

Supplementary information

**Synthesis and antitumor activity of triazole-containing sorafenib analogs**

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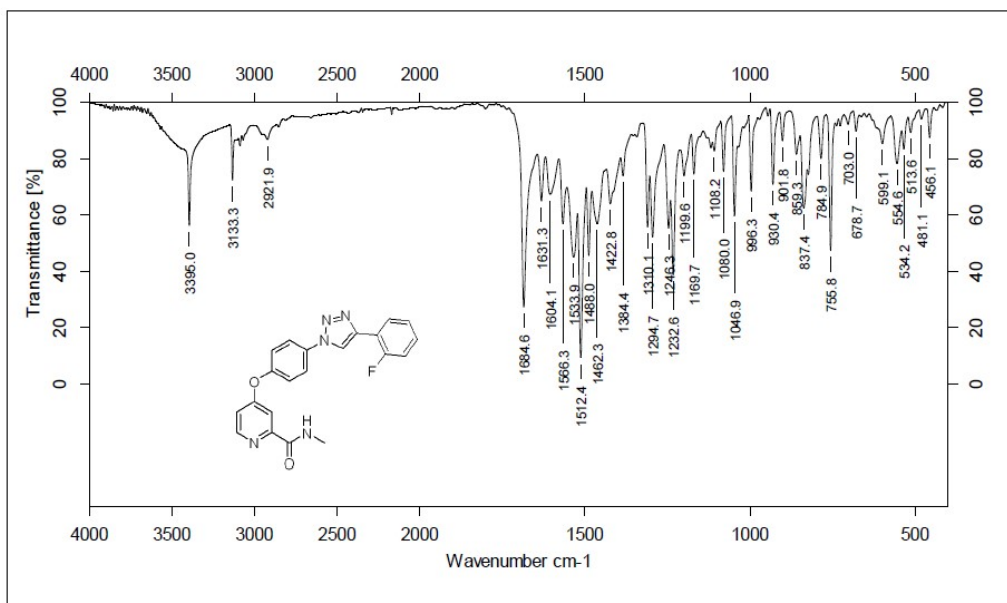
**Table S1.** Enzymatic screening of selected compounds.

Compound	% inhibition at 10 $\mu$ M <sup>a</sup>									
	VEGFR-3	PDGFR $\alpha$	FGFR1	c-KIT	CDK4	RET	TNIK	B-Raf	CDK2	CHK1
<b>8e</b>	1.2	3.4	15	7.3	-2.6	28.9	18.6	5.6	17	21
<b>8f</b>	3.5	-5.2	1.8	-2.6	-2.3	17.2	15.1	5.6	8.4	10
<b>8j</b>	4.3	0.6	-0.61	11	0.7	18.0	13.1	5.6	13	17
<b>8n</b>	15	-0.5	8.0	9.5	2.3	11.0	26.6	13.8	8.9	10

<sup>a</sup> The biological data are generated from at least two independent experiments.

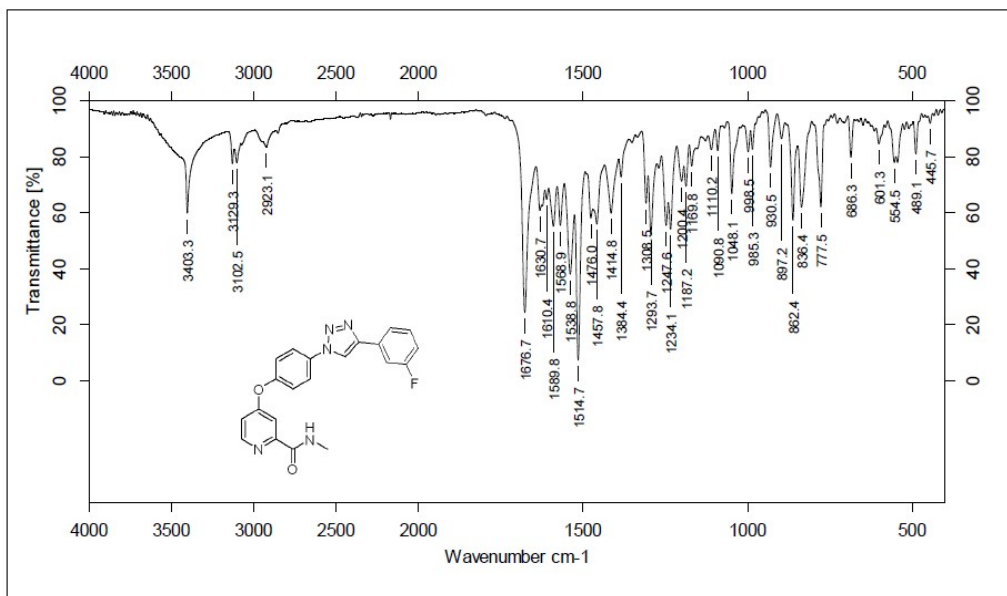
## Copies of IR spectra for triazoles

8e



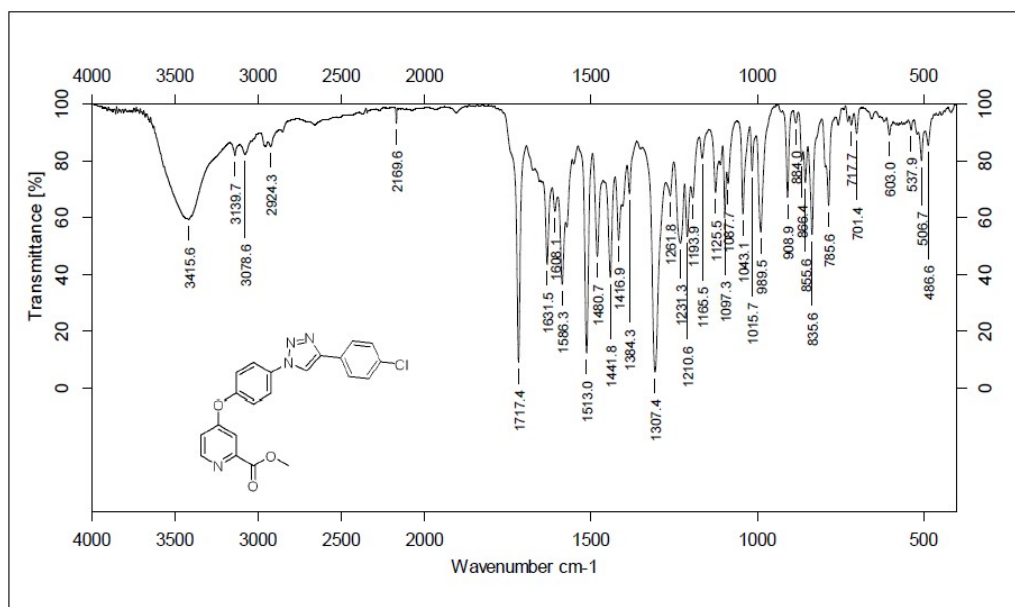
Sample : KPR-6	Frequency Range : 3999.64 - 400.157	Measured on : 2017-10-11
Technique : Sample form	Resolution : 2	Instrument : EQUINOX55
Customer : Default	Zerofilling : 2	Acquisition : Double Sided,For
		Sample Scans : 16

8f



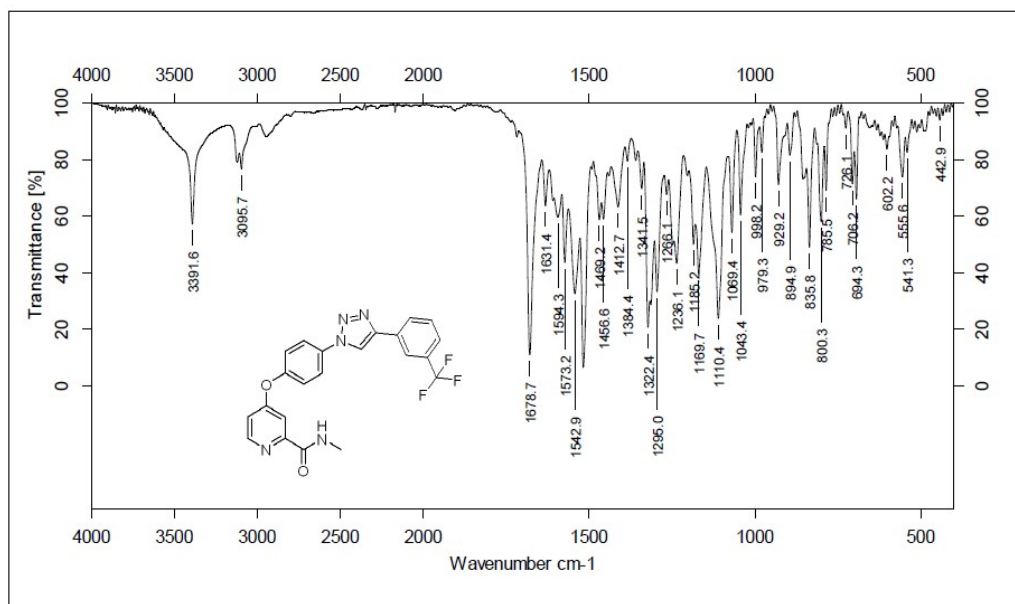
Sample : KPR-2	Frequency Range : 3999.64 - 400.157	Measured on : 2017-10-11
Technique : Sample form	Resolution : 2	Instrument : EQUINOX55
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		Sample Scans : 16

8g



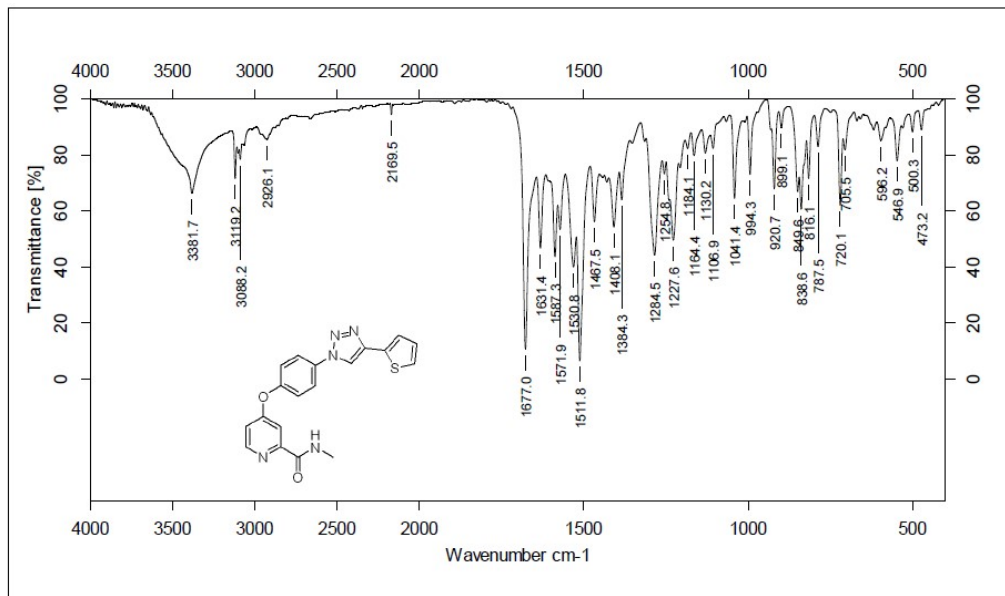
Sample : KPR-28	Frequency Range : 3999.64 - 400.157	Measured on : 2017-10-11
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8j



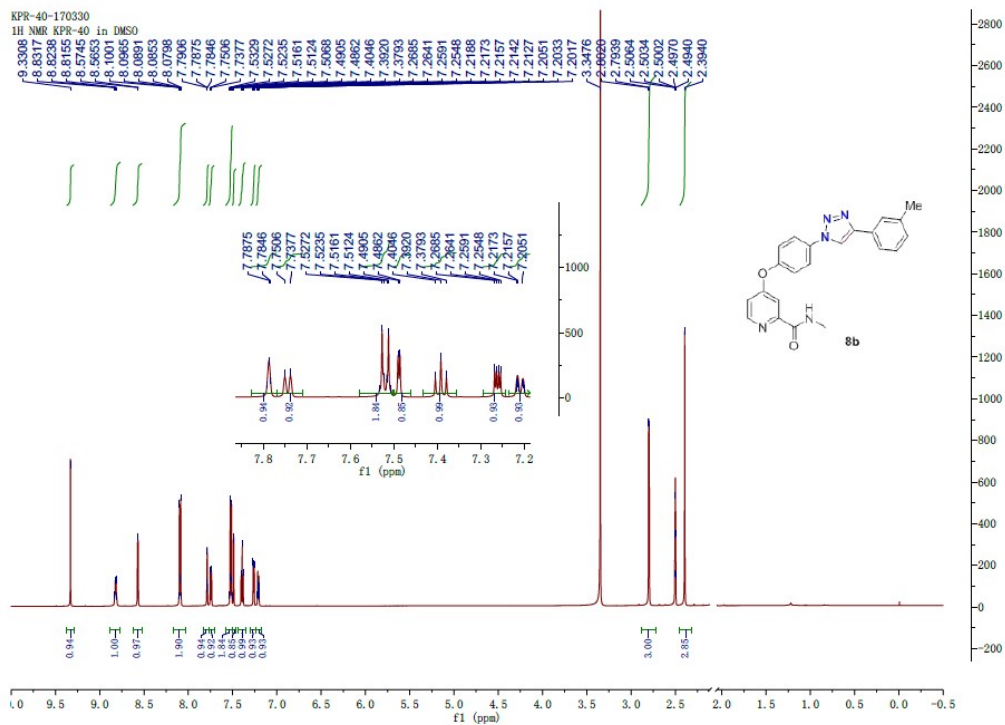
Sample : KPR-35	Frequency Range : 3999.64 - 400.157	Measured on : 2017-10-11
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Customer : Default	Zerofilling : 2	Acquisition : Double Sided,For
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8n

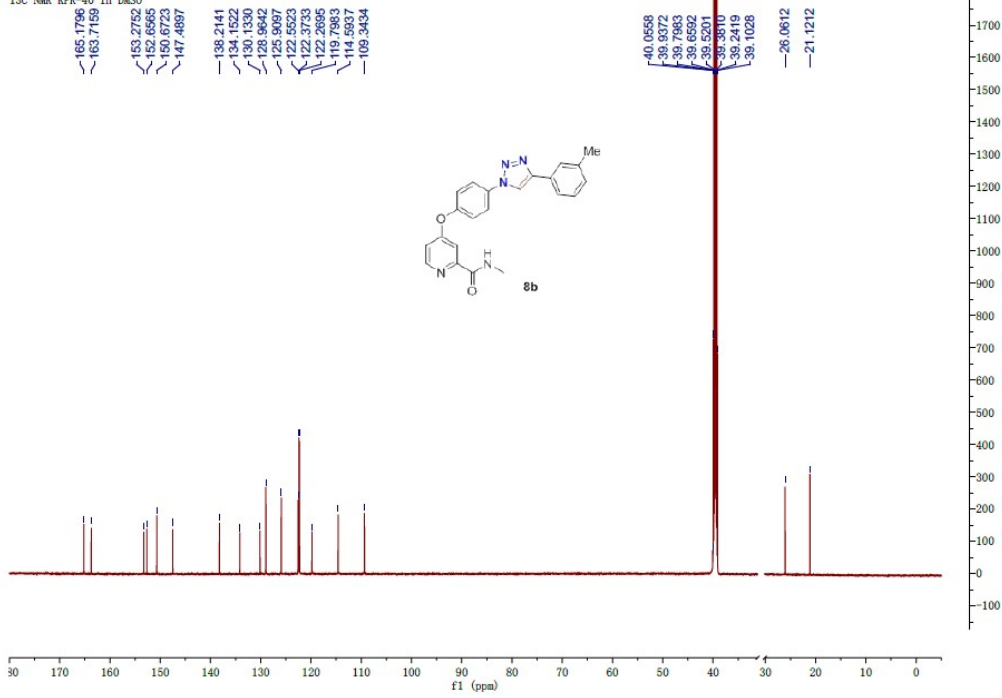


Sample : KPR-4	Frequency Range : 3999.64 - 400.157	Measured on : 2017-10-11
Technique : Sample form	Resolution : 2	Instrument : EQUINOX55
Customer : Default	Zerofilling : 2	Acquisition : Double Sided,For
		Sample Scans : 16

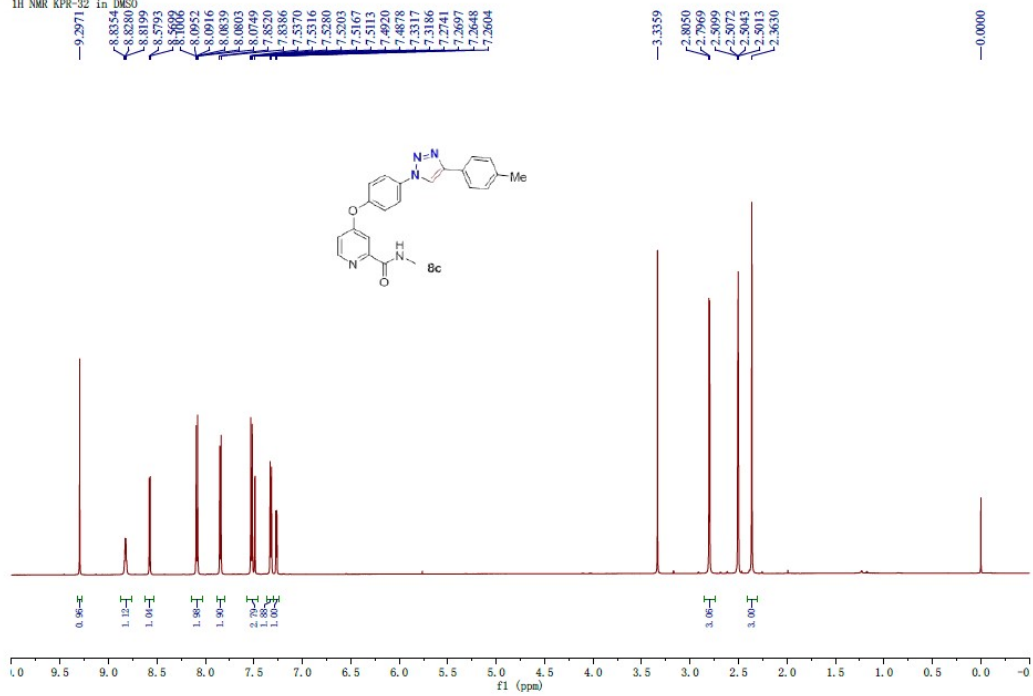
### Copies of NMR spectra for triazoles



KPR-40-170330  
13C NMR KPR-40 in DMSO



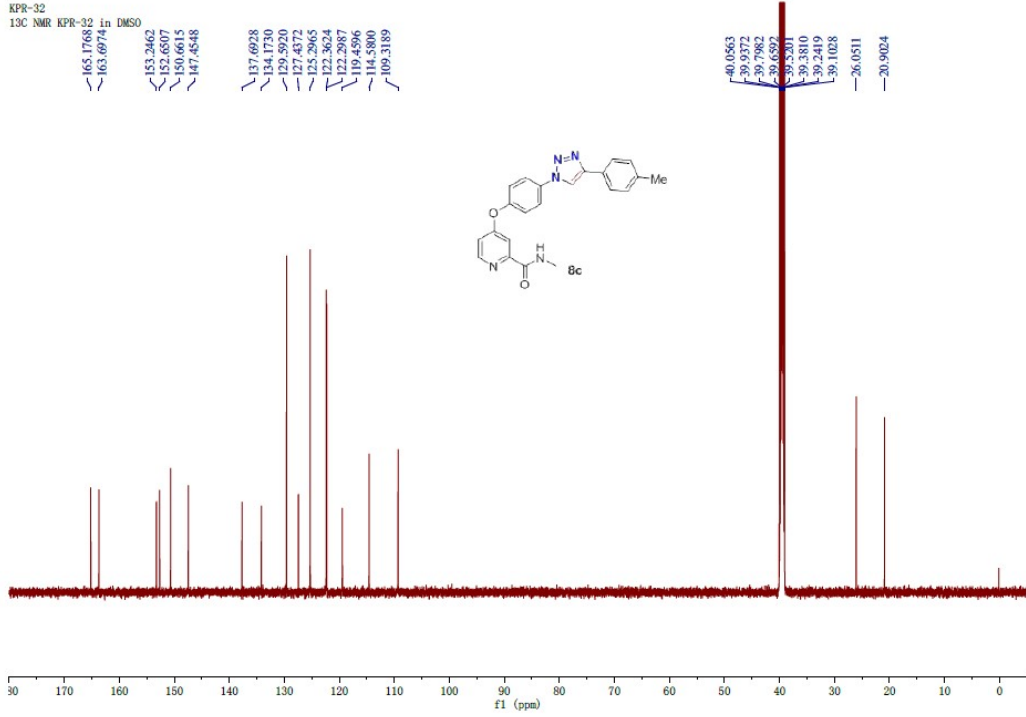
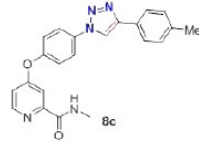
KPR-32  
1H NMR KPR-32 in DMSO



KPR-32

<sup>13</sup>C NMR KPR-32 in DMSO

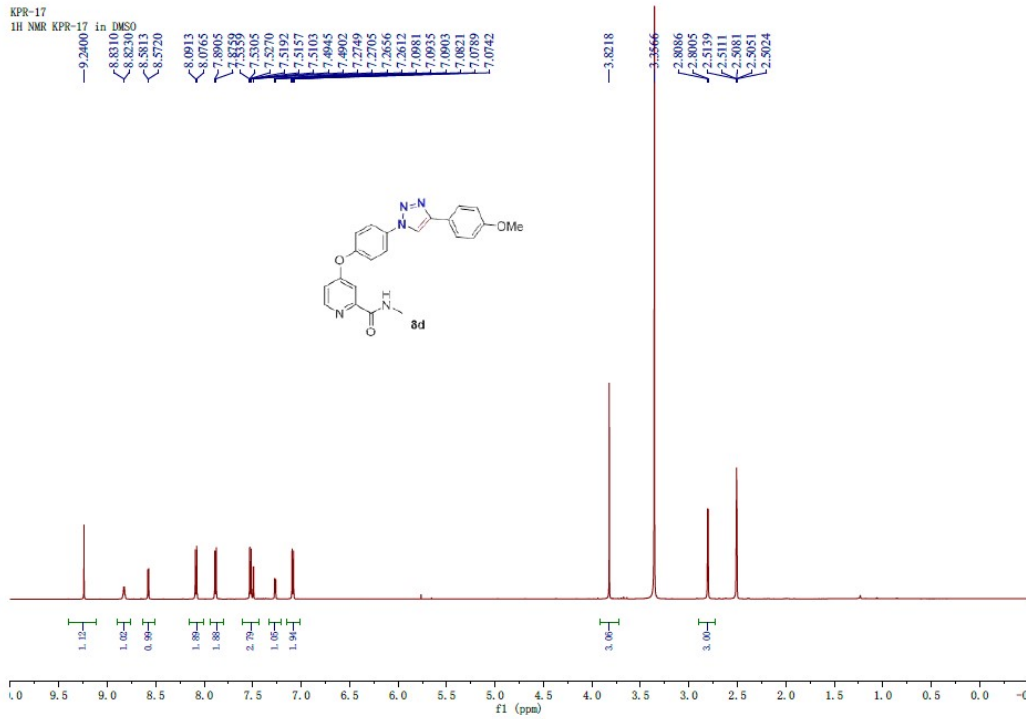
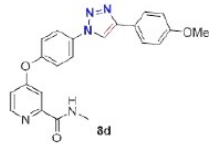
165.17682  
163.6974  
153.2462  
152.6907  
150.6615  
147.4548  
137.6928  
134.1730  
129.5920  
127.4372  
125.2965  
124.8674  
122.2087  
119.4596  
114.5800  
109.3189



KPR-17

<sup>1</sup>H NMR KPR-17 in DMSO

9.24007  
8.8310  
8.8230  
8.5813  
8.5720  
8.0913  
8.0765  
7.8905  
7.8359  
7.5305  
7.5270  
7.5192  
7.5157  
7.4965  
7.4809  
7.2705  
7.2656  
7.2612  
7.0981  
7.0935  
7.0903  
7.0821  
7.0789  
7.0742

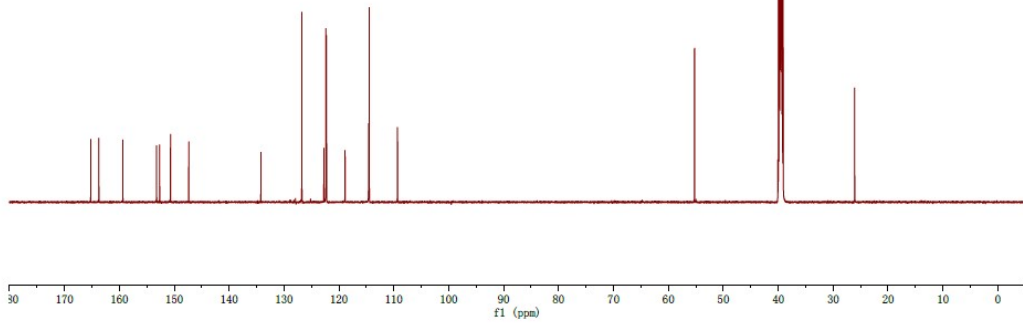
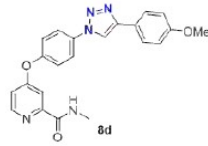


KPR-17  
 13C NMR KPR-17 in DMSO

165.1982  
 163.7210  
 159.3504  
 153.2137  
 152.6639  
 147.5604

134.2116  
 126.7533  
 122.7488  
 122.7732  
 122.2645  
 118.8953  
 114.4792  
 109.3282

55.2376  
 40.0558  
 39.9368  
 39.7979  
 39.6889  
 39.3806  
 39.2415  
 39.1024  
 26.0656

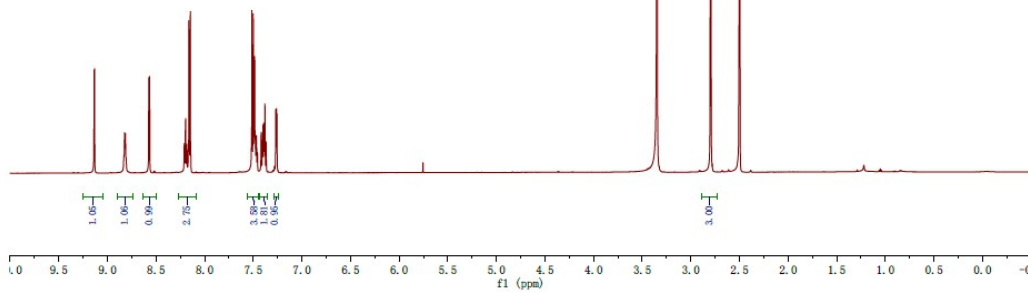
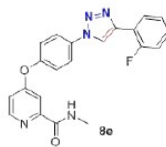


KPR-6  
 1H NMR KPR-6 in DMSO

9.12669  
 9.13205  
 8.83002  
 8.82238  
 8.81448  
 8.80773  
 8.57448  
 8.56555

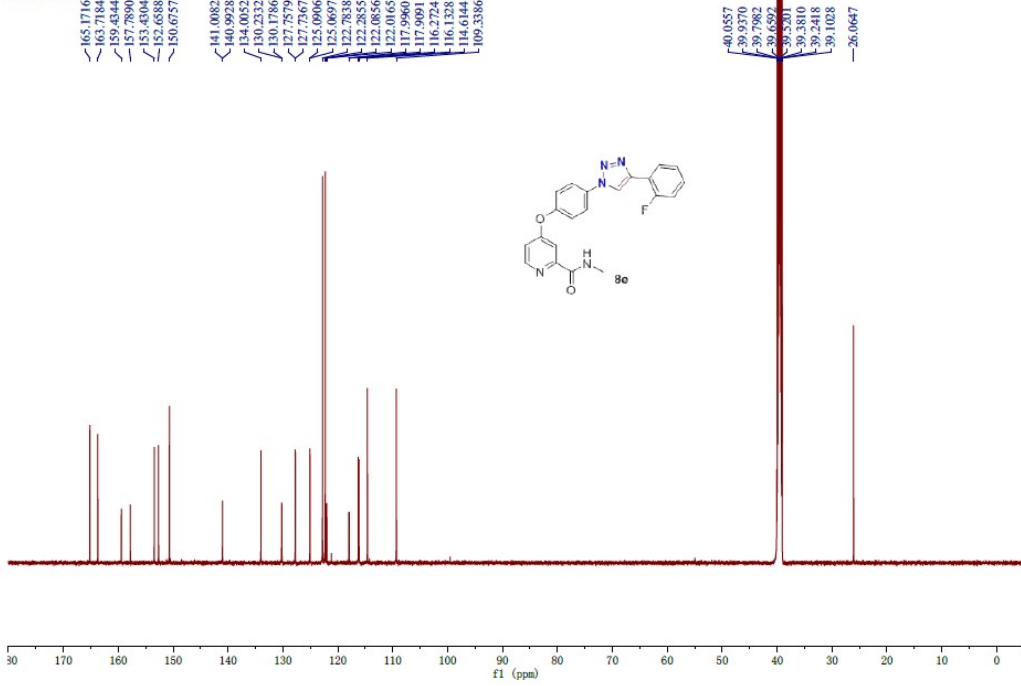
8.1622  
 8.1588  
 8.1554  
 8.1520  
 7.5143  
 7.5110  
 7.5030  
 7.4995  
 7.4937  
 7.4897  
 7.4853  
 7.4681  
 7.4647  
 7.4590  
 7.4561  
 7.4184  
 7.4041  
 7.4002  
 7.3934  
 7.3917  
 7.3863  
 7.3807  
 7.3685  
 7.3667  
 7.3548  
 7.3508  
 7.2599  
 7.2555

3.3487  
 2.8005  
 2.7924  
 2.5029  
 2.5000  
 2.4971



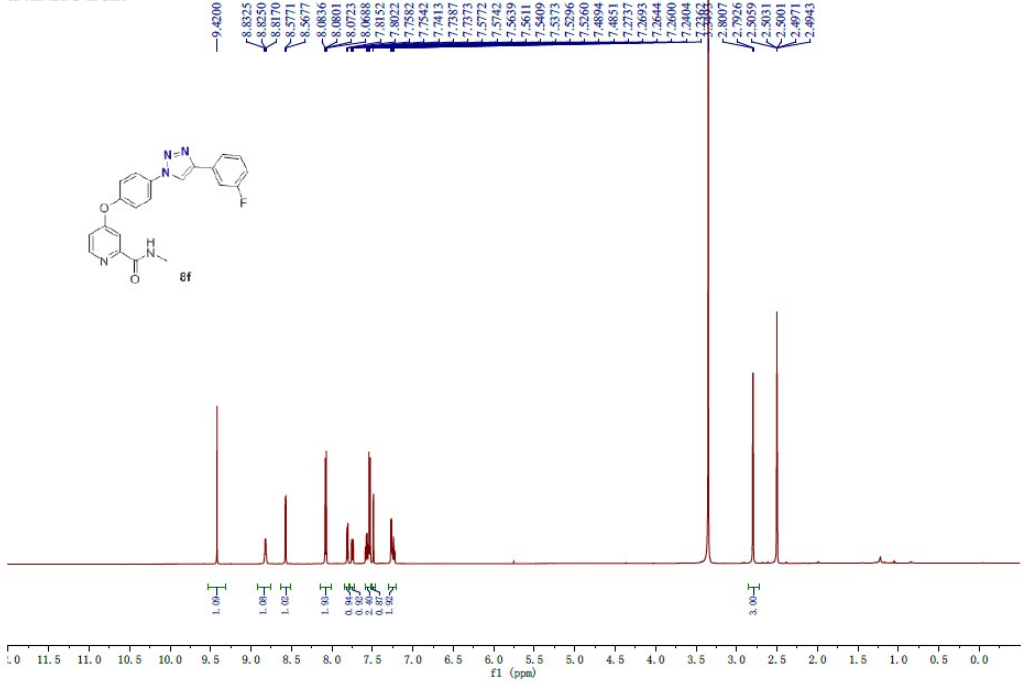
KPR-6

<sup>13</sup>C NMR KPR-6 in DMSO



KPR-2

<sup>1</sup>H NMR KPR-2 in DMSO

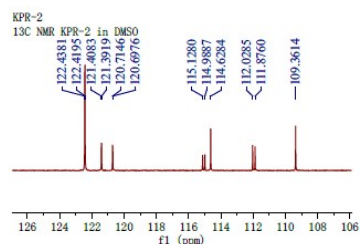
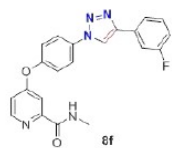




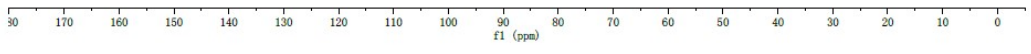
KPR-2

<sup>13</sup>C NMR KPR-2 in DMSO

165.1523  
163.7159  
161.8338  
153.4386  
152.6660  
150.6915  
146.2896  
146.2718  
134.0260  
132.6111  
132.5542  
131.3036  
131.2471  
122.4381  
122.4195  
121.4083  
114.9887  
114.6284  
112.0285  
111.8760  
109.3614



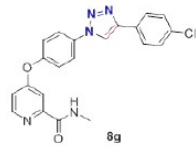
40.0561  
39.2888  
39.1719  
39.1590  
39.3807  
39.2415  
39.1024  
-26.0670



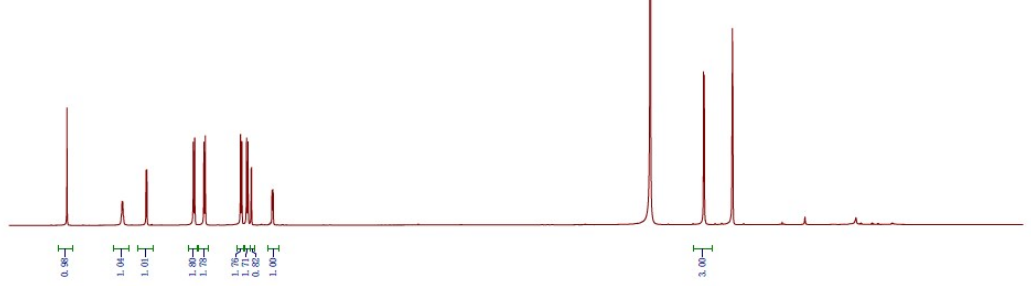
KPR-4

<sup>1</sup>H NMR KPR-4 in DMSO

9.4027  
8.8317  
8.8237  
8.8332  
8.5739  
8.0938  
8.0790  
7.9838  
7.9697  
7.6997  
7.5417  
7.5269  
7.4946  
7.4904  
7.2788  
7.2745  
7.2695  
7.2652

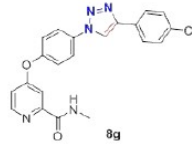


3.2461  
2.8079  
2.7998  
2.5110  
2.5082  
2.5055

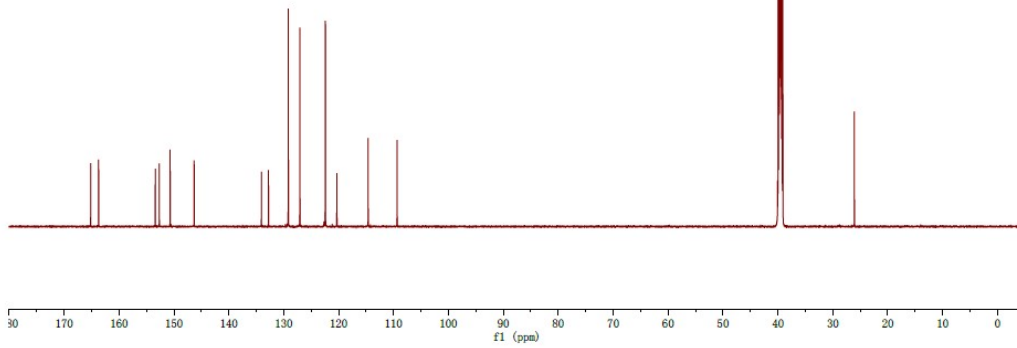


KPR-4  
 13C NMR KPR-4 in DMSO

165.1557  
 163.7154  
 153.3947  
 149.6677  
 150.6863  
 146.3047  
 134.0582  
 132.7746  
 129.1671  
 129.1424  
 127.0503  
 122.4186  
 122.3967  
 118.6289  
 120.3089  
 114.6216  
 109.3463

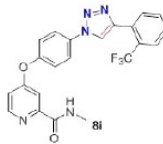


40.0555  
 39.7708  
 39.7086  
 39.6590  
 39.5199  
 39.3808  
 39.2416  
 39.1025  
 26.0663

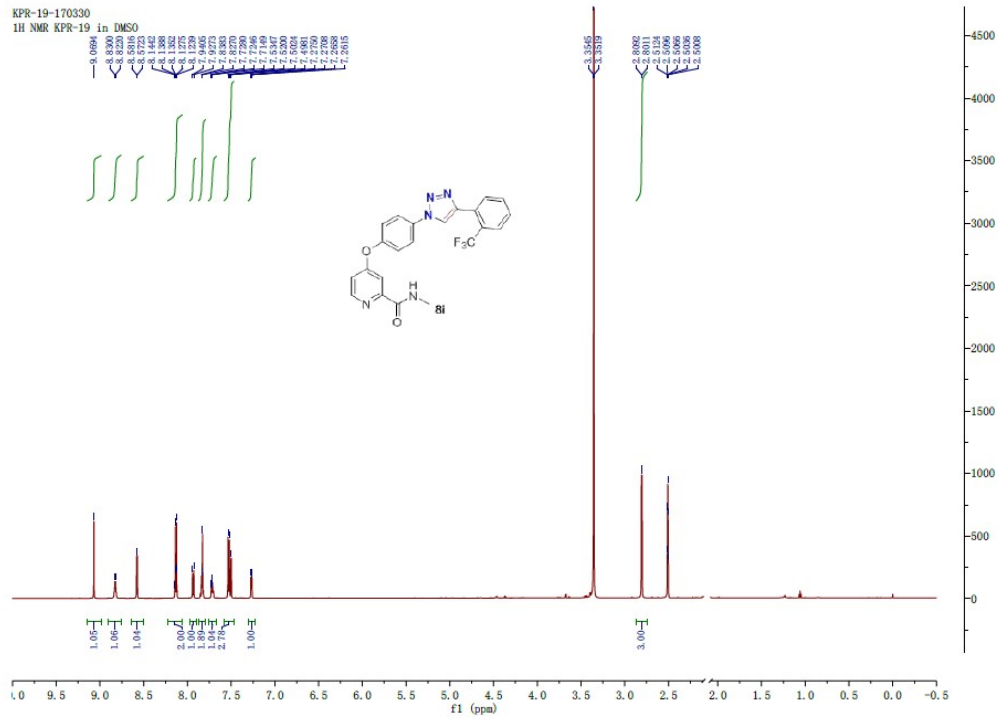


KPR-19-170330  
 1H NMR KPR-19 in DMSO

9.0928  
 8.8320  
 8.8145  
 8.6723  
 8.1385  
 8.1352  
 8.1229  
 7.9705  
 7.8383  
 7.7290  
 7.7246  
 7.5300  
 7.5247  
 7.4981  
 7.2730  
 7.2658  
 7.2615



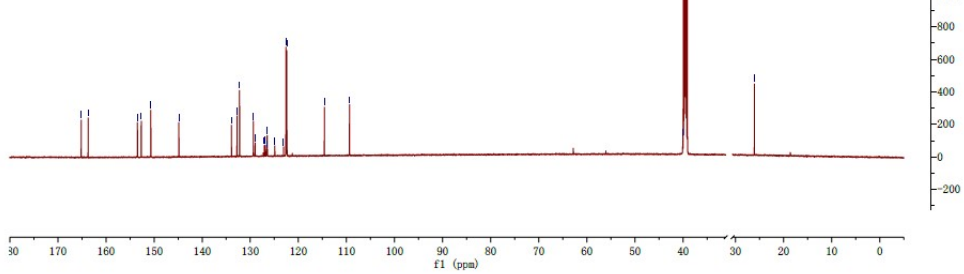
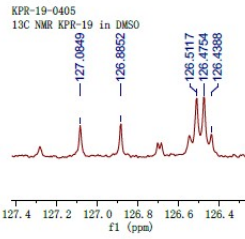
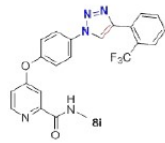
3.3545  
 3.3319  
 2.8862  
 2.8124  
 2.6996  
 2.6096  
 2.5008



KPR-19-0405

<sup>13</sup>C NMR KPR-19 in DMSO

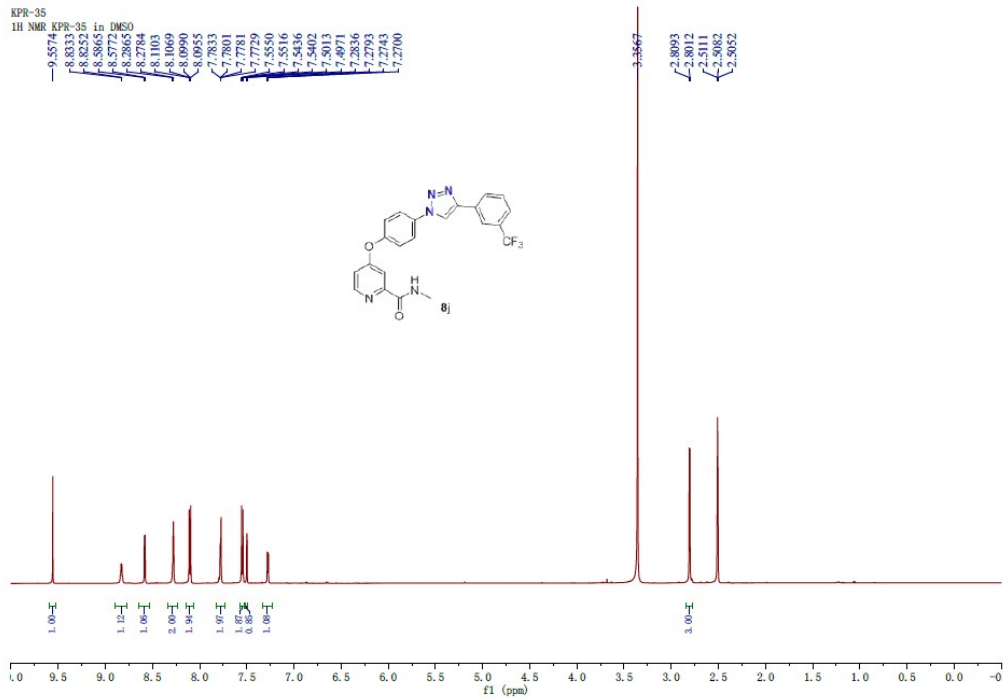
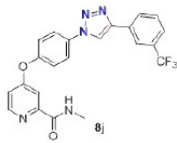
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163.7150  
153.4535  
152.6695  
150.6764  
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132.7555  
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128.9787  
128.5117  
128.4754  
127.5984  
126.6984  
109.3712



KPR-35

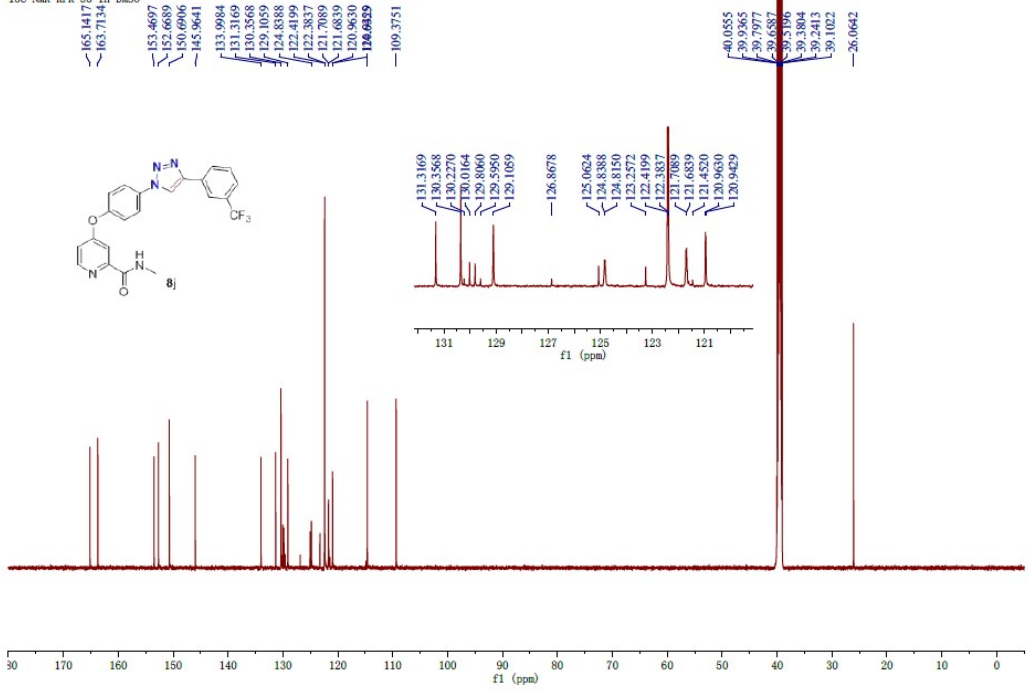
<sup>1</sup>H NMR KPR-35 in DMSO

9.5574  
8.8333  
8.8252  
8.8065  
8.5772  
8.2865  
8.2784  
8.1103  
8.1069  
8.0959  
8.0655  
8.0533  
7.7801  
7.7781  
7.7729  
7.5550  
7.5516  
7.5436  
7.5402  
7.4971  
7.4971  
7.2836  
7.2793  
7.2743  
7.2700



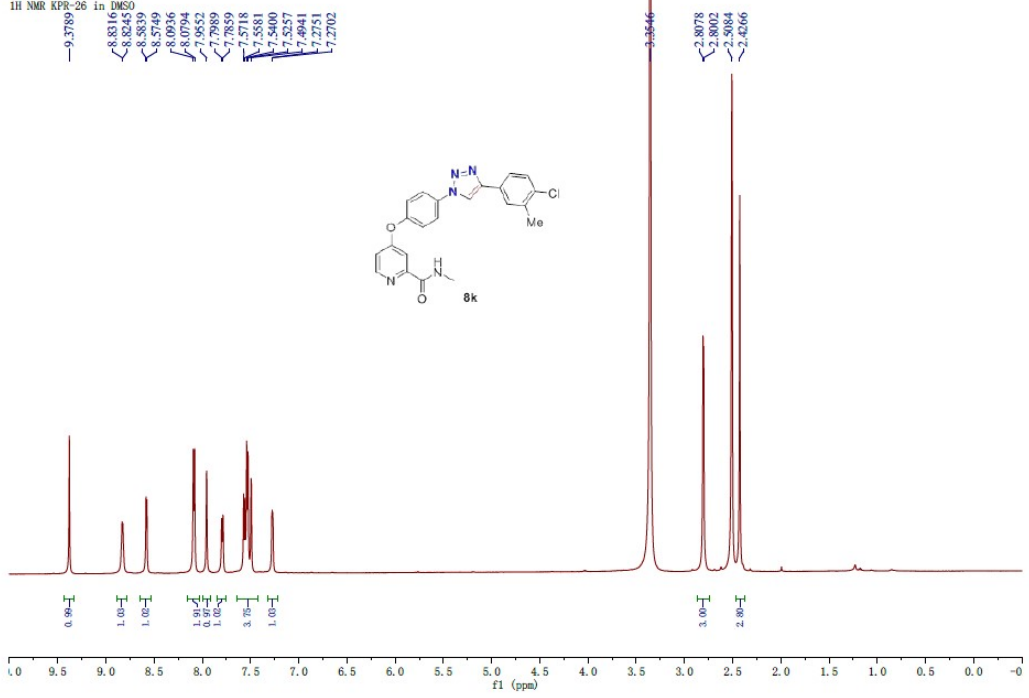
KPR-35

<sup>13</sup>C NMR KPR-35 in DMSO

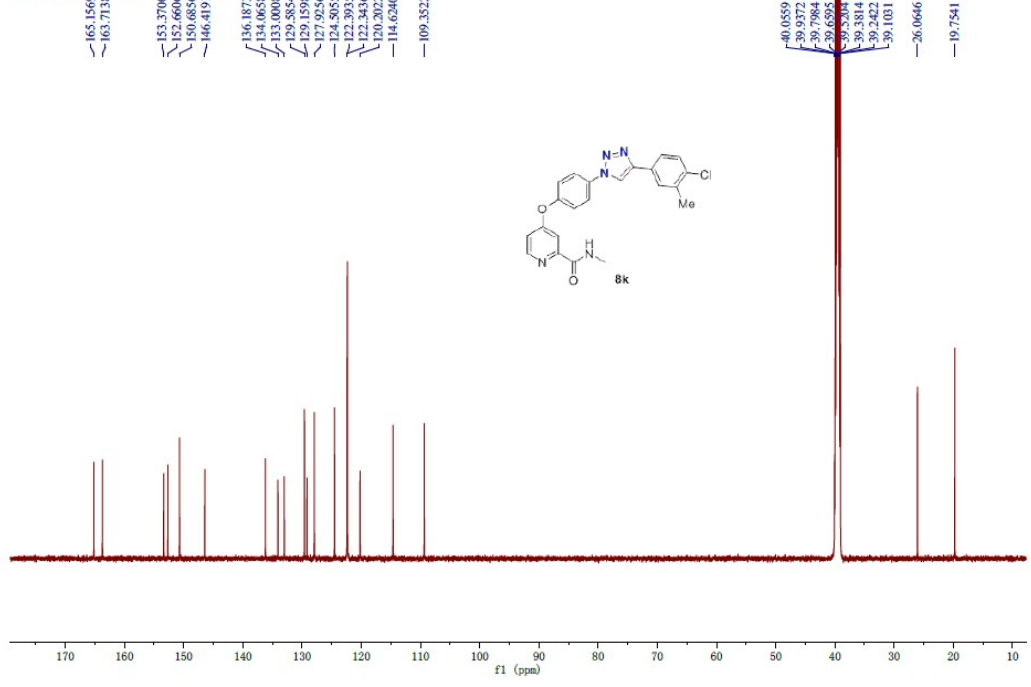


KPR-26

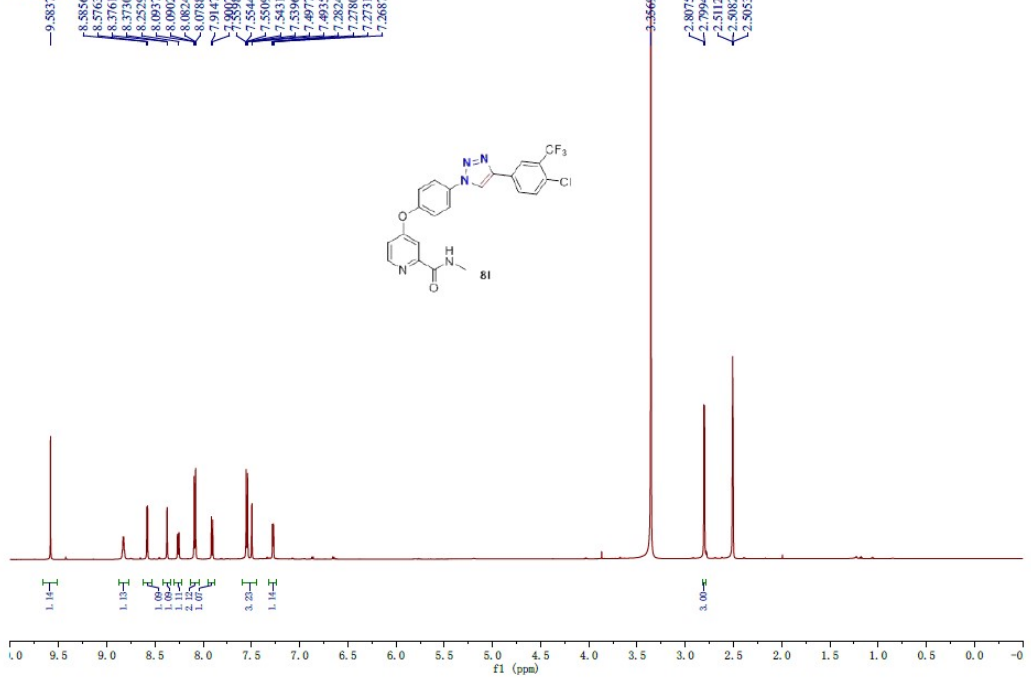
<sup>1</sup>H NMR KPR-26 in DMSO



KPR-26  
 13C NMR KPR-26 in DMSO



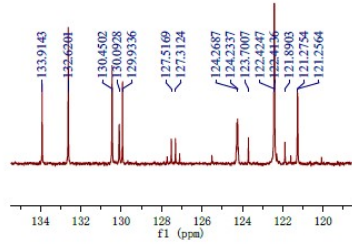
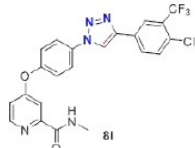
KPR-18  
 1H NMR KPR-18 in DMSO



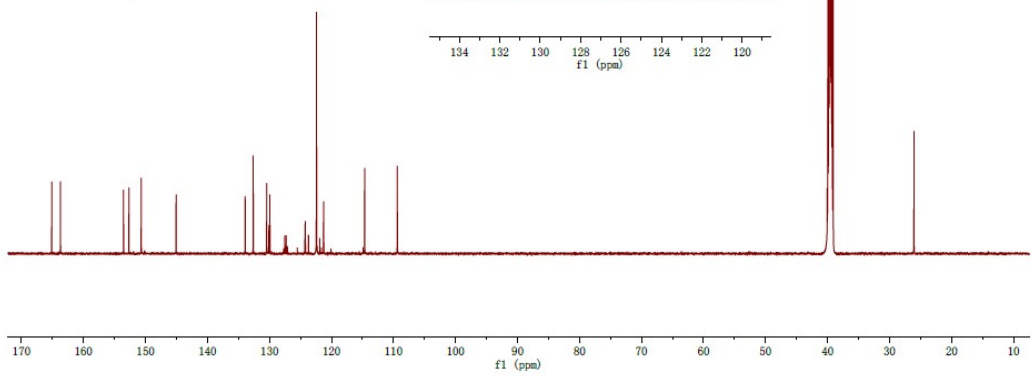
KPR-18

<sup>13</sup>C NMR KPR-18 in DMSO

165.1192  
163.7091  
153.5353  
152.6708  
150.6942  
145.0596  
133.9143  
132.6201  
130.4502  
130.0928  
129.9336  
124.2687  
122.4247  
122.4136  
121.8983  
121.2564  
109.3801



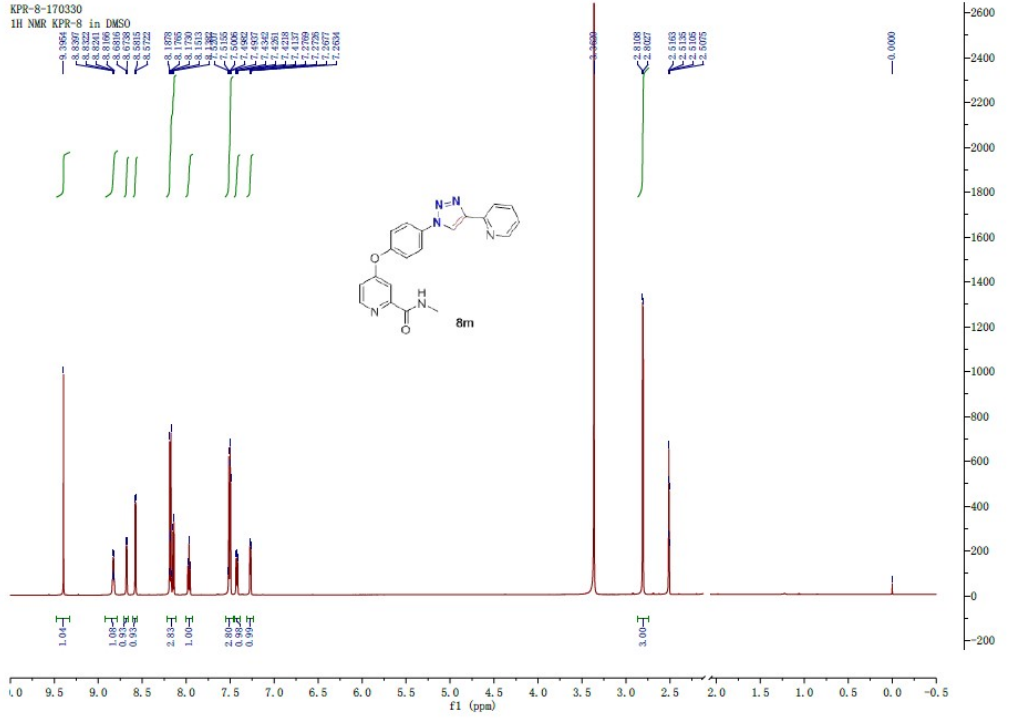
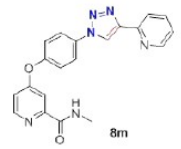
40.0561  
39.9573  
39.7965  
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26.0648



KPR-8-170330

<sup>1</sup>H NMR KPR-8 in DMSO

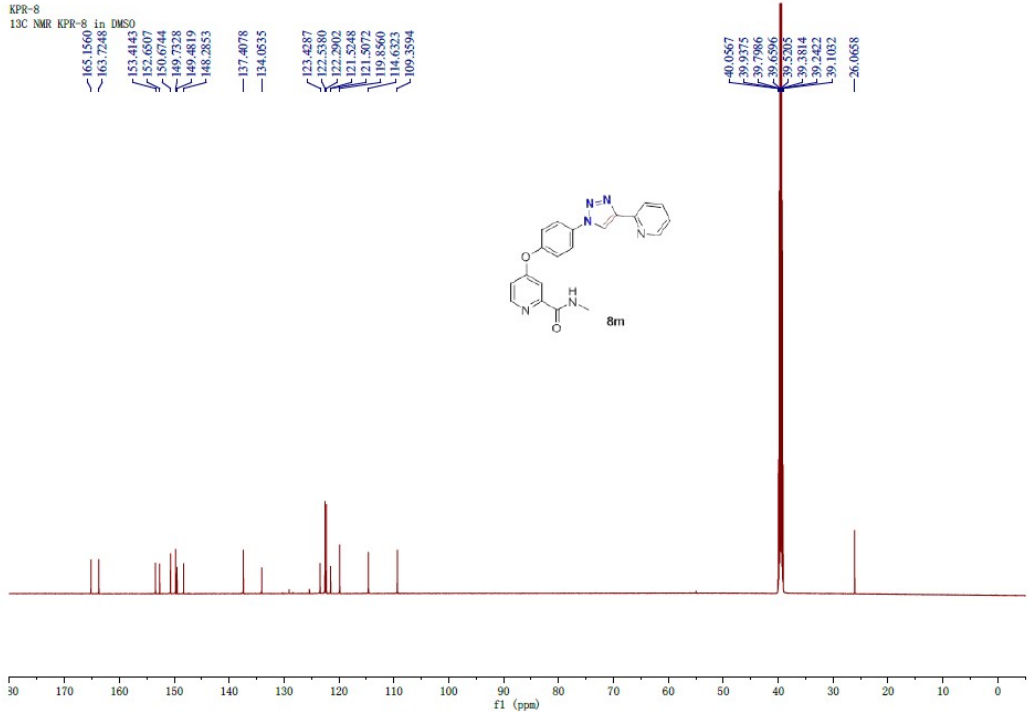
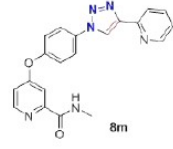
8.3826  
8.3821  
8.3816  
8.3783  
8.3722  
8.1828  
8.1795  
8.1720  
8.1692  
8.1662  
7.5135  
7.5105  
7.4906  
7.4877  
7.4822  
7.4218  
7.3729  
7.3725  
7.2834  
3.4200  
2.8188  
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2.5163  
2.5135  
2.5075  
0.0000



KPR-8

<sup>13</sup>C NMR KPR-8 in DMSO

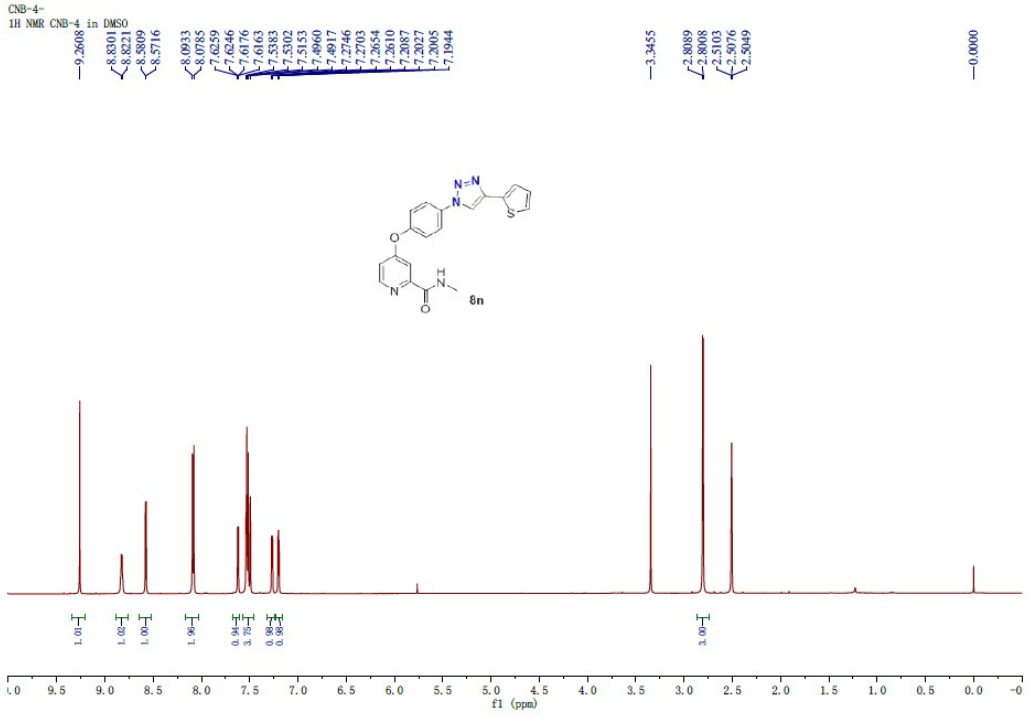
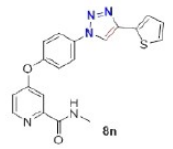
165.1560  
163.7248  
153.4143  
152.6469  
150.6744  
149.7328  
149.4819  
148.2853  
137.4078  
134.0335  
121.4287  
122.5380  
122.2902  
121.5248  
121.5072  
119.8560  
114.6323  
109.3594



CNB-4-

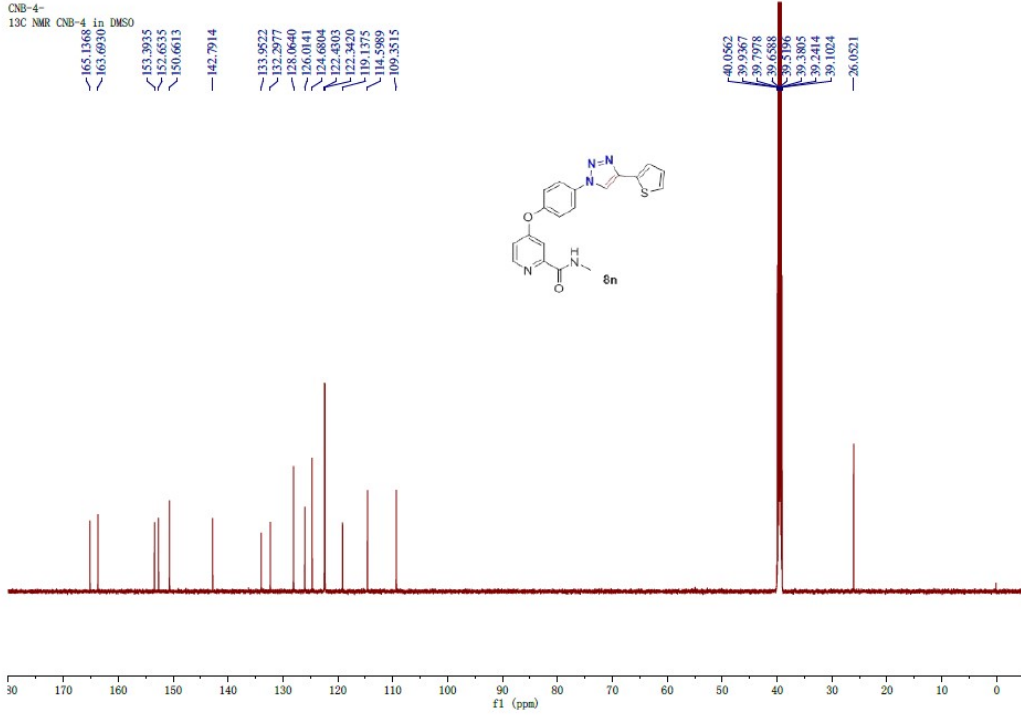
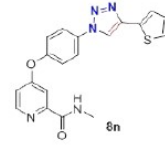
<sup>1</sup>H NMR CNB-4 in DMSO

9.2608  
8.8301  
8.8221  
8.8009  
8.5716  
8.0933  
8.0785  
7.6259  
7.6246  
7.6176  
7.5883  
7.5302  
7.5153  
7.4960  
7.4917  
7.2746  
7.2703  
7.2654  
7.2610  
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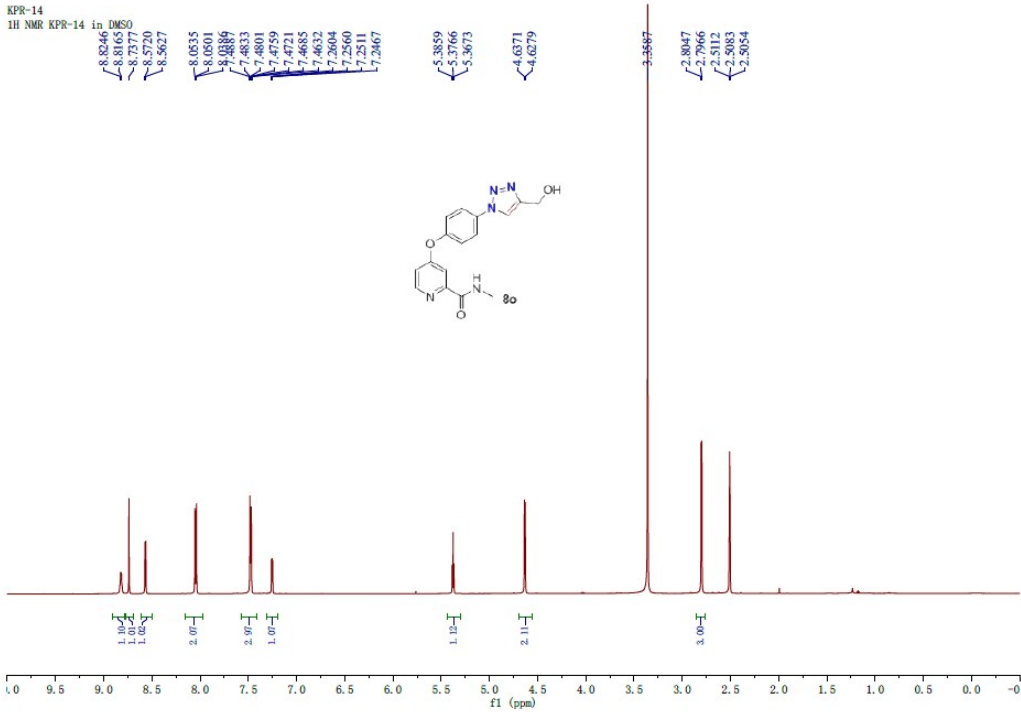
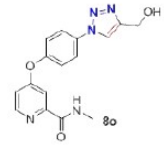
CNB-4-  
13C NMR CNB-4 in DMSO

165.1368  
163.6930  
151.3035  
152.6535  
150.6613  
142.7914  
133.9522  
132.2977  
129.8970  
126.0041  
124.6804  
122.4303  
122.3420  
119.1375  
114.5989  
109.3515



KPR-14  
1H NMR KPR-14 in DMSO

8.8246  
8.8105  
8.7377  
8.7236  
8.5627  
8.0535  
8.0501  
8.0386  
7.8633  
7.8599  
7.821  
7.821  
7.685  
7.632  
7.604  
7.2560  
7.2511  
7.2467  
5.3859  
5.3766  
5.3673  
4.6371  
4.6279





KPR-14

<sup>13</sup>C NMR KPR-14 in DMSO

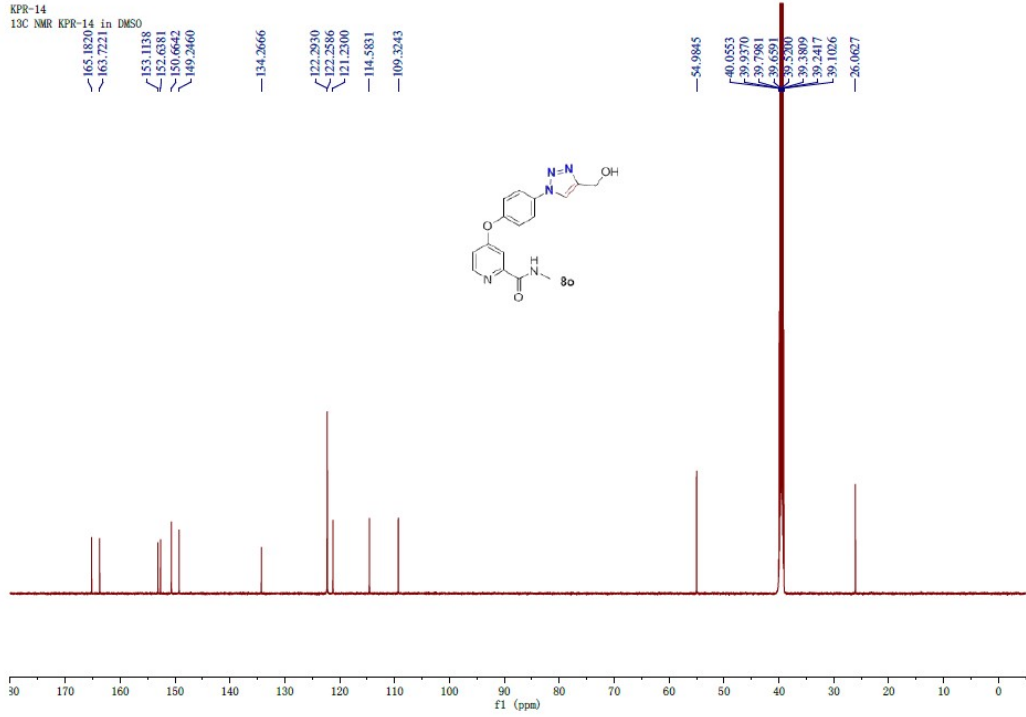
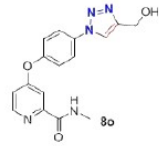
165.1820  
163.7221  
153.1138  
152.6381  
150.6642  
149.2460

134.2666

122.2930  
122.2586  
121.2500

114.5831

109.3243

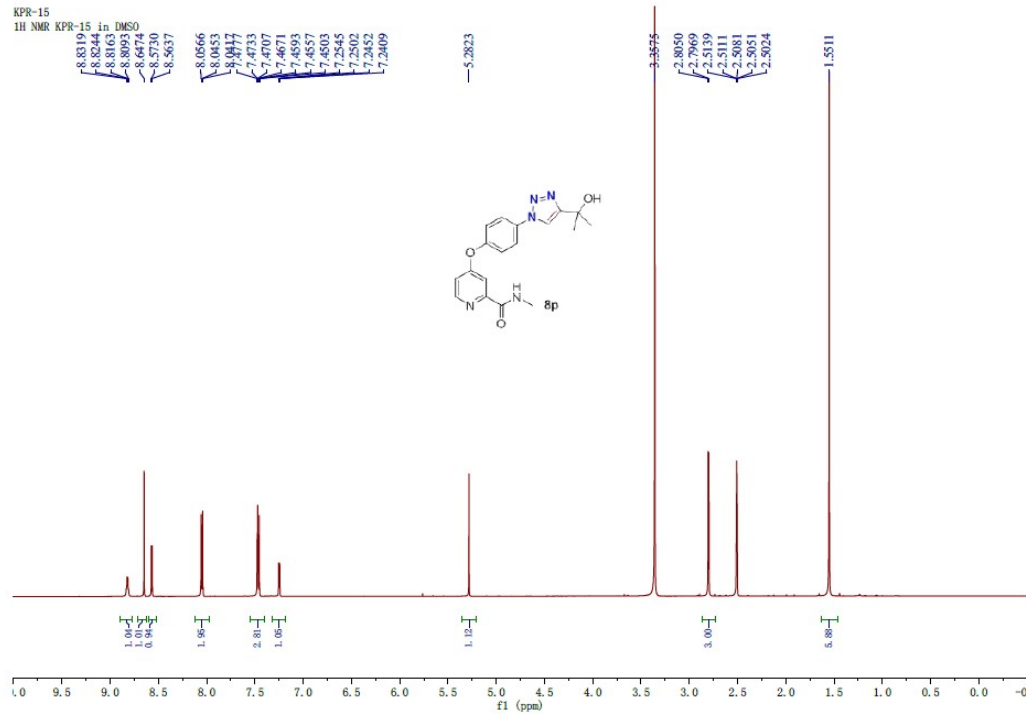
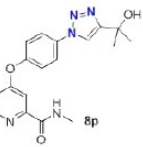


KPR-15

<sup>1</sup>H NMR KPR-15 in DMSO

8.8319  
8.8244  
8.8169  
8.8094  
8.6774  
8.2730  
8.3637

8.0666  
8.0453  
7.8777  
7.8733  
7.4707  
7.4671  
7.4635  
7.4599  
7.4563  
7.2845  
7.2502  
7.2452  
7.2409



KPR-15

13C NMR KPR-15 DMSO

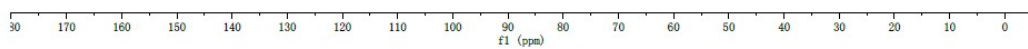
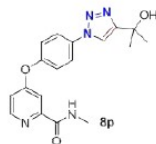
165.1897  
163.7206  
157.0290  
153.0149  
152.6364  
150.6614

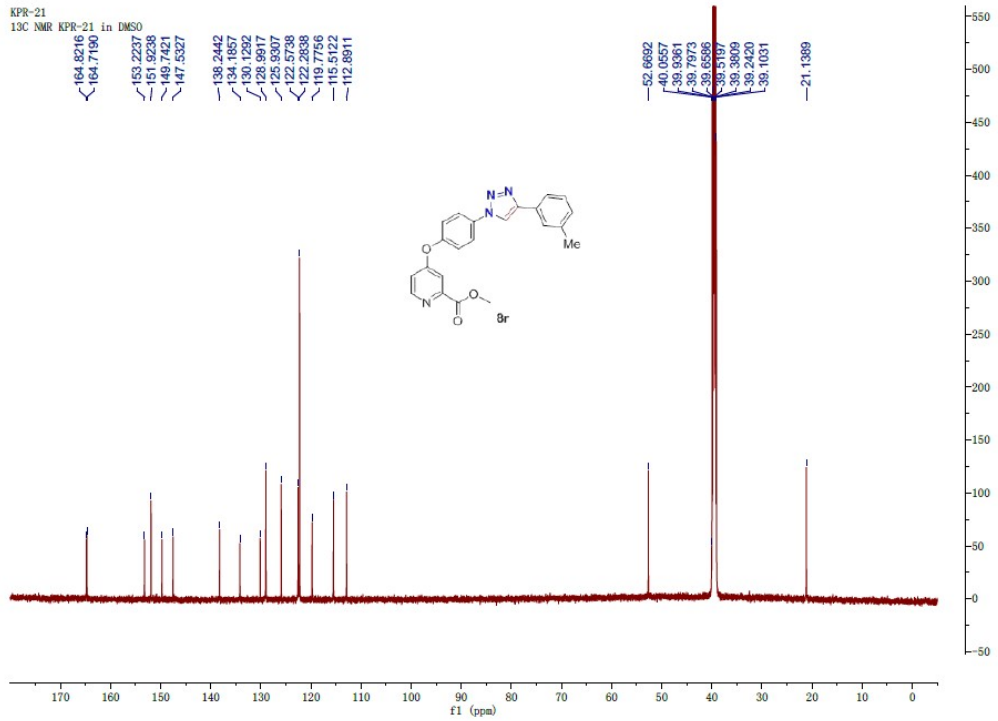
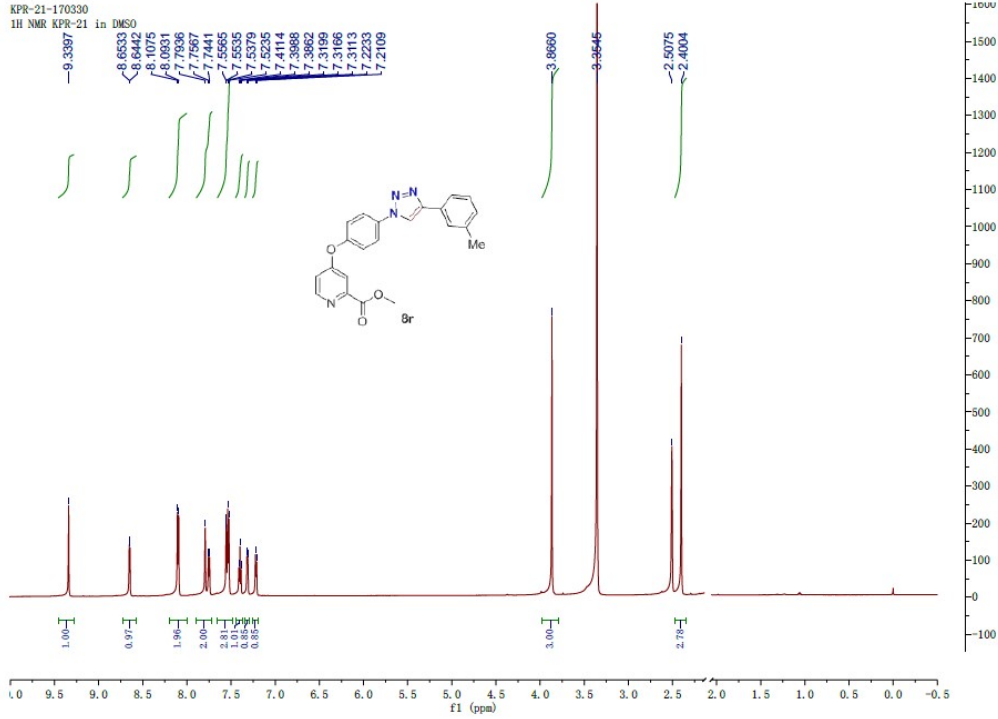
134.3424

122.2514  
122.1748  
119.1026  
114.5750  
109.3283

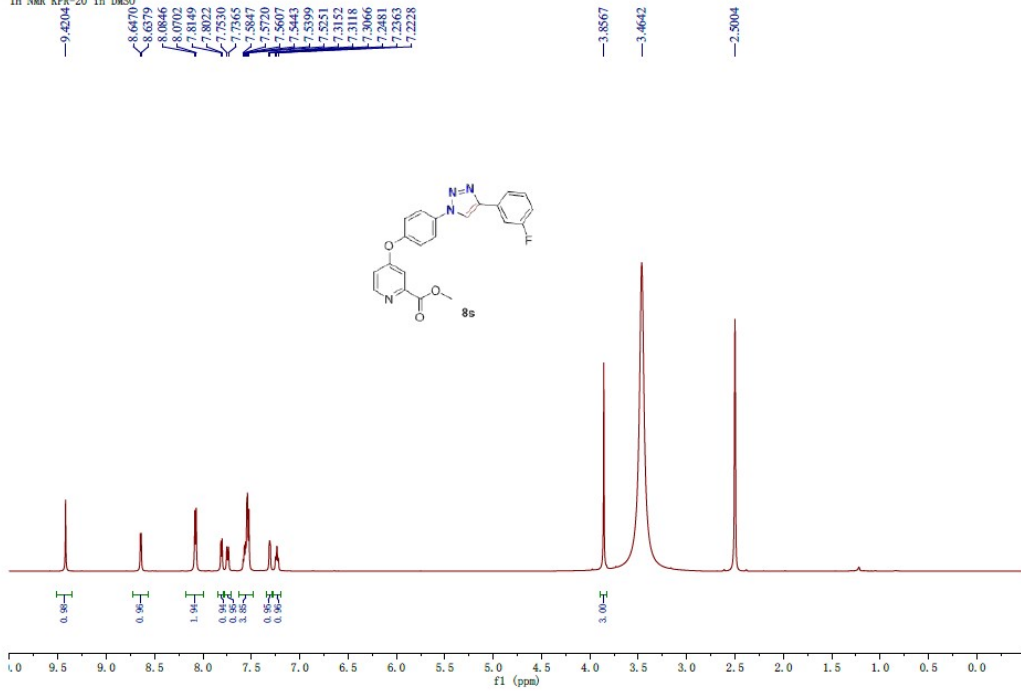
67.0245

40.0561  
39.9567  
39.7979  
39.6588  
39.5187  
39.3806  
39.2415  
39.1023  
38.9631  
26.0625



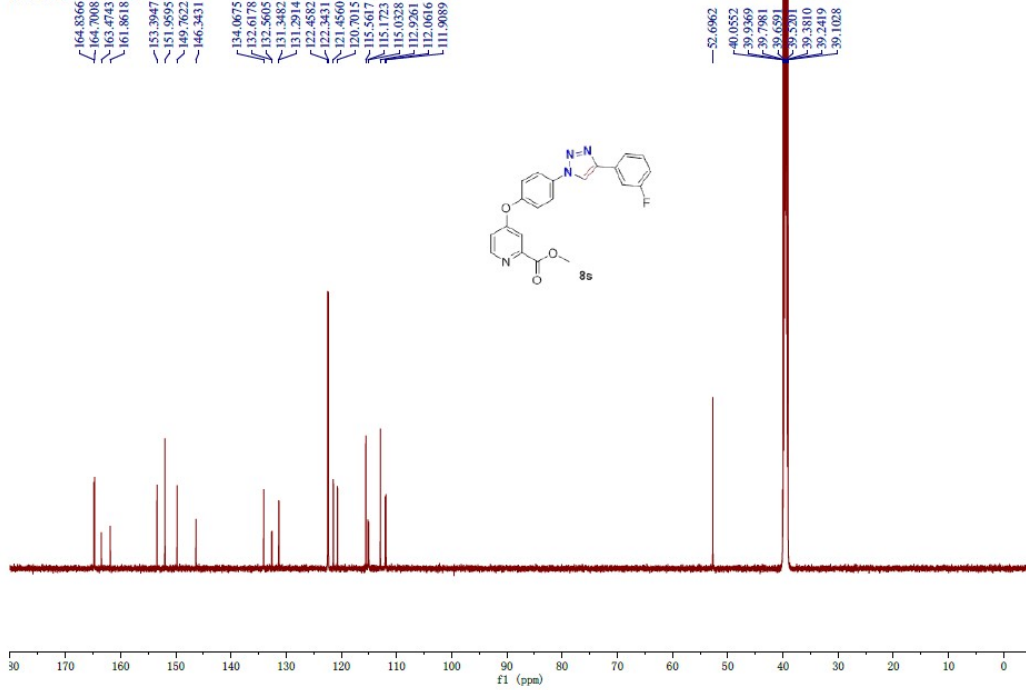


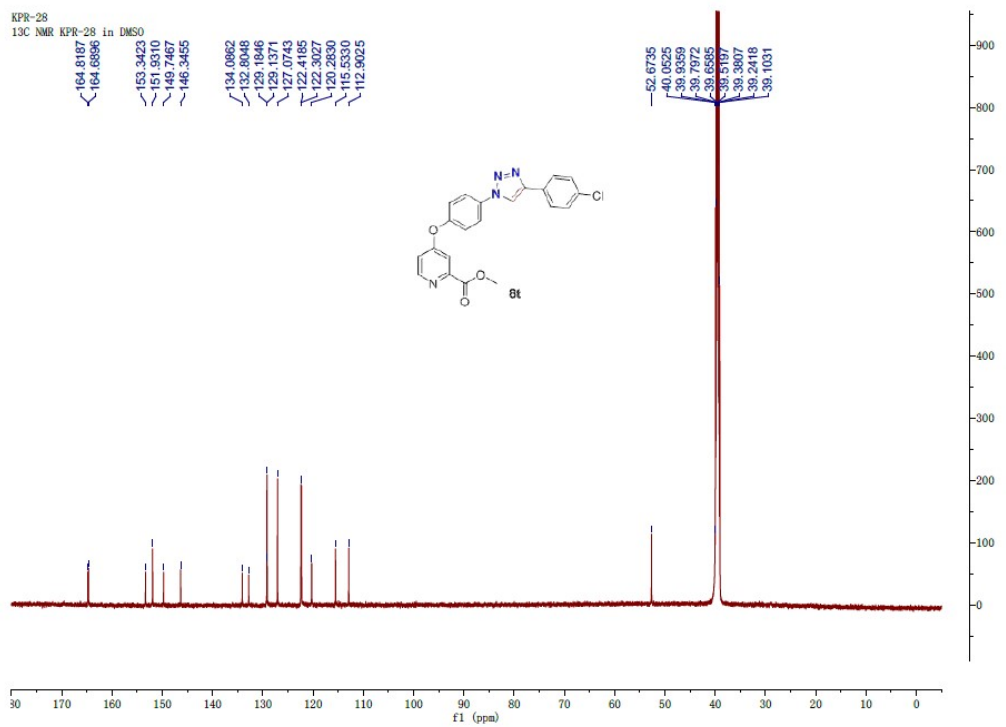
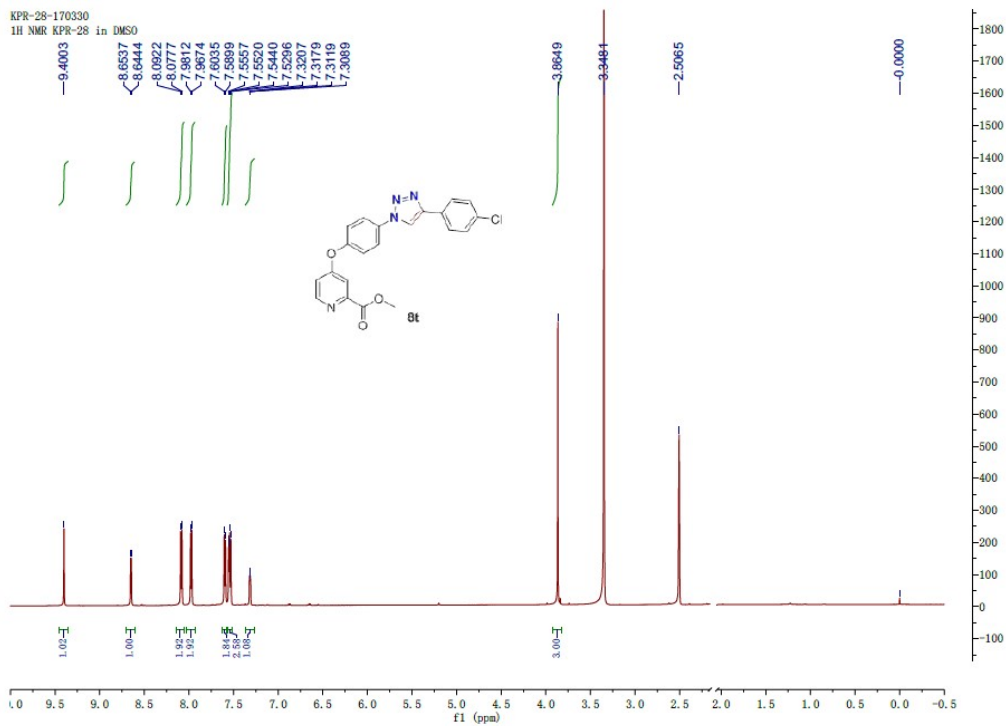
KPR-20  
1H NMR KPR-20 in DMSO



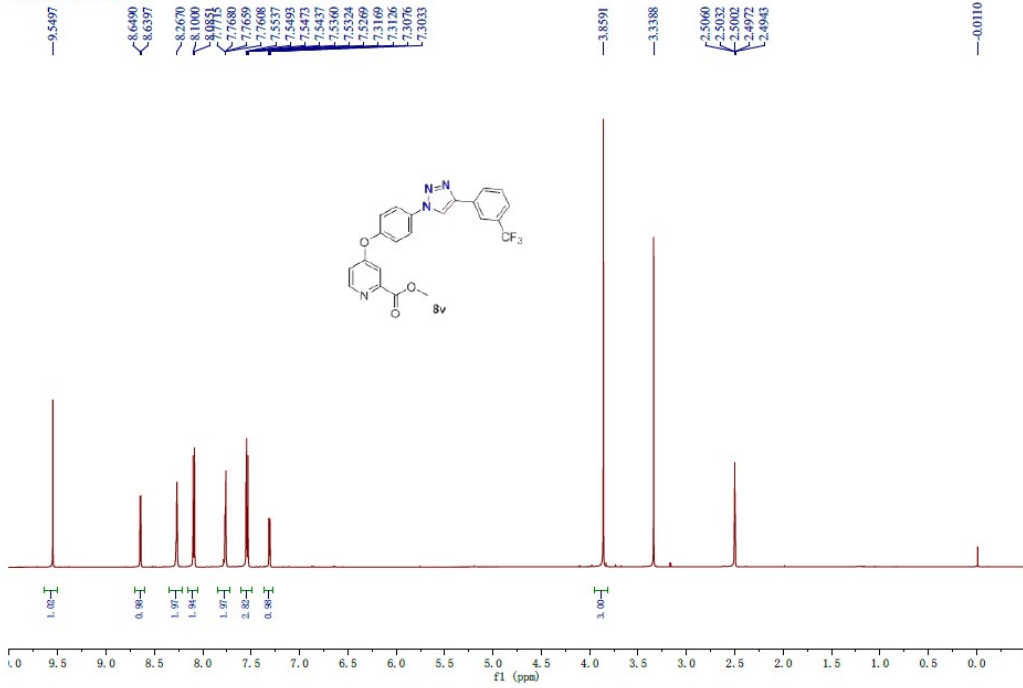
KPR-20

13C NMR KPR-20 in DMSO

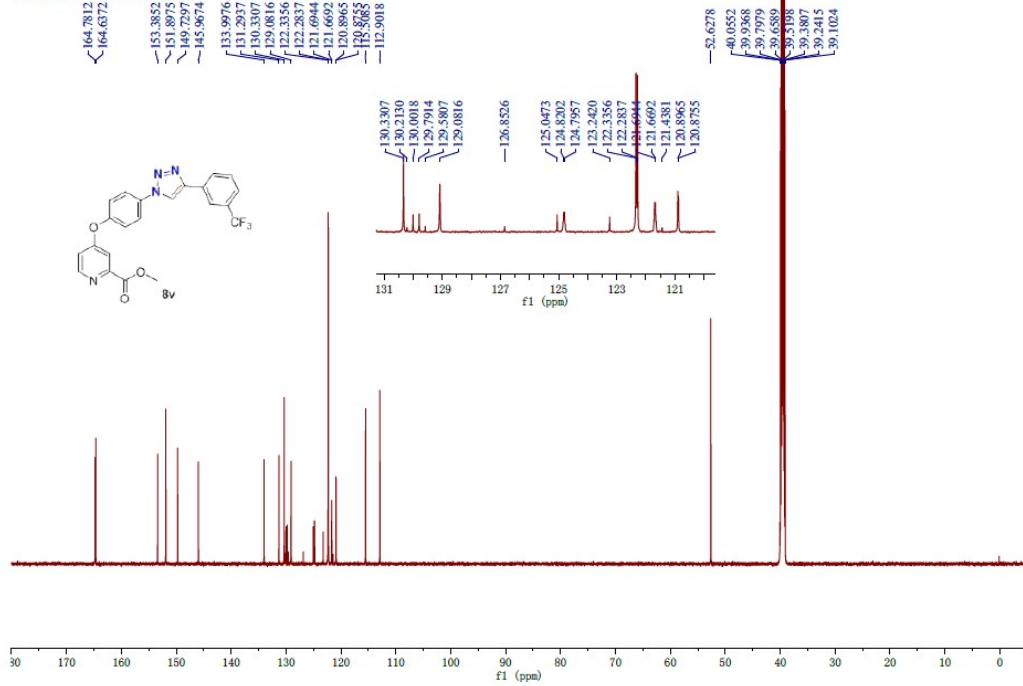




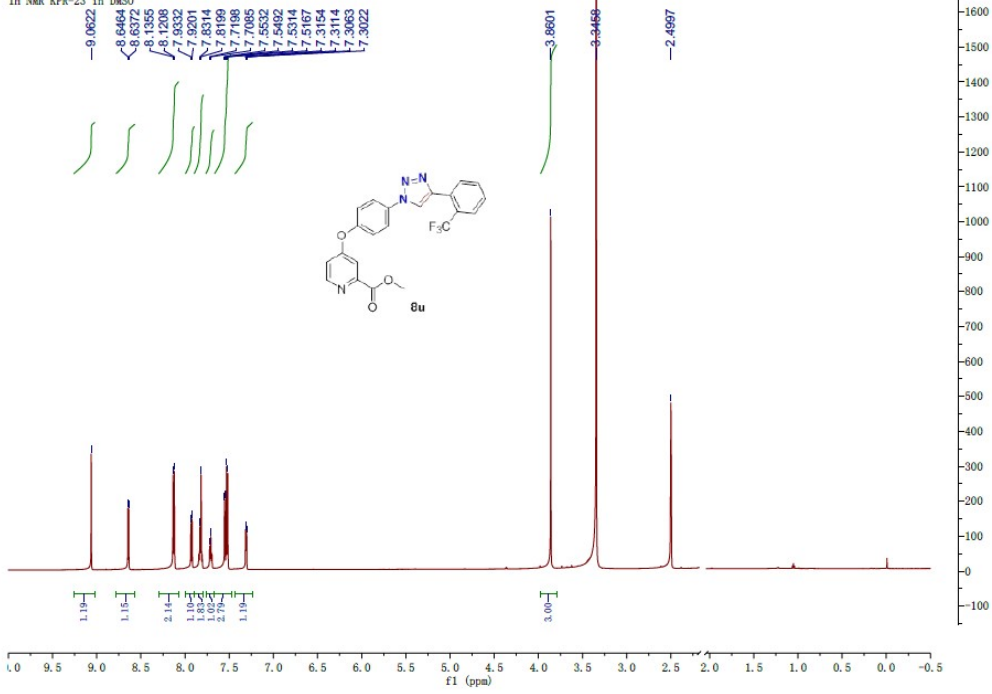
KPR-34  
<sup>1</sup>H NMR KPR-34 in DMSO



KPR-34  
<sup>13</sup>C NMR KPR-34 in DMSO



KPR-23-170330  
1H NMR KPR-23 in DMSO



KPR-23  
13C NMR KPR-23 in DMSO

