

# **Sunlight induced and Recyclable g-C<sub>3</sub>N<sub>4</sub> Catalyzed C-H Sulfenylation of Quinoxalin-2(1*H*)-ones**

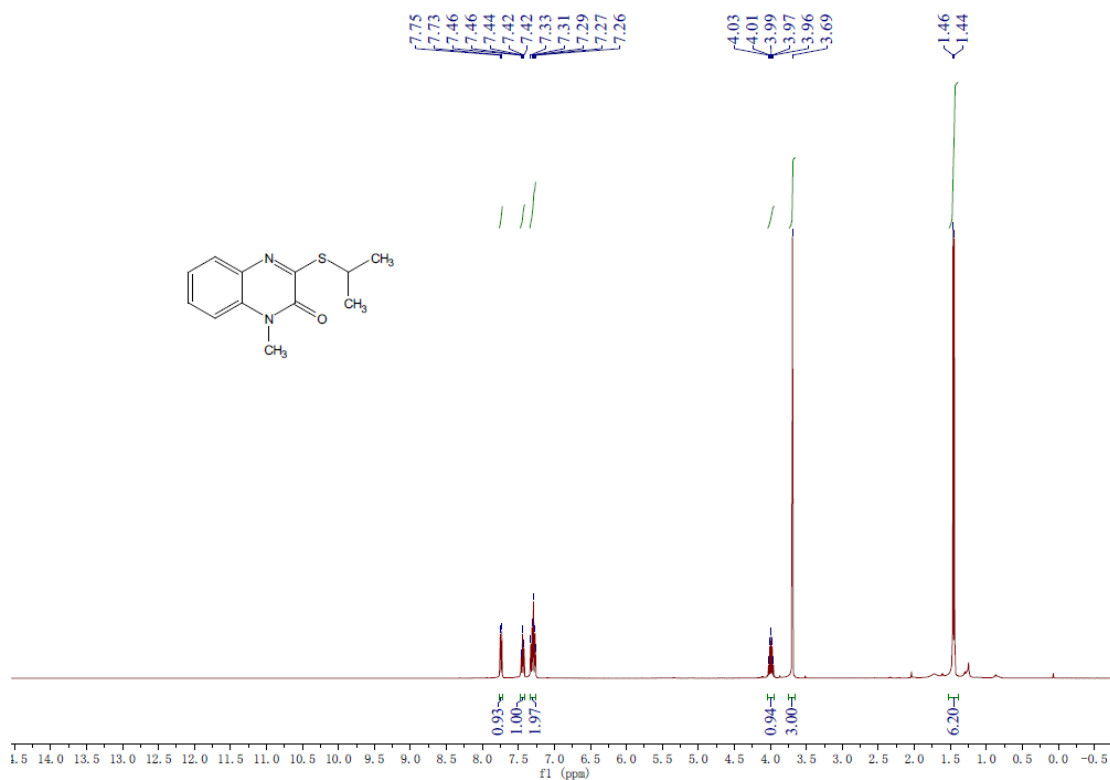
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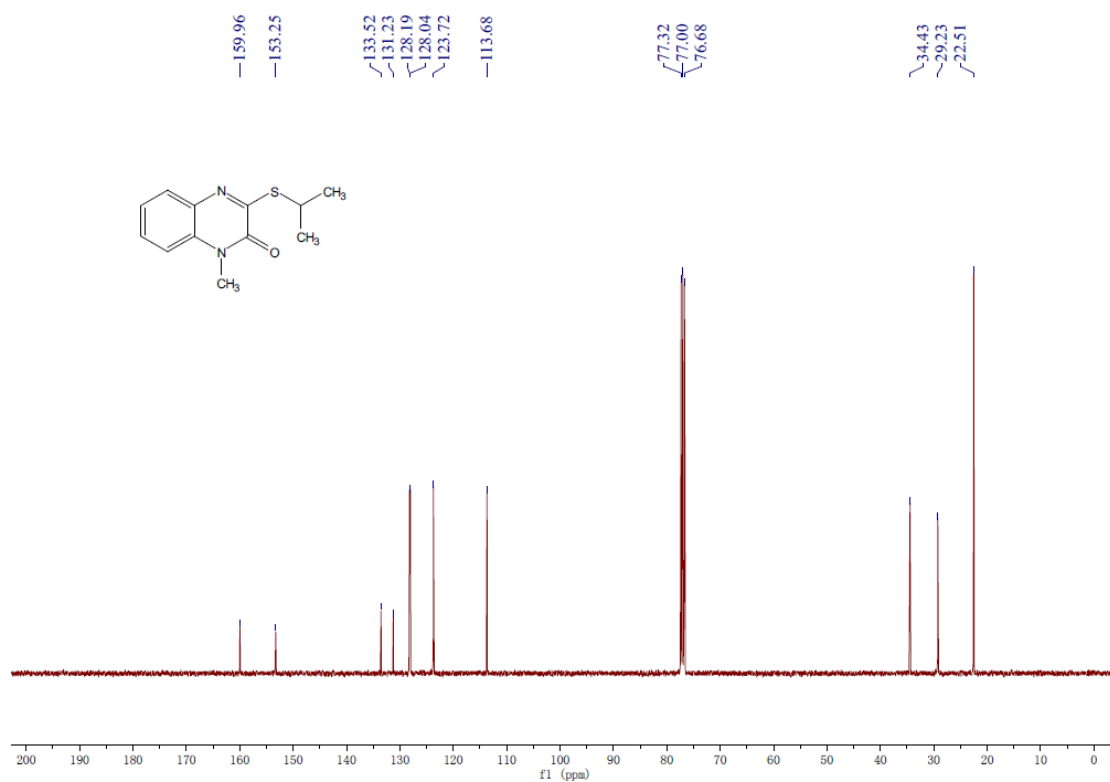
*E-mail:* xielongyong@huse.edu.cn

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

### 3-(isopropylthio)-1-methylquinoxalin-2(1H)-one (3aa)

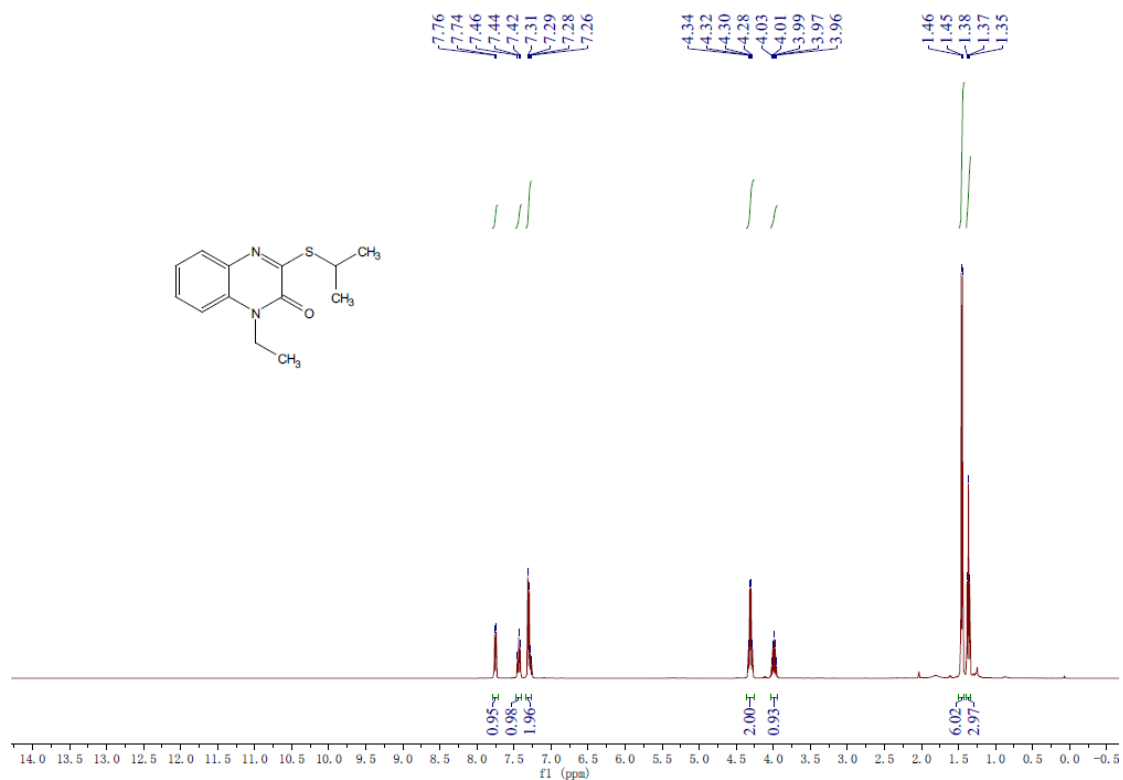


### $^1\text{H}$ spectra of 3aa

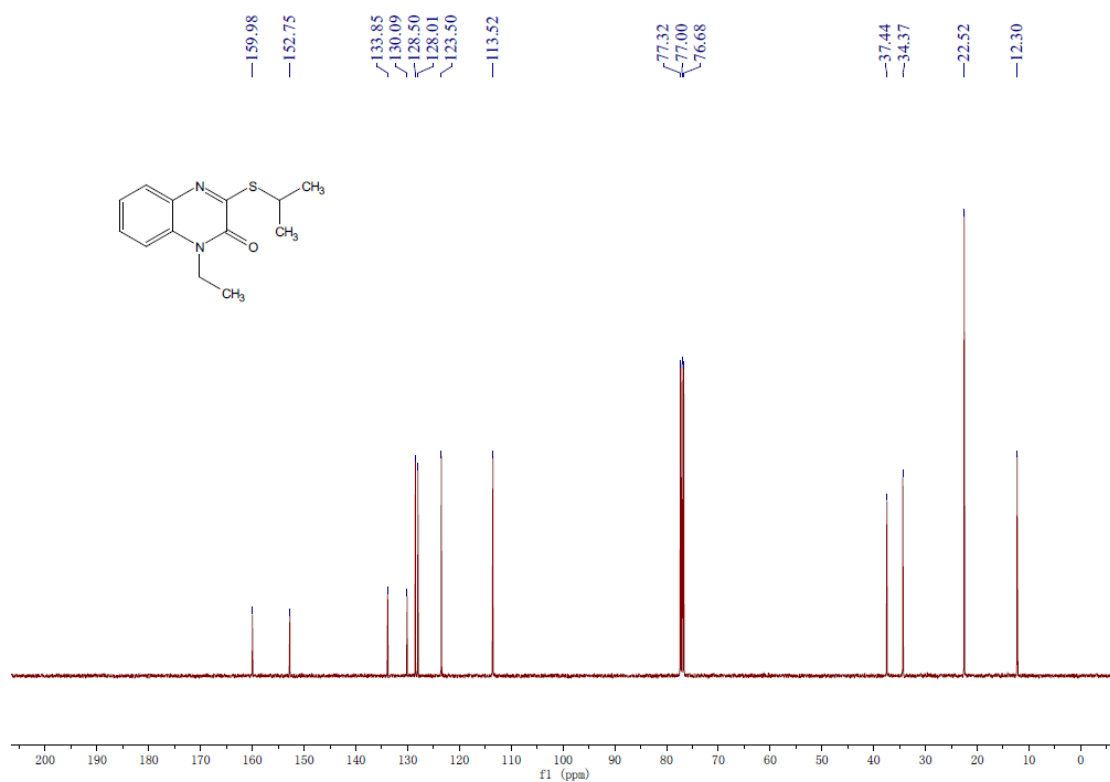


### $^{13}\text{C}$ spectra of 3aa

**1-ethyl-3-(isopropylthio)quinoxalin-2(1H)-one (3ba)**

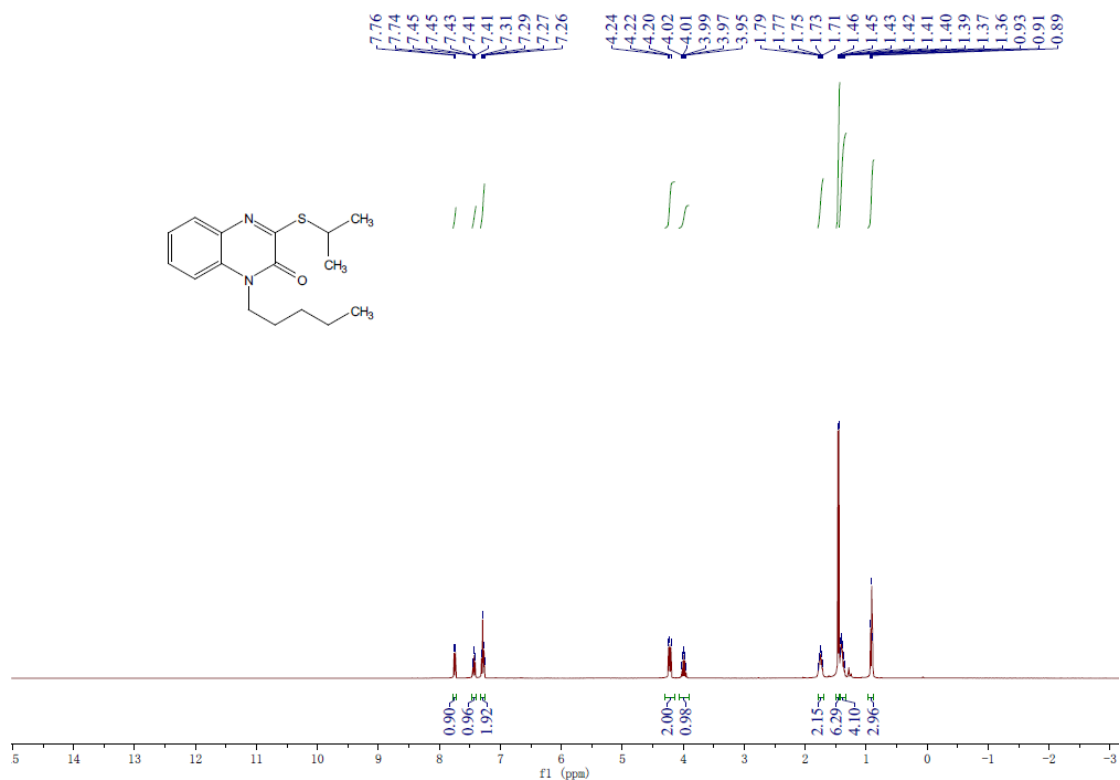


**<sup>1</sup>H spectra of 3ba**

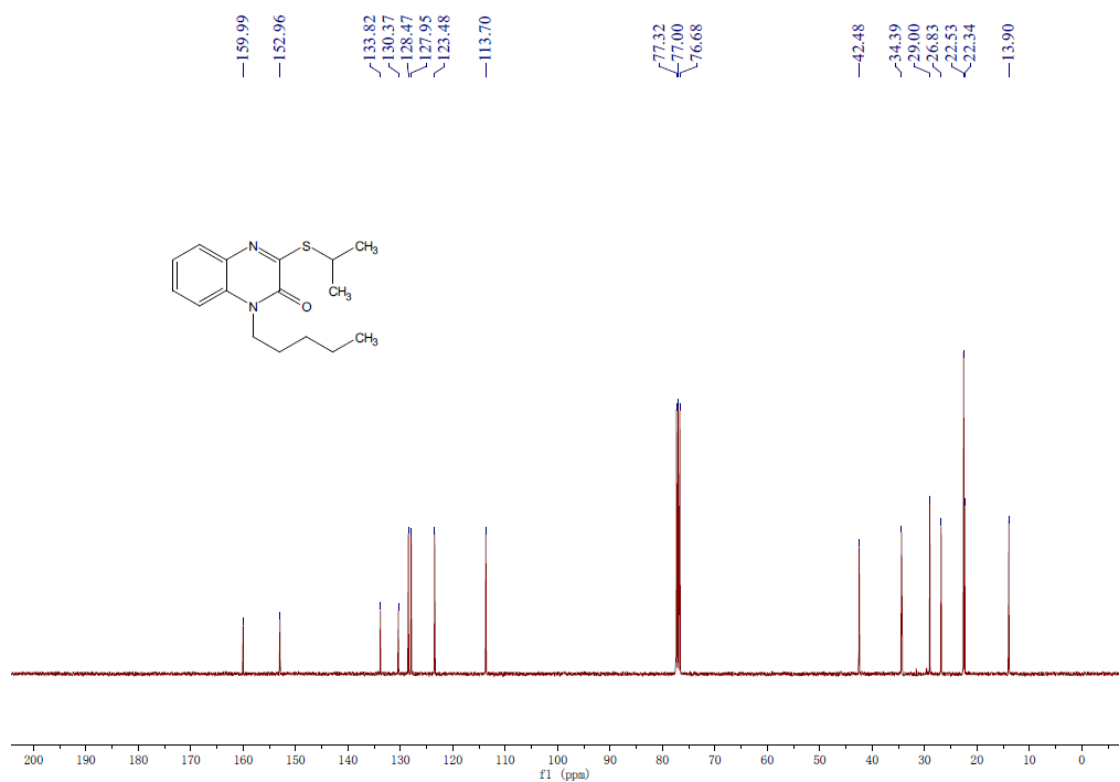


**<sup>13</sup>C spectra of 3ba**

**3-(isopropylthio)-1-pentylquinoxalin-2(1H)-one (3ca)**

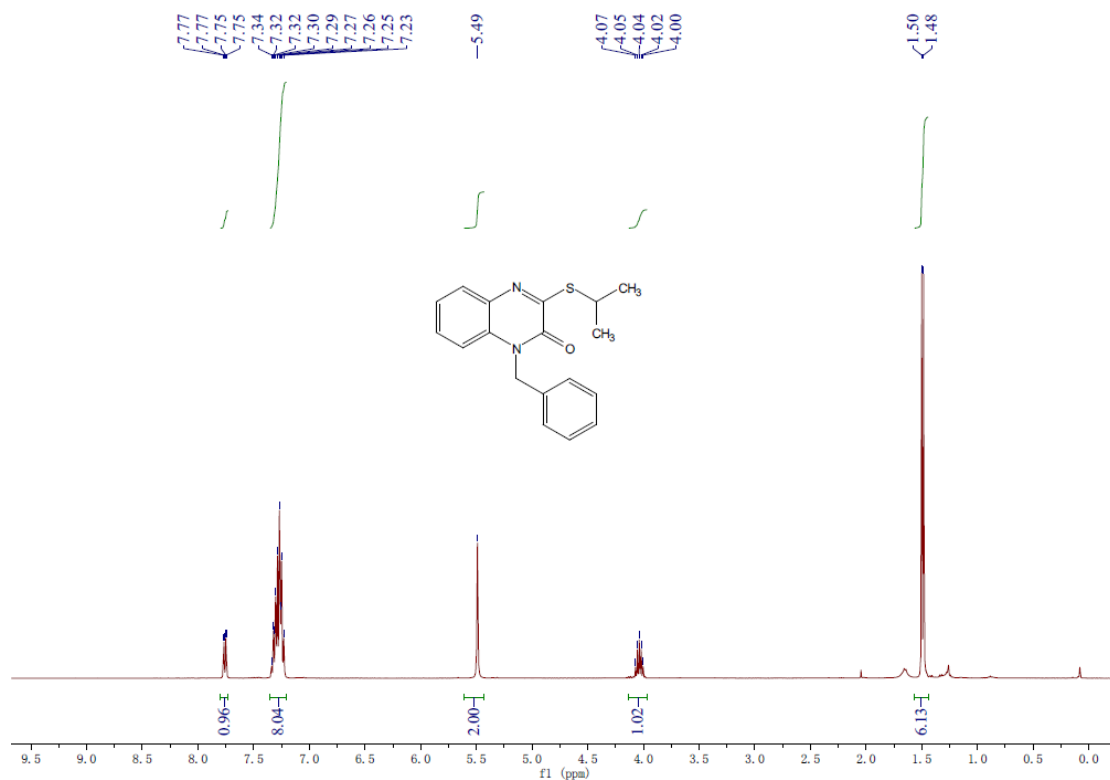


<sup>1</sup>H spectra of 3ca

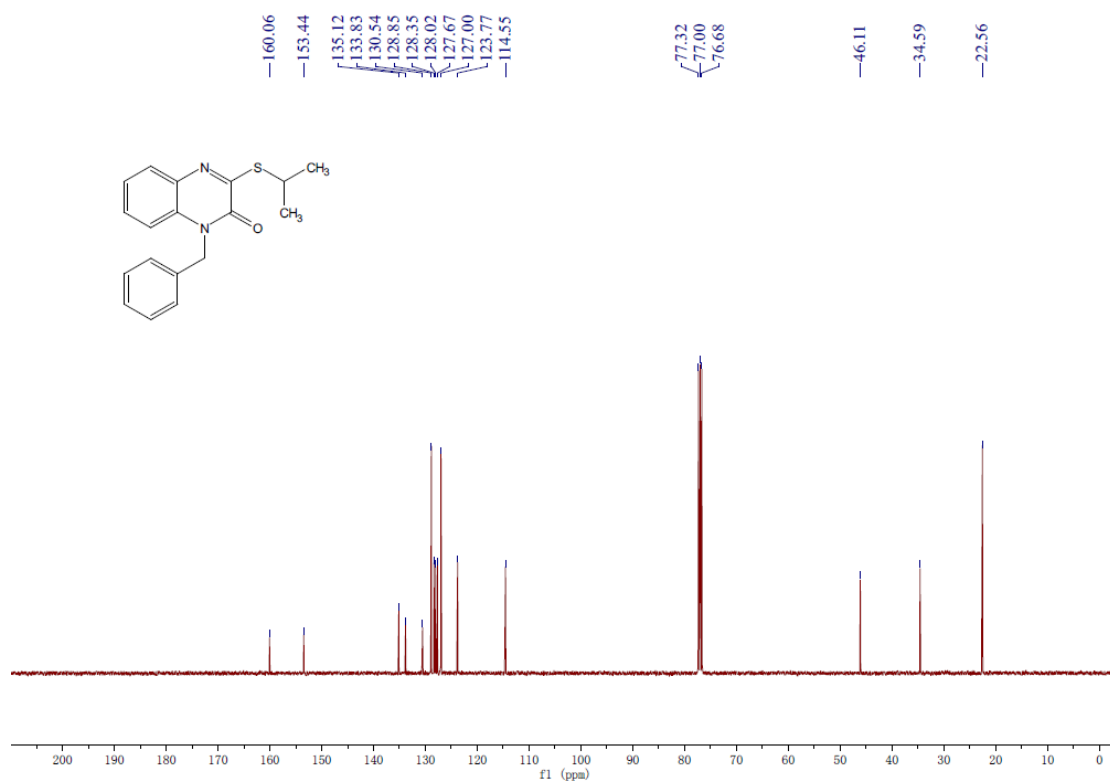


<sup>13</sup>C spectra of 3ca

benzyl-3-(isopropylthio)quinoxalin-2(1*H*)-one (3da)

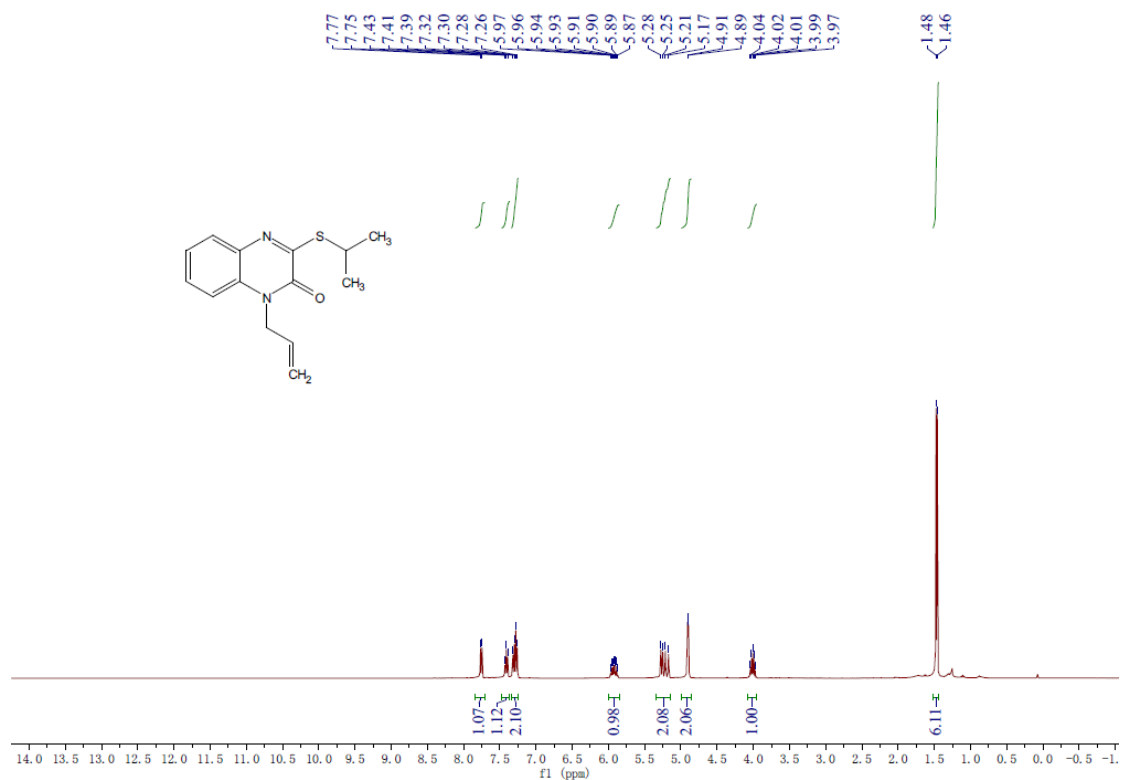


<sup>1</sup>H spectra of 3da

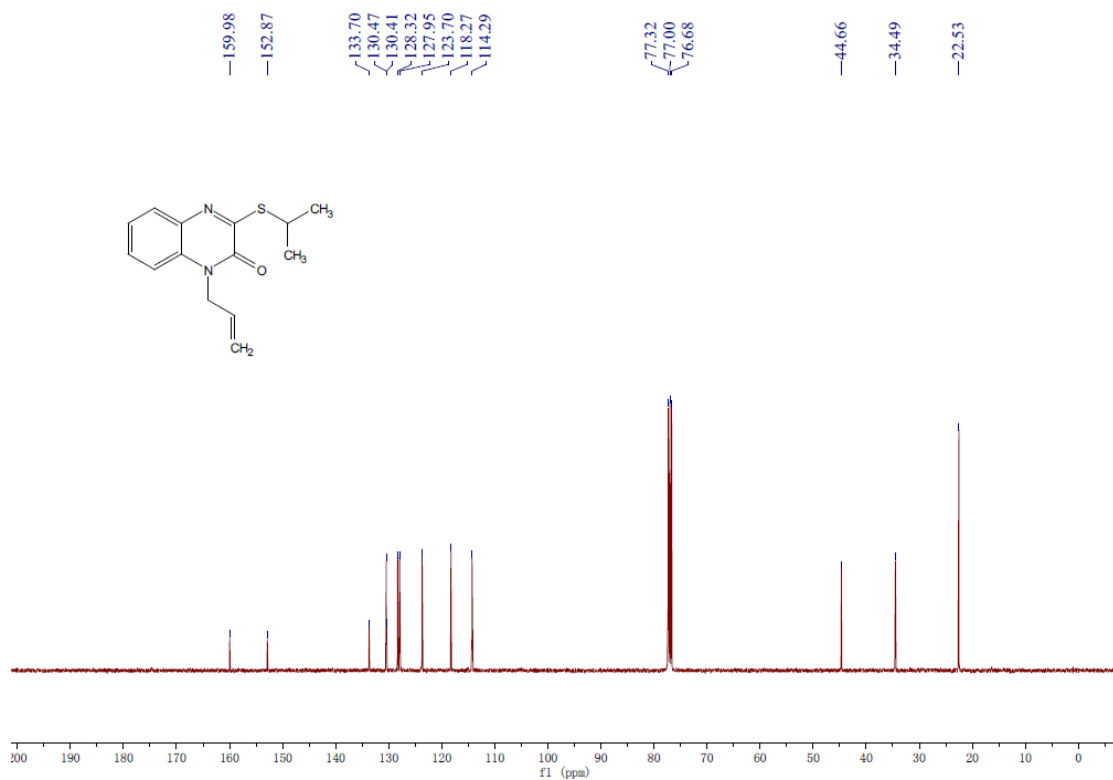


<sup>13</sup>C spectra of 3da

allyl-3-(isopropylthio)quinoxalin-2(1H)-one (3ea)

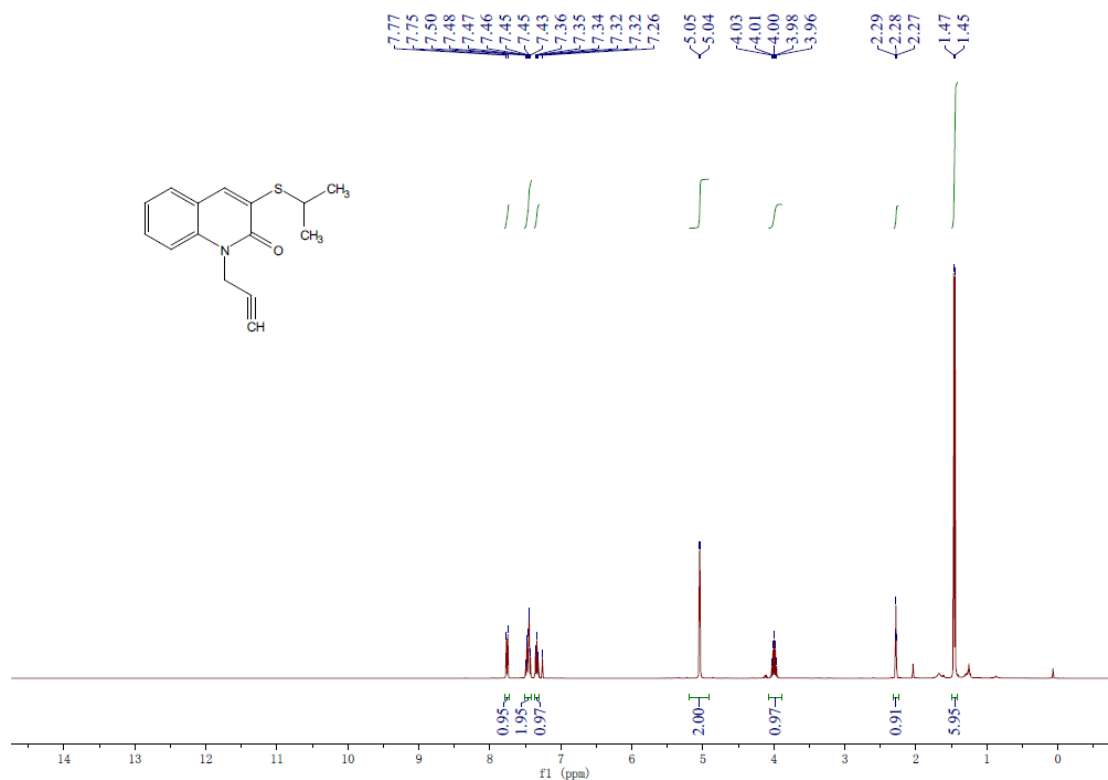


<sup>1</sup>H spectra of 3ea

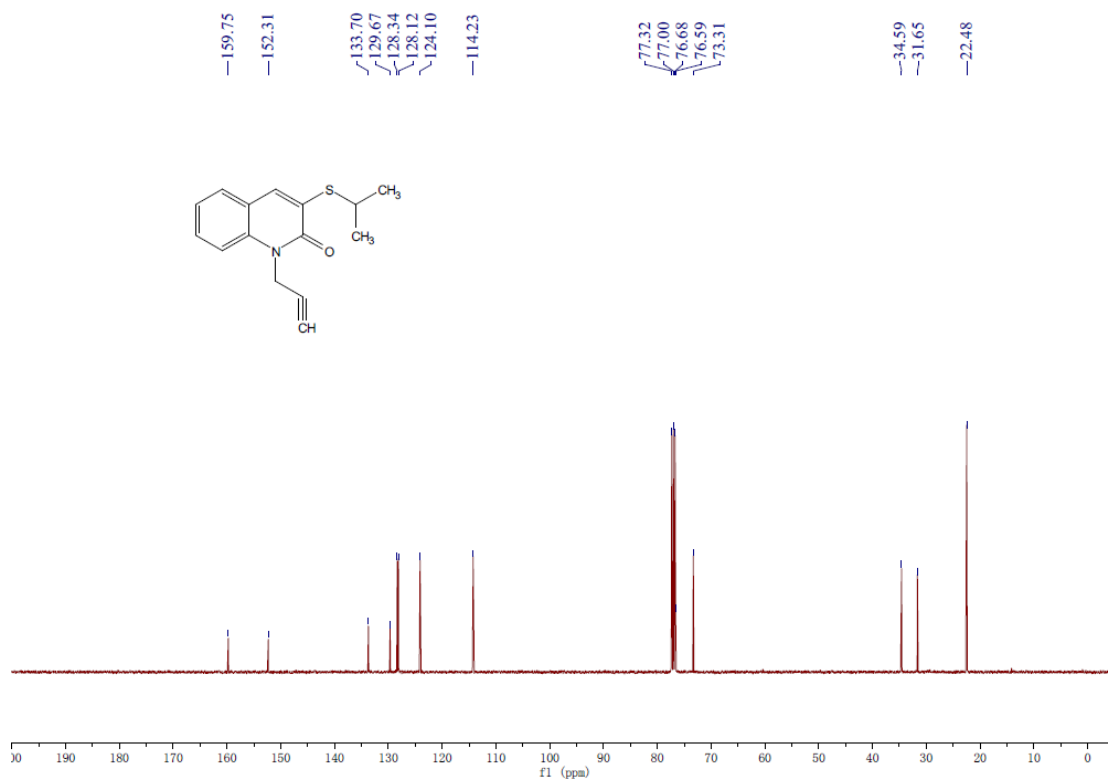


<sup>13</sup>C spectra of 3ea

**3-(isopropylthio)-1-(prop-2-yn-1-yl)quinolin-2(1H)-one (3fa)**

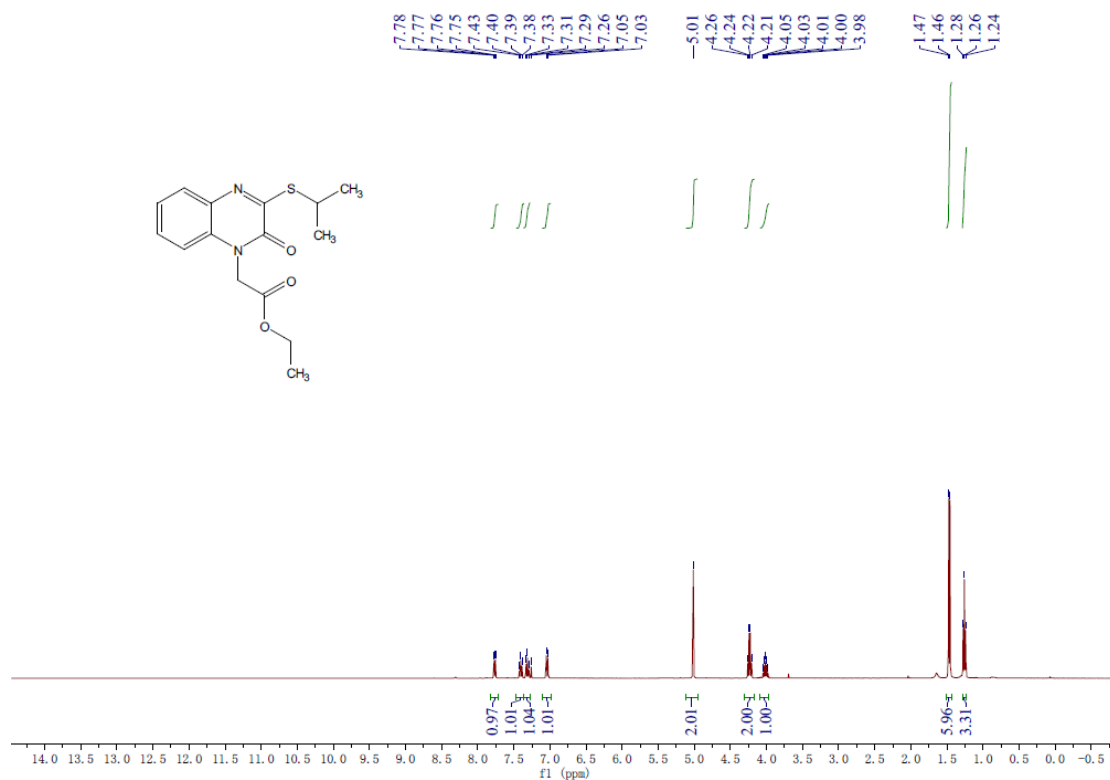


<sup>1</sup>H spectra of **3fa**

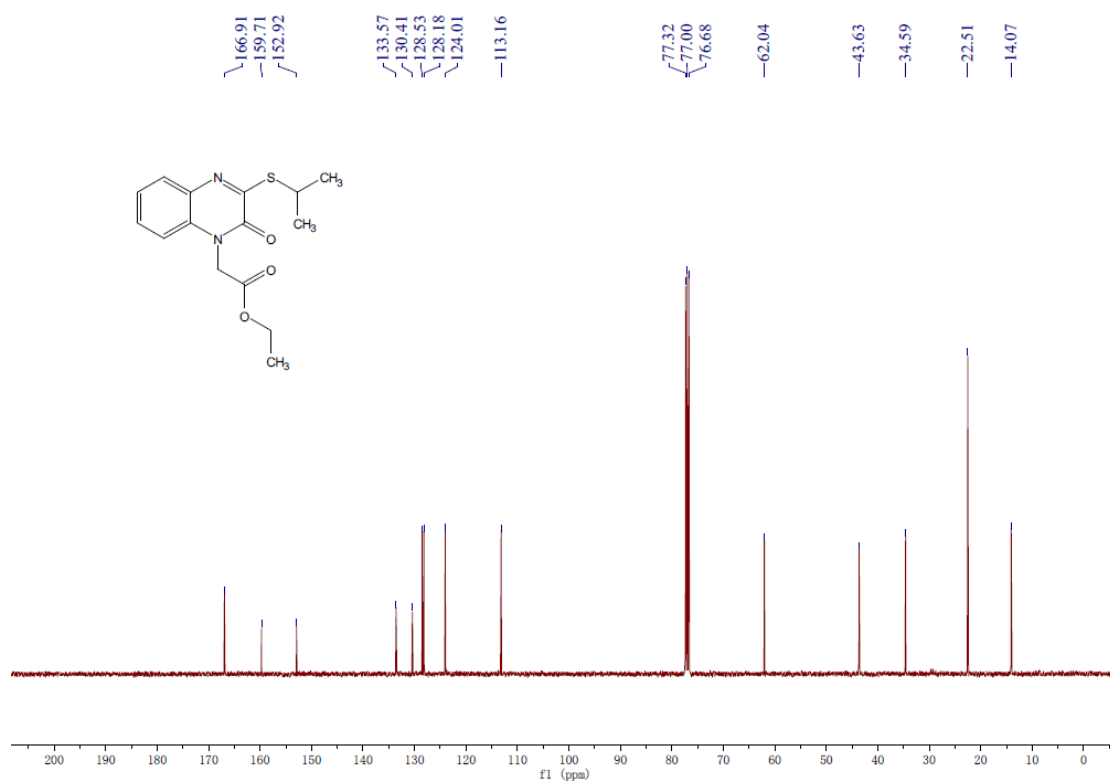


<sup>13</sup>C spectra of **3fa**

ethyl 2-(3-(isopropylthio)-2-oxoquinoxalin-1(2*H*)-yl)acetate (**3ga**)



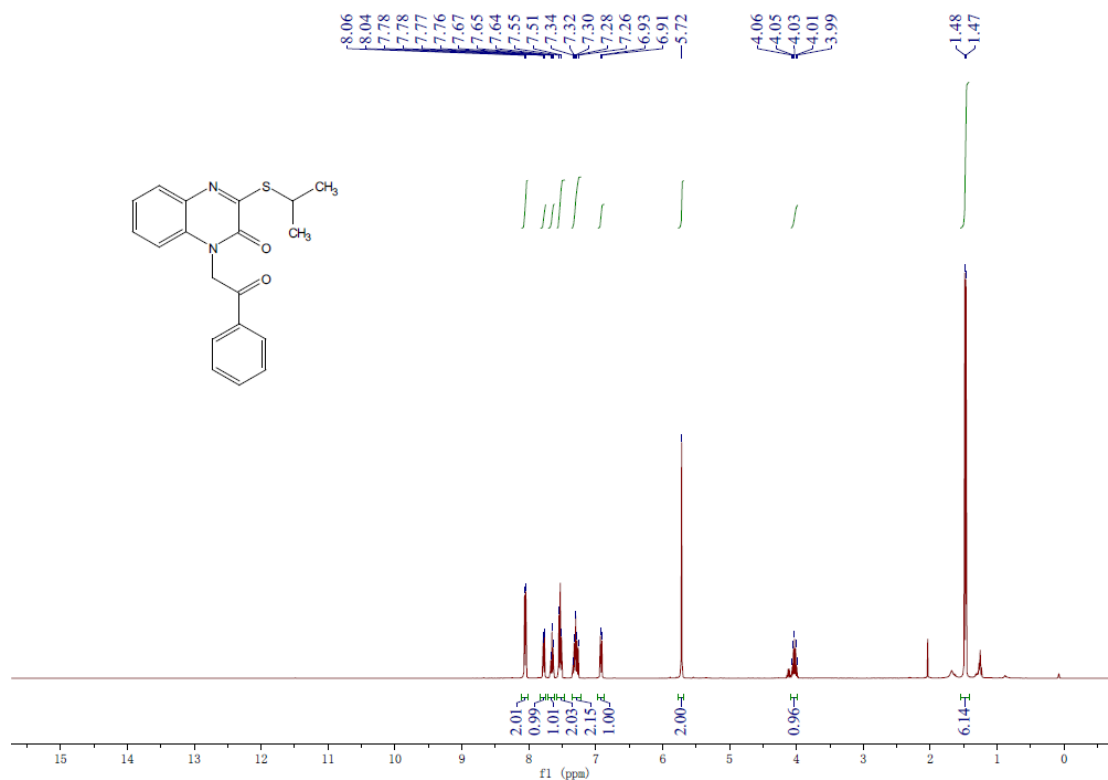
<sup>1</sup>H spectra of **3ga**



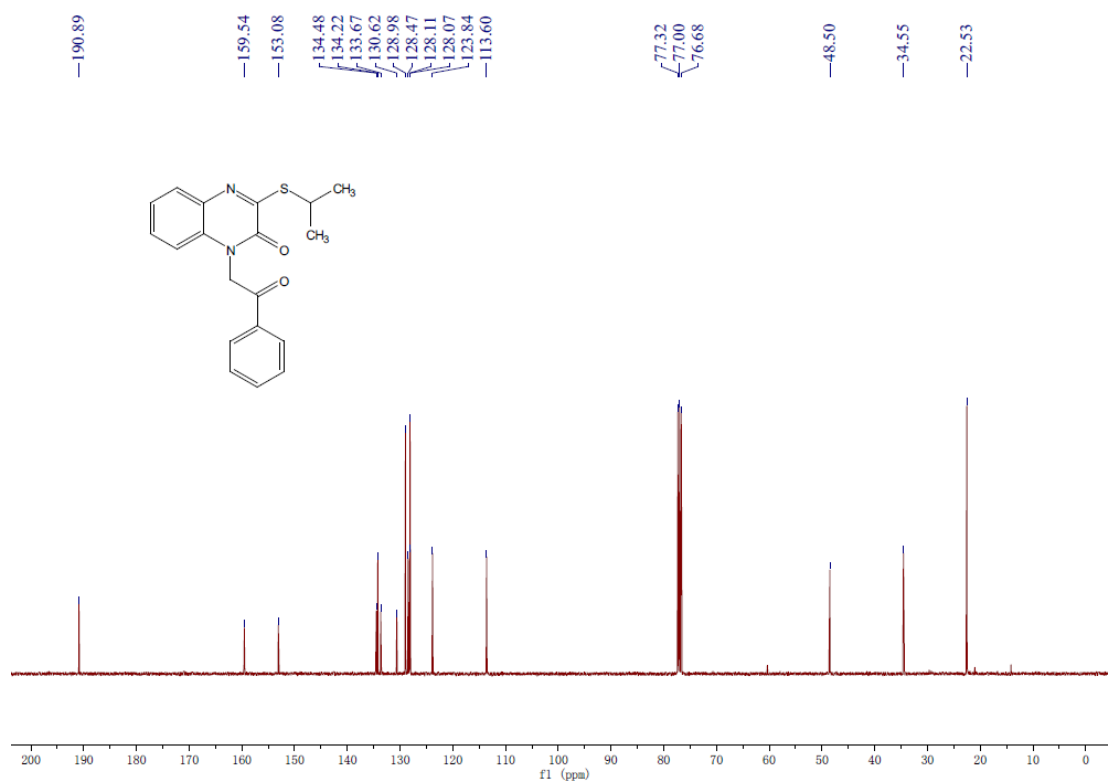
<sup>13</sup>C spectra of **3ga**



**3-(isopropylthio)-1-(2-oxo-2-phenylethyl)quinoxalin-2(1H)-one (3ha)**

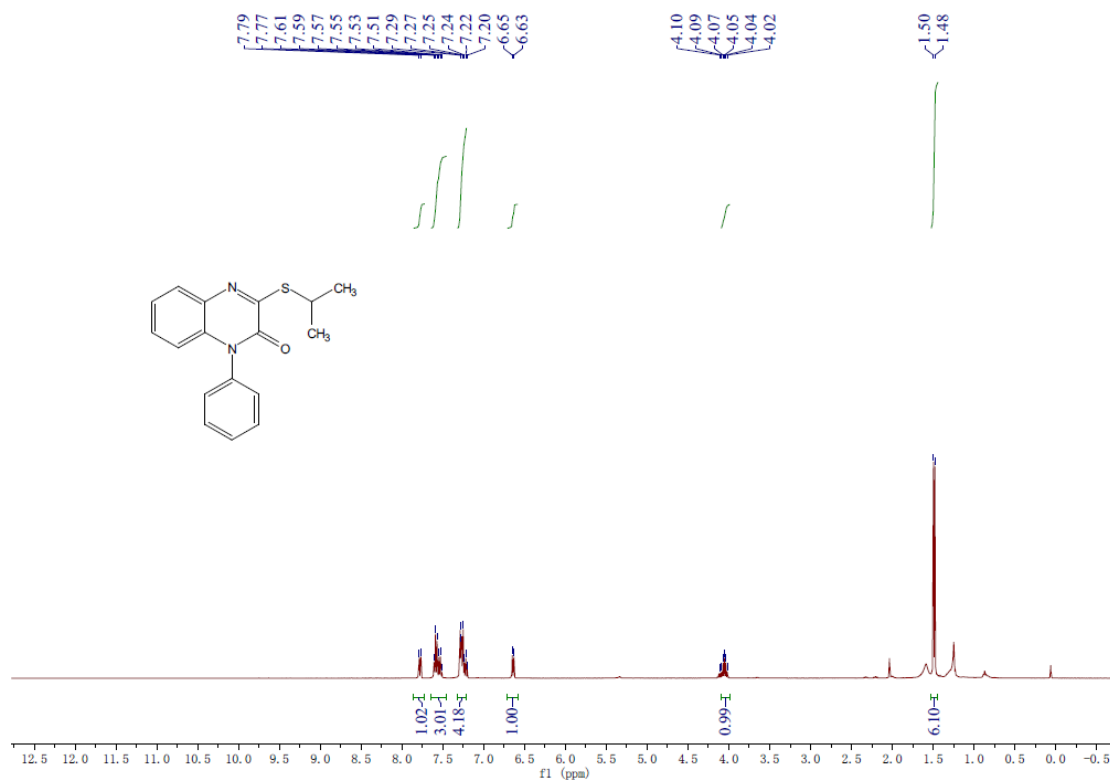


<sup>1</sup>H spectra of **3ha**

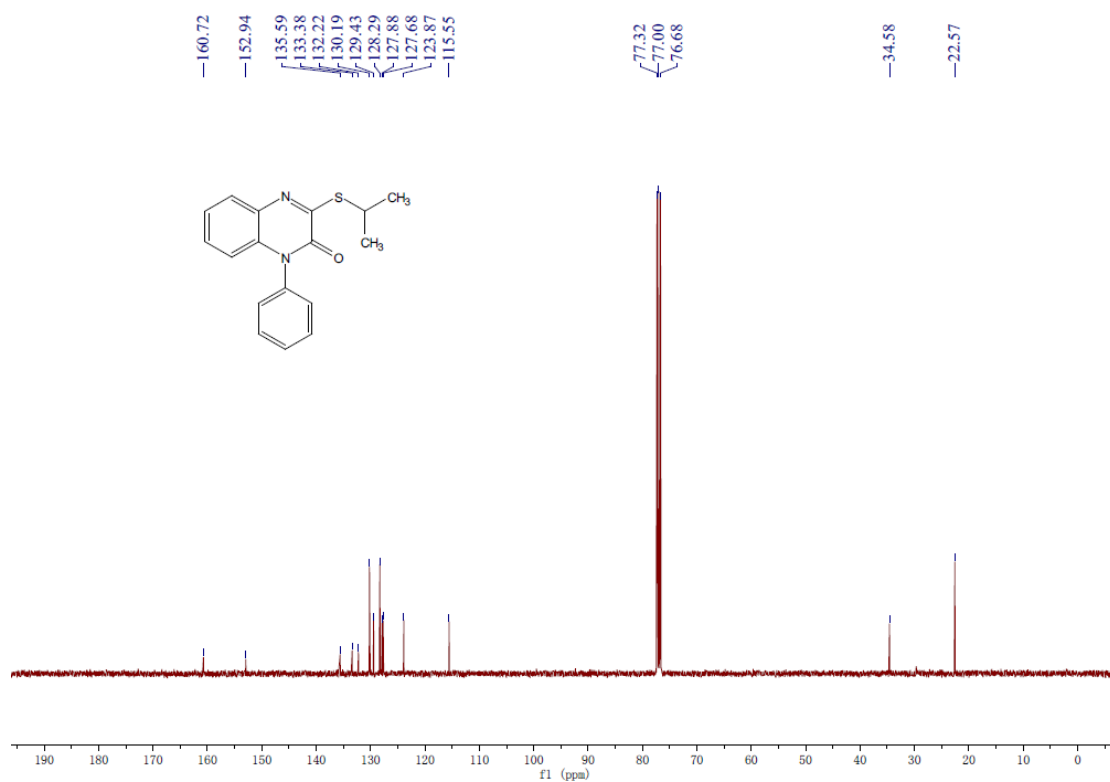


<sup>13</sup>C spectra of **3ha**

**3-(isopropylthio)-1-phenylquinoxalin-2(1H)-one (3ia)**

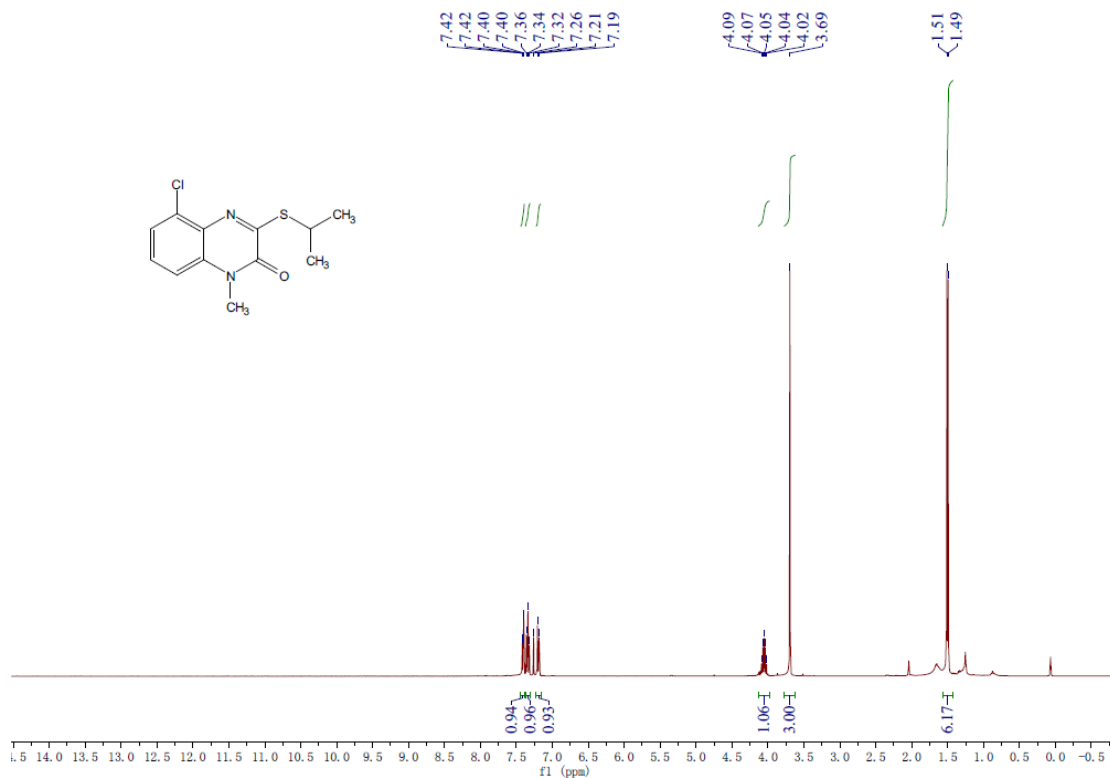


<sup>1</sup>H spectra of **3ia**

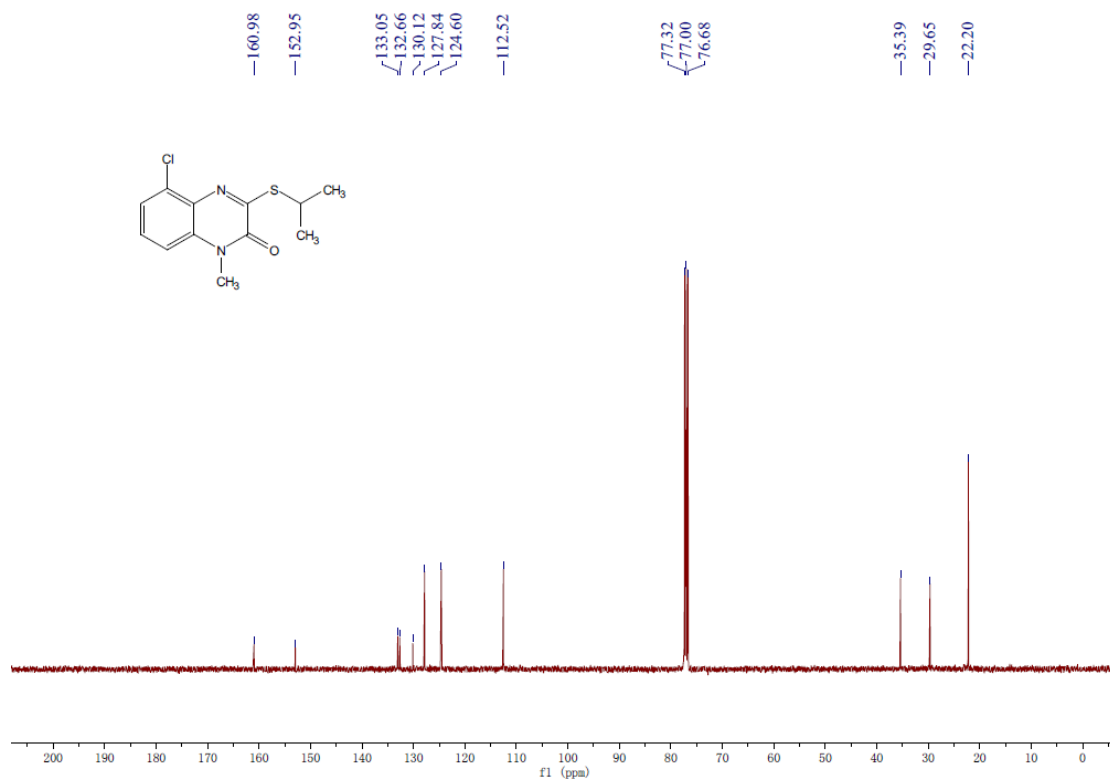


<sup>13</sup>C spectra of **3ia**

**5-chloro-3-(isopropylthio)-1-methylquinoxalin-2(1H)-one (3ja)**

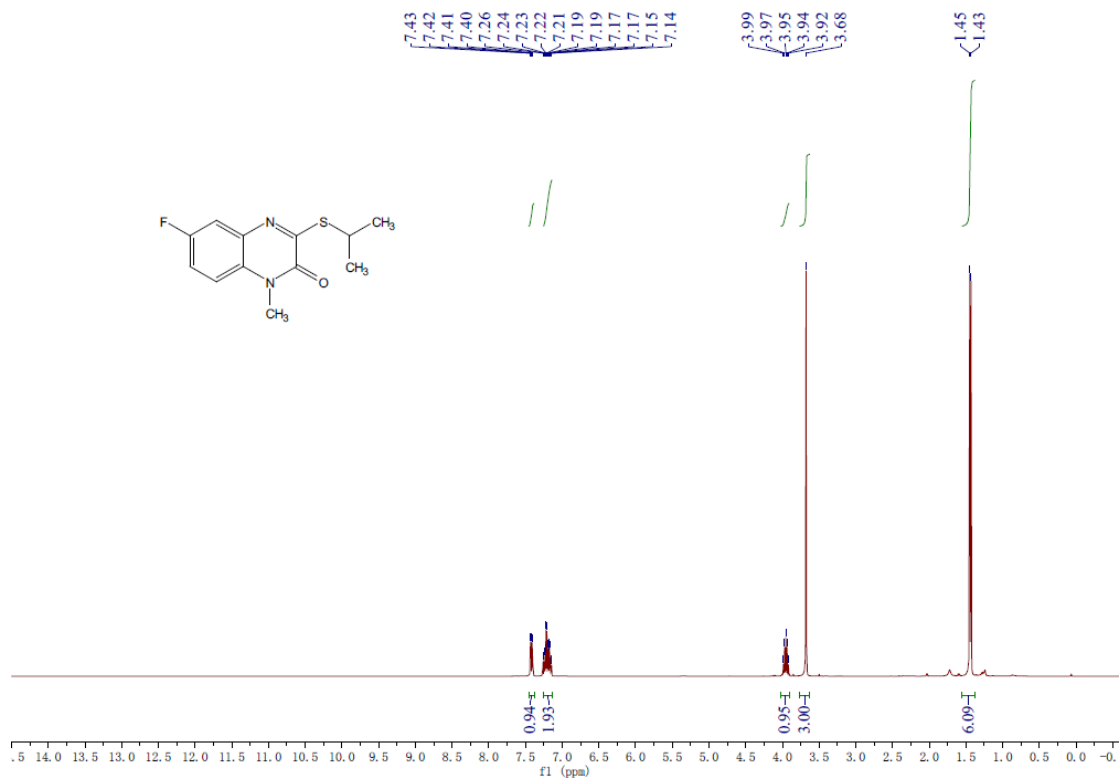


**<sup>1</sup>H spectra of 3ja**

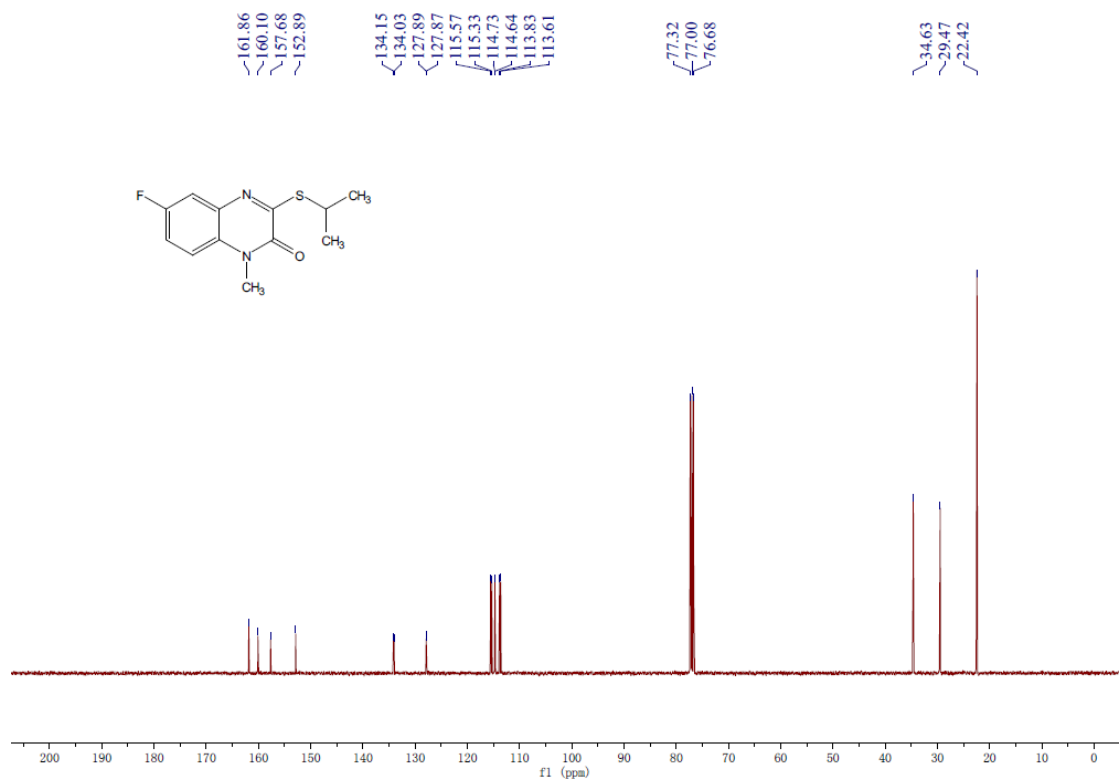


**<sup>13</sup>C spectra of 3ja**

**6-fluoro-3-(isopropylthio)-1-methylquinoxalin-2(1H)-one (3ka)**

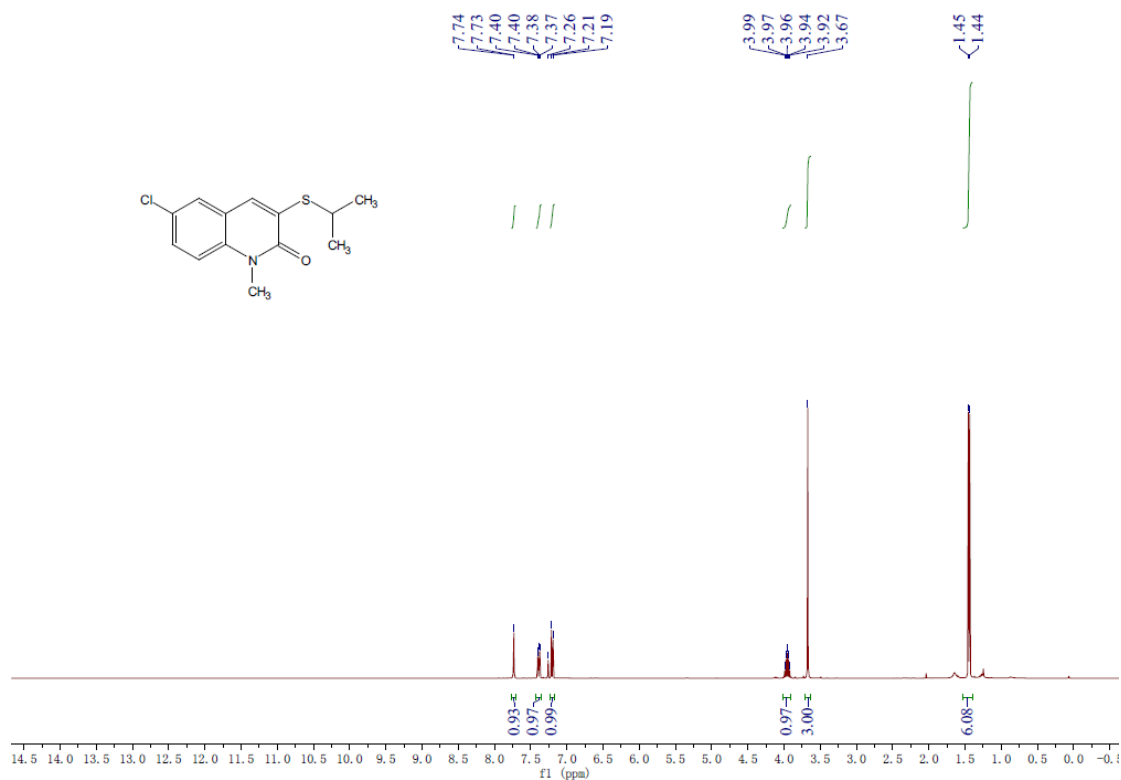


**<sup>1</sup>H spectra of 3ka**

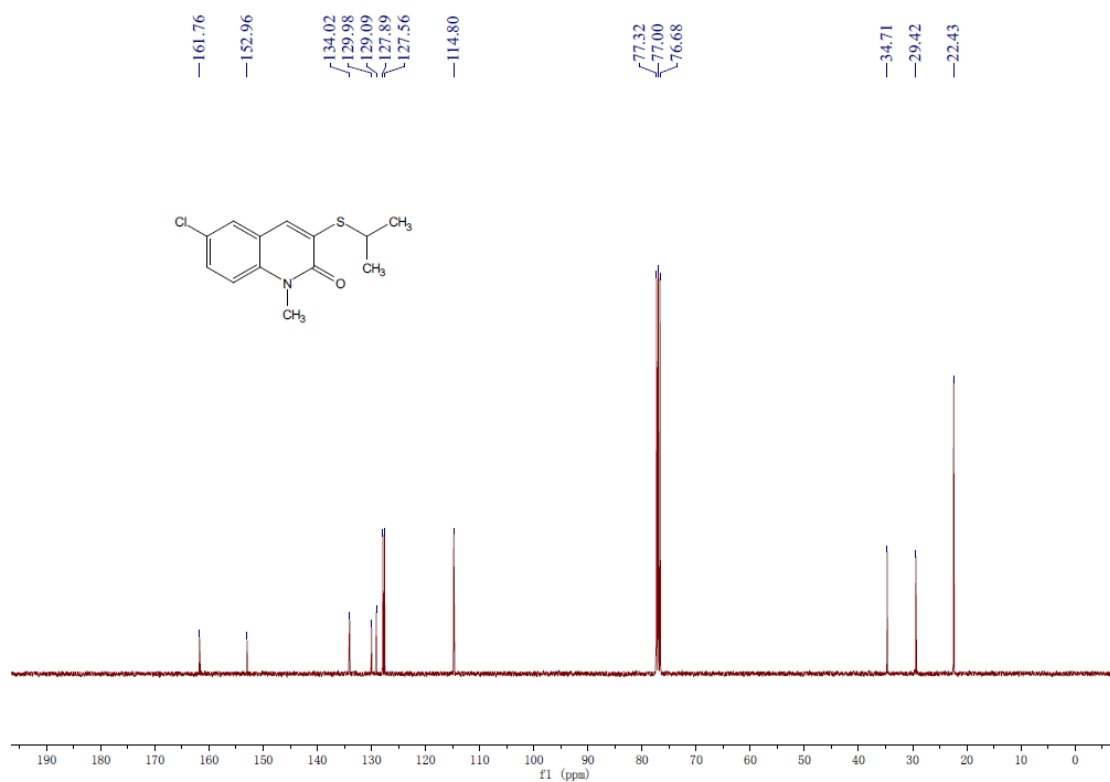


**<sup>13</sup>C spectra of 3ka**

**6-chloro-3-(isopropylthio)-1-methylquinolin-2(1H)-one (3la)**

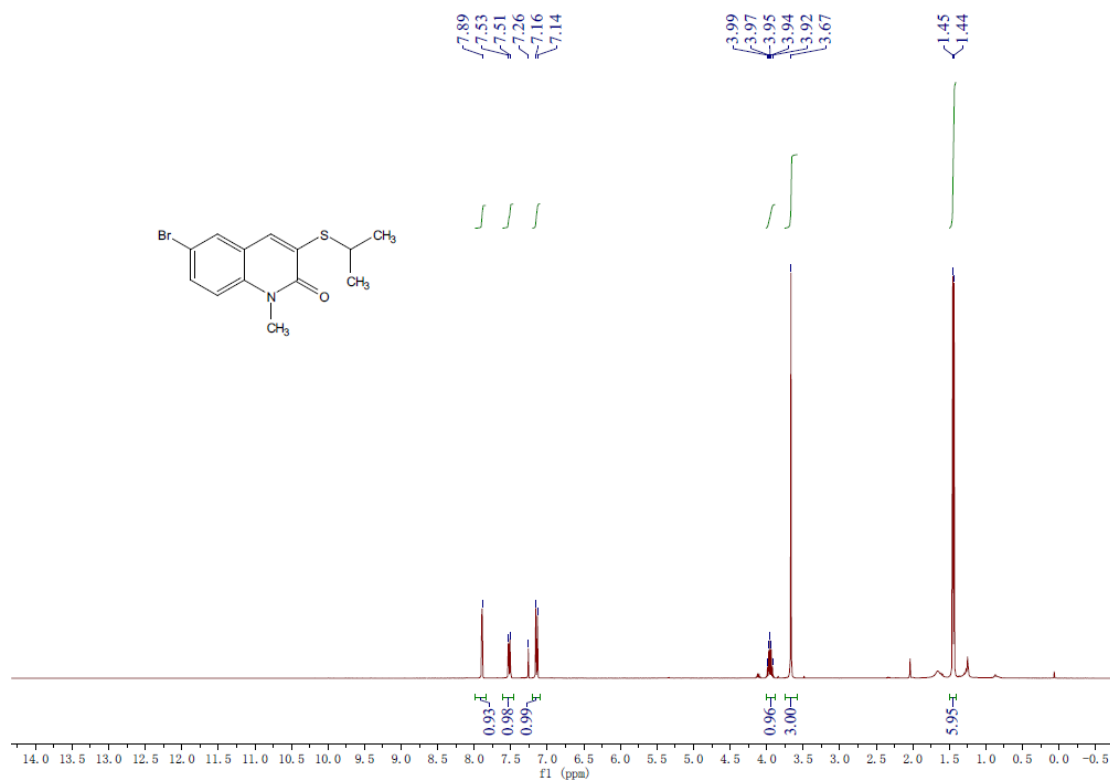


**<sup>1</sup>H spectra of 3la**

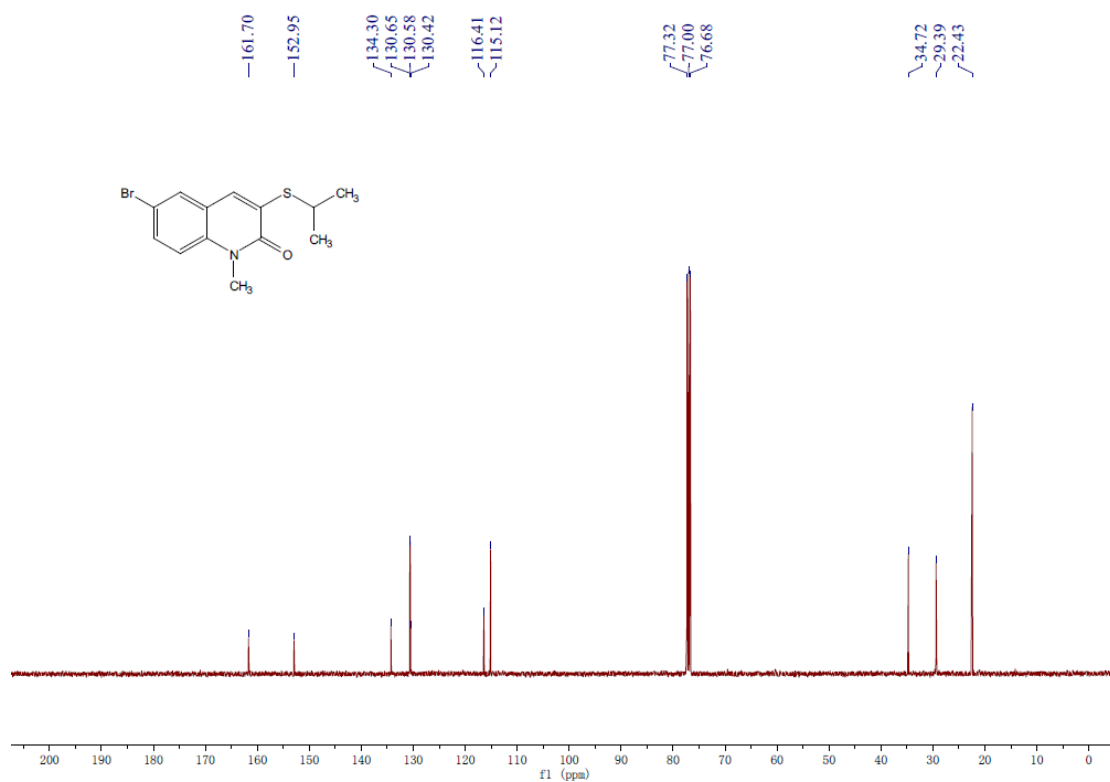


**<sup>13</sup>C spectra of 3la**

**6-bromo-3-(isopropylthio)-1-methylquinolin-2(1H)-one (3ma)**

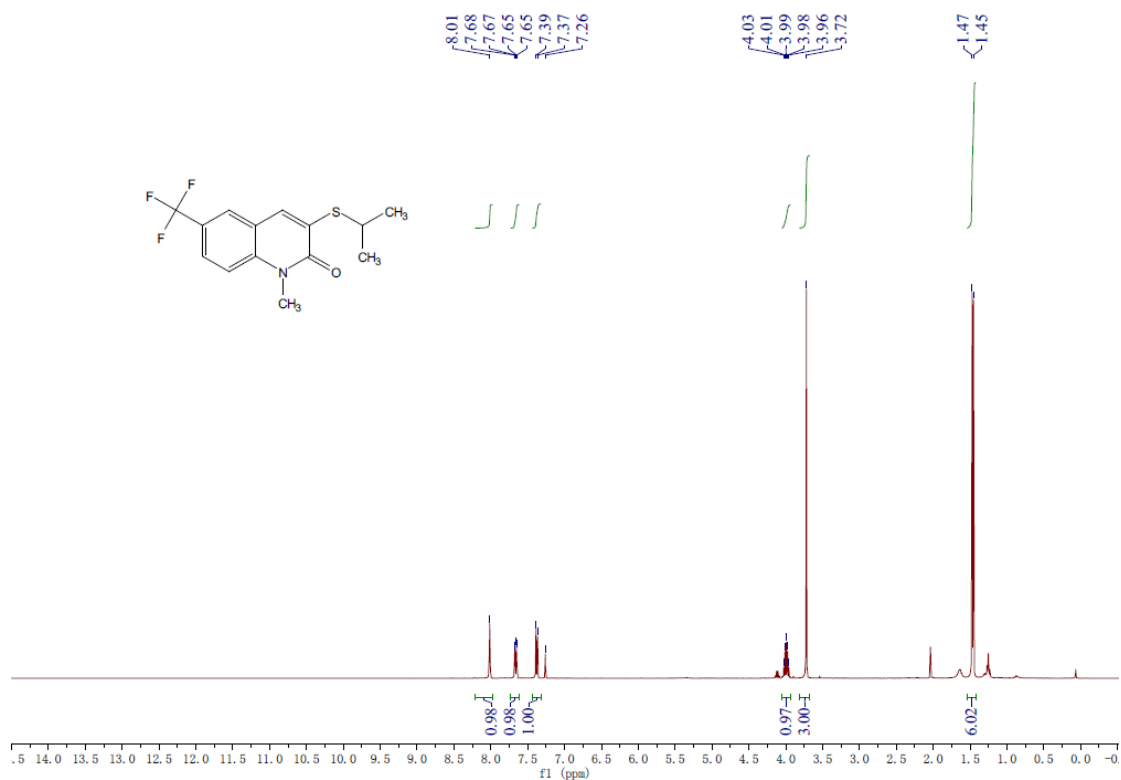


**<sup>1</sup>H spectra of 3ma**

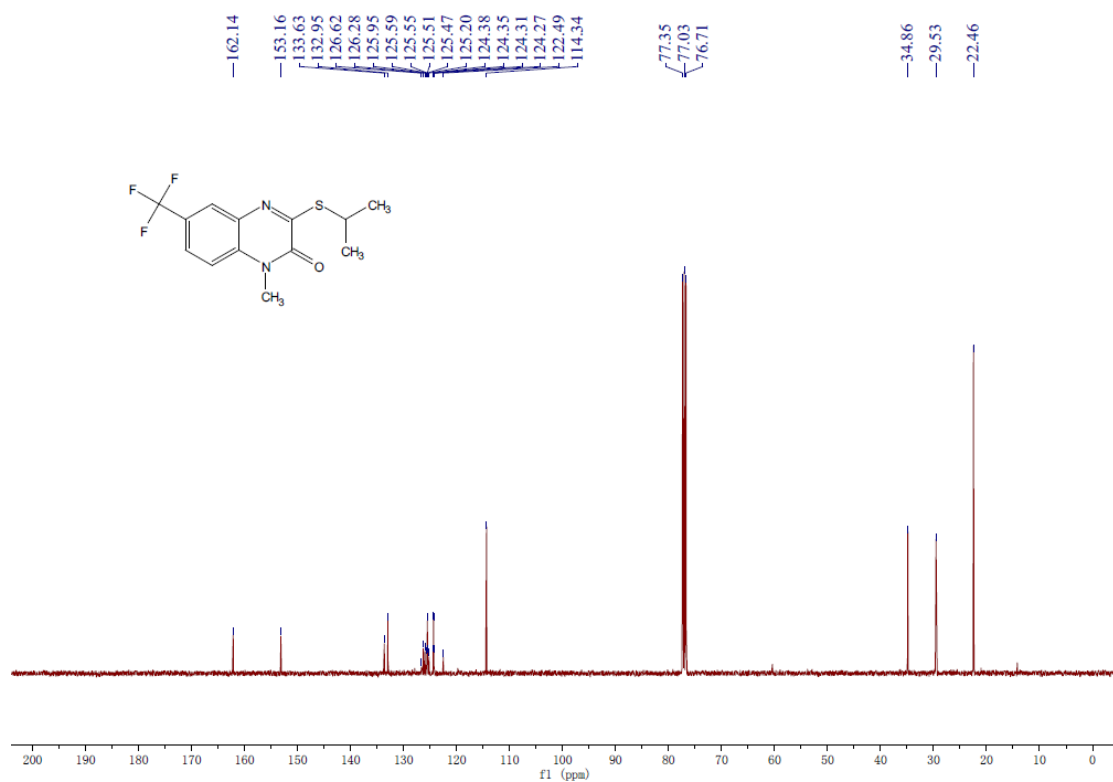


**<sup>13</sup>C spectra of 3ma**

**3-(isopropylthio)-1-methyl-6-(trifluoromethyl)quinolin-2(1H)-one (3na)**

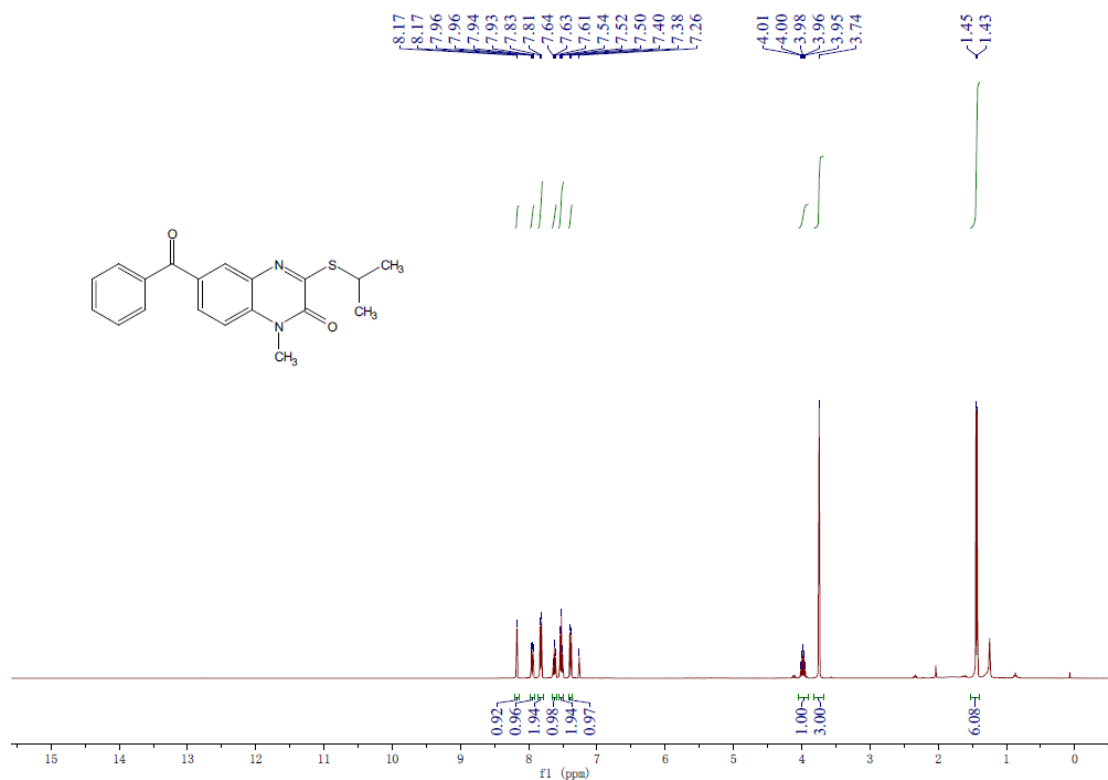


**<sup>1</sup>H spectra of 3na**

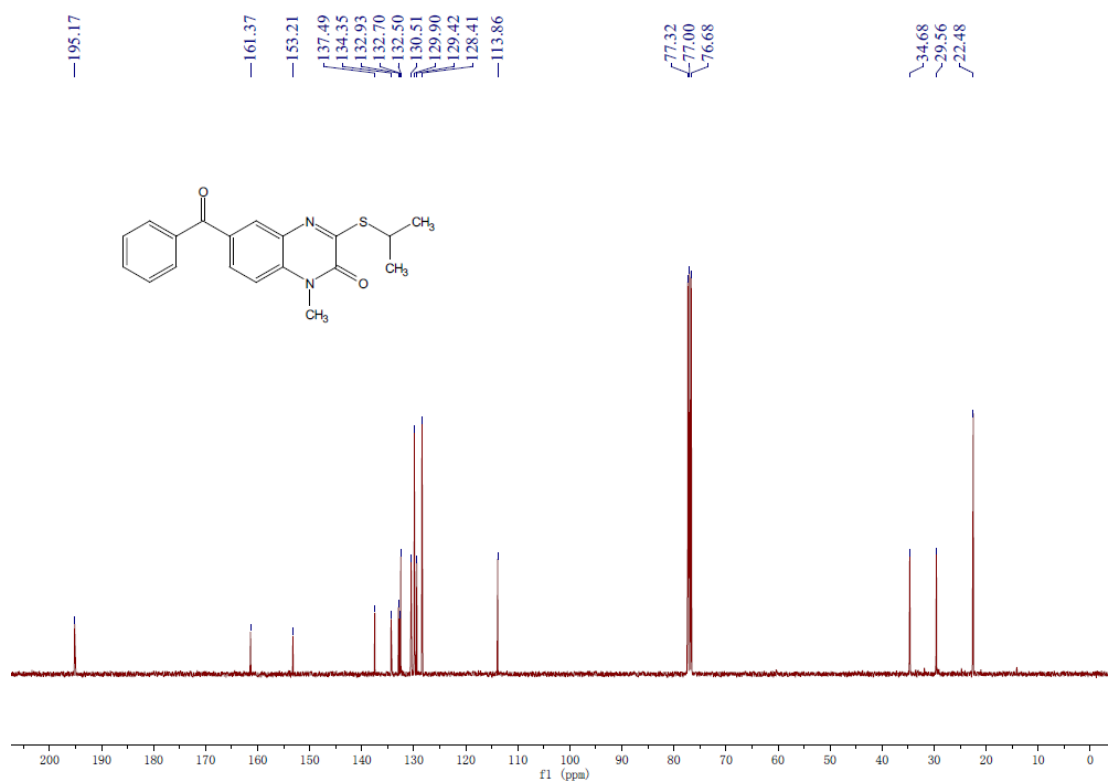


**<sup>13</sup>C spectra of 3na**

**6-benzoyl-3-(isopropylthio)-1-methylquinoxalin-2(1H)-one (3oa)**



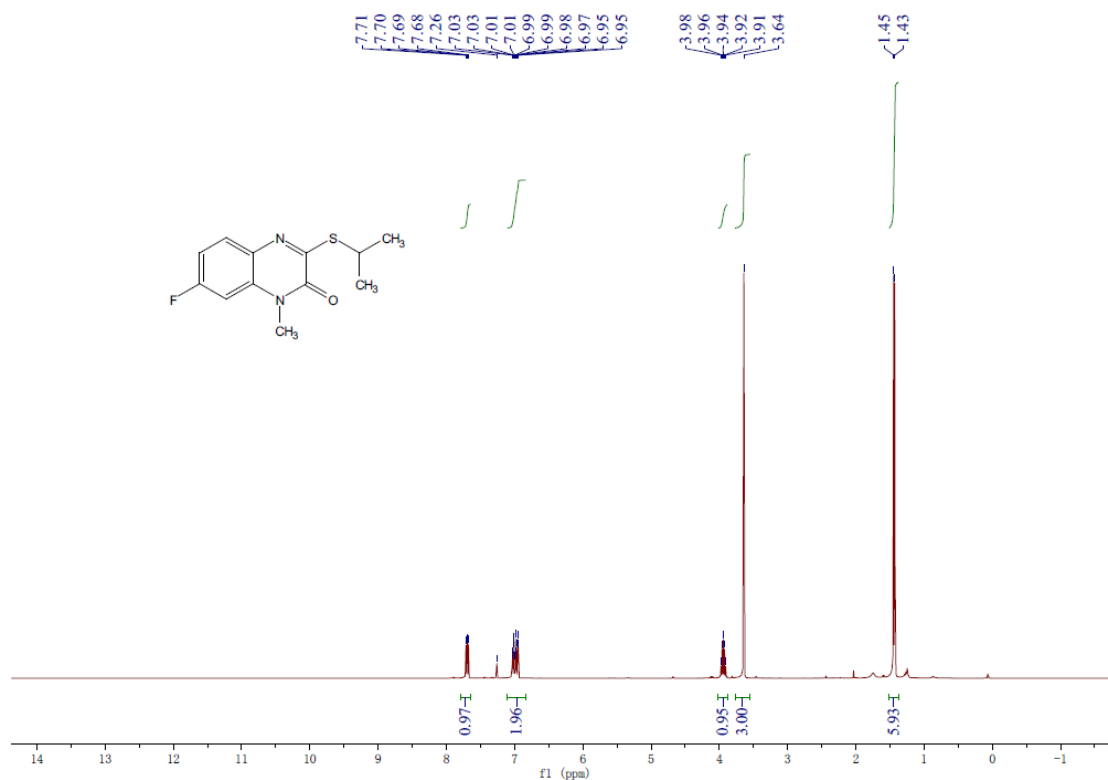
<sup>1</sup>H spectra of **3oa**



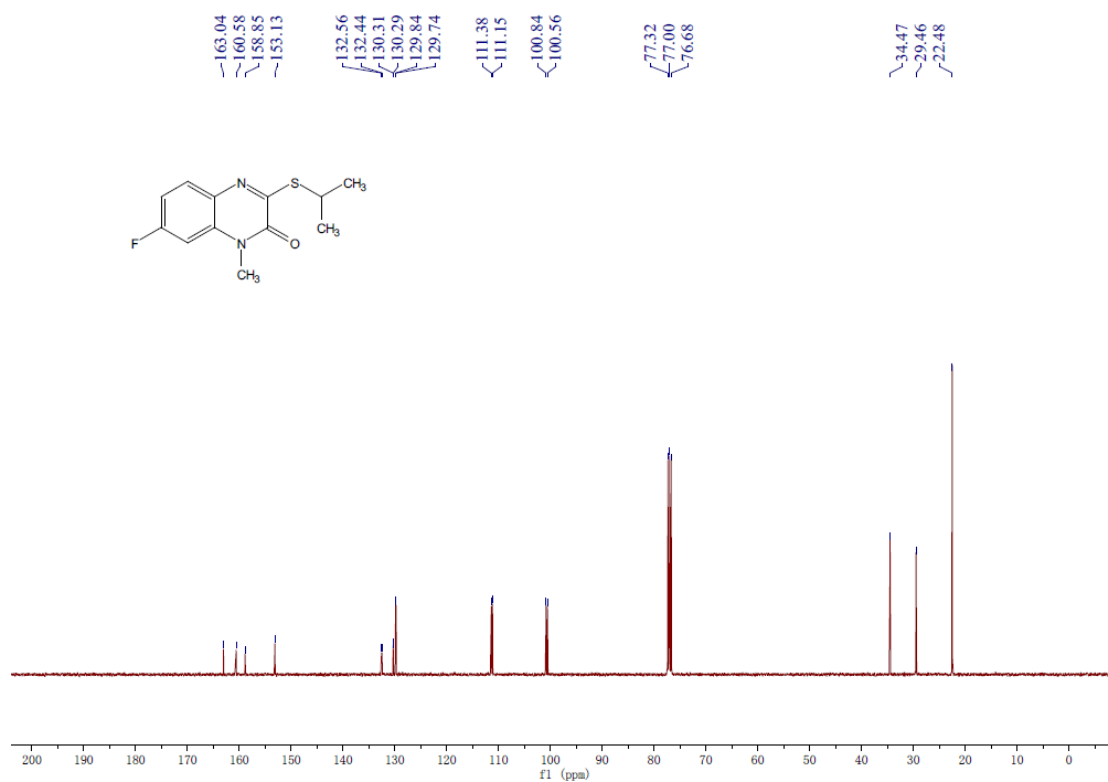
<sup>13</sup>C spectra of **3oa**



**7-fluoro-3-(isopropylthio)-1-methylquinolin-2(1H)-one (3pa)**

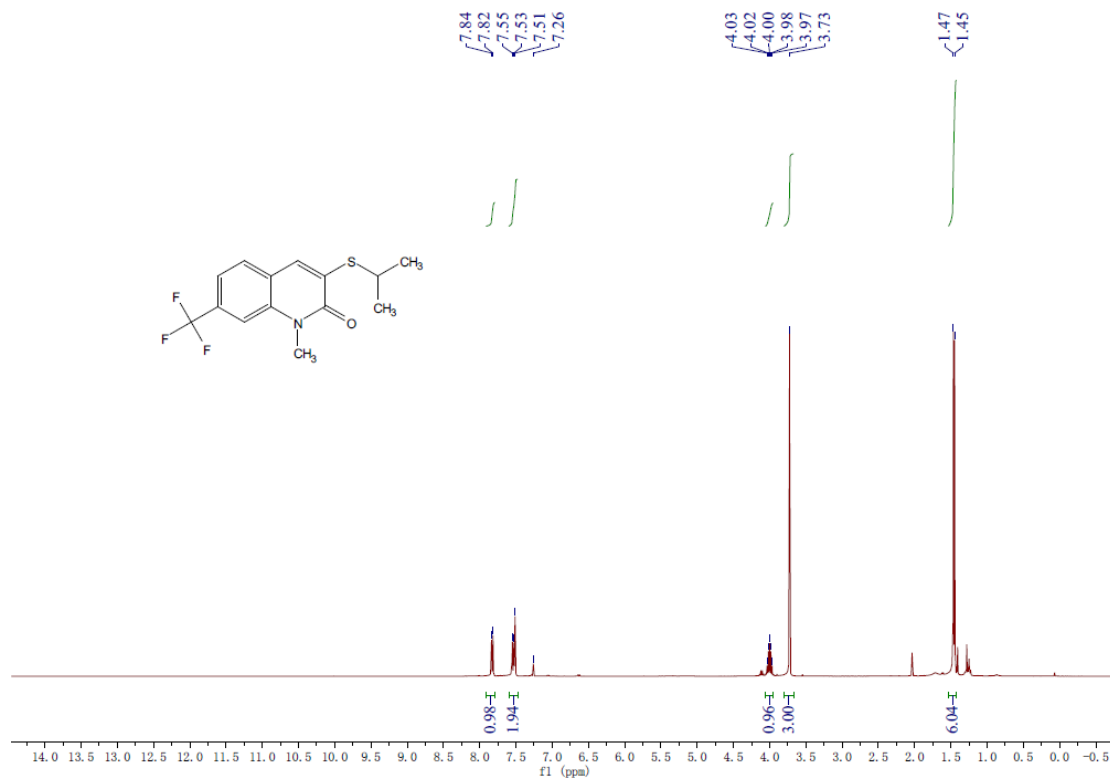


**<sup>1</sup>H spectra of 3pa**

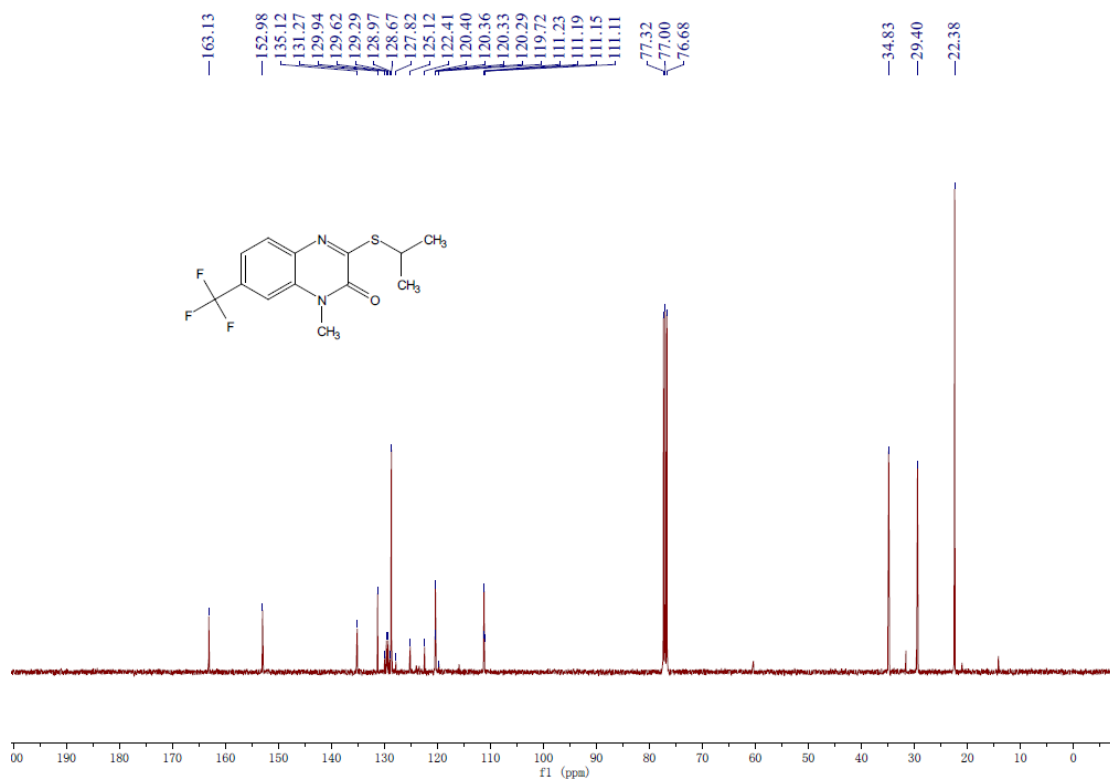


**<sup>13</sup>C spectra of 3pa**

**3-(isopropylthio)-1-methyl-7-(trifluoromethyl)quinolin-2(1H)-one (3qa)**

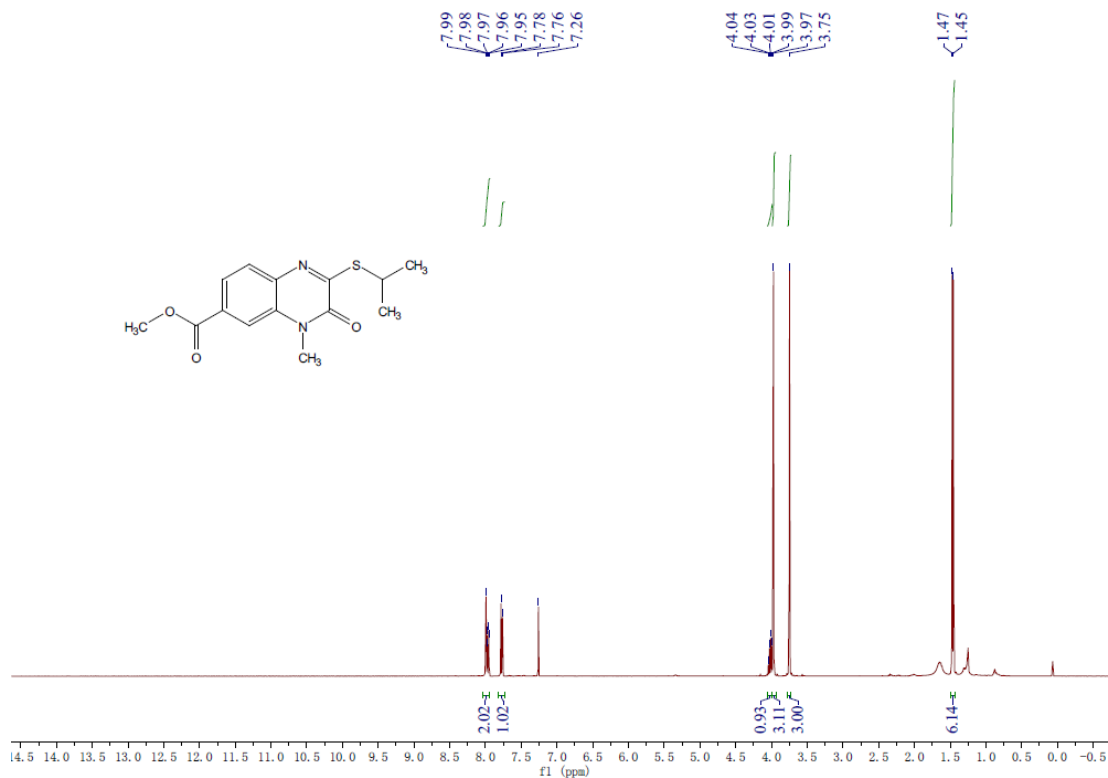


**<sup>1</sup>H spectra of 3qa**

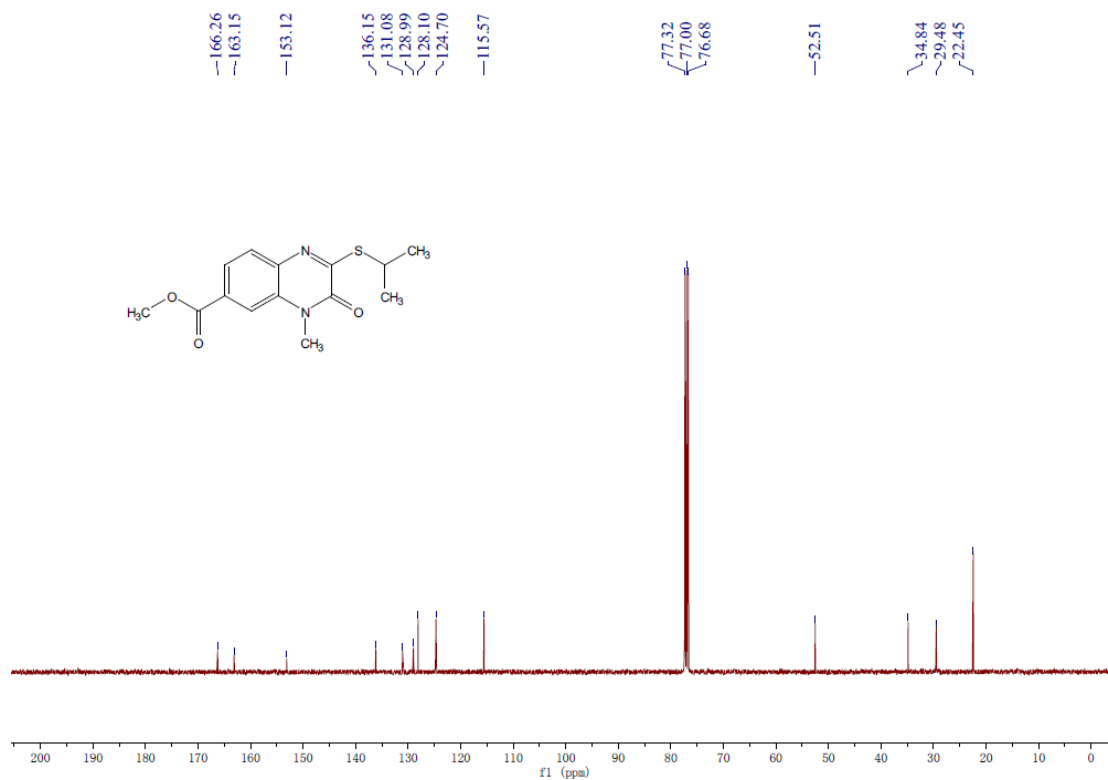


**<sup>13</sup>C spectra of 3qa**

**methyl 2-(isopropylthio)-4-methyl-3-oxo-3,4-dihydroquinoxaline-6-carboxylate (3ra)**

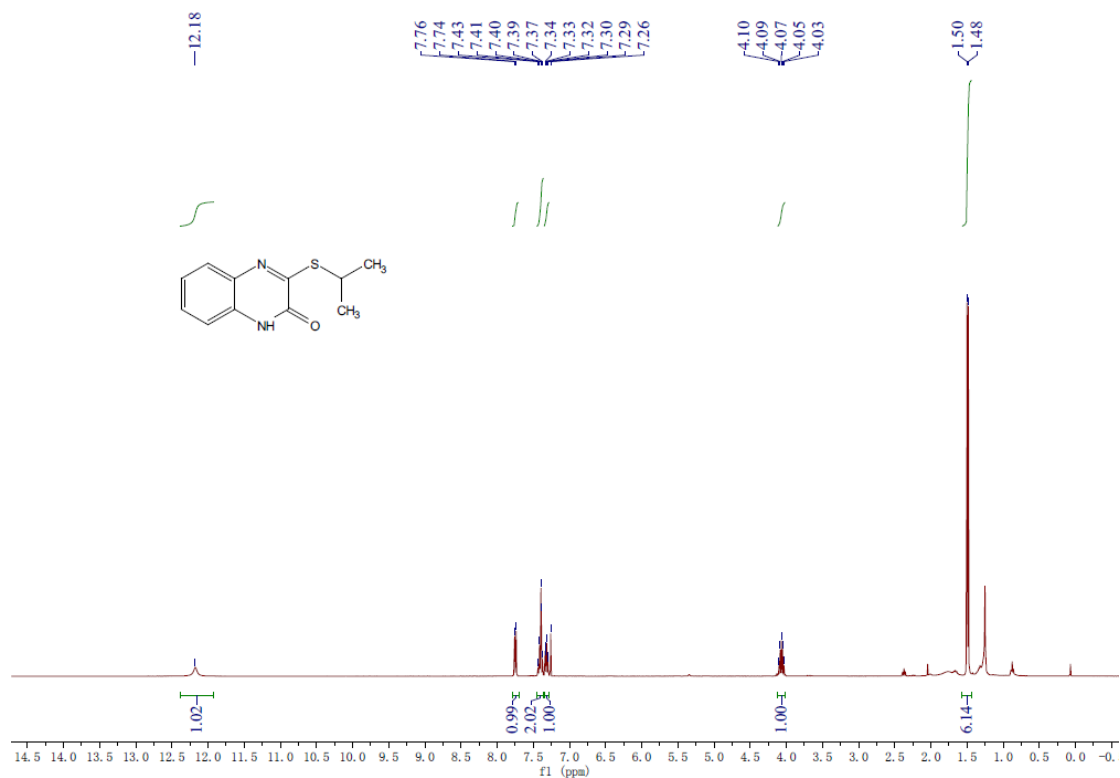


<sup>1</sup>H spectra of **3ra**

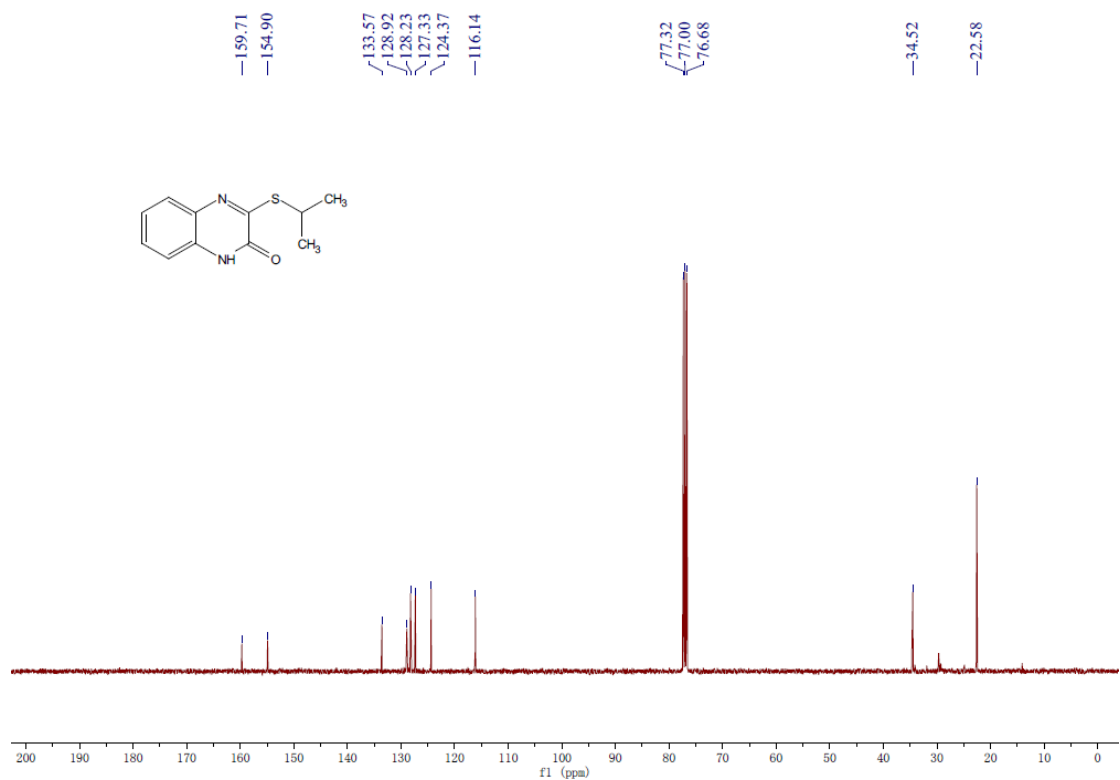


<sup>13</sup>C spectra of **3ra**

### 3-(isopropylthio)quinoxalin-2(1H)-one (3sa)

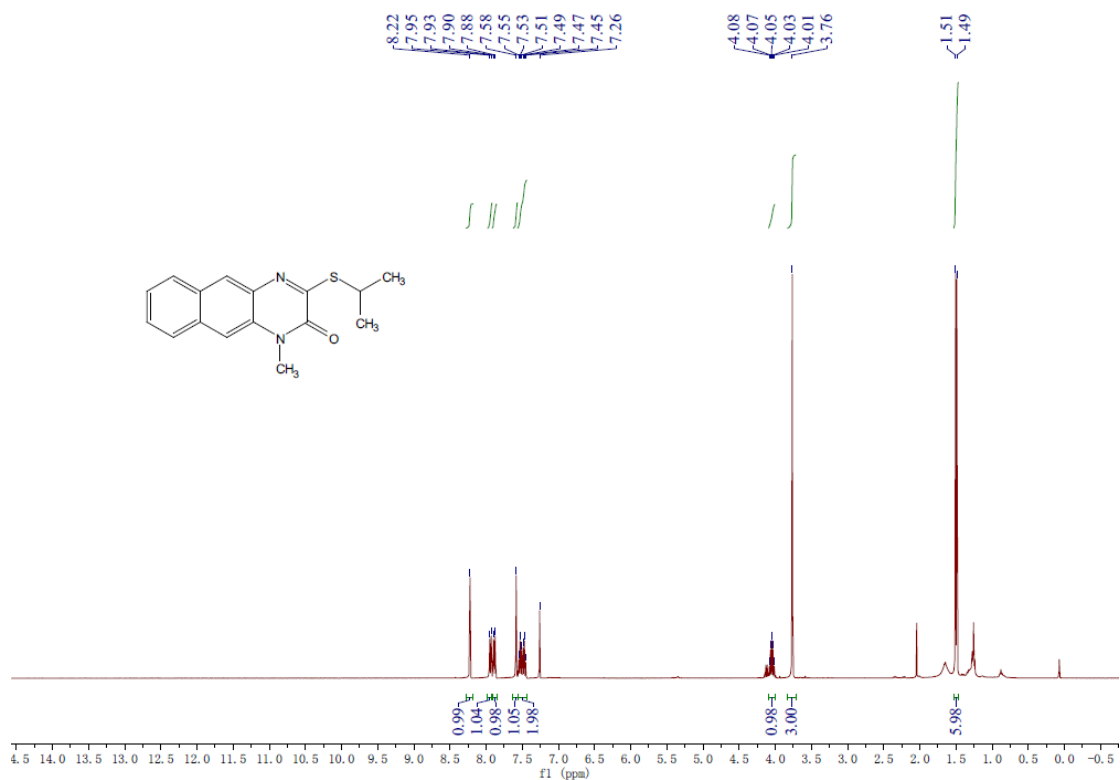


<sup>1</sup>H spectra of 3sa

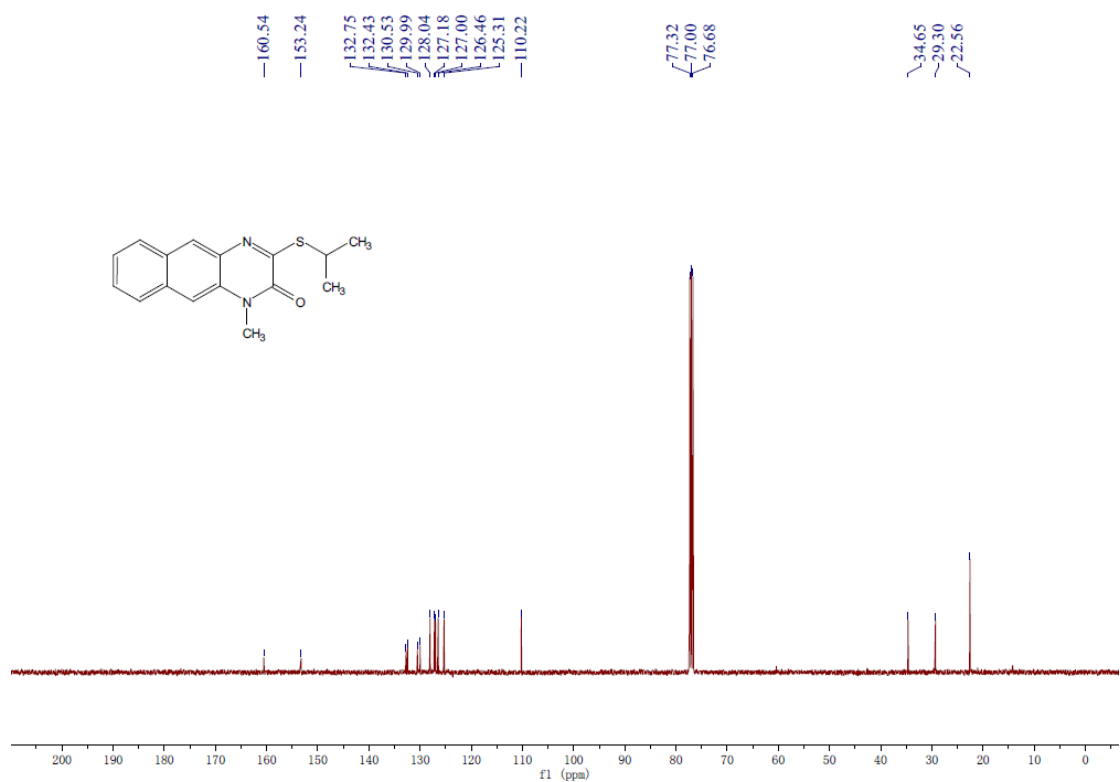


<sup>13</sup>C spectra of 3sa

**3-(isopropylthio)-1-methylbenzo[g]quinoxalin-2(1H)-one (3ta)**

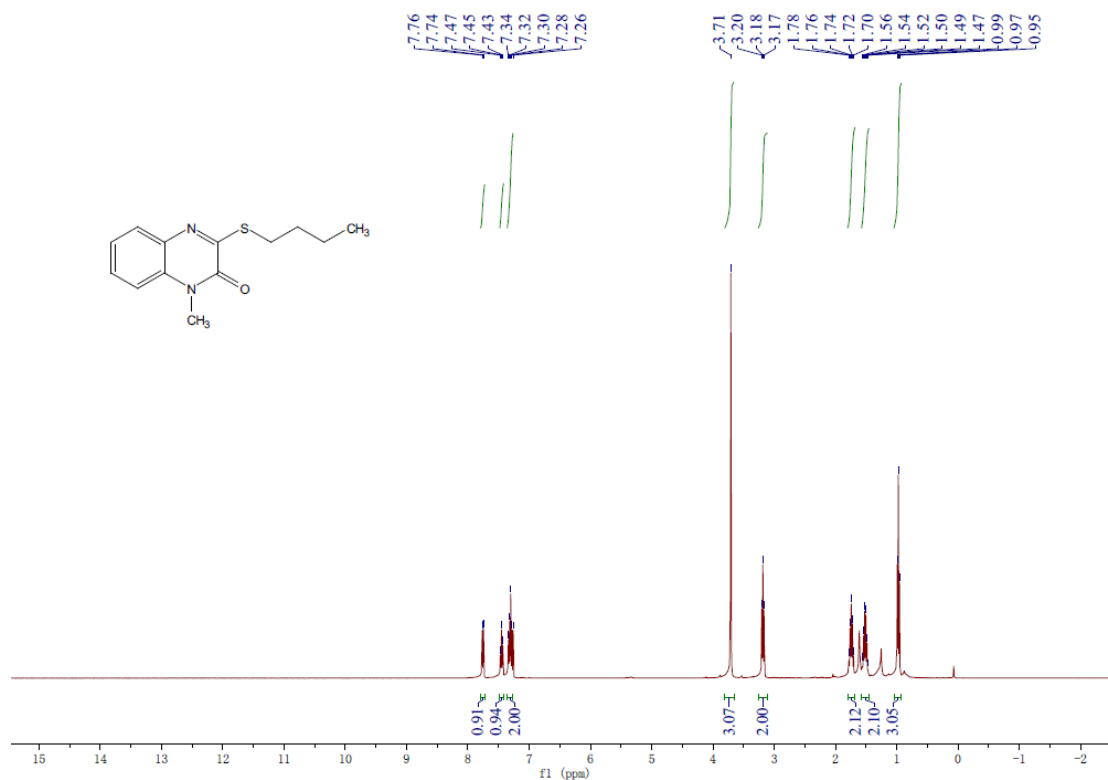


**<sup>1</sup>H spectra of 3ta**

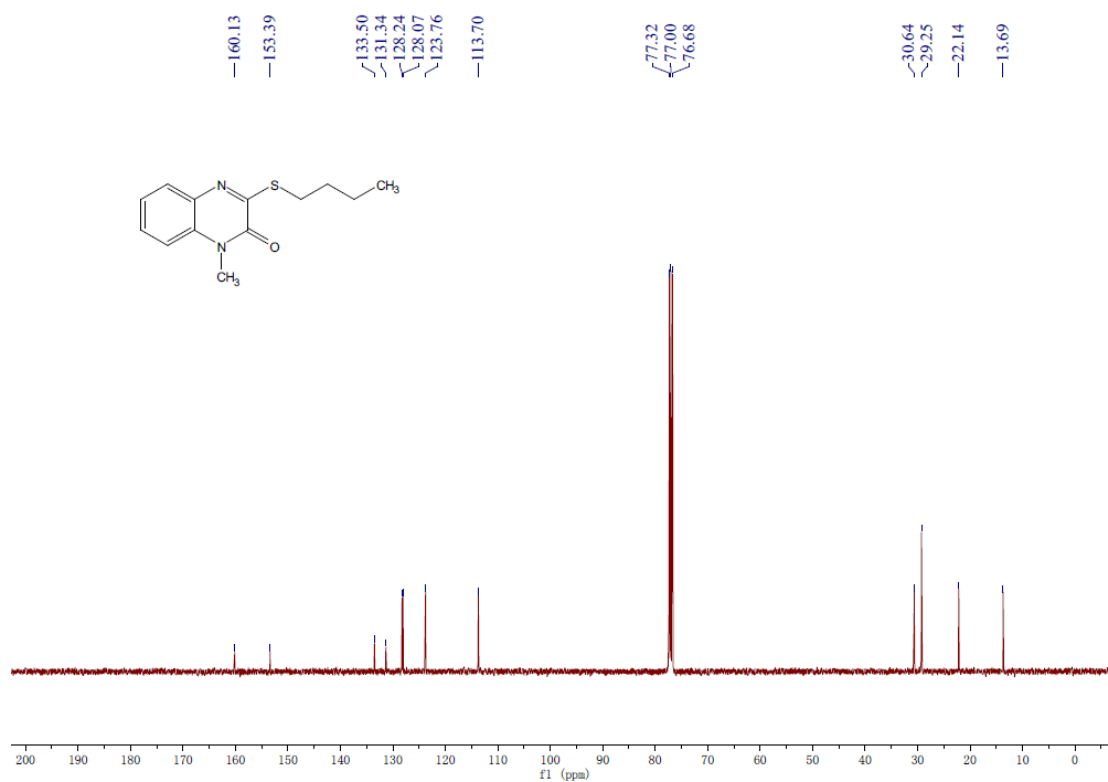


**<sup>13</sup>C spectra of 3ta**

**3-(butylthio)-1-methylquinoxalin-2(1H)-one (3ab)**

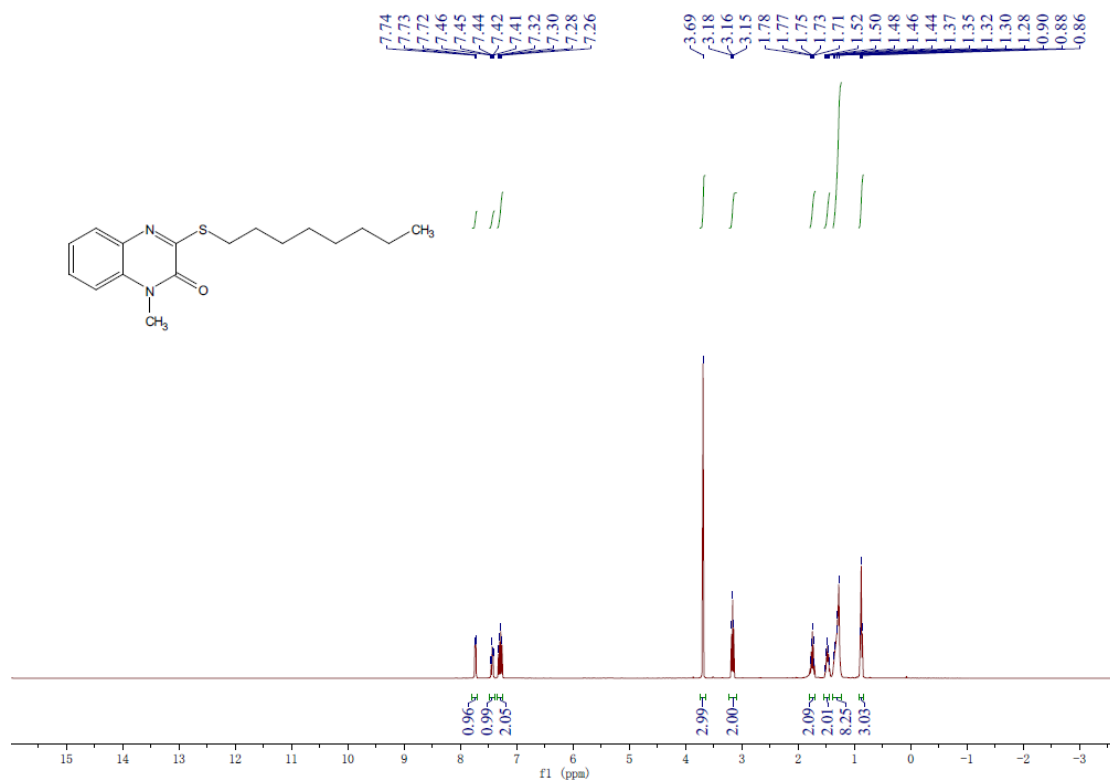


<sup>1</sup>H spectra of **3ab**

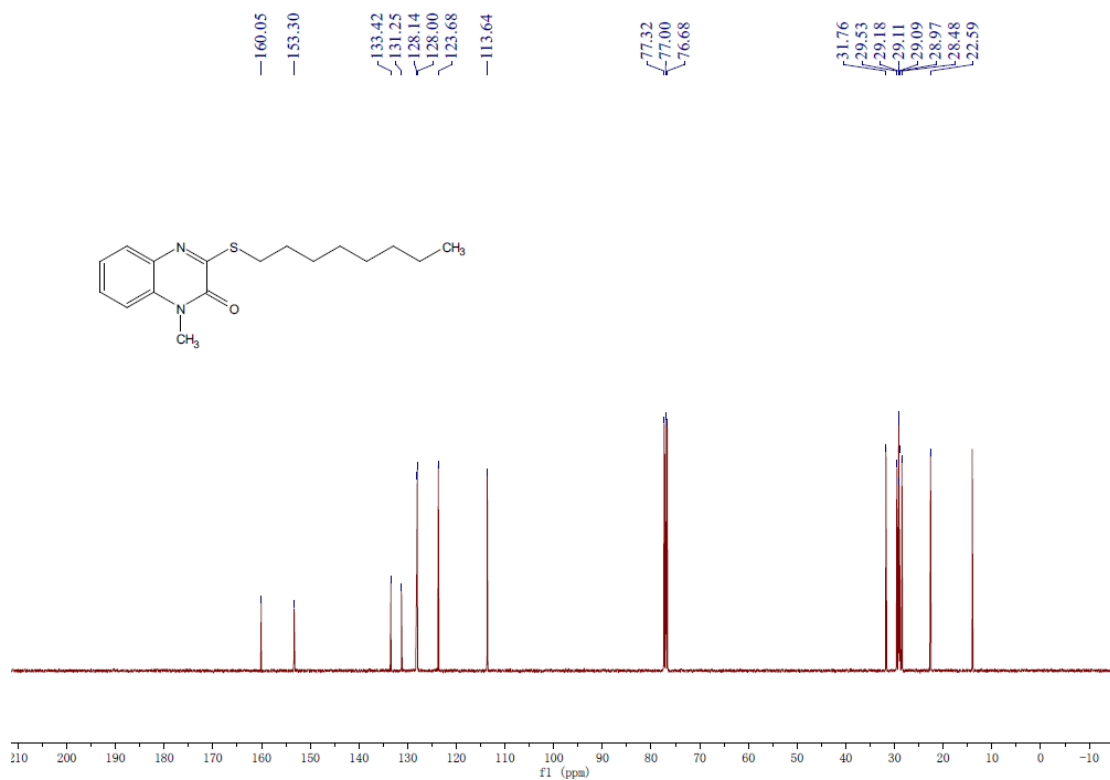


<sup>13</sup>C spectra of **3ab**

**1-methyl-3-(octylthio)quinoxalin-2(1H)-one (3ac)**

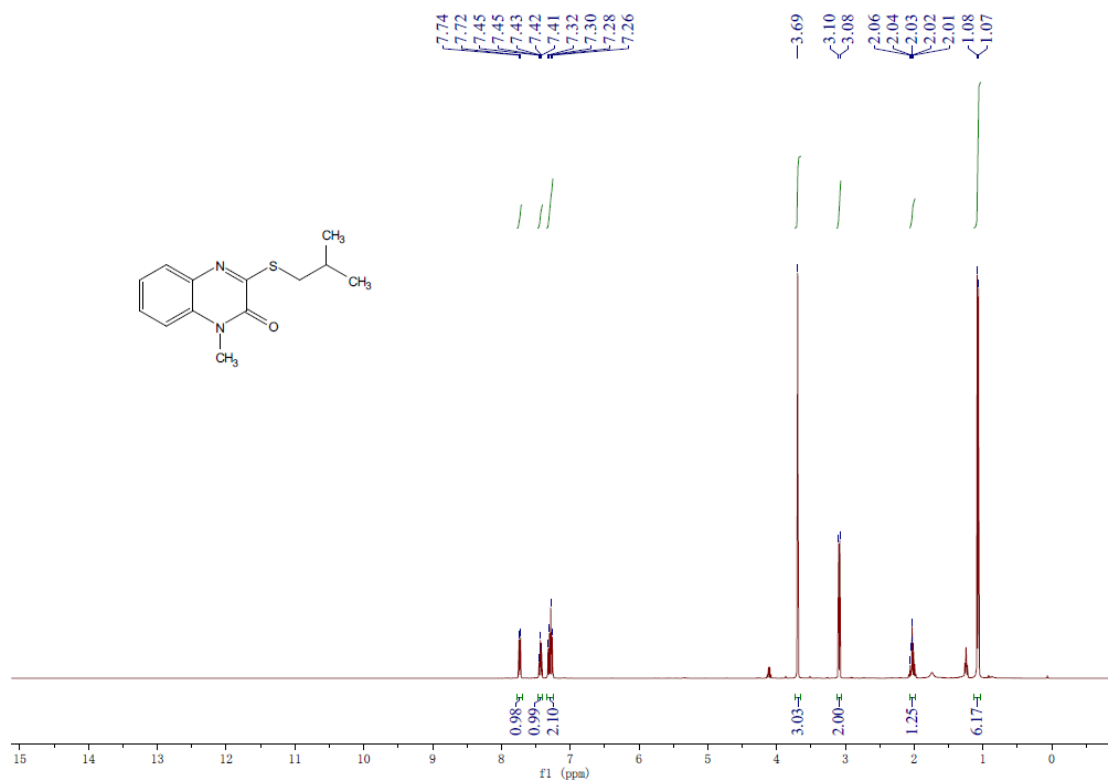


<sup>1</sup>H spectra of **3ac**

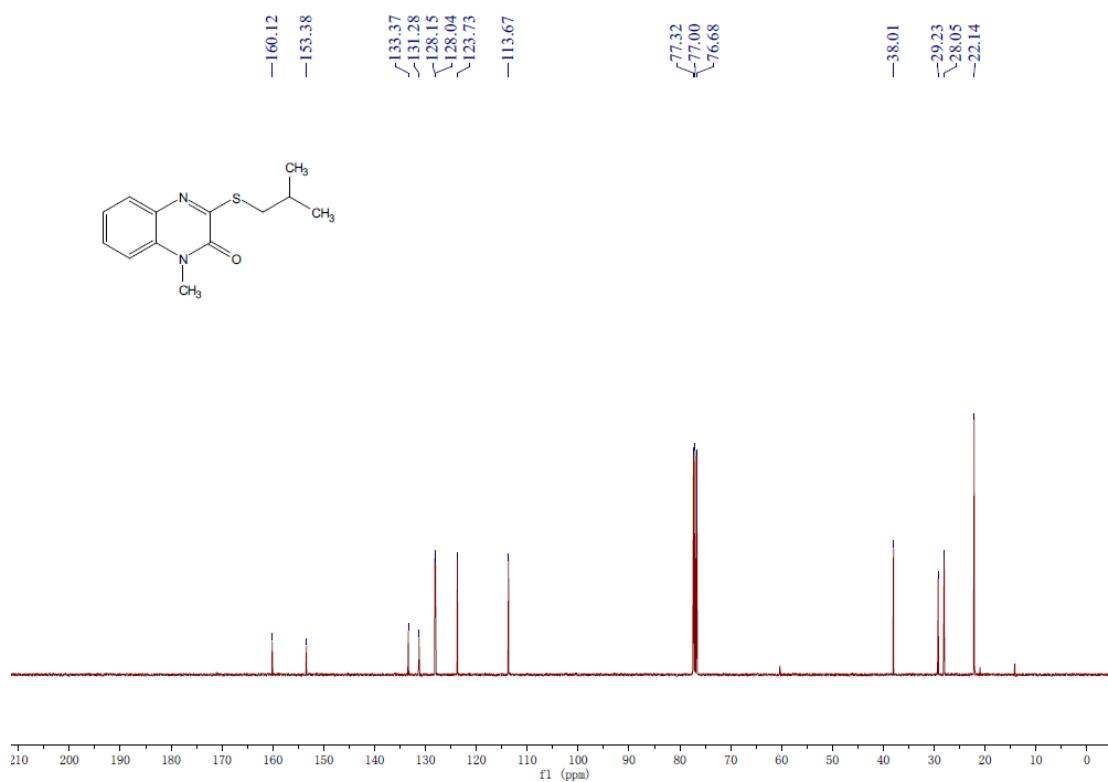


<sup>13</sup>C spectra of **3ac**

**3-(isobutylthio)-1-methylquinoxalin-2(1H)-one (3ad)**



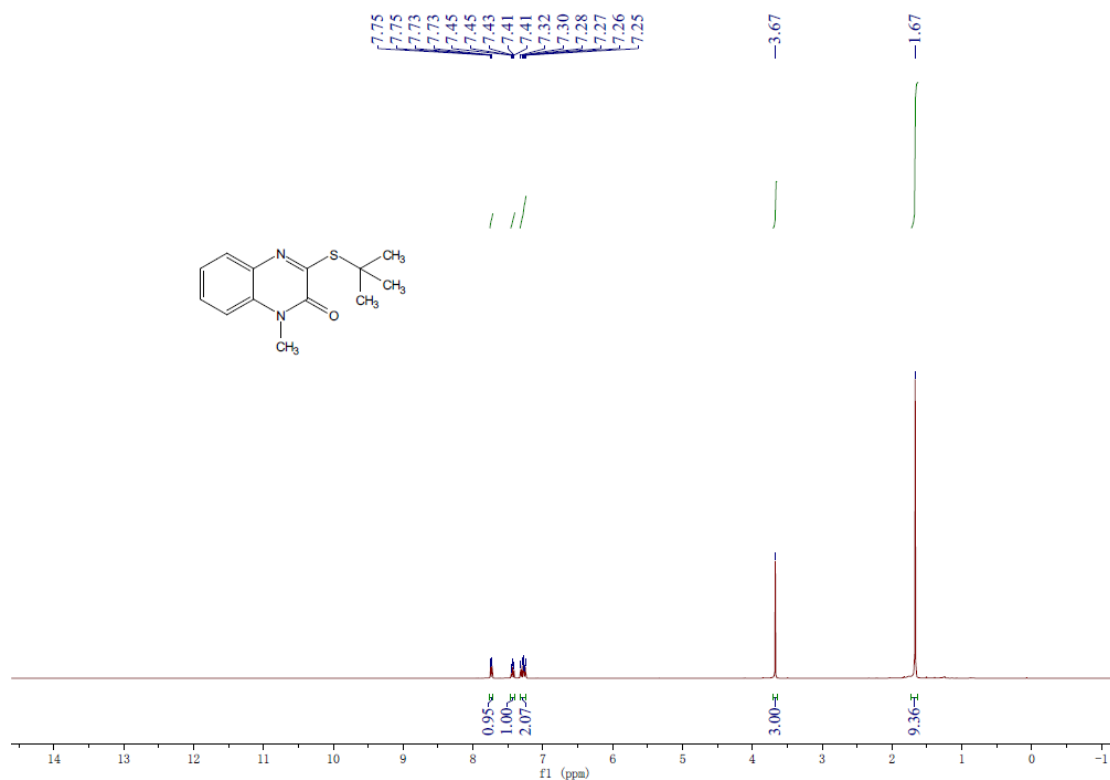
<sup>1</sup>H spectra of 3ad



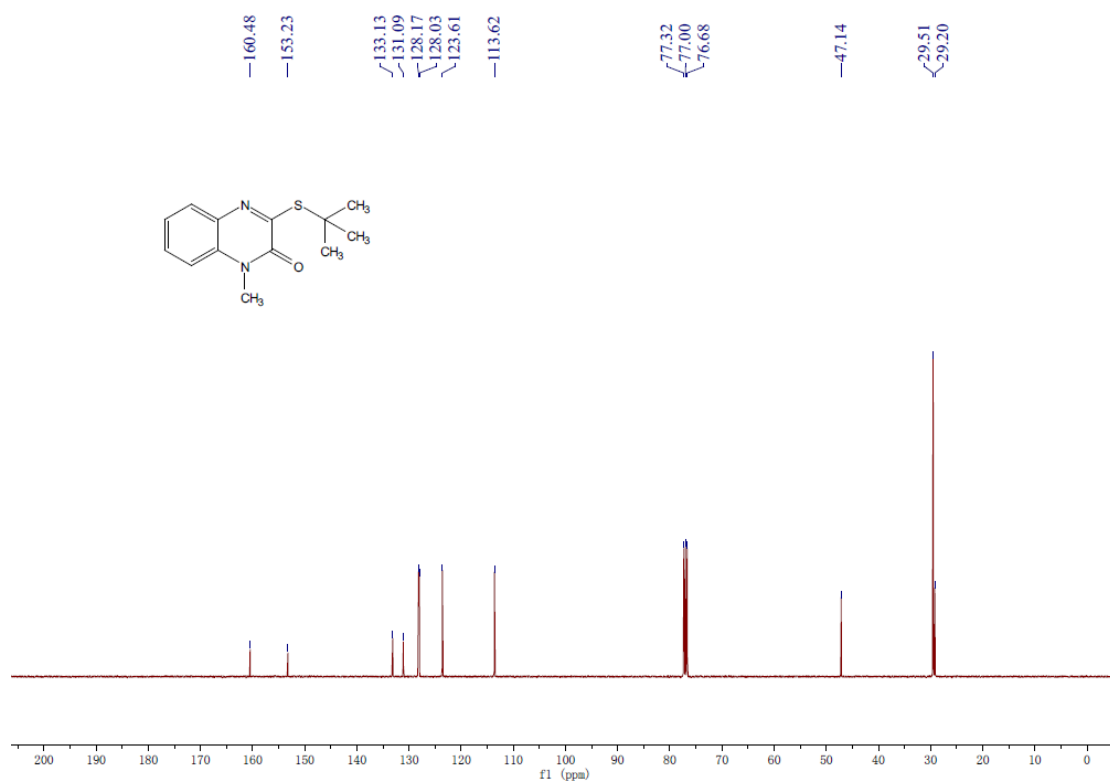
<sup>13</sup>C spectra of 3ad



**3-(tert-butylthio)-1-methylquinoxalin-2(1H)-one (3ae)**

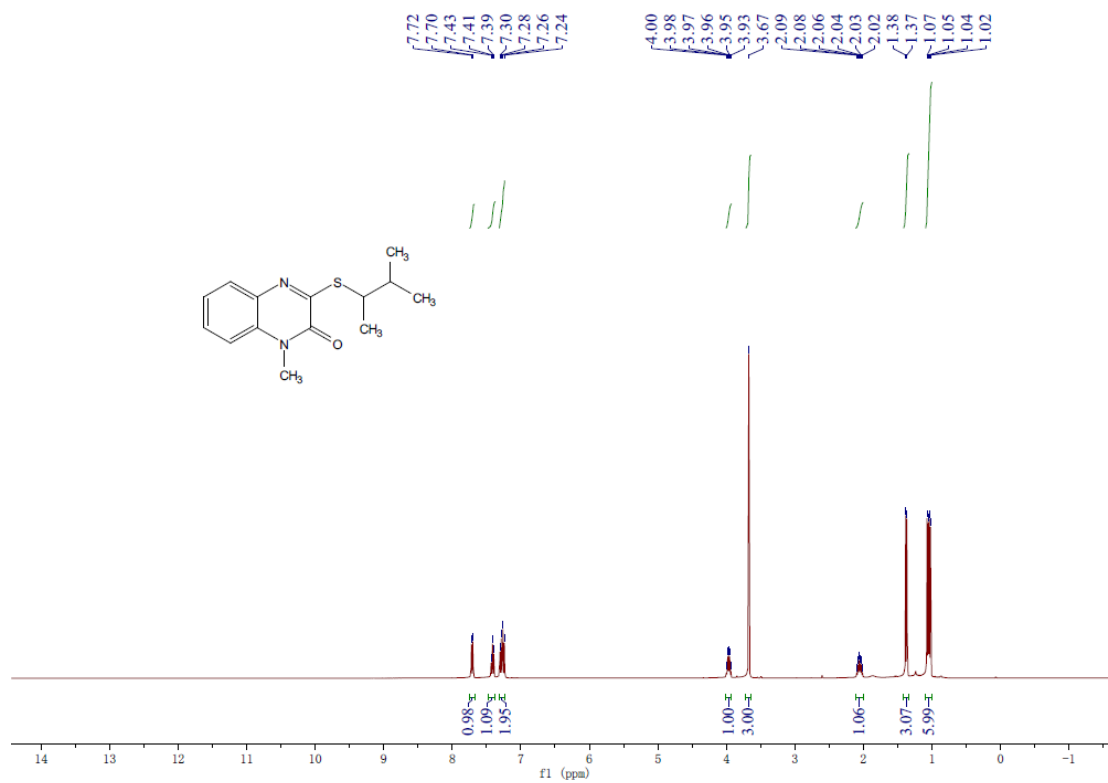


<sup>1</sup>H spectra of 3ae

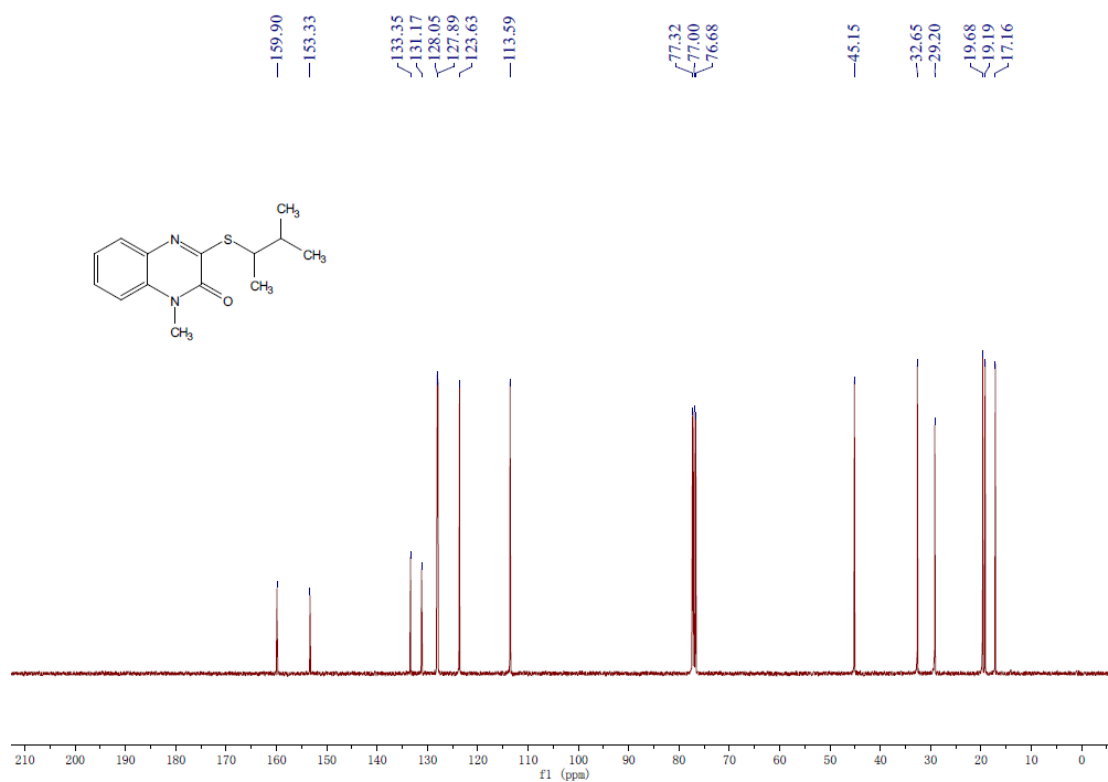


<sup>13</sup>C spectra of 3ae

**1-methyl-3-((3-methylbutan-2-yl)thio)quinoxalin-2(1H)-one (3af)**

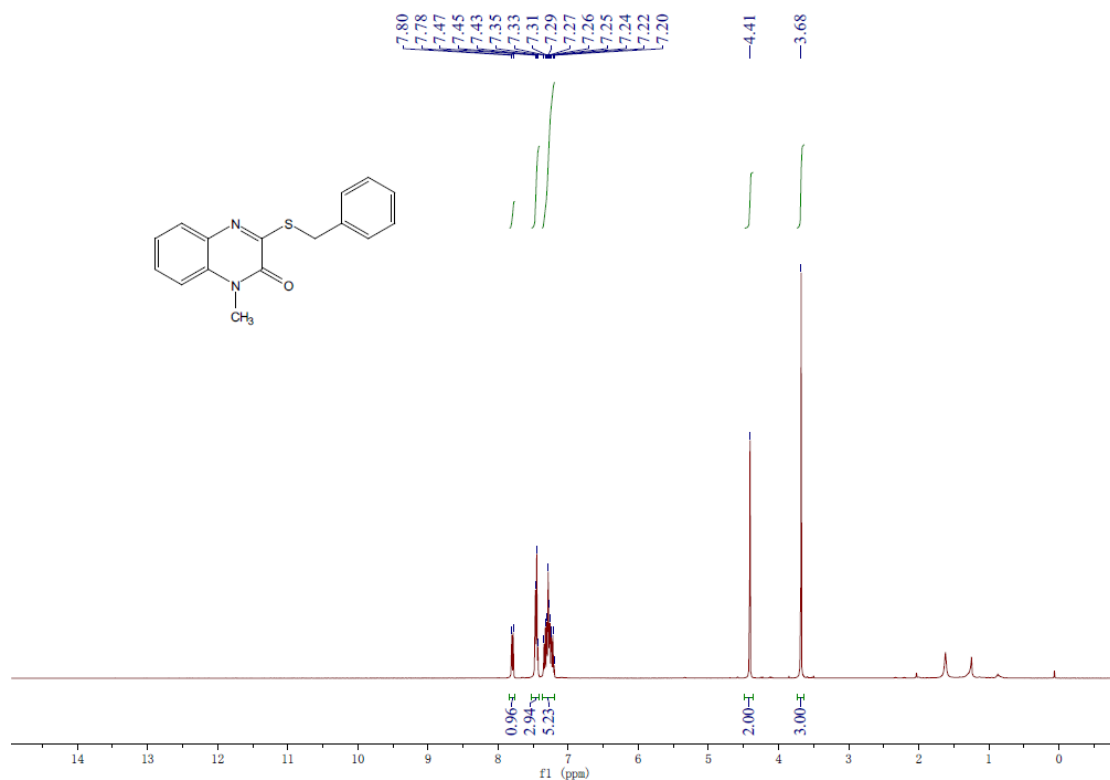


<sup>1</sup>H spectra of **3af**

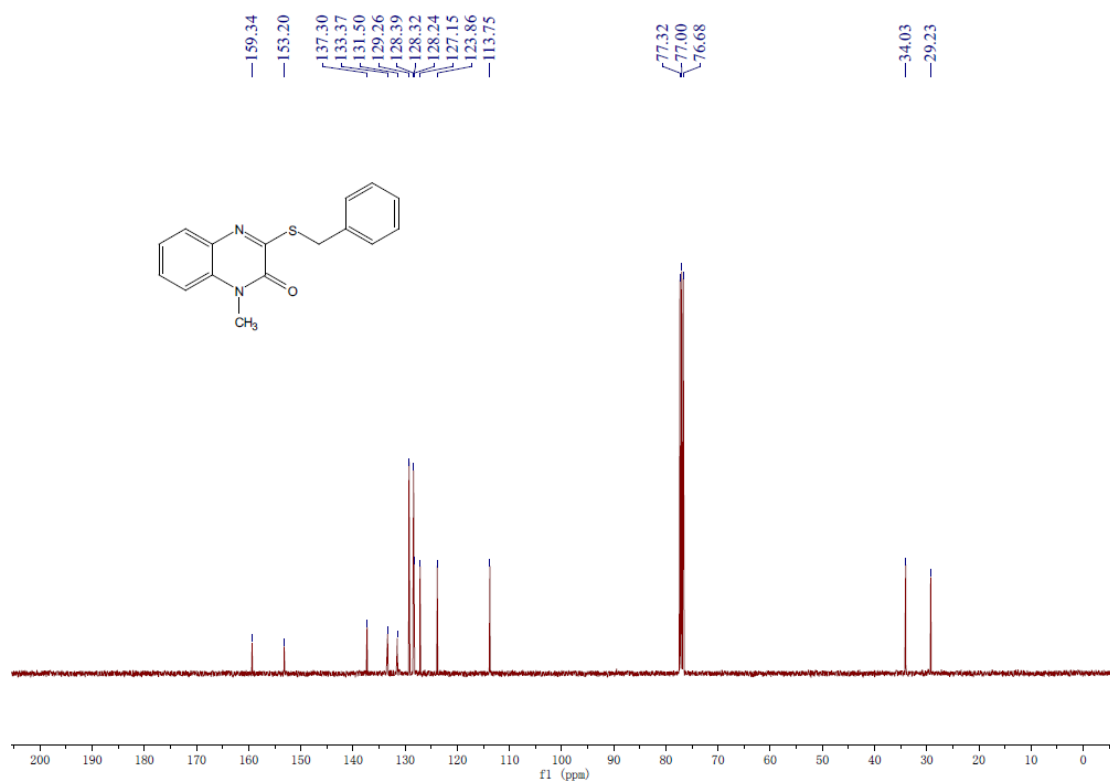


<sup>13</sup>C spectra of **3af**

**3-(benzylthio)-1-methylquinoxalin-2(1H)-one (3ag)**

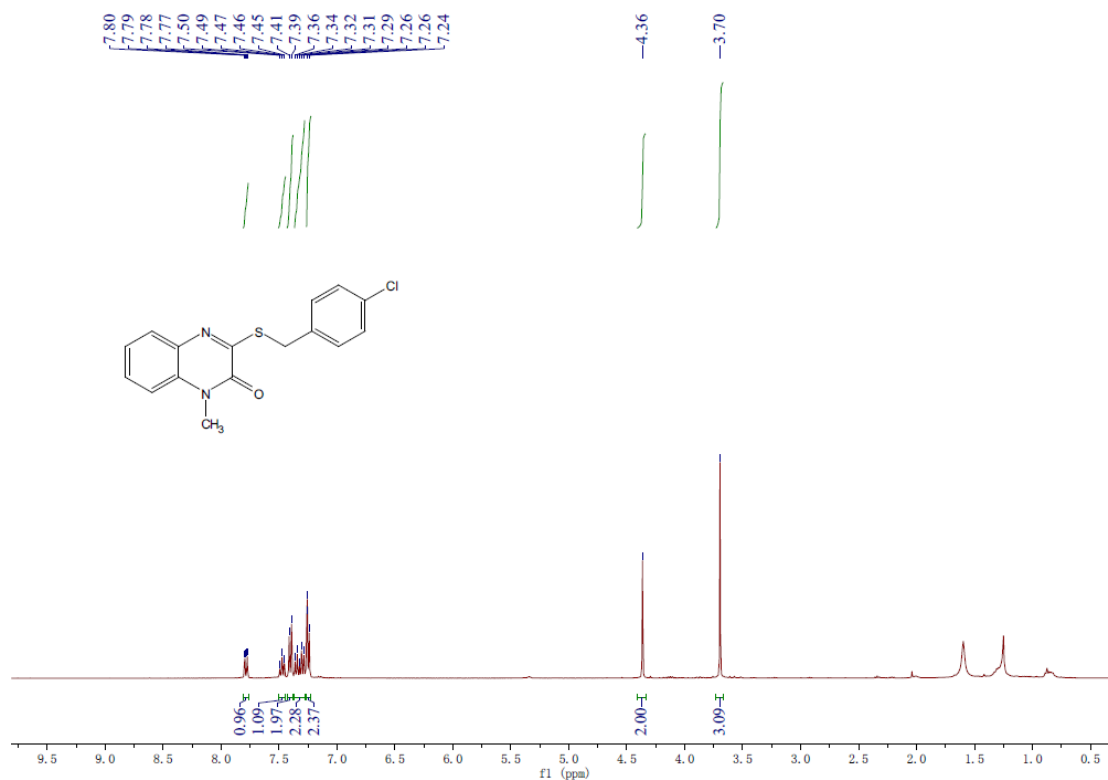


<sup>1</sup>H spectra of **3ag**

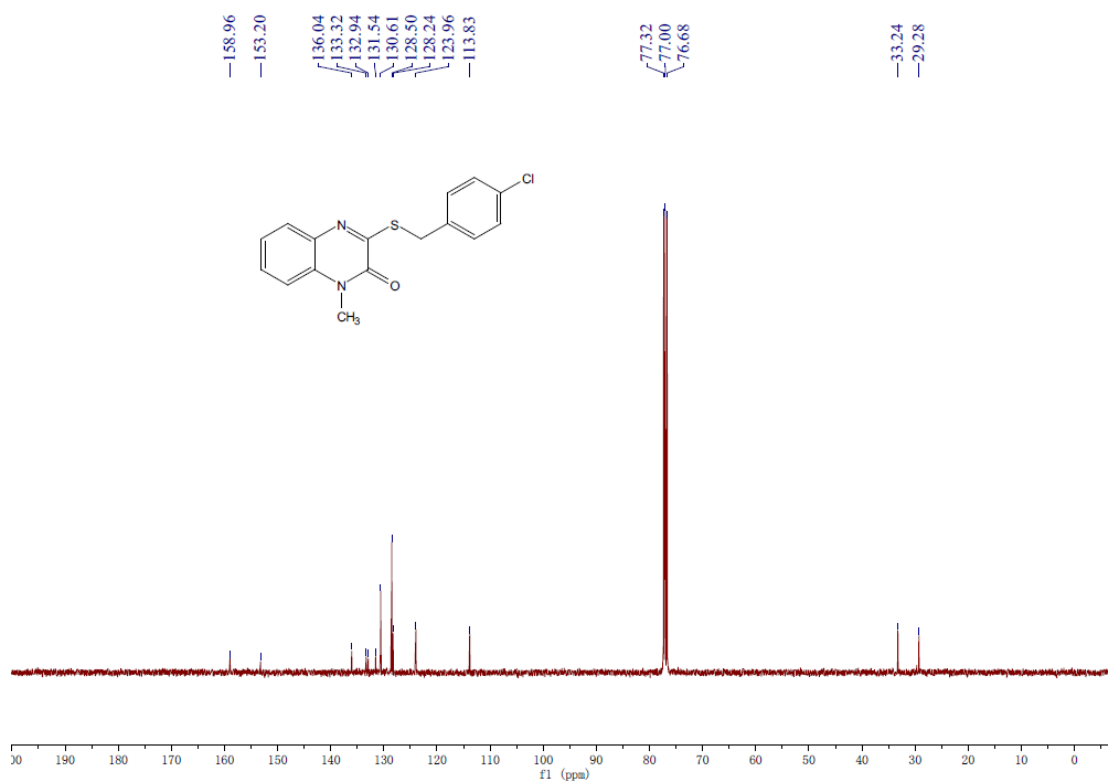


<sup>13</sup>C spectra of **3ag**

**3-((4-chlorobenzyl)thio)-1-methylquinoxalin-2(1H)-one (3ah)**

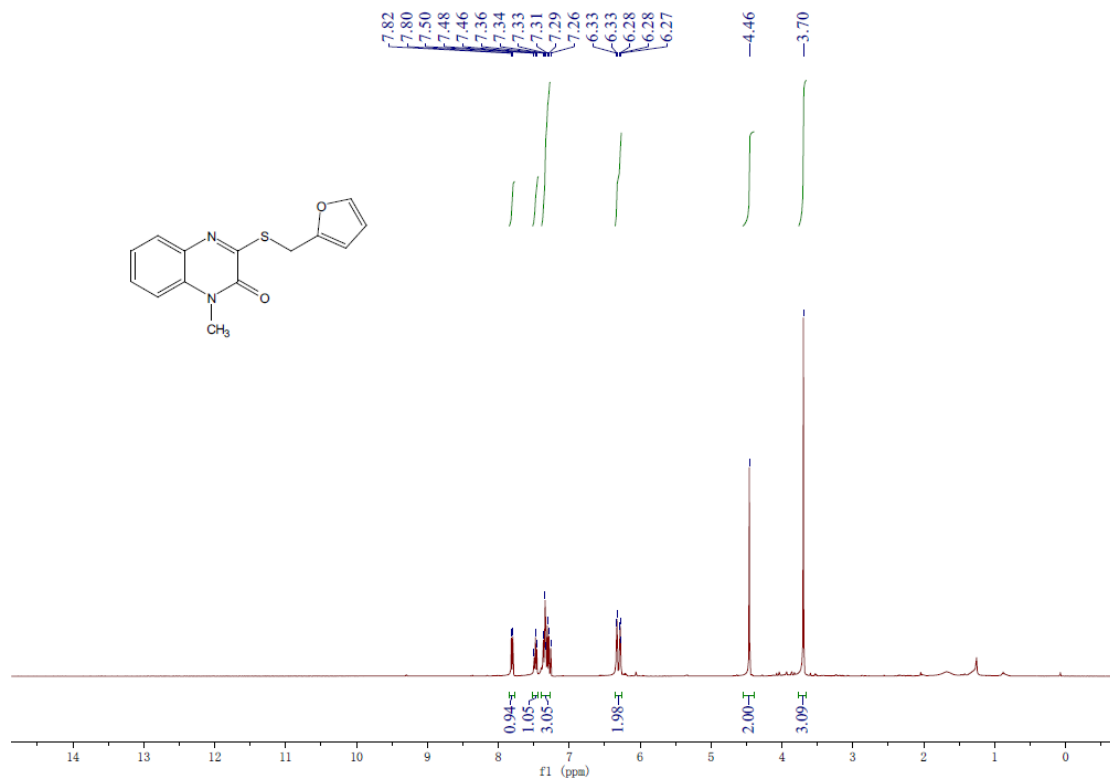


**<sup>1</sup>H spectra of 3ah**

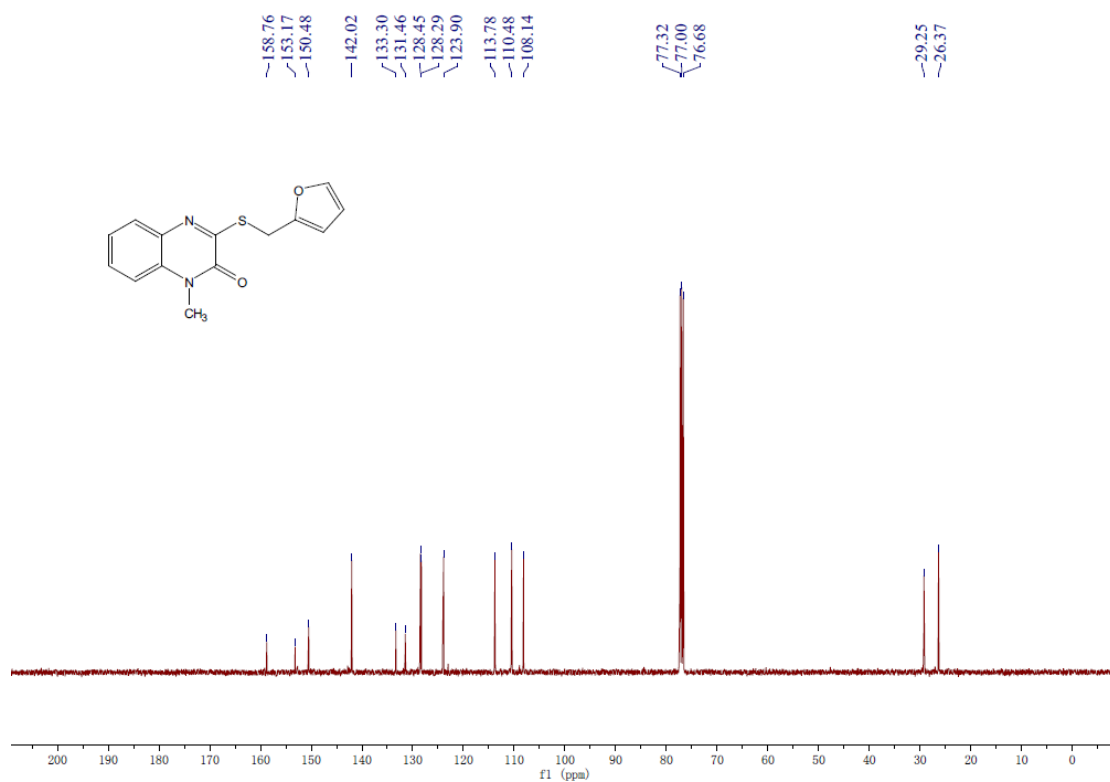


**<sup>13</sup>C spectra of 3ah**

**3-((furan-2-ylmethyl)thio)-1-methylquinoxalin-2(1H)-one (3ai)**

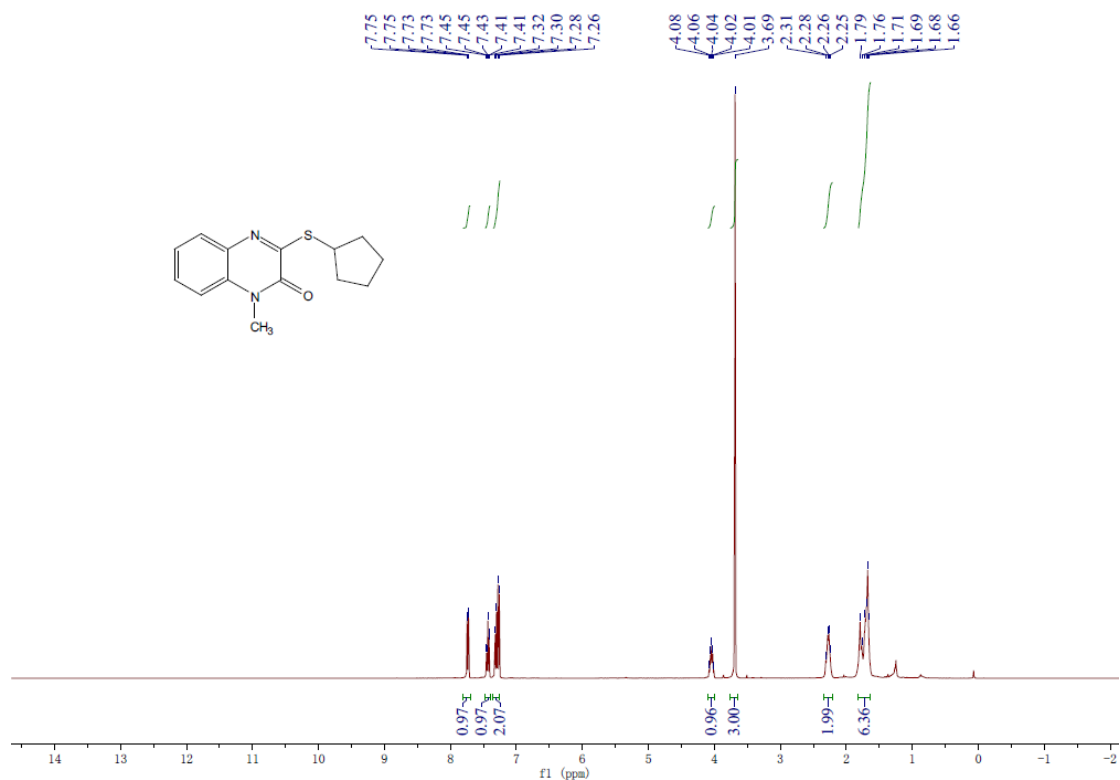


<sup>1</sup>H spectra of **3ai**

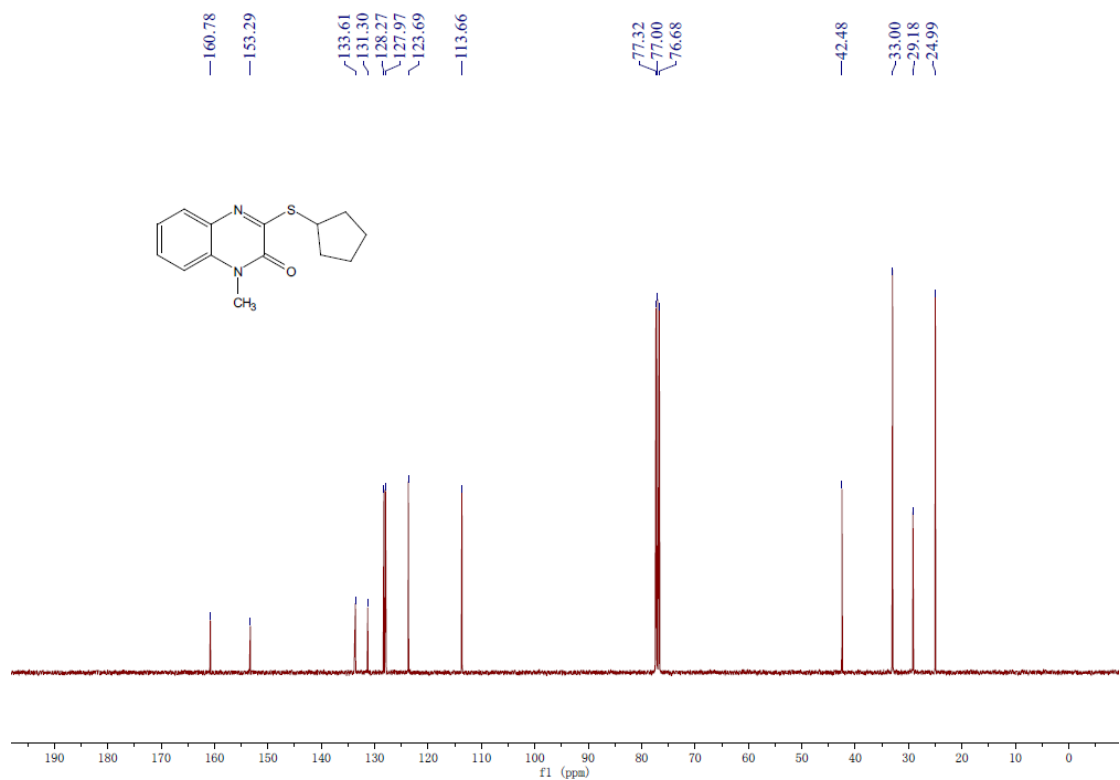


<sup>13</sup>C spectra of **3ai**

**3-(cyclopentylthio)-1-methylquinoxalin-2(1H)-one (3aj)**

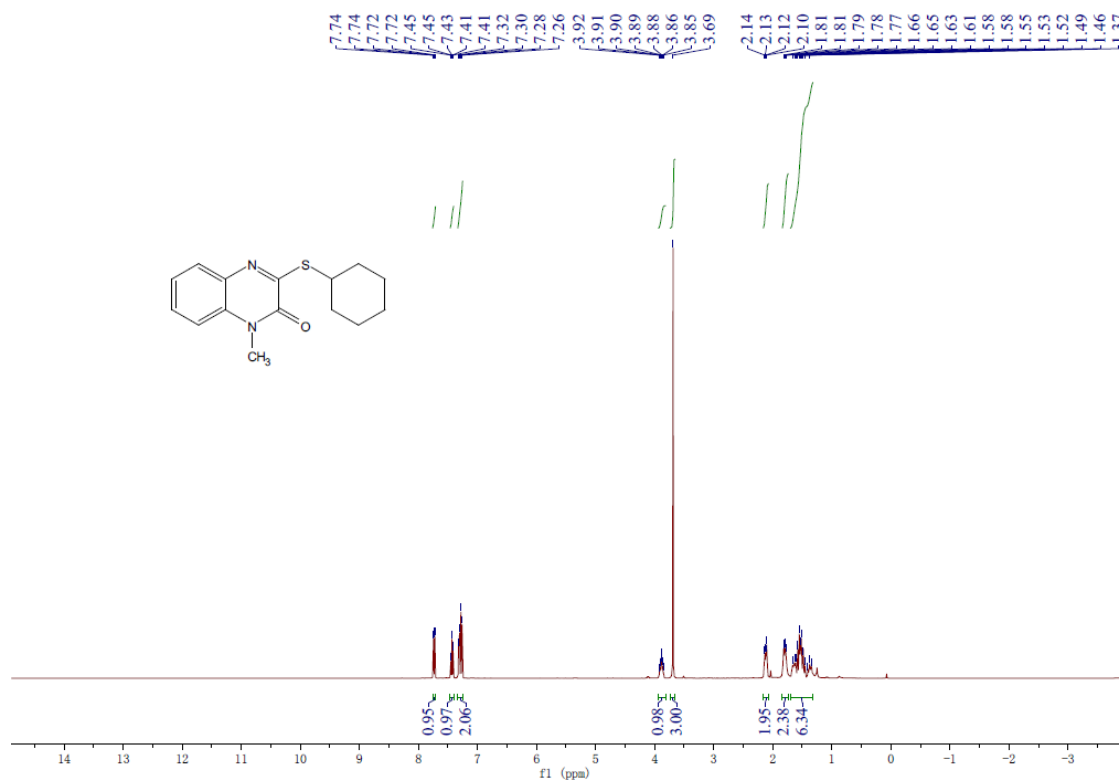


<sup>1</sup>H spectra of 3aj

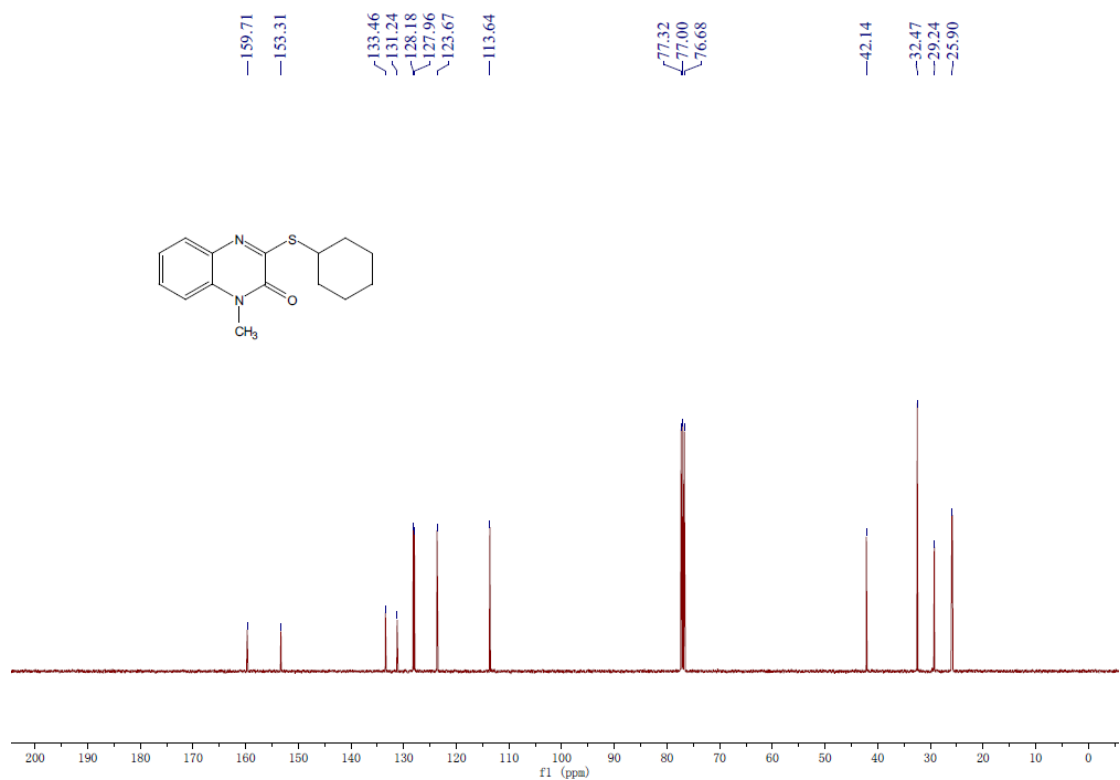


<sup>13</sup>C spectra of 3aj

**3-(cyclohexylthio)-1-methylquinoxalin-2(1H)-one (3ak)**

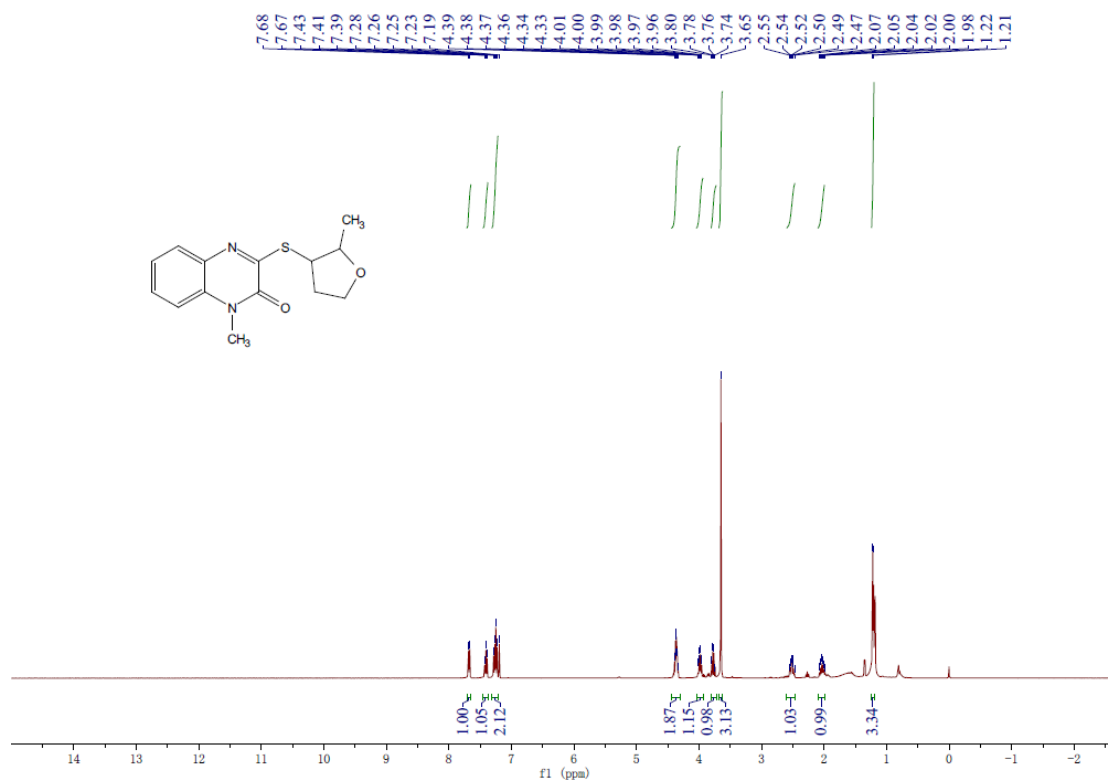


<sup>1</sup>H spectra of **3ak**

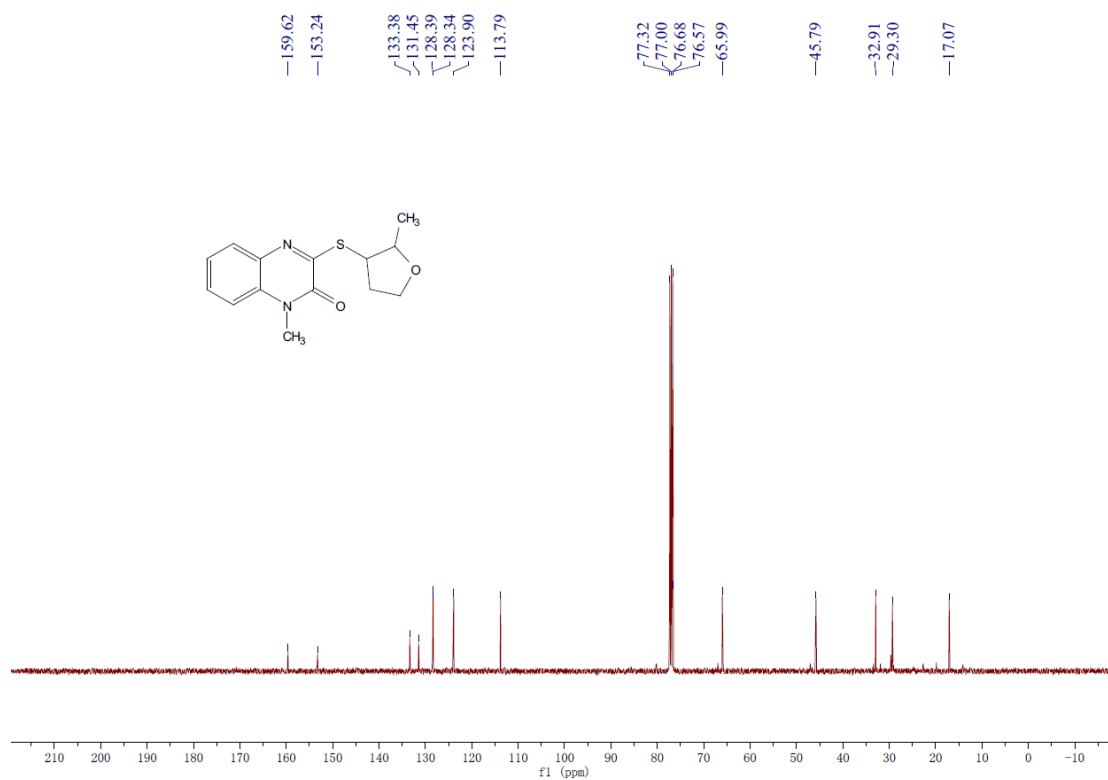


<sup>13</sup>C spectra of **3ak**

**1-methyl-3-((2-methyltetrahydrofuran-3-yl)thio)quinoxalin-2(1H)-one (3al)**



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



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