

Expanding the Structure-Activity Relationships of Alkynyl Diphenylurea Scaffold as Promising Antibacterial Agents

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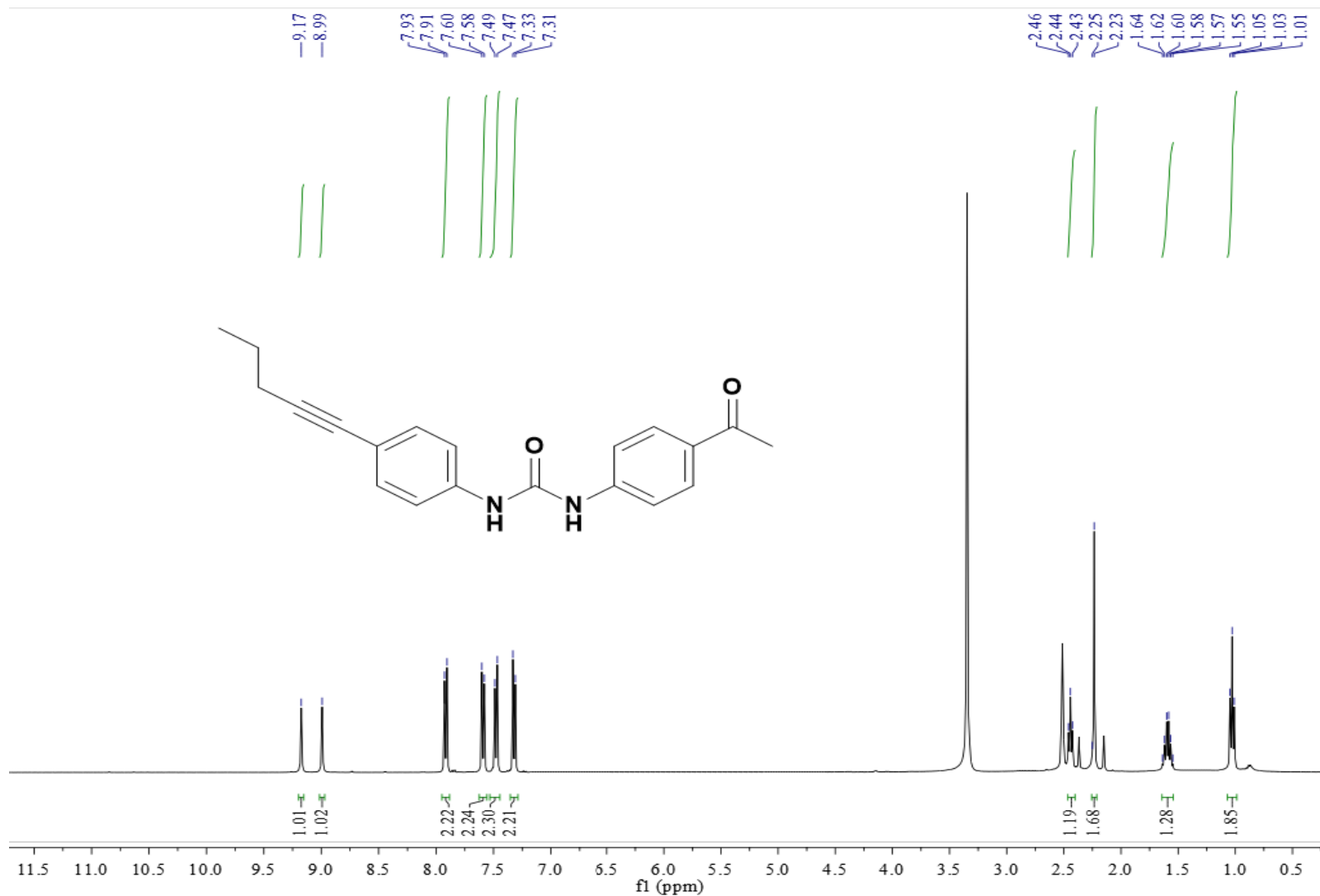
^c Department of Biomedical Sciences and Pathobiology, Virginia-Maryland College of Veterinary Medicine, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061, United States of America.

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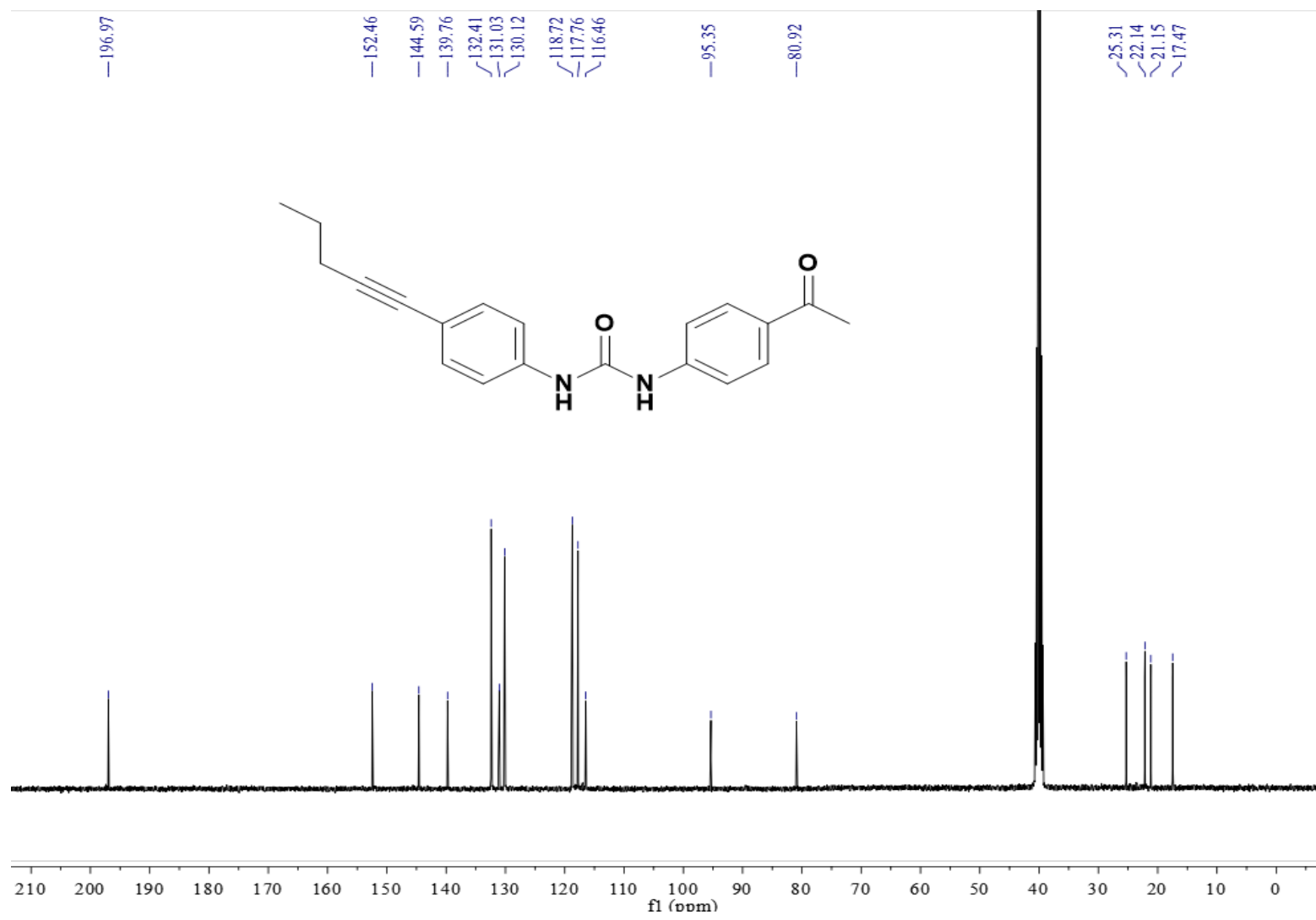
^e Department of Microbiology and Immunology, School of Pharmacy, Newgiza University, Giza, Egypt.

^f Center for One Health Research, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061, United States of America.

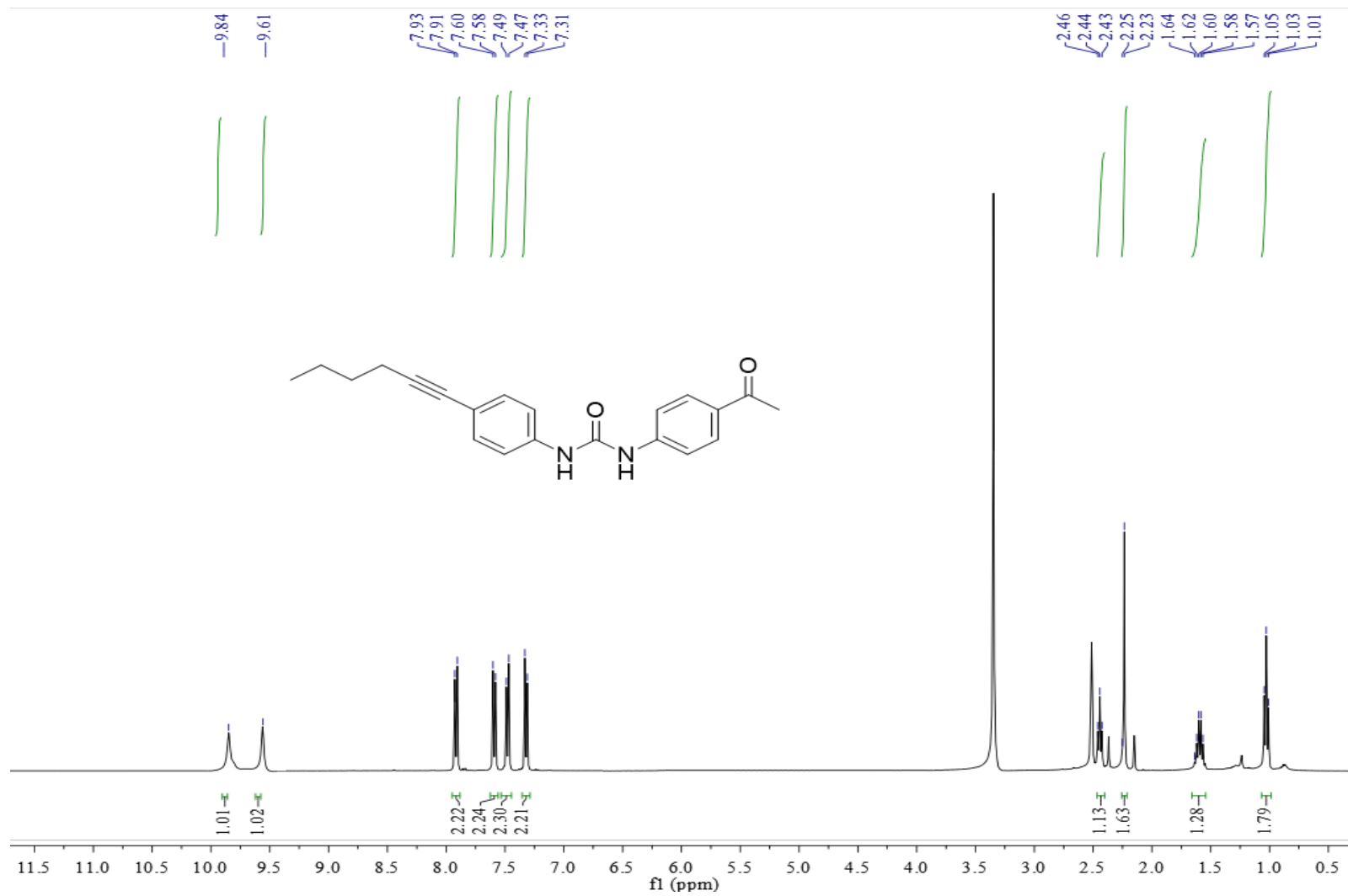
^g Nanoscience Program, University of Science and Technology, Zewail City of Science and Technology, Giza, Egypt.



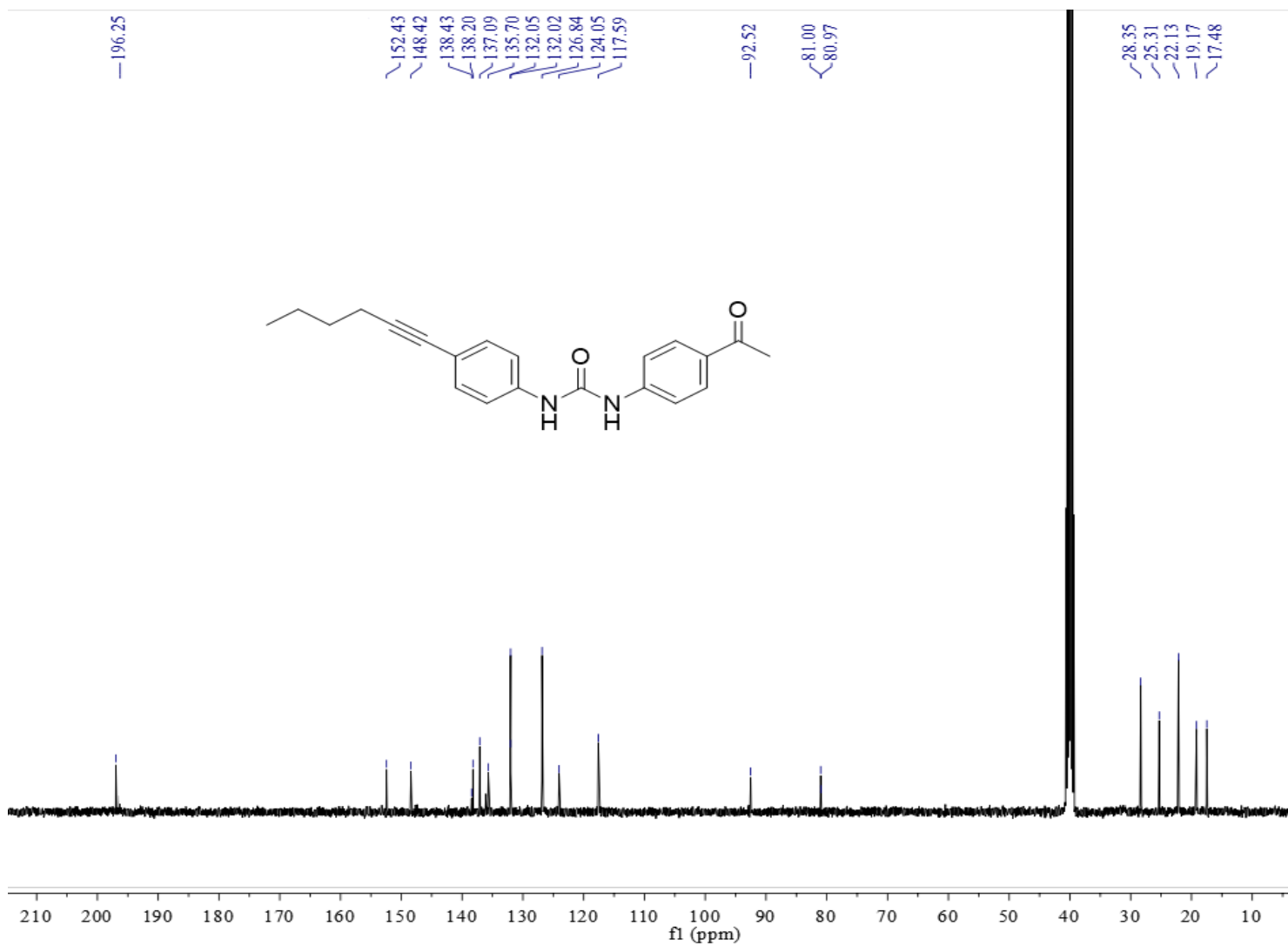
¹H NMR of compound (4a)



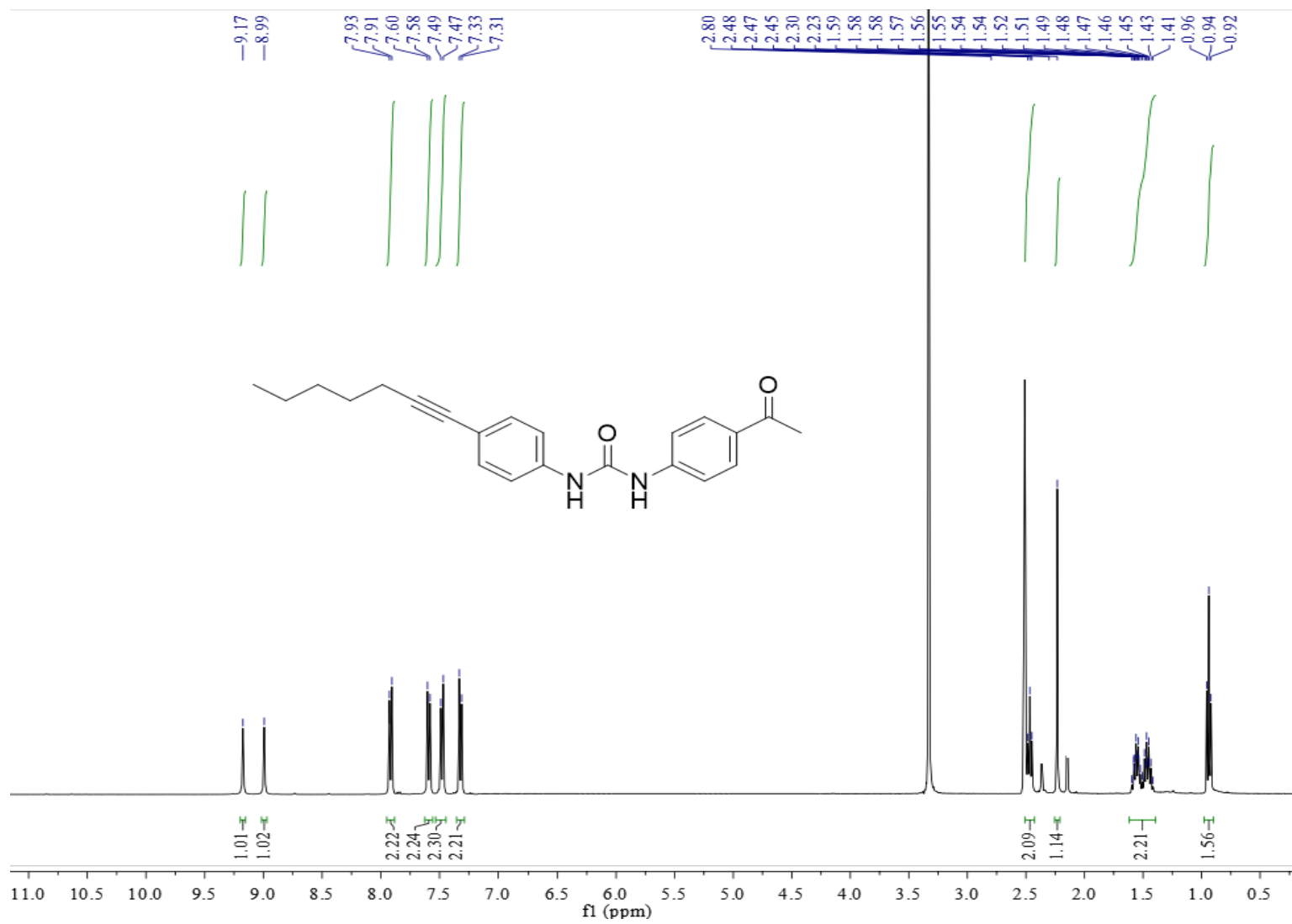
¹³C of compound (4a)



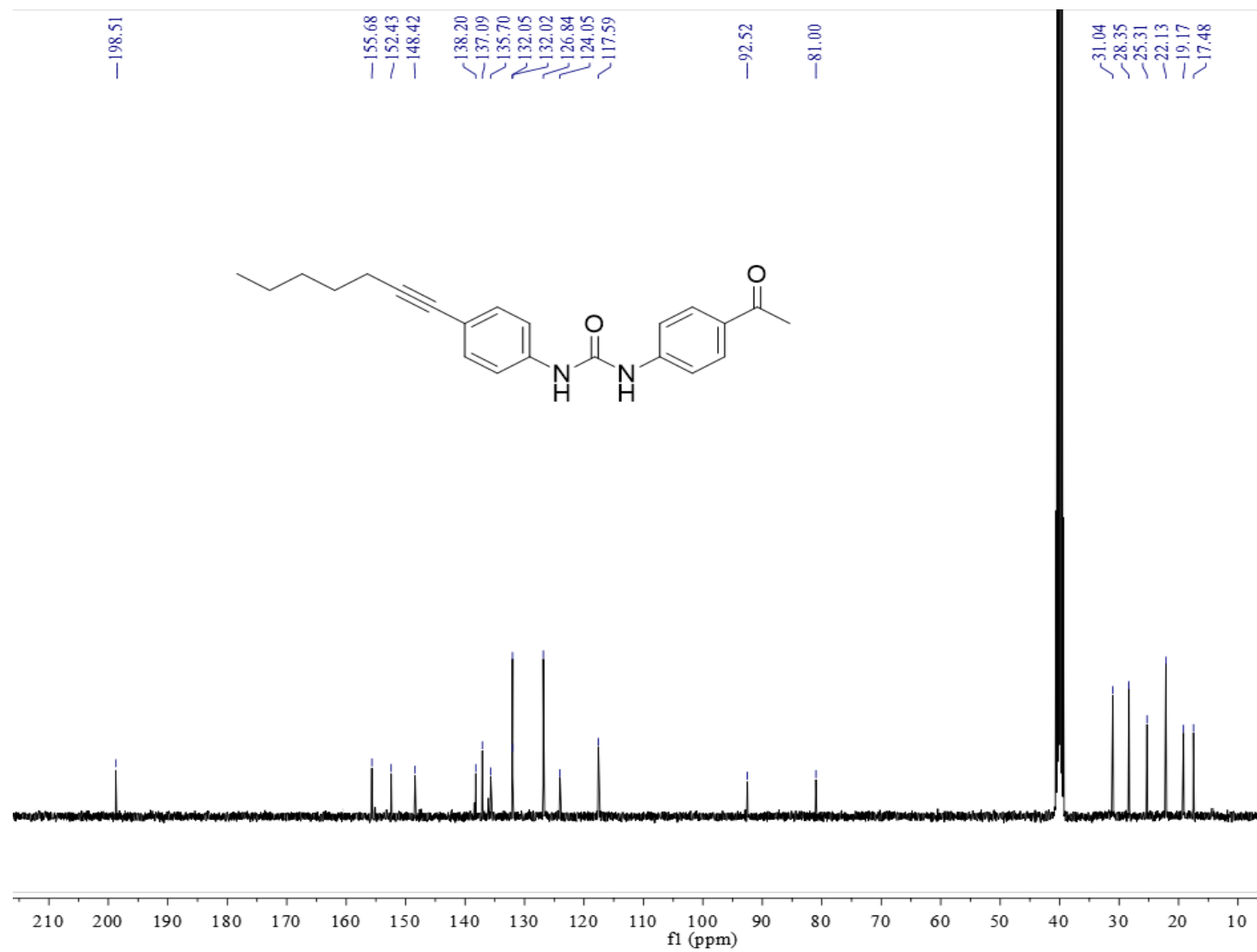
¹H NMR of compound (4b)



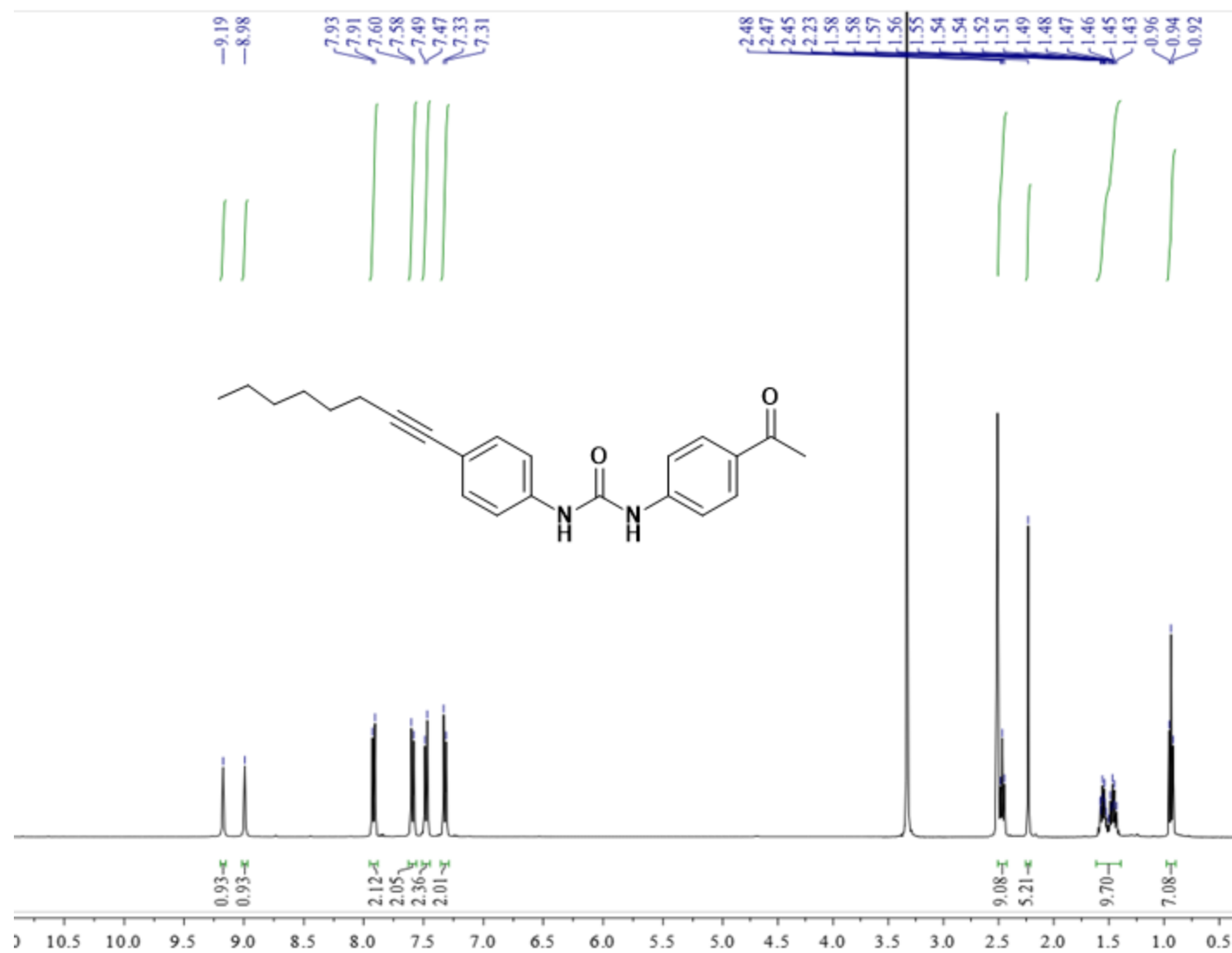
¹³C of compound (4b)



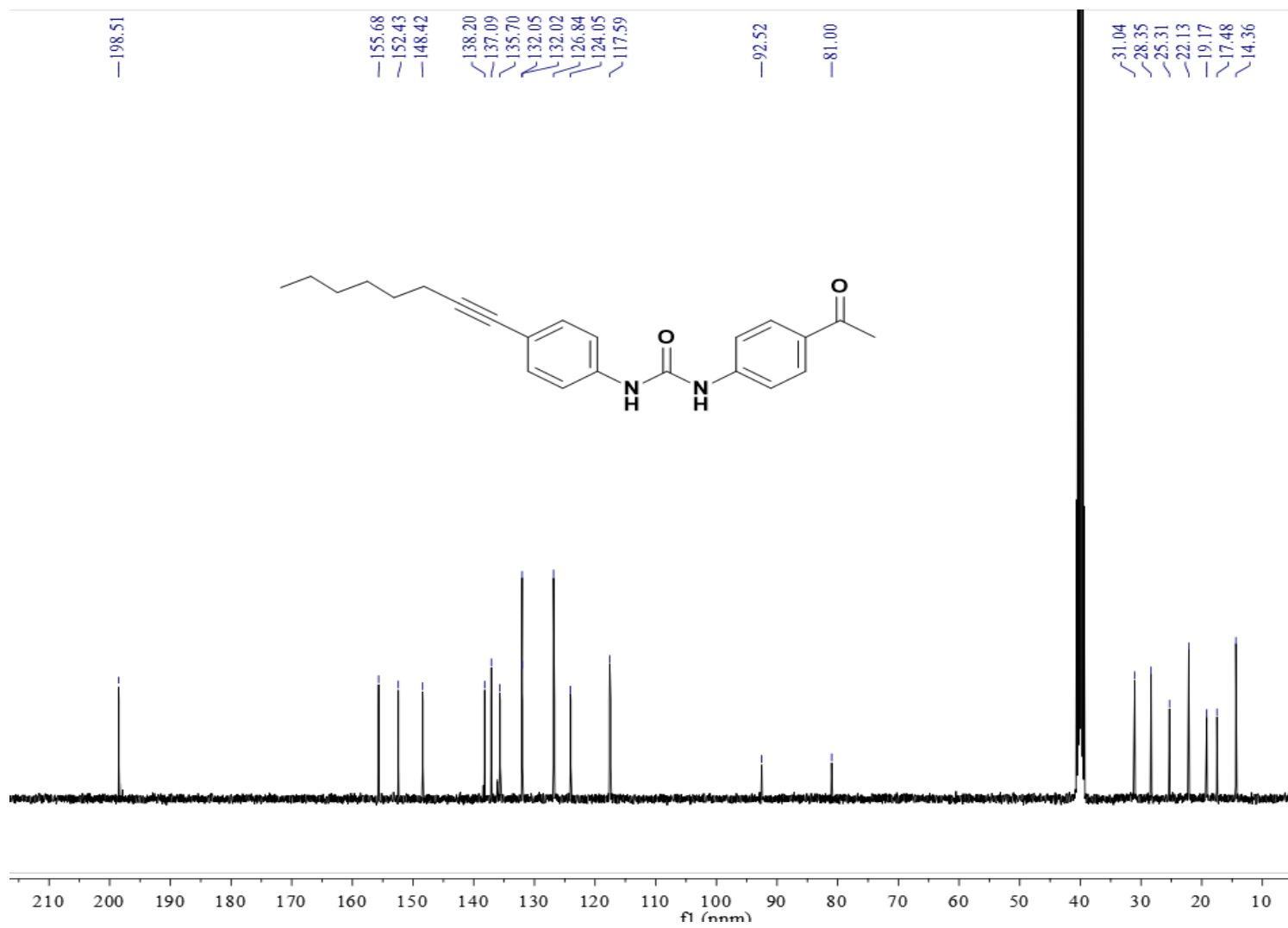
¹H NMR of compound (4c)



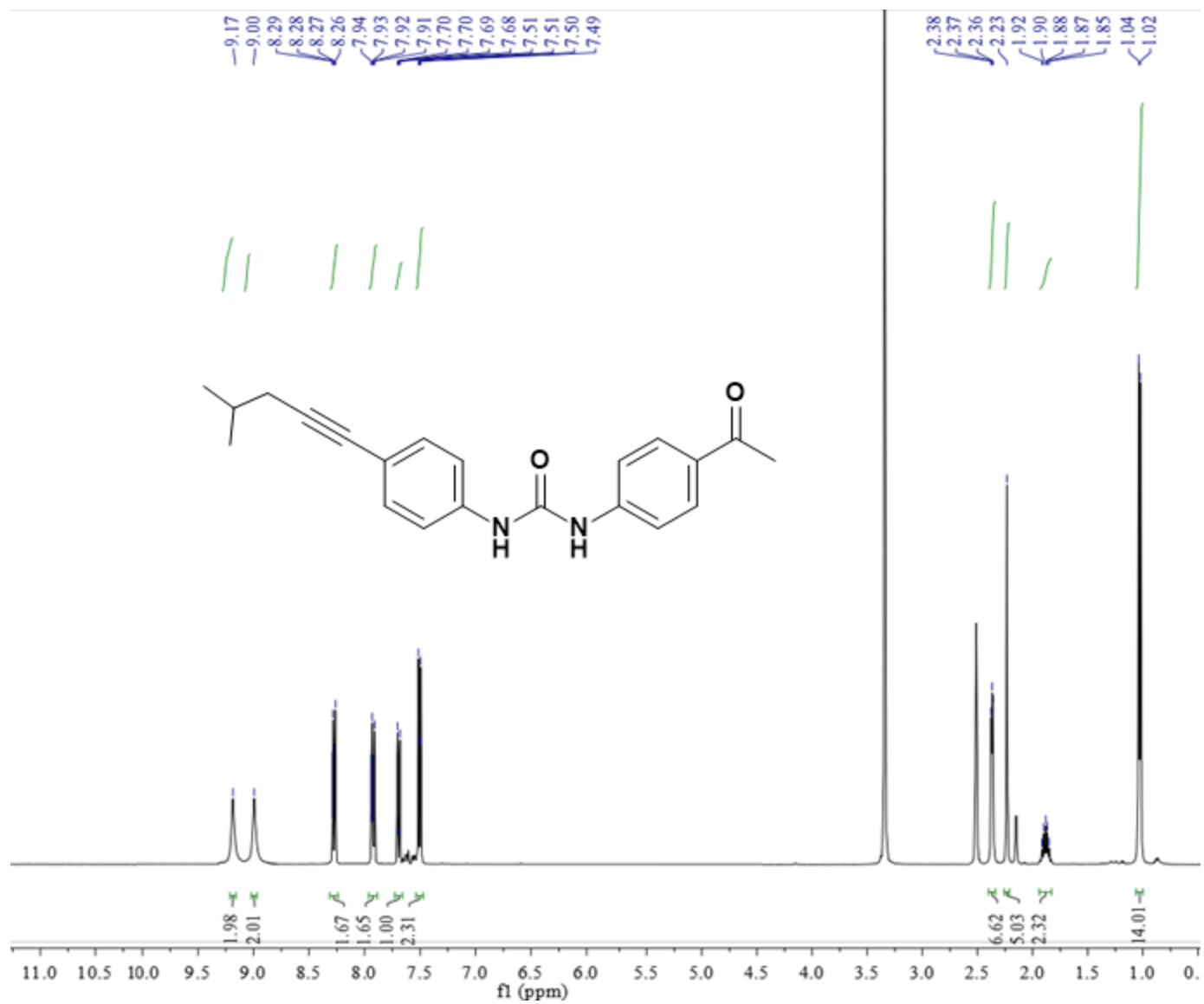
¹³C of compound (4c)



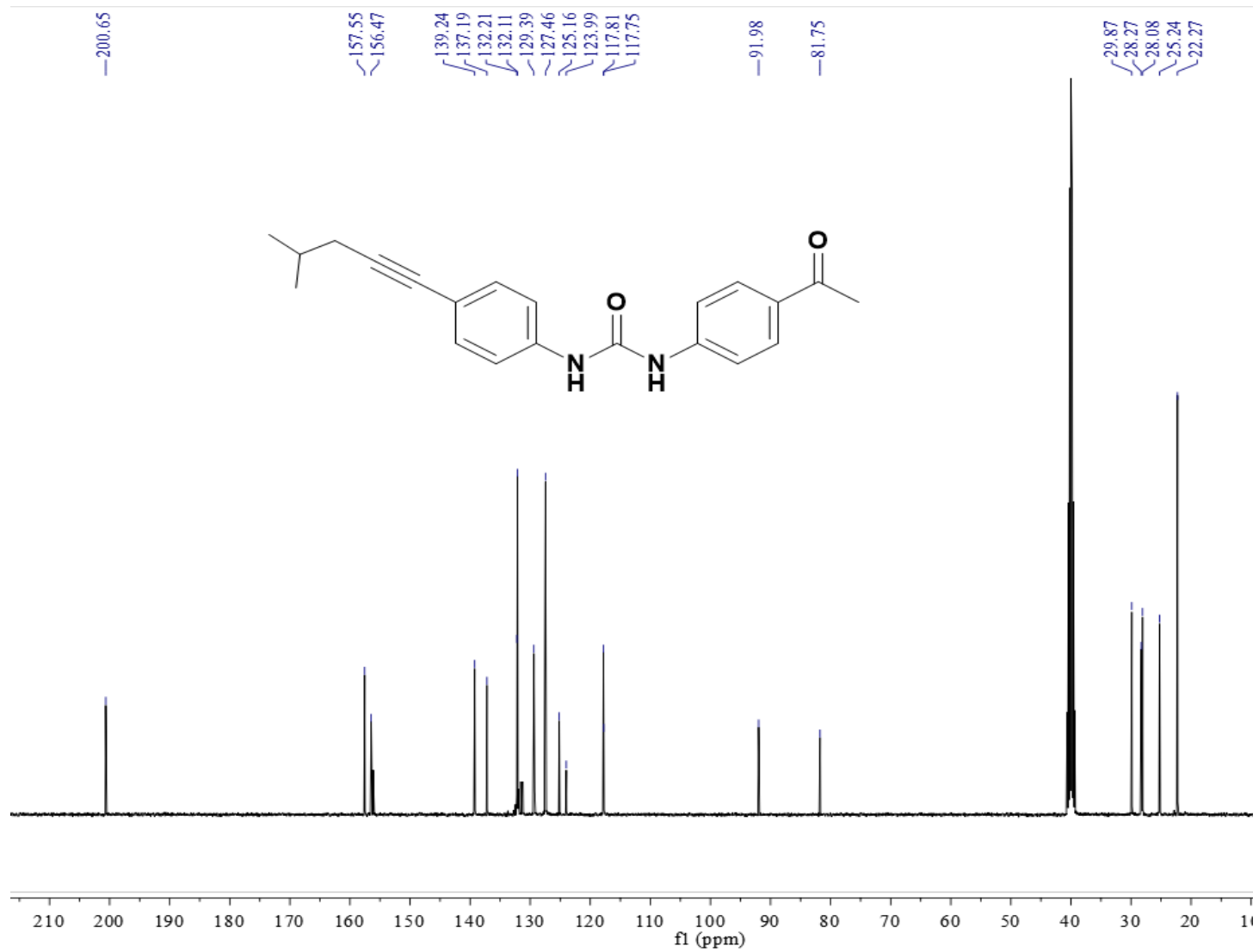
¹H NMR of compound (4d)



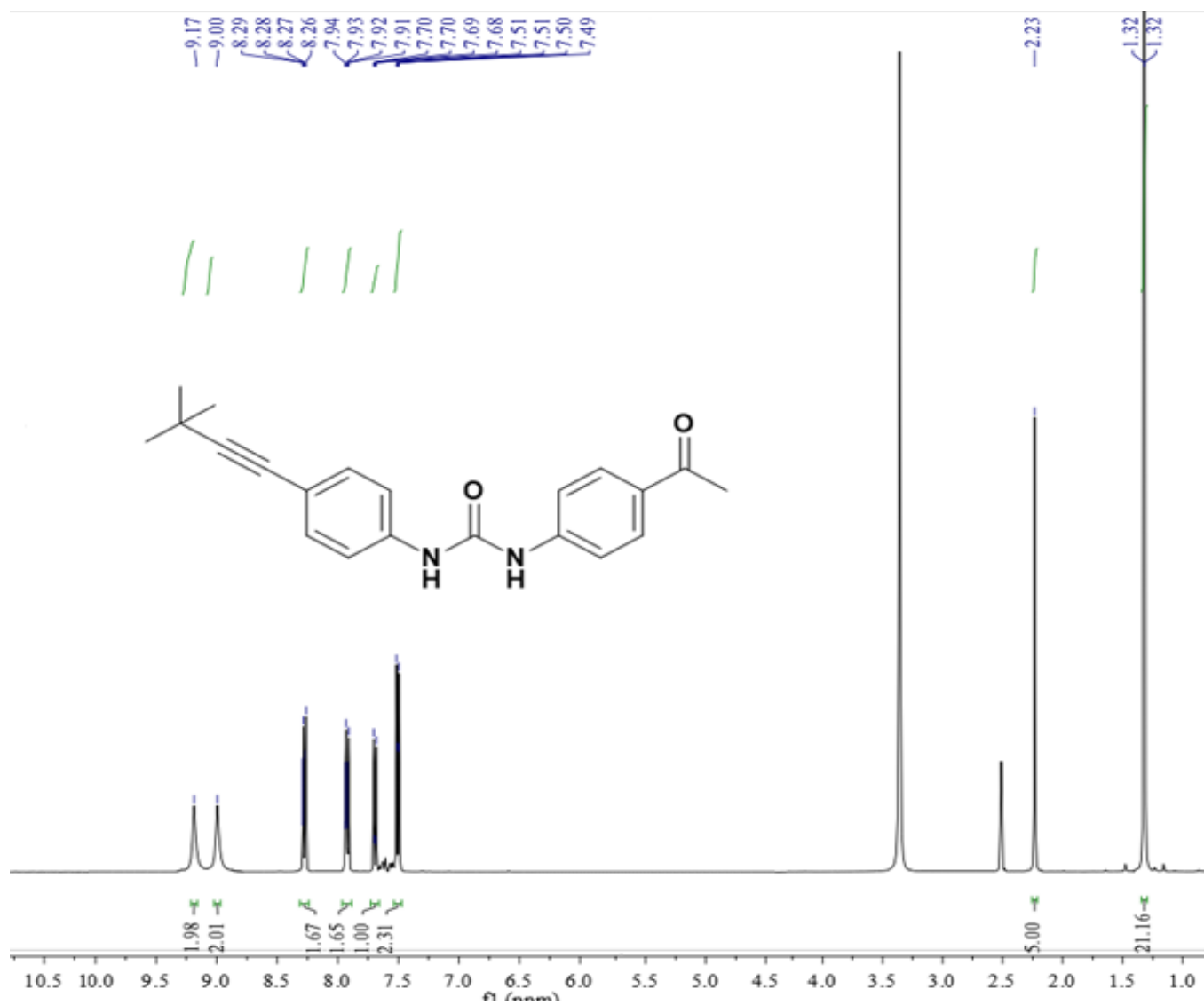
¹³C of compound (4d)



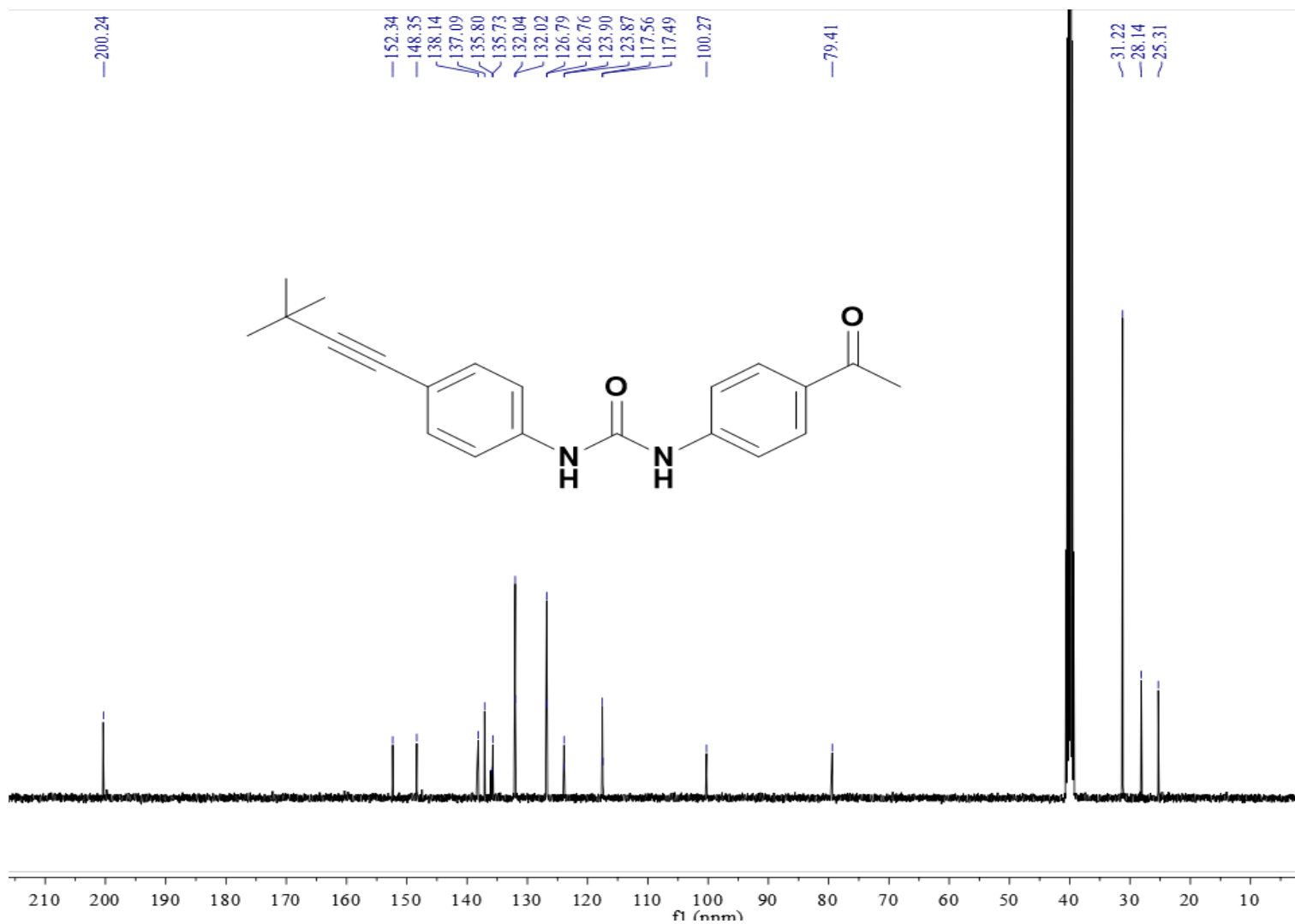
¹H NMR of compound (4e)



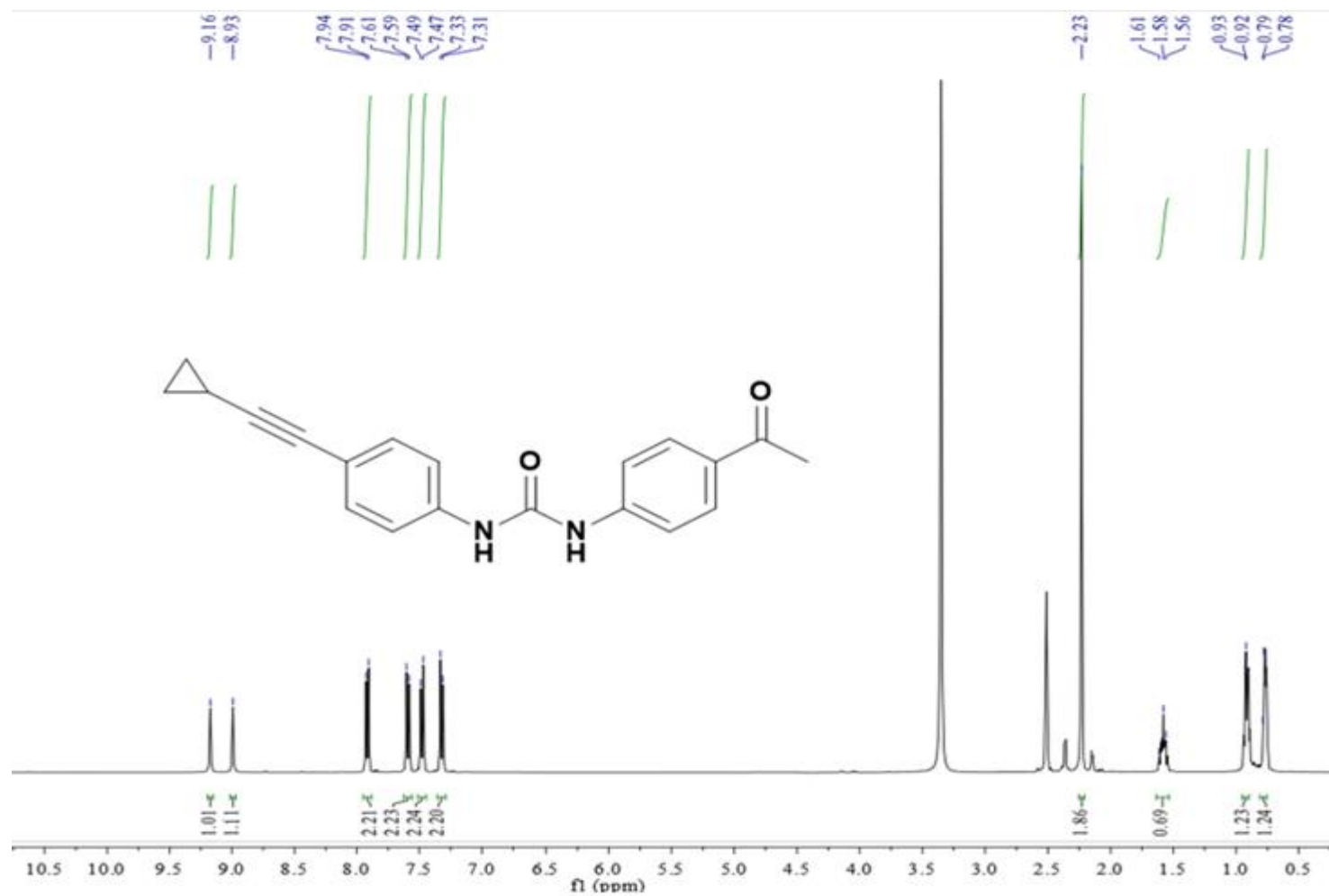
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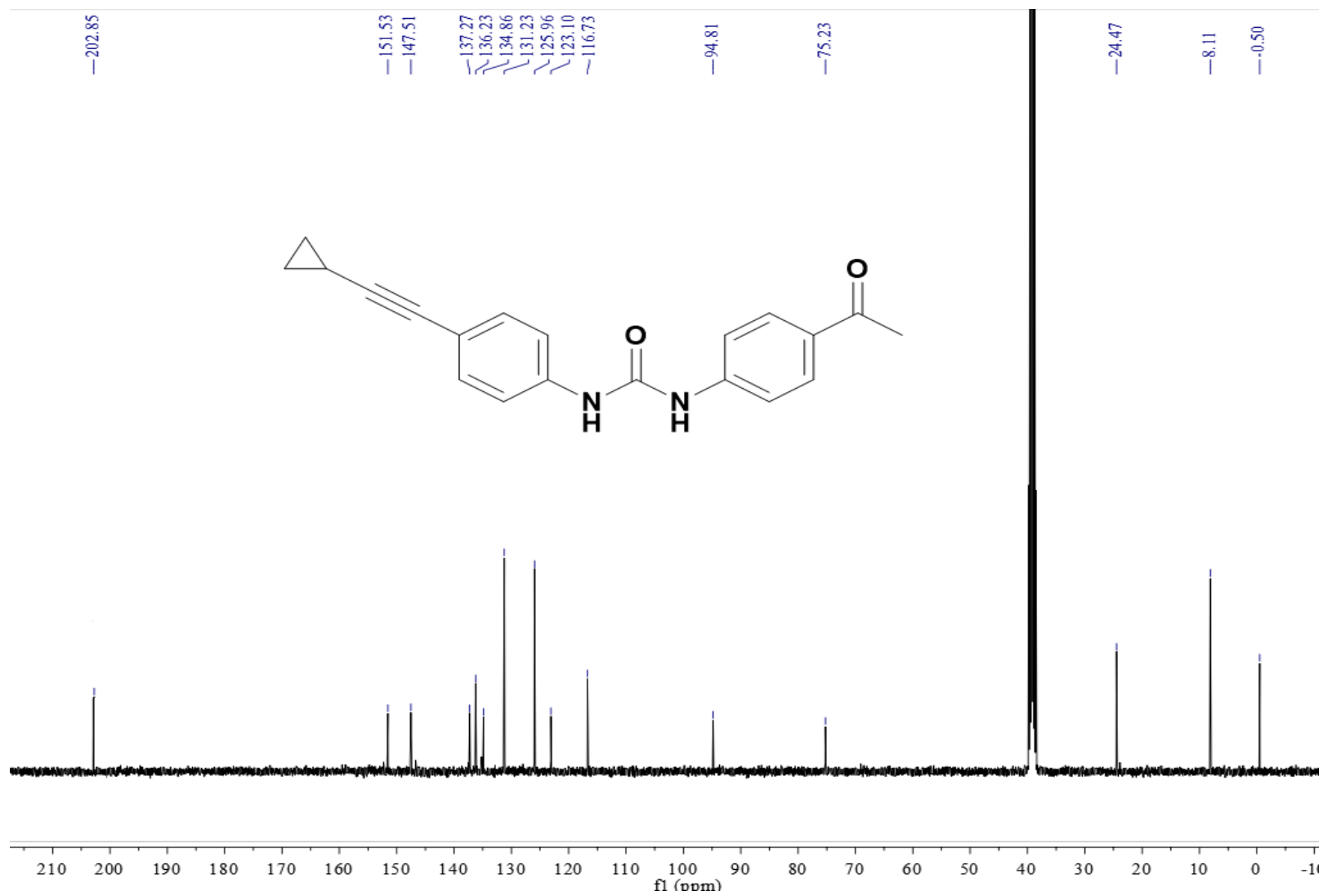
¹H NMR of compound (4f)



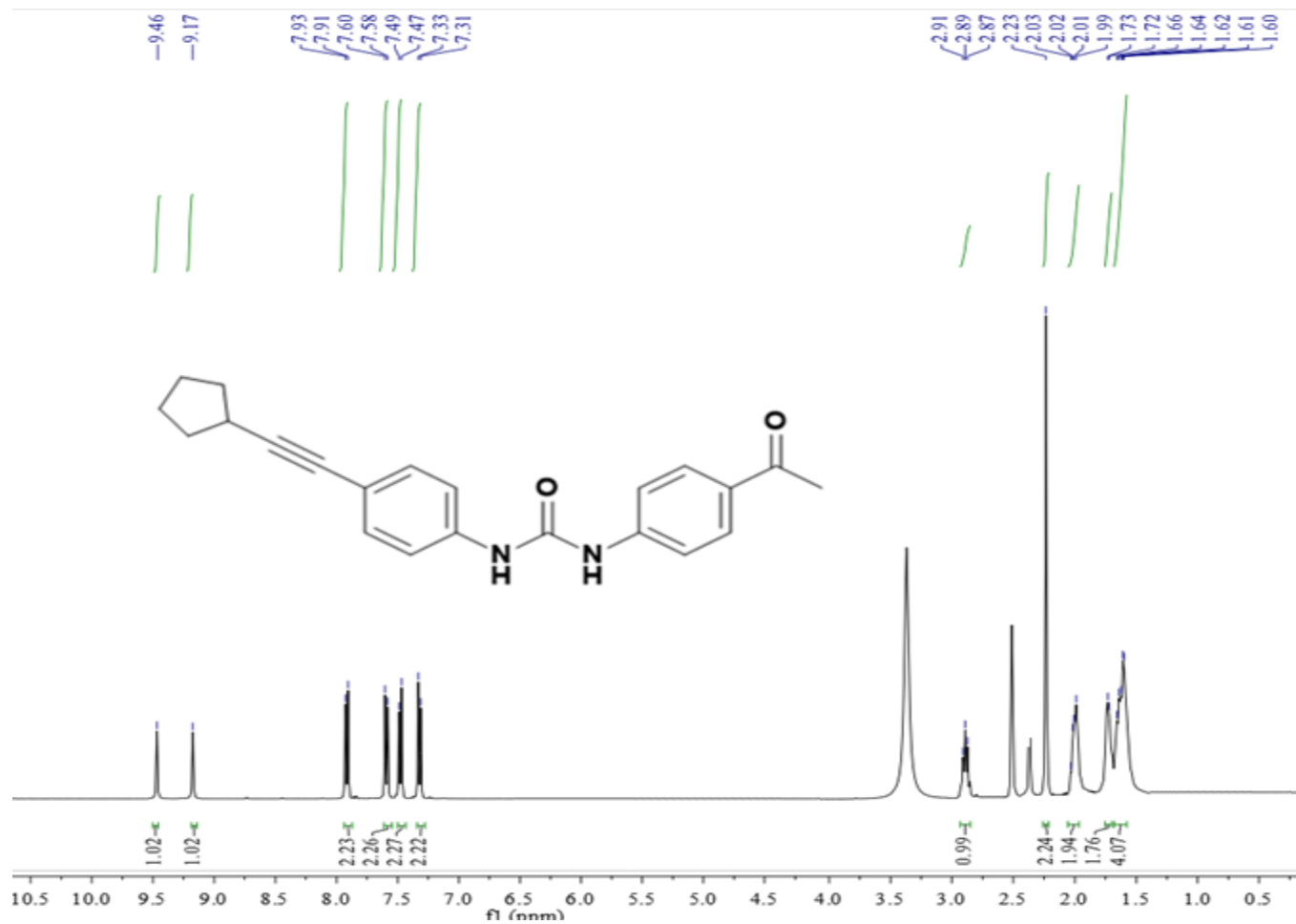
¹³C of compound (4f)



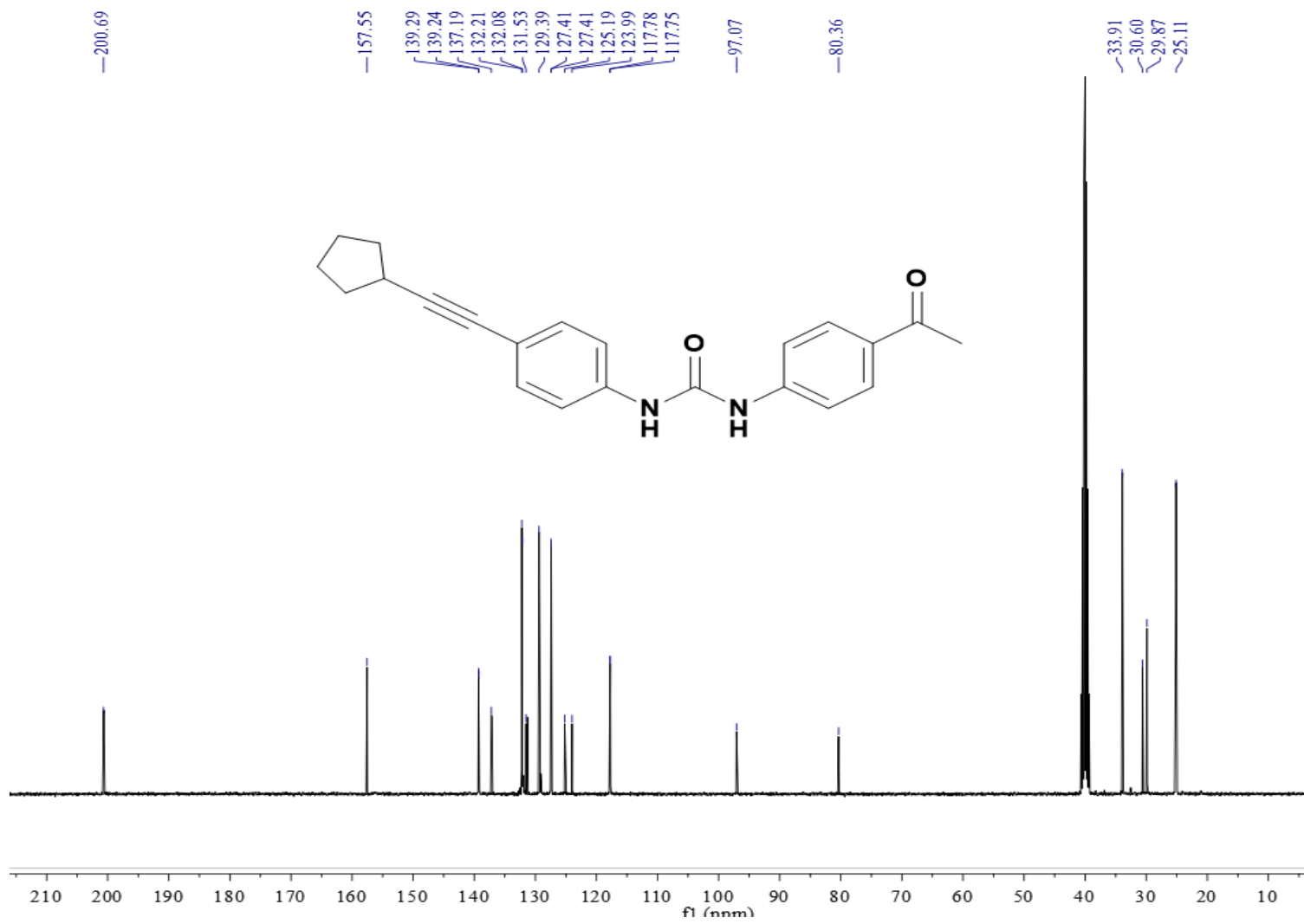
¹H NMR of compound (4g)



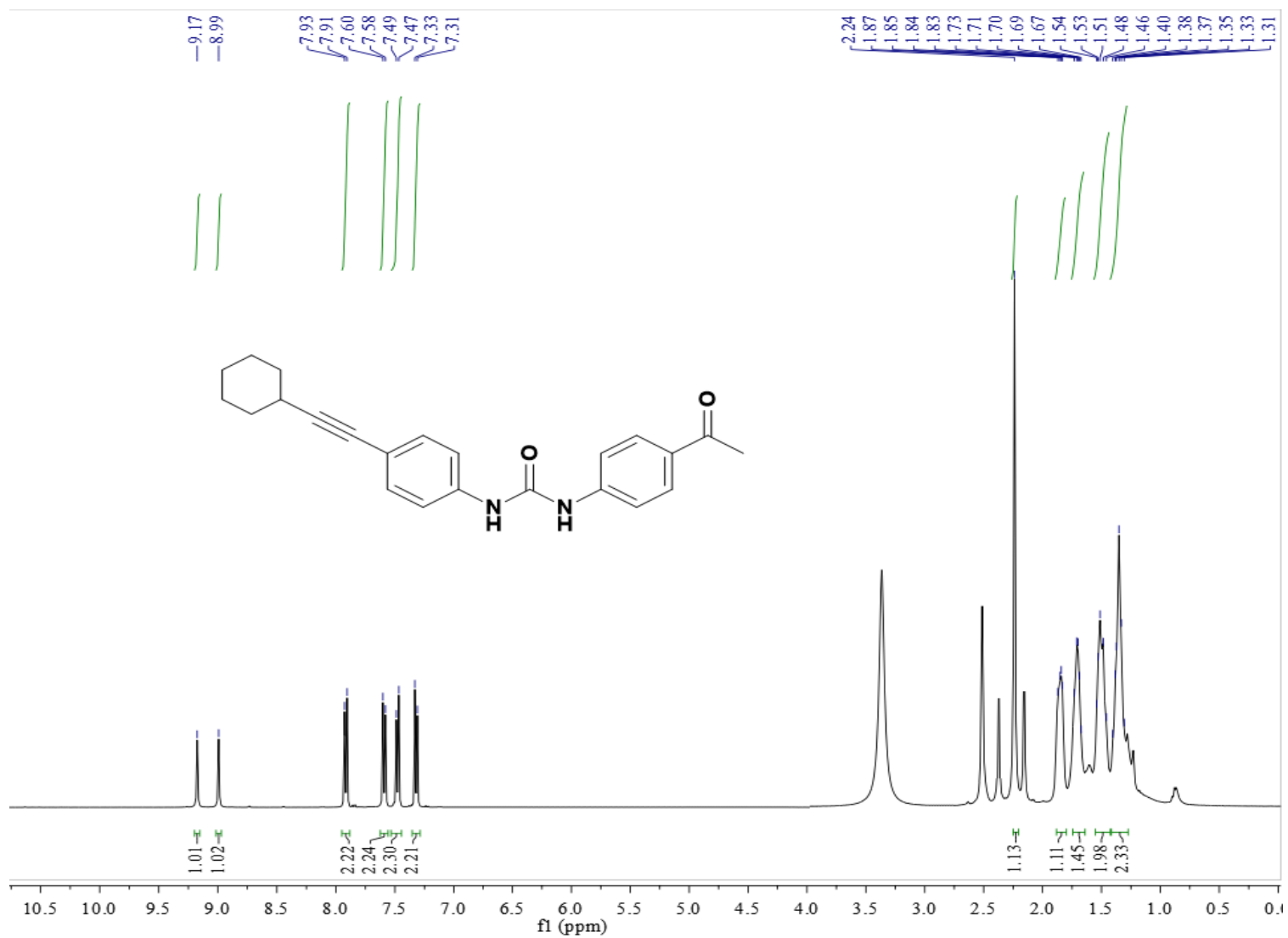
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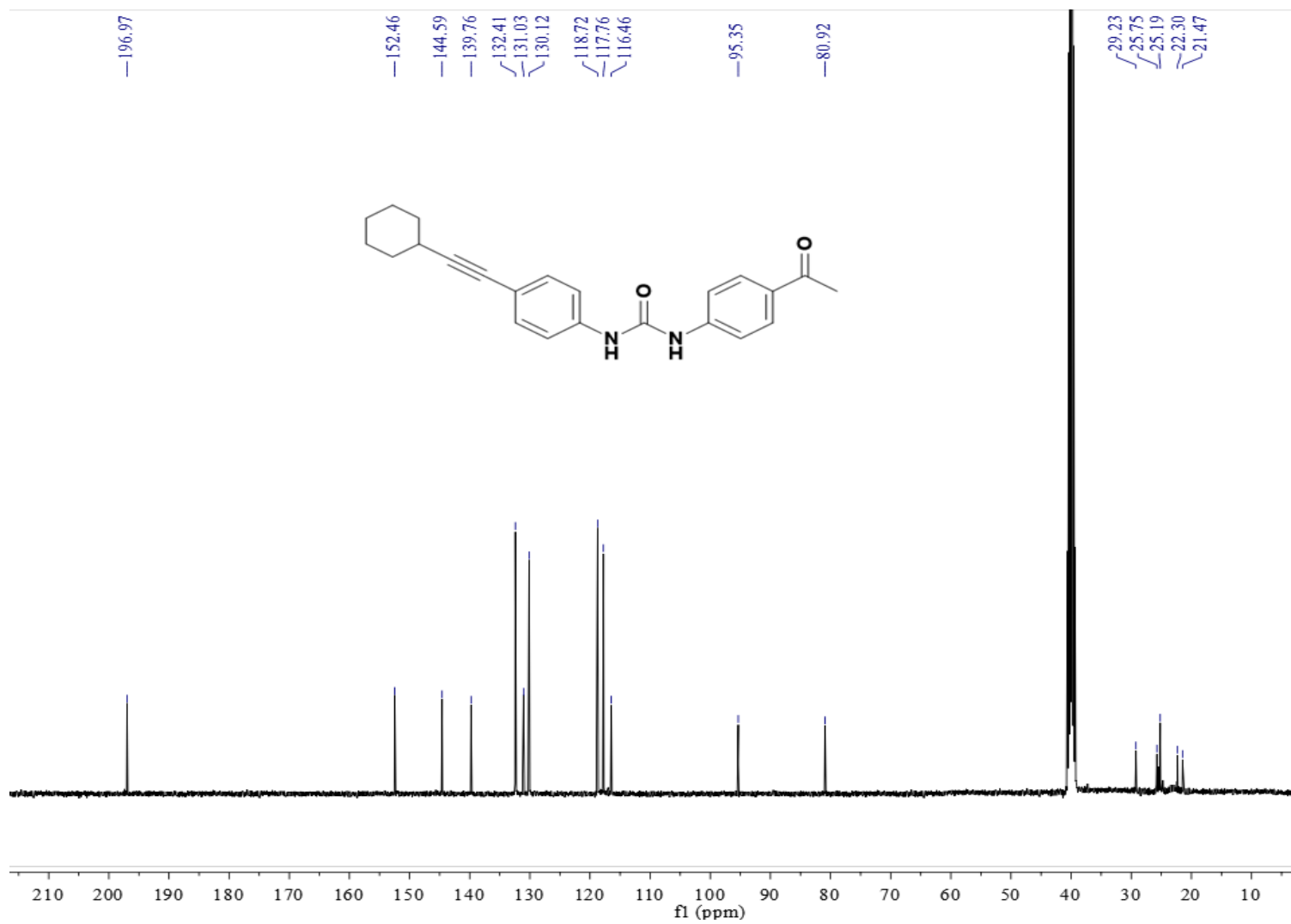
¹H NMR of compound (4h)



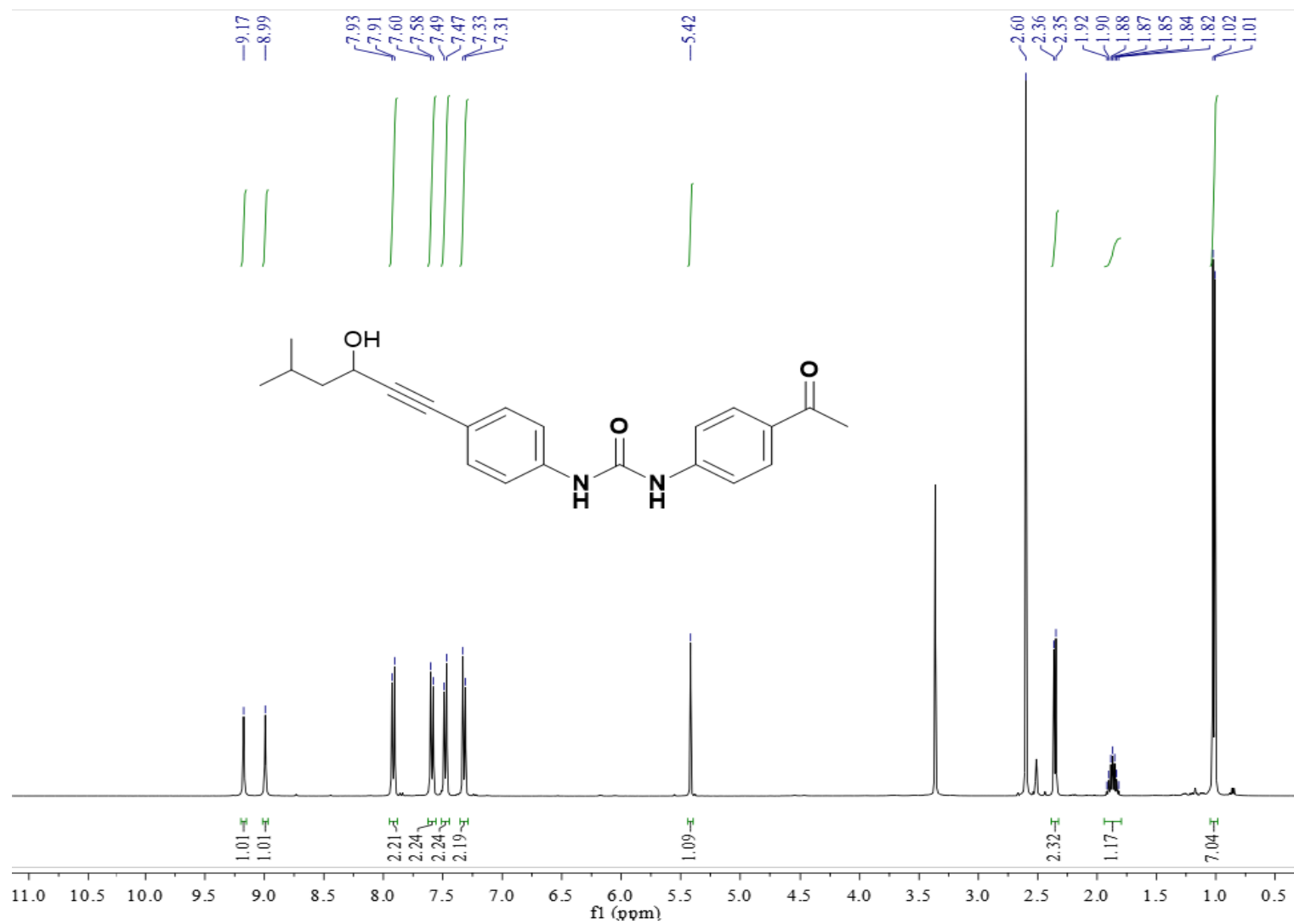
¹³C of compound (4h)



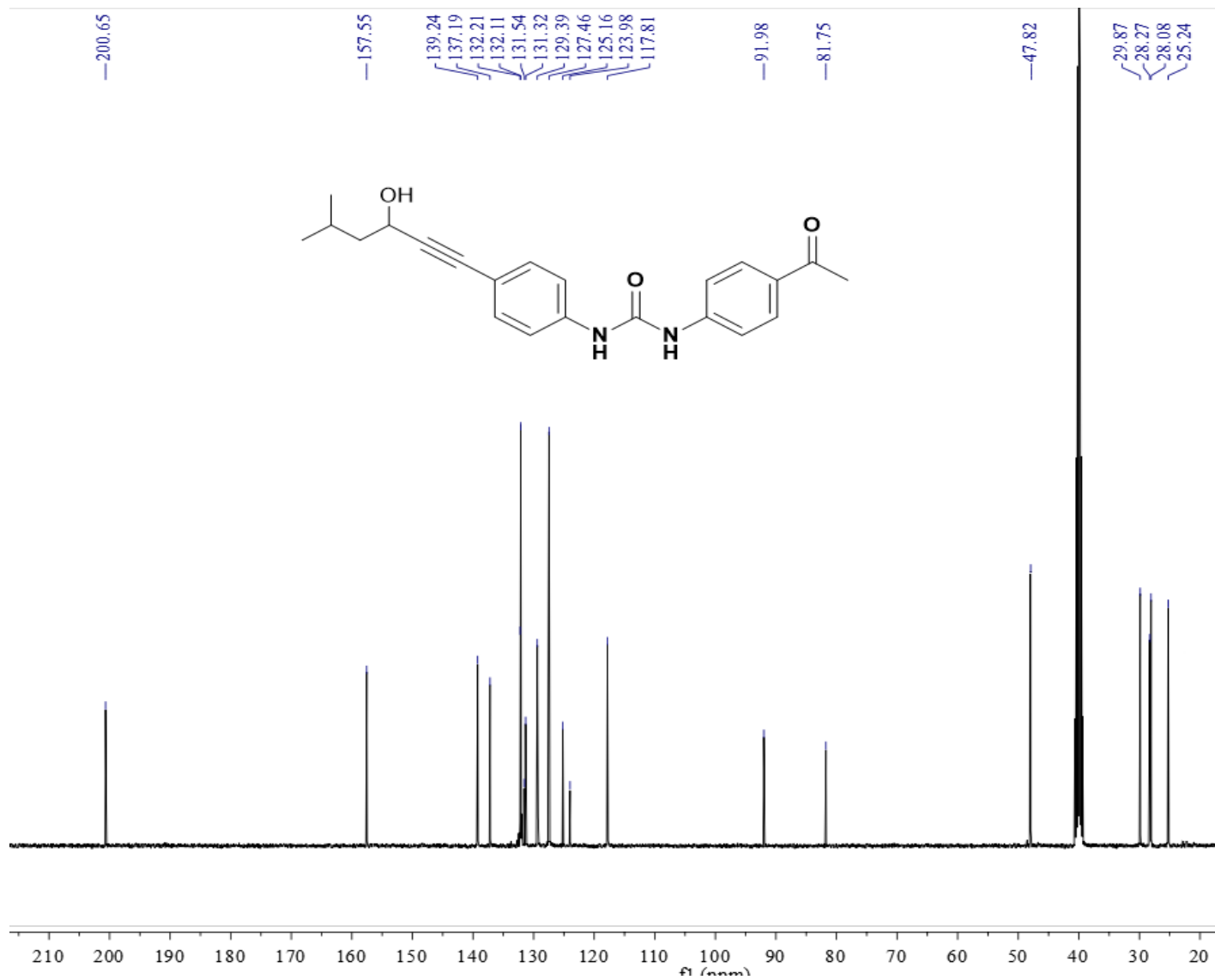
¹H NMR of compound (4i)



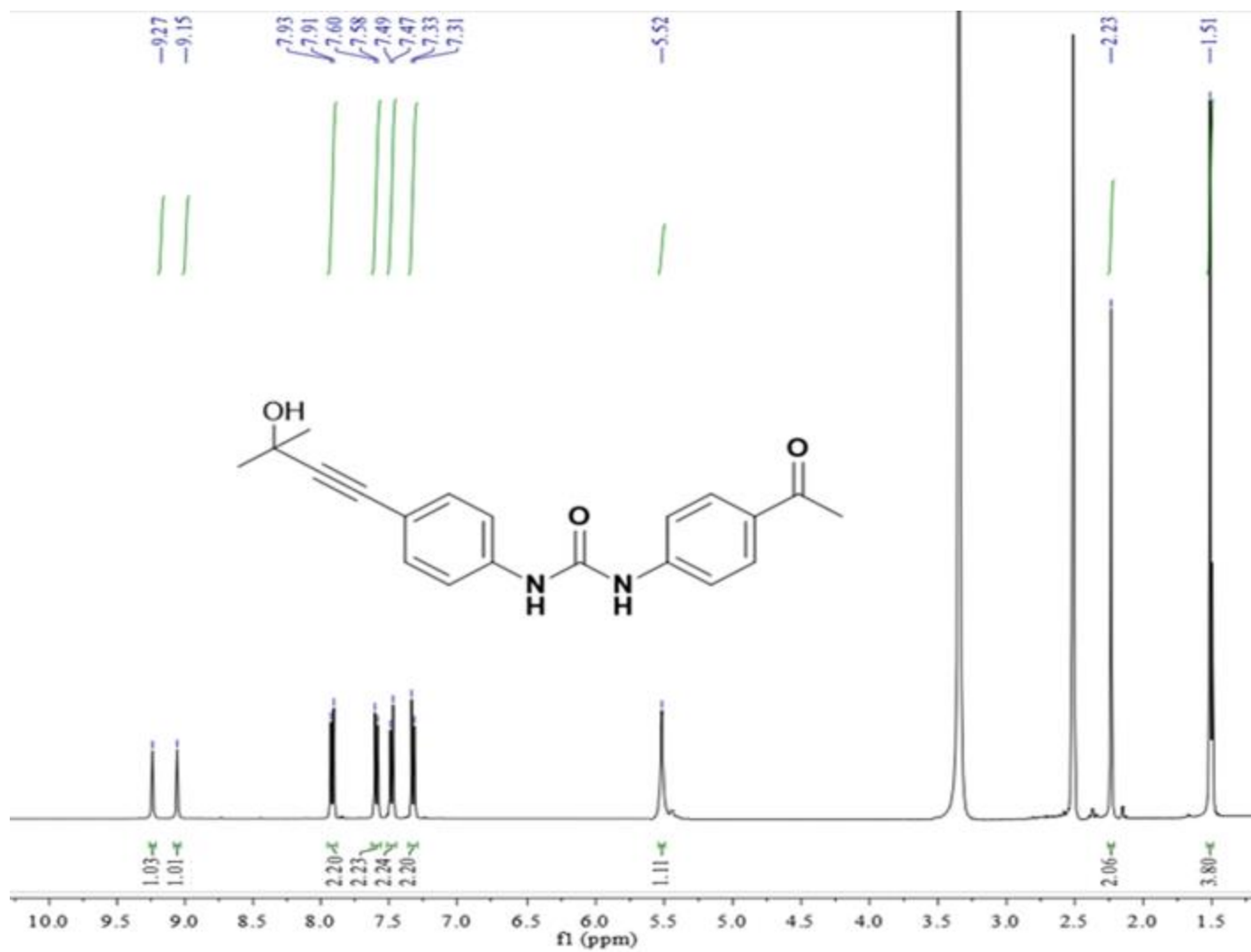
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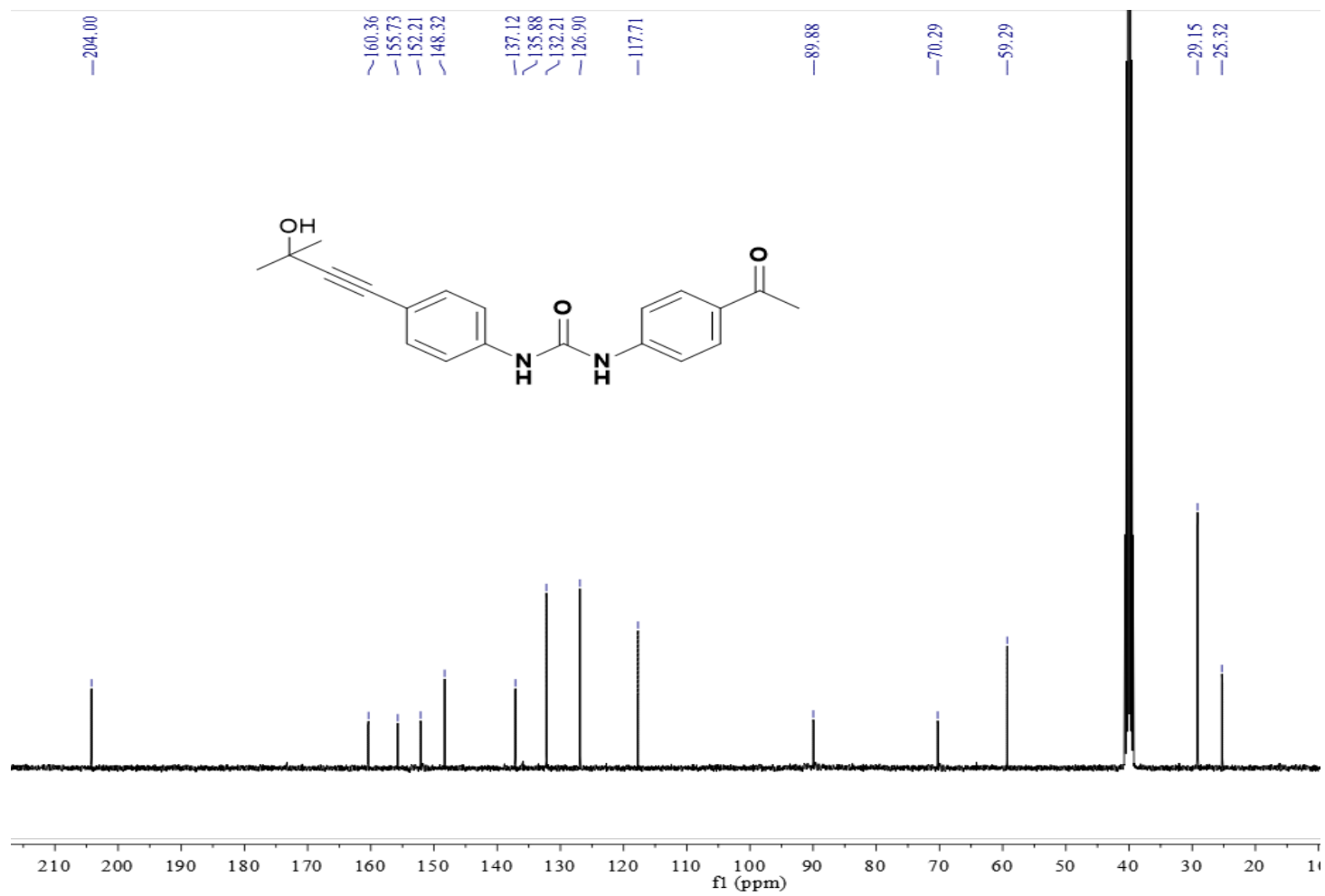
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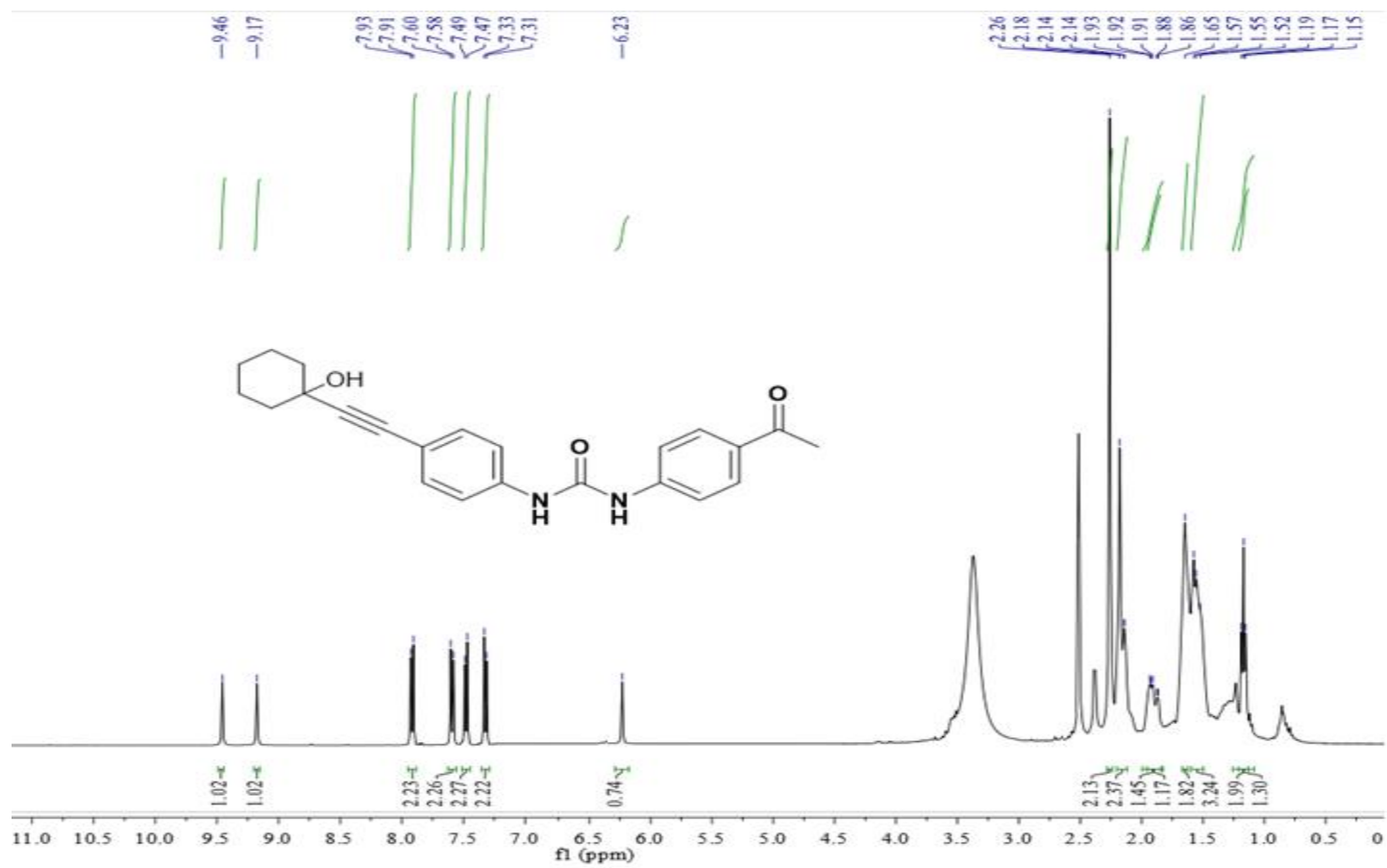
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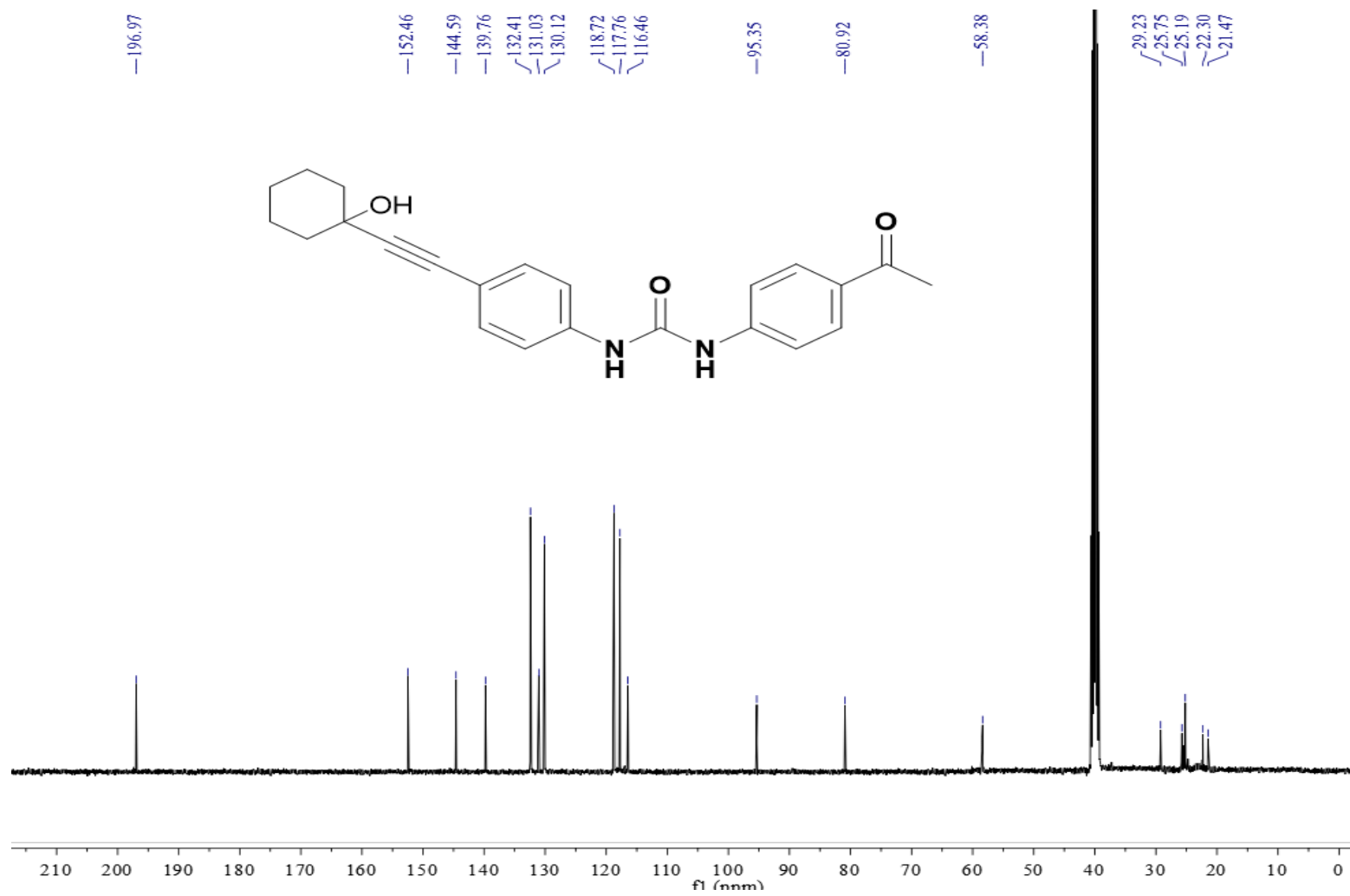
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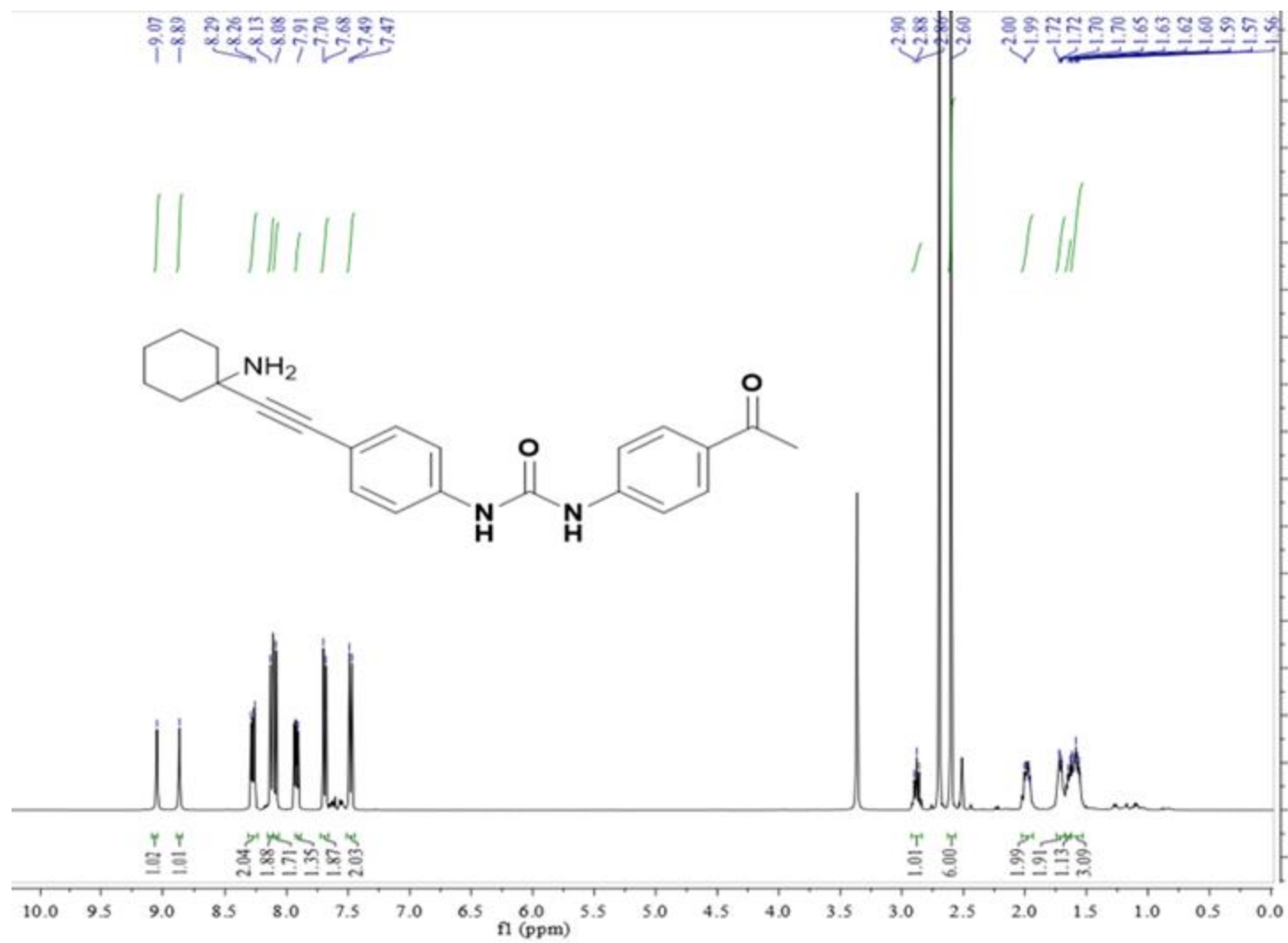
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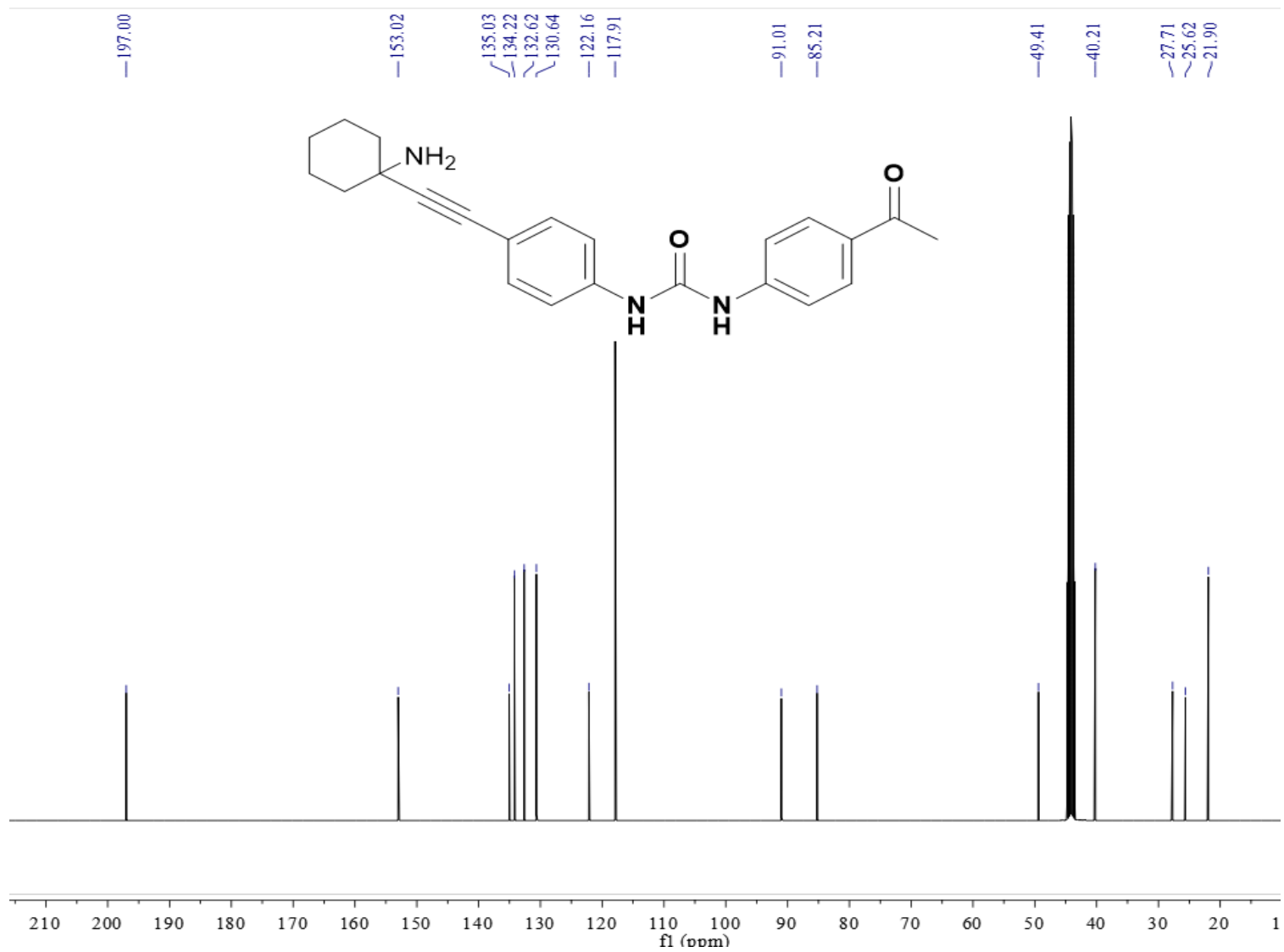
¹H NMR of compound (4l)



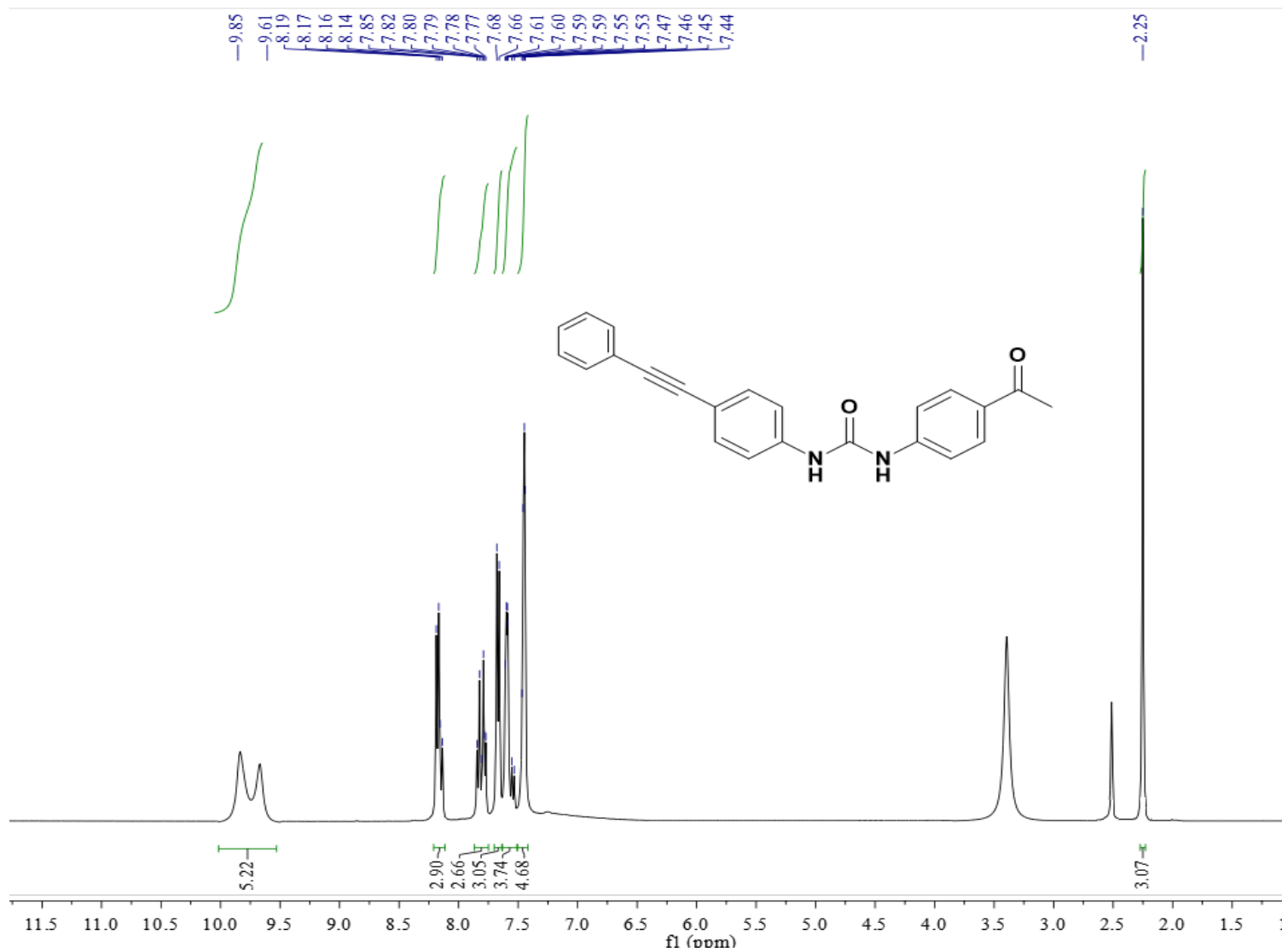
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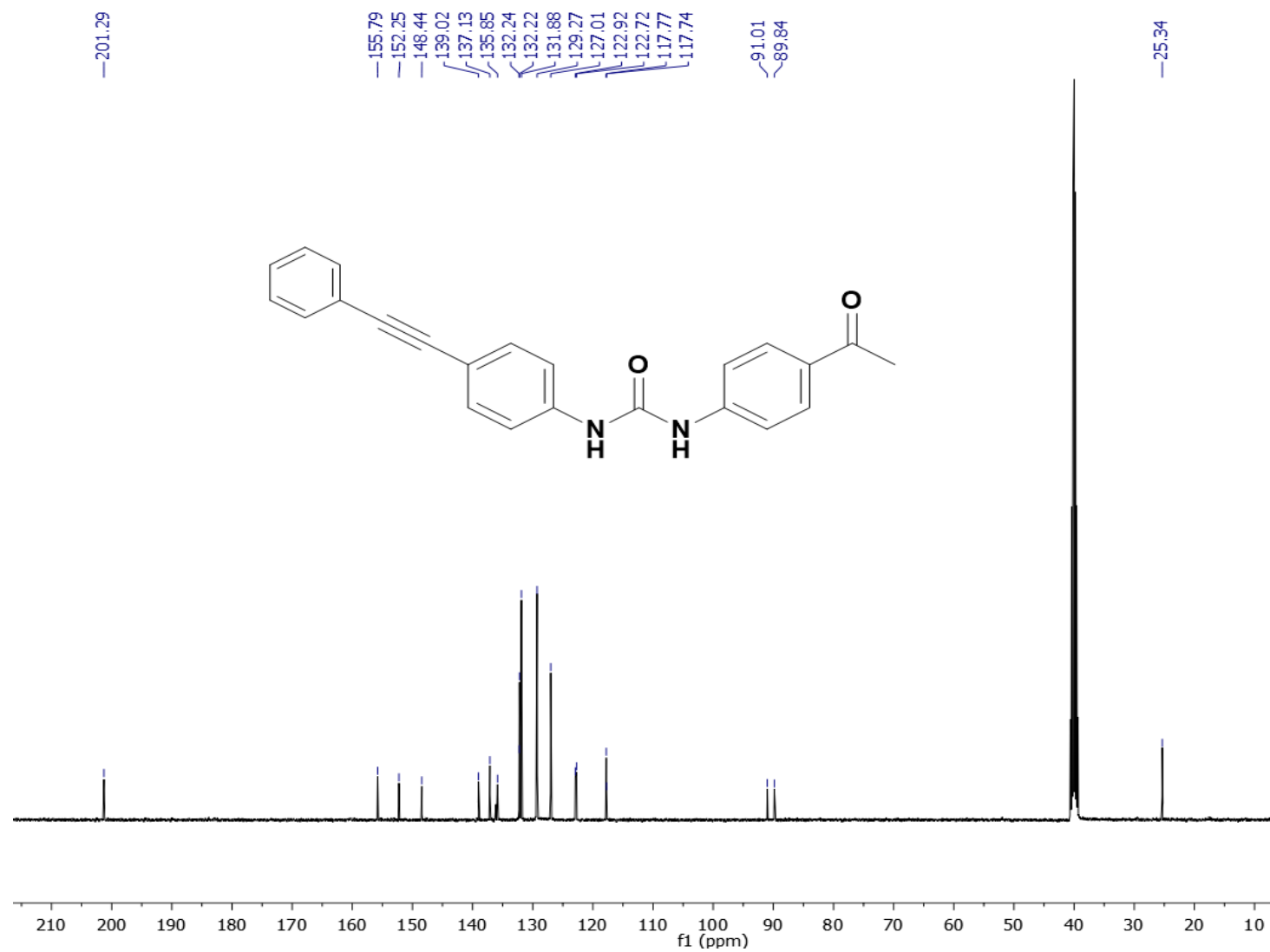
¹H NMR of compound (4m)



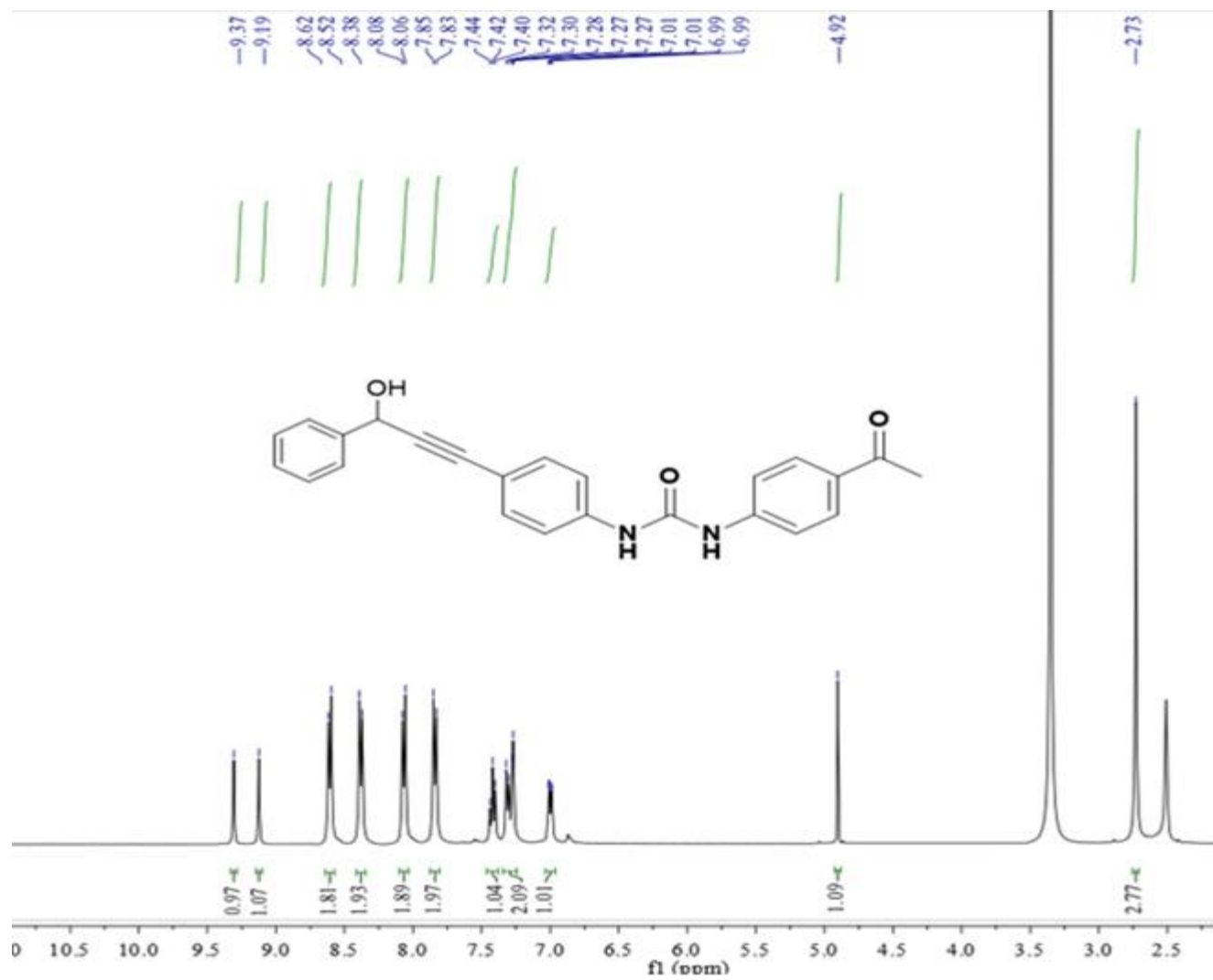
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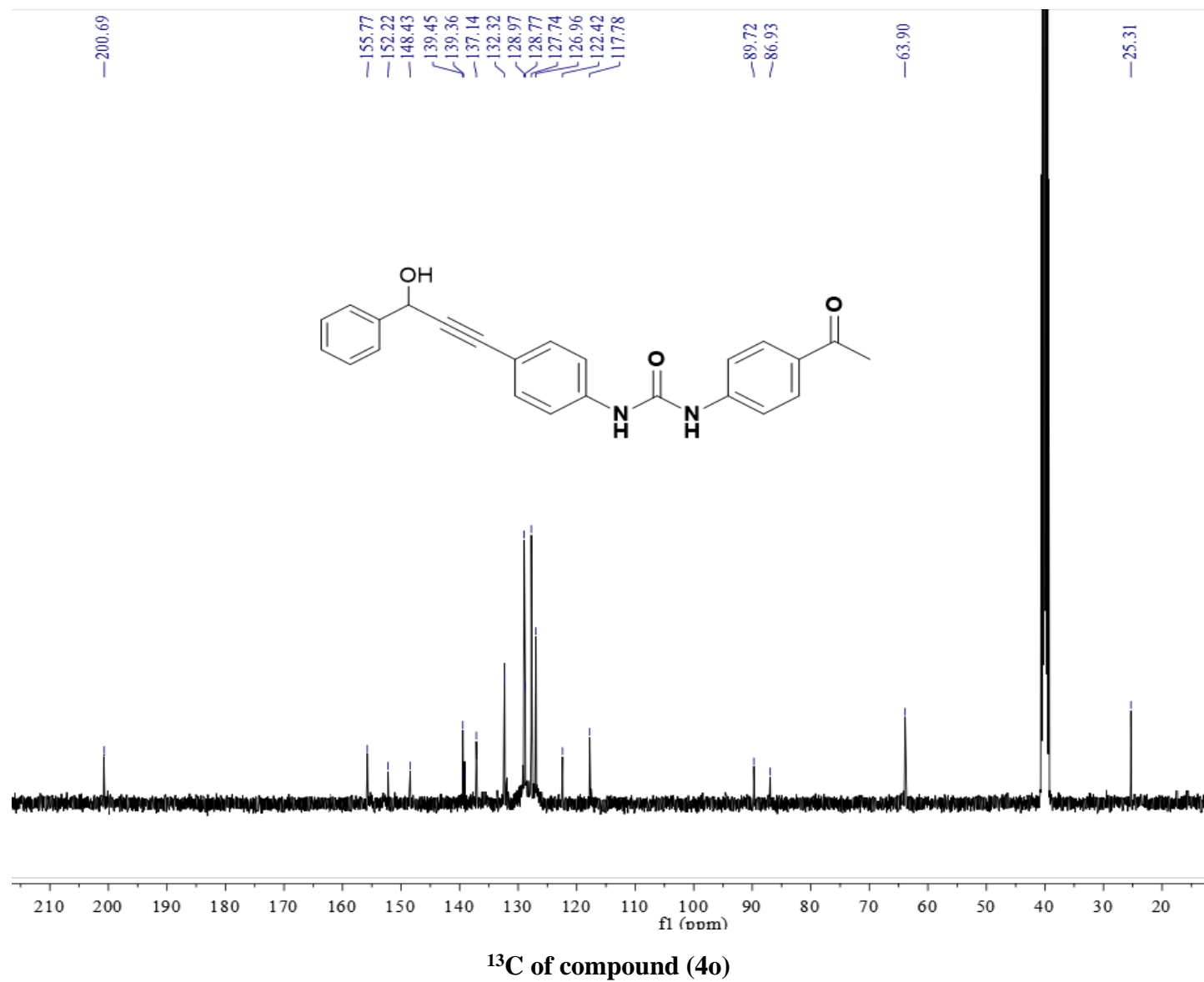
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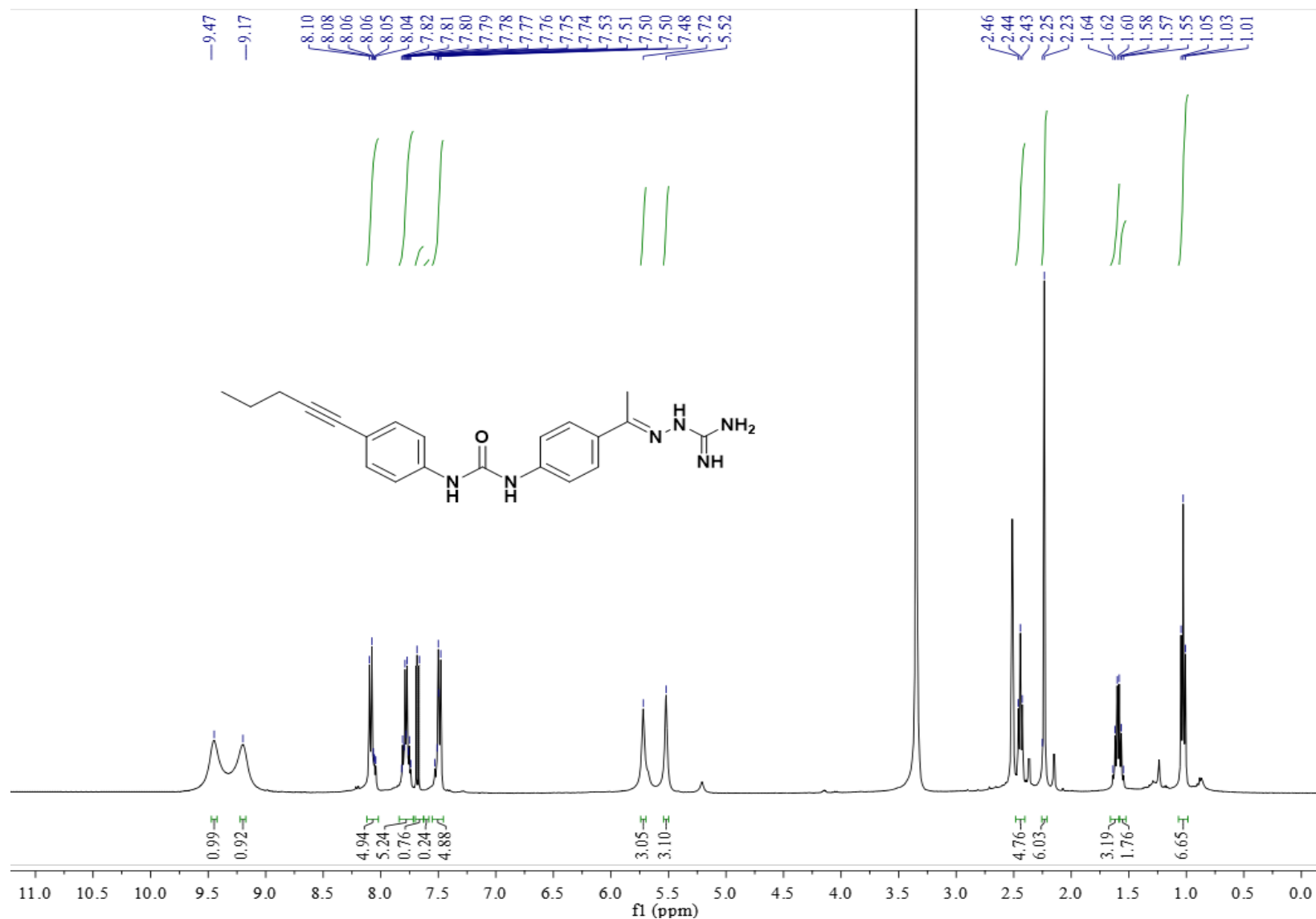


¹³C of compound (4n)

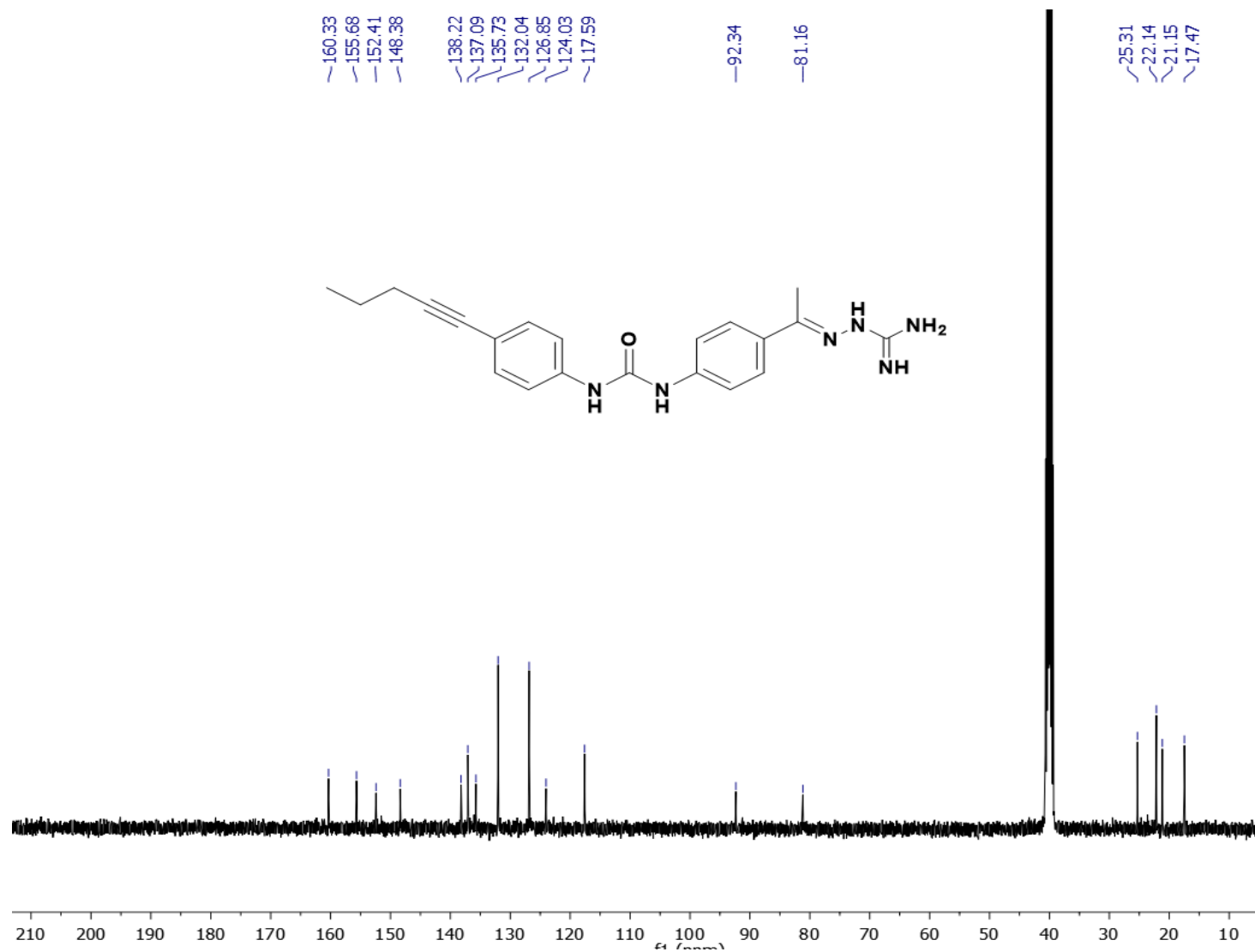


¹H NMR of compound (4o)

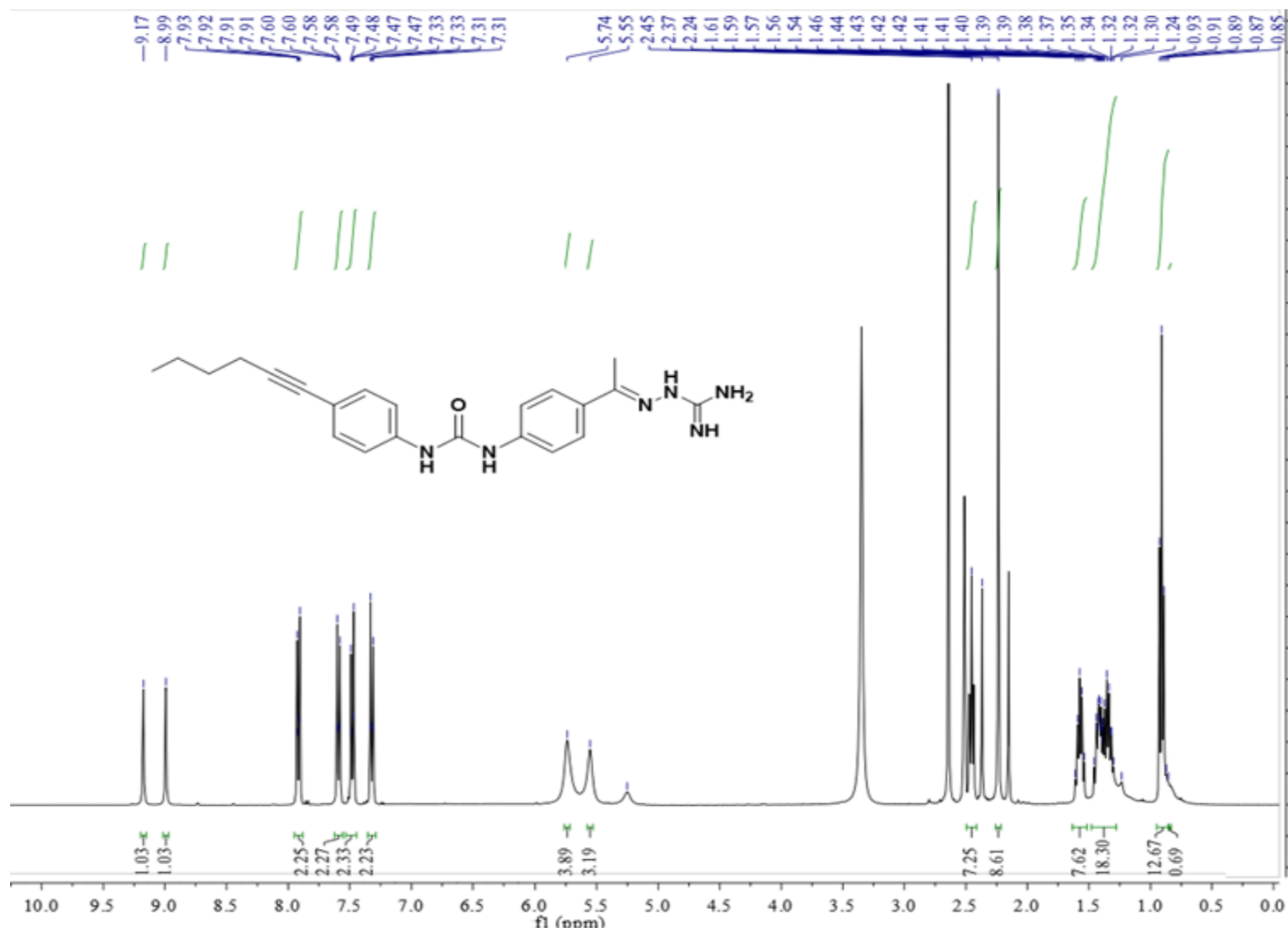




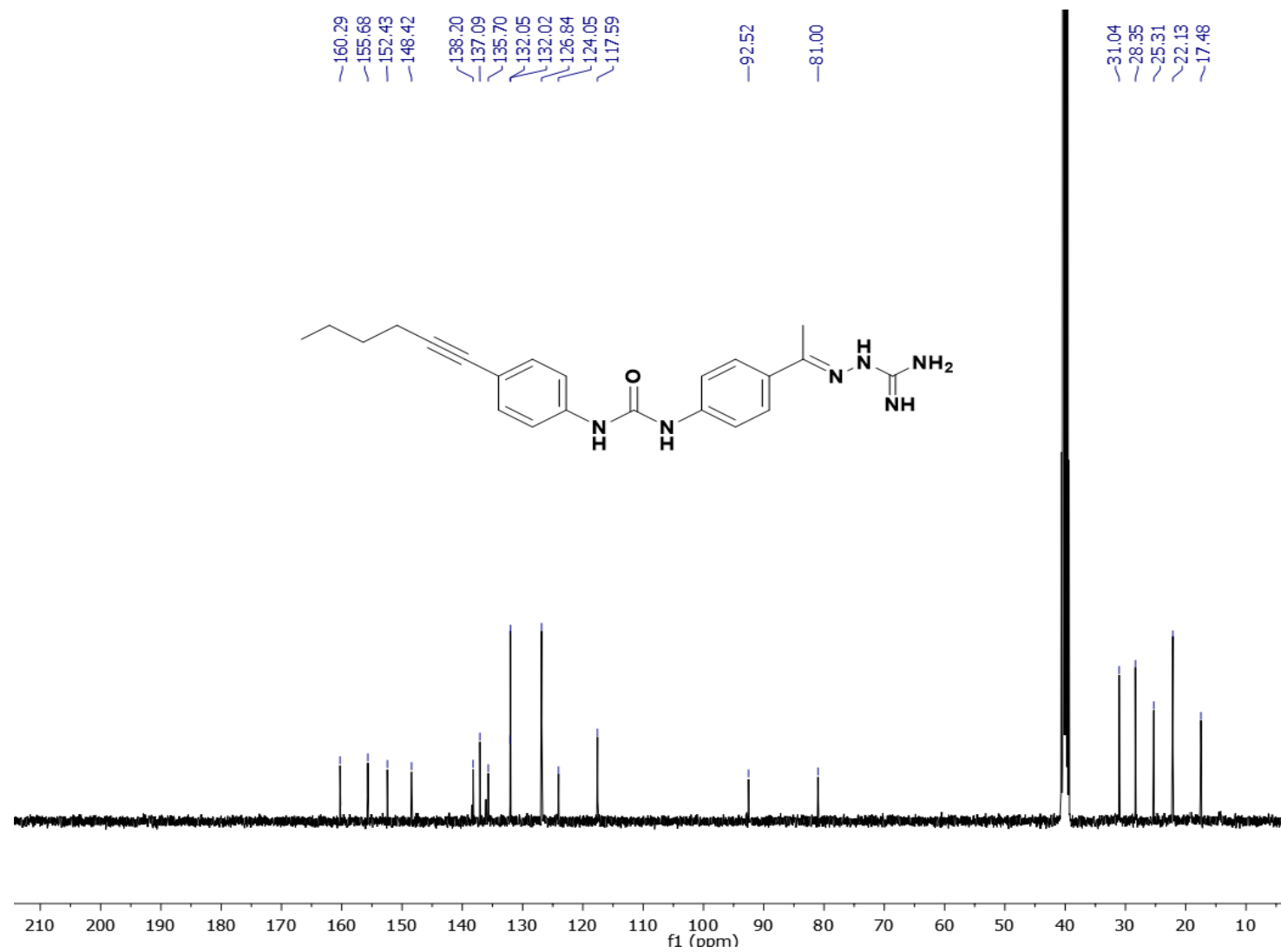
¹H NMR of compound (5)



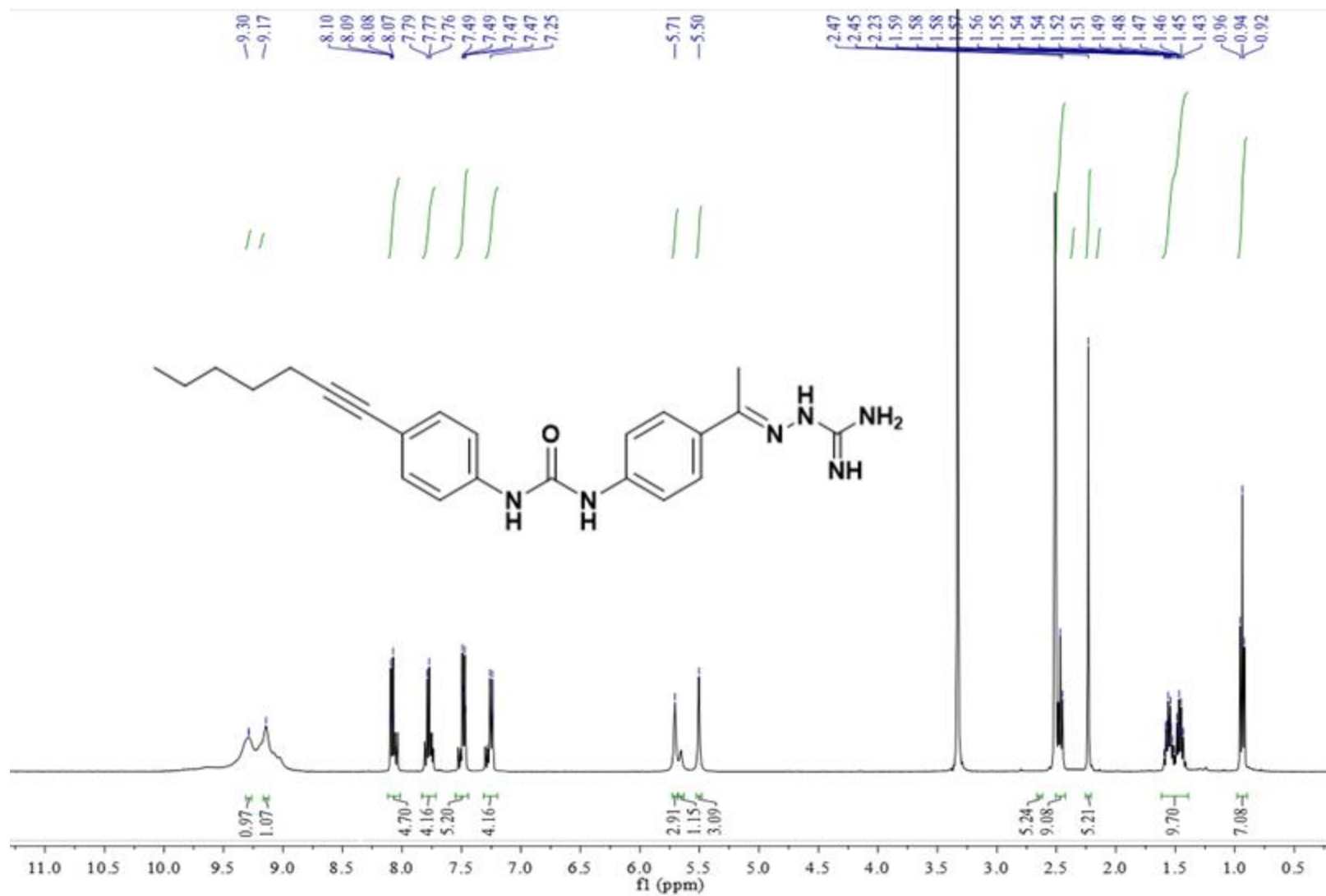
¹³C of compound (5)



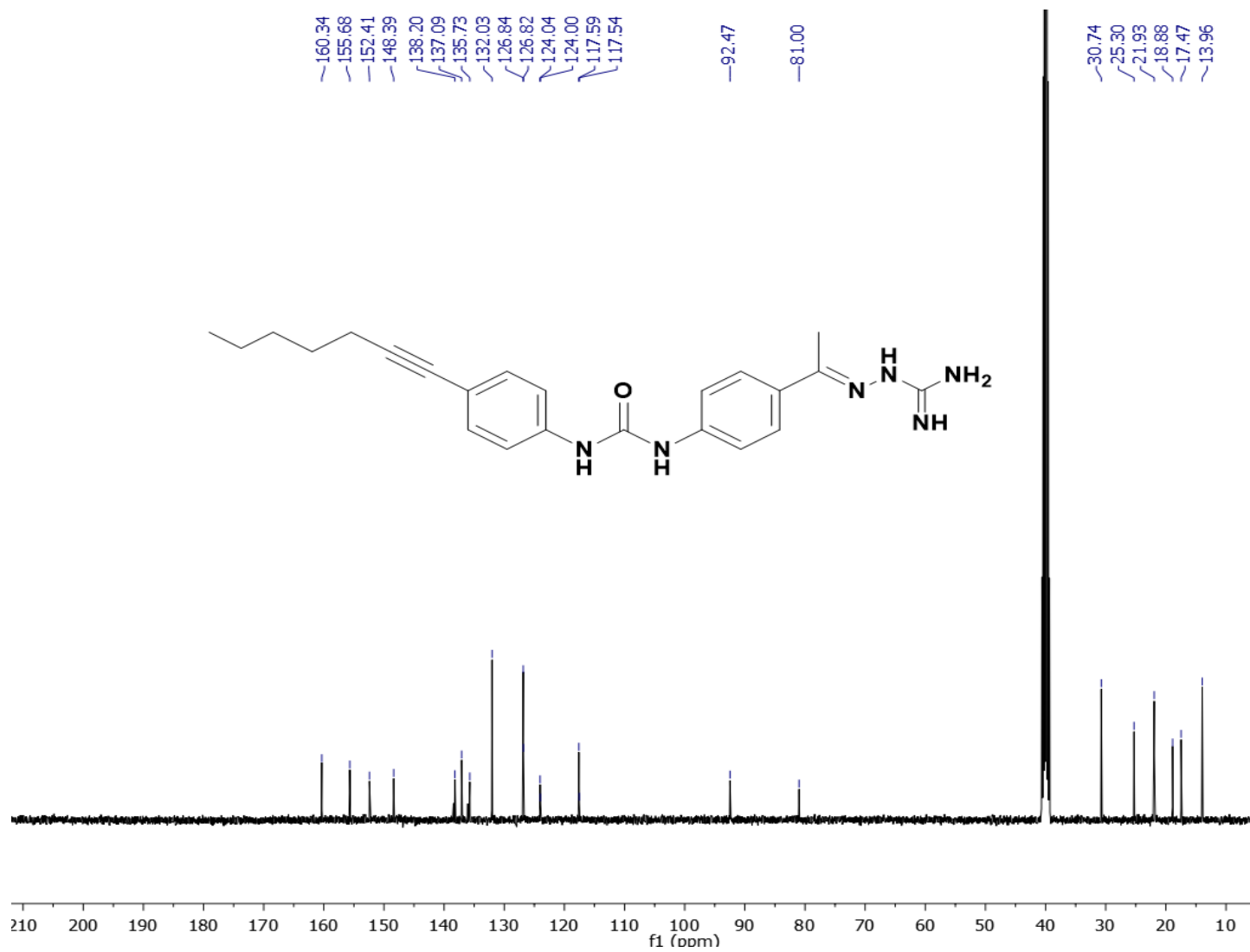
¹H NMR of compound (6)



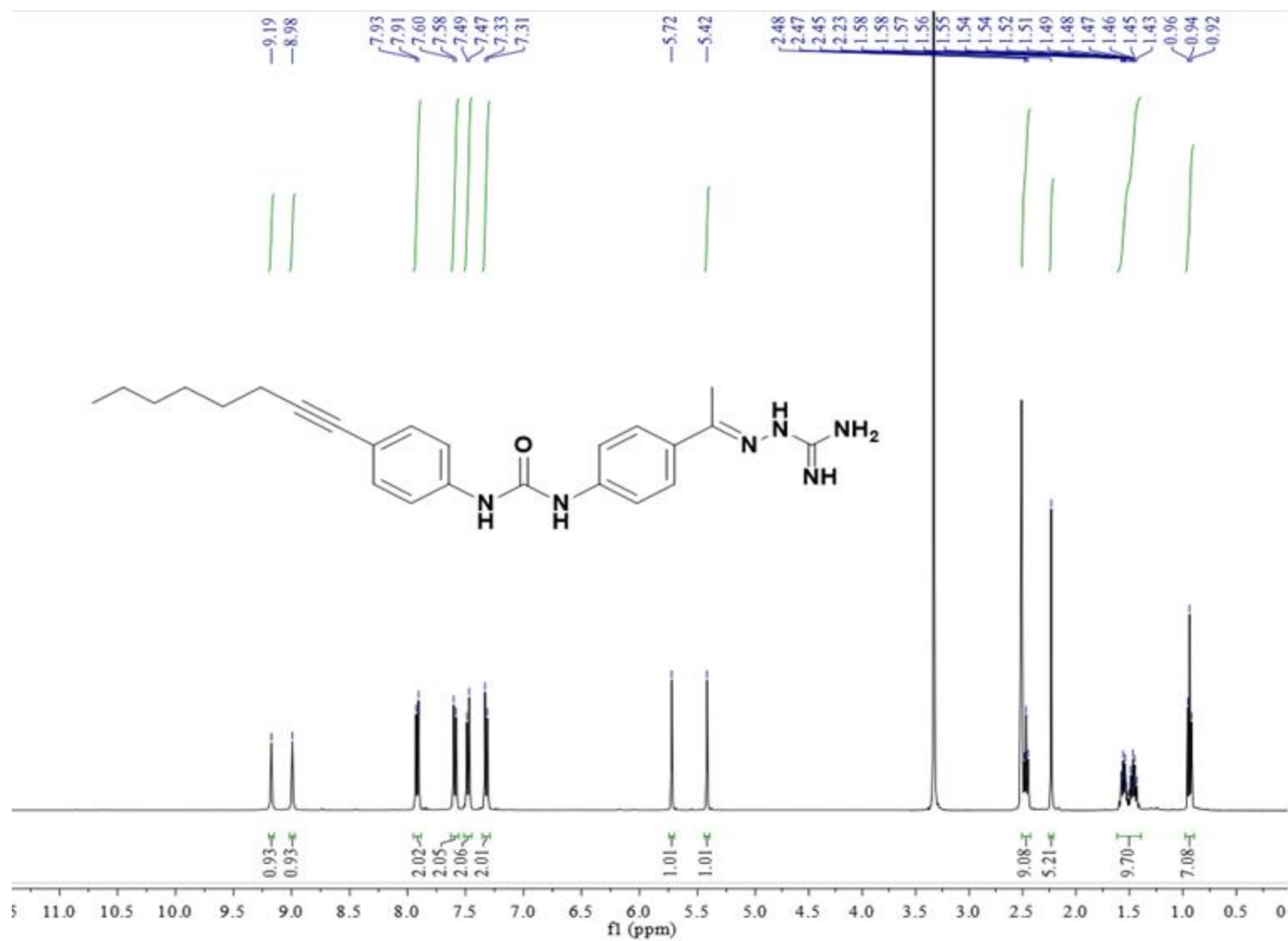
^{13}C of compound (6)



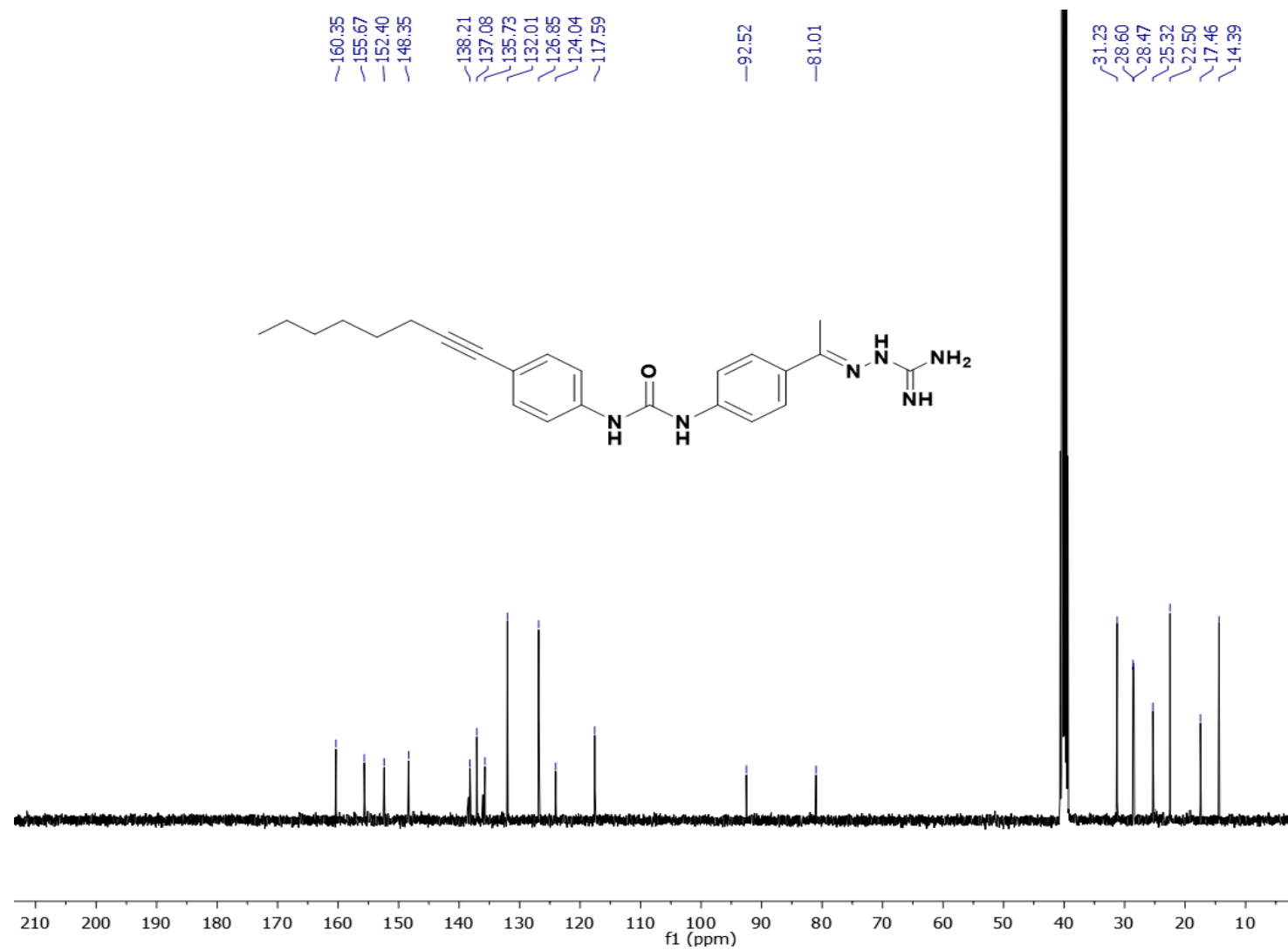
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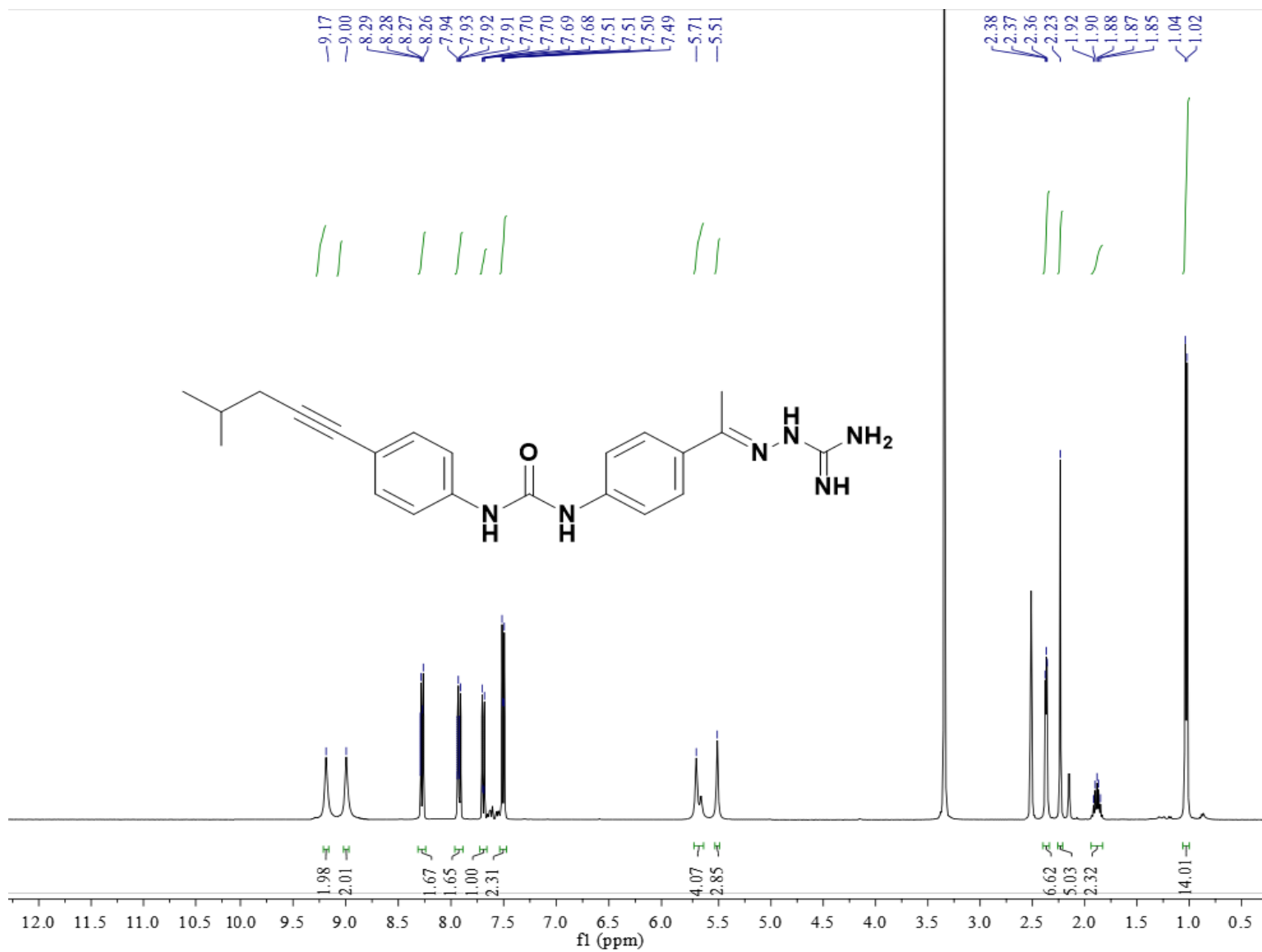
¹³C of compound (7)



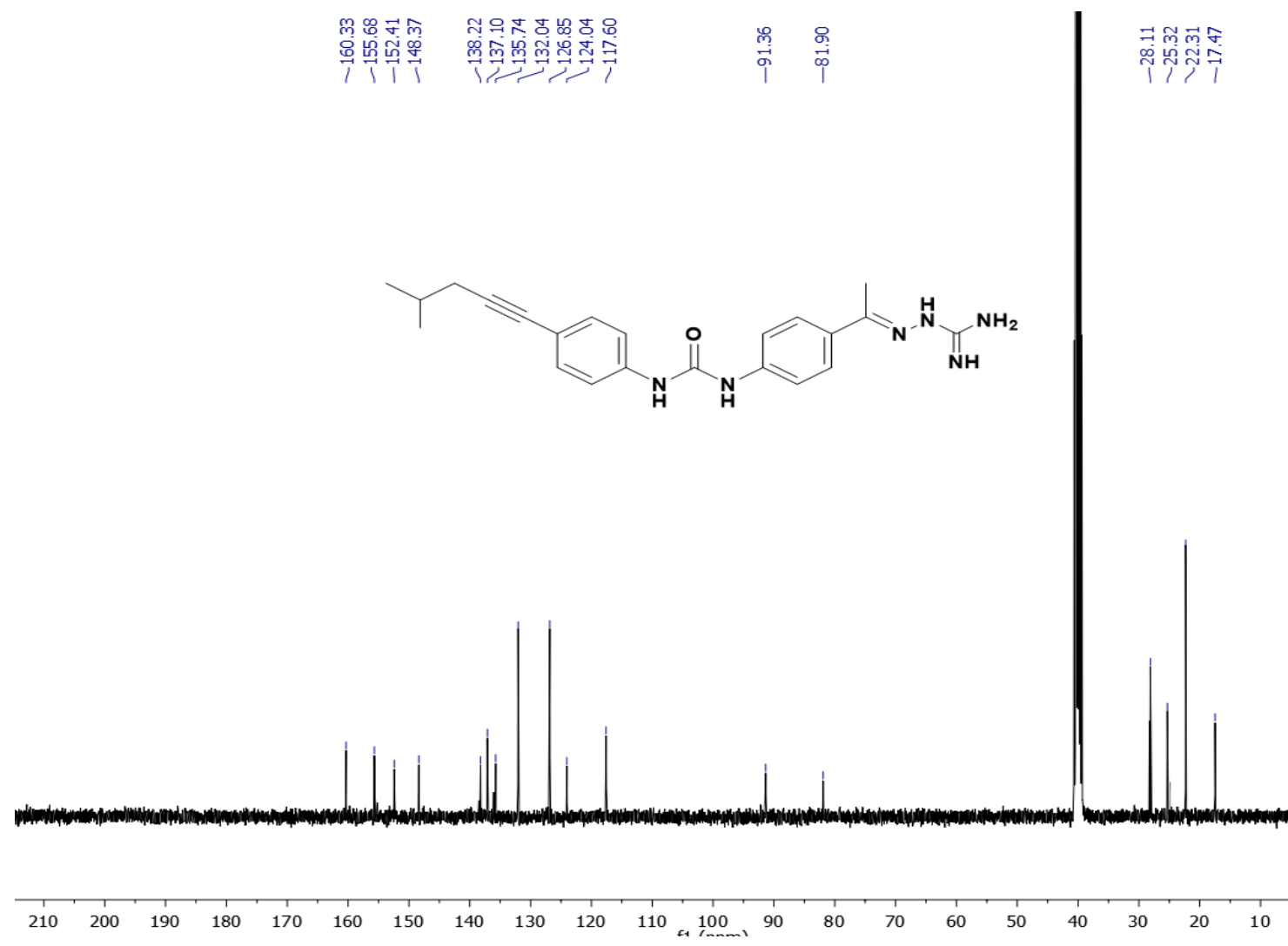
¹H NMR of compound (8)



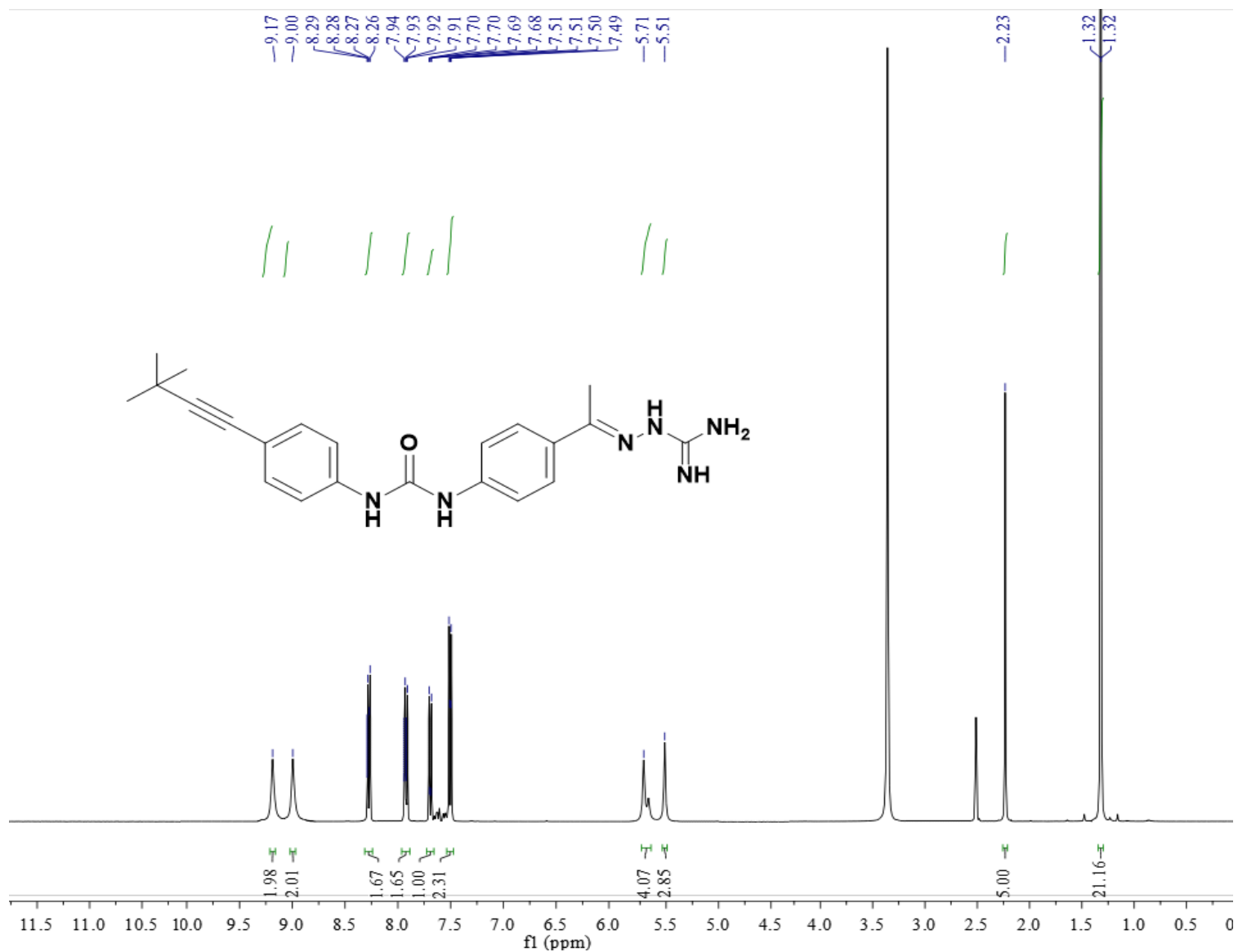
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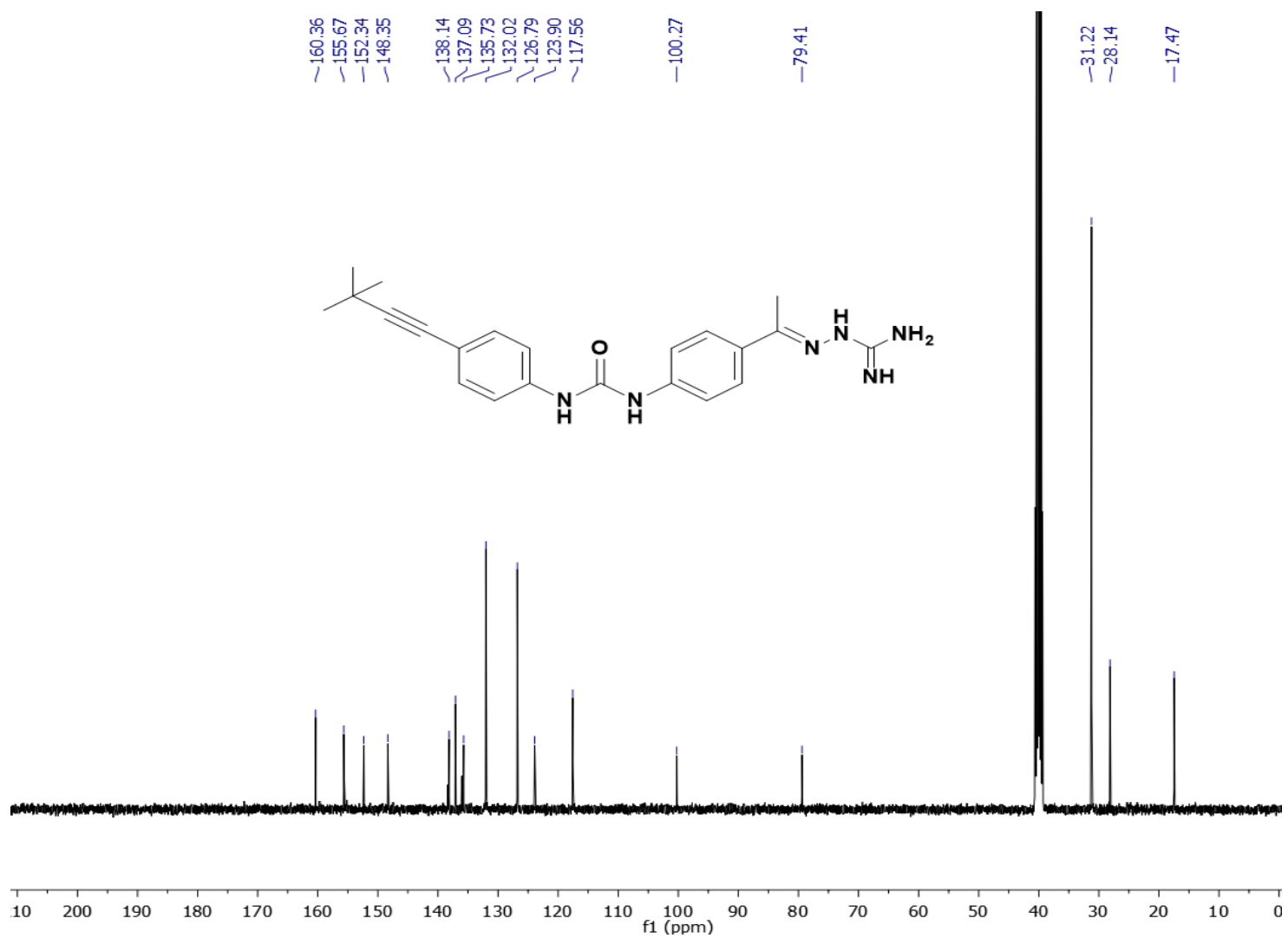
¹H NMR of compound (9)



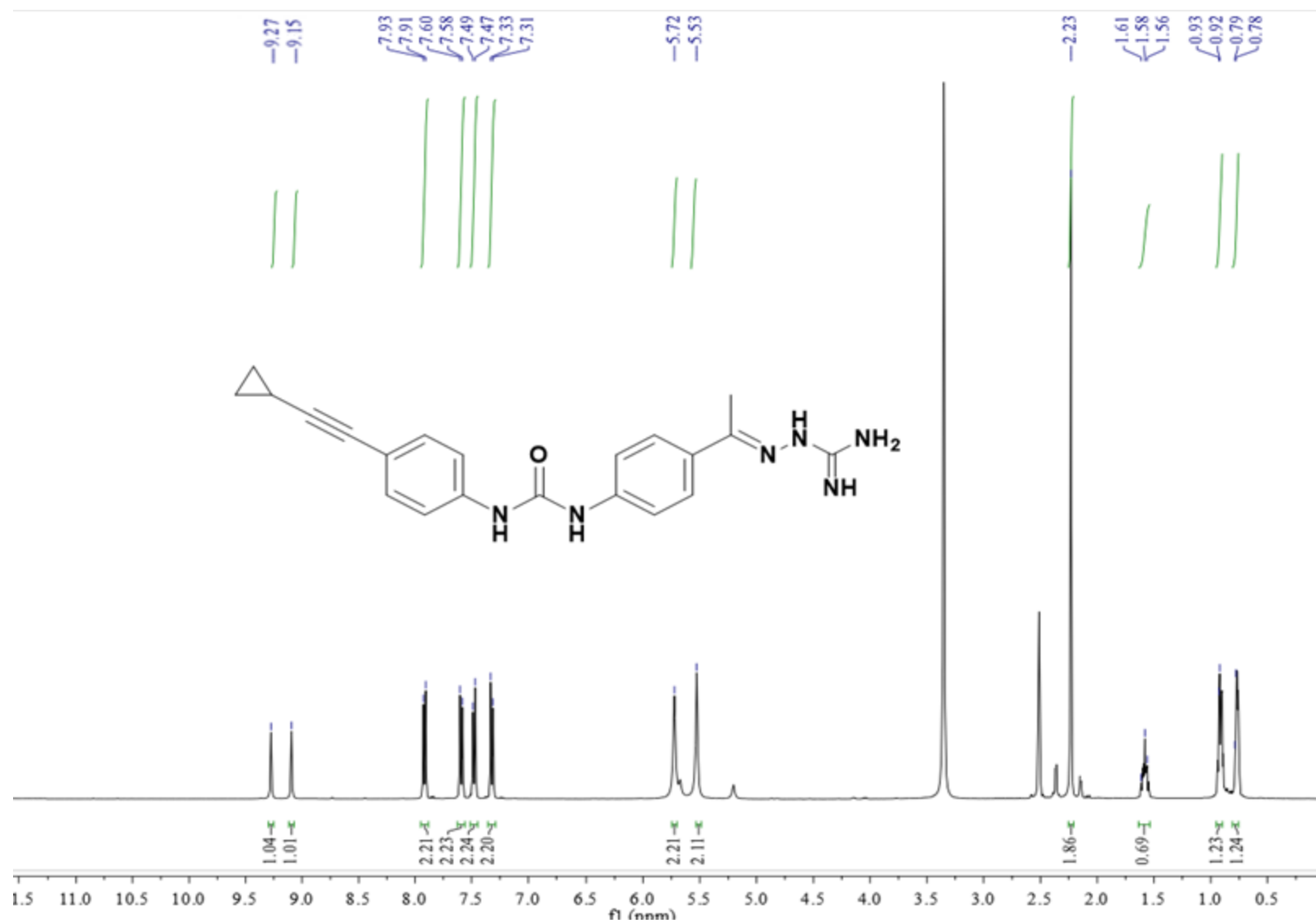
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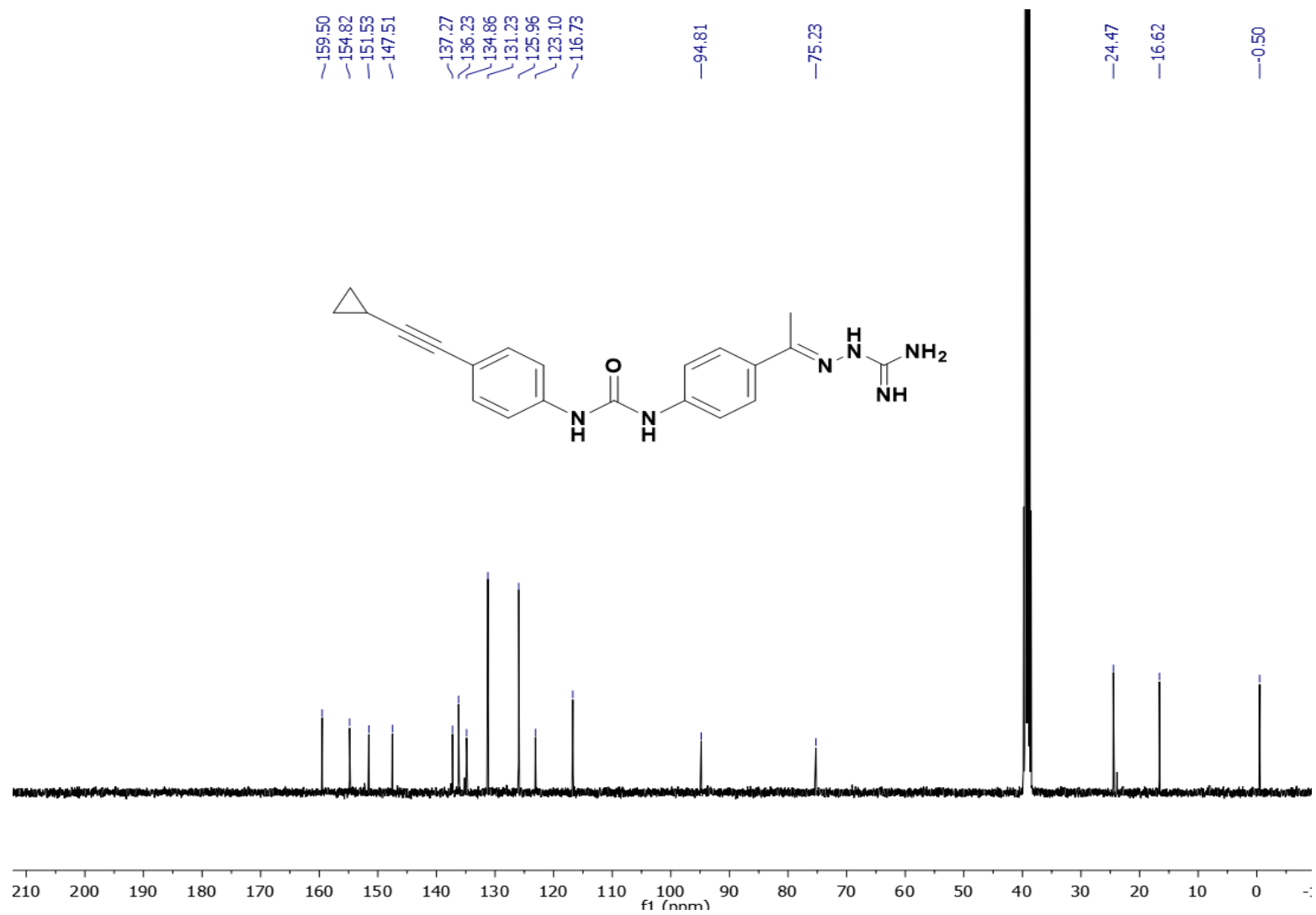
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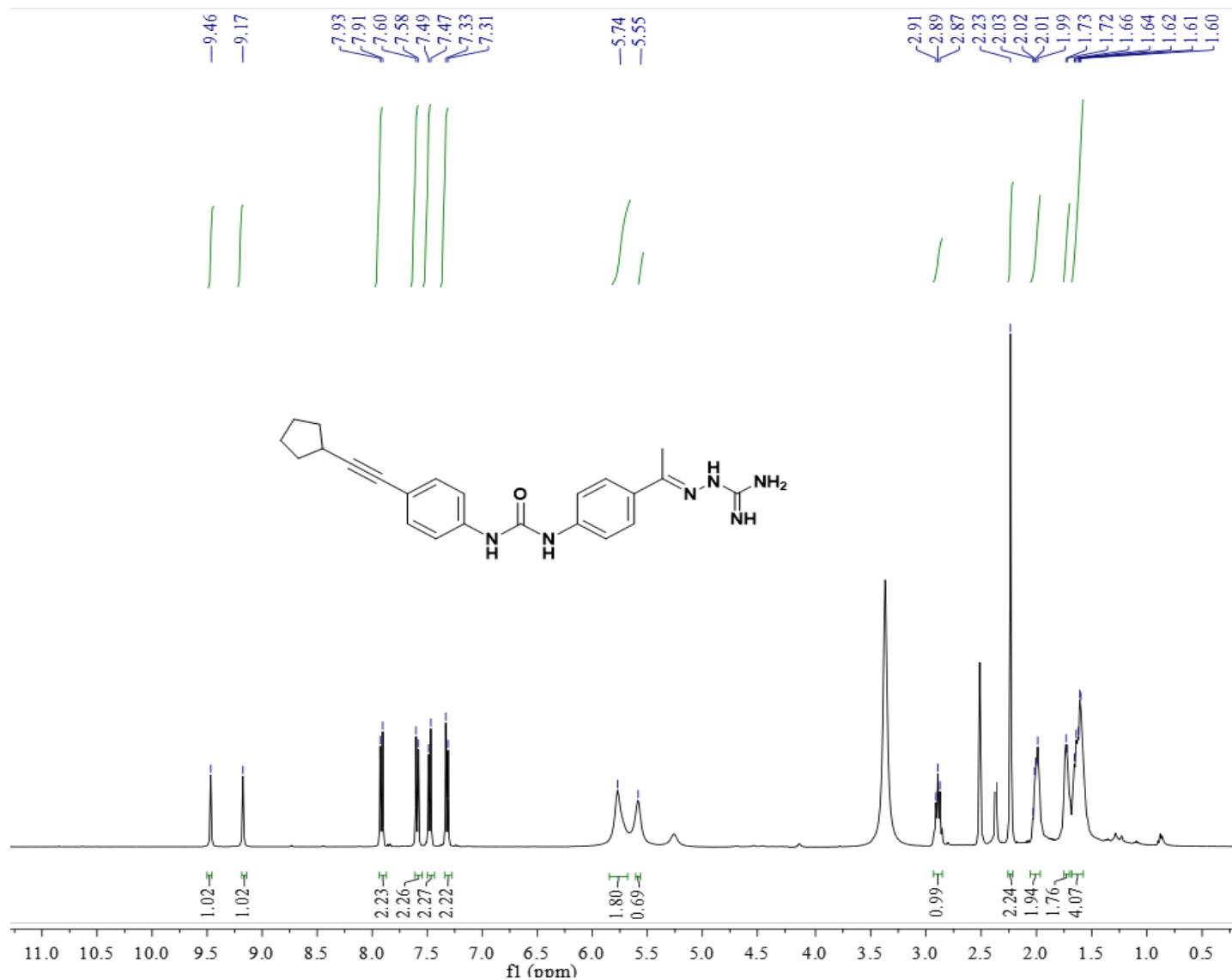
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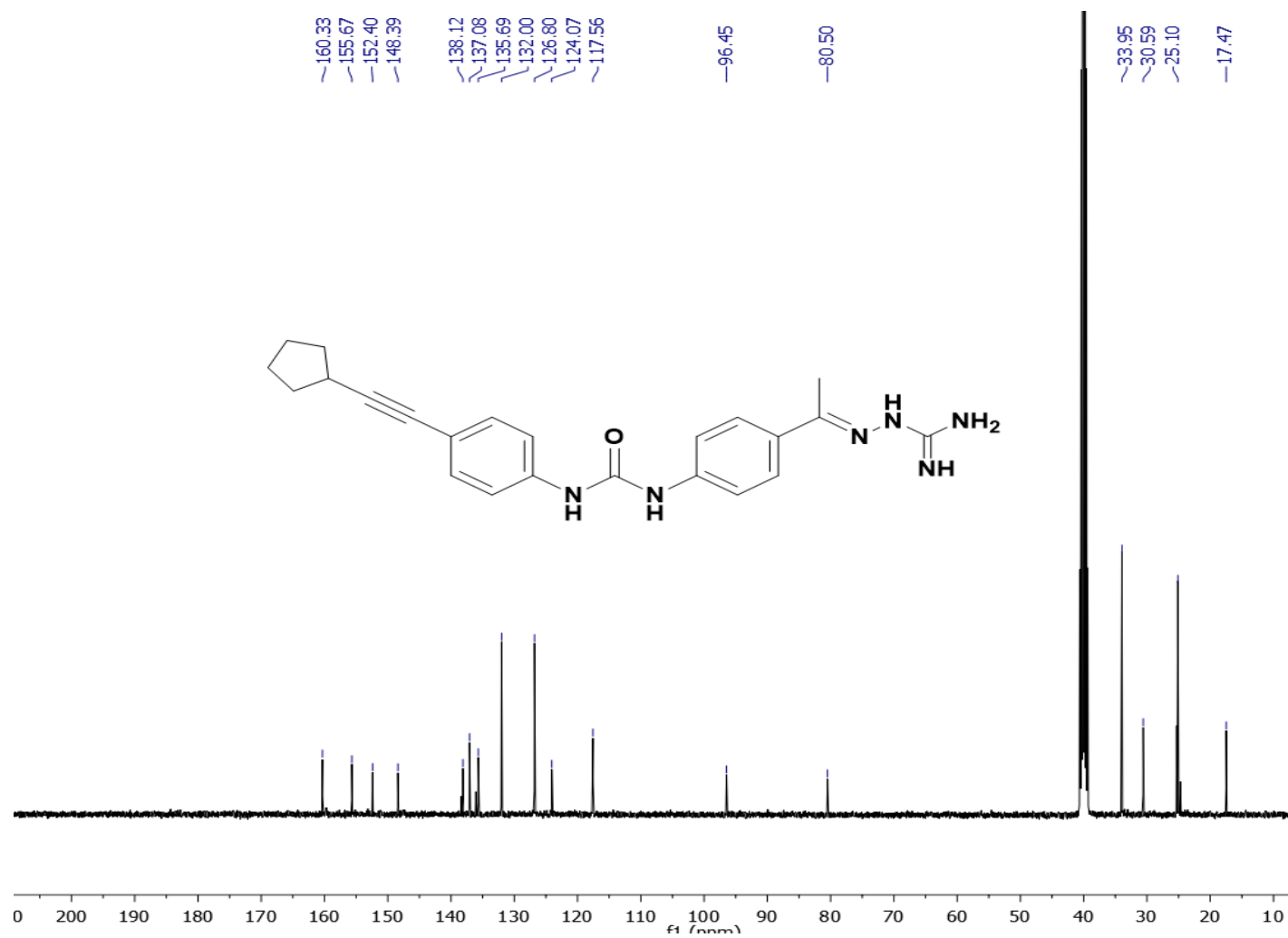
¹H NMR of compound (11)



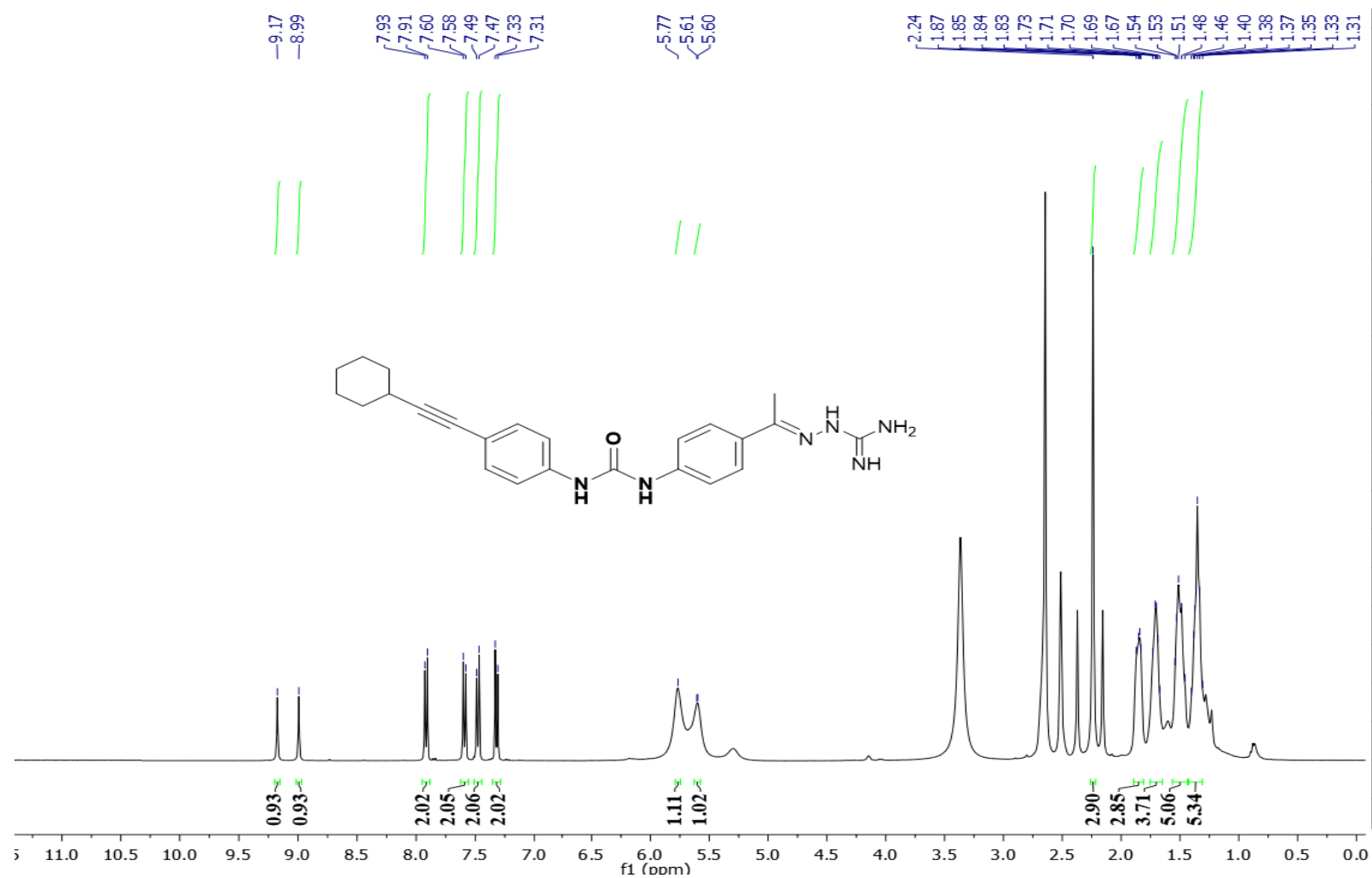
¹³C of compound (11)



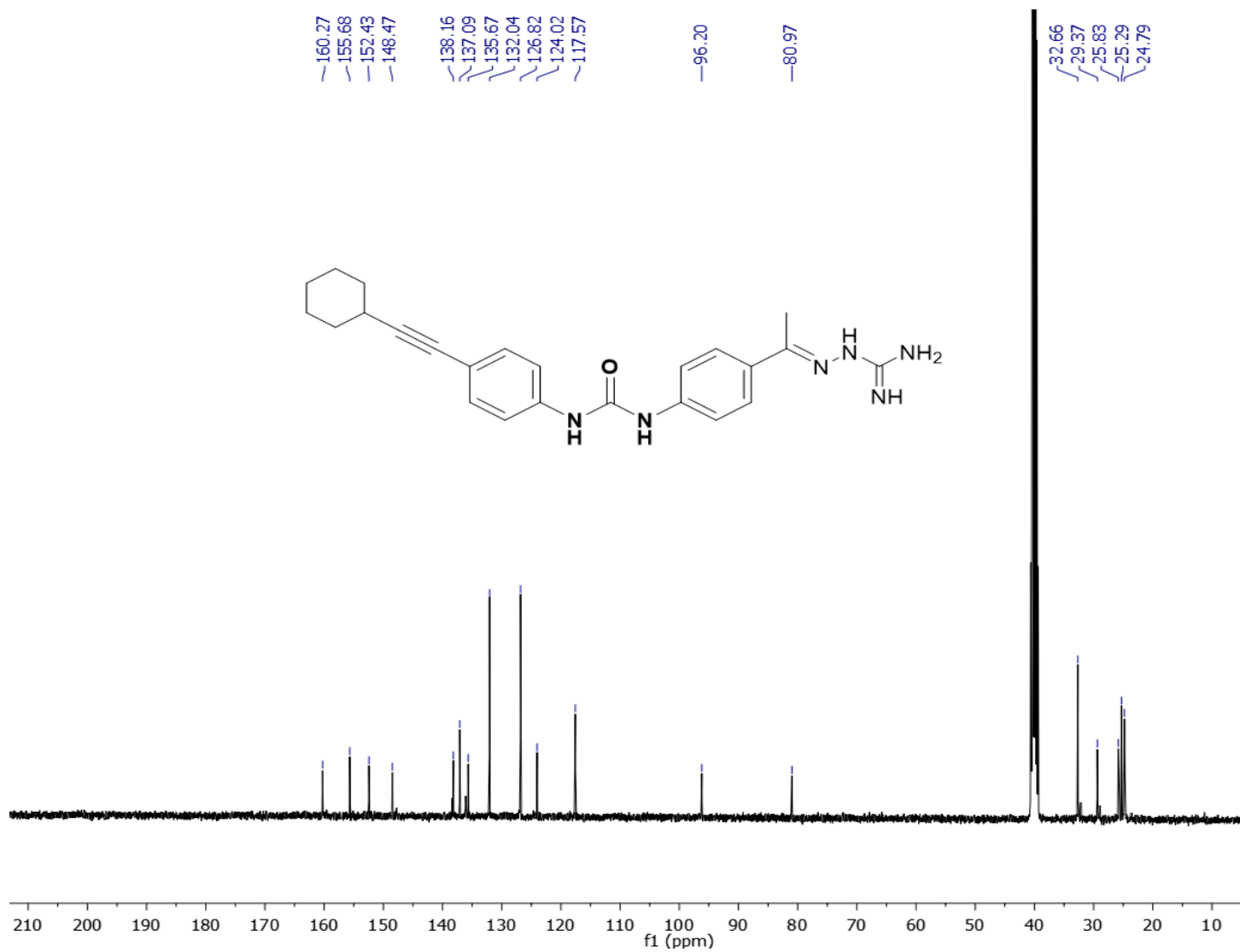
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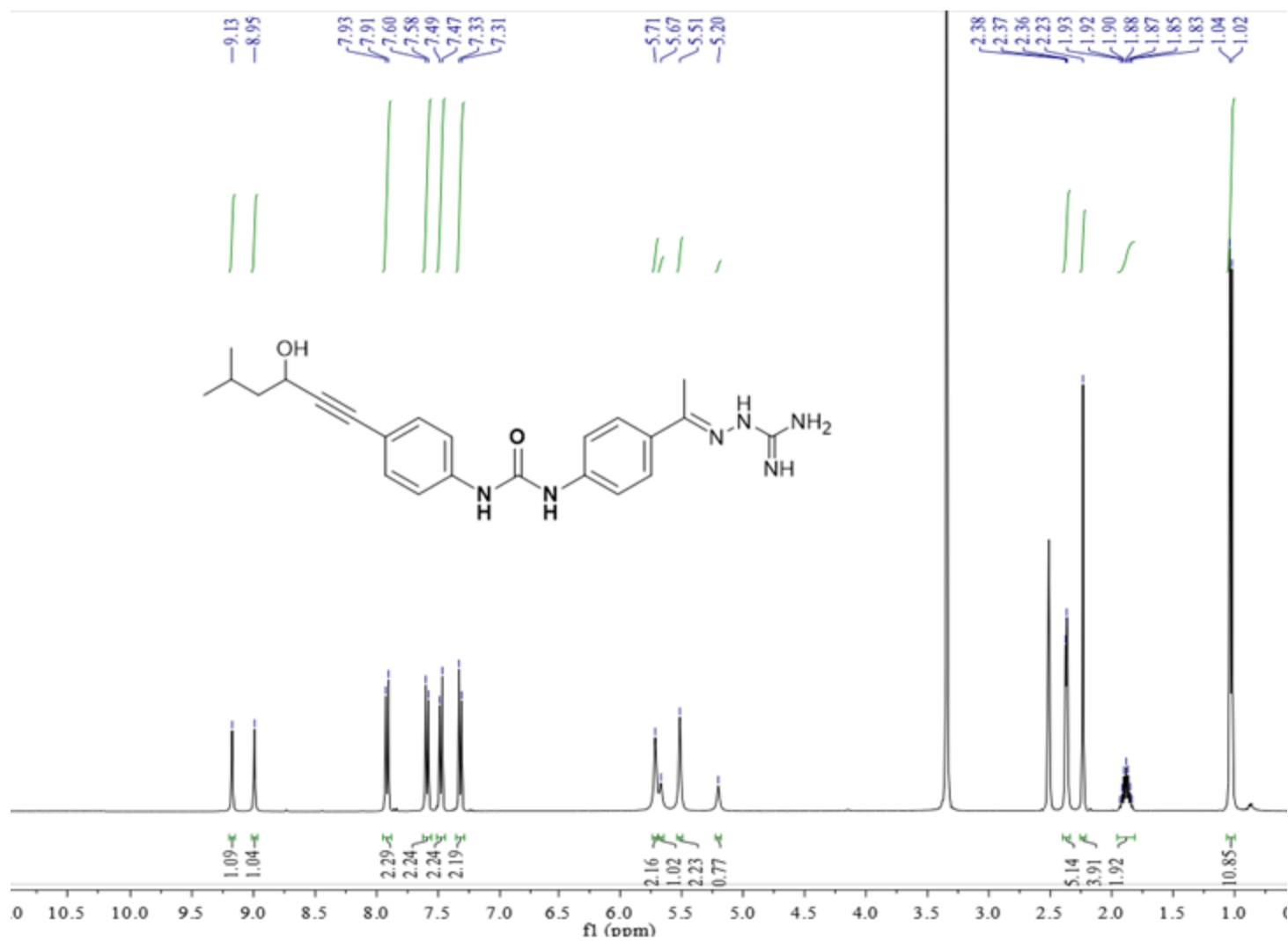
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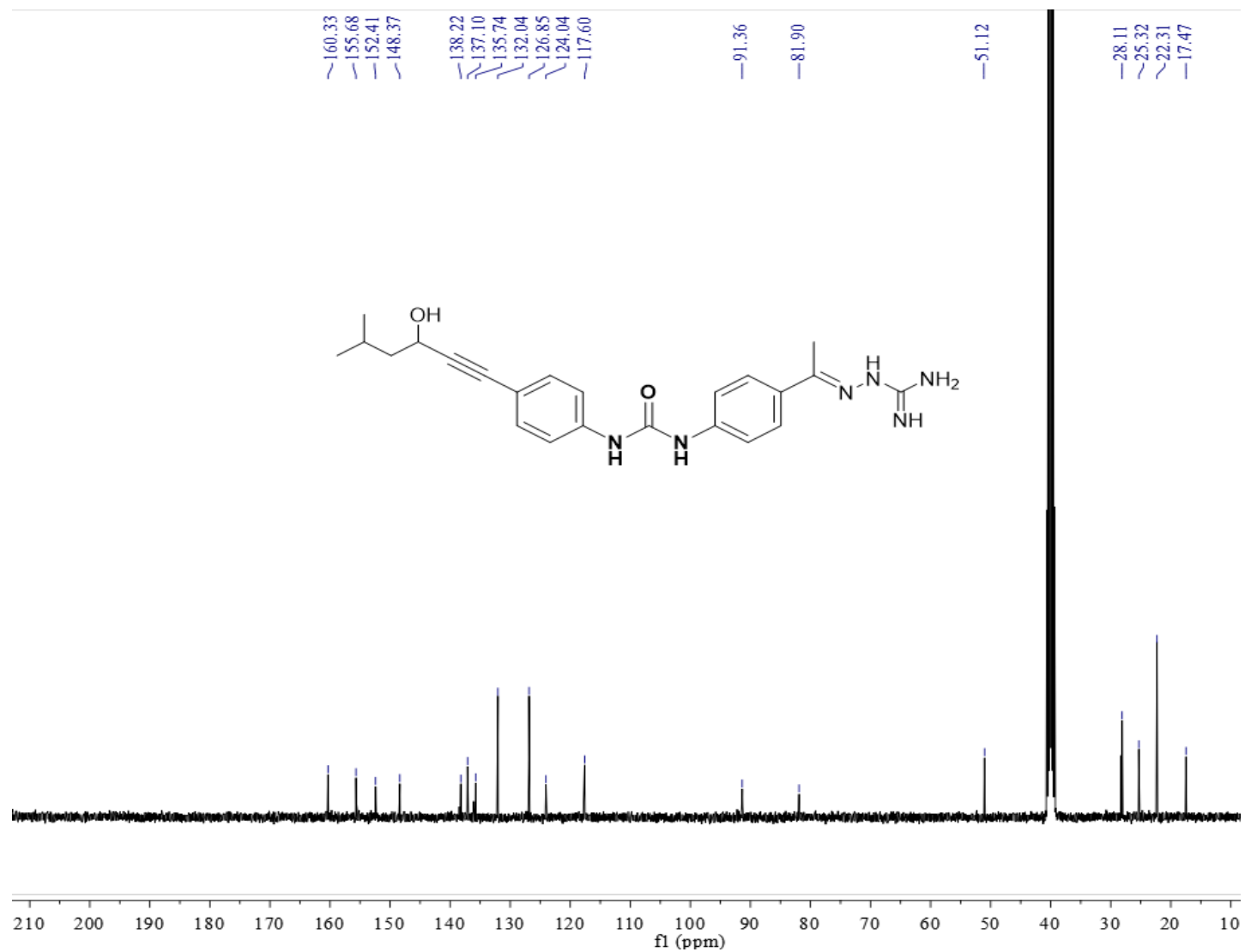
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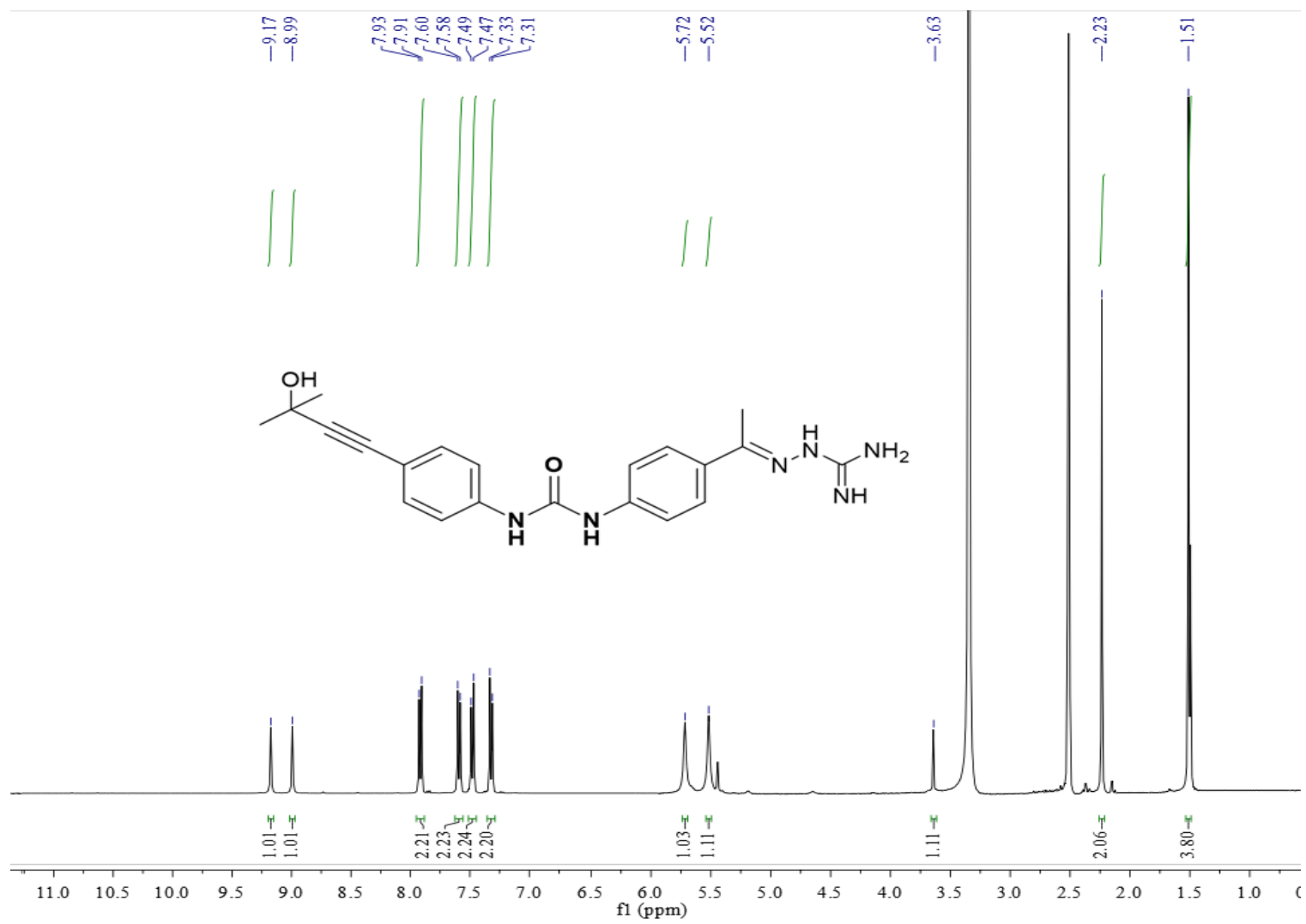
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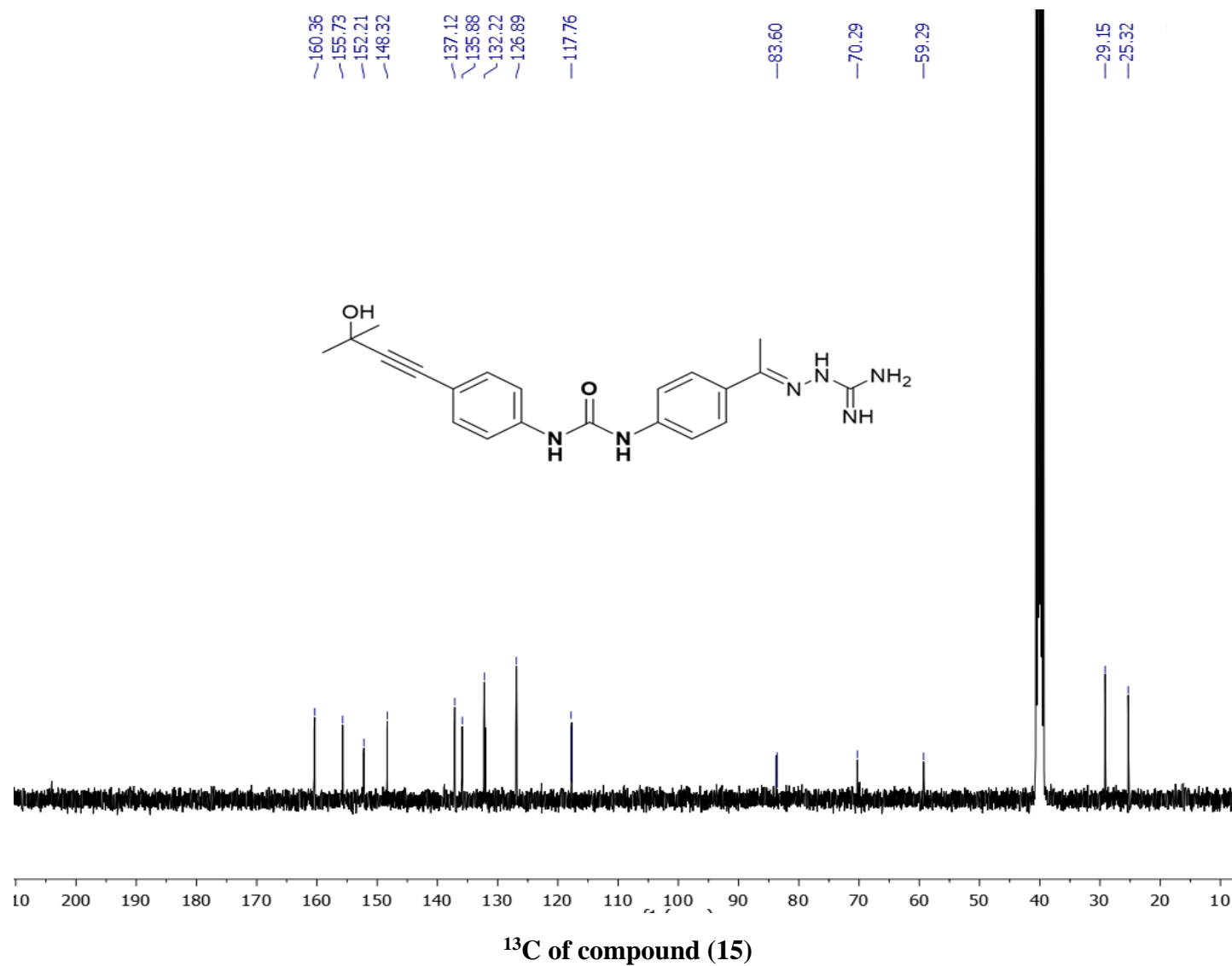
¹H NMR of compound (14)

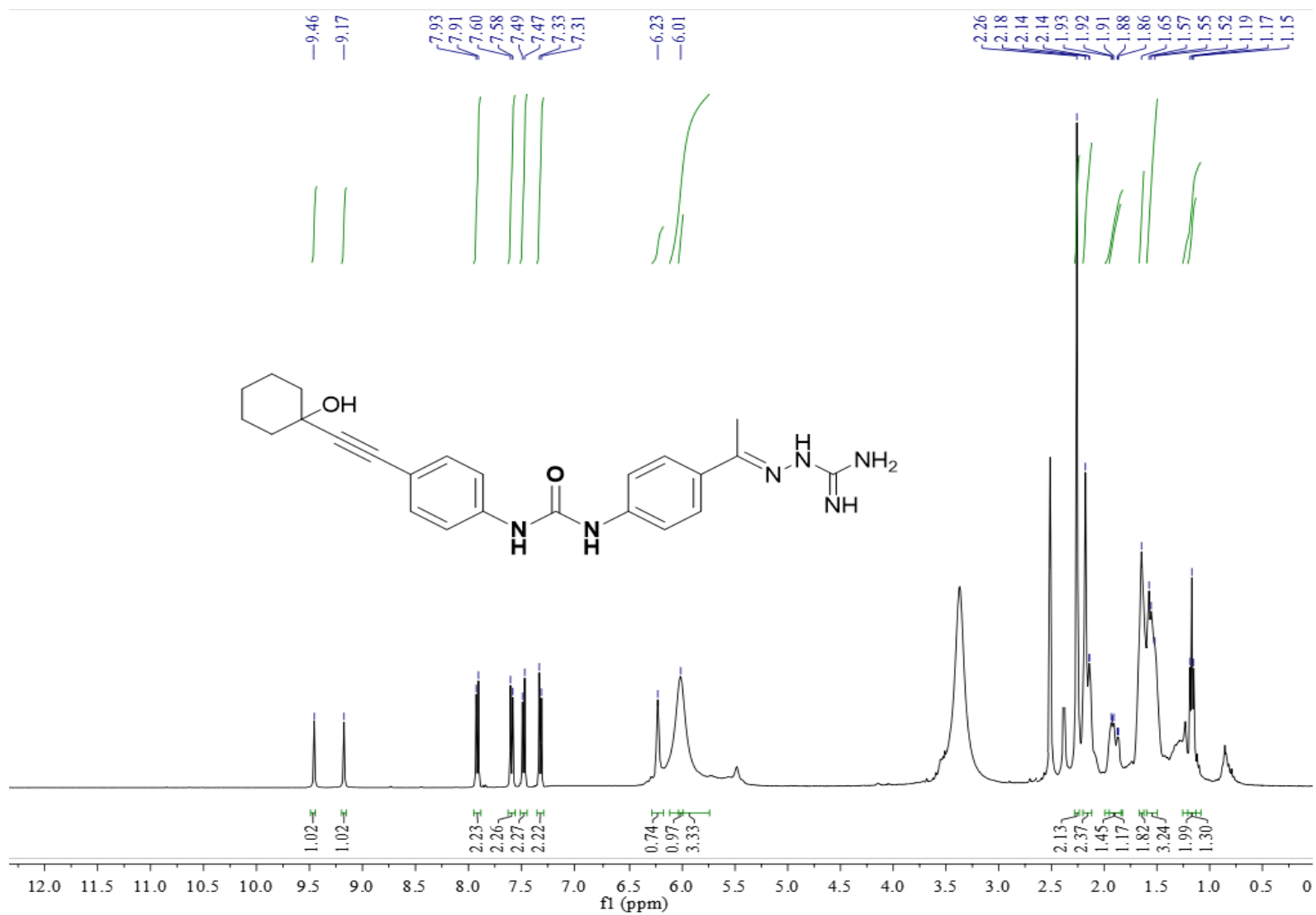


¹³C of compound (14)

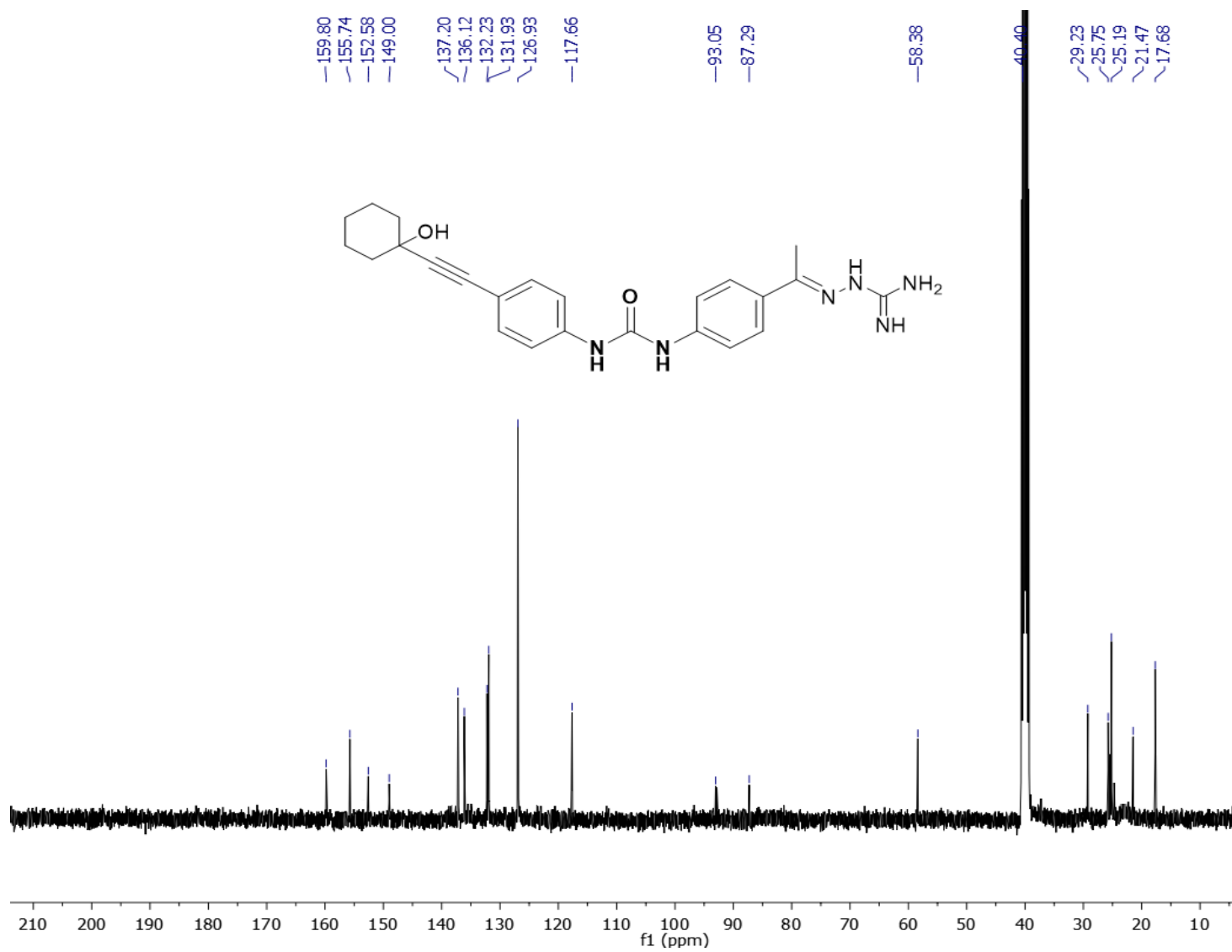


¹H NMR of compound (15)

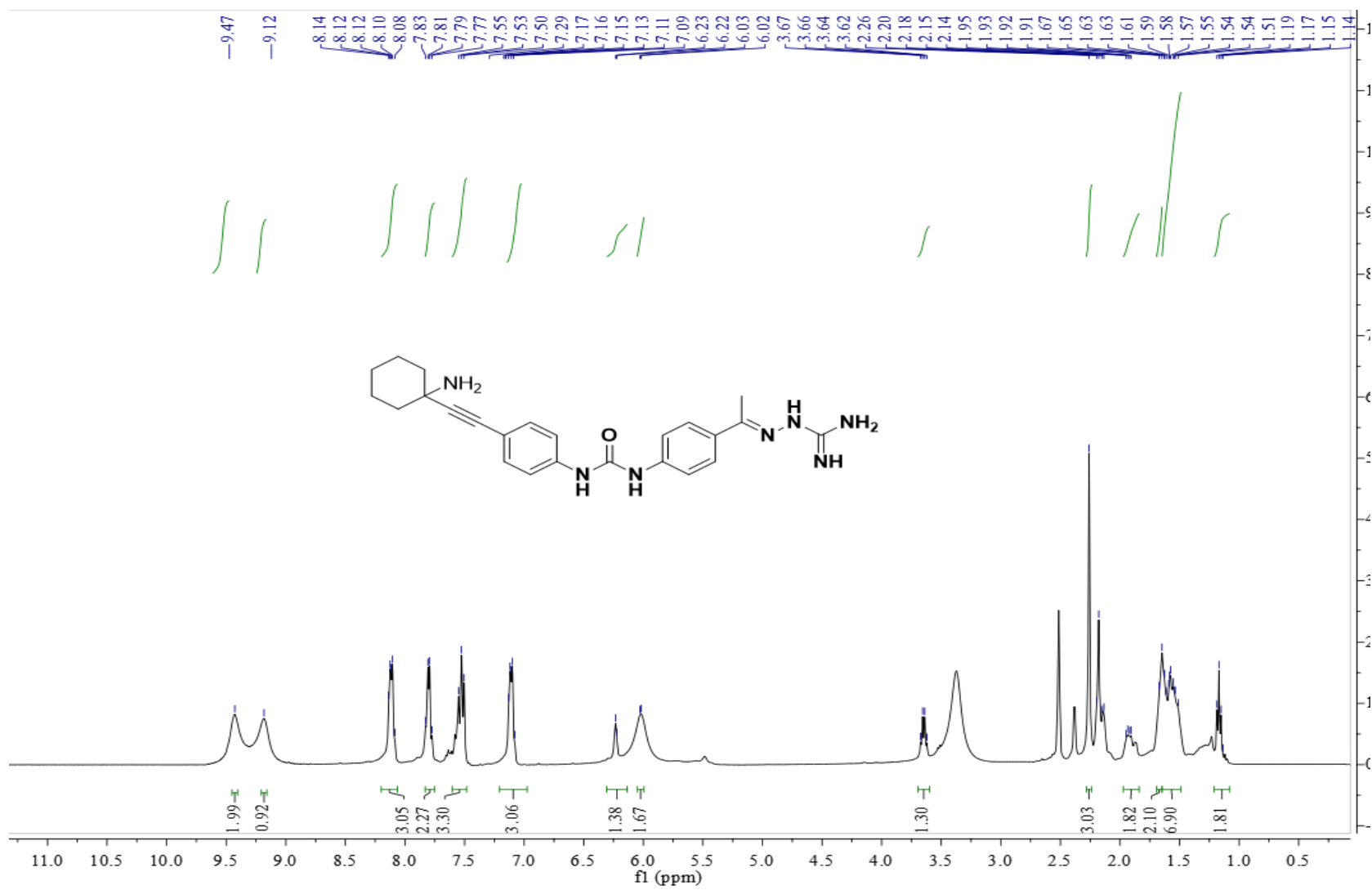




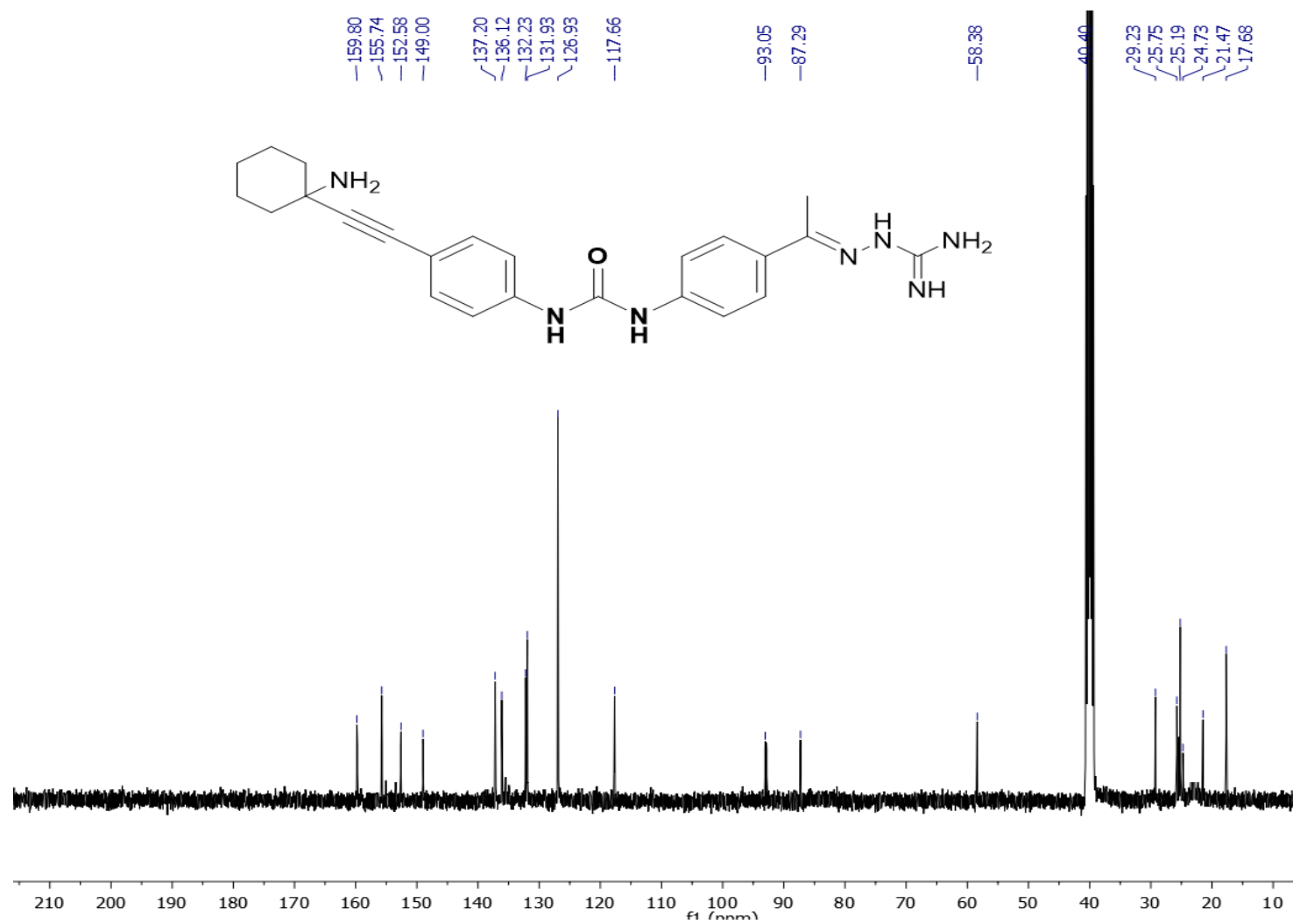
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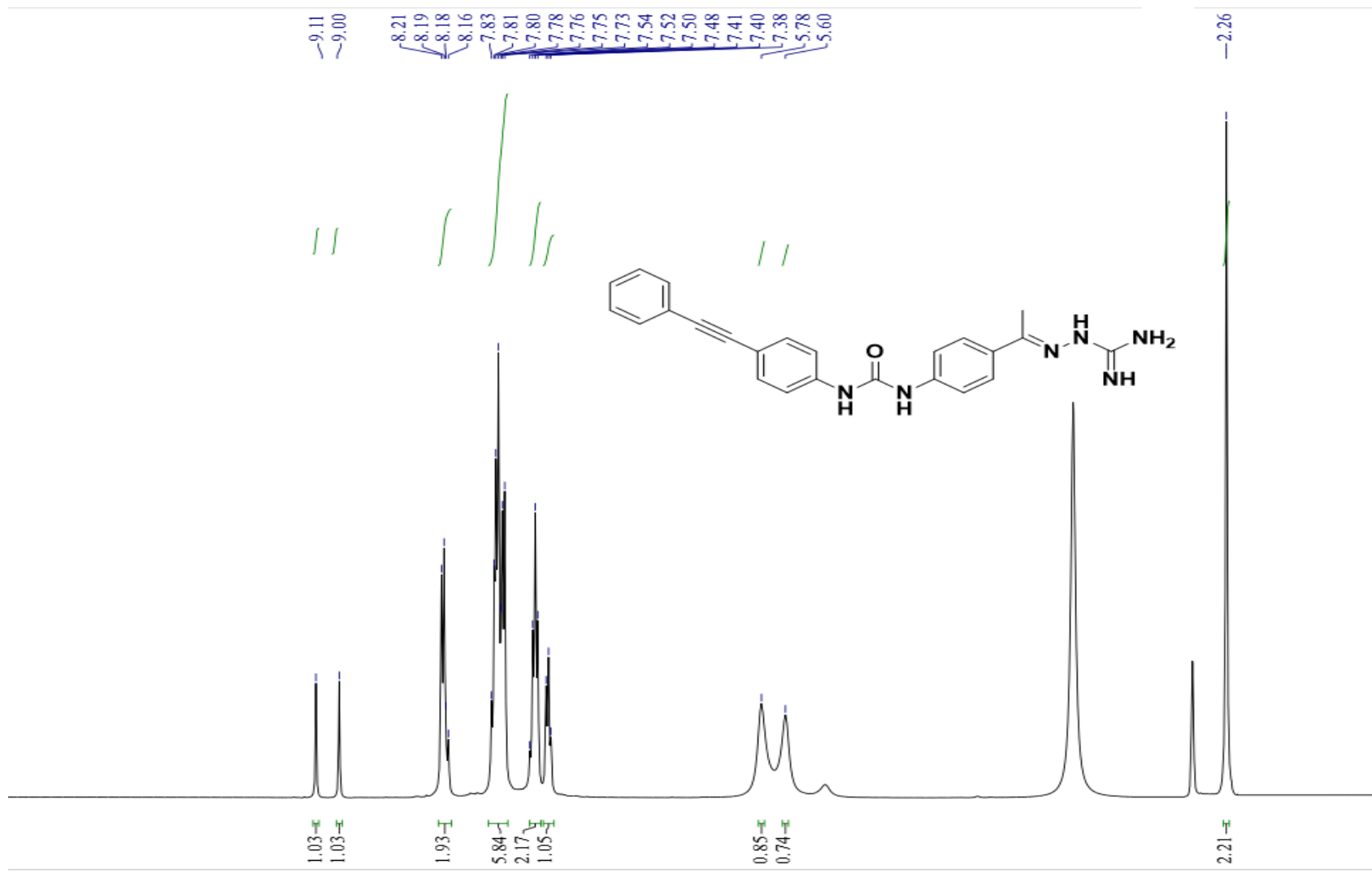
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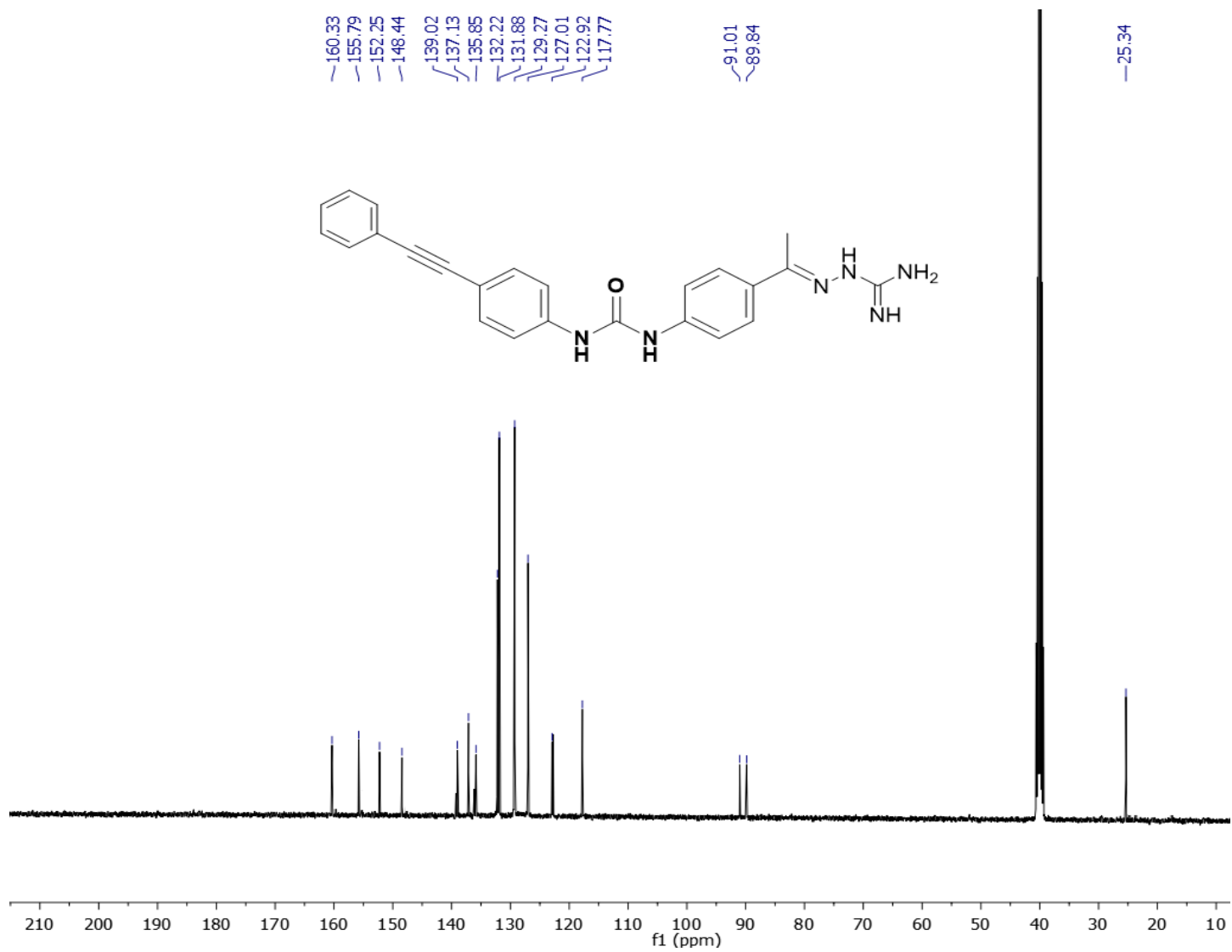
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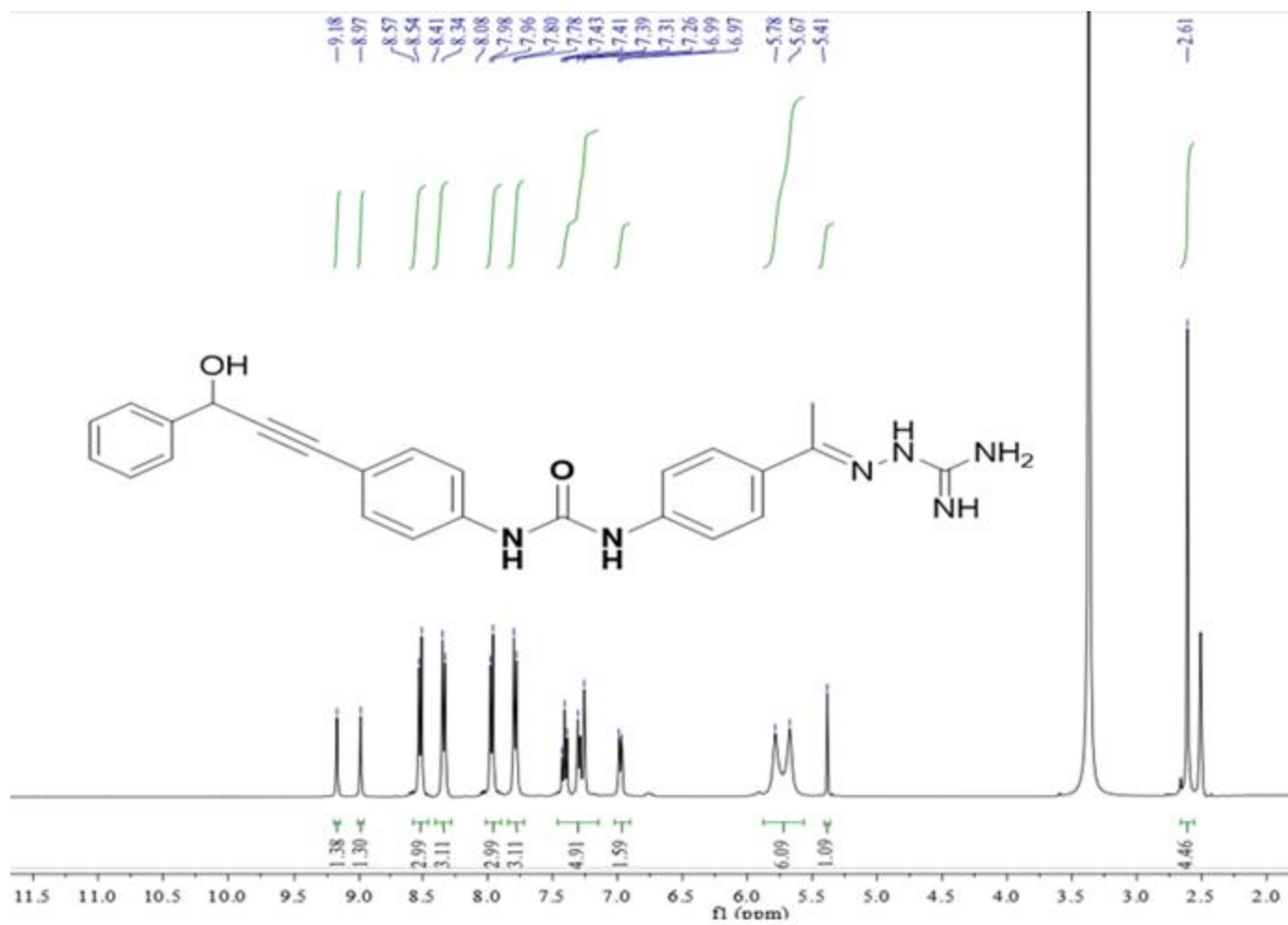
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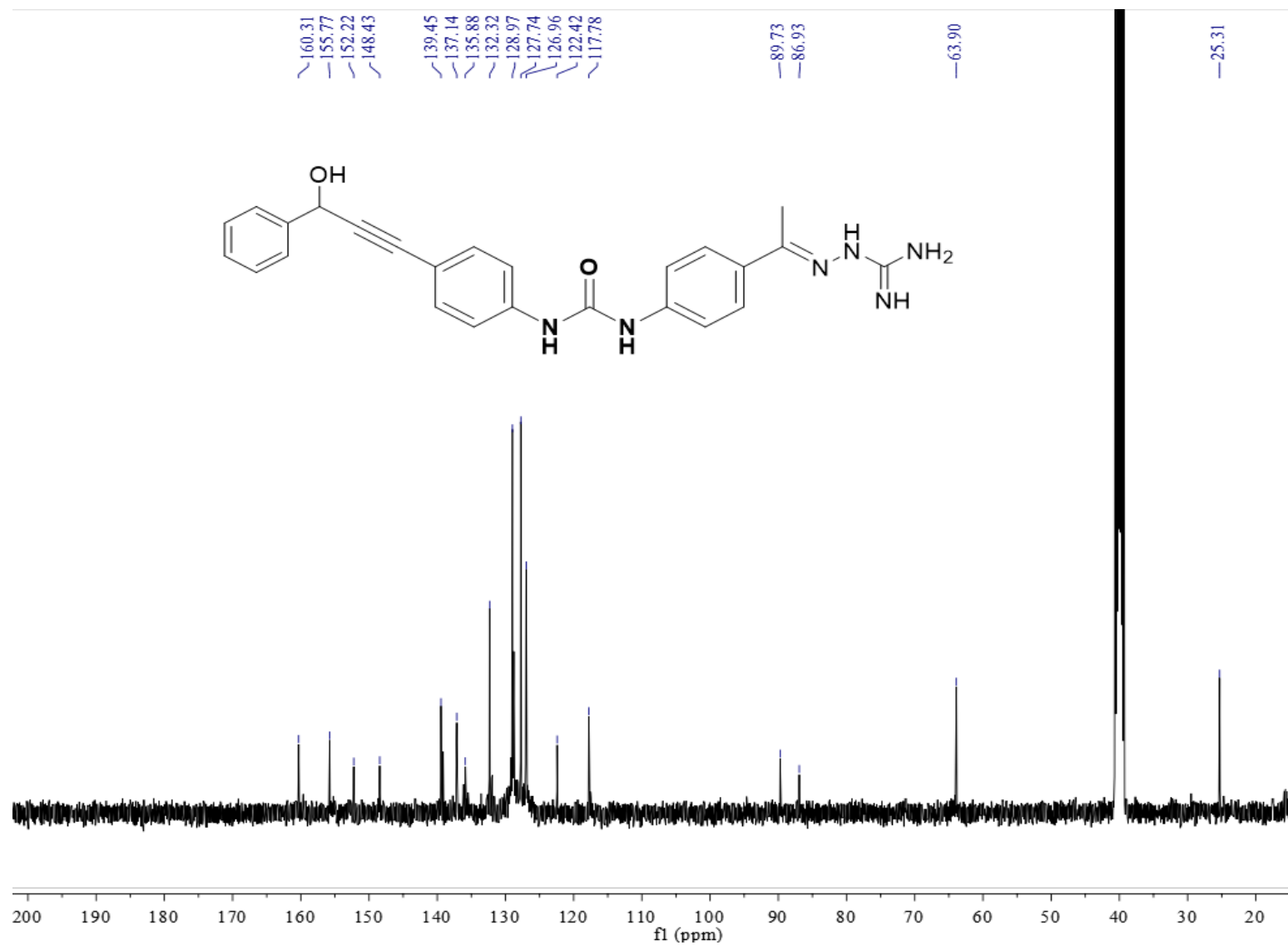
¹H NMR of compound (18)



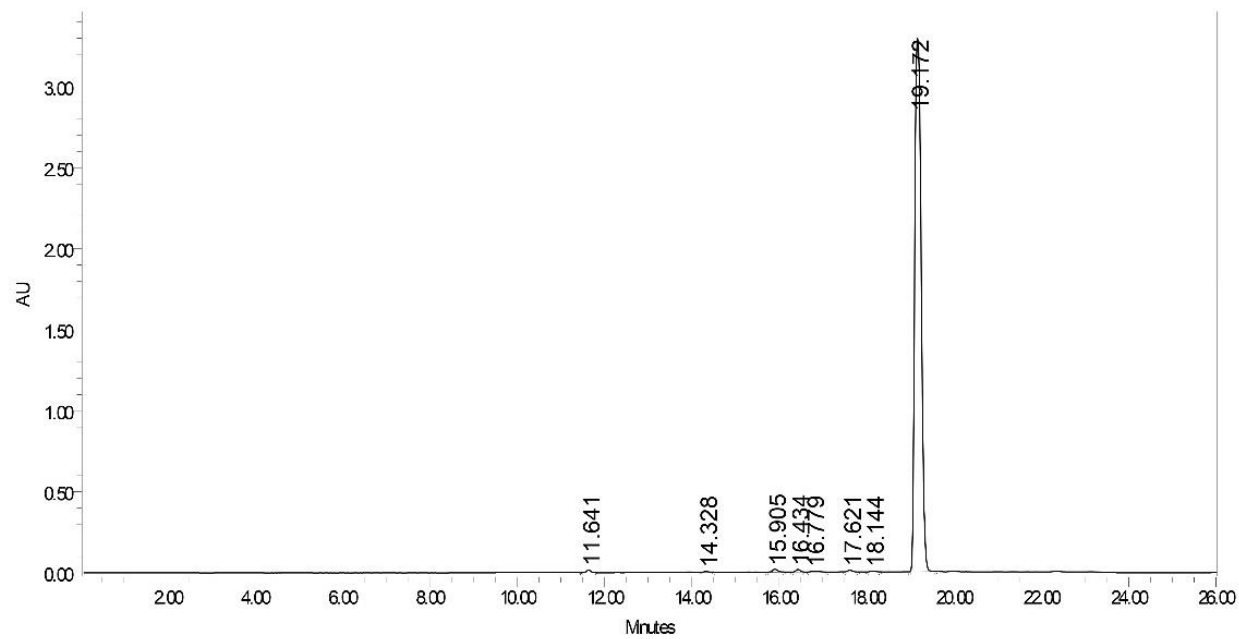
¹³C of compound (18)



¹H NMR of compound (19)



¹³C of compound (19)



	RT	Area	%Area	Hight
1	11.641	111086	0.32	16902
2	14.328	34834	0.10	5515
3	15.905	147448	0.43	17126
4	16.434	116555	0.34	15682
5	16.779	92146	0.27	6877
6	17.621	73783	0.22	9594
7	18.144	40526	0.12	5381
8	19.172	33599443	98.20	3300551

HPLC chromatogram of compound (18)