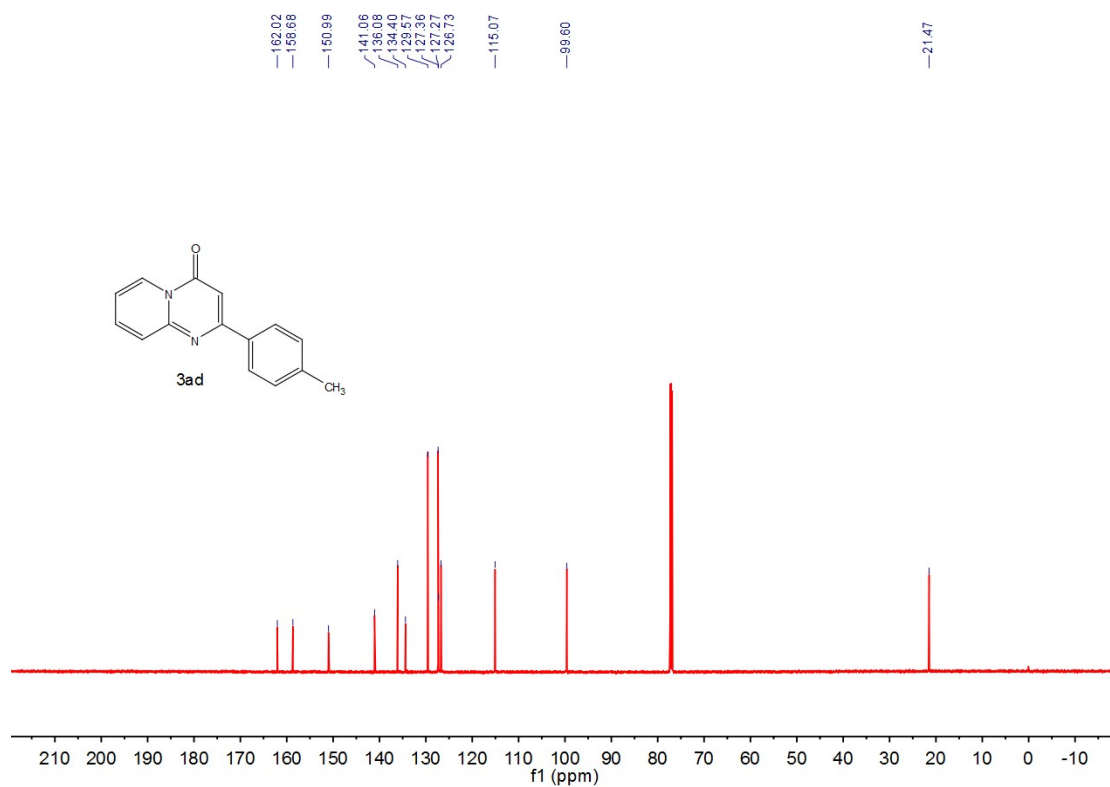


### 2-(p-tolyl)-4H-pyrido[1,2-a]pyrimidin-4-one (**3ad**)

### <sup>1</sup>H spectrum of **3ad**

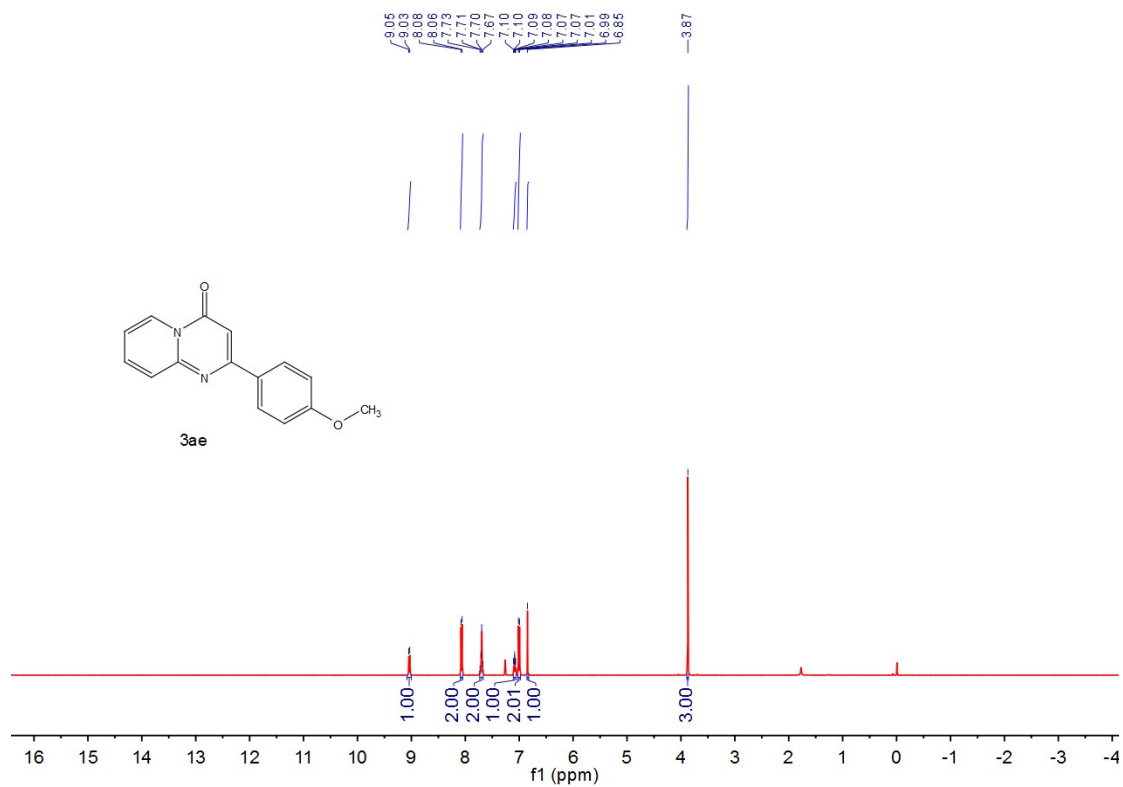


### <sup>13</sup>C spectrum of **3ad**

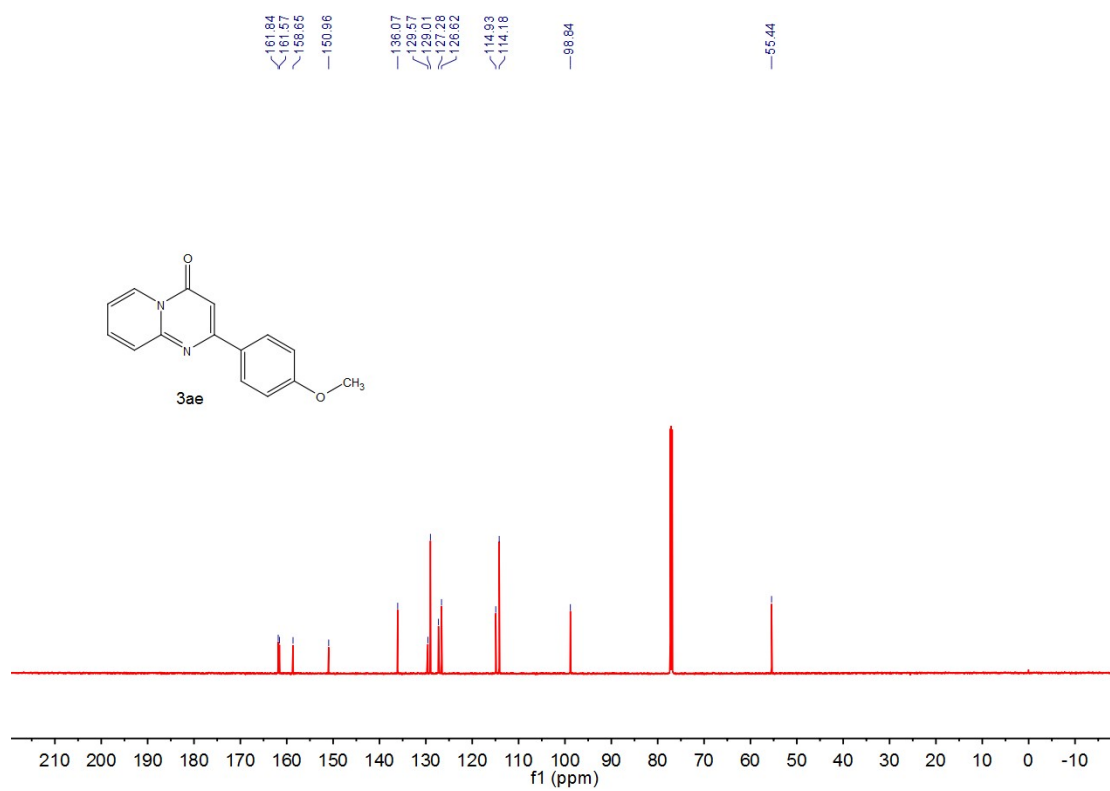


### 2-(4-Methoxyphenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(**3ae**)

#### <sup>1</sup>H spectrum of **3ae**

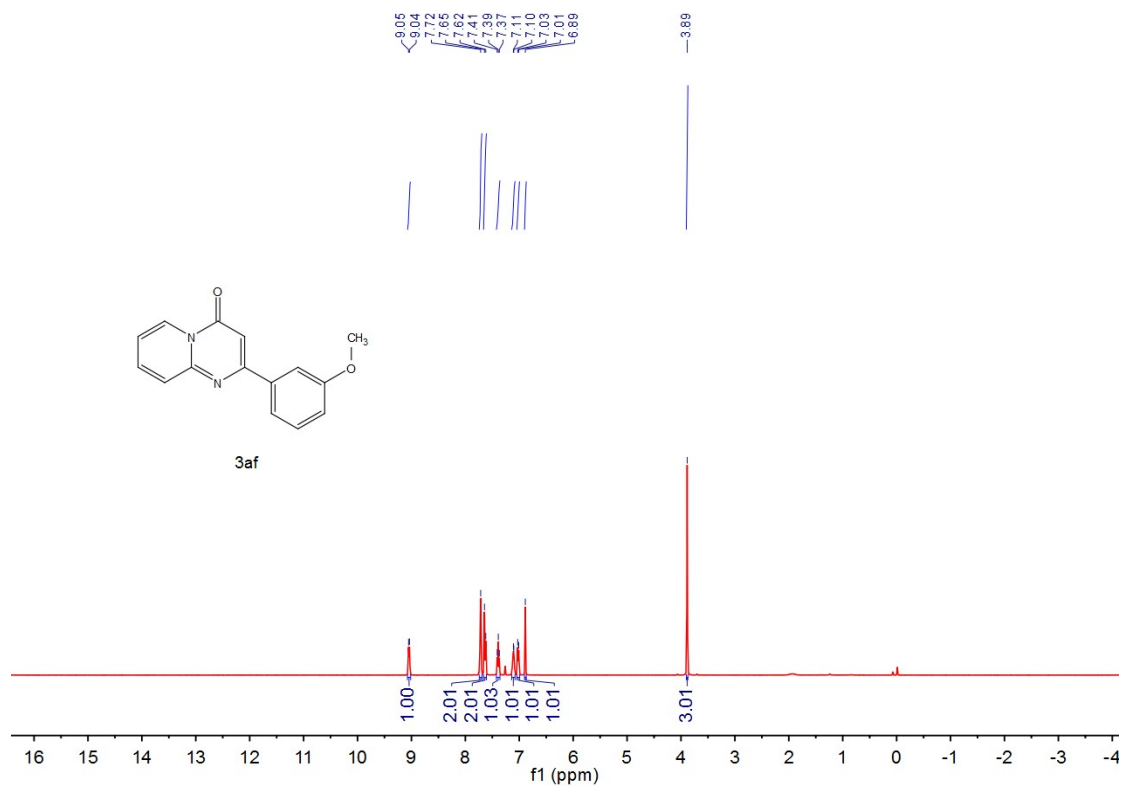


**<sup>13</sup>C spectrum of 3ae**

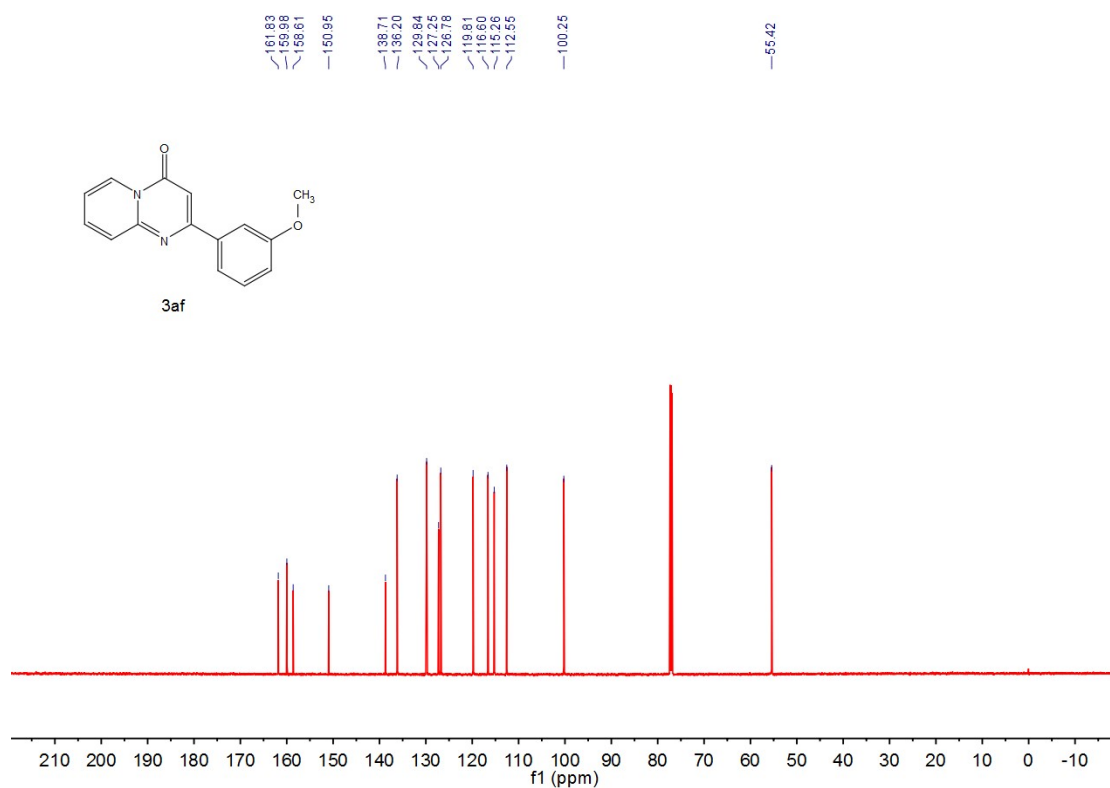


**2-(3-Methoxyphenyl)-4H-pyrido[1,2-a]pyrimidin-4-one (3af)**

**<sup>1</sup>H spectrum of 3af**

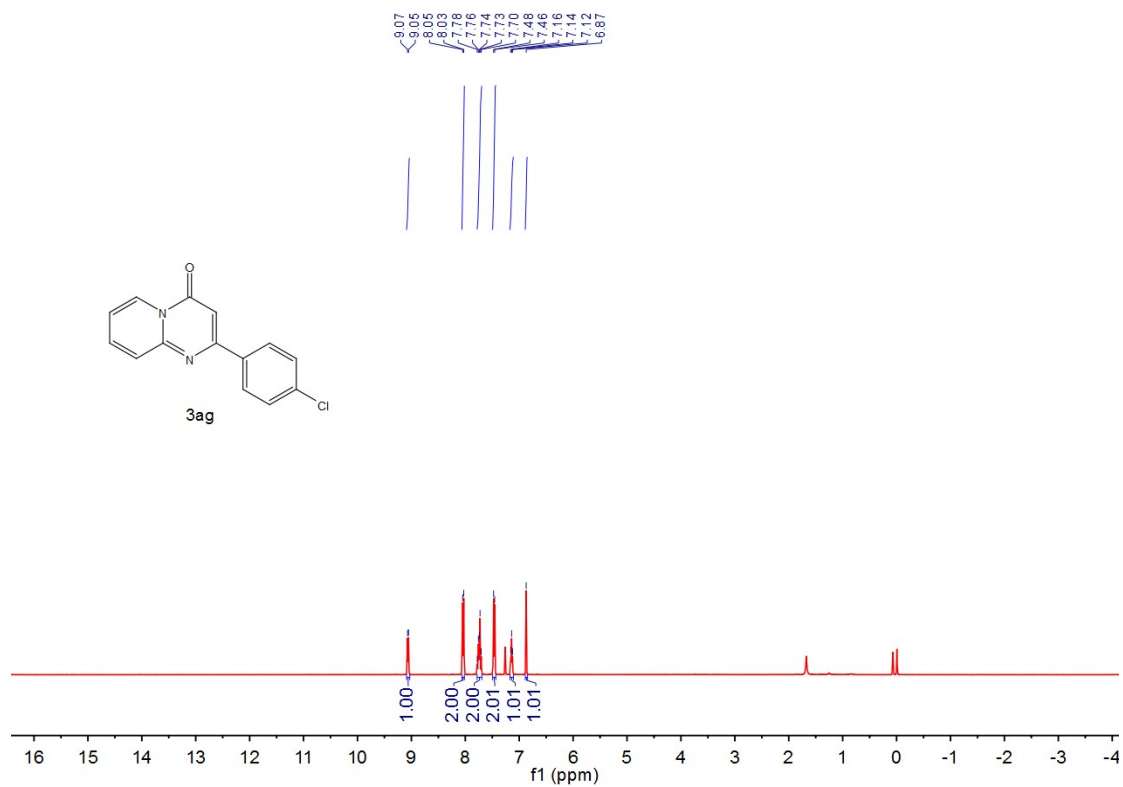


**<sup>13</sup>C spectrum of 3af**

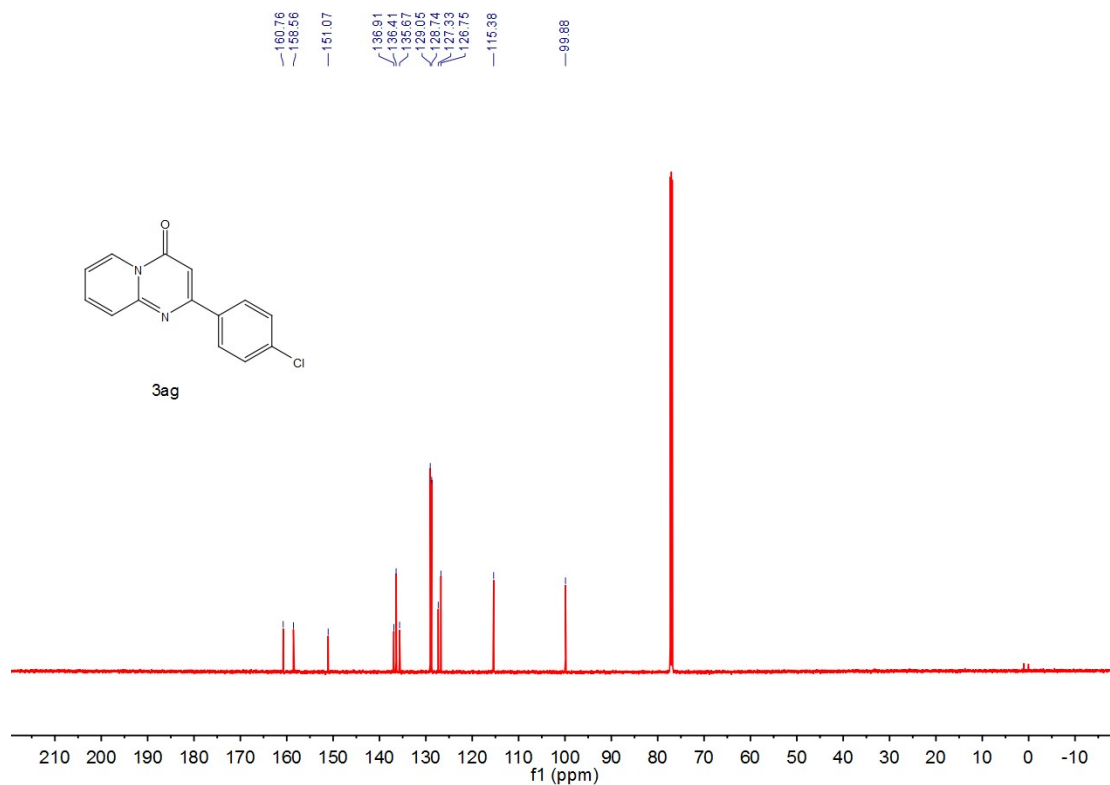


**2-(4-Chlorophenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3ag)**

**<sup>1</sup>H spectrum of 3ag**



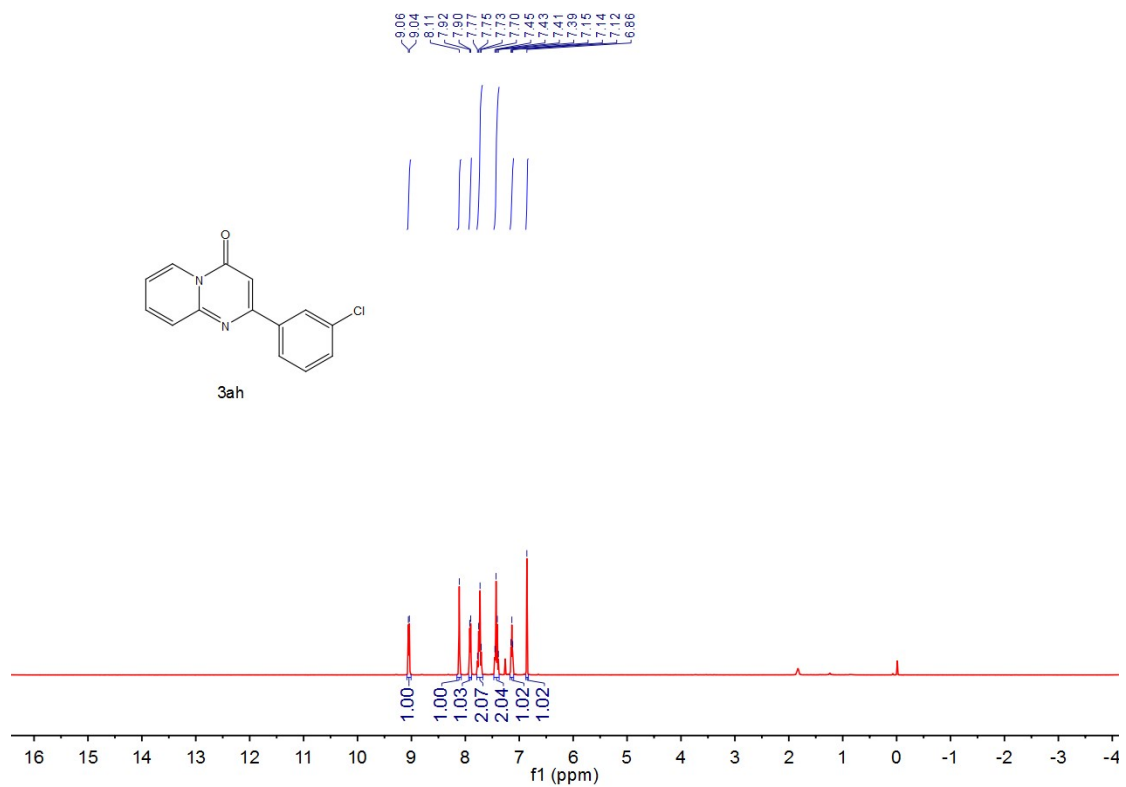
<sup>13</sup>C spectrum of **3ag**



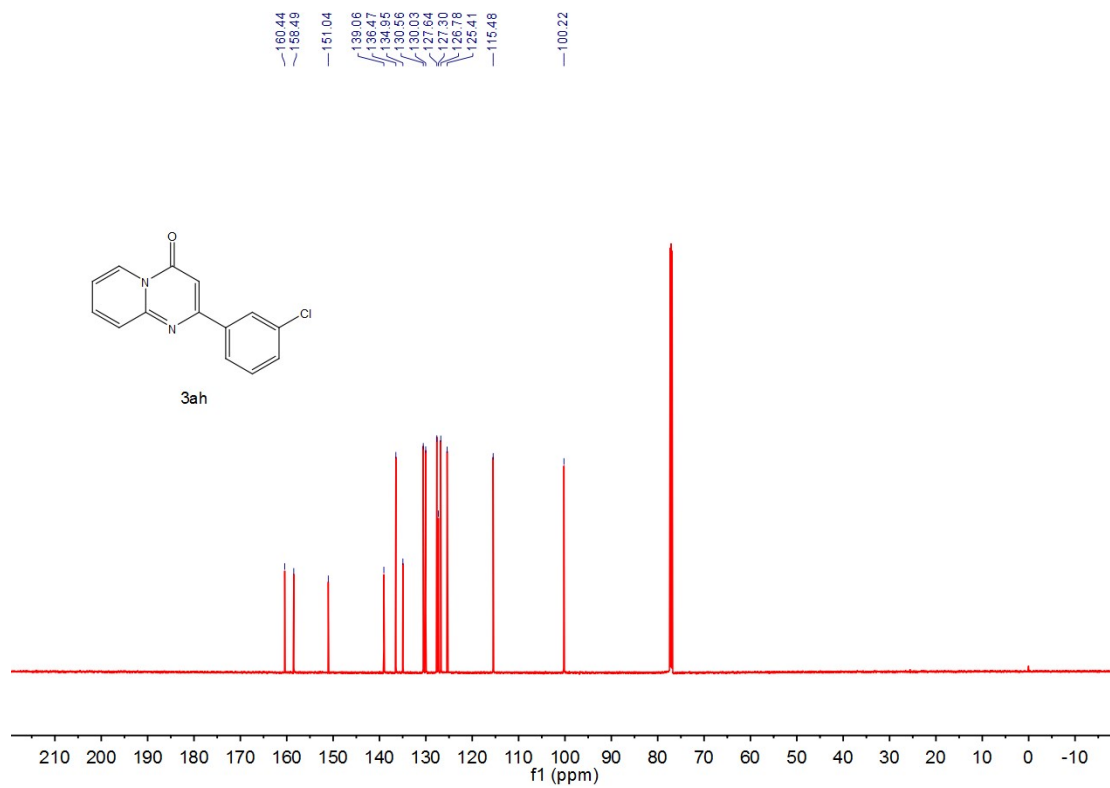
*2-(3-Chlorophenyl)-4H-pyrido[1,2-a]pyrimidin-4-one* (**3ah**)

<sup>1</sup>H spectrum of **3ah**



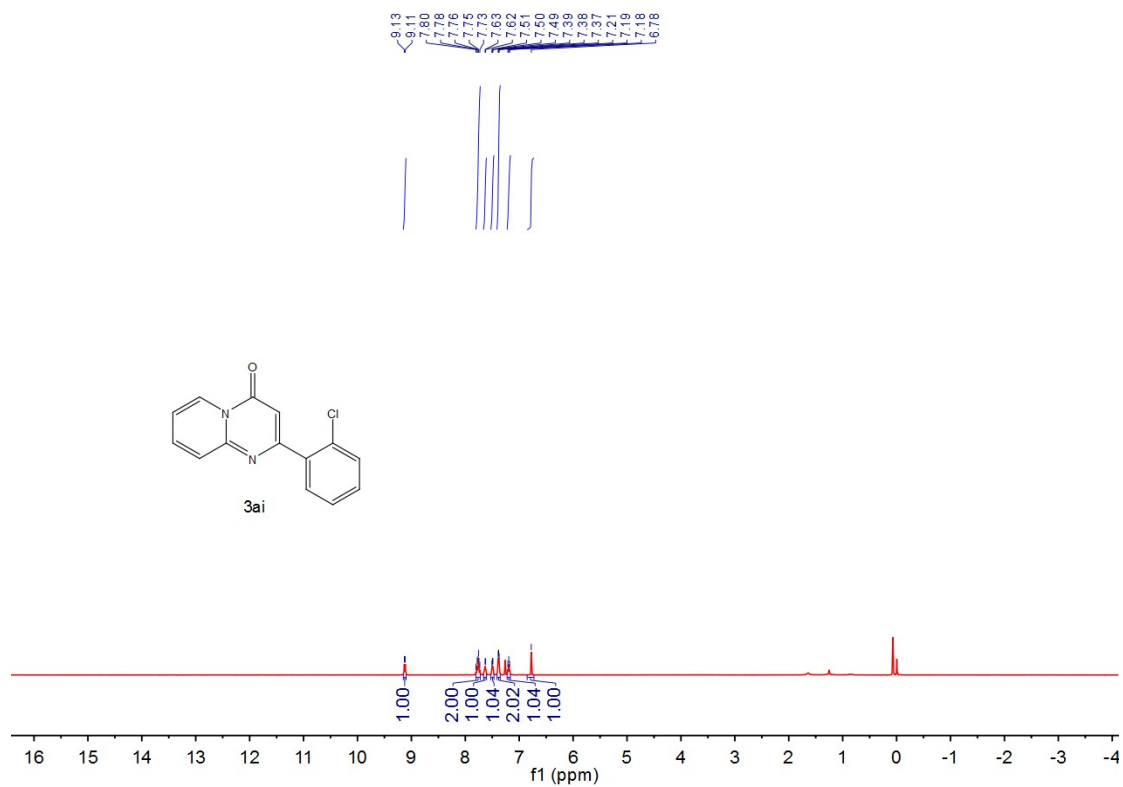


<sup>13</sup>C spectrum of **3ah**

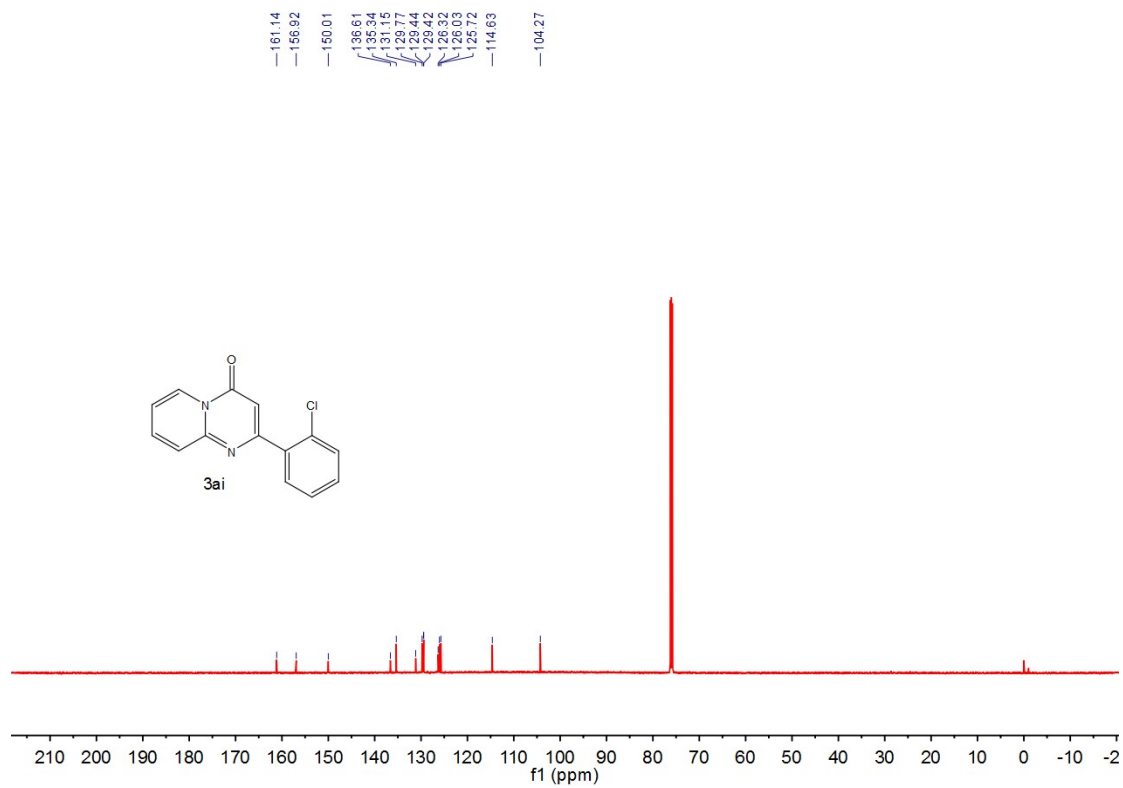


2-(2-Chlorophenyl)-4H-pyrido[1,2-a]pyrimidin-4-one (**3ai**)

<sup>1</sup>H spectrum of **3ai**

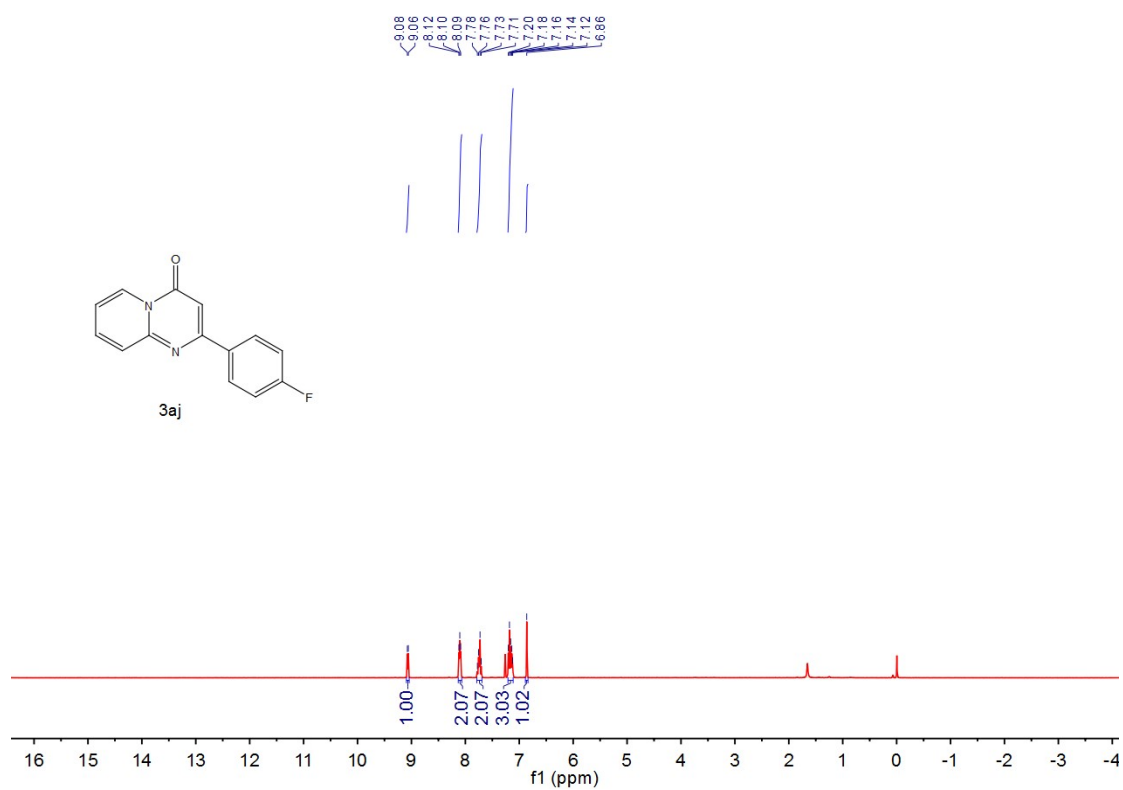


<sup>13</sup>C spectrum of **3ai**

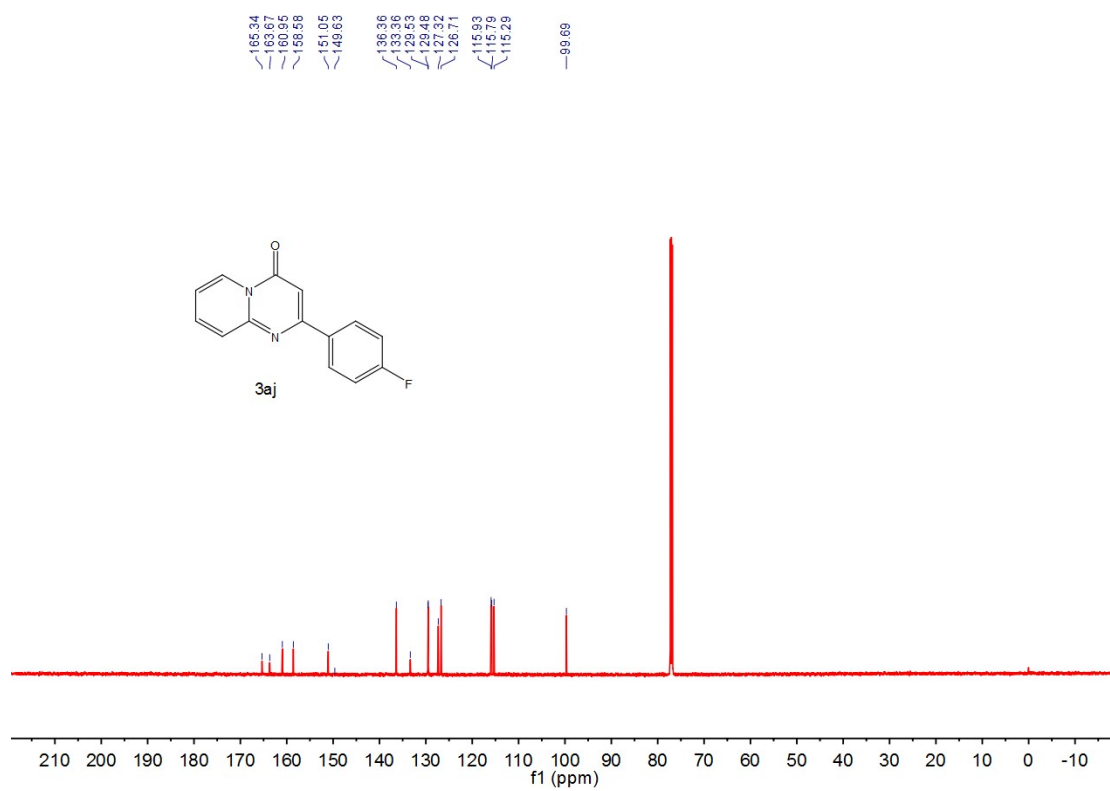


**2-(4-Fluorophenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3aj)**

<sup>1</sup>H spectrum of **3aj**

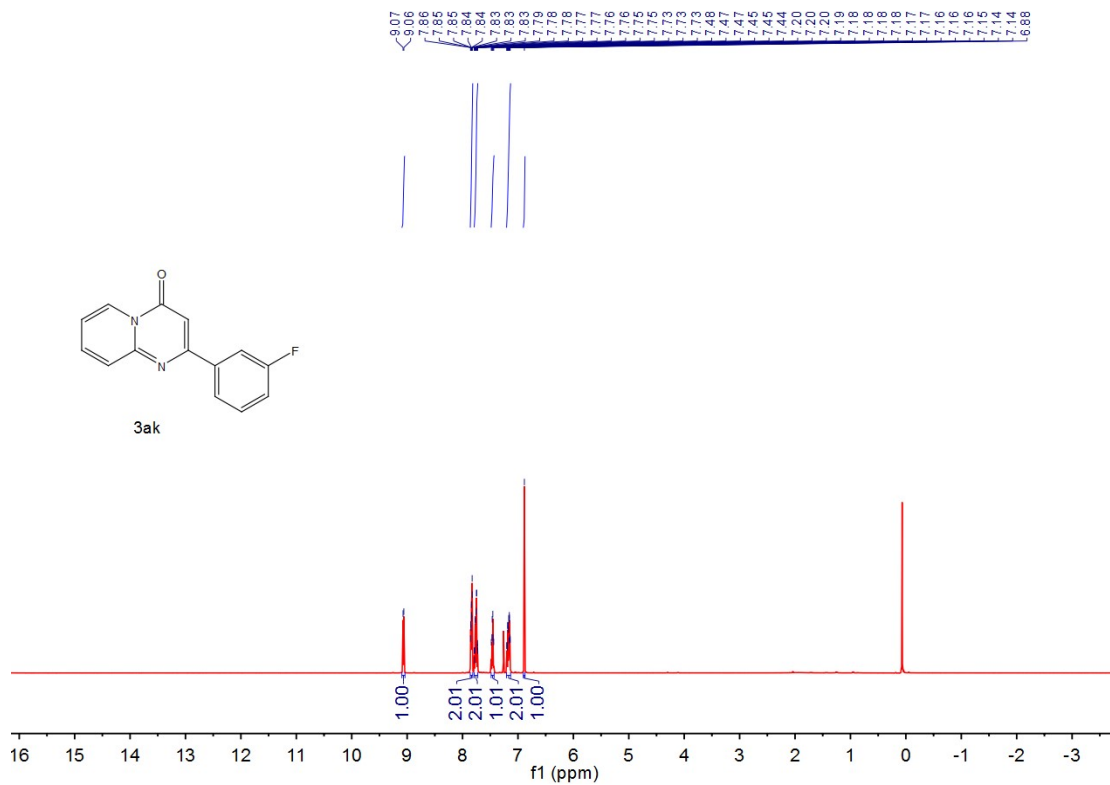


**<sup>13</sup>C spectrum of 3aj**

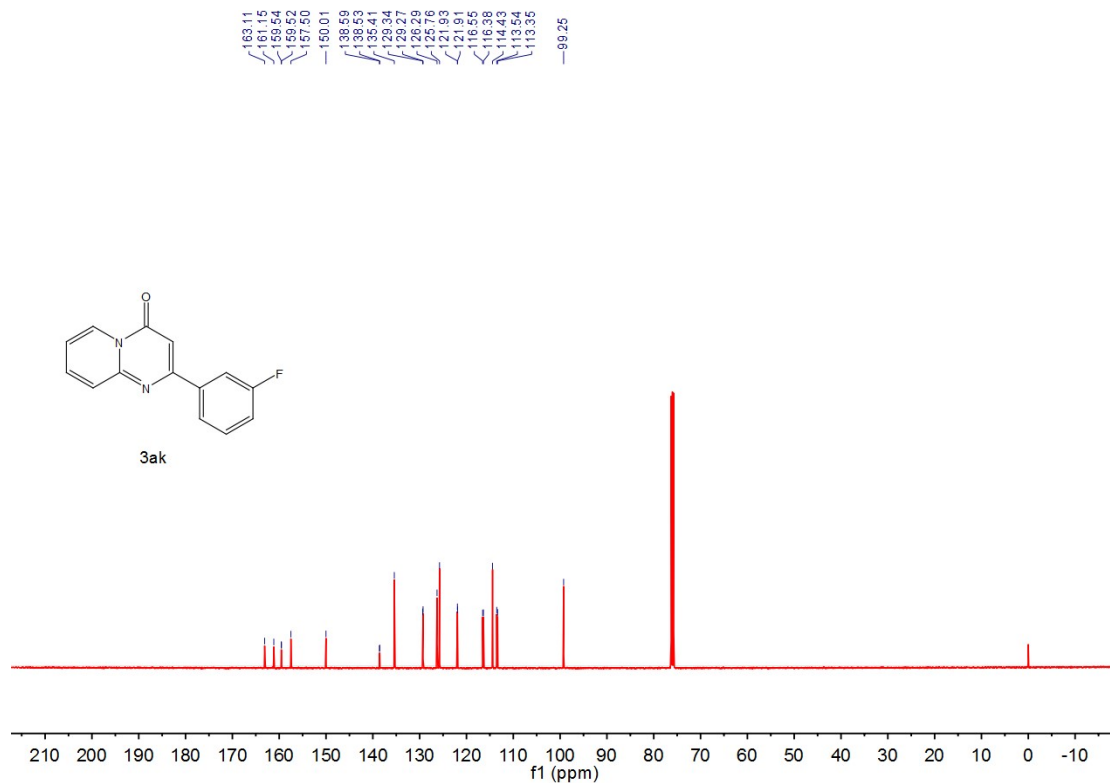


**2-(3-Fluorophenyl)-4H-pyrido[1,2-a]pyrimidin-4-one (3ak)**

**<sup>1</sup>H spectrum of 3ak**

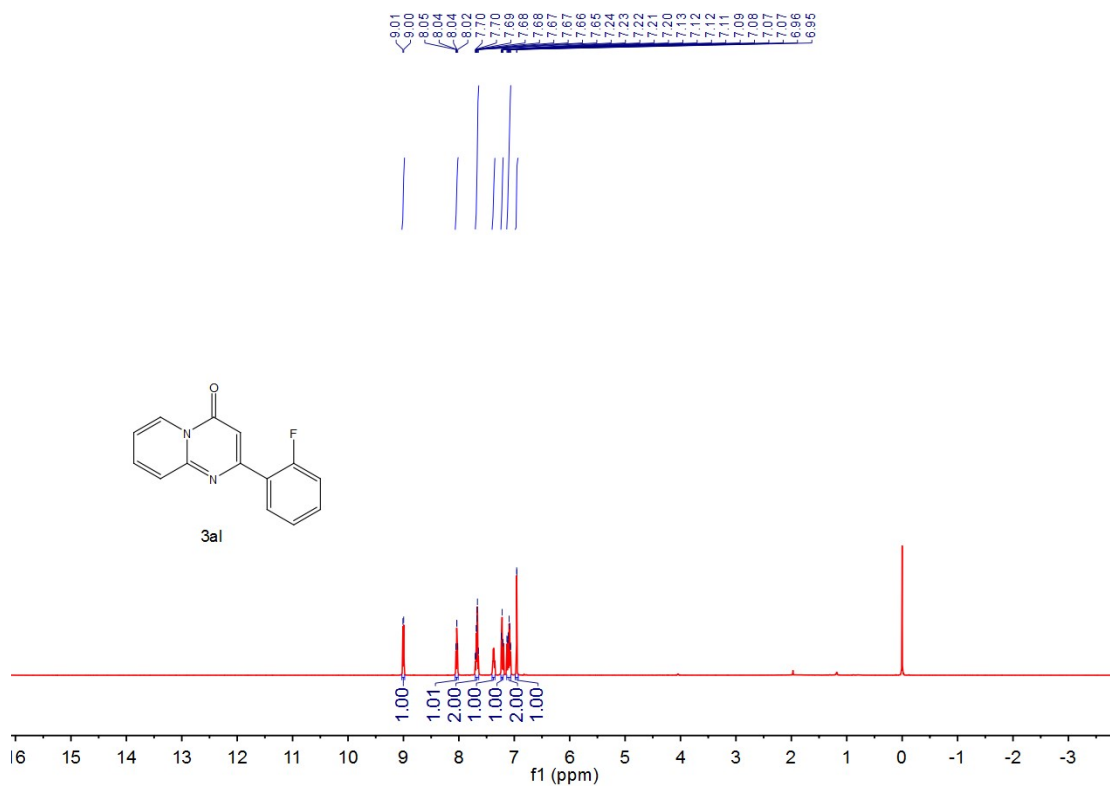


**<sup>13</sup>C spectrum of 3ak**

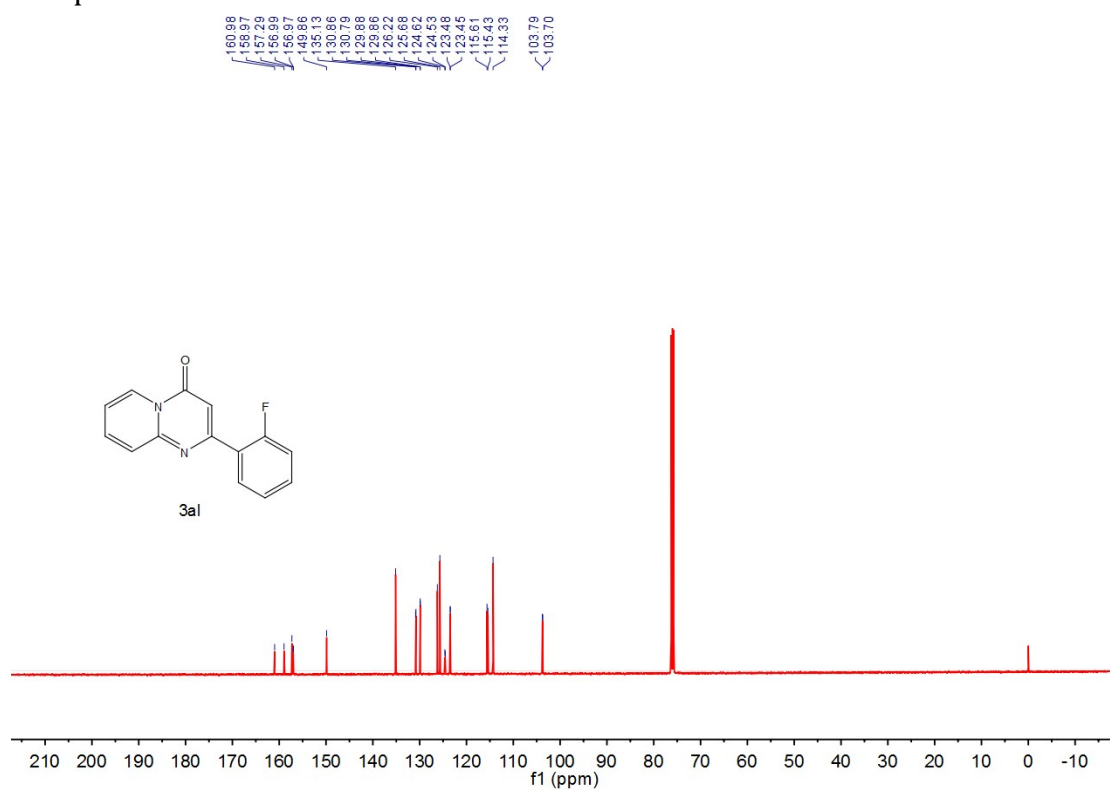


**2-(2-Fluorophenyl)-4H-pyrido[1,2-a]pyrimidin-4-one (3al)**

**<sup>1</sup>H spectrum of 3al**

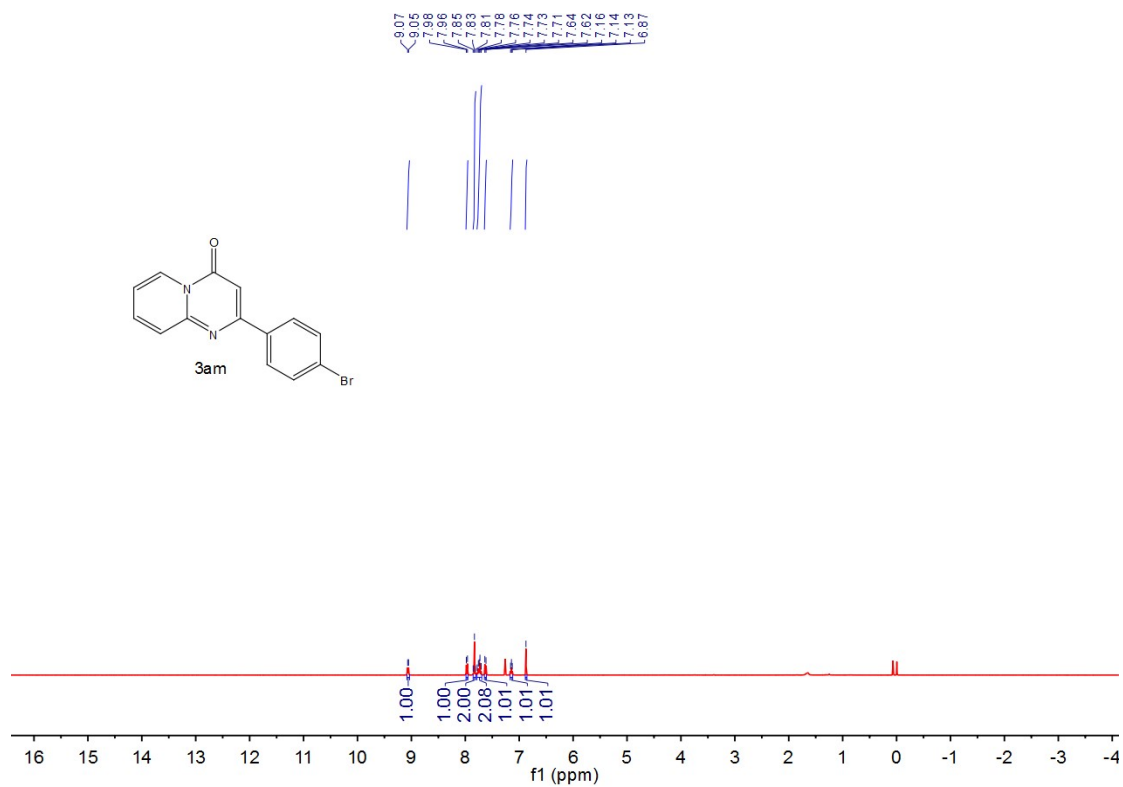


**<sup>13</sup>C spectrum of 3al**

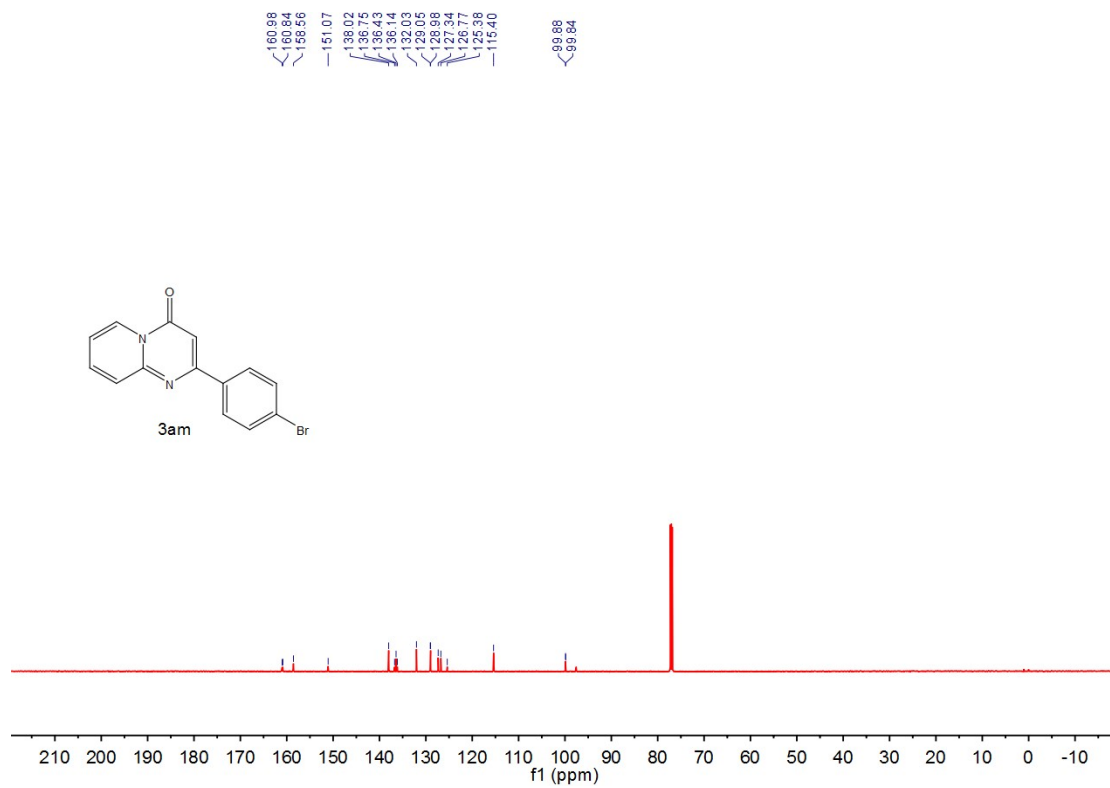


**2-(4-Bromophenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3am)**

**<sup>1</sup>H spectrum of 3am**

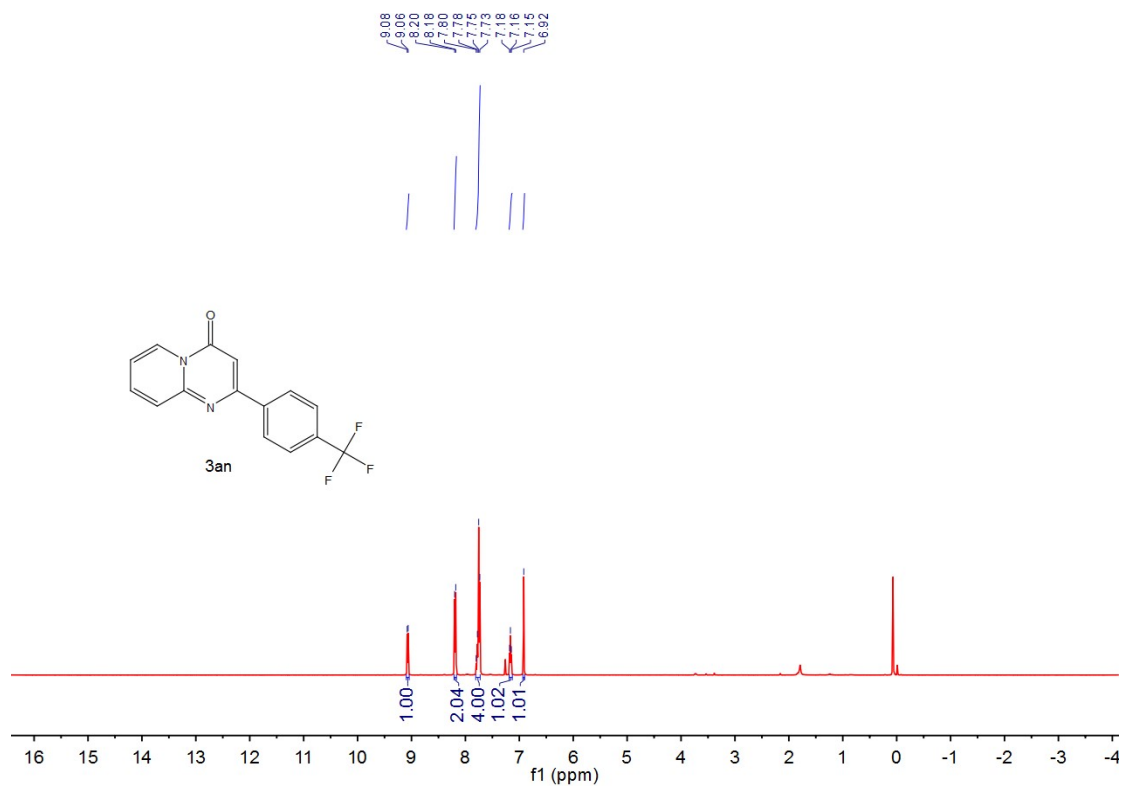


**<sup>13</sup>C spectrum of 3am**

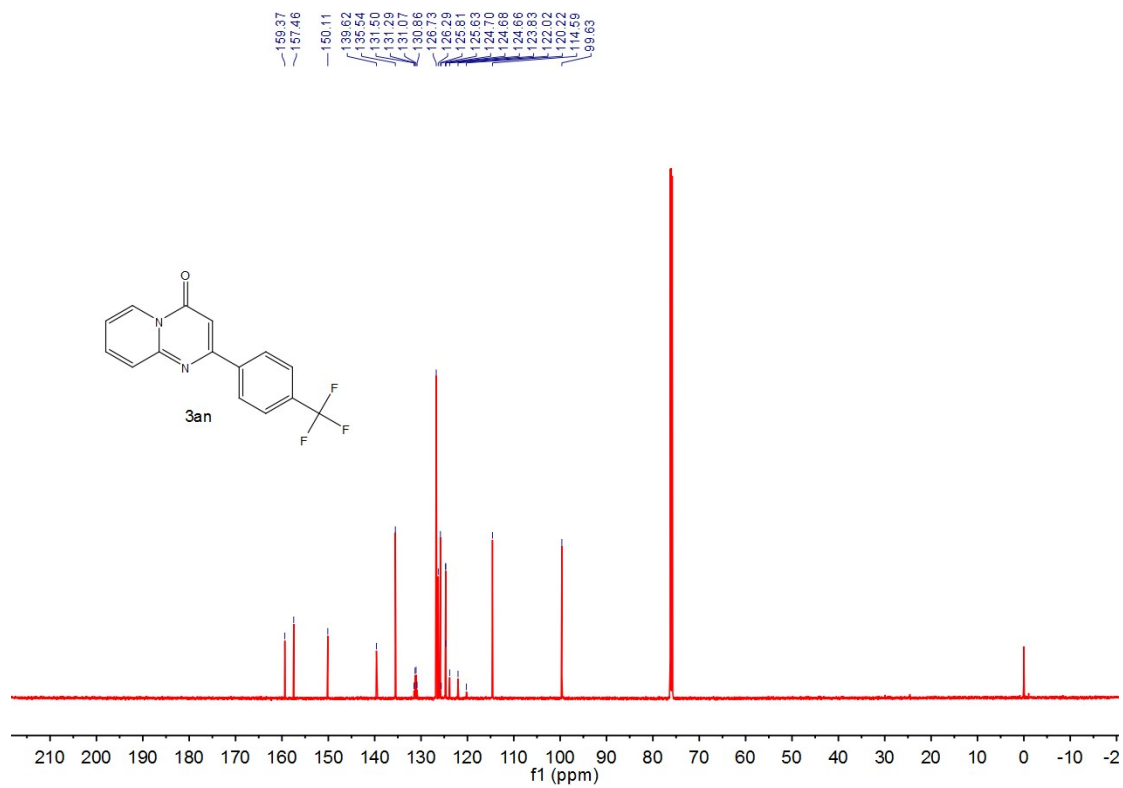


**2-(4-(Trifluoromethyl)phenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3an)**

**<sup>1</sup>H spectrum of 3an**

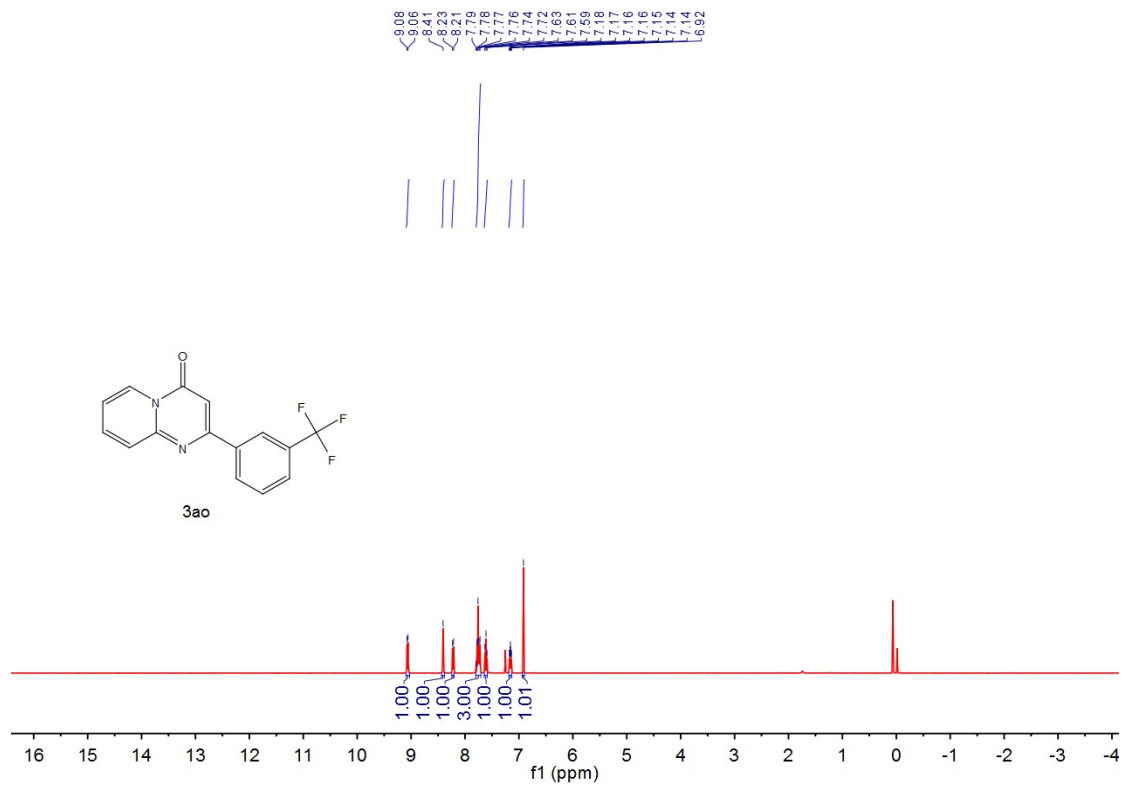


<sup>13</sup>C spectrum of **3an**

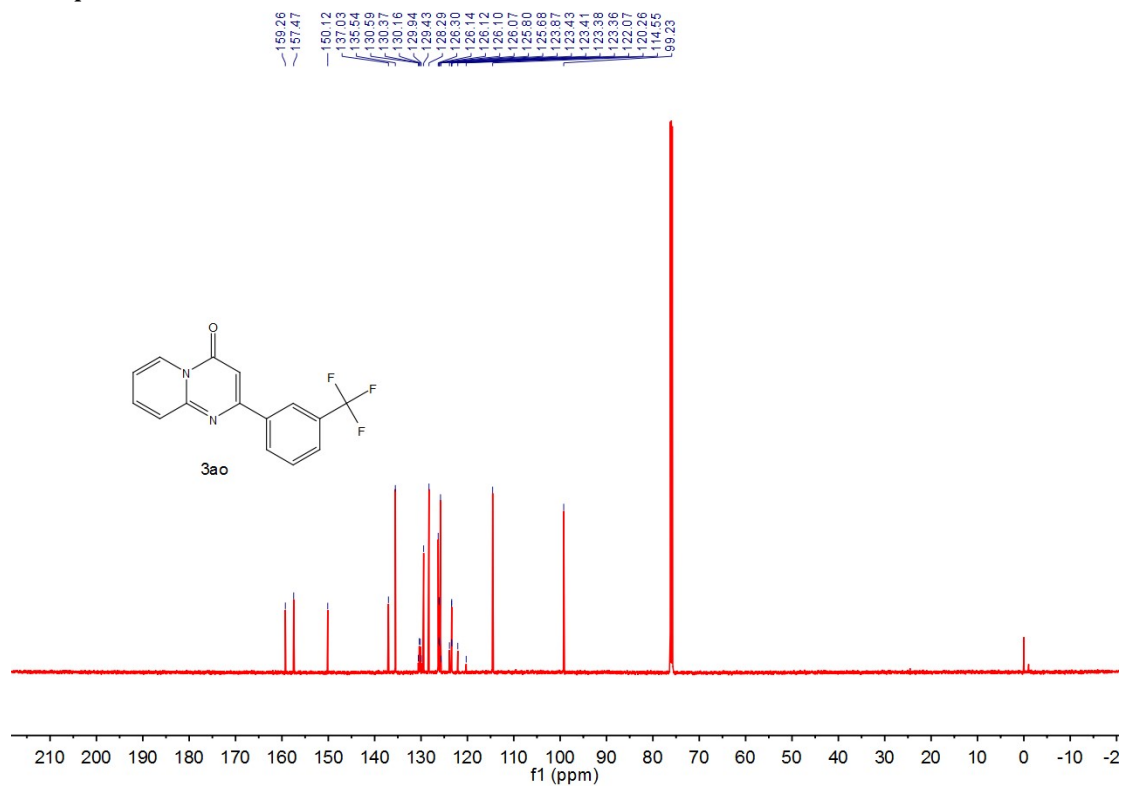


**2-(3-(Trifluoromethyl)phenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3ao)**

<sup>1</sup>H spectrum of **3ao**



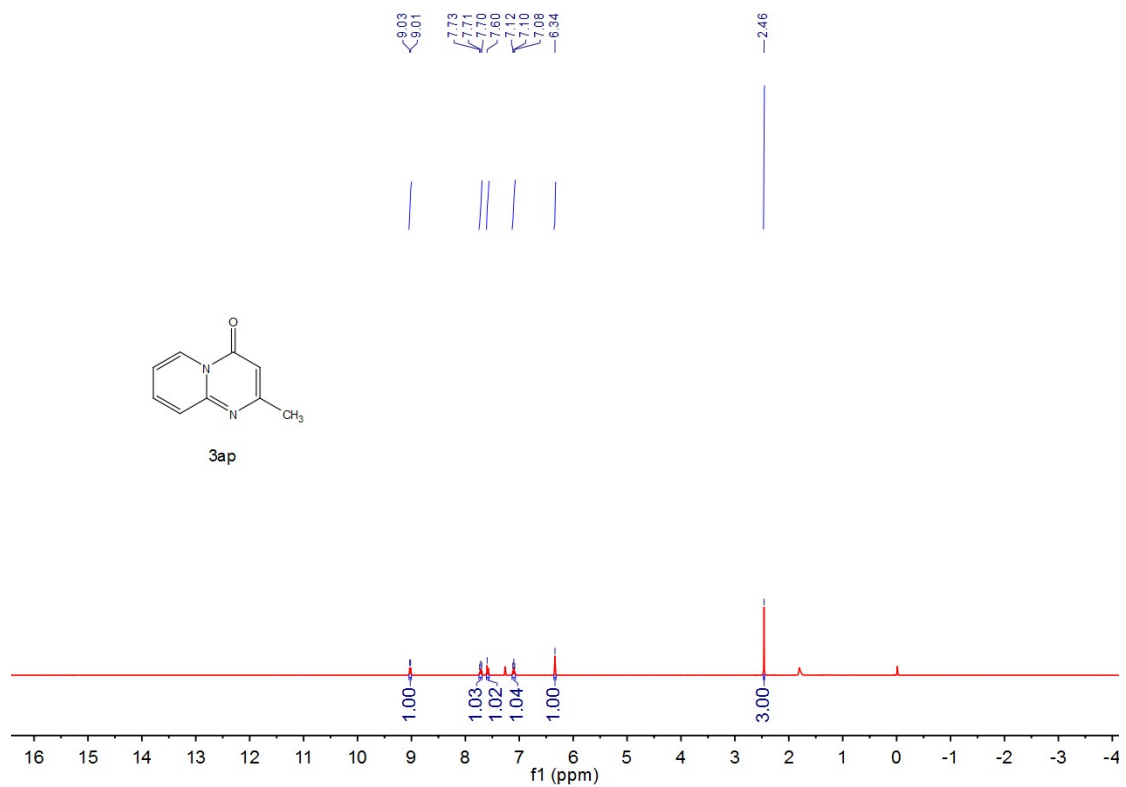
**<sup>13</sup>C spectrum of 3ao**



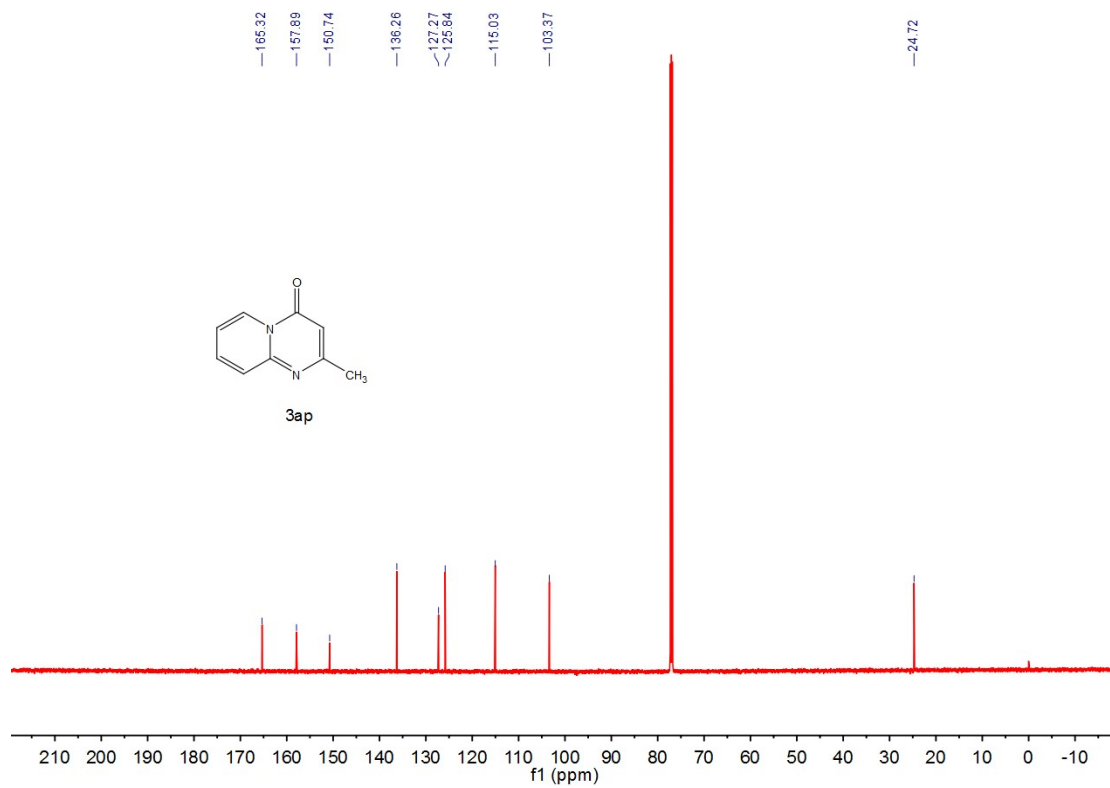
**2-Methyl-4H-pyrido[1,2-a]pyrimidin-4-one(3ap)**

**<sup>1</sup>H spectrum of 3ap**



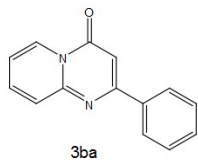
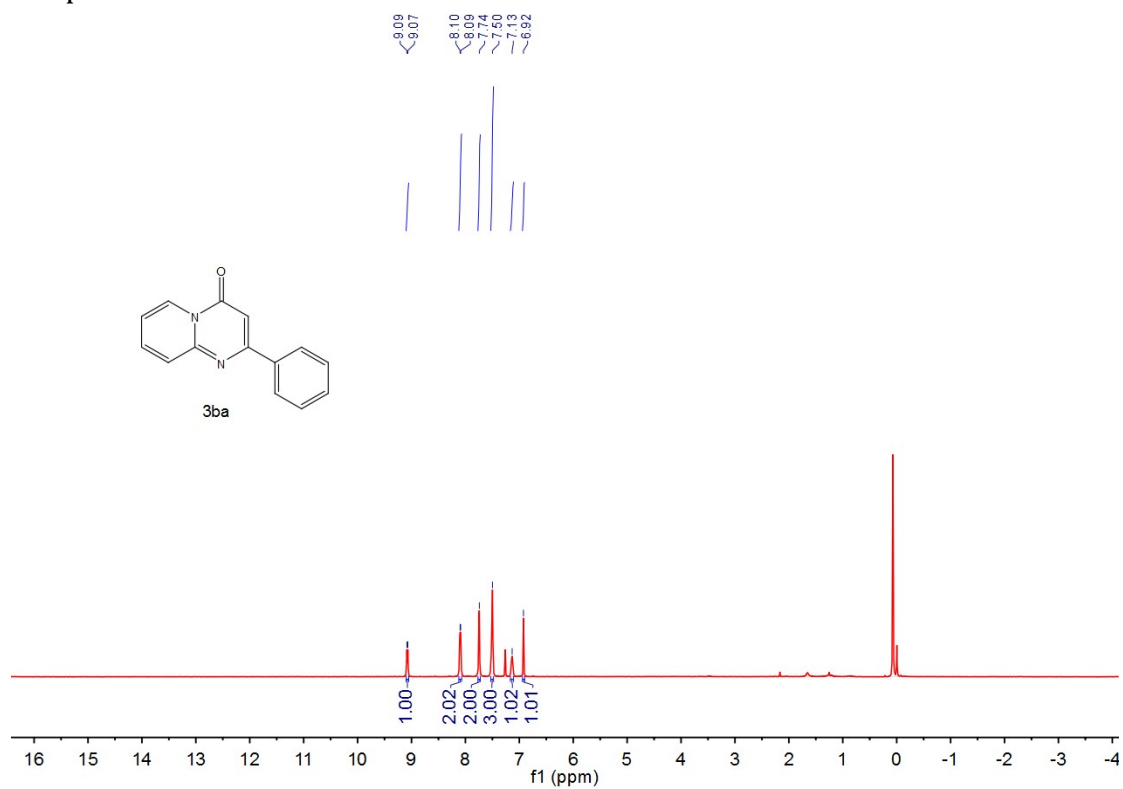


**<sup>13</sup>C spectrum of 3ap**

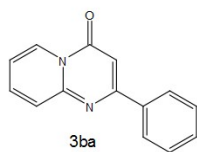
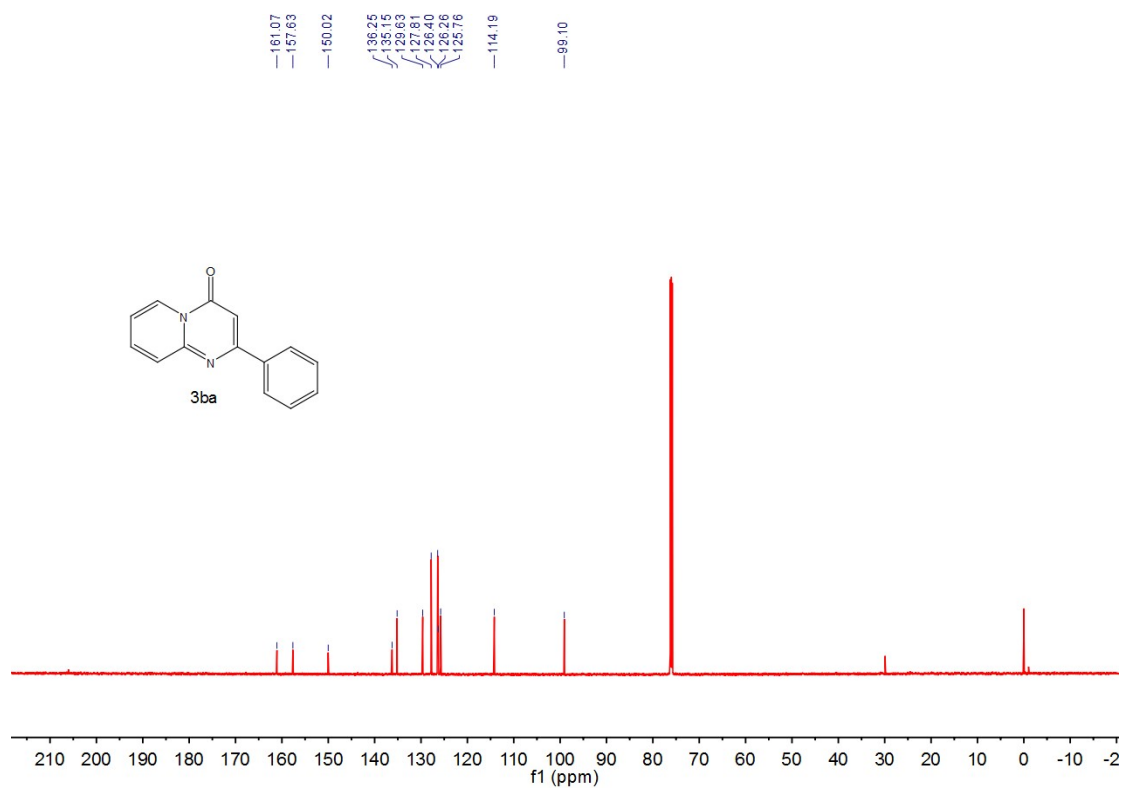


**2-Phenyl-4H-pyrido[1,2-a]pyrimidin-4-one(3ba)**

### <sup>1</sup>H spectrum of **3ba**

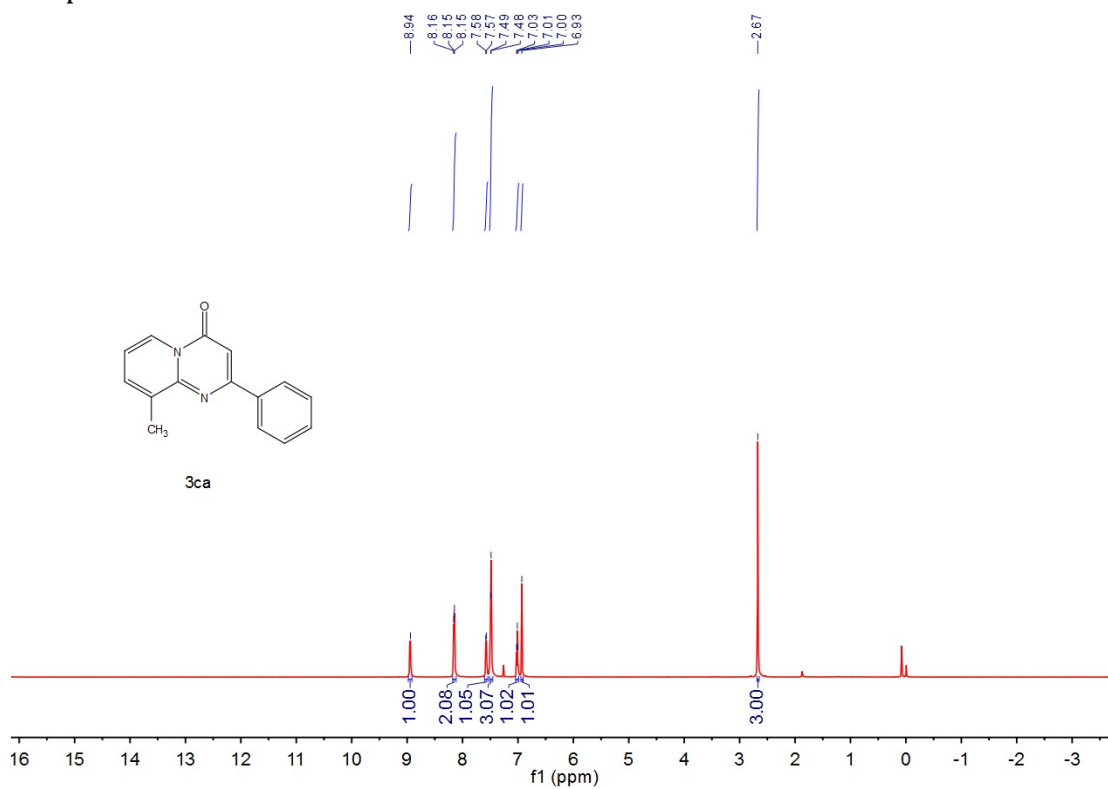


### <sup>13</sup>C spectrum of **3ba**

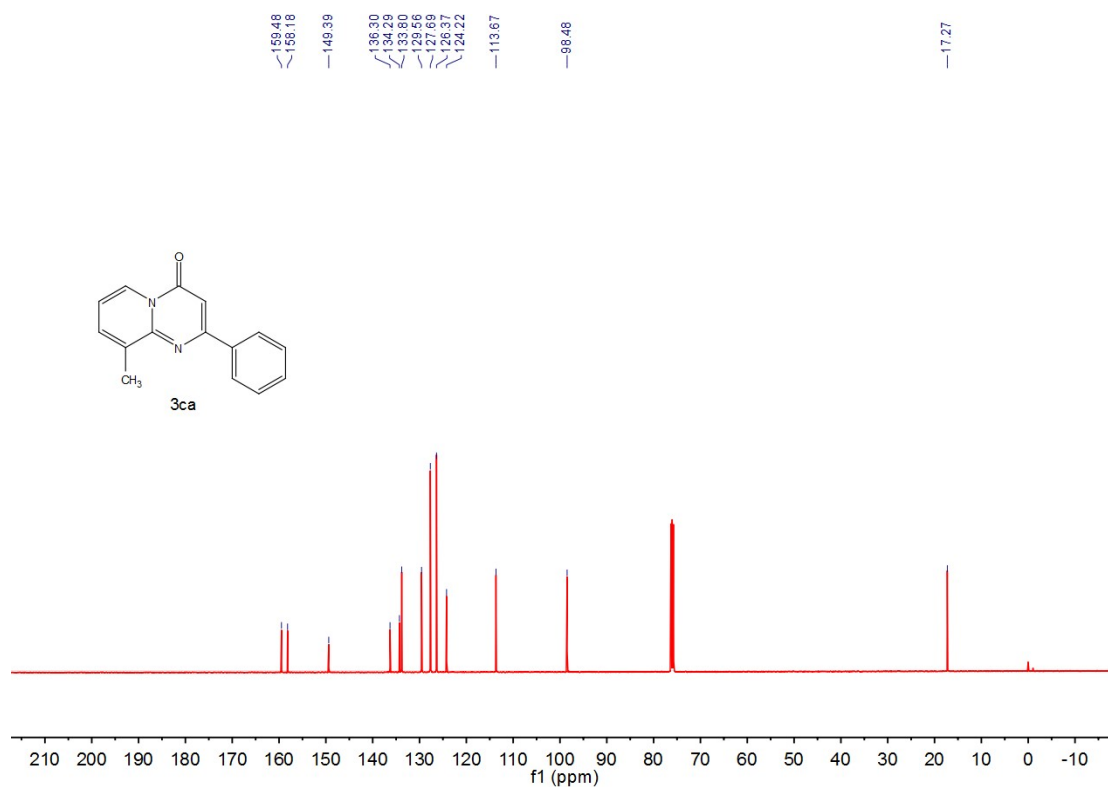


*9-Methyl-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one(3ca)*

### <sup>1</sup>H spectrum of **3ca**

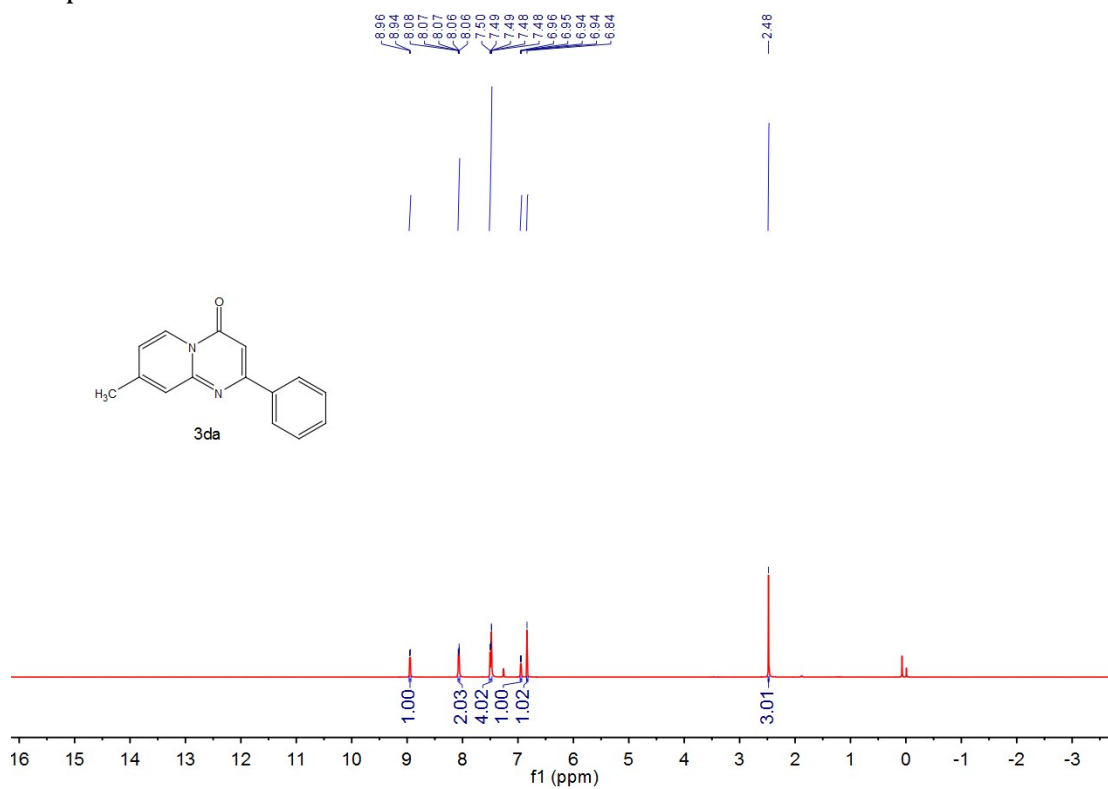


### <sup>13</sup>C spectrum of **3ca**

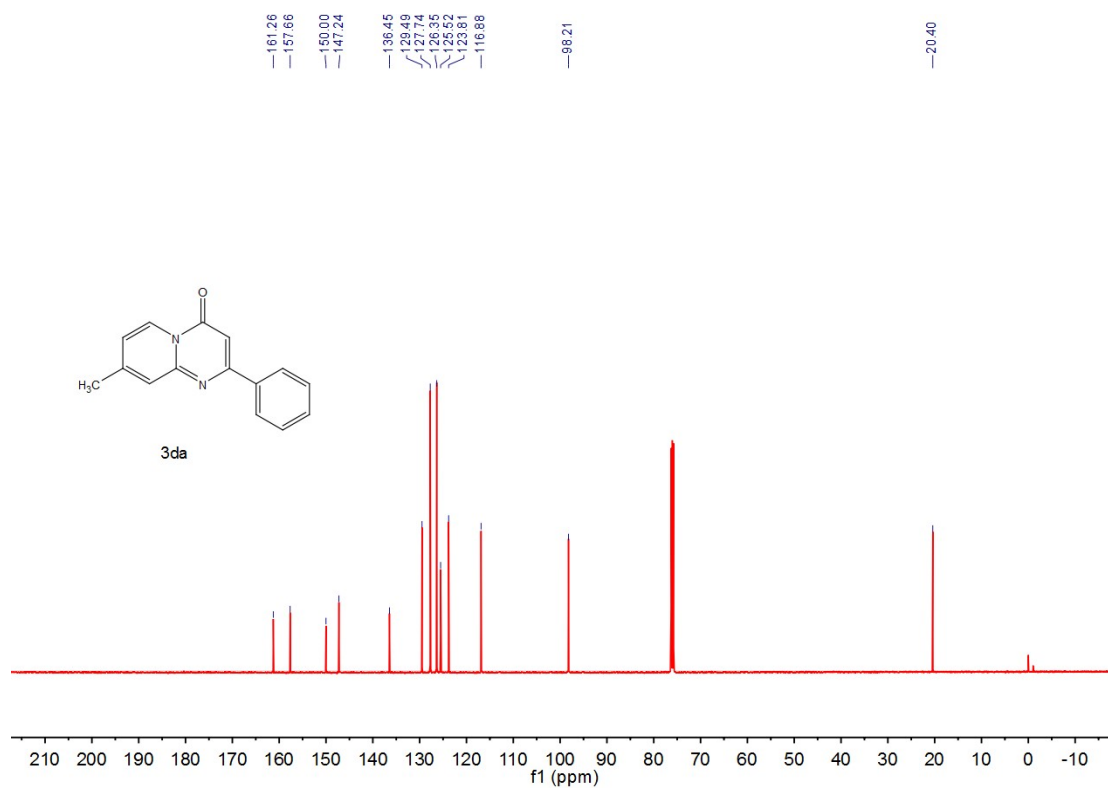


**8-Methyl-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one(3da)**

### <sup>1</sup>H spectrum of **3da**

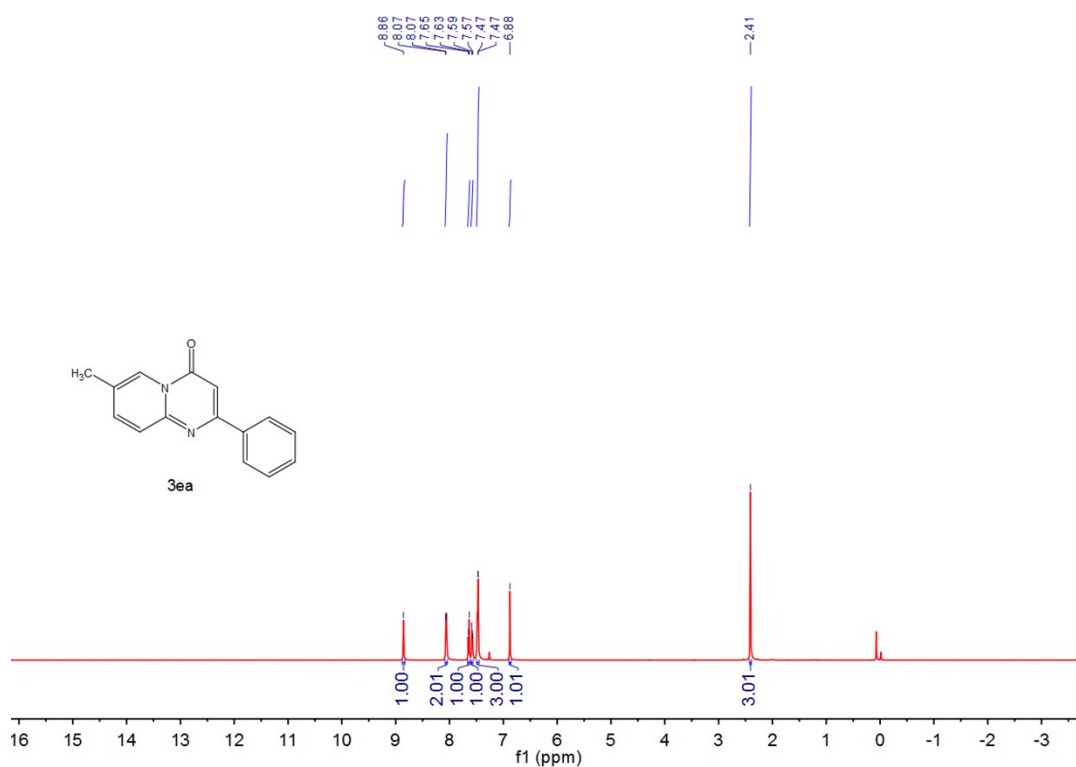


### <sup>13</sup>C spectrum of **3da**

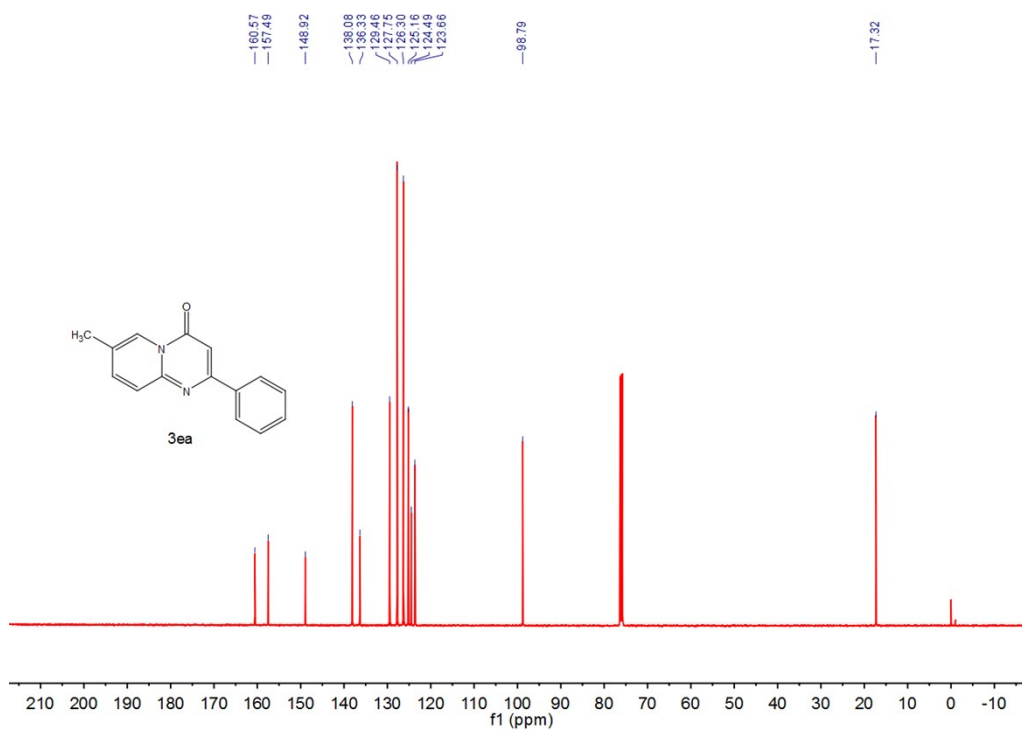


*7-Methyl-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one*(**3ea**)

### <sup>1</sup>H spectrum of **3ea**

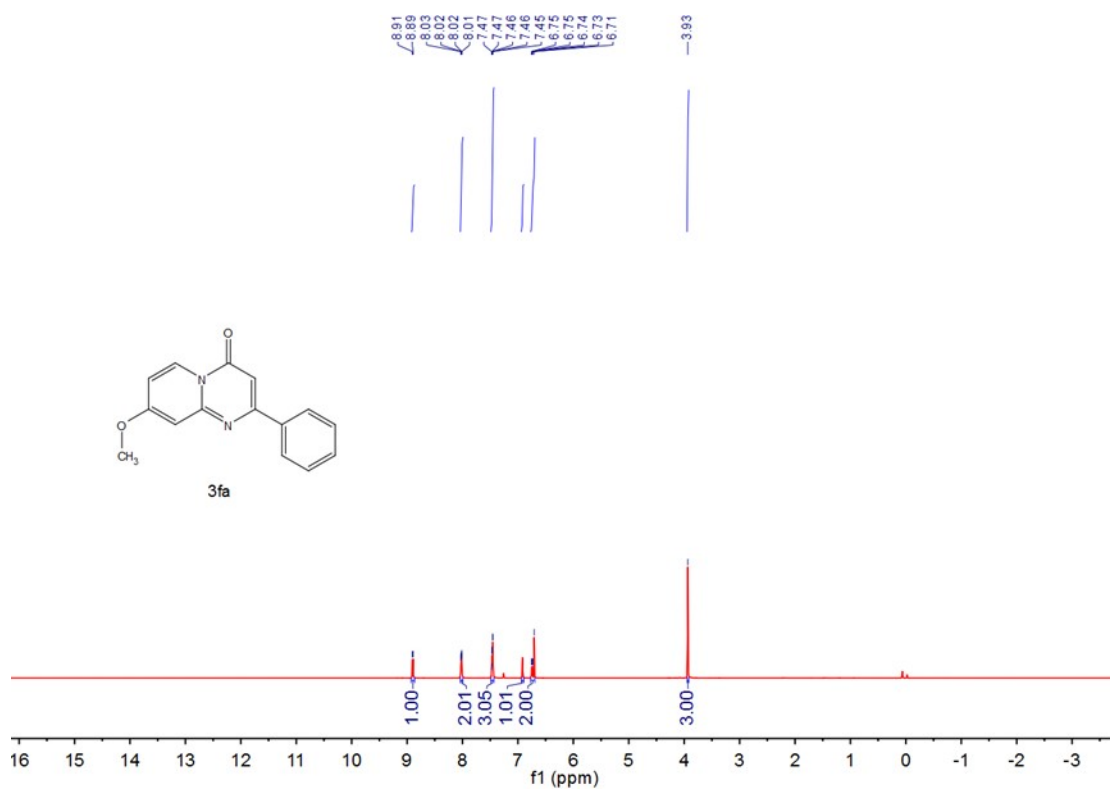


### <sup>13</sup>C spectrum of **3ea**

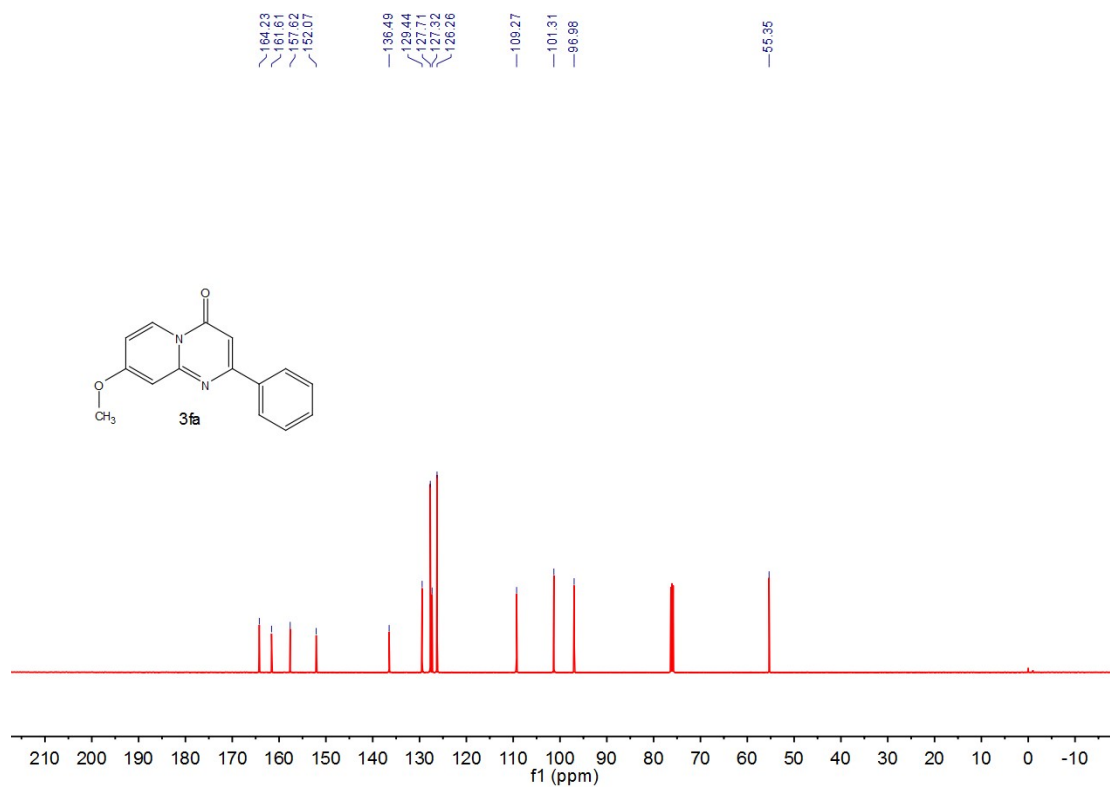


### 8-Methoxy-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one (**3fa**)

### <sup>1</sup>H spectrum of **3fa**

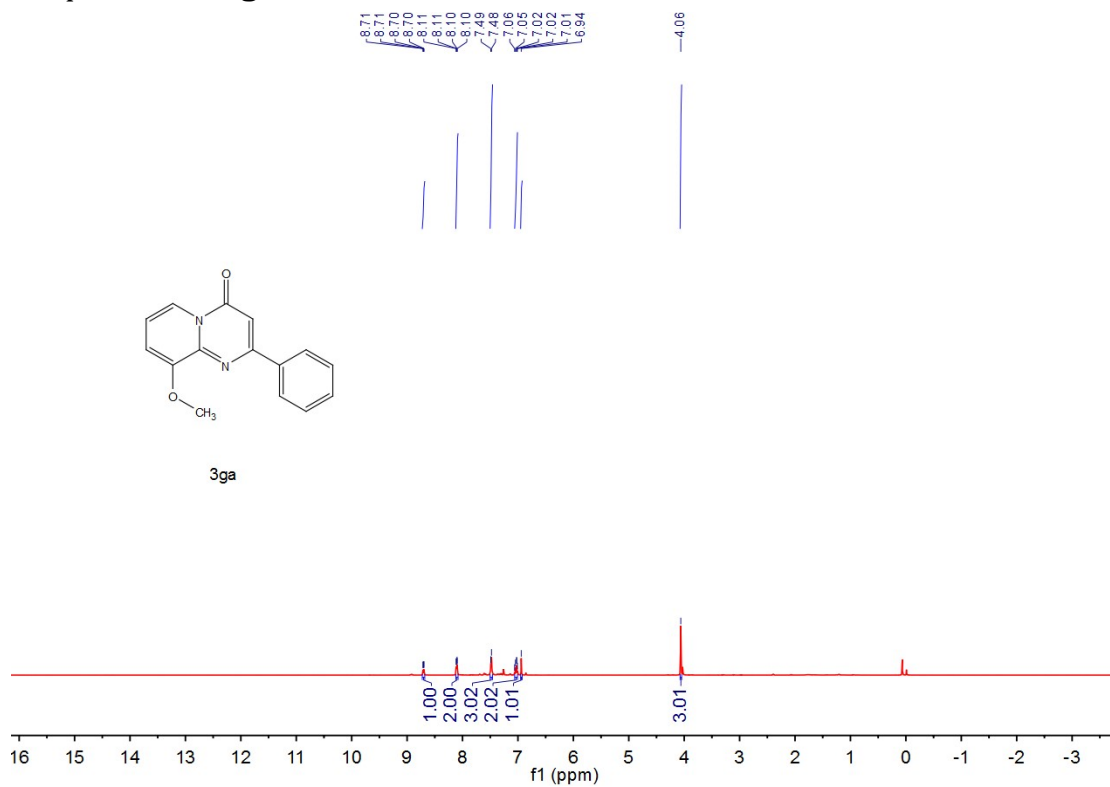


### <sup>13</sup>C spectrum of **3fa**

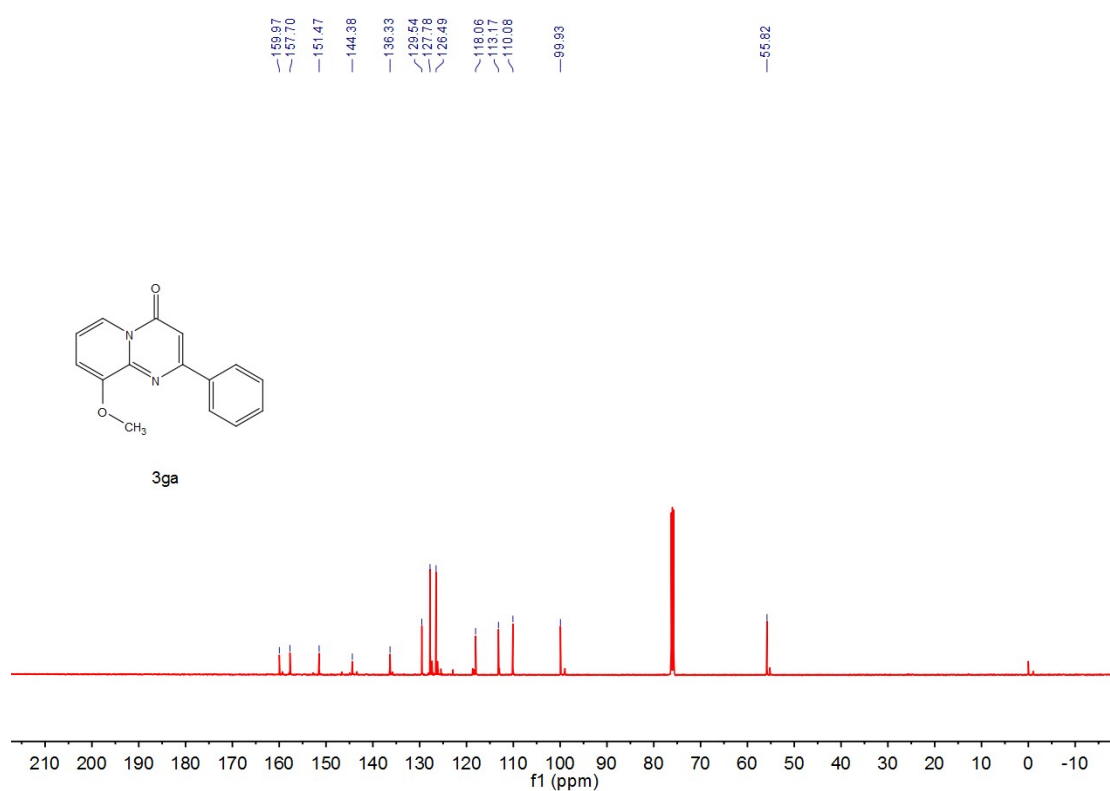


### 9-Methoxy-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one (**3ga**)

### $^1\text{H}$ spectrum of **3ga**

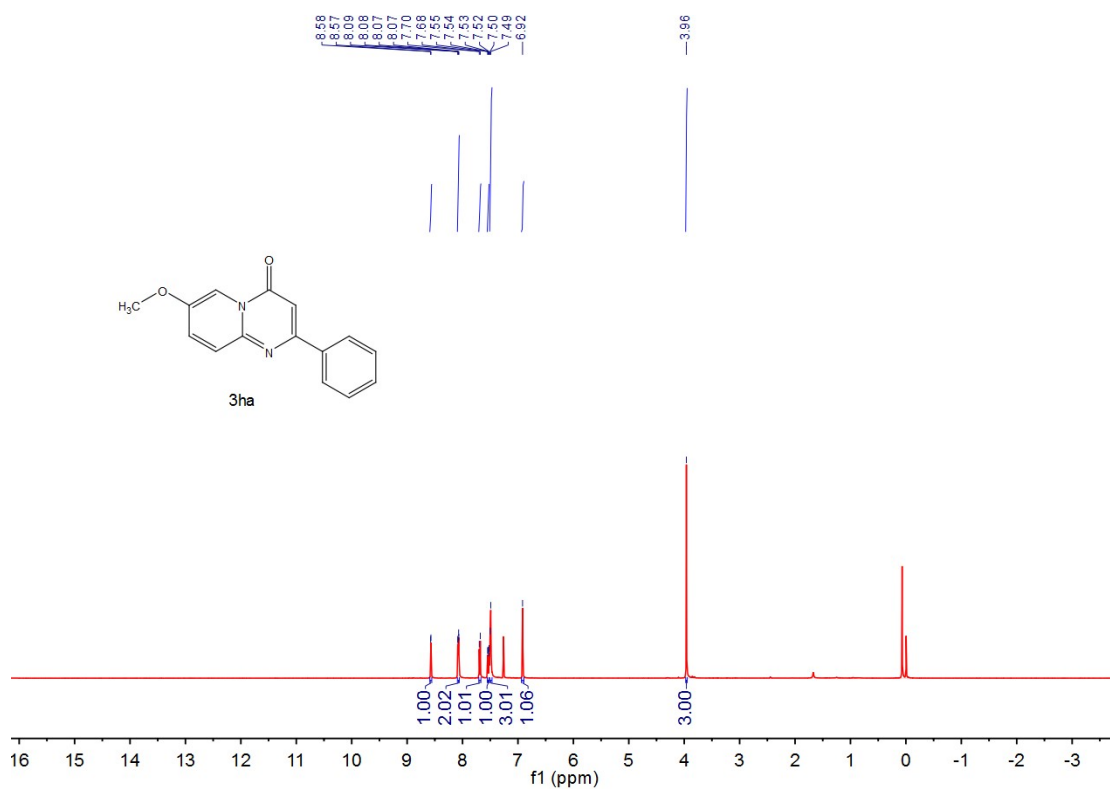


### $^{13}\text{C}$ spectrum of **3ga**

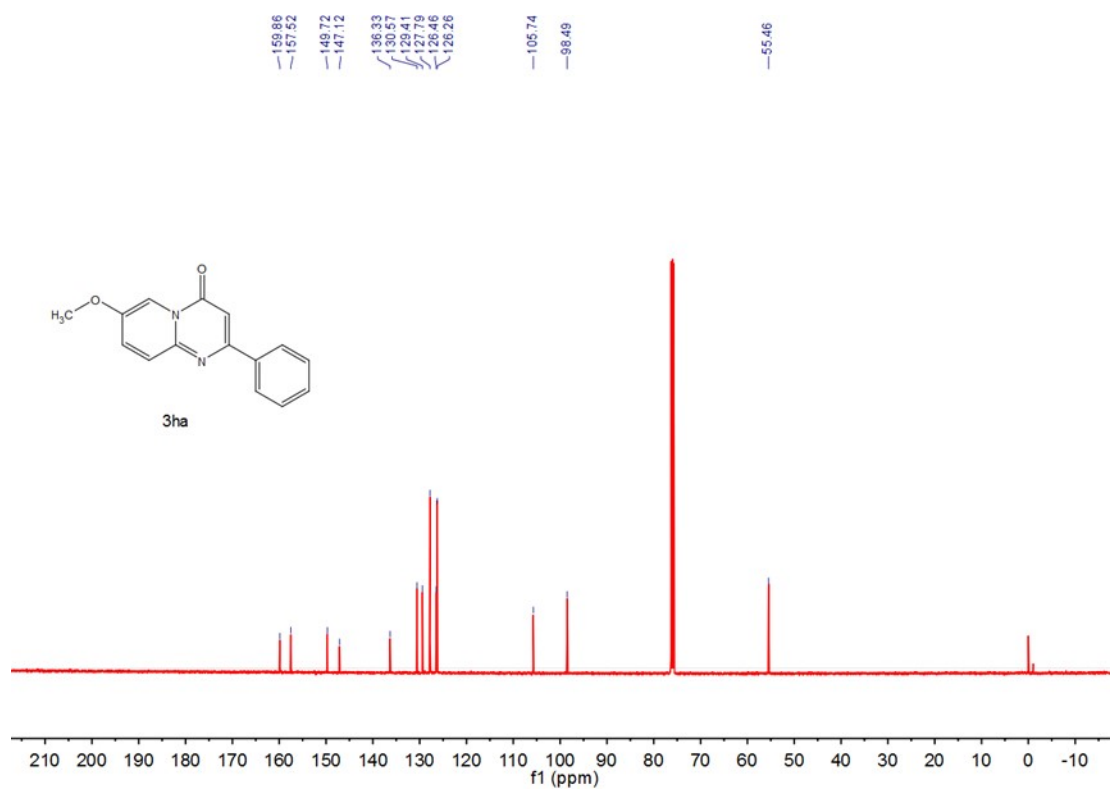


### 7-Methoxy-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one (**3ha**)

### $^1\text{H}$ spectrum of **3ha**



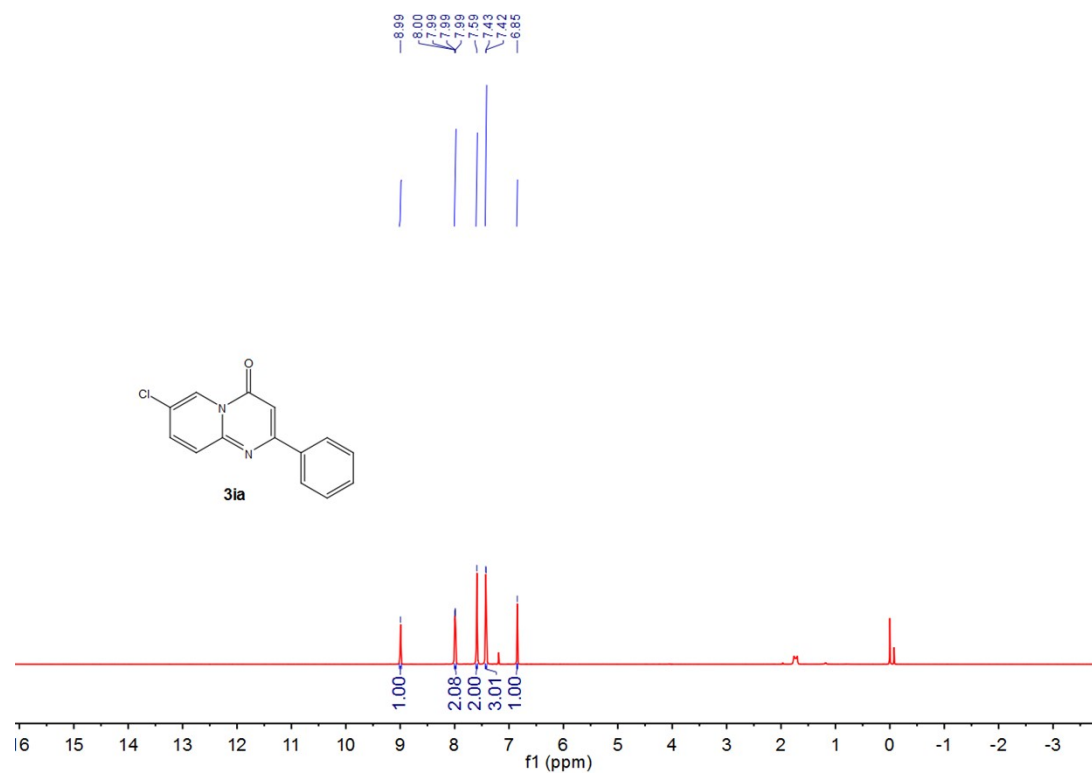
**<sup>13</sup>C spectrum of 3ha**



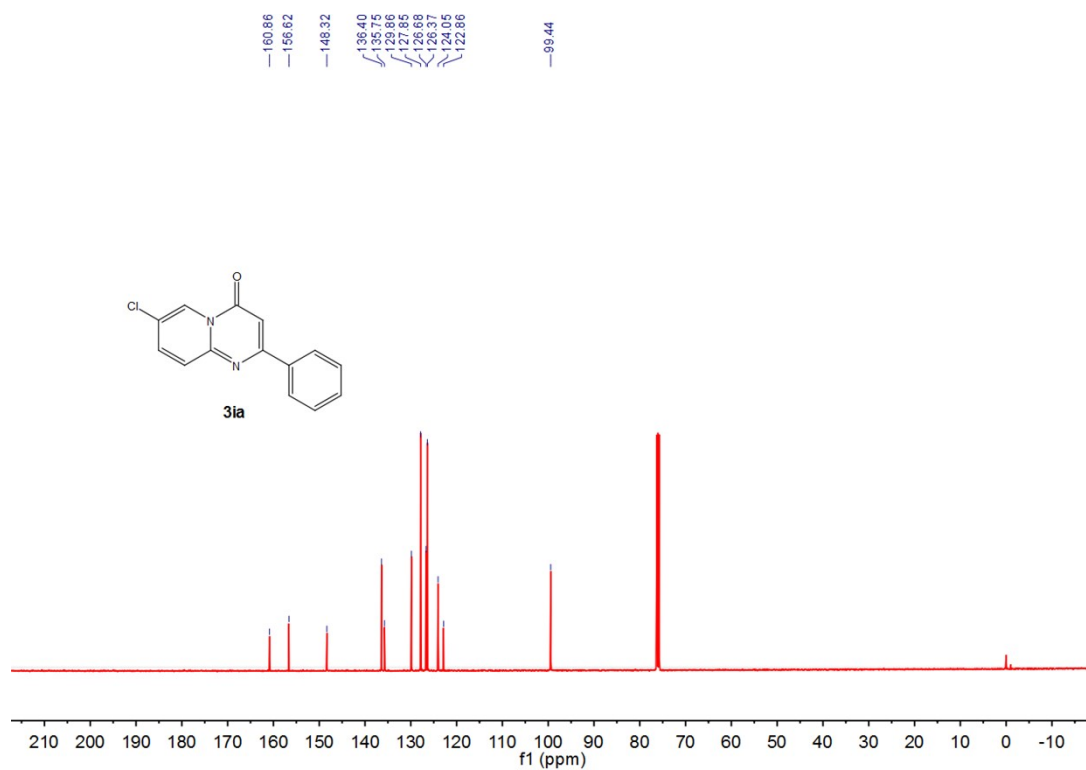
**7-Chloro-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one(3ia)**

**<sup>1</sup>H spectrum of 3ia**



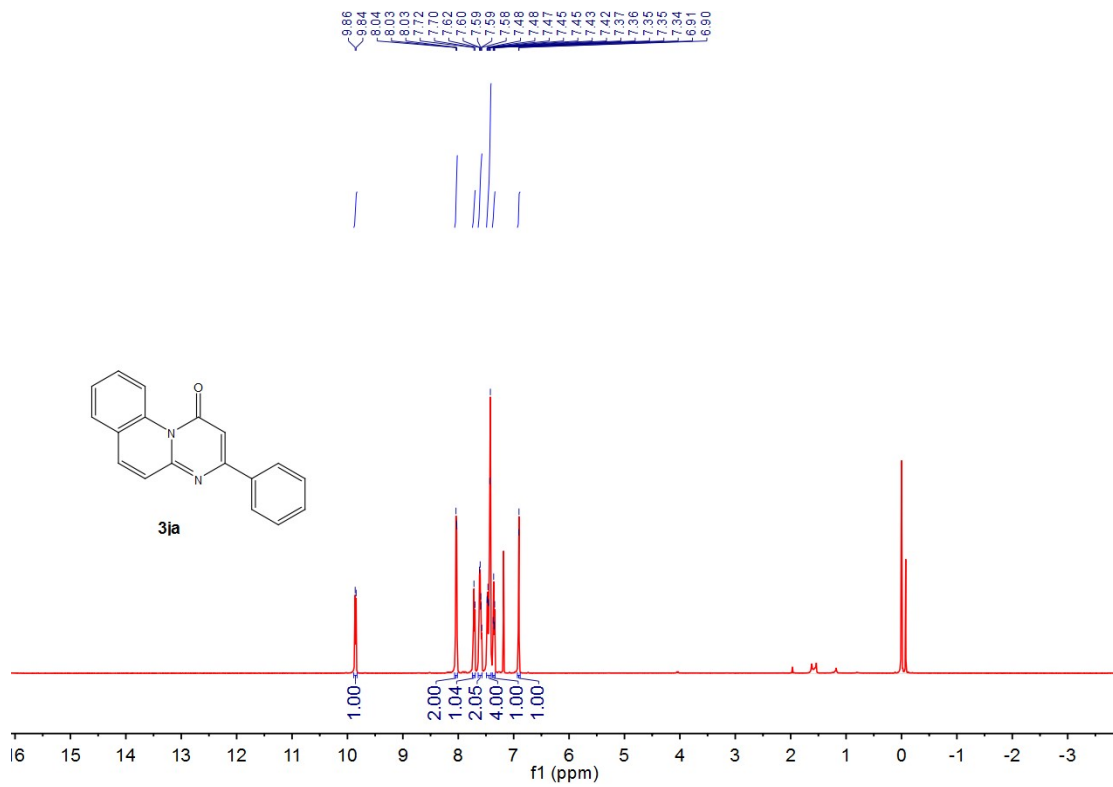


<sup>13</sup>C spectrum of 3ja

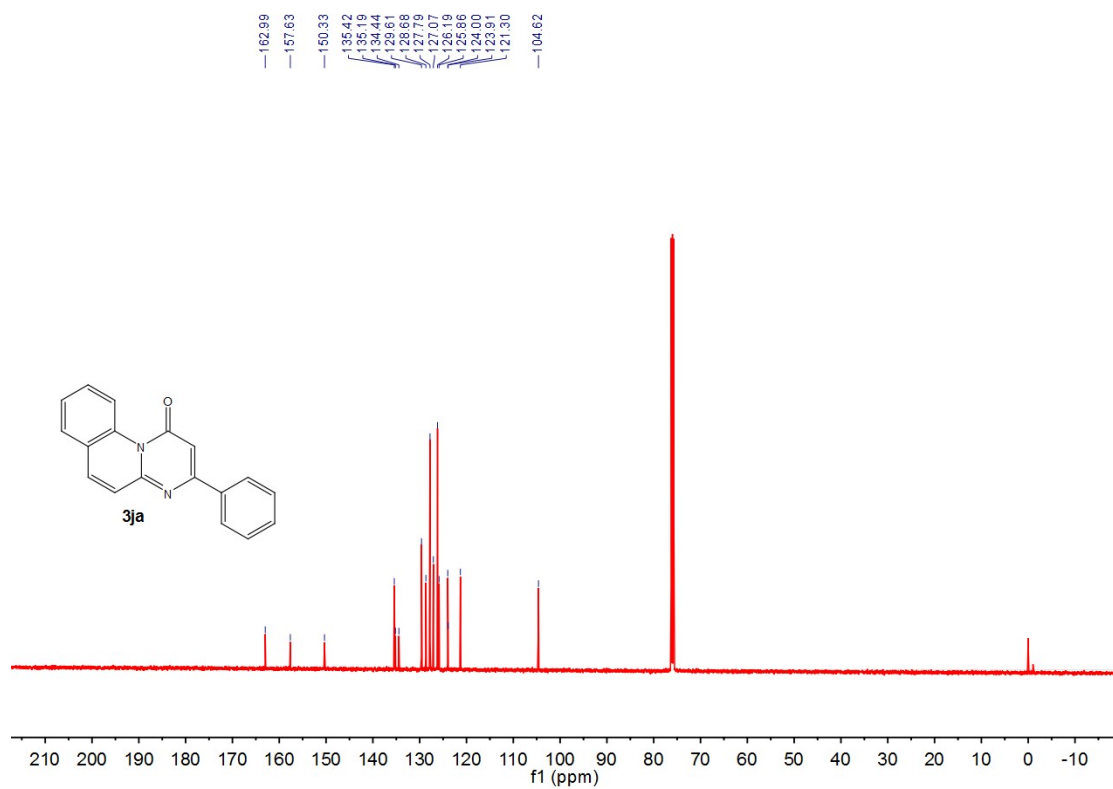


**3-Phenyl-1H-pyrimido[1,2-a]quinolin-1-one(3ja)**

<sup>1</sup>H spectrum of 3ja

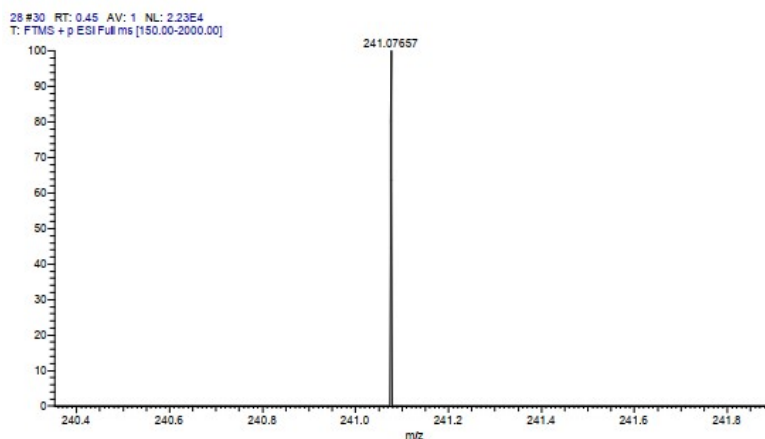


<sup>13</sup>C spectrum of **3ja**

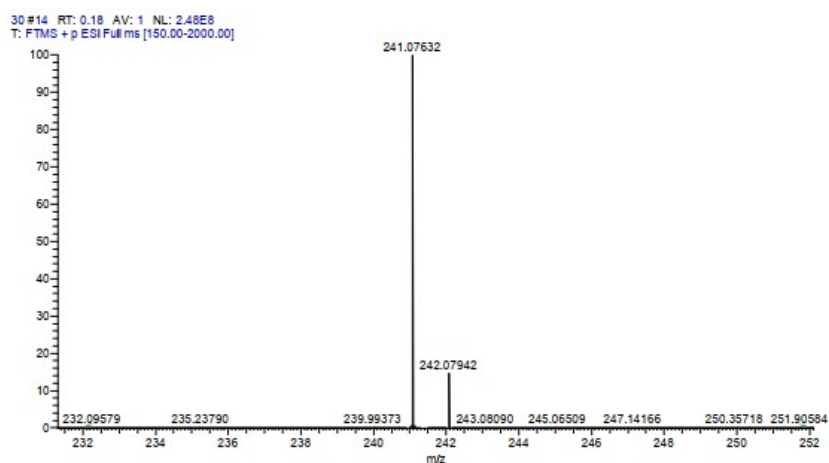


## 2. High-resolution mass spectra of new compounds

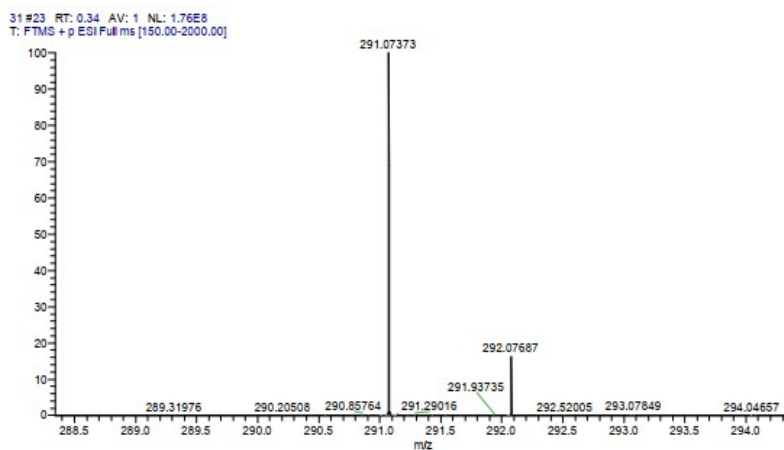
### 2-(3-Fluorophenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3ak)



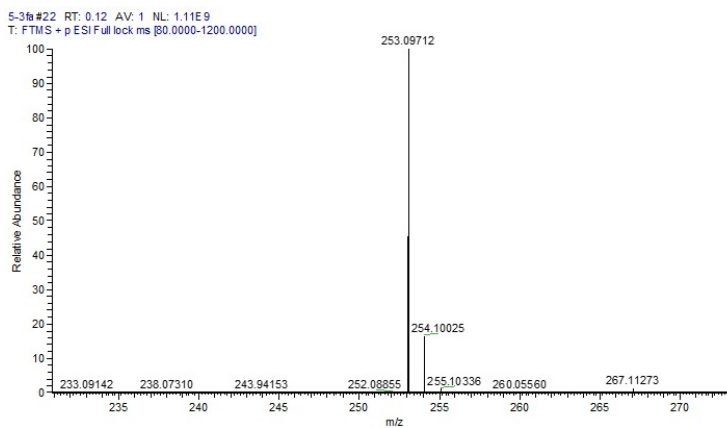
### 2-(2-Fluorophenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3al)



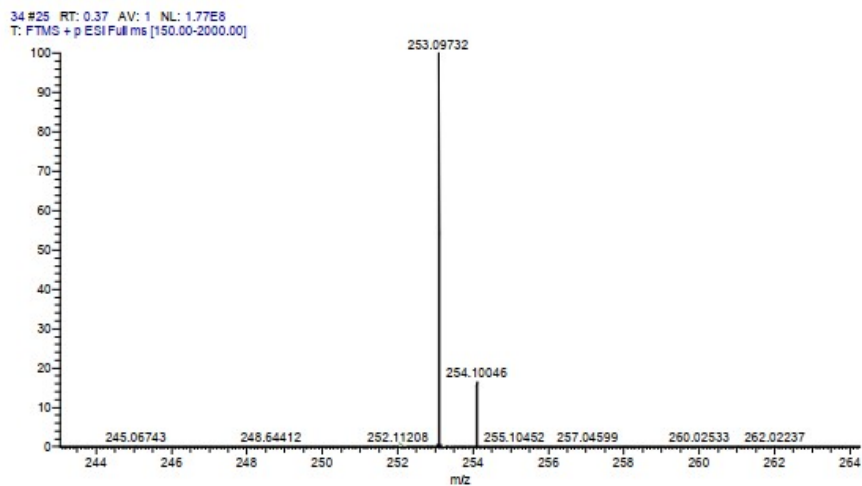
### 2-(3-(Trifluoromethyl)phenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3ao)



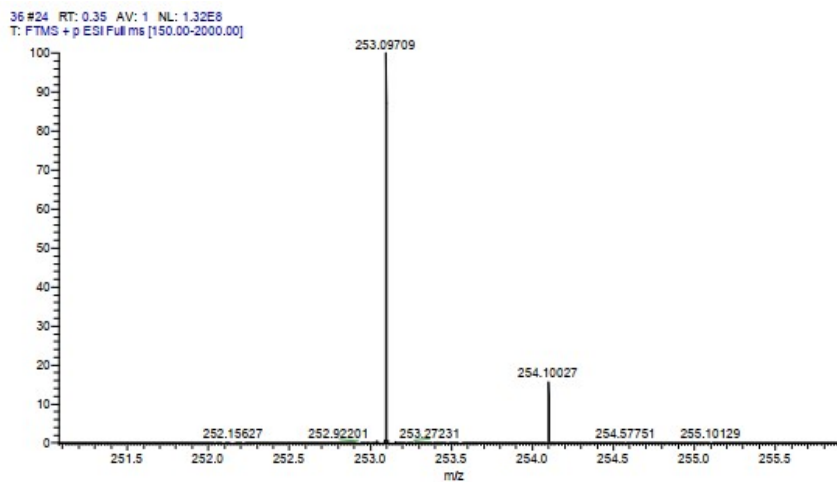
**8-Methoxy-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one(3fa)**



**9-Methoxy-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one(3ga)**

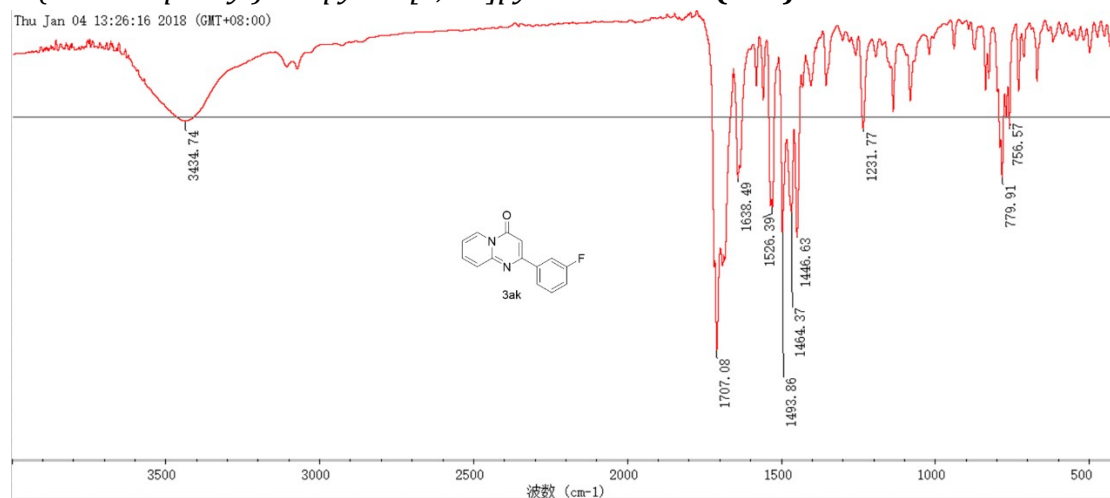


**7-Methoxy-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one(3ha)**

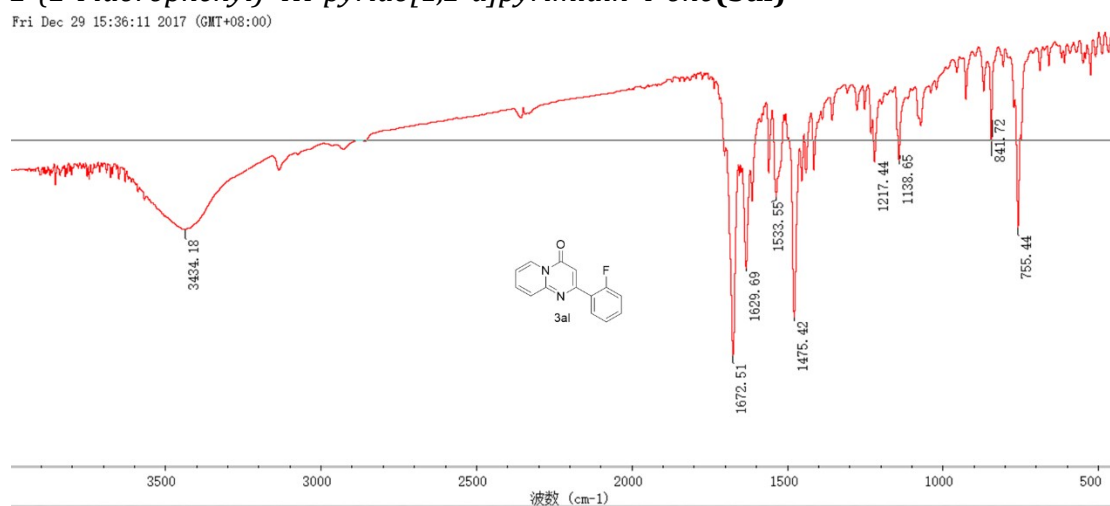


### 3. IR spectra of new compounds

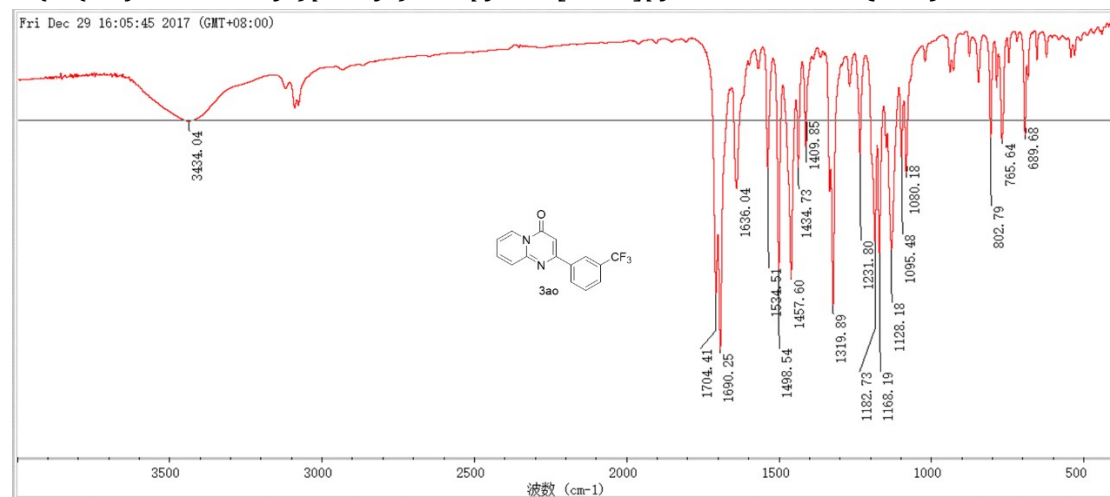
#### 2-(3-Fluorophenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3ak)



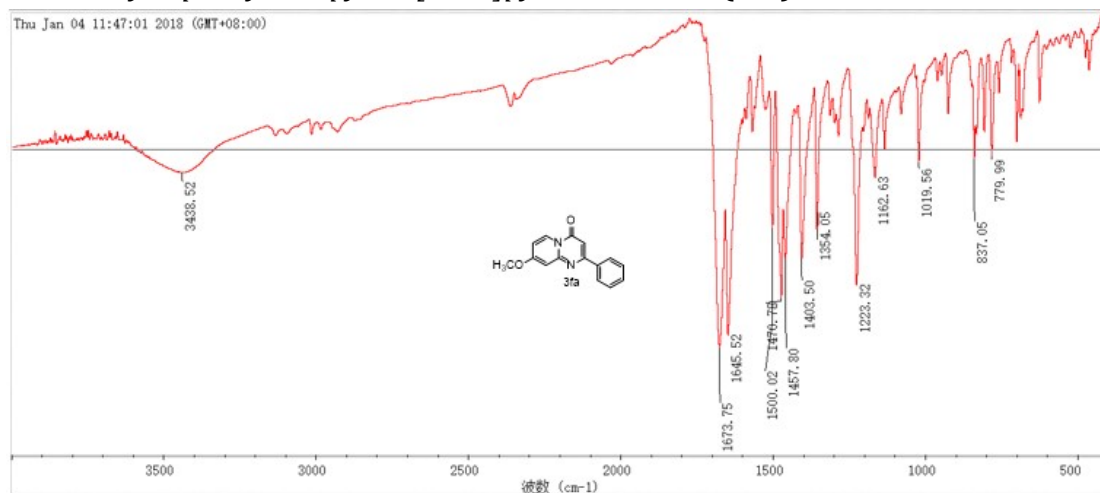
#### 2-(2-Fluorophenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3al)



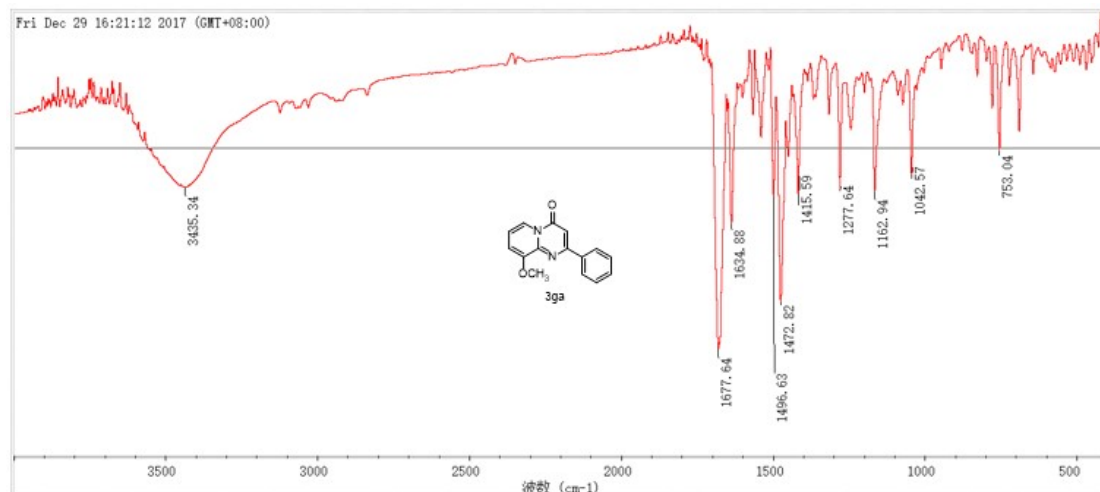
#### 2-(3-(Trifluoromethyl)phenyl)-4H-pyrido[1,2-a]pyrimidin-4-one(3ao)



### 8-Methoxy-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one(3fa)



### 9-Methoxy-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one(3ga)



### 7-Methoxy-2-phenyl-4H-pyrido[1,2-a]pyrimidin-4-one(3ha)

