

## Supporting Information

# Molecular Hybrids of Pyrazolo[3,4-*b*]pyridine and Triazole: Design, Synthesis and In Vitro Antibacterial Studies

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02	<sup>13</sup> C NMR spectrum of 3-Methyl-1-((1-( <i>o</i> -tolyl)-1 <i>H</i> -1,2,3-triazol-4-yl)methyl)-1 <i>H</i> -pyrazolo[3,4- <i>b</i> ]pyridine (14)
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09	<sup>13</sup> C NMR spectrum of 1-((1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (16)
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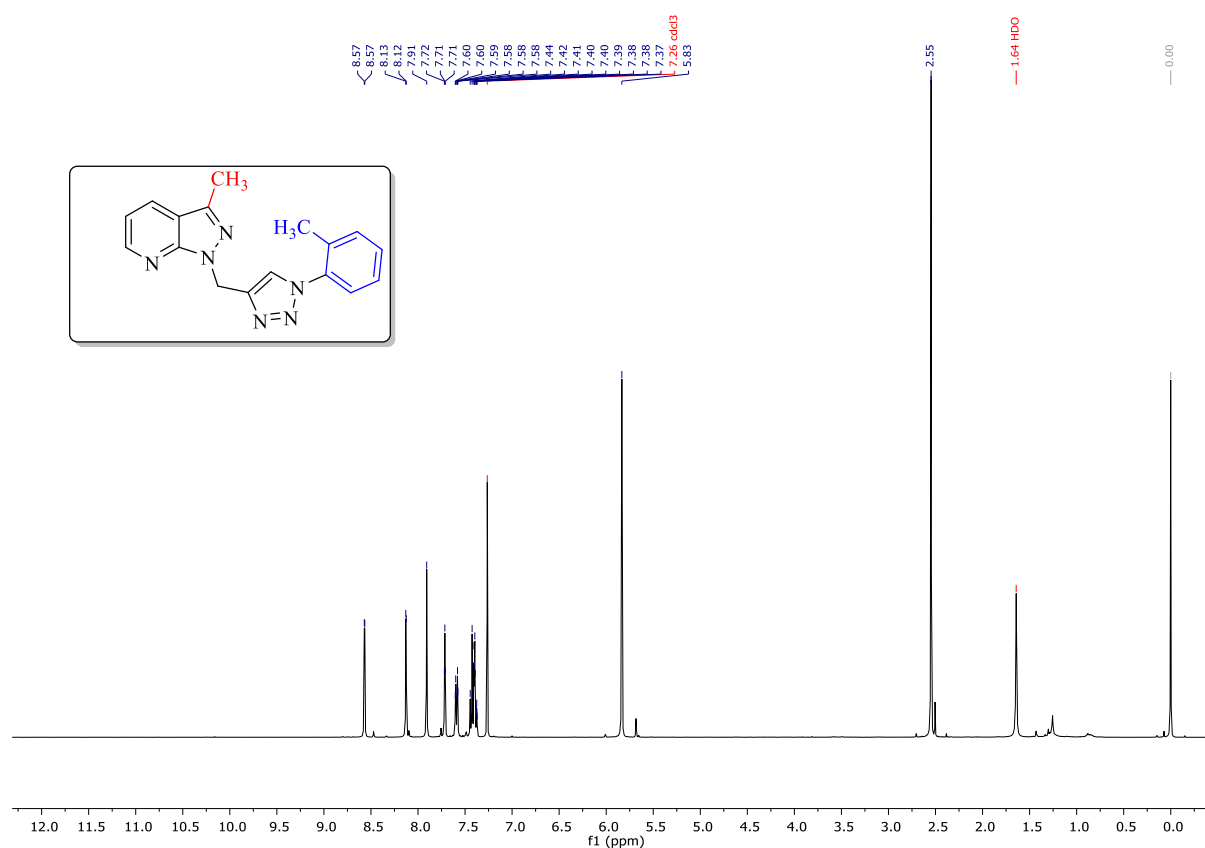
65	<sup>1</sup> H NMR spectrum of (1-(2-Chloro-5-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl-1-((1-(2-chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (28)
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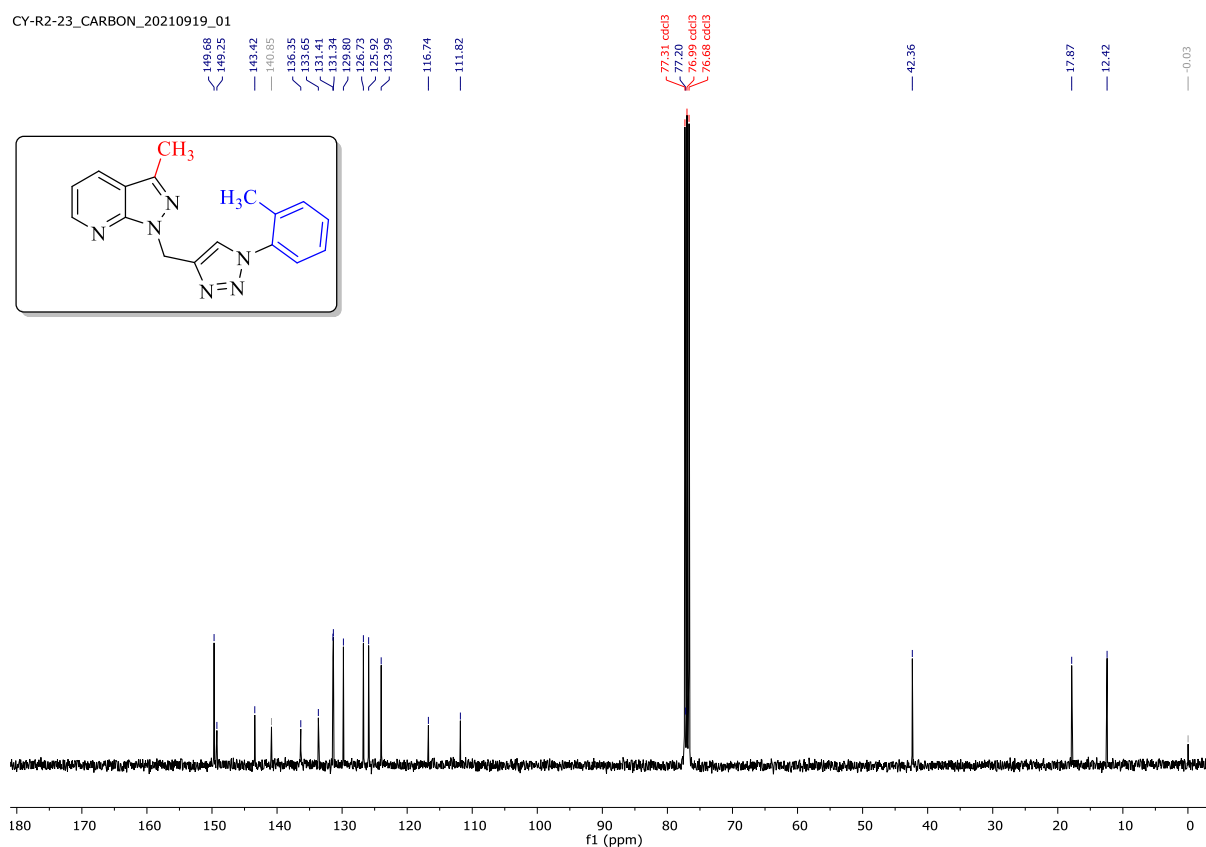
## Spectra:

<sup>1</sup>H NMR spectrum of 3-Methyl-1-((1-(*o*-tolyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-*b*]pyridine (14)

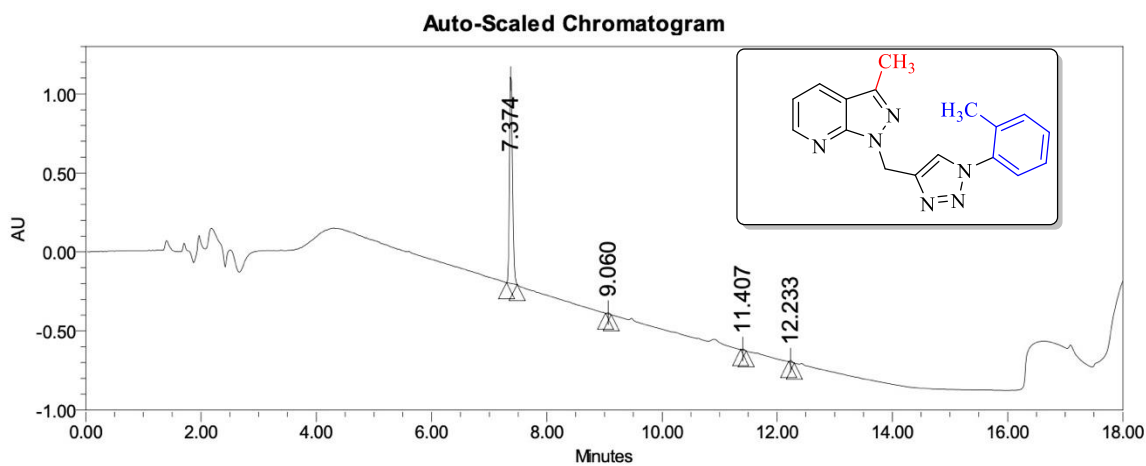


<sup>13</sup>C NMR spectrum of 3-Methyl-1-((1-(*o*-tolyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-*b*]pyridine (14)

CY-R2-23\_CARBON\_20210919\_01



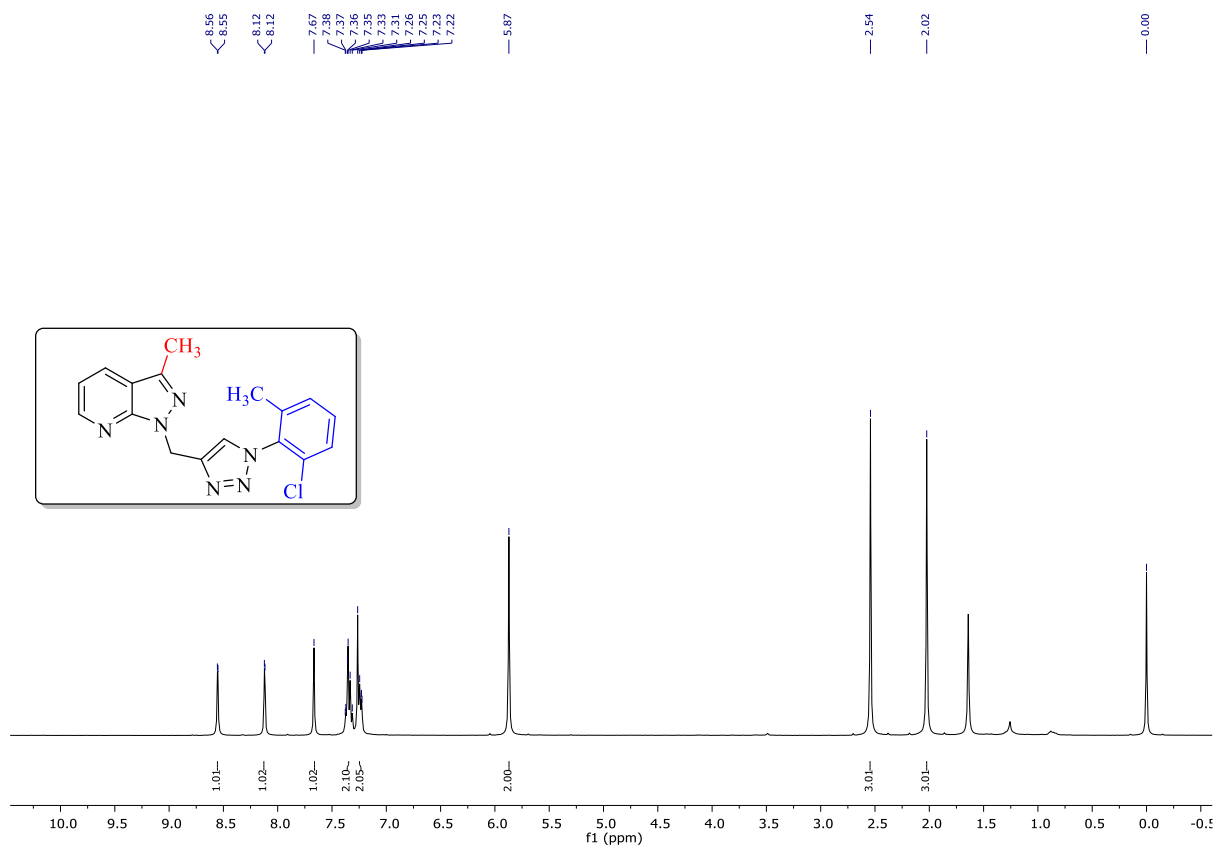
HPLC chromatogram of 3-Methyl-1-((1-(o-tolyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine (14)



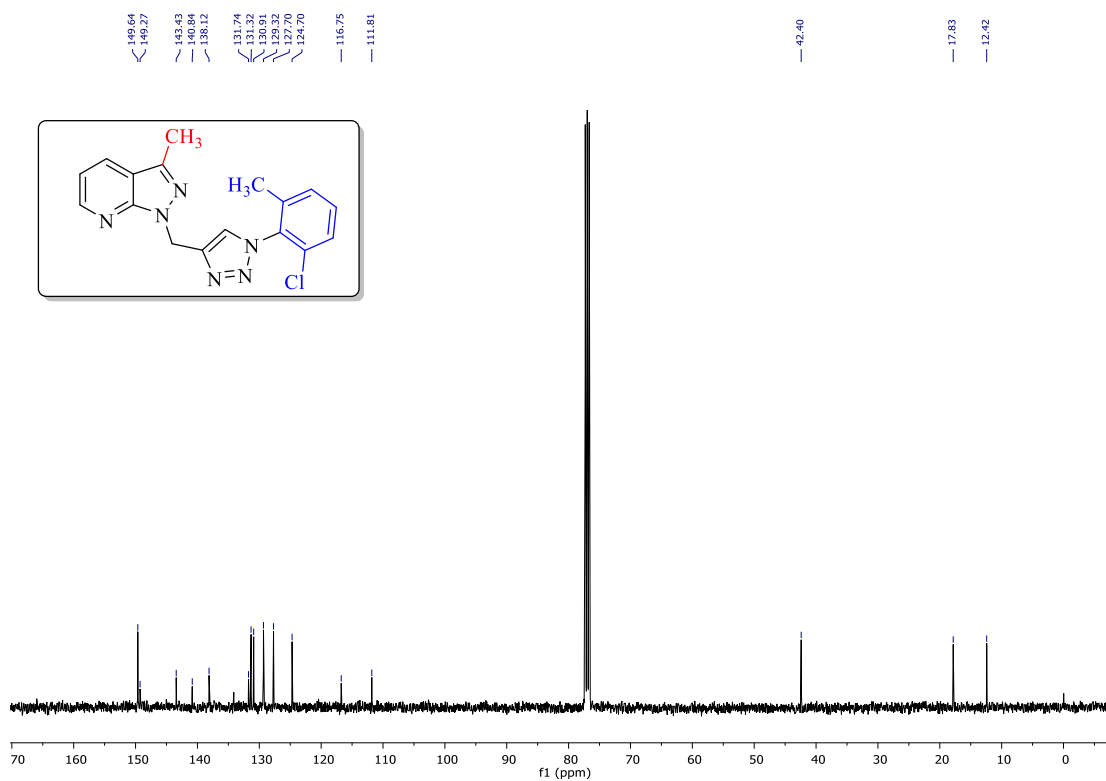
#### Peak Results

	Name	RT	Area	% Area
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2		9.060	26208	0.55
3		11.407	19985	0.42
4		12.233	32574	0.68

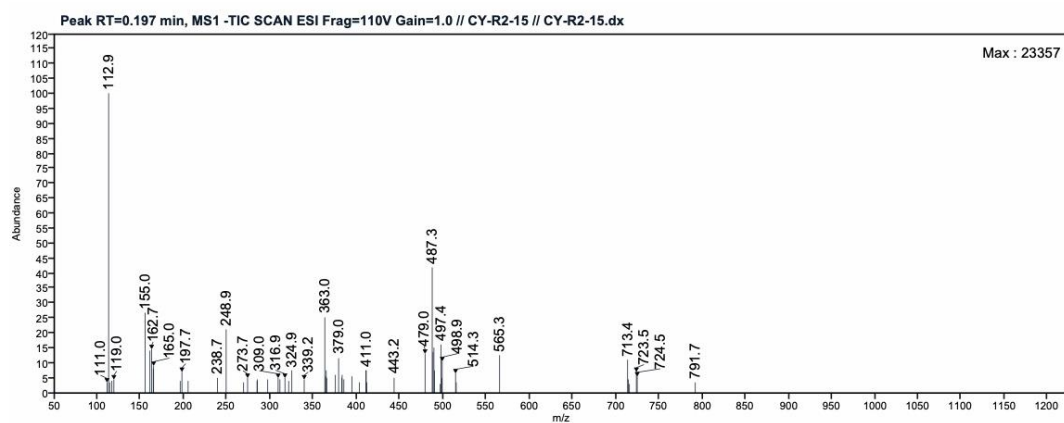
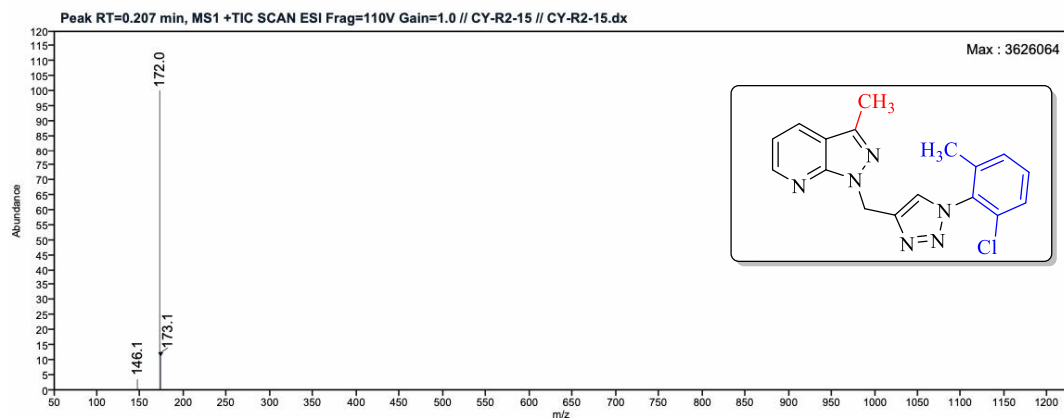
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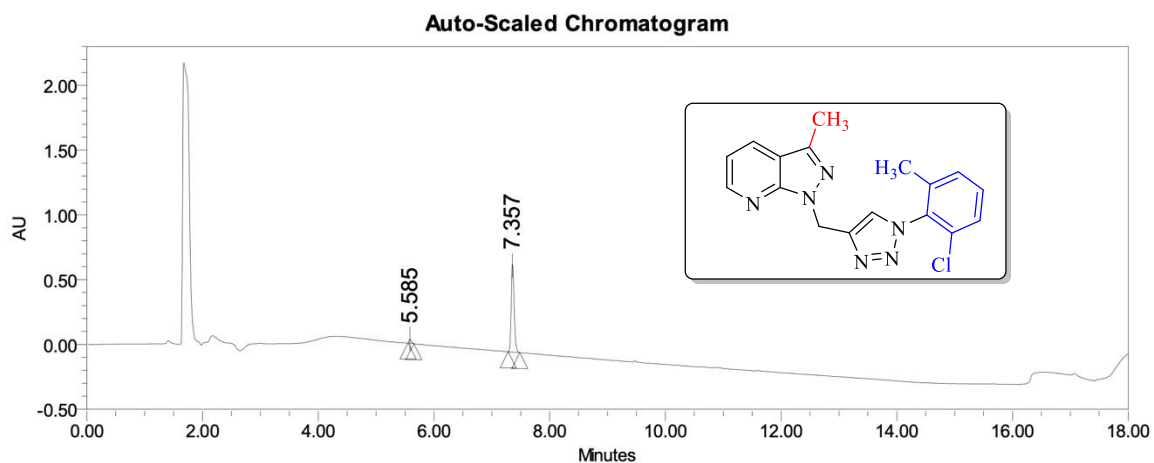
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Mass spectrum of 1-((1-(2-Chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (15)



HPLC chromatogram of 1-((1-(2-Chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (15)

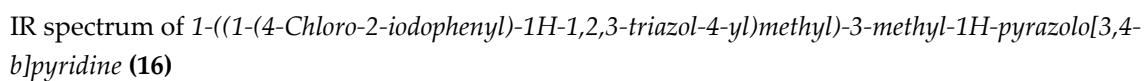
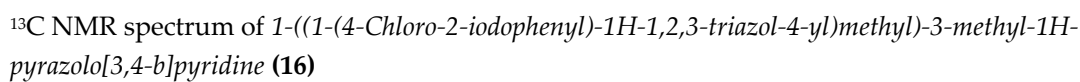


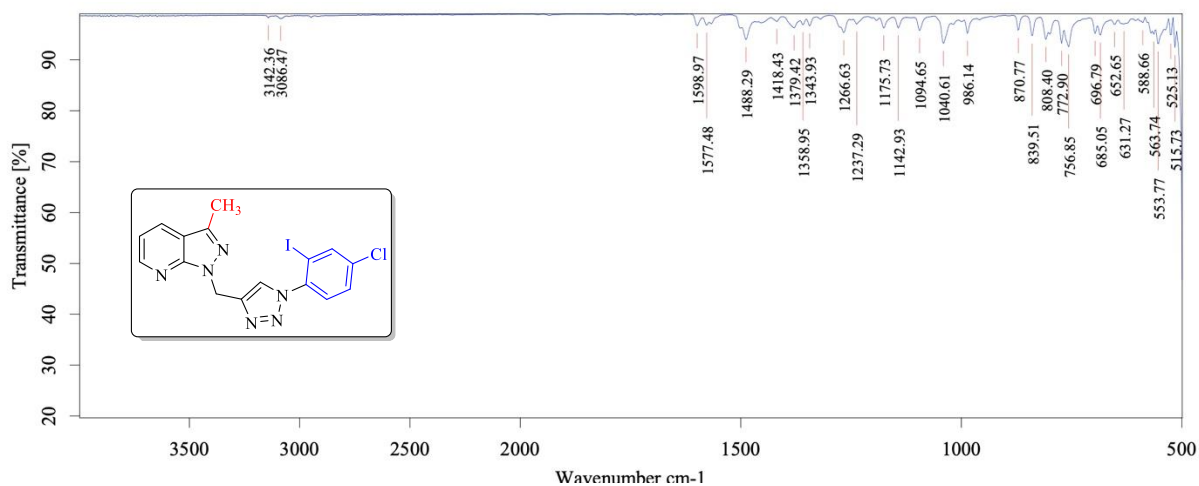
#### Peak Results

	Name	RT	Area	% Area
1		5.585	82860	3.37
2		7.357	2373545	96.63

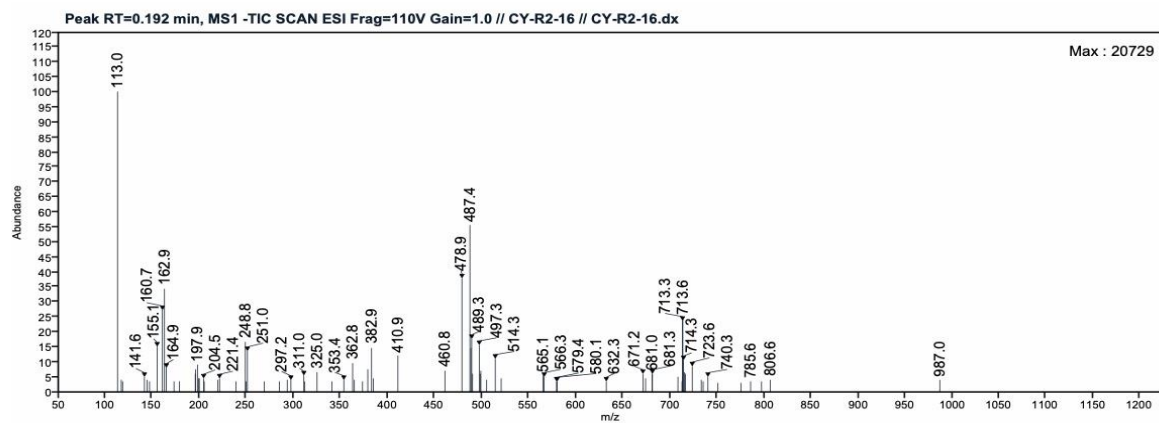
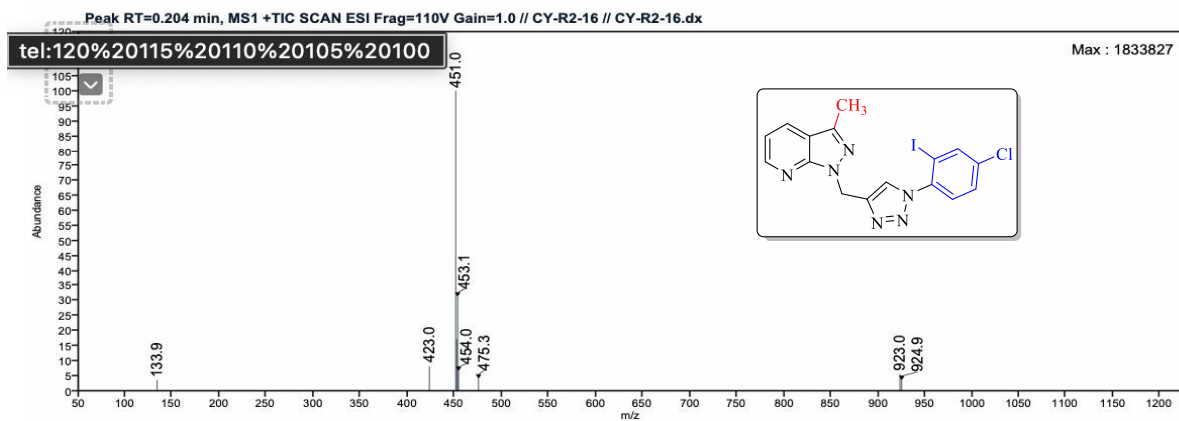
<sup>1</sup>H NMR spectrum of 1-((1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (16)



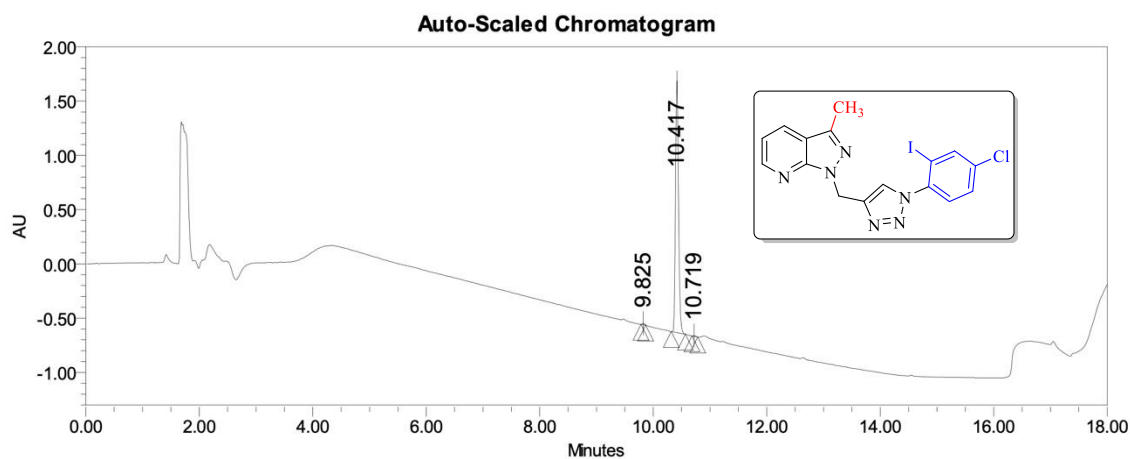




Mass spectrum of 1-((1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (16)



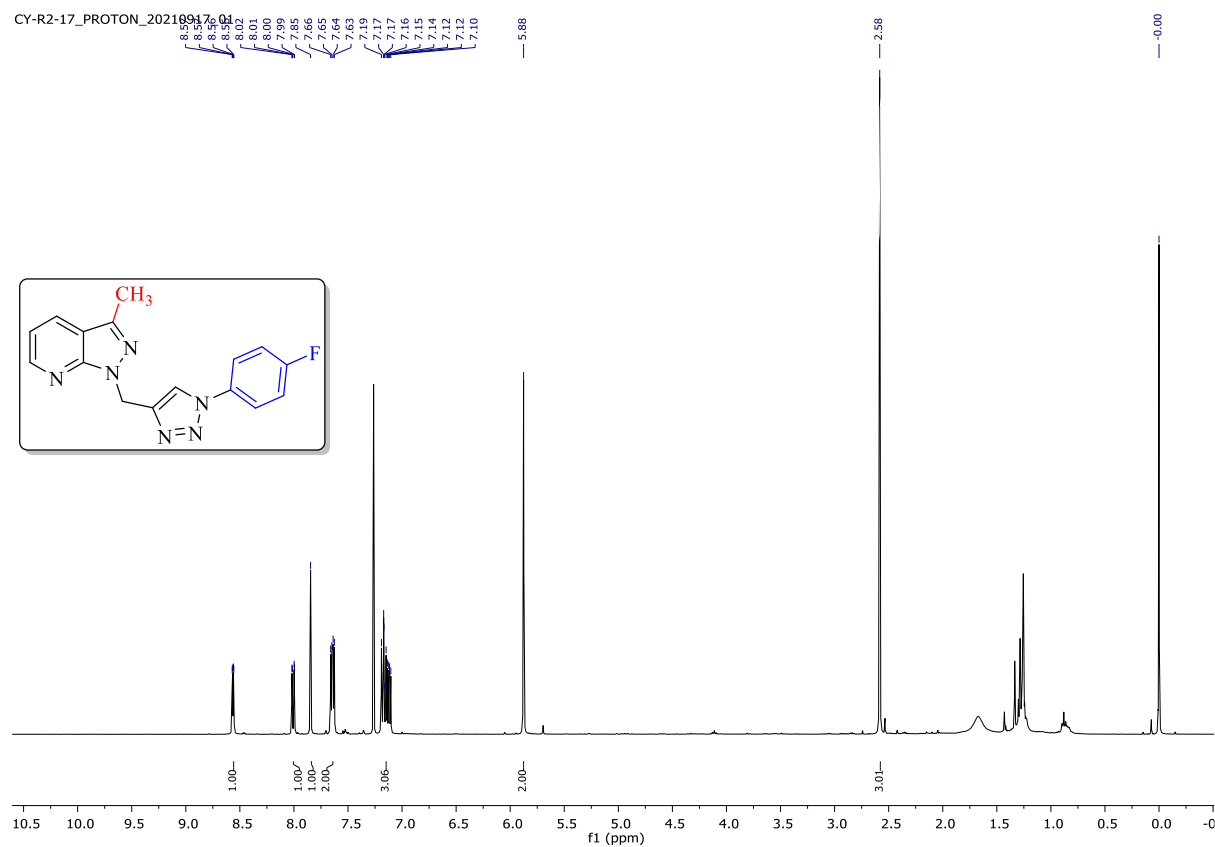
HPLC chromatogram of 1-((1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (16)



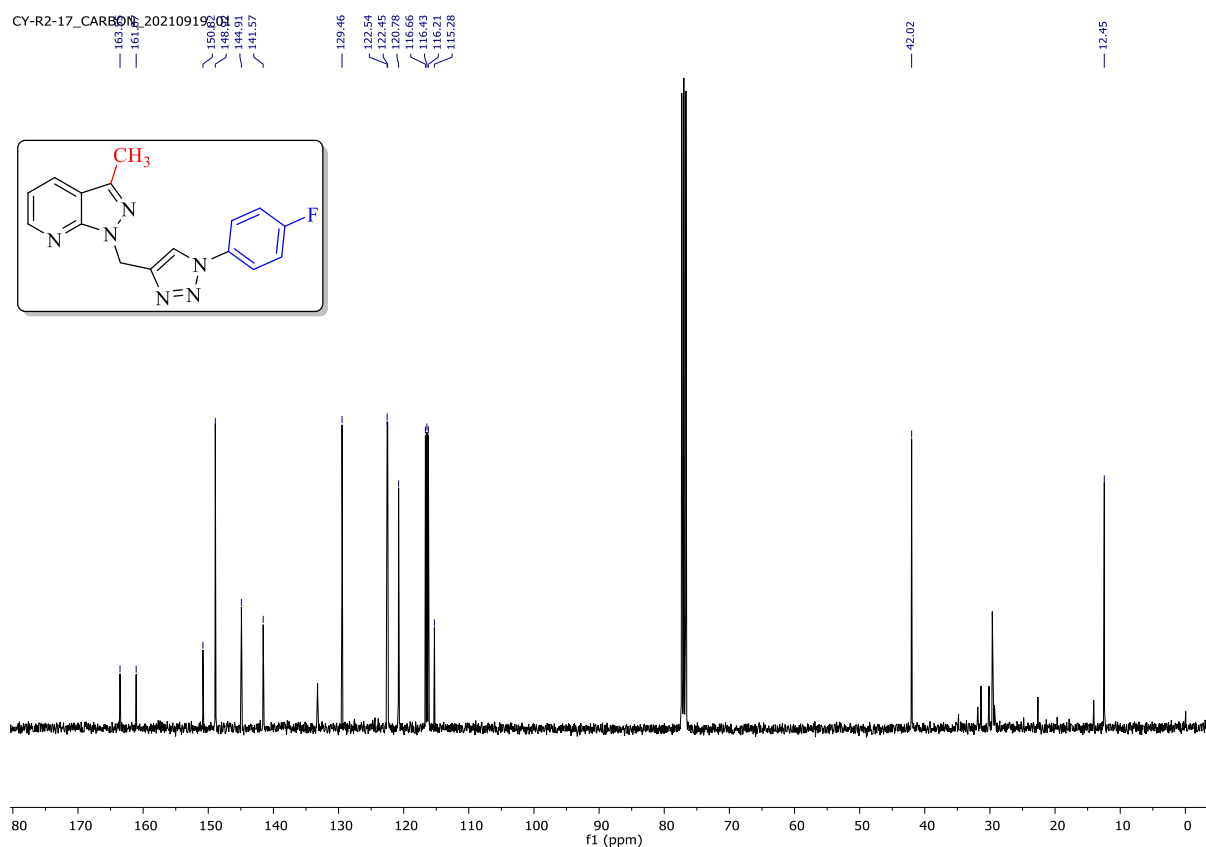
**Peak Results**

	Name	RT	Area	% Area
1		9.825	39331	0.44
2		10.417	8898778	99.35
3		10.719	19338	0.22

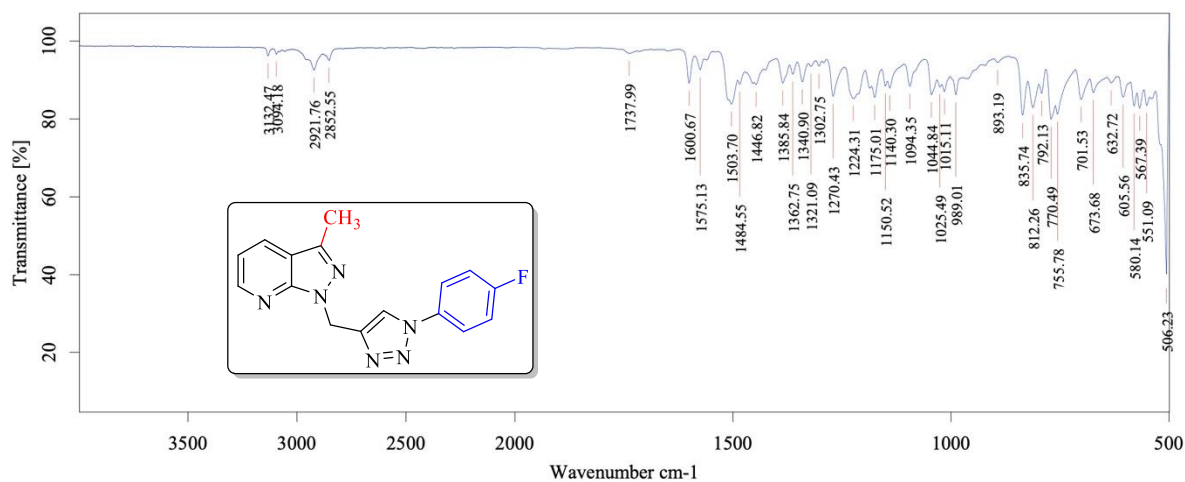
$^1\text{H}$  NMR spectrum of 1-((1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (17)



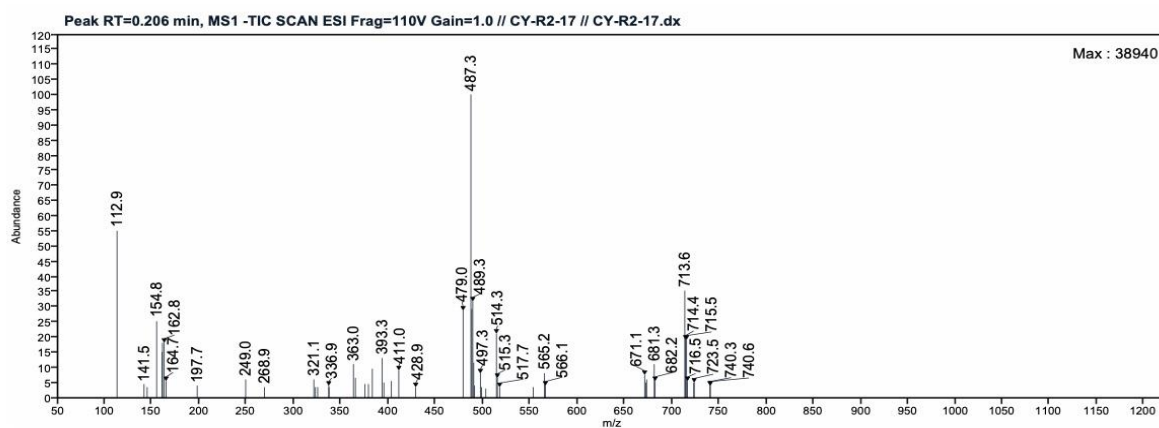
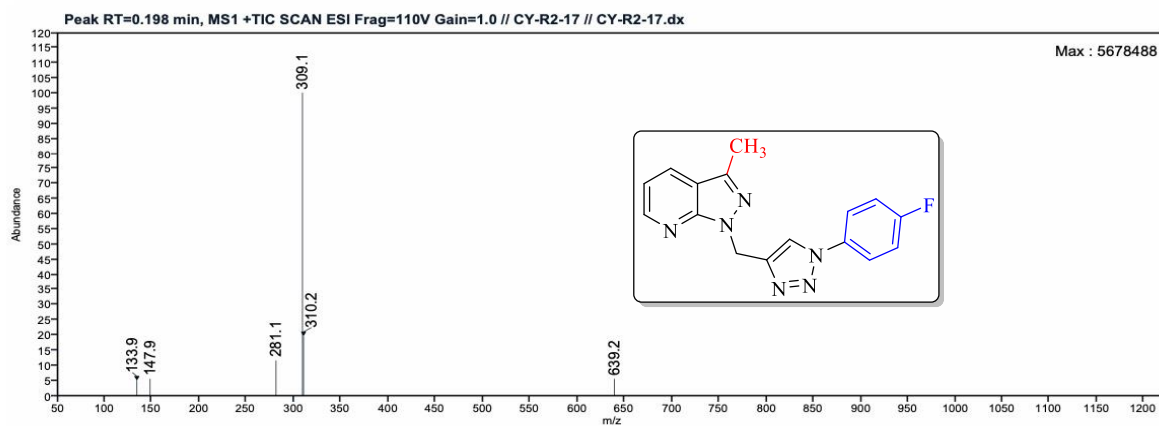
$^{13}\text{C}$  NMR spectrum of 1-((1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (17)



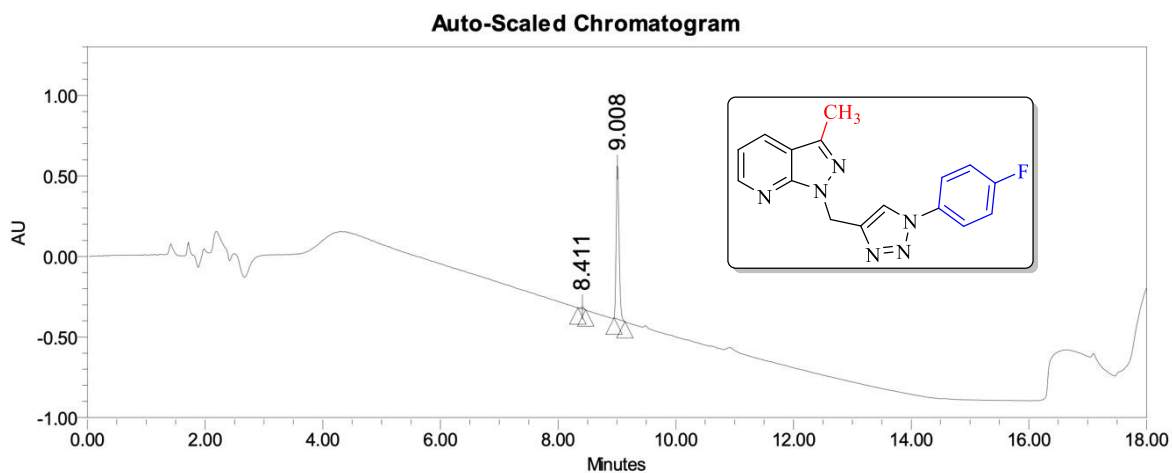
IR spectrum of 1-((1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (17)



Mass spectrum of 1-((1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (17)



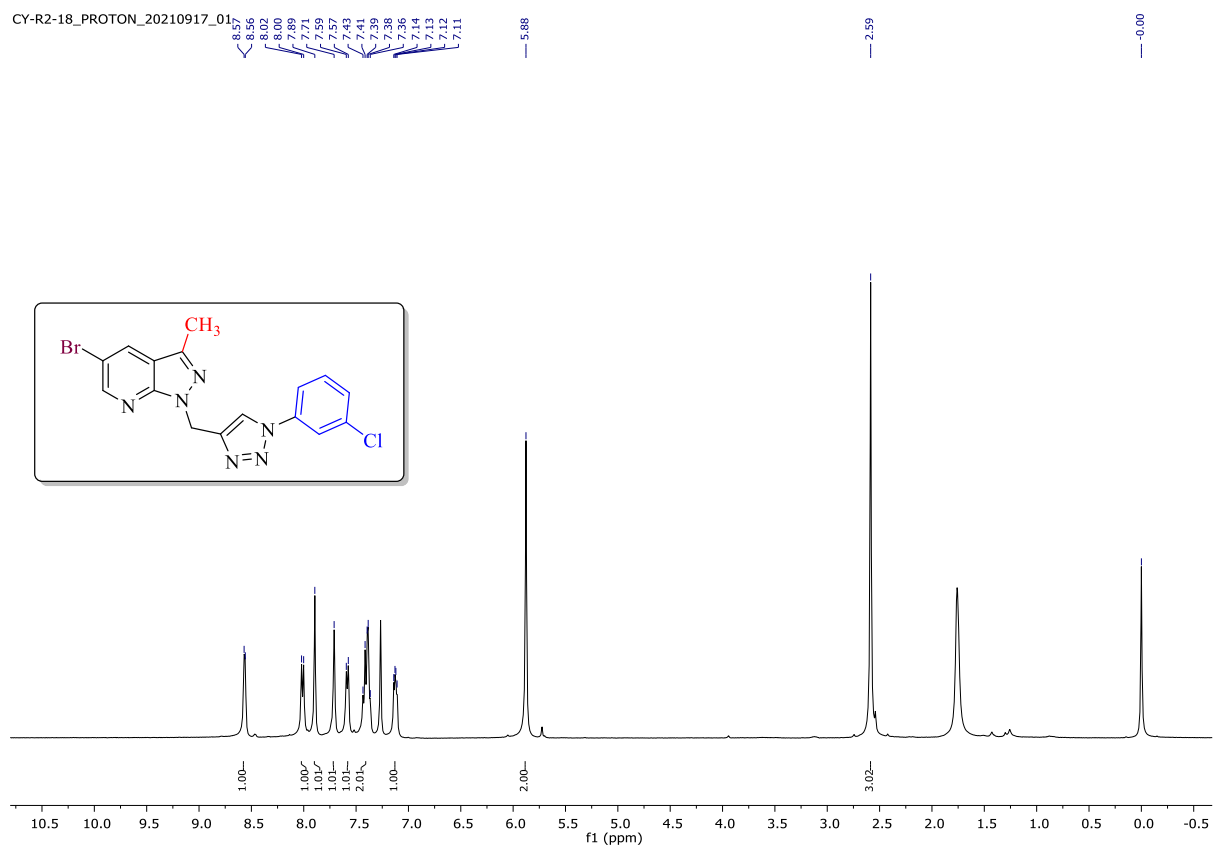
HPLC chromatogram of 1-((1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (17)



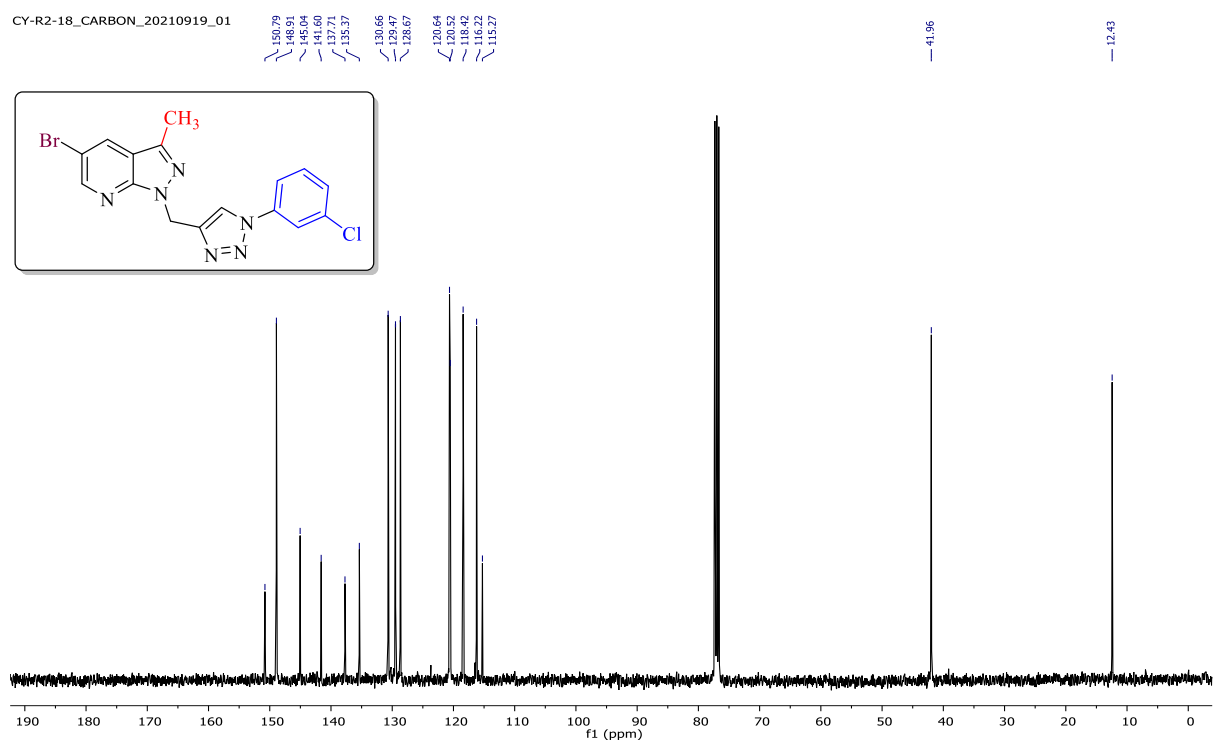
#### Peak Results

	Name	RT	Area	% Area
1		8.411	40037	1.20
2		9.008	3290473	98.80

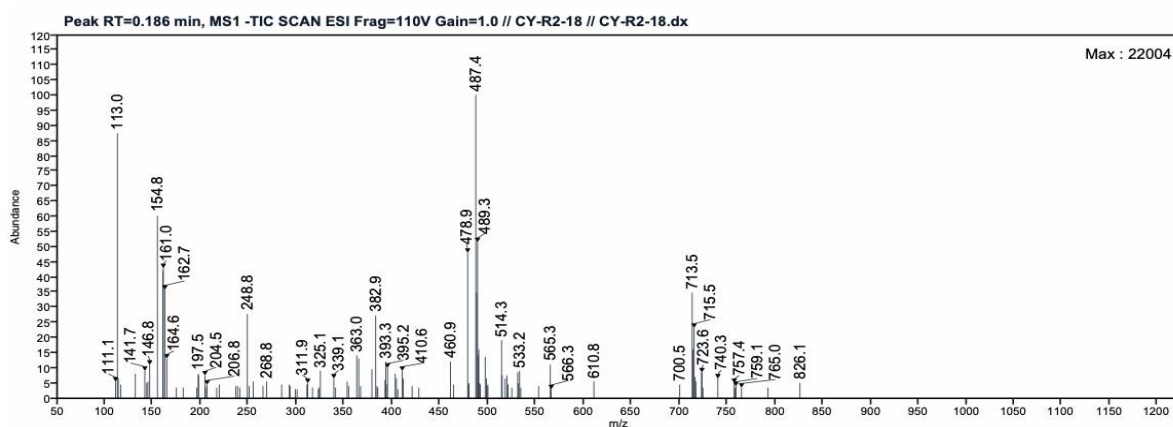
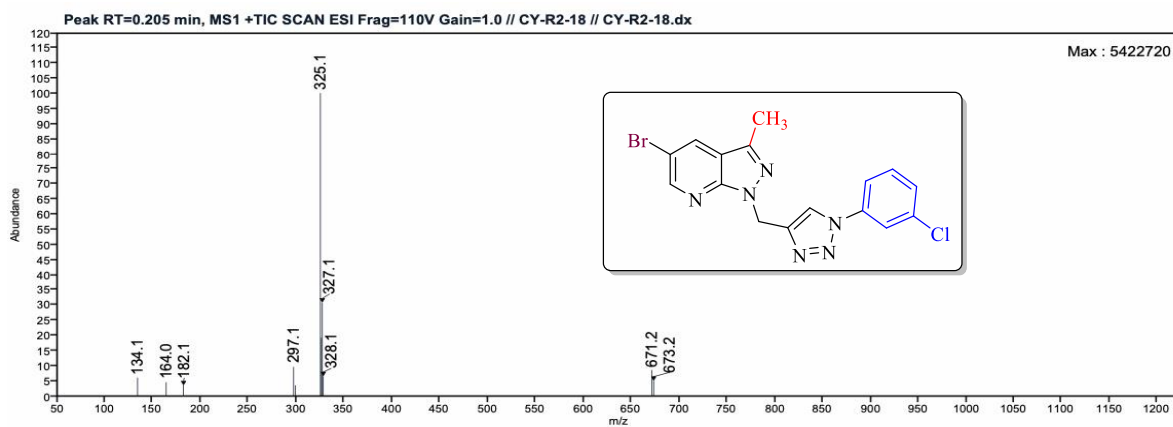
<sup>1</sup>H NMR spectrum of 1-((1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (18)



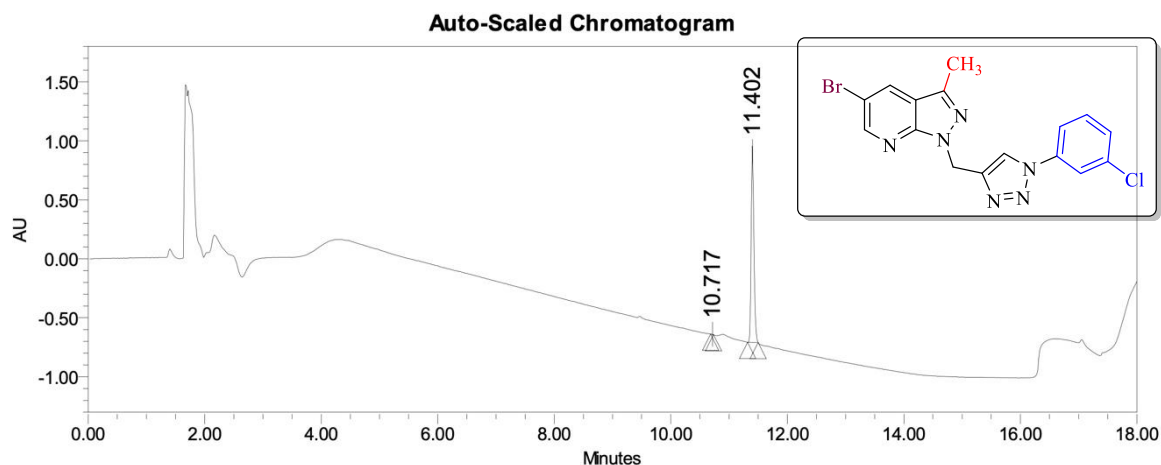
<sup>13</sup>C NMR spectrum of 1-((1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (18)



Mass spectrum of 1-((1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (18)



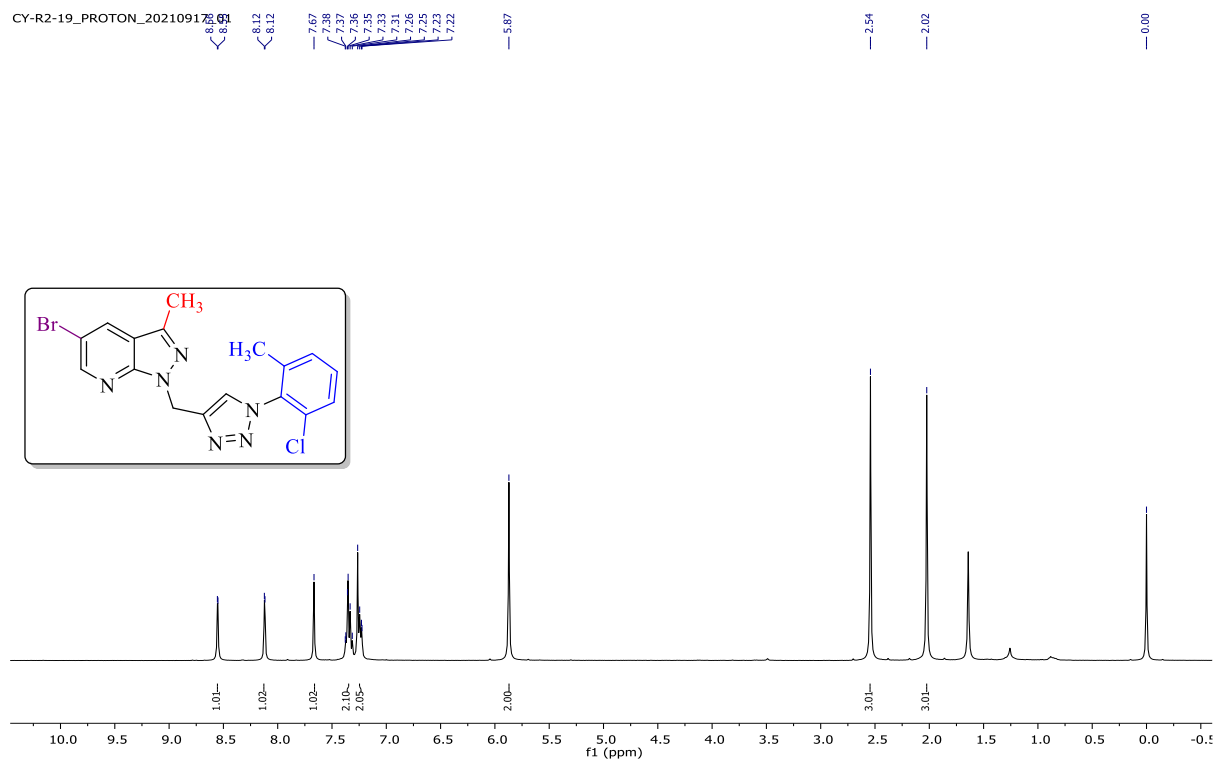
HPLC chromatogram of 1-((1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (18)



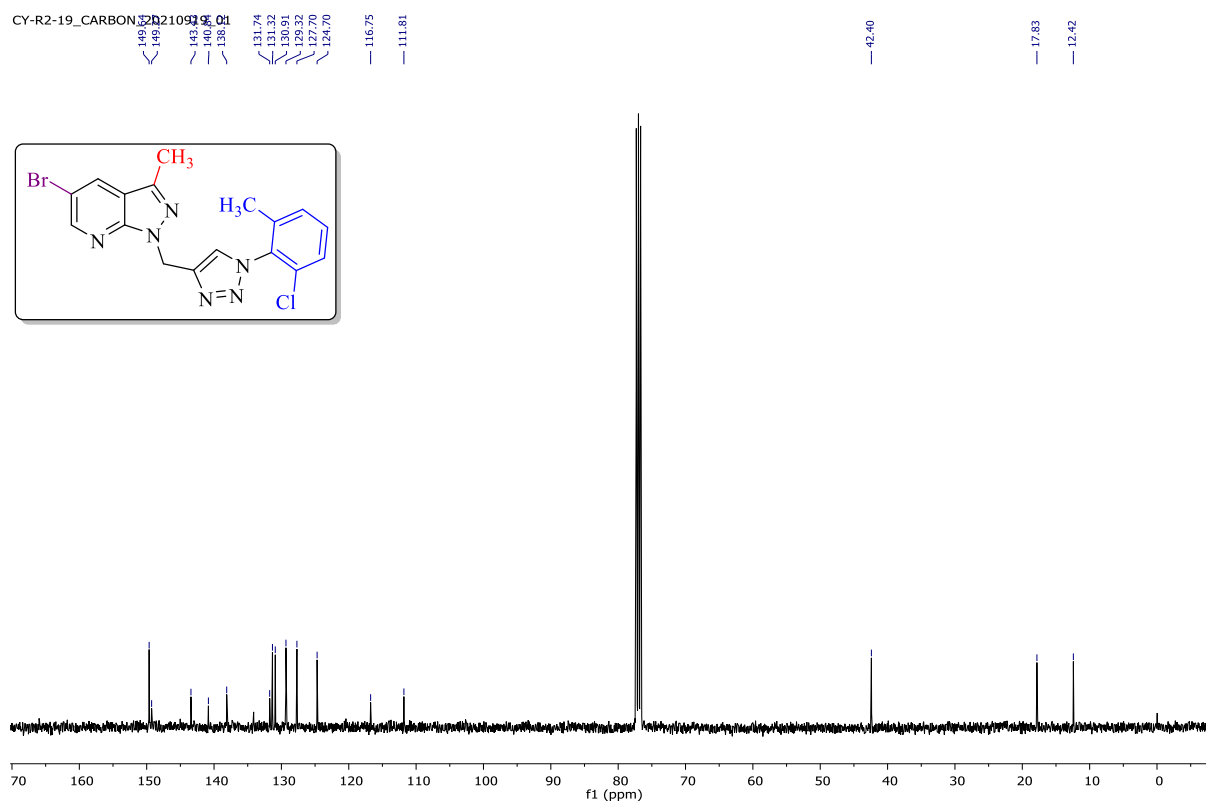
#### Peak Results

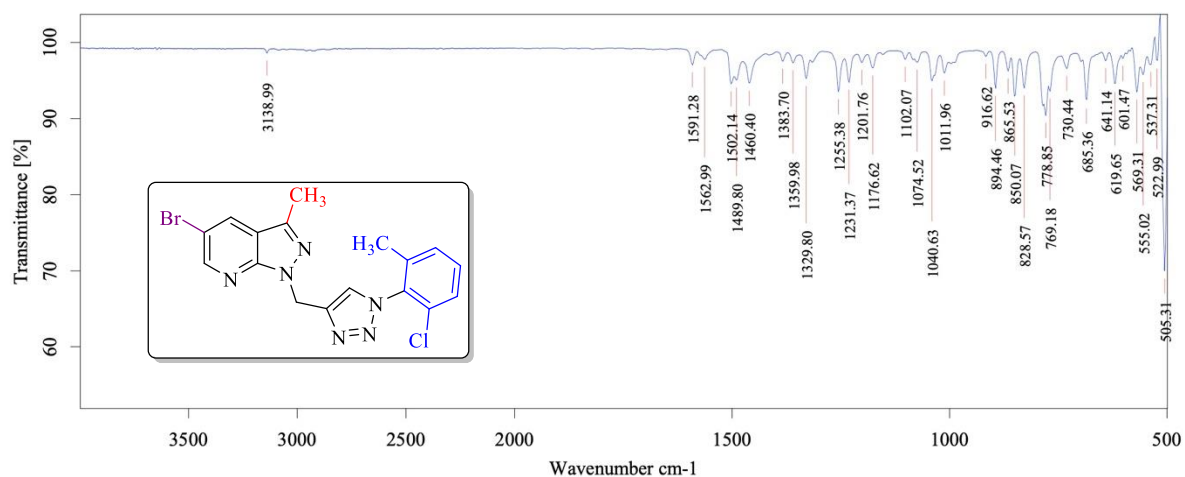
	Name	RT	Area	% Area
1		10.717	4609	0.08
2		11.402	5474714	99.92

<sup>1</sup>H NMR spectrum of 5-Bromo-1-((1-(2-chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (19)

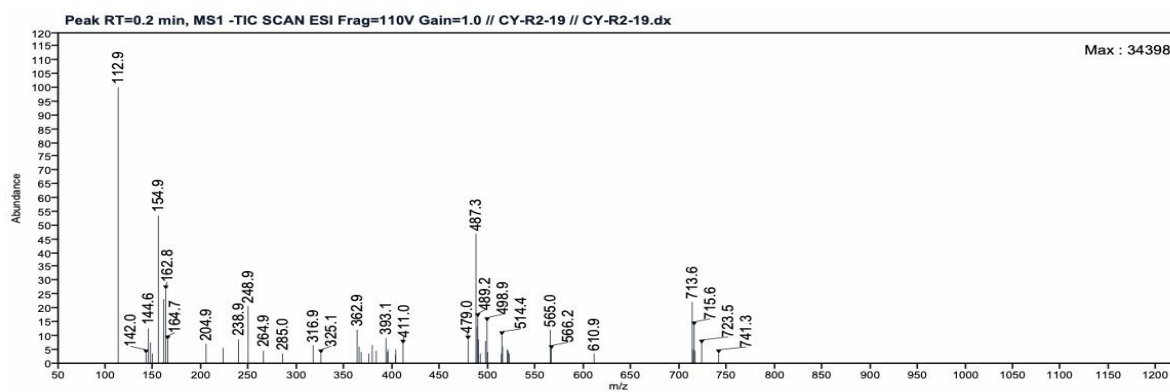
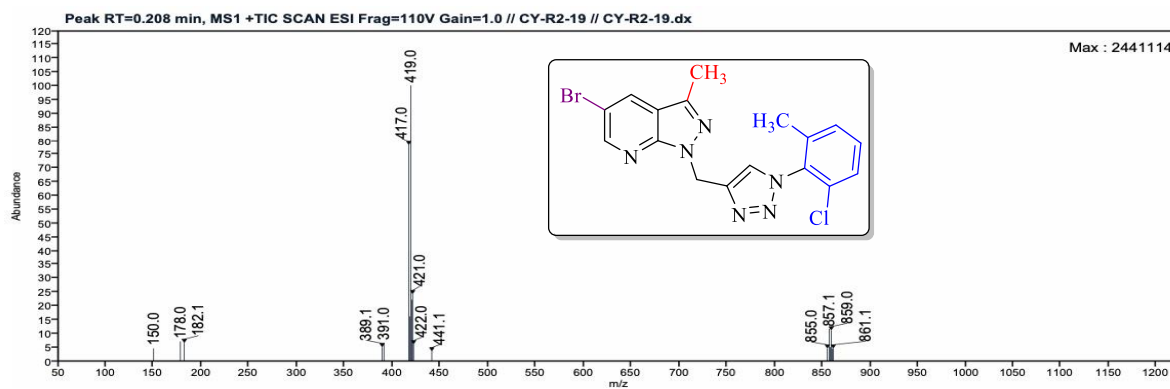


<sup>13</sup>C NMR spectrum of 5-Bromo-1-((1-(2-chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-*b*]pyridine (19)

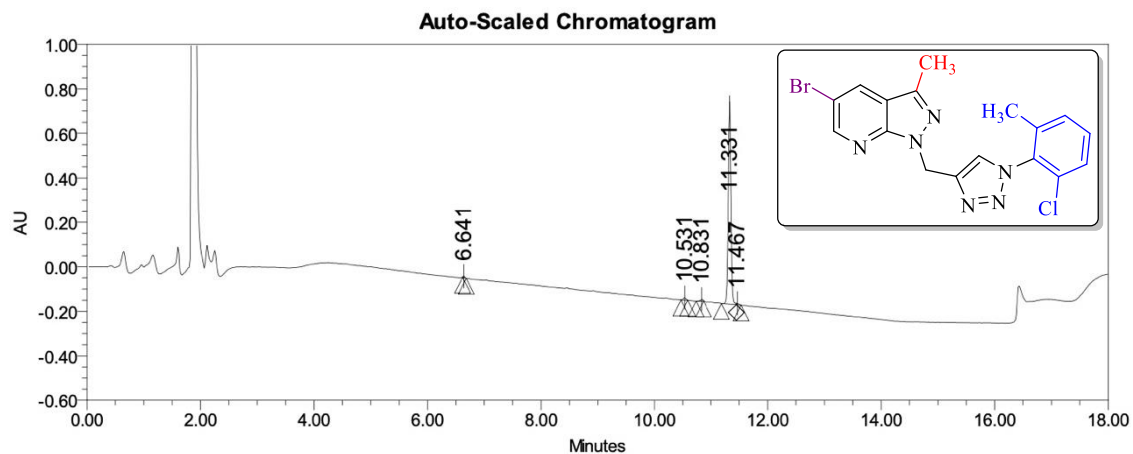




Mass spectrum of 5-Bromo-1-((1-(2-chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (19)



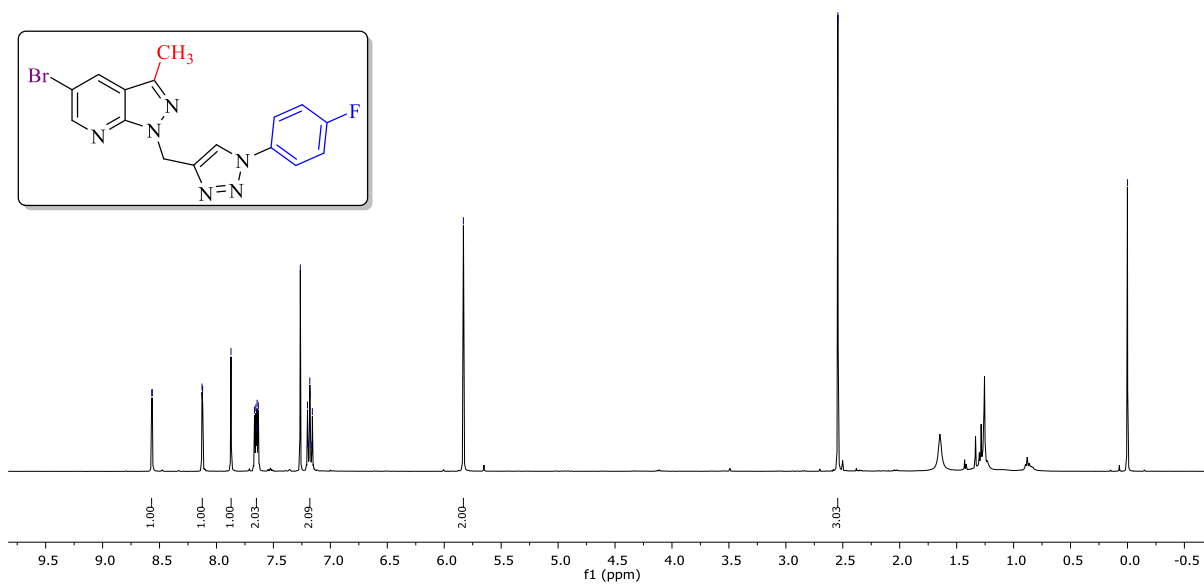
HPLC chromatogram of 5-Bromo-1-((1-(2-chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (19)



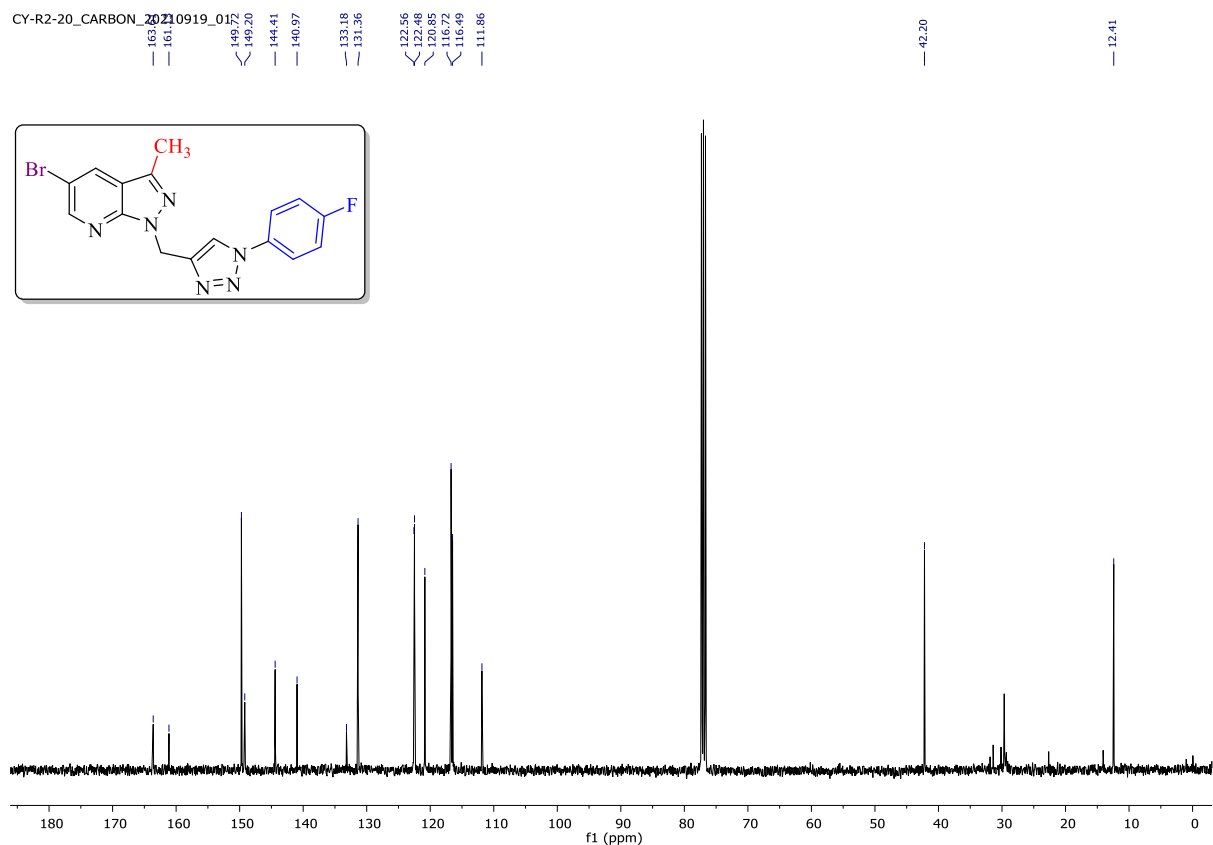
**Peak Results**

	Name	RT	Area	% Area
1		6.641	14263	0.48
2		10.531	34427	1.16
3		10.831	22944	0.78
4		11.331	2869270	97.05
5		11.467	15584	0.53

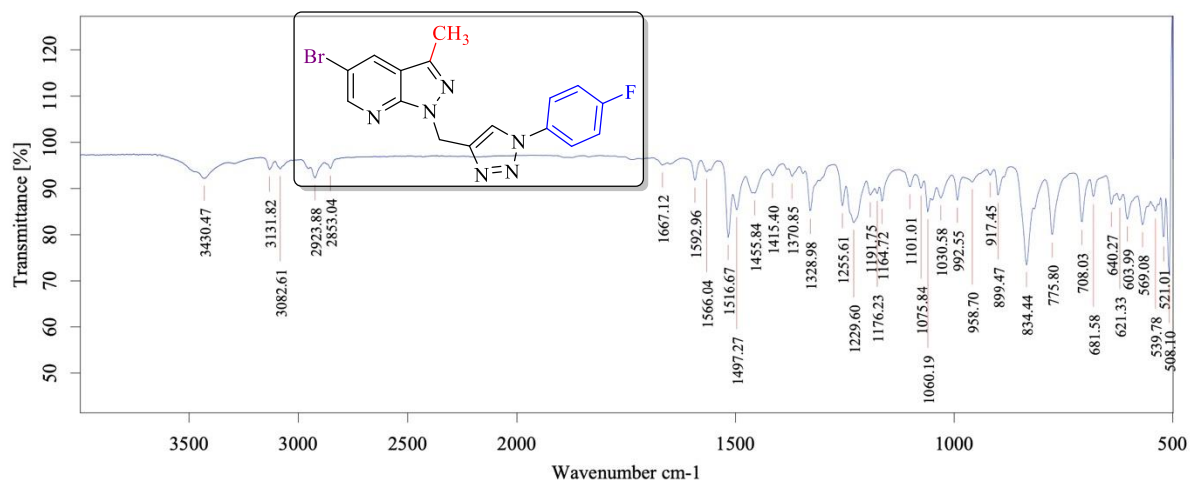
<sup>1</sup>H NMR spectrum of 5-Bromo-1-((1-(4-fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (20)



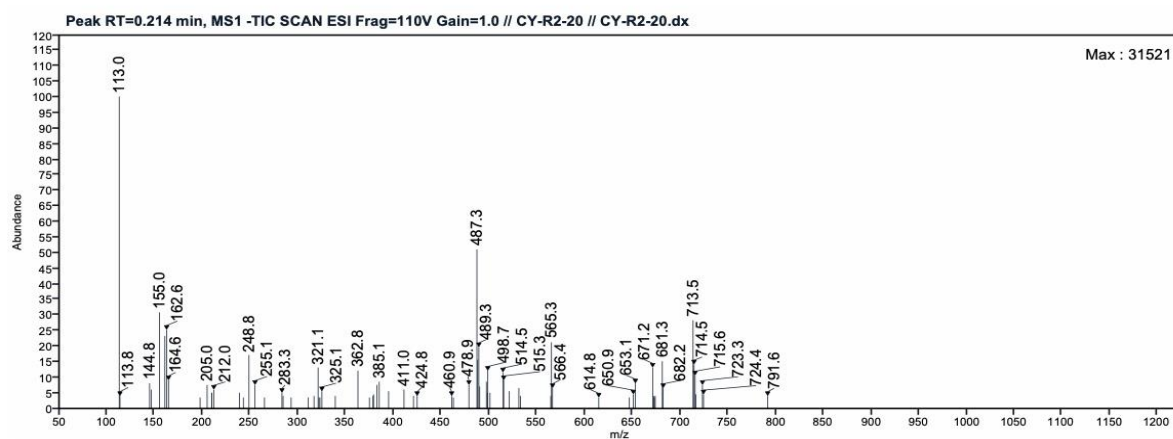
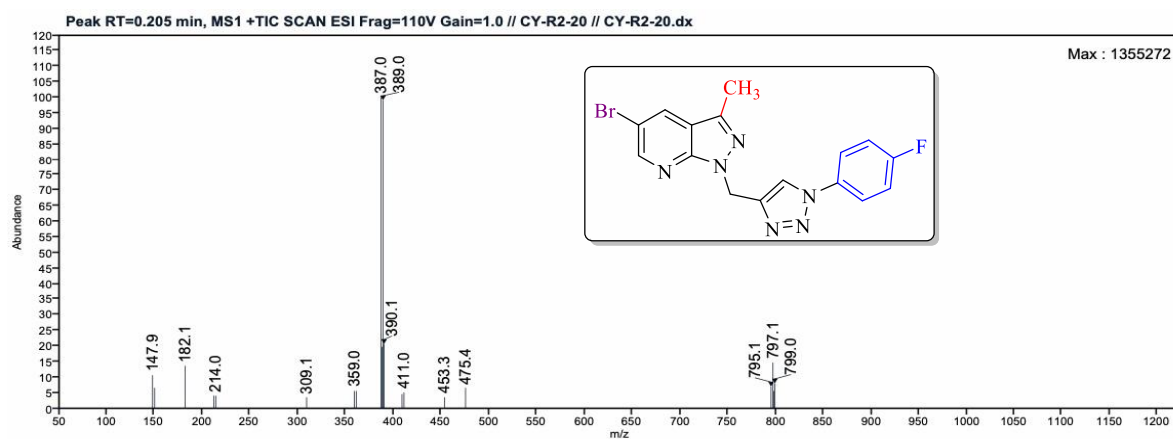
<sup>13</sup>C NMR spectrum of 5-Bromo-1-((1-(4-fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (20)



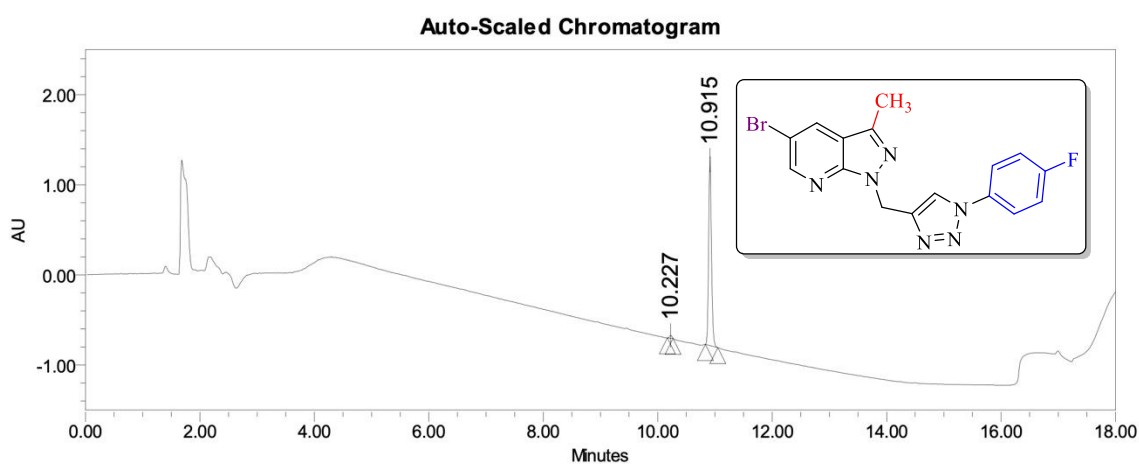
IR spectrum of 5-Bromo-1-((1-(4-fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (20)



Mass spectrum of 5-Bromo-1-((1-(4-fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (20)



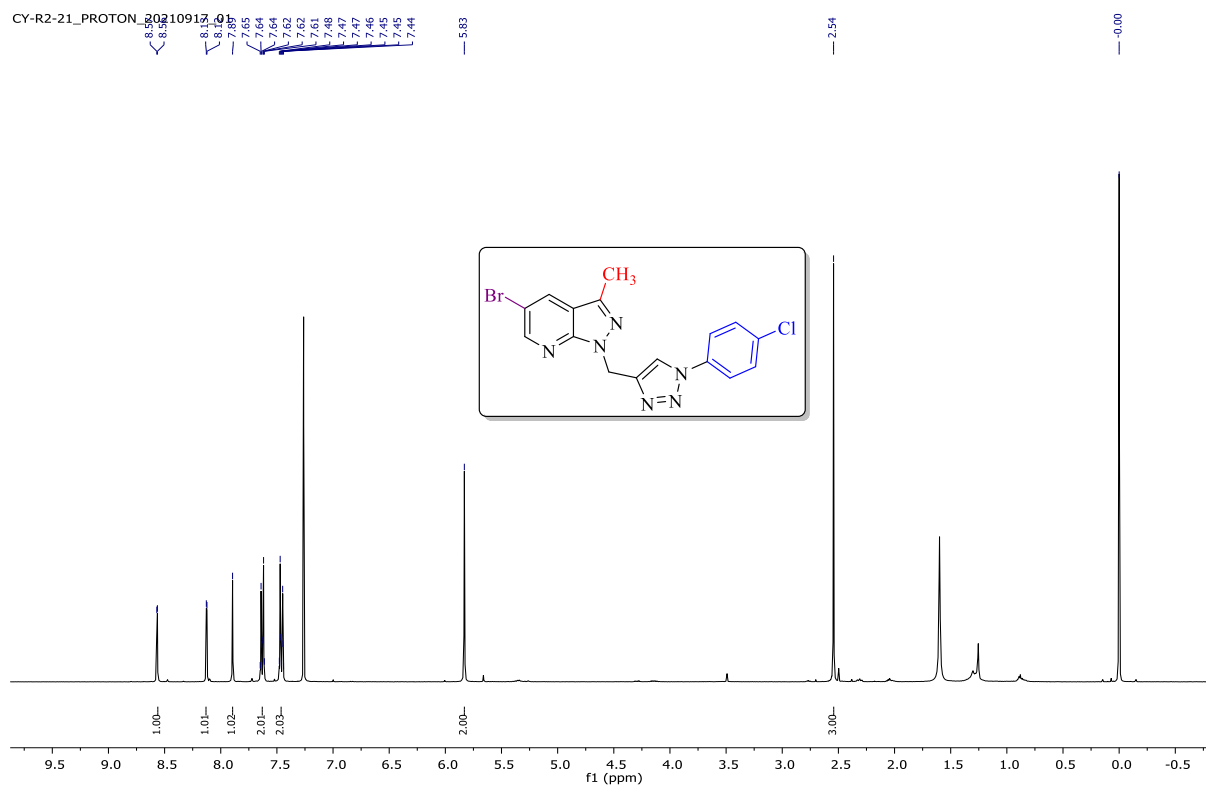
HPLC chromatogram of 5-Bromo-1-((1-(4-fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (20)



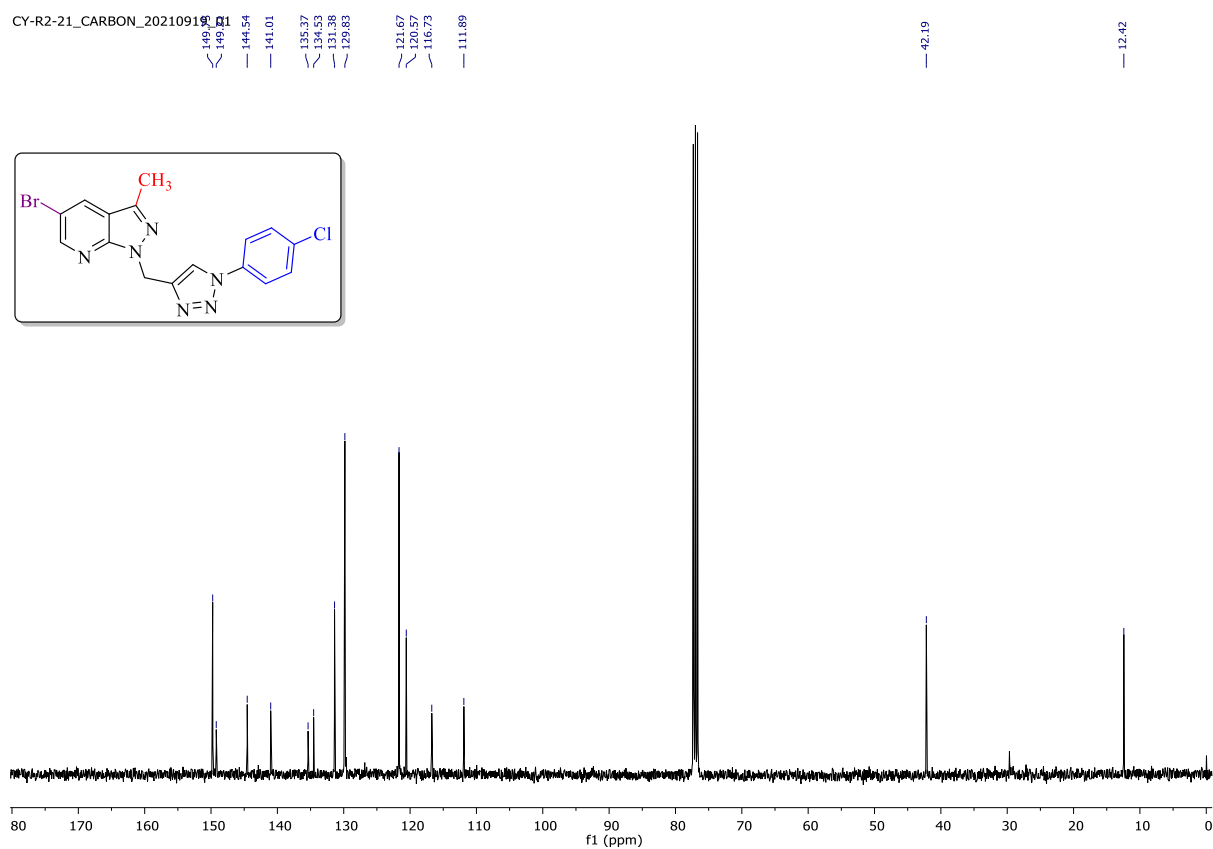
#### Peak Results

	Name	RT	Area	% Area
1		10.227	90125	1.28
2		10.915	6944173	98.72

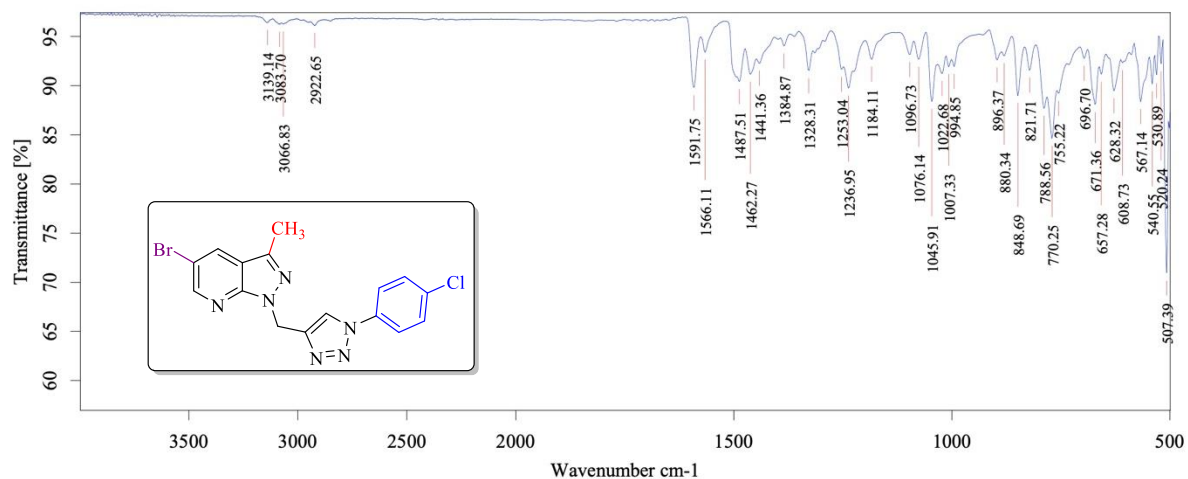
<sup>1</sup>H NMR spectrum of 5-Bromo-1-((1-(4-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (21)



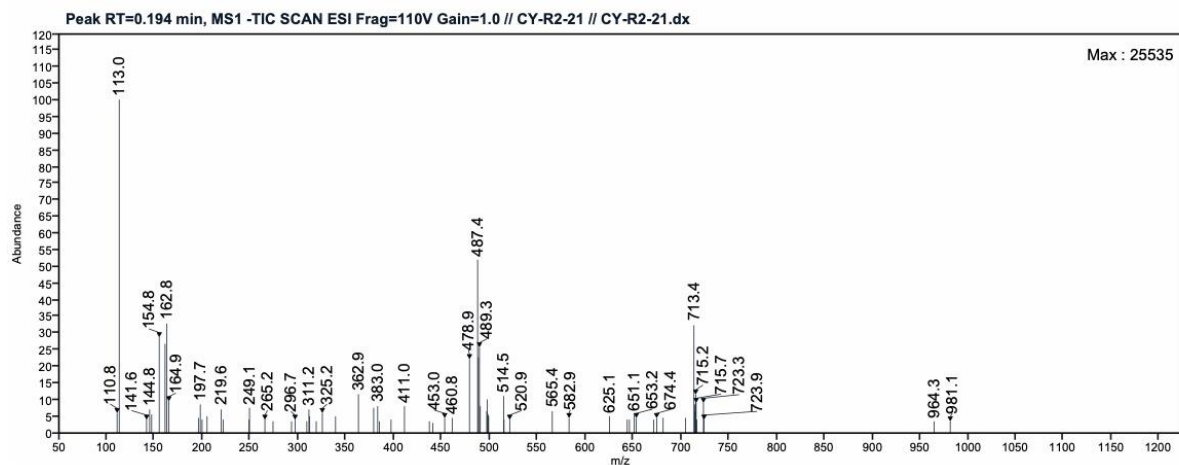
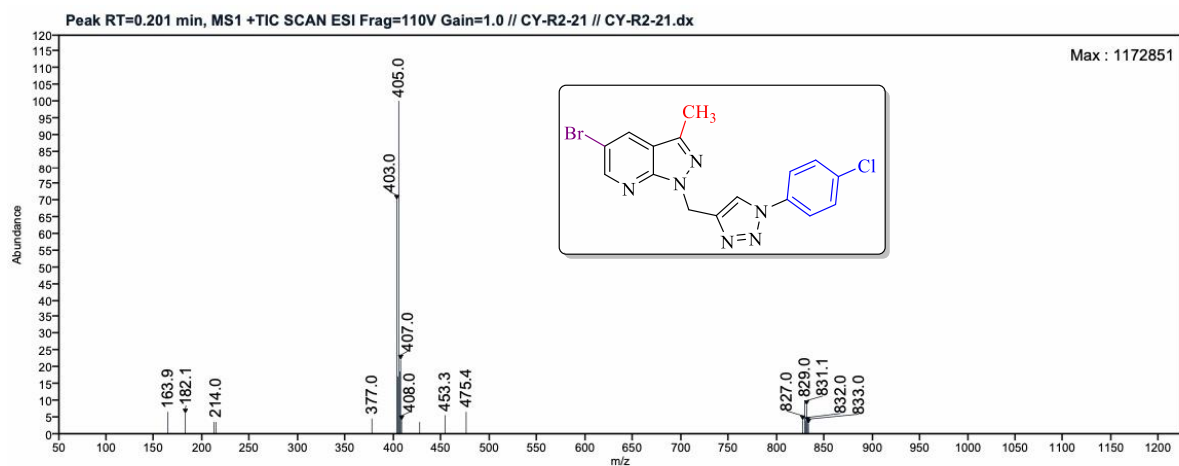
<sup>13</sup>C NMR spectrum of 5-Bromo-1-((1-(4-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (21)



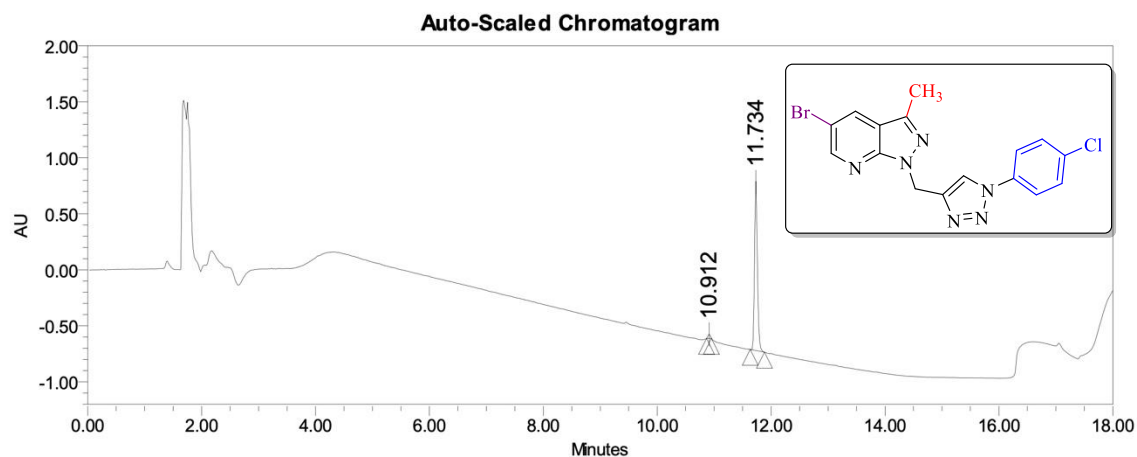
IR spectrum of 5-Bromo-1-((1-(4-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (21)



Mass spectrum of 5-Bromo-1-((1-(4-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (21)



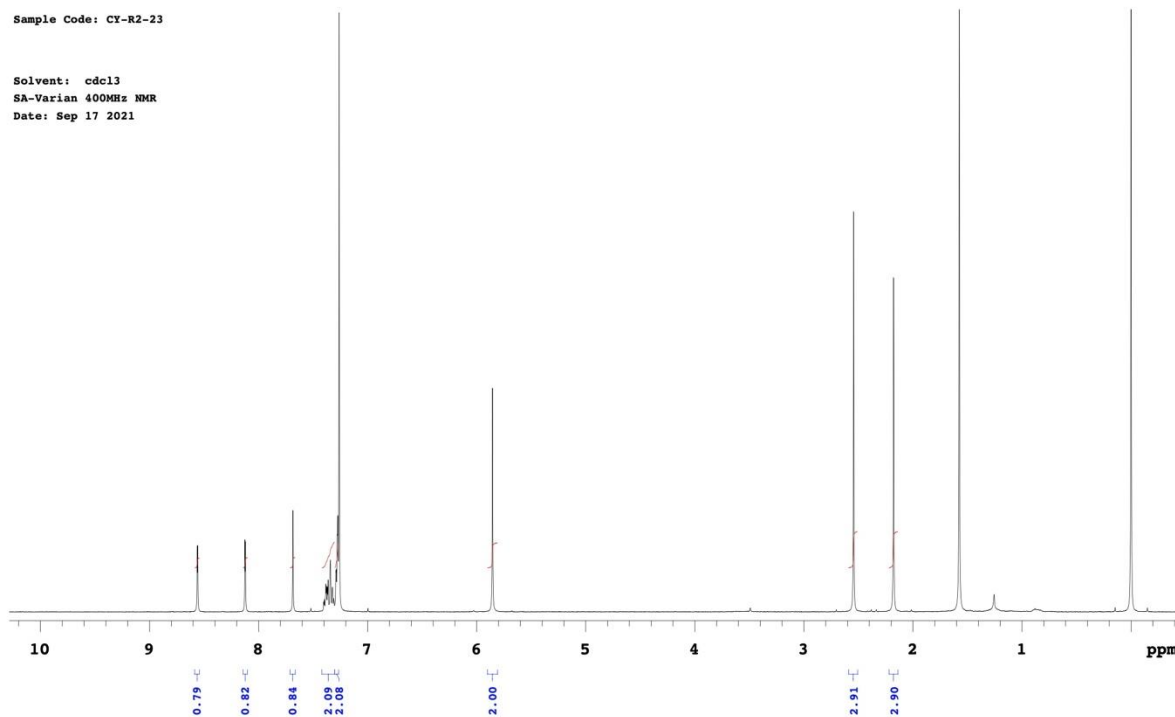
HPLC chromatogram of 5-Bromo-1-((1-(4-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (21)



**Peak Results**

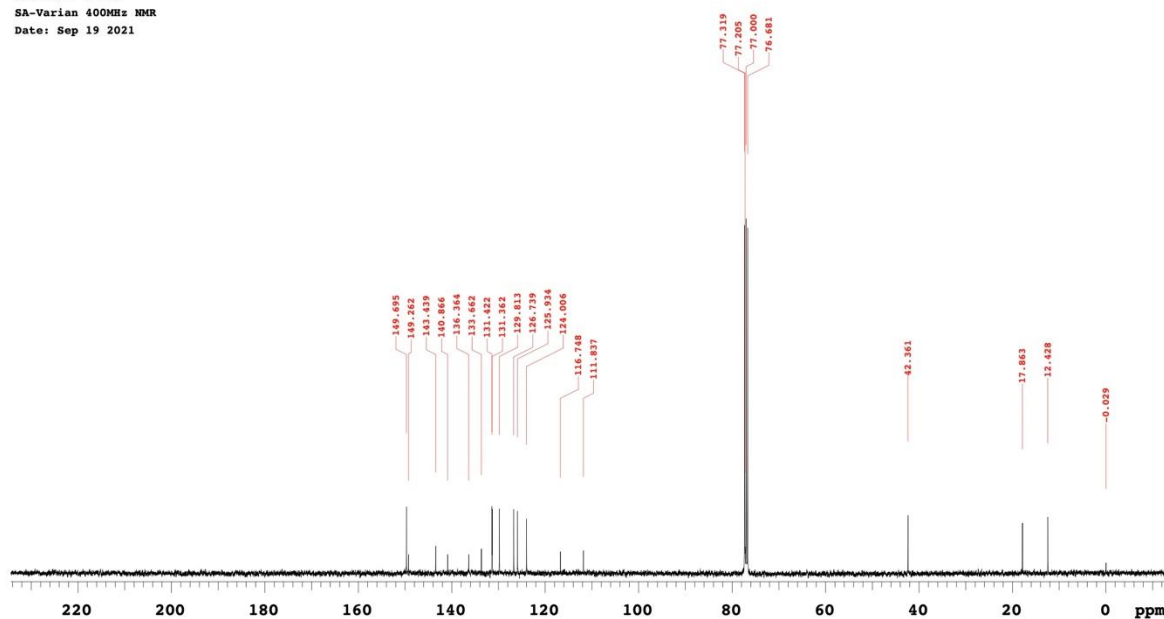
	Name	RT	Area	% Area
1		10.912	101965	1.97
2		11.734	5085406	98.03

<sup>1</sup>H NMR spectrum of 5-Bromo-1-((1-(3-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (22)

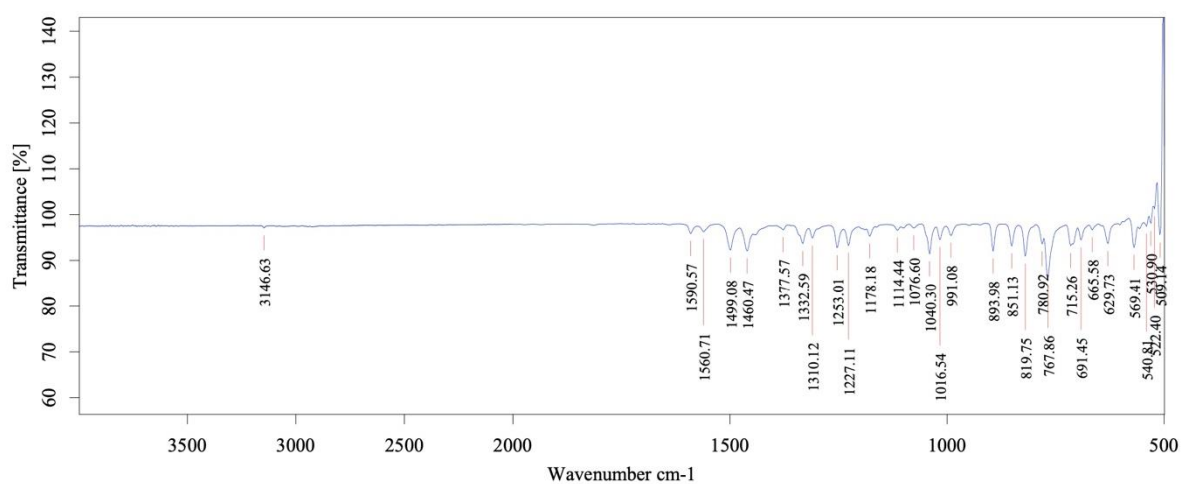


$^{13}\text{C}$  NMR spectrum of 5-Bromo-1-((1-(3-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (22)

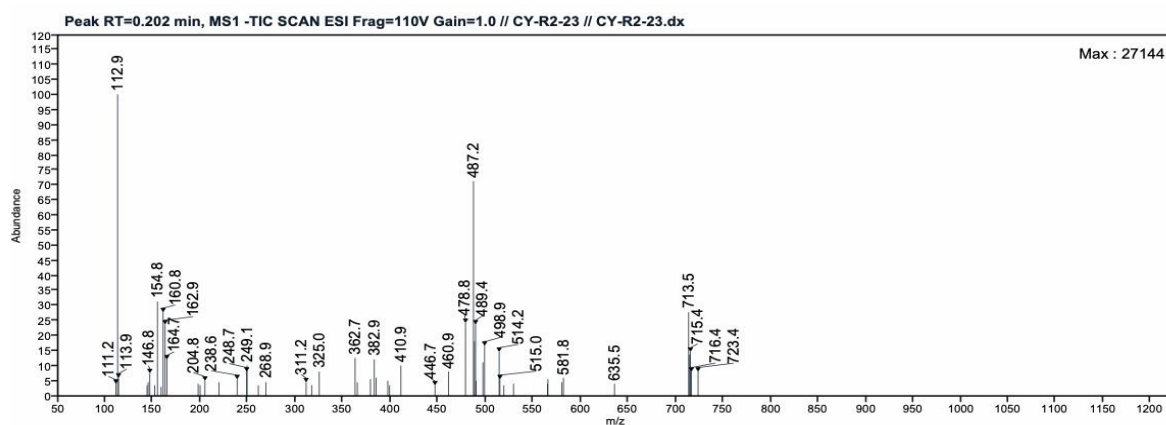
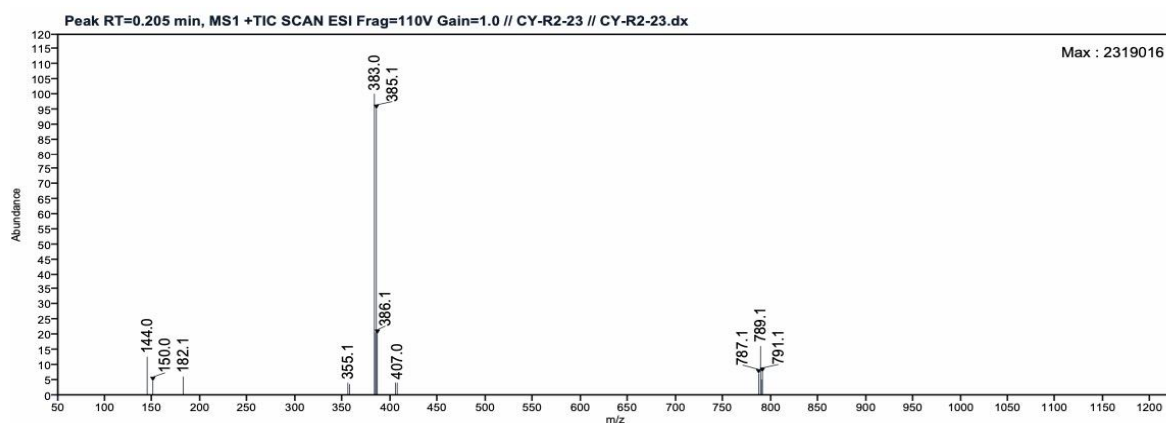
Solvent:  $\text{cdcl}_3$   
 SA-Varian 400MHz NMR  
 Date: Sep 19 2021



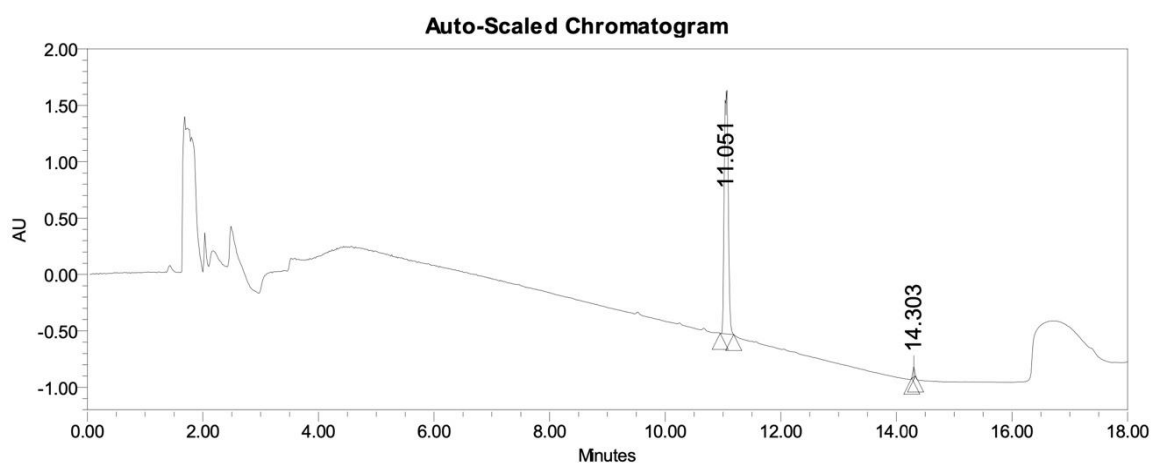
IR spectrum of 5-Bromo-1-((1-(3-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (22)



Mass spectrum of 5-Bromo-1-((1-(3-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (22)



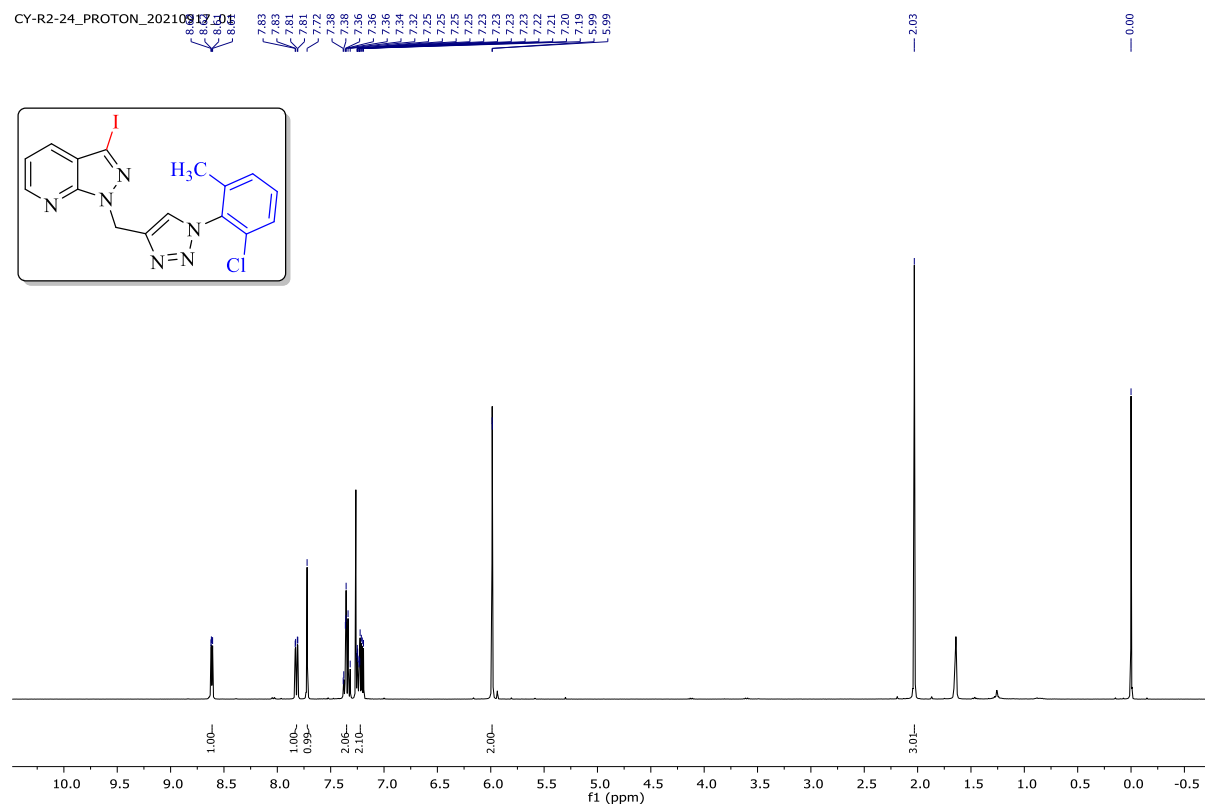
HPLC chromatogram of 5-Bromo-1-((1-(3-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-methyl-1H-pyrazolo[3,4-b]pyridine (22)



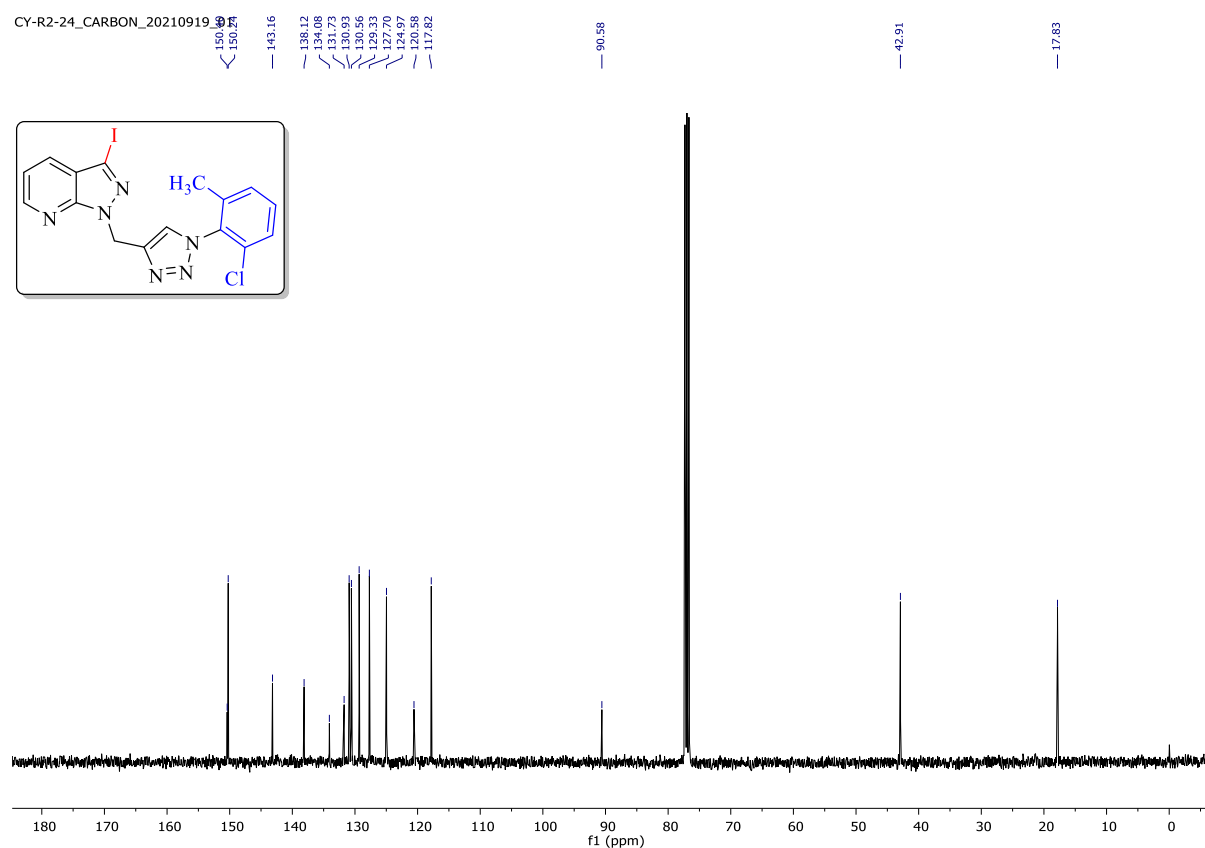
#### Peak Results

	Name	RT	Area	% Area
1		11.051	10361708	98.19
2		14.303	191009	1.81

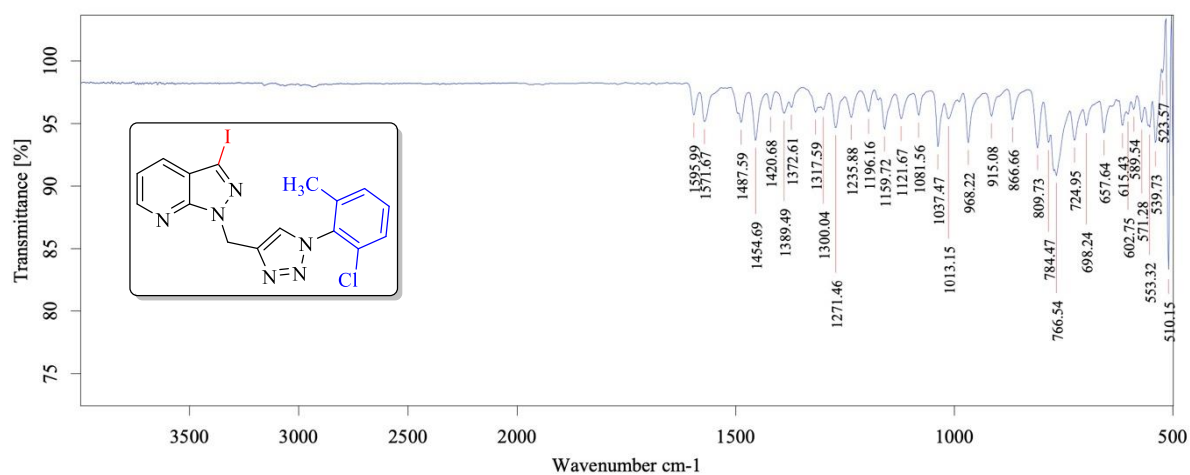
<sup>1</sup>H NMR spectrum of 1-((1-(2-Chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (23)



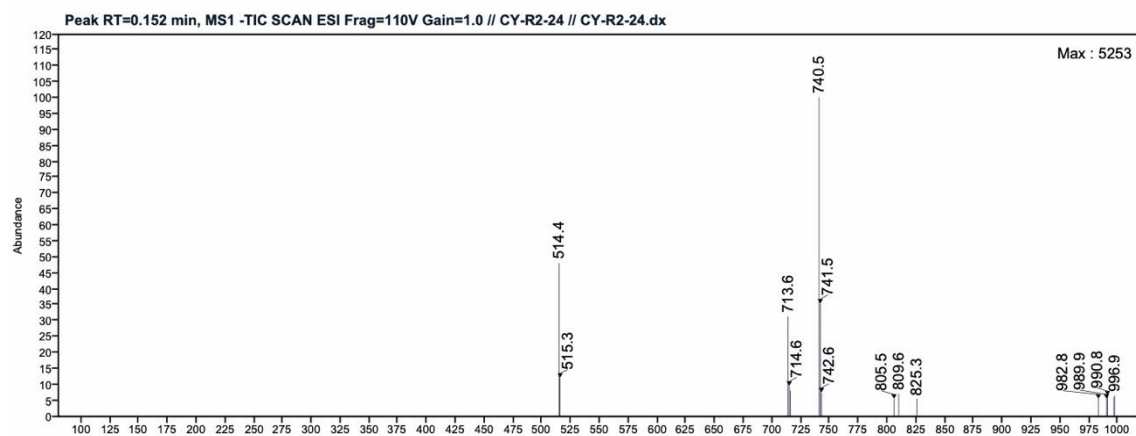
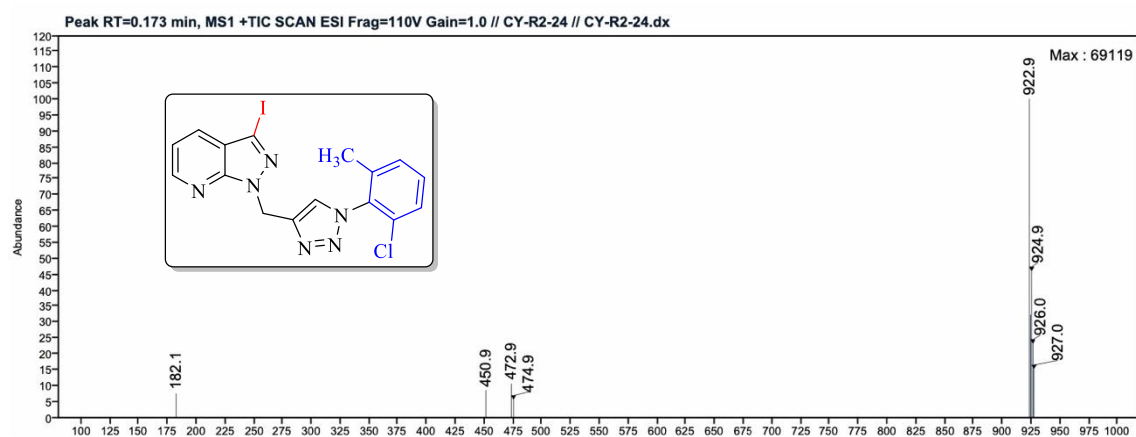
<sup>13</sup>C NMR spectrum of 1-((1-(2-Chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (23)



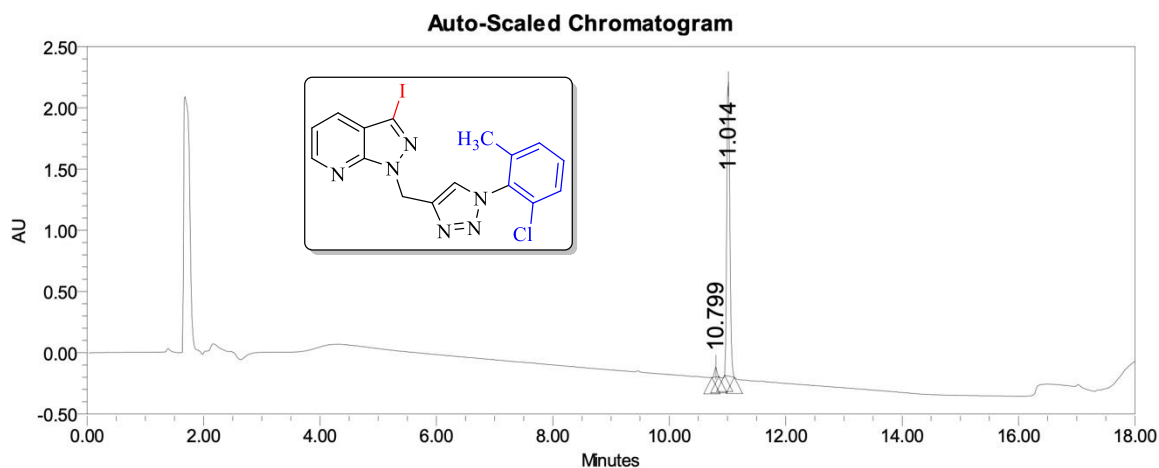
IR spectrum of 1-((1-(2-Chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (23)



Mass spectrum of 1-((1-(2-Chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (23)



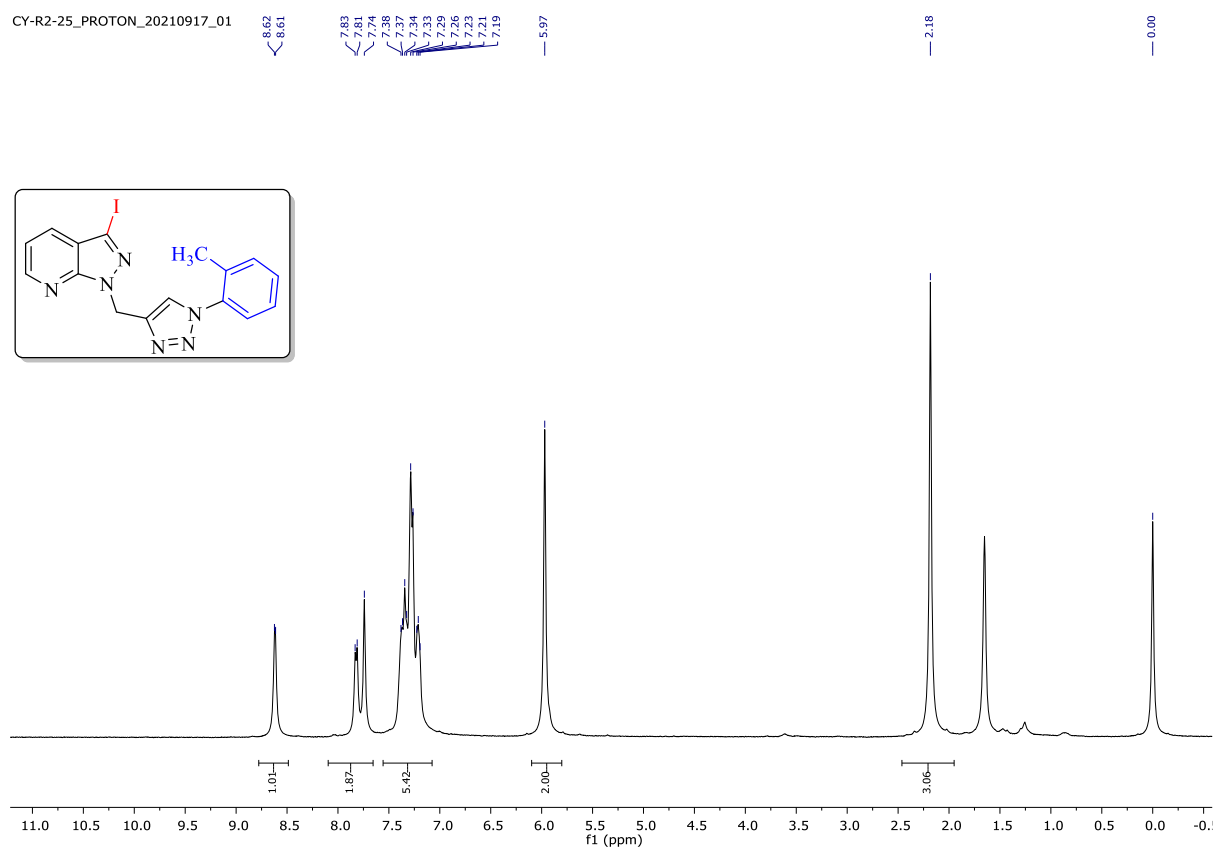
HPLC chromatogram of 1-((1-(2-Chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (23)



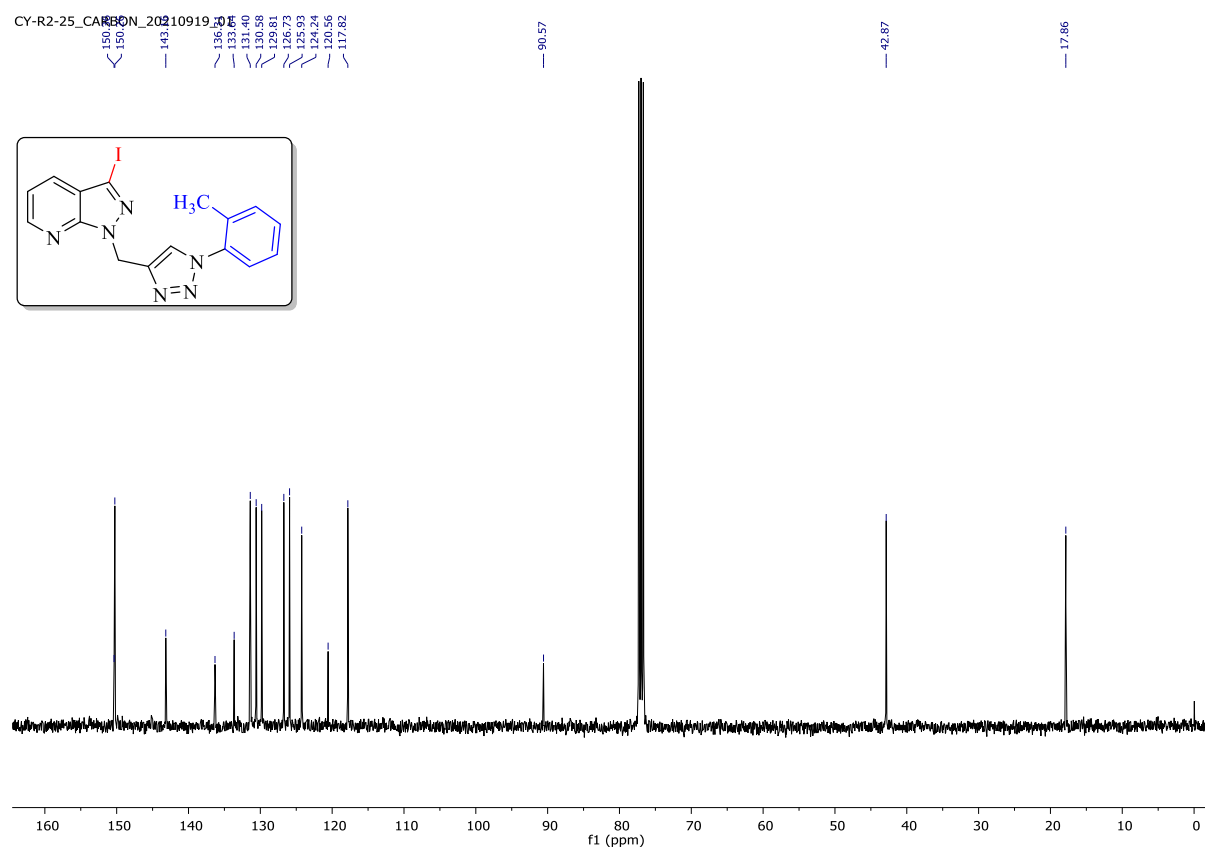
**Peak Results**

	Name	RT	Area	% Area
1		10.799	243648	2.67
2		11.014	8884521	97.33

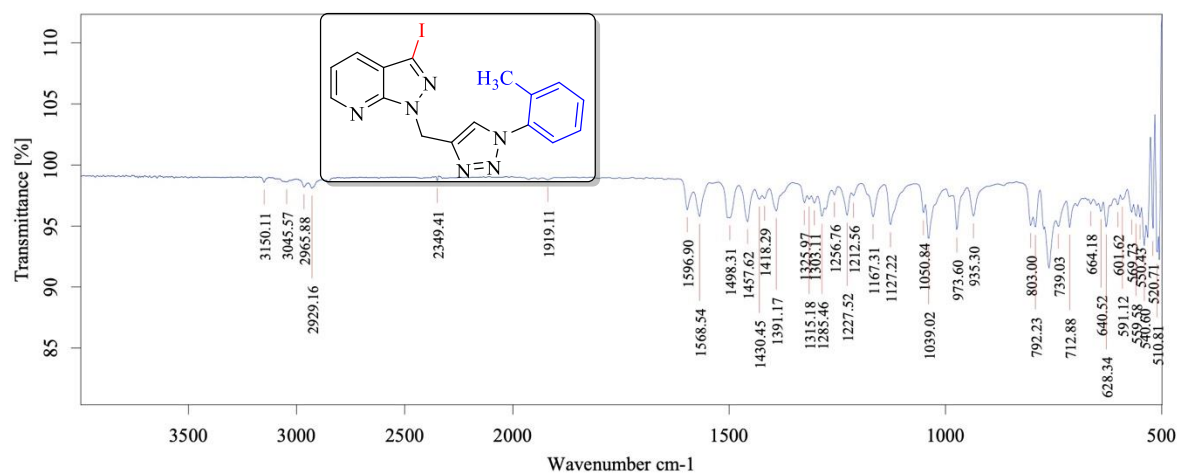
$^1\text{H}$  NMR spectrum of 3-Iodo-1-((1-(*o*-tolyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine (24)



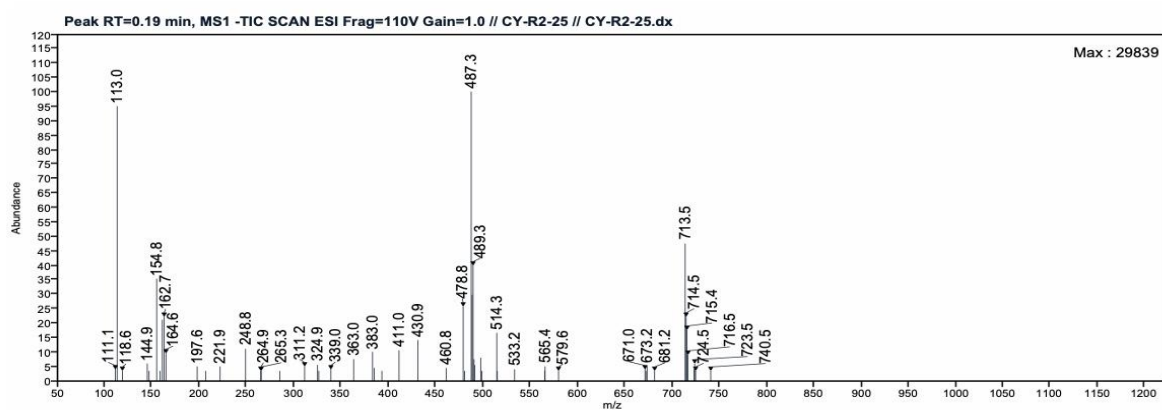
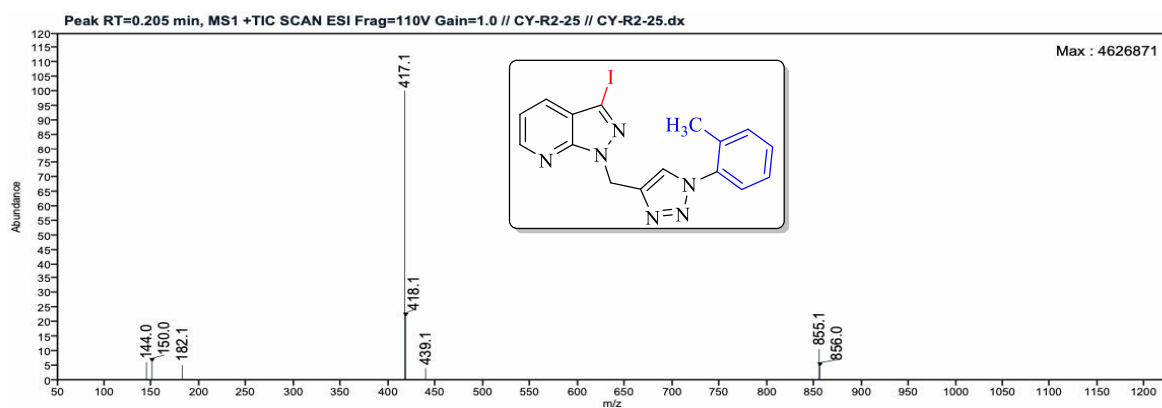
<sup>13</sup>C NMR spectrum of 3-Iodo-1-((1-(*o*-tolyl)-1*H*-1,2,3-triazol-4-yl)methyl)-1*H*-pyrazolo[3,4-*b*]pyridine (24)



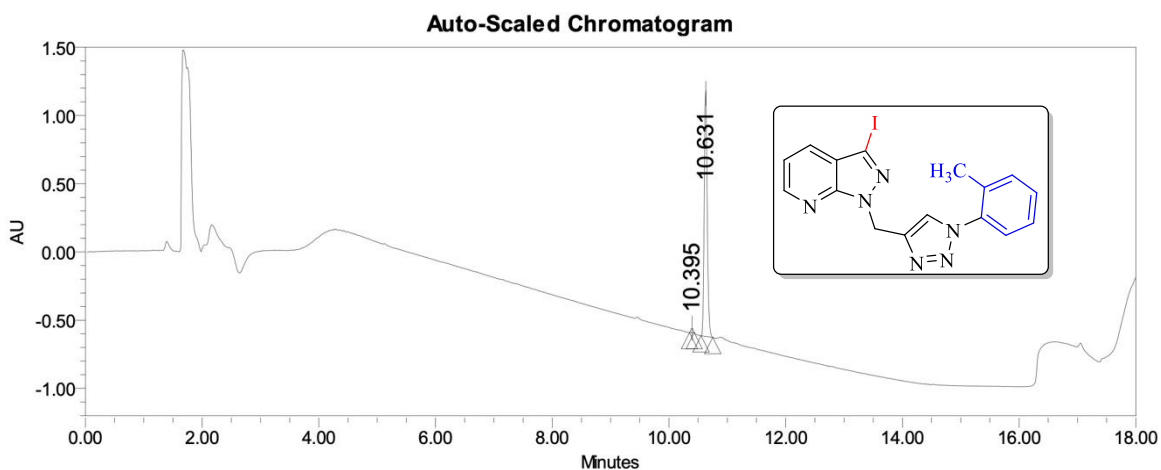
IR spectrum of 3-Iodo-1-((1-(*o*-tolyl)-1*H*-1,2,3-triazol-4-yl)methyl)-1*H*-pyrazolo[3,4-*b*]pyridine (24)



Mass spectrum of 3-Iodo-1-((1-(*o*-tolyl)-1*H*-1,2,3-triazol-4-yl)methyl)-1*H*-pyrazolo[3,4-*b*]pyridine (24)



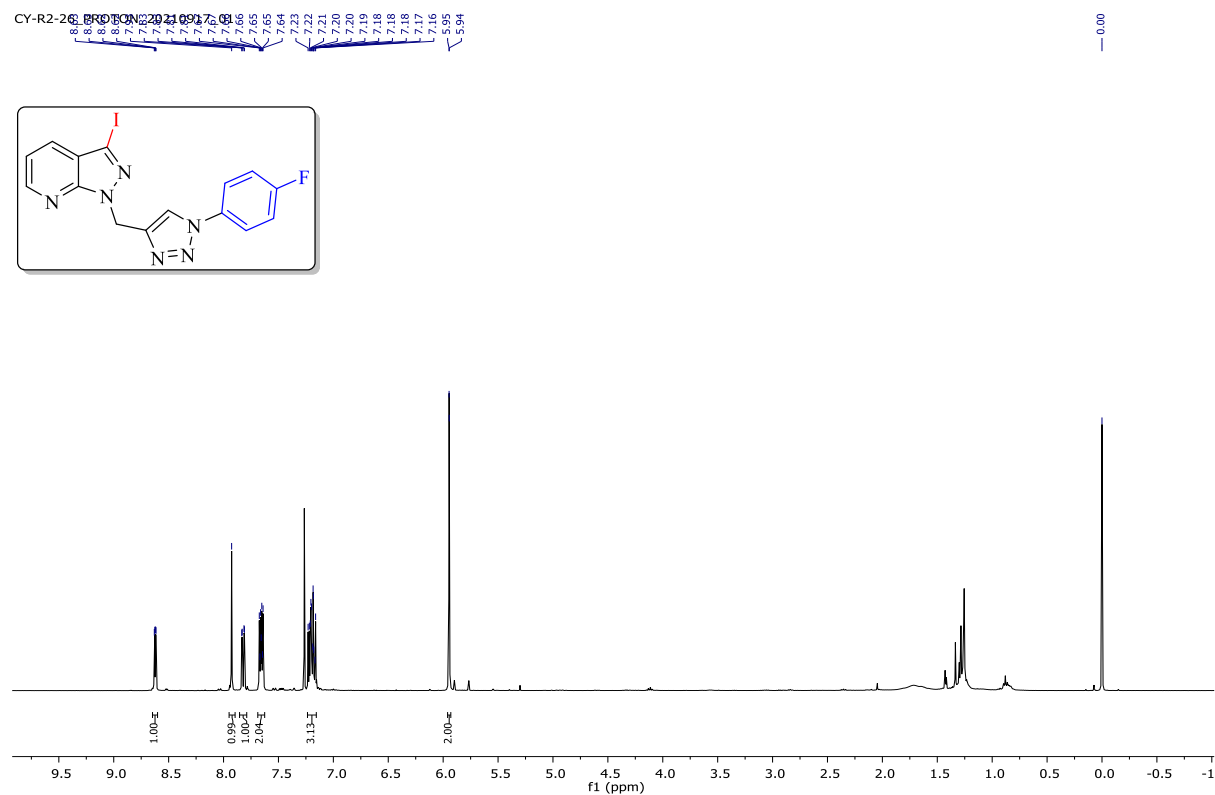
HPLC chromatogram of 3-Iodo-1-((1-(*o*-tolyl)-1*H*-1,2,3-triazol-4-yl)methyl)-1*H*-pyrazolo[3,4-*b*]pyridine (24)



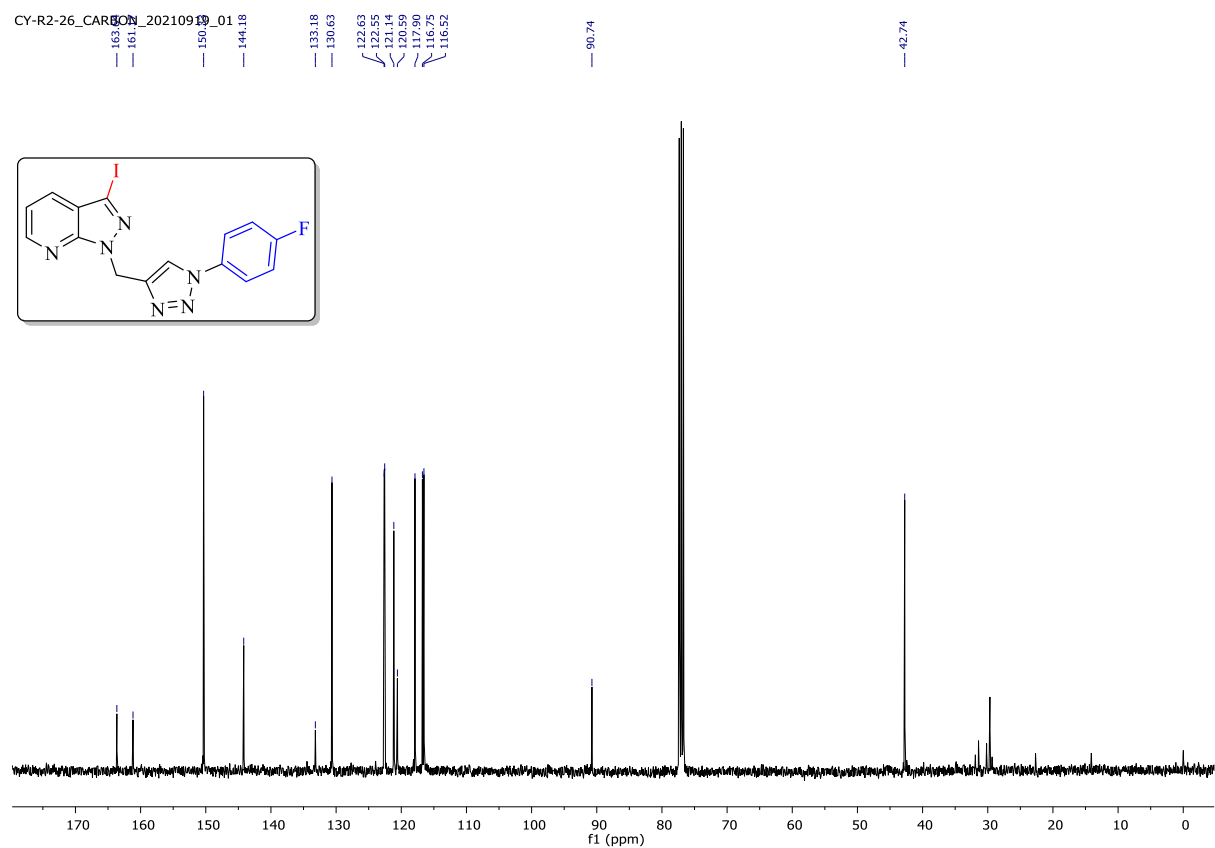
#### Peak Results

	Name	RT	Area	% Area
1		10.395	87247	1.33
2		10.631	6452798	98.67

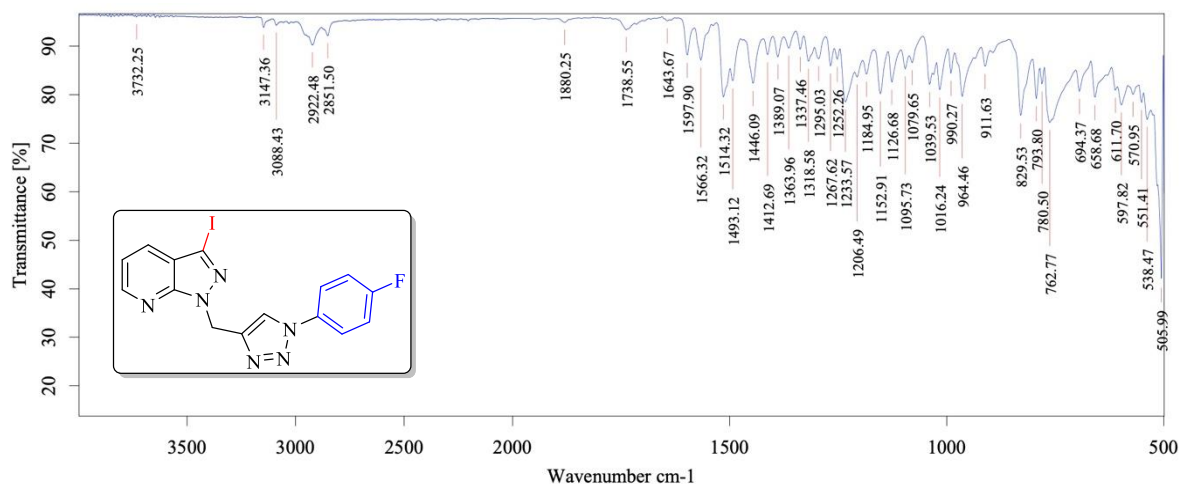
<sup>1</sup>H NMR spectrum of 1-((1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridin (25)



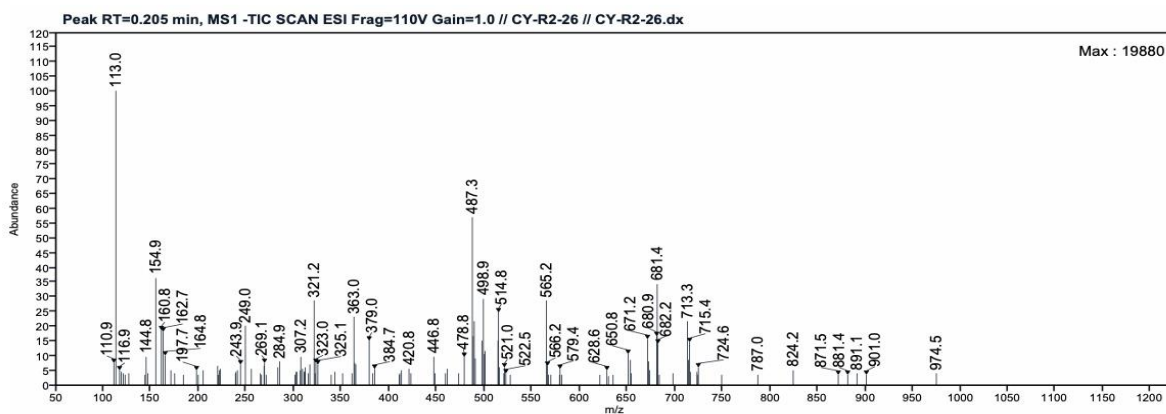
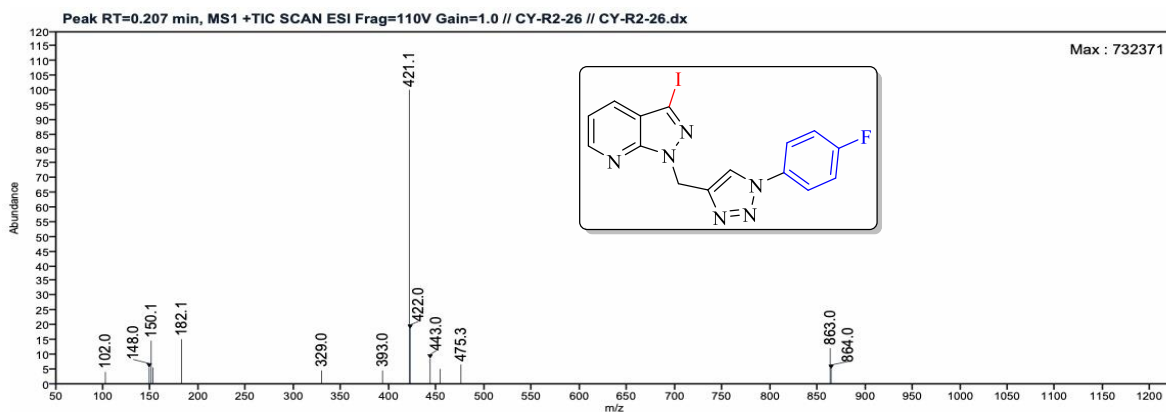
<sup>13</sup>C NMR spectrum of 1-((1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridin (25)



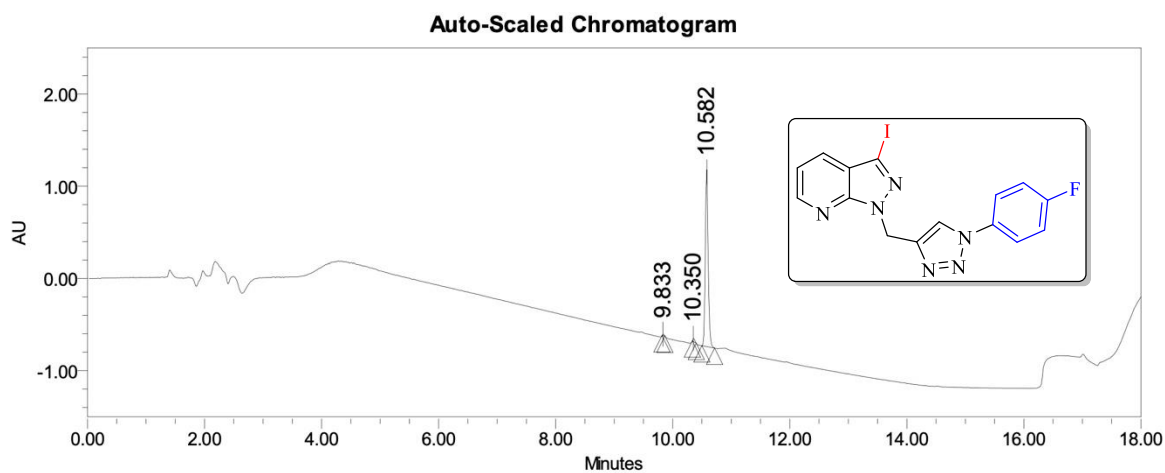
IR spectrum of 1-((1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridin (25)



Mass spectrum of 1-((1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridin (25)



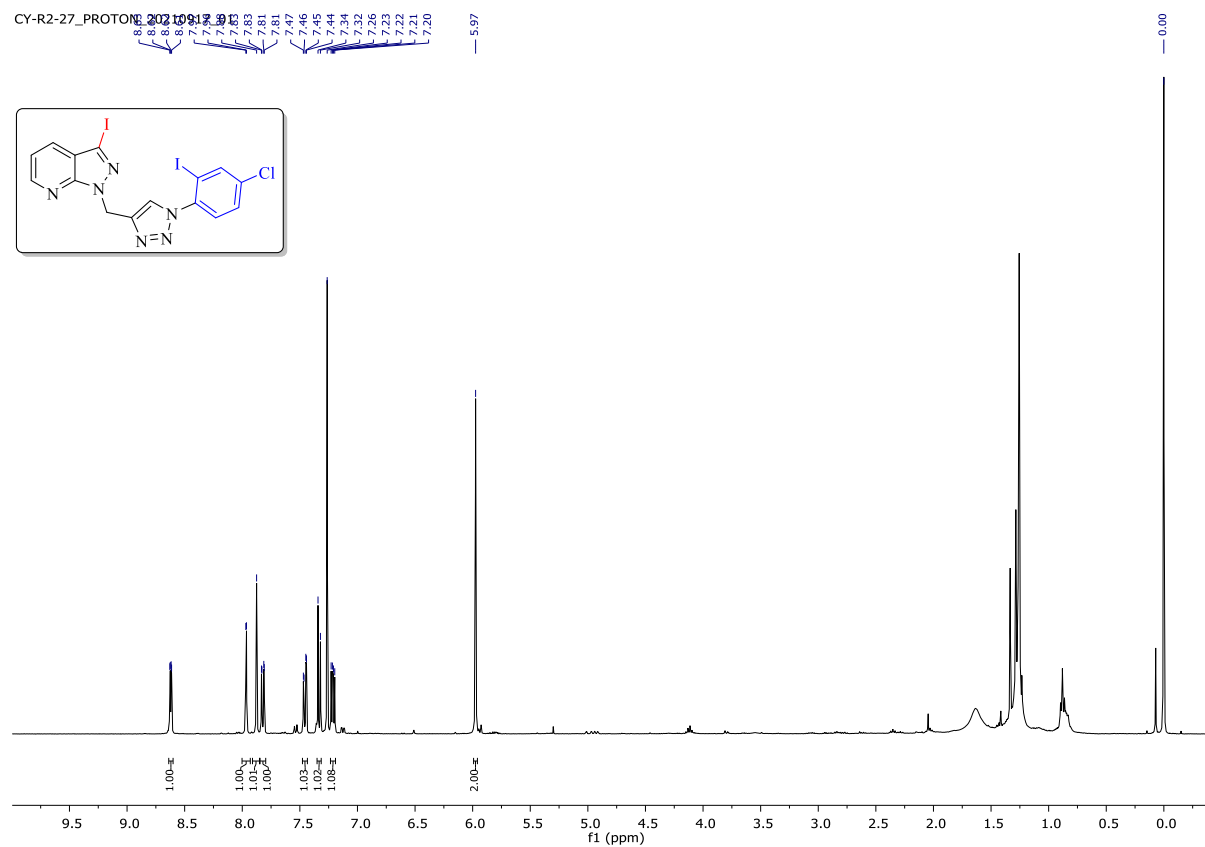
HPLC chromatogram of 1-((1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridin (25)



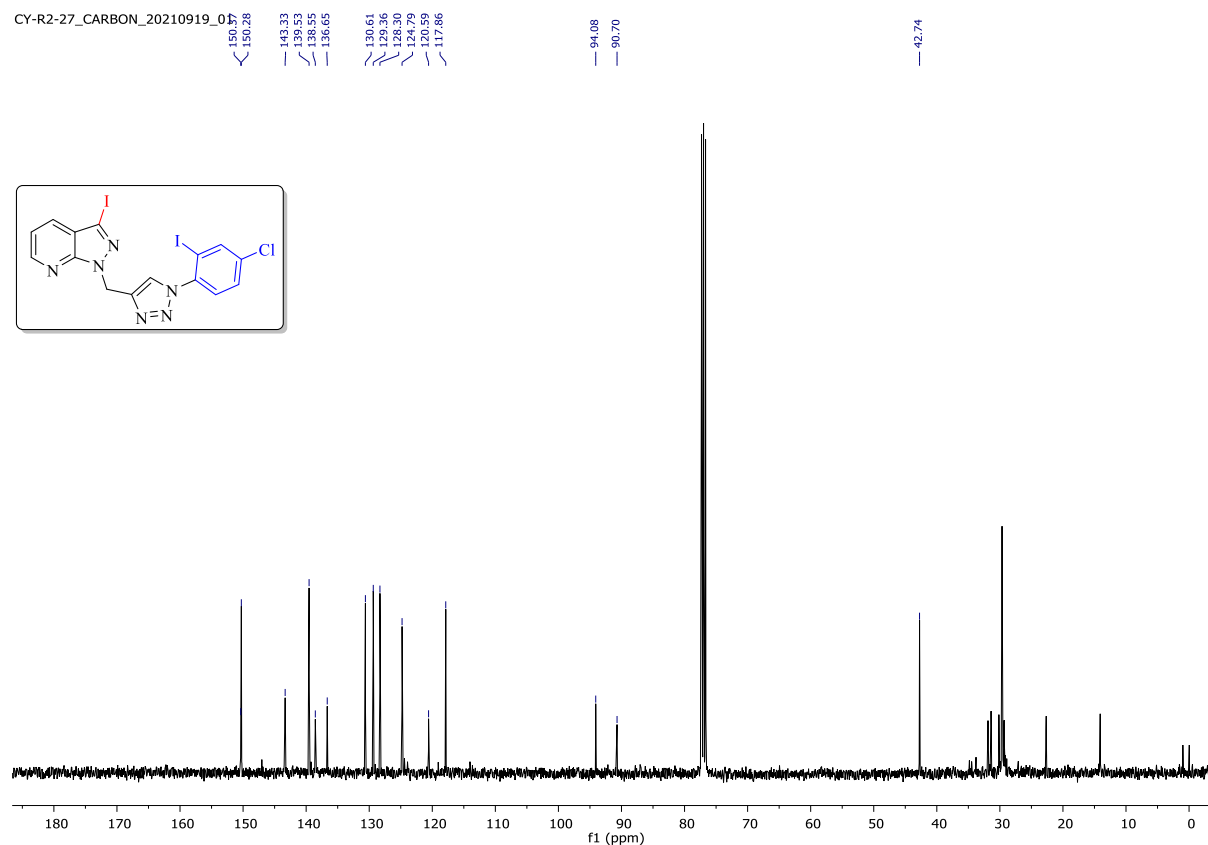
**Peak Results**

	Name	RT	Area	% Area
1		9.833	34621	0.53
2		10.350	77602	1.18
3		10.582	6481318	98.30

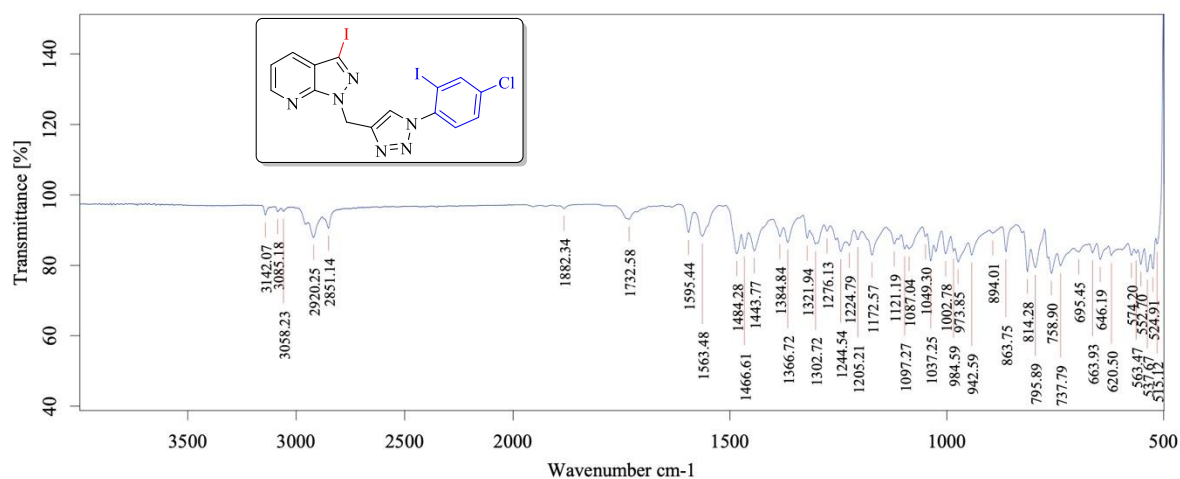
<sup>1</sup>H NMR spectrum of 1-((1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (26)



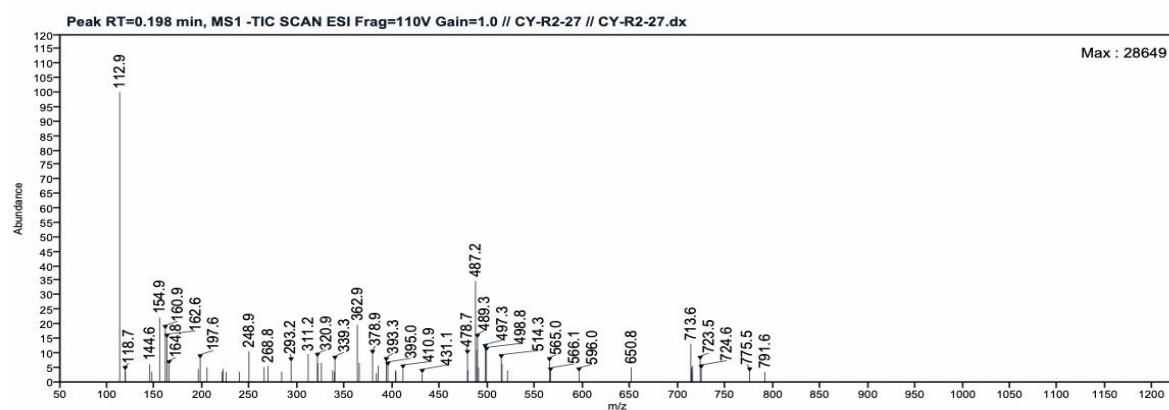
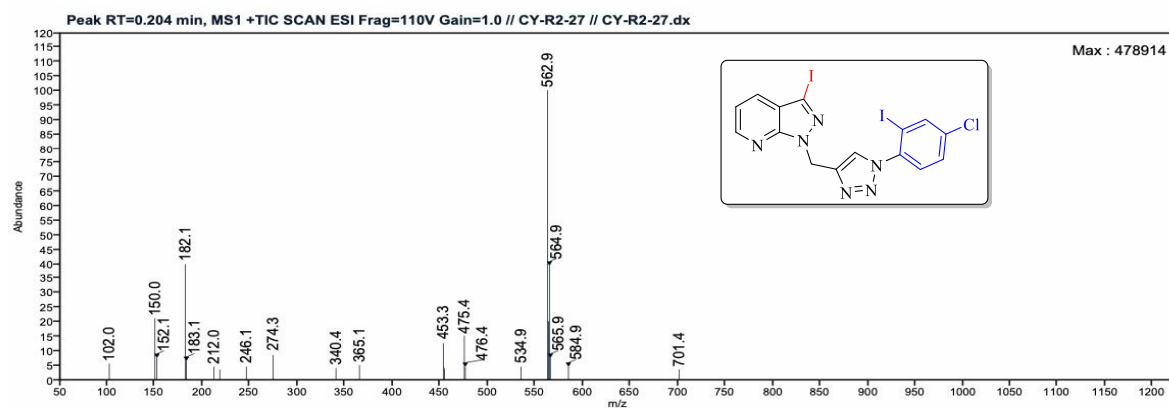
<sup>13</sup>C NMR spectrum of 1-((1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (26)



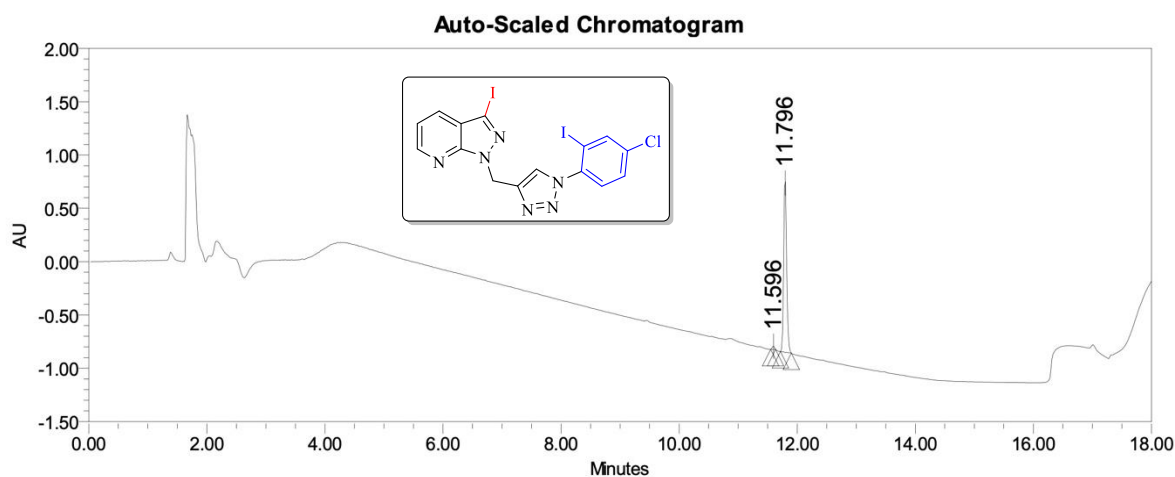
IR spectrum of 1-((1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (26)



Mass spectrum of 1-((1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (26)



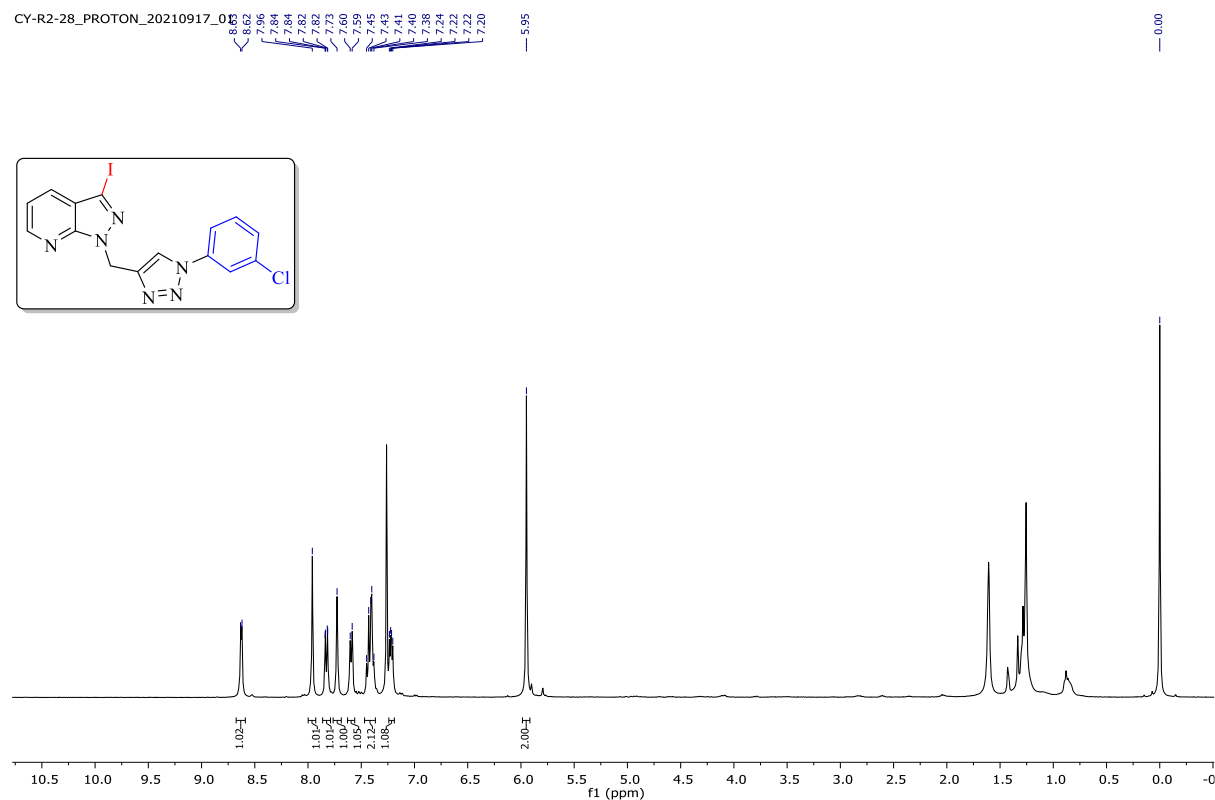
HPLC chromatogram of 1-((1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (26)



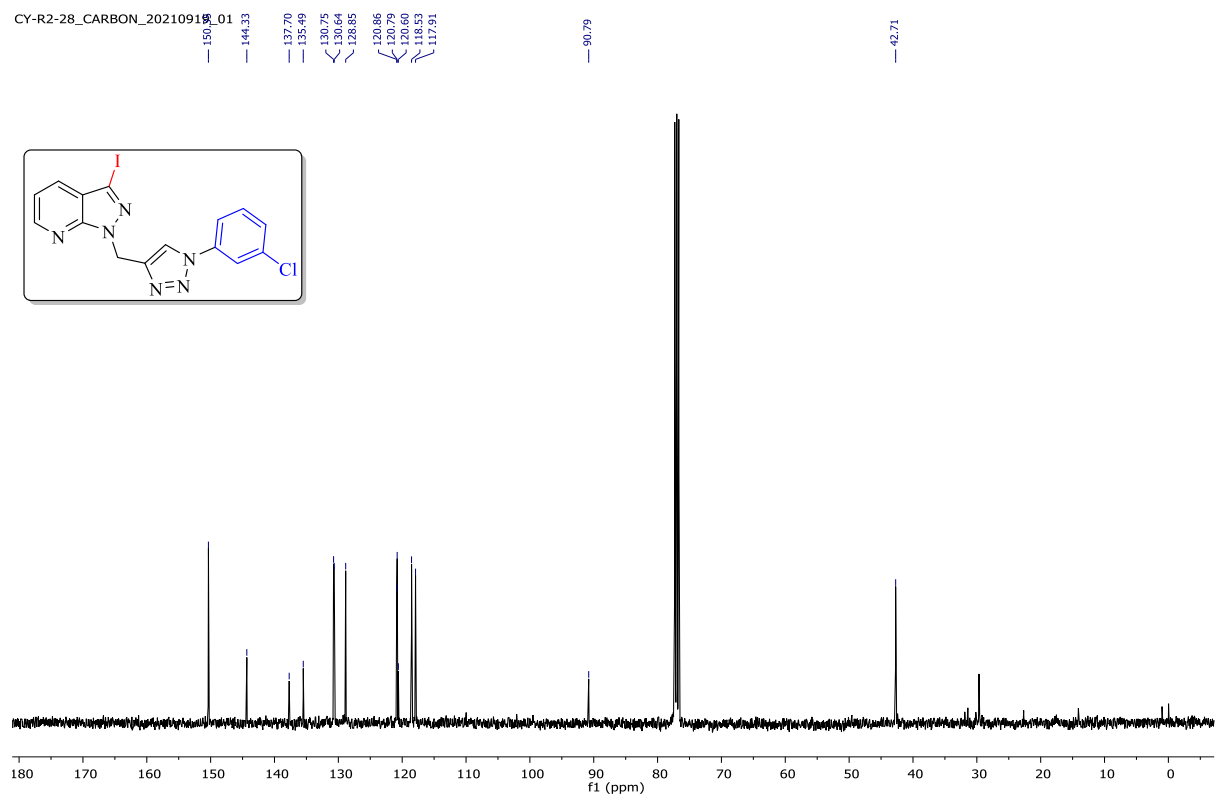
#### Peak Results

	Name	RT	Area	% Area
1		11.596	80924	1.41
2		11.796	5672987	98.59

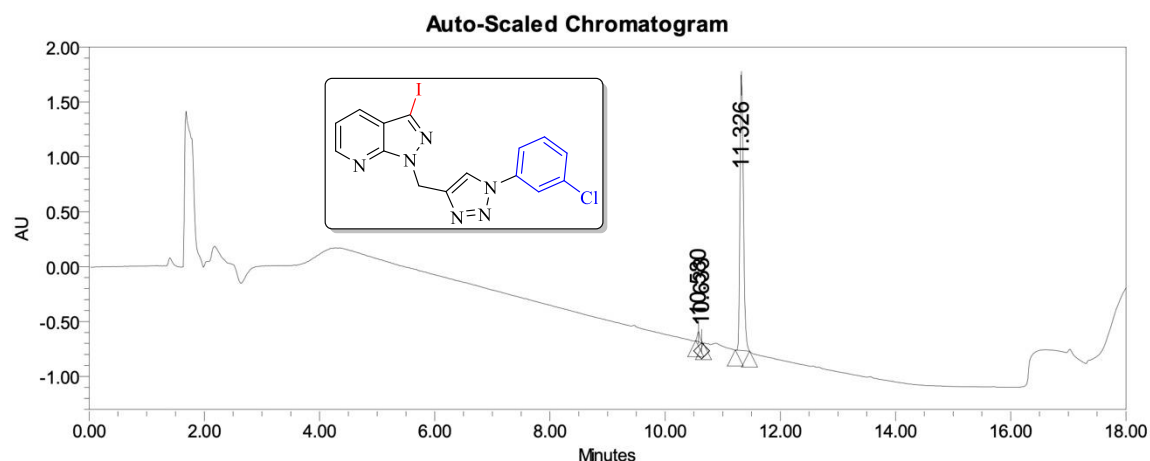
<sup>1</sup>H NMR spectrum of 1-((1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (27)



<sup>13</sup>C NMR spectrum of 1-((1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (27)



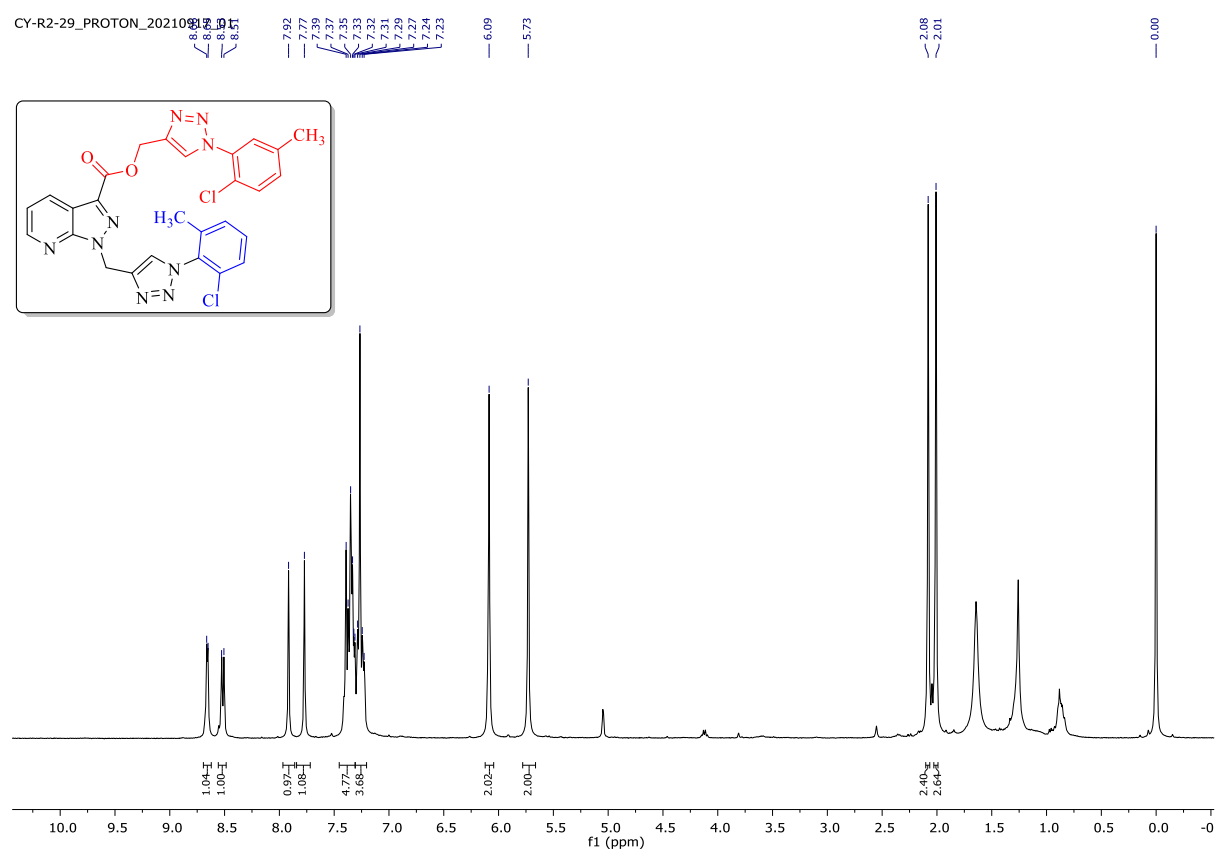
HPLC chromatogram of 1-((1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-3-iodo-1H-pyrazolo[3,4-b]pyridine (27)



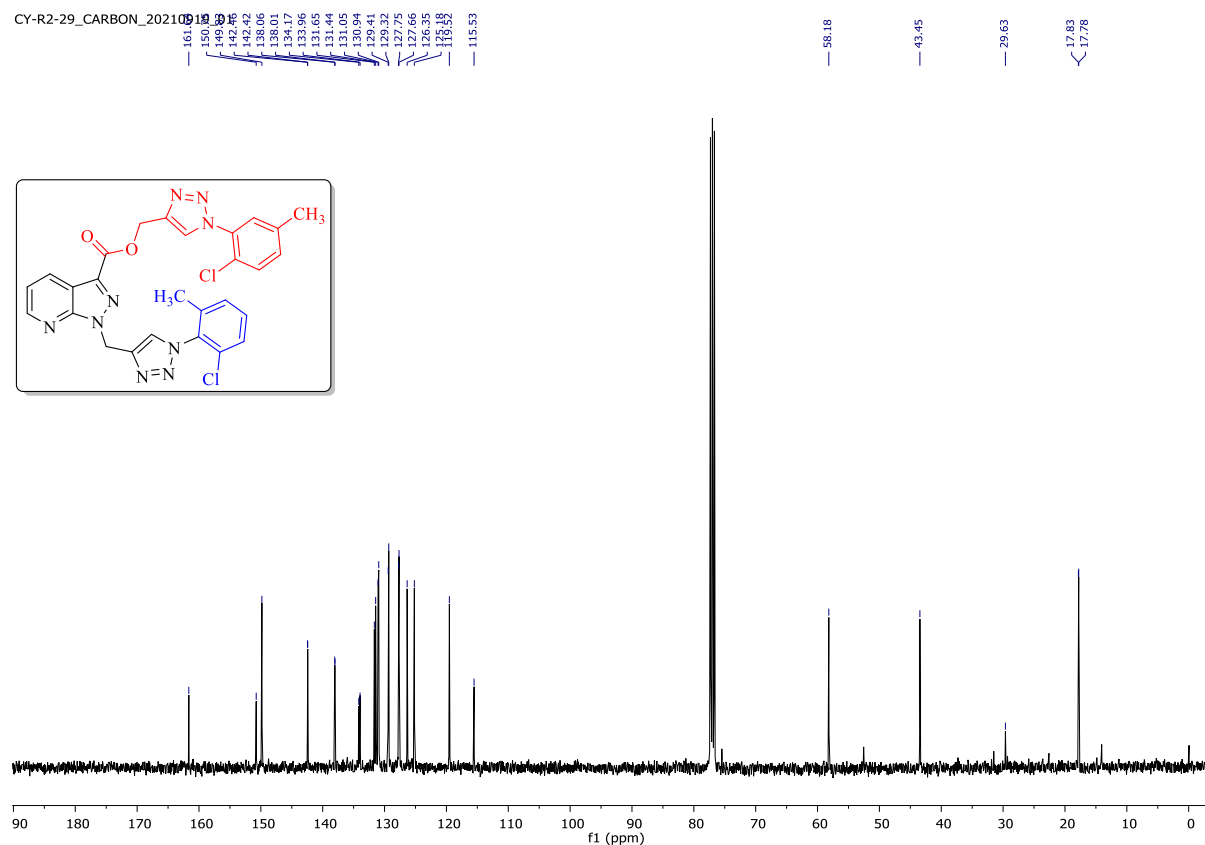
**Peak Results**

	Name	RT	Area	% Area
1		10.580	300138	2.84
2		10.633	16729	0.16
3		11.326	10261032	97.00

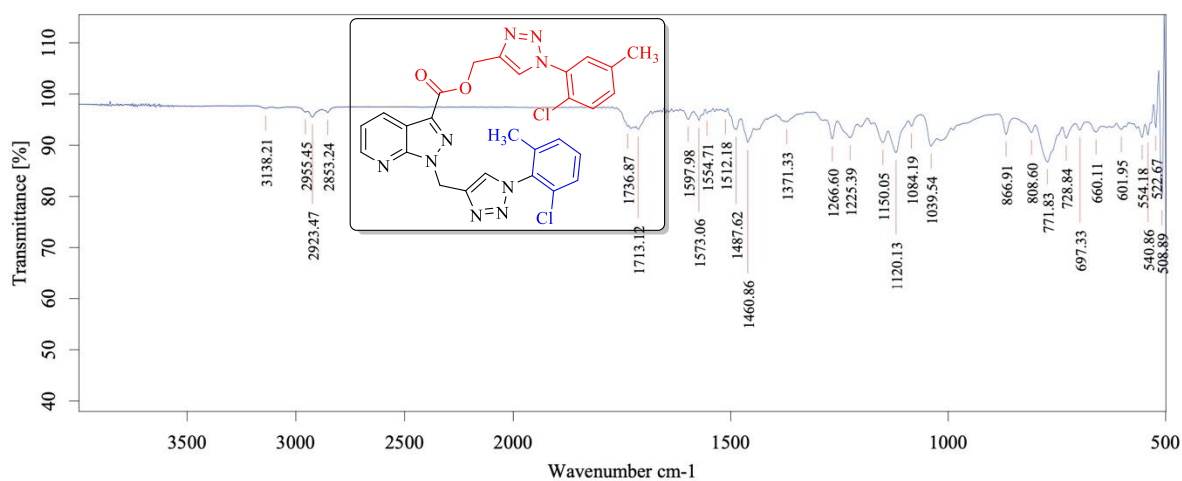
$^1\text{H}$  NMR spectrum of (1-(2-Chloro-5-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl-1-((1-(2-chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (28)



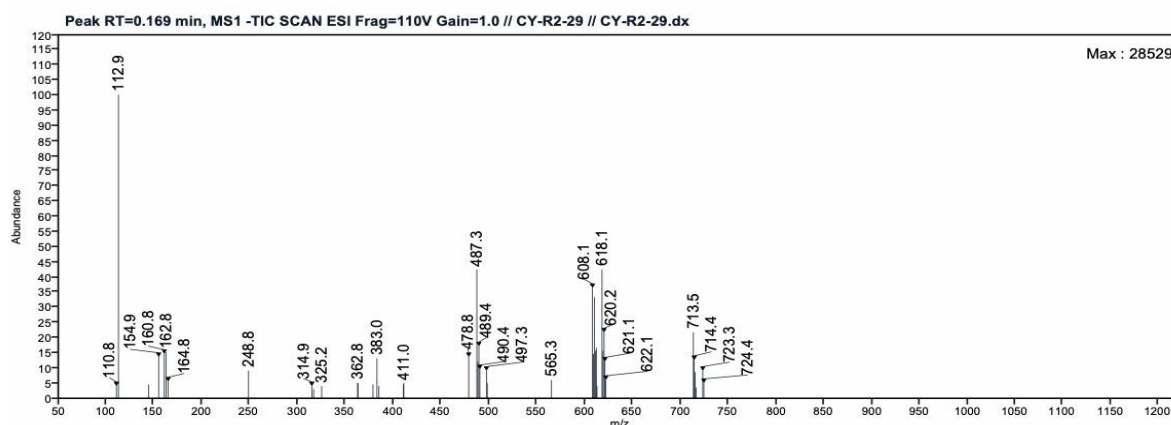
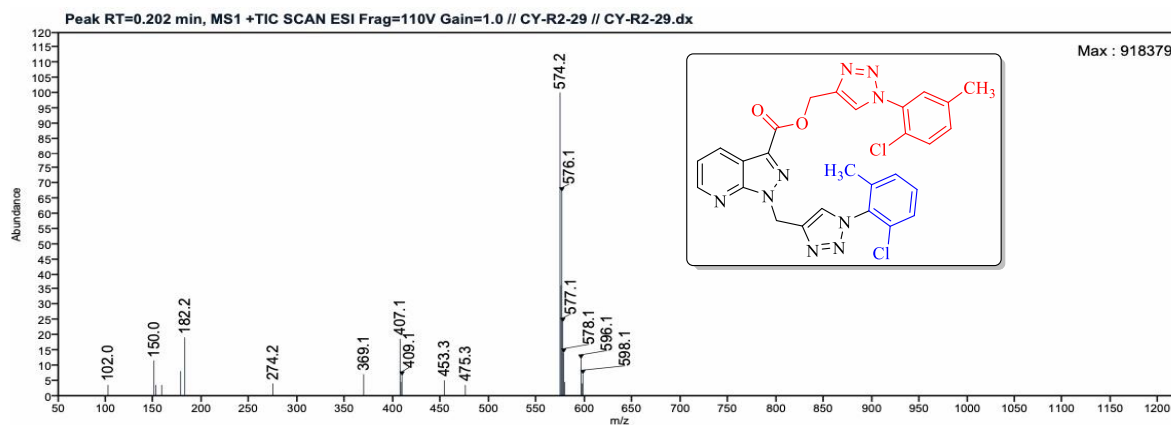
$^{13}\text{C}$  NMR spectrum of (1-(2-Chloro-5-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl-((1-(2-chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (28)



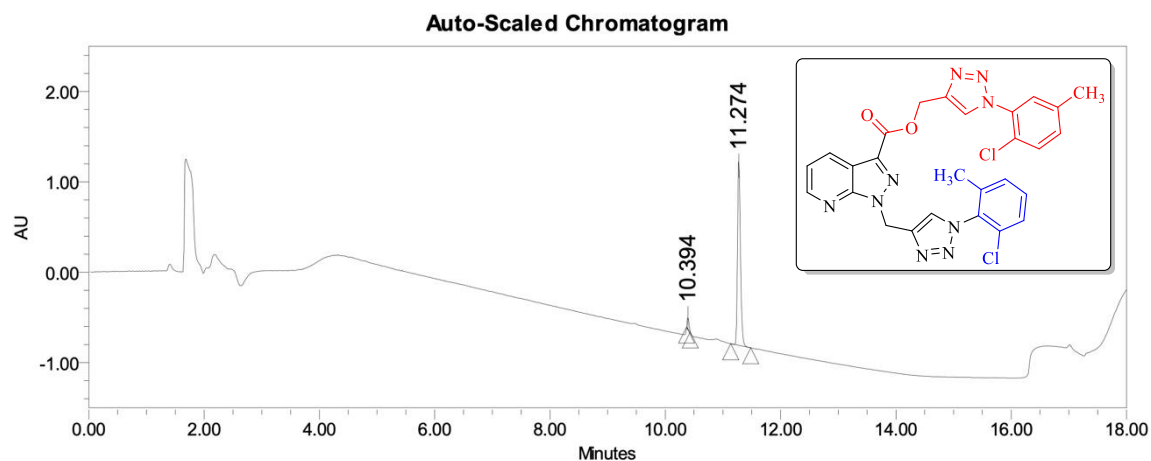
IR spectrum of (1-(2-Chloro-5-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl-((1-(2-chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (28)



Mass spectrum of (1-(2-Chloro-5-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl-((1-(2-chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (28)



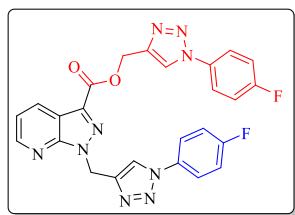
HPLC chromatogram of (1-(2-Chloro-5-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl-((1-(2-chloro-6-methylphenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (28)



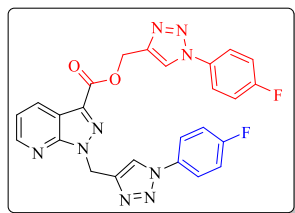
#### Peak Results

	Name	RT	Area	% Area
1		10.394	289952	3.86
2		11.274	7227763	96.14

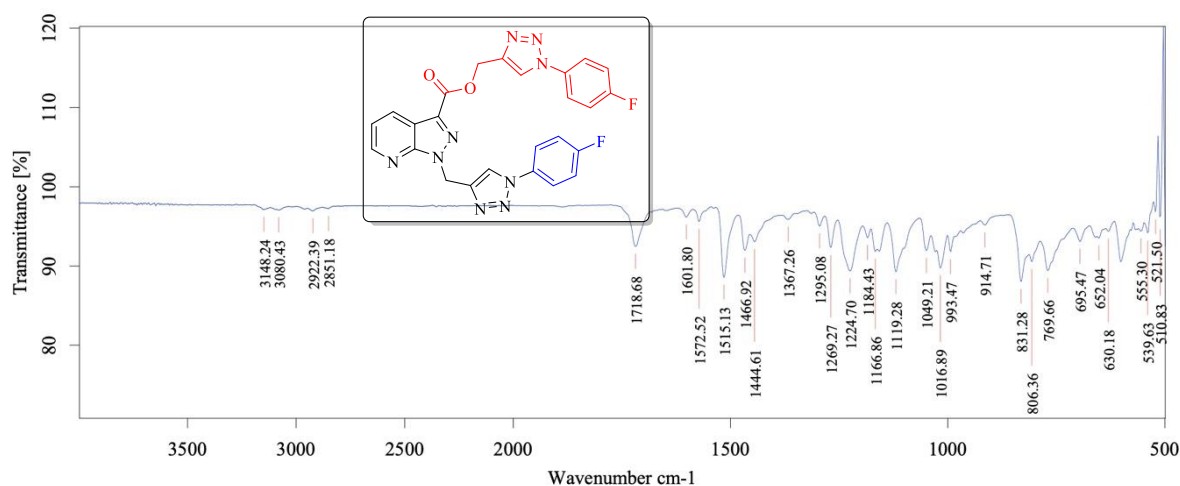
CY-R2-31 8.10 8.09 8.08 8.07 8.06 8.05 8.04 8.03 8.02 8.01 7.99 7.98 7.97 7.96 7.95 7.94 7.93 7.92 7.91 7.90 7.89 7.88 7.87 7.86 7.85 7.84 7.83 7.82 7.81 7.80 7.79 7.78 7.77 7.76 7.75 7.74 7.73 7.72 7.71 7.70 7.69 7.68 7.67 7.66 7.65 7.64 7.63 7.62 7.61 7.60 7.59 7.58 7.57 7.56 7.55 7.54 7.53 7.52 7.51 7.50 7.49 7.48 7.47 7.46 7.45 7.44 7.43 7.42 7.41 7.40 7.39 7.38 7.37 7.36 7.35 7.34 7.33 7.32 7.31 7.30 7.29 7.28 7.27 7.26 7.25 7.24 7.23 7.22 7.21 7.20 7.19 7.18 7.17 7.16 7.15 7.14 7.13 7.12 7.11 7.10 7.09 7.08 7.07 7.06 7.05 7.04 7.03 7.02 7.01 7.00 6.99 6.98 6.97 6.96 6.95 6.94 6.93 6.92 6.91 6.90 6.89 6.88 6.87 6.86 6.85 6.84 6.83 6.82 6.81 6.80 6.79 6.78 6.77 6.76 6.75 6.74 6.73 6.72 6.71 6.70 6.69 6.68 6.67 6.66 6.65 6.64 6.63 6.62 6.61 6.60 6.59 6.58 6.57 6.56 6.55 6.54 6.53 6.52 6.51 6.50 6.49 6.48 6.47 6.46 6.45 6.44 6.43 6.42 6.41 6.40 6.39 6.38 6.37 6.36 6.35 6.34 6.33 6.32 6.31 6.30 6.29 6.28 6.27 6.26 6.25 6.24 6.23 6.22 6.21 6.20 6.19 6.18 6.17 6.16 6.15 6.14 6.13 6.12 6.11 6.10 6.09 6.08 6.07 6.06 6.05 6.04 6.03 6.02 6.01 6.00 5.99 5.98 5.97 5.96 5.95 5.94 5.93 5.92 5.91 5.90 5.89 5.88 5.87 5.86 5.85 5.84 5.83 5.82 5.81 5.80 5.79 5.78 5.77 5.76 5.75 5.74 5.73 5.72 5.71 5.70 5.69 5.68 5.67 5.66 5.65 5.64 5.63 5.62 5.61 5.60 5.59 5.58 5.57 5.56 5.55 5.54 5.53 5.52 5.51 5.50 5.49 5.48 5.47 5.46 5.45 5.44 5.43 5.42 5.41 5.40 5.39 5.38 5.37 5.36 5.35 5.34 5.33 5.32 5.31 5.30 5.29 5.28 5.27 5.26 5.25 5.24 5.23 5.22 5.21 5.20 5.19 5.18 5.17 5.16 5.15 5.14 5.13 5.12 5.11 5.10 5.09 5.08 5.07 5.06 5.05 5.04 5.03 5.02 5.01 5.00 4.99 4.98 4.97 4.96 4.95 4.94 4.93 4.92 4.91 4.90 4.89 4.88 4.87 4.86 4.85 4.84 4.83 4.82 4.81 4.80 4.79 4.78 4.77 4.76 4.75 4.74 4.73 4.72 4.71 4.70 4.69 4.68 4.67 4.66 4.65 4.64 4.63 4.62 4.61 4.60 4.59 4.58 4.57 4.56 4.55 4.54 4.53 4.52 4.51 4.50 4.49 4.48 4.47 4.46 4.45 4.44 4.43 4.42 4.41 4.40 4.39 4.38 4.37 4.36 4.35 4.34 4.33 4.32 4.31 4.30 4.29 4.28 4.27 4.26 4.25 4.24 4.23 4.22 4.21 4.20 4.19 4.18 4.17 4.16 4.15 4.14 4.13 4.12 4.11 4.10 4.09 4.08 4.07 4.06 4.05 4.04 4.03 4.02 4.01 4.00 3.99 3.98 3.97 3.96 3.95 3.94 3.93 3.92 3.91 3.90 3.89 3.88 3.87 3.86 3.85 3.84 3.83 3.82 3.81 3.80 3.79 3.78 3.77 3.76 3.75 3.74 3.73 3.72 3.71 3.70 3.69 3.68 3.67 3.66 3.65 3.64 3.63 3.62 3.61 3.60 3.59 3.58 3.57 3.56 3.55 3.54 3.53 3.52 3.51 3.50 3.49 3.48 3.47 3.46 3.45 3.44 3.43 3.42 3.41 3.40 3.39 3.38 3.37 3.36 3.35 3.34 3.33 3.32 3.31 3.30 3.29 3.28 3.27 3.26 3.25 3.24 3.23 3.22 3.21 3.20 3.19 3.18 3.17 3.16 3.15 3.14 3.13 3.12 3.11 3.10 3.09 3.08 3.07 3.06 3.05 3.04 3.03 3.02 3.01 3.00 2.99 2.98 2.97 2.96 2.95 2.94 2.93 2.92 2.91 2.90 2.89 2.88 2.87 2.86 2.85 2.84 2.83 2.82 2.81 2.80 2.79 2.78 2.77 2.76 2.75 2.74 2.73 2.72 2.71 2.70 2.69 2.68 2.67 2.66 2.65 2.64 2.63 2.62 2.61 2.60 2.59 2.58 2.57 2.56 2.55 2.54 2.53 2.52 2.51 2.50 2.49 2.48 2.47 2.46 2.45 2.44 2.43 2.42 2.41 2.40 2.39 2.38 2.37 2.36 2.35 2.34 2.33 2.32 2.31 2.30 2.29 2.28 2.27 2.26 2.25 2.24 2.23 2.22 2.21 2.20 2.19 2.18 2.17 2.16 2.15 2.14 2.13 2.12 2.11 2.10 2.09 2.08 2.07 2.06 2.05 2.04 2.03 2.02 2.01 2.00 1.99 1.98 1.97 1.96 1.95 1.94 1.93 1.92 1.91 1.90 1.89 1.88 1.87 1.86 1.85 1.84 1.83 1.82 1.81 1.80 1.79 1.78 1.77 1.76 1.75 1.74 1.73 1.72 1.71 1.70 1.69 1.68 1.67 1.66 1.65 1.64 1.63 1.62 1.61 1.60 1.59 1.58 1.57 1.56 1.55 1.54 1.53 1.52 1.51 1.50 1.49 1.48 1.47 1.46 1.45 1.44 1.43 1.42 1.41 1.40 1.39 1.38 1.37 1.36 1.35 1.34 1.33 1.32 1.31 1.30 1.29 1.28 1.27 1.26 1.25 1.24 1.23 1.22 1.21 1.20 1.19 1.18 1.17 1.16 1.15 1.14 1.13 1.12 1.11 1.10 1.09 1.08 1.07 1.06 1.05 1.04 1.03 1.02 1.01 1.00 0.99 0.98 0.97 0.96 0.95 0.94 0.93 0.92 0.91 0.90 0.89 0.88 0.87 0.86 0.85 0.84 0.83 0.82 0.81 0.80 0.79 0.78 0.77 0.76 0.75 0.74 0.73 0.72 0.71 0.70 0.69 0.68 0.67 0.66 0.65 0.64 0.63 0.62 0.61 0.60 0.59 0.58 0.57 0.56 0.55 0.54 0.53 0.52 0.51 0.50 0.49 0.48 0.47 0.46 0.45 0.44 0.43 0.42 0.41 0.40 0.39 0.38 0.37 0.36 0.35 0.34 0.33 0.32 0.31 0.30 0.29 0.28 0.27 0.26 0.25 0.24 0.23 0.22 0.21 0.20 0.19 0.18 0.17 0.16 0.15 0.14 0.13 0.12 0.11 0.10 0.09 0.08 0.07 0.06 0.05 0.04 0.03 0.02 0.01 0.00



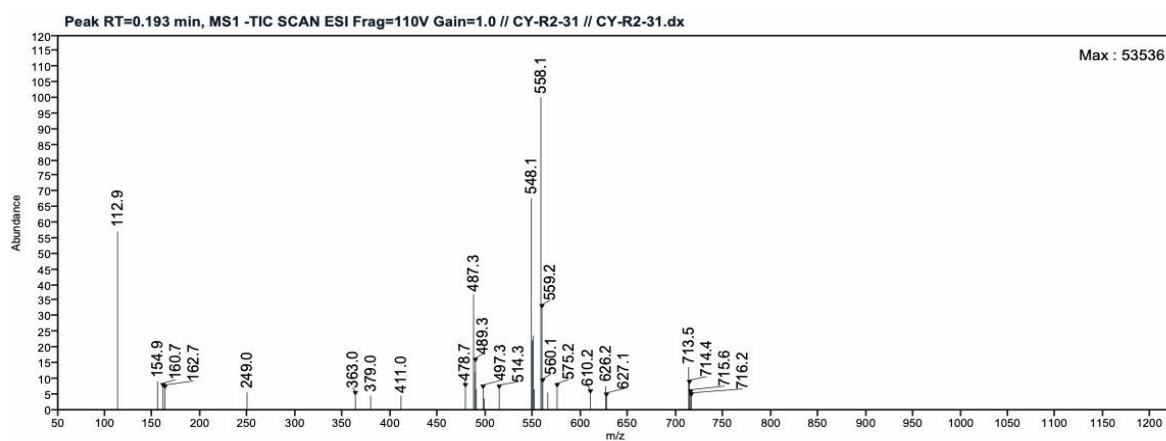
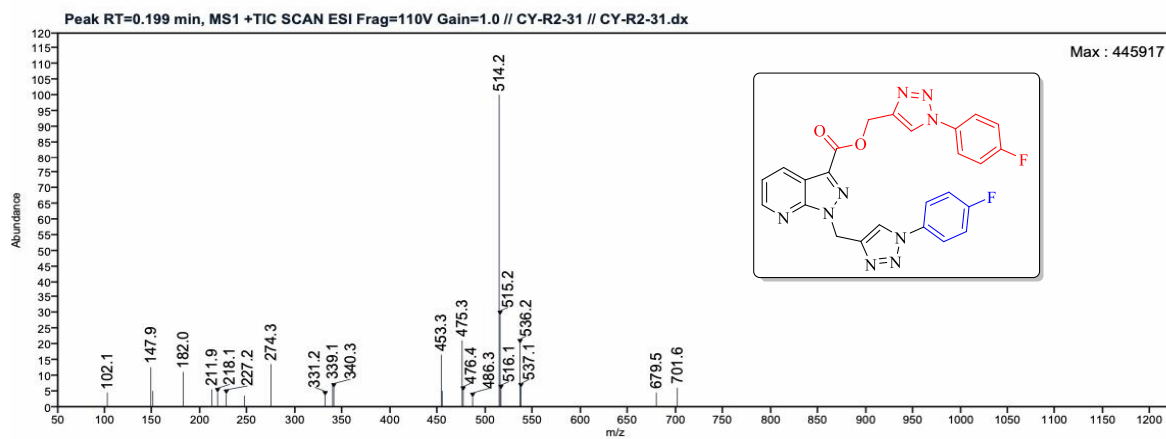
CY-R2-31\_CARBON\_3021019\_01



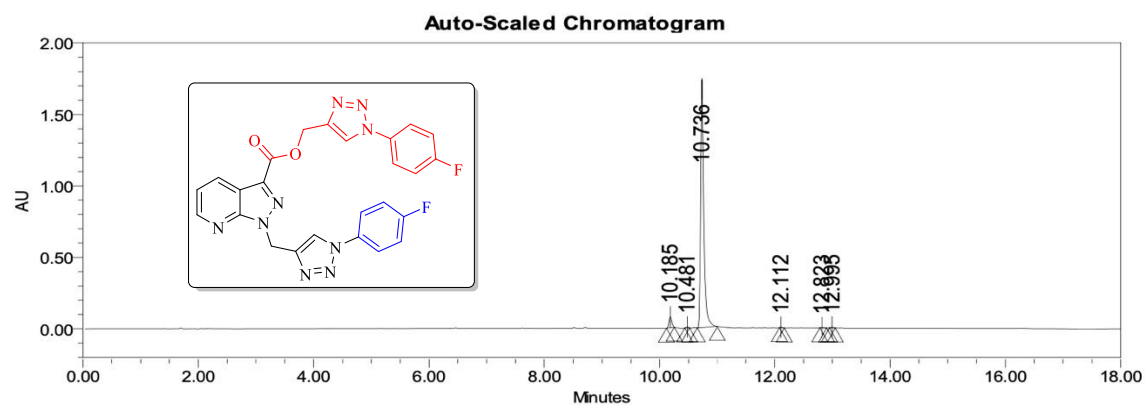
IR spectrum of (1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(4-fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (29)



Mass spectrum of (1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(4-fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (29)



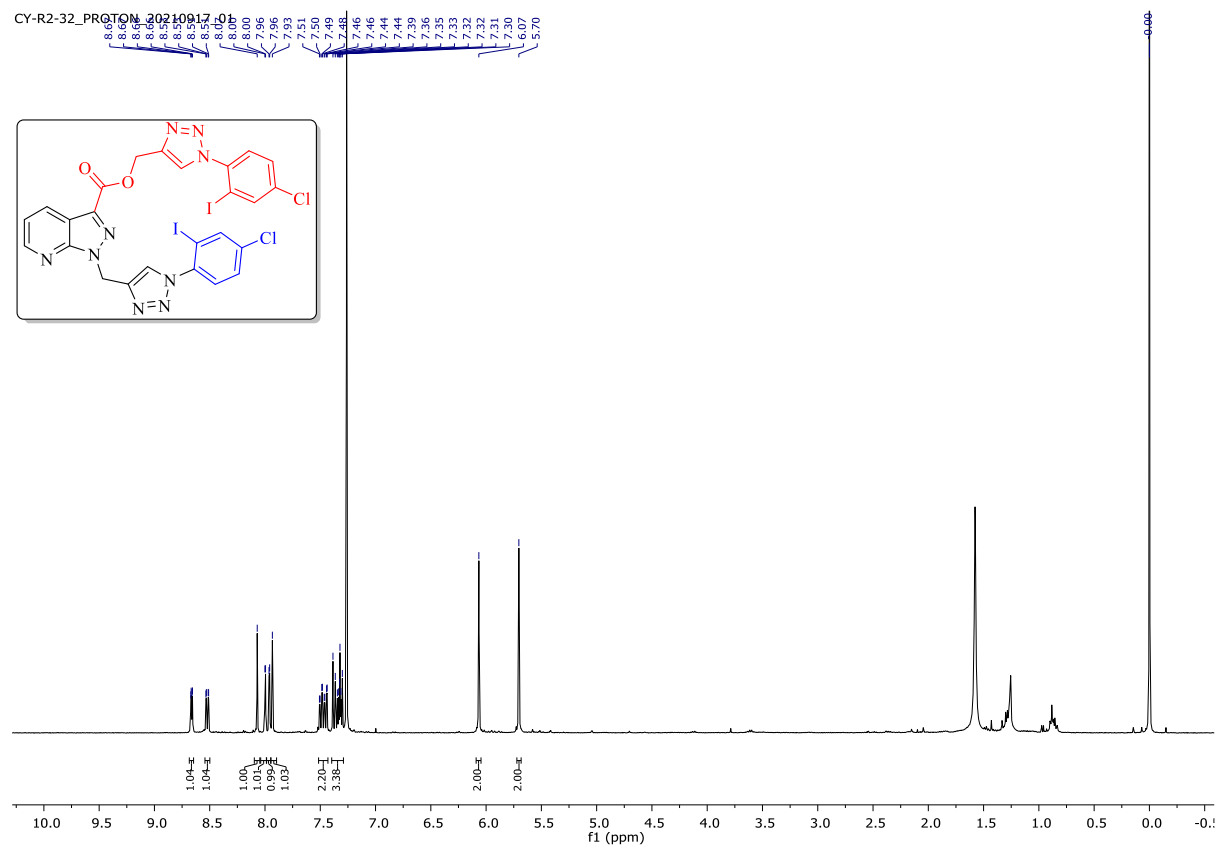
HPLC chromatogram of (1-(4-Fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(4-fluorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (29)



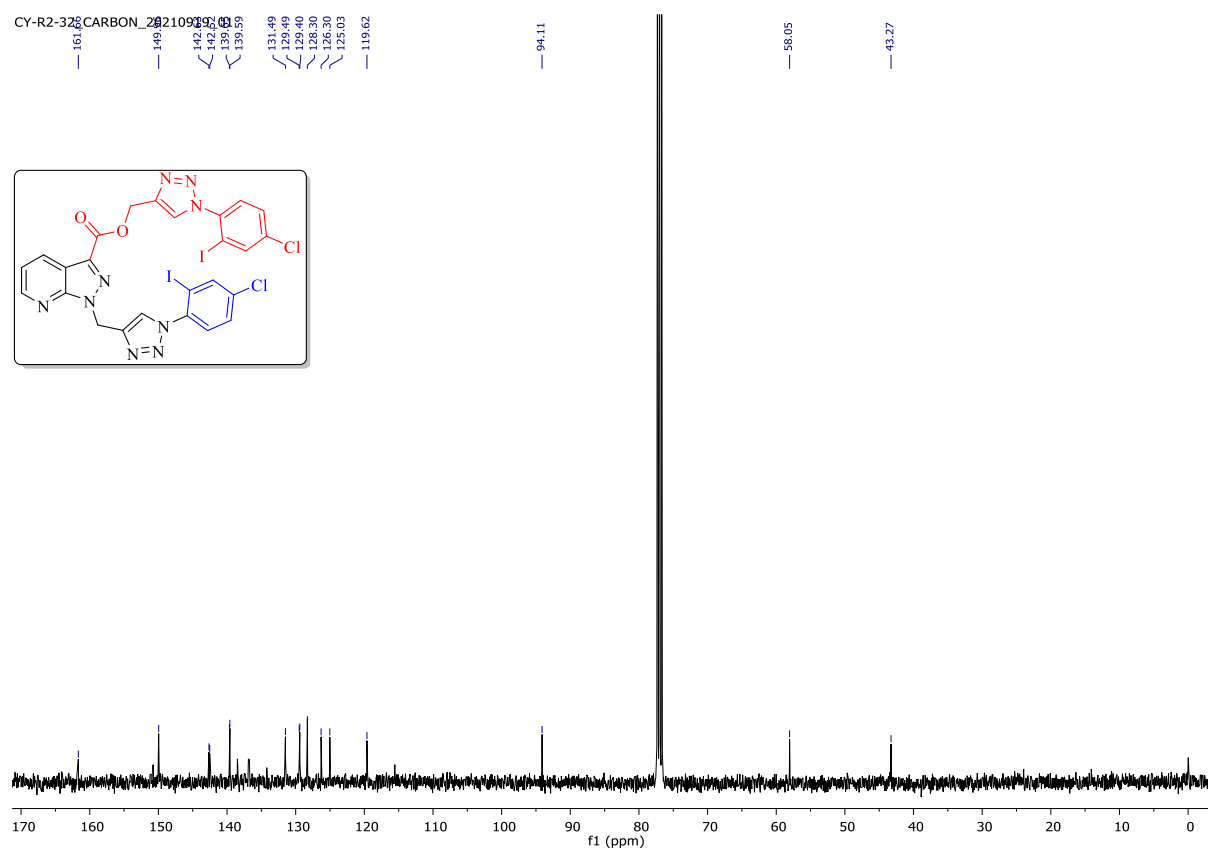
**Peak Results**

	Name	RT	Area	% Area
1		10.185	242899	3.66
2		10.481	20449	0.31
3		10.736	6330986	95.27
4		12.112	11445	0.17
5		12.823	15600	0.23

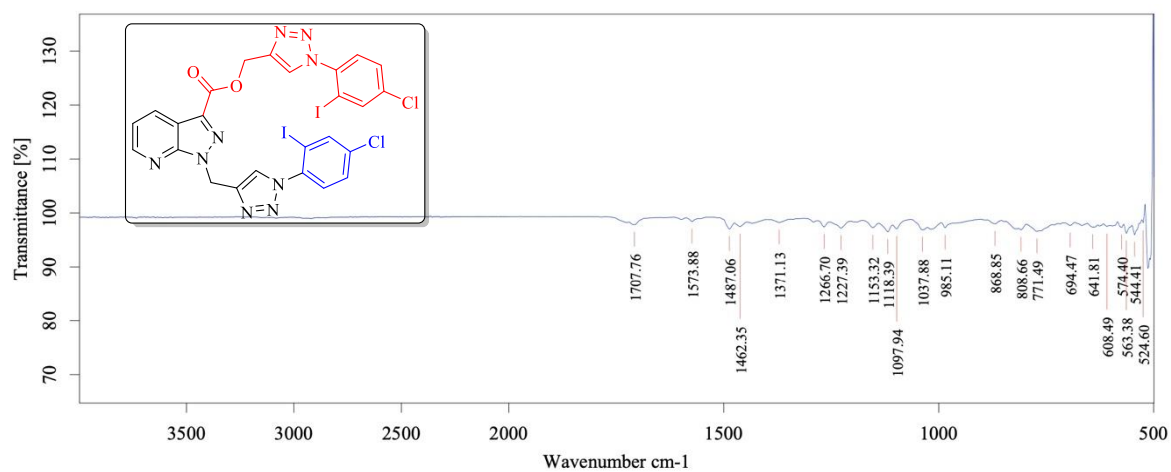
$^1\text{H}$  NMR spectrum of (1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(4-chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (30)



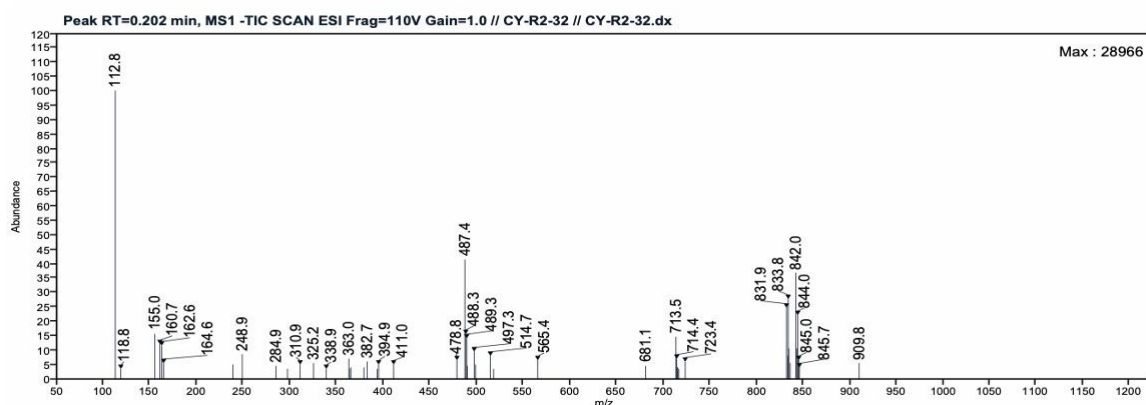
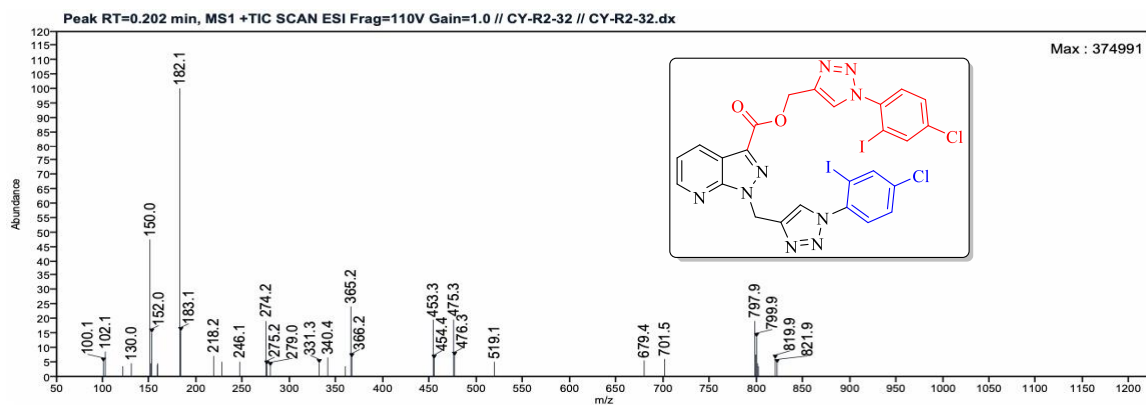
<sup>13</sup>C NMR spectrum of (1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(4-chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (30)



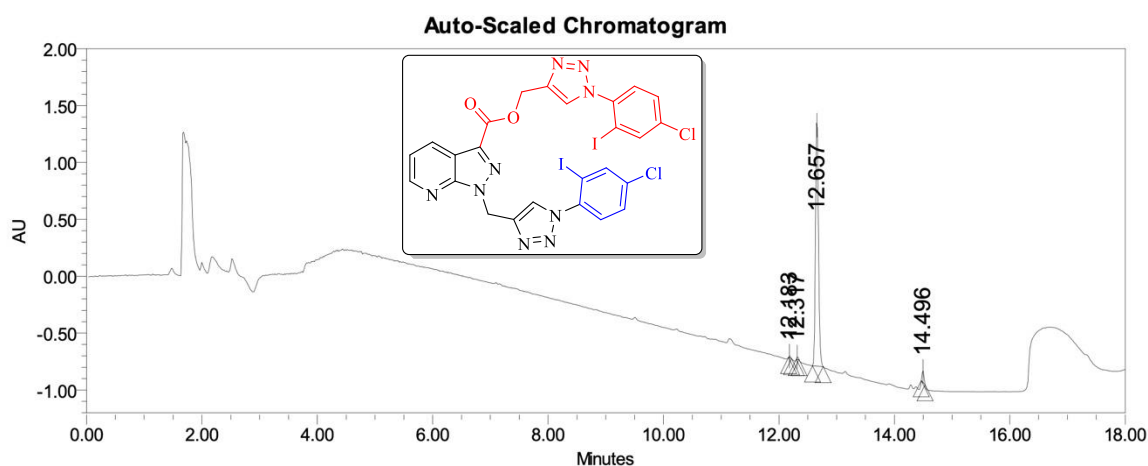
IR spectrum of (1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(4-chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (30)



Mass spectrum of (1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(4-chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (30)



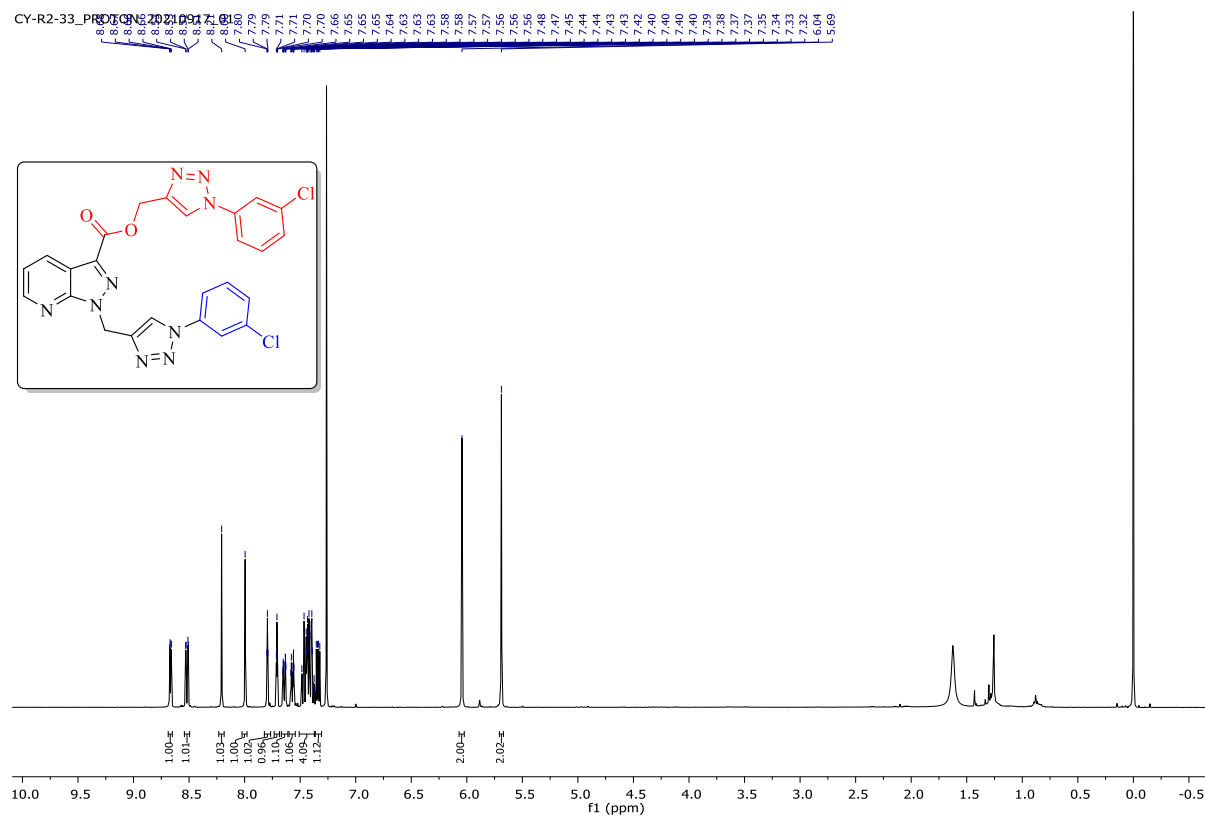
HPLC chromatogram of (1-(4-Chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(4-chloro-2-iodophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (30)



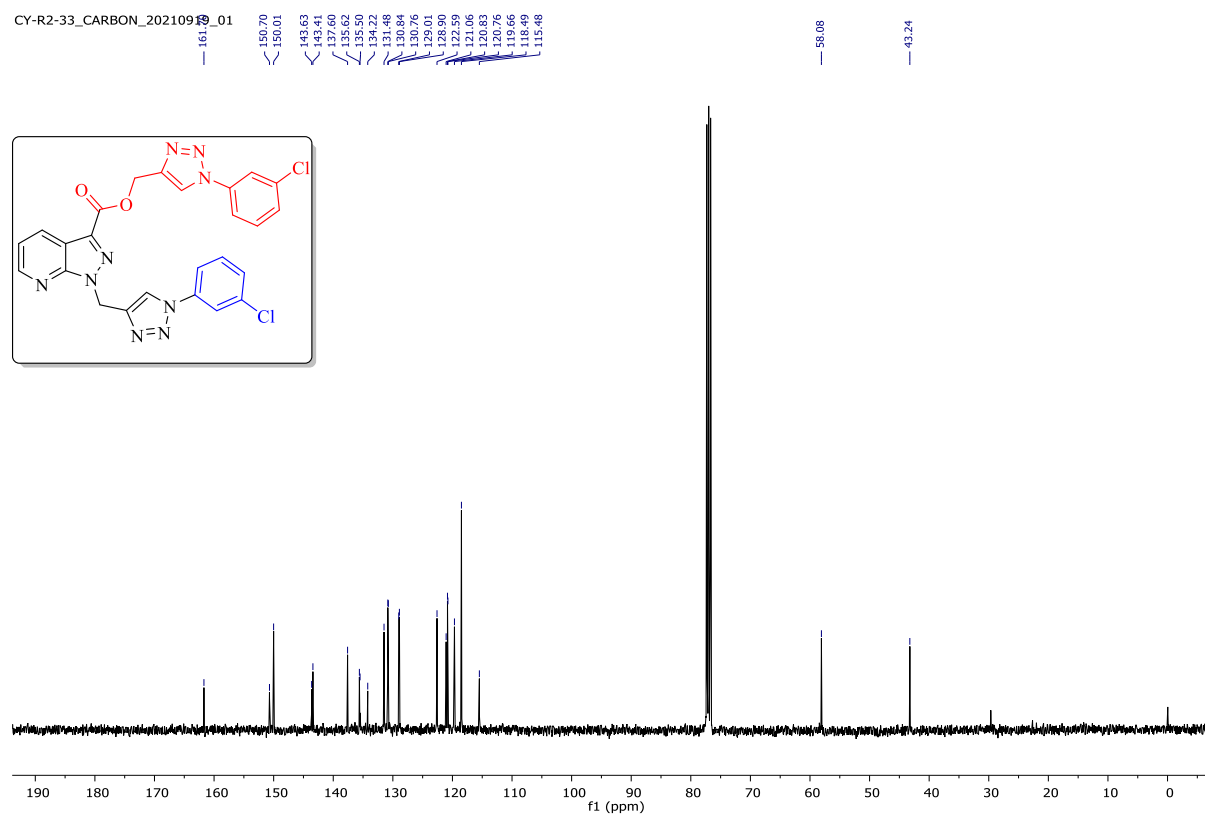
#### Peak Results

	Name	RT	Area	% Area
1		12.183	25667	0.32
2		12.317	40781	0.50
3		12.657	7807837	96.28
4		14.496	234849	2.90

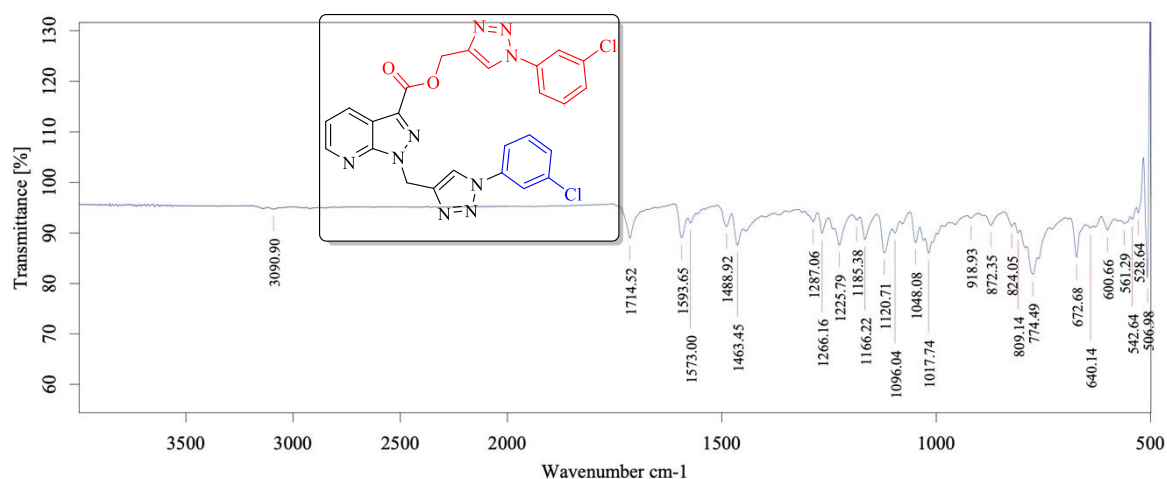
<sup>1</sup>H NMR spectrum of (1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(3-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (31)



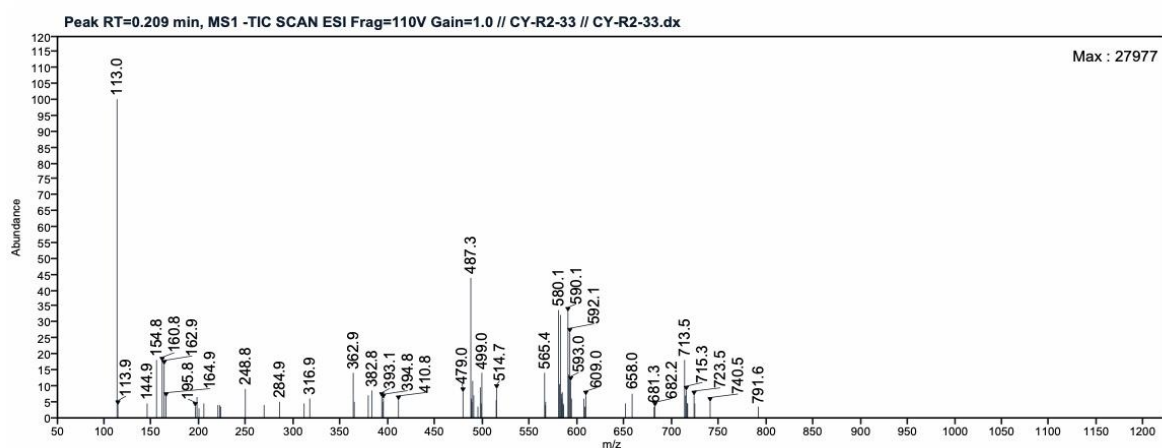
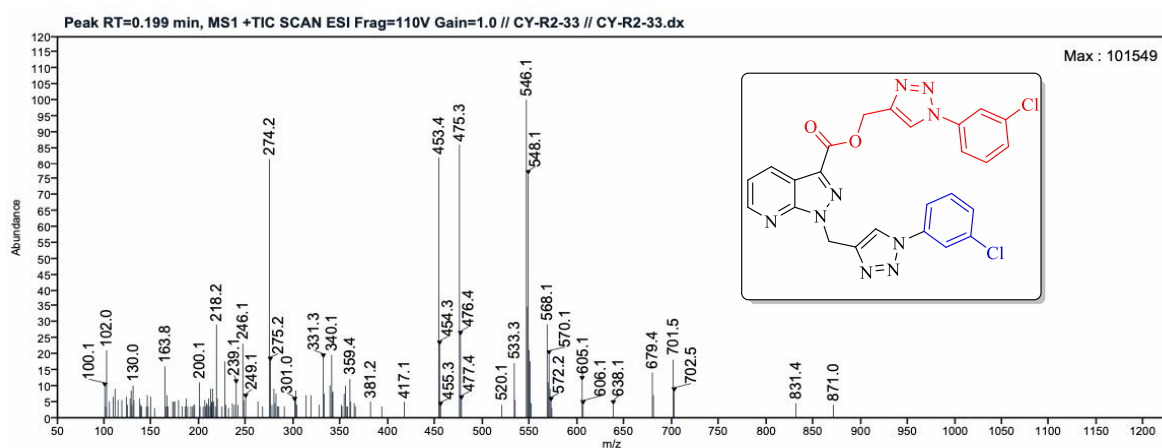
<sup>13</sup>C NMR spectrum of (1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(3-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (31)



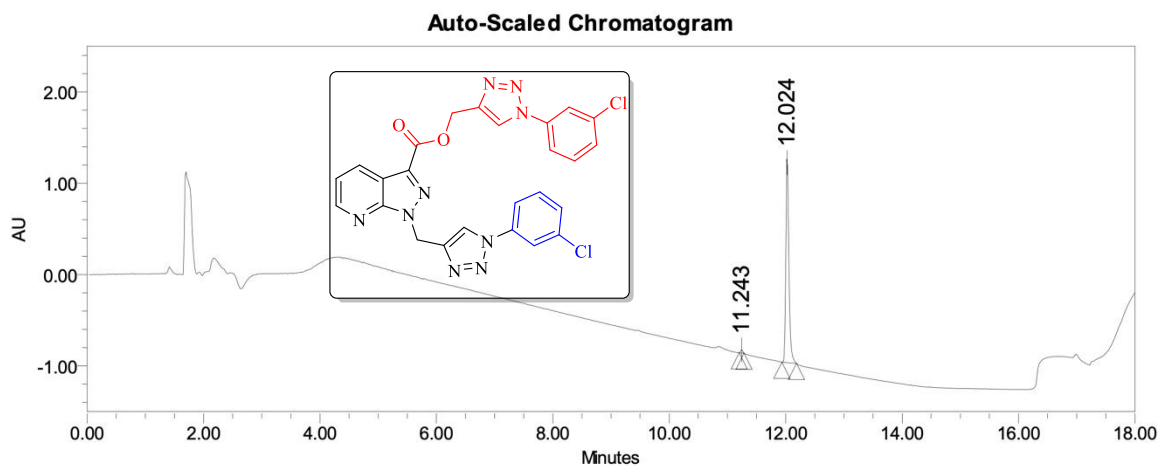
IR spectrum of (1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(3-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (31)



Mass spectrum of (1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(3-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (31)



HPLC chromatogram of (1-(3-Chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl 1-((1-(3-chlorophenyl)-1H-1,2,3-triazol-4-yl)methyl)-1H-pyrazolo[3,4-b]pyridine-3-carboxylate (31)



**Peak Results**

	Name	RT	Area	% Area
1		11.243	94473	1.13
2		12.024	8264804	98.87