

# Supporting Information

## SAR Studies on Acylhydrazones as Inhibitors of Fungal Sphingolipids for the Development of Novel Antifungal Agents

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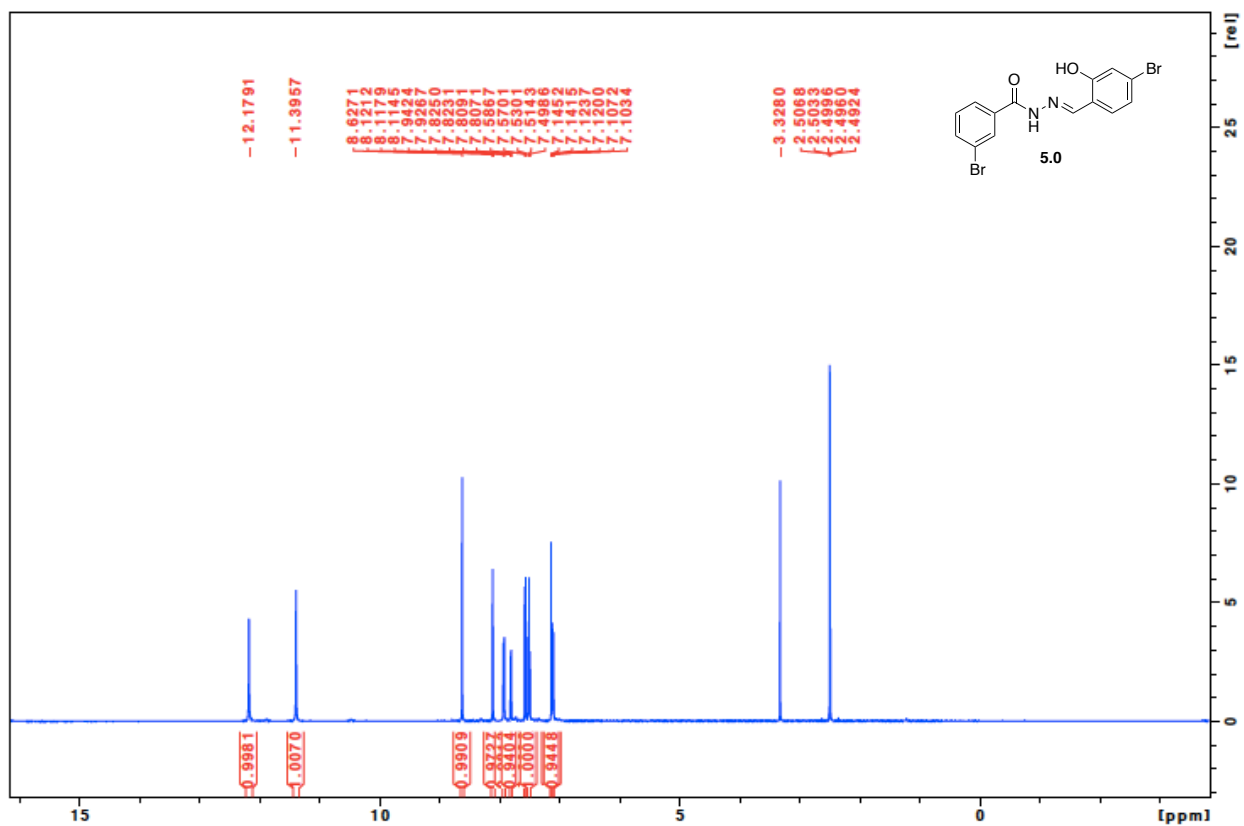
<sup>†</sup> Contributed equally

\* Corresponding Author

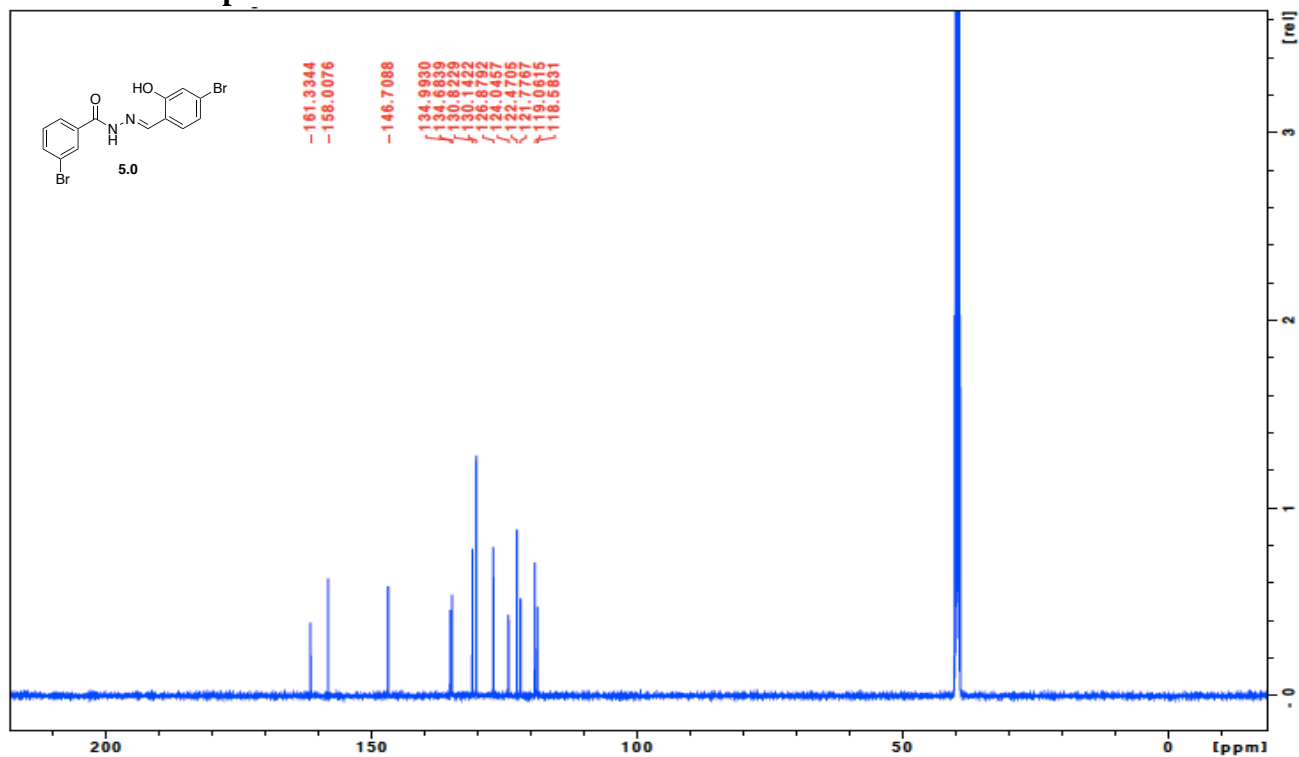
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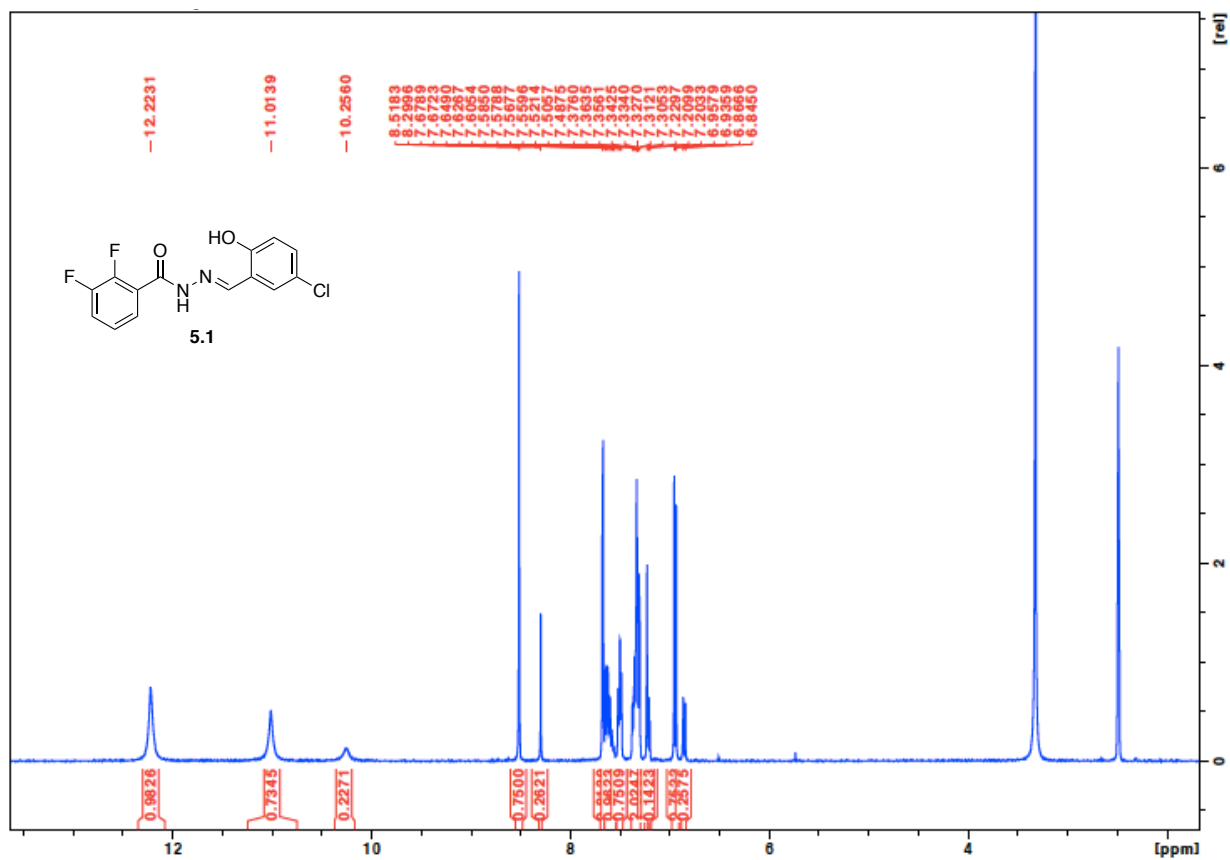
\* To whom correspondences should be addressed. Phone 631-632-1339; fax 631-632-7942; e-mail, iwao.ojima@stonybrook.edu



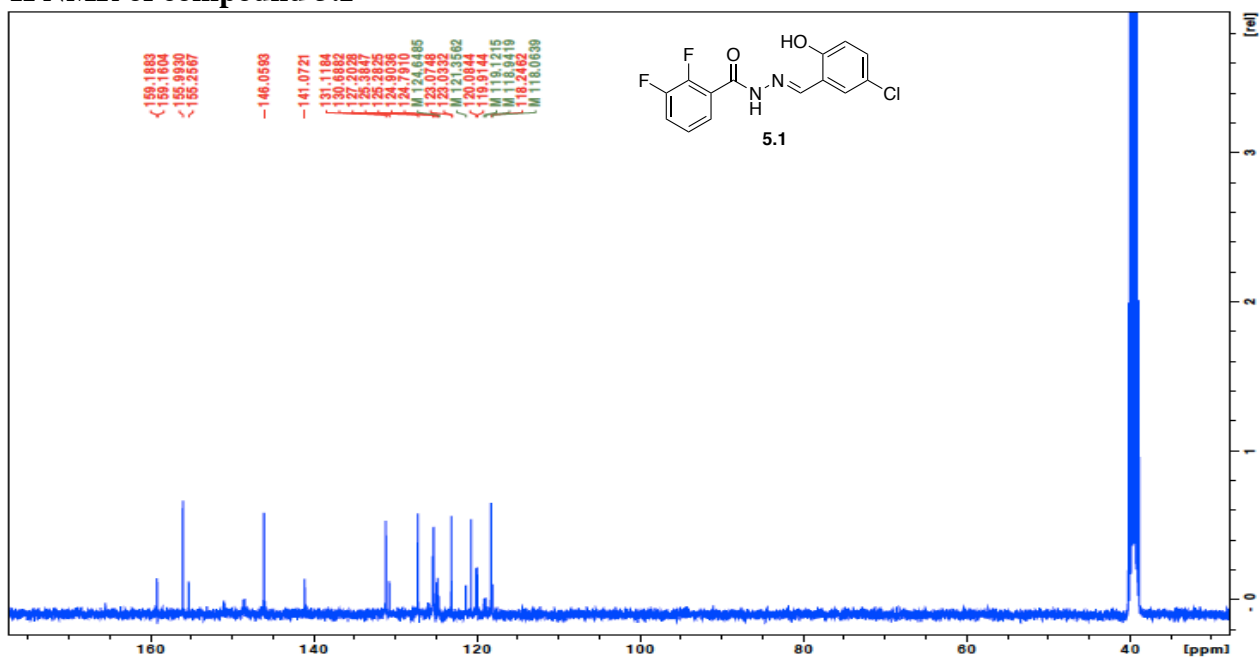
**<sup>1</sup>H NMR of compound 5.0**



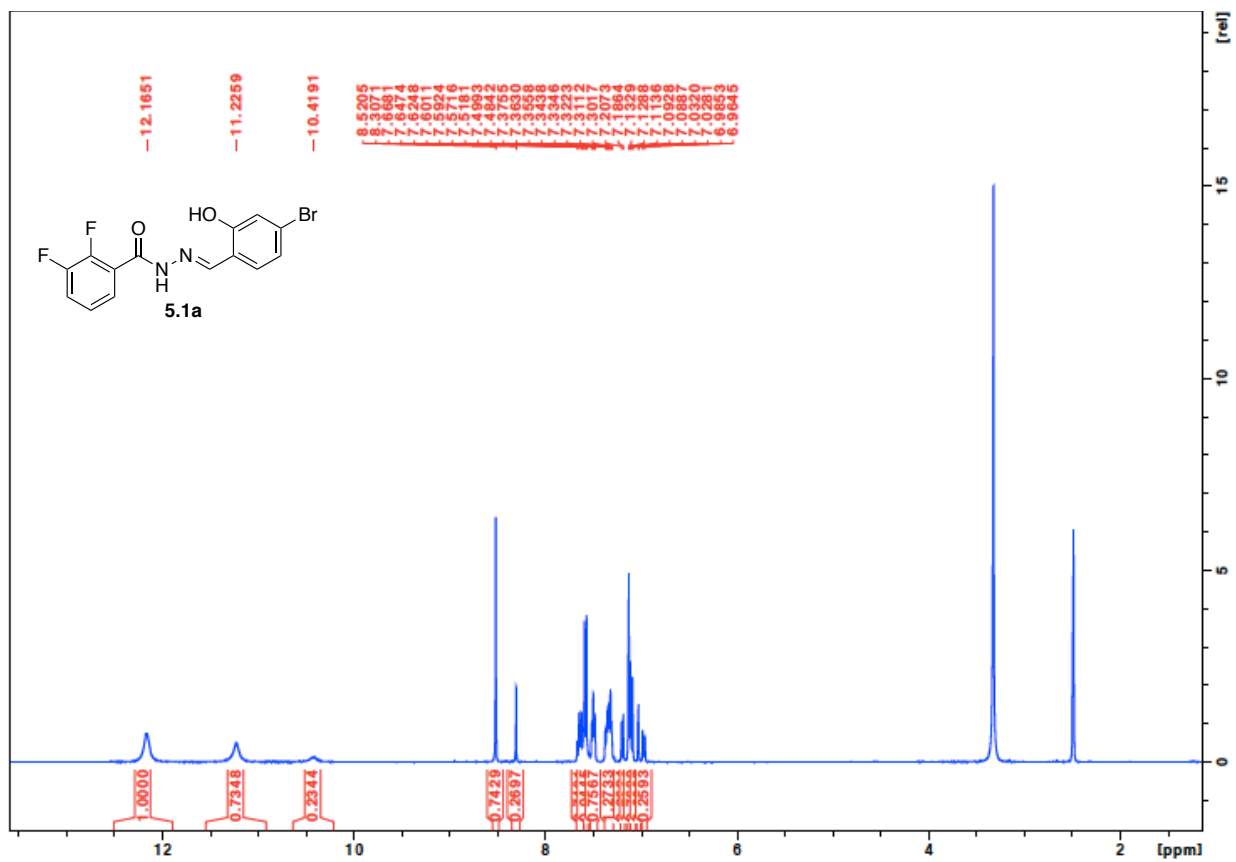
**<sup>13</sup>C NMR of compound 5.0**



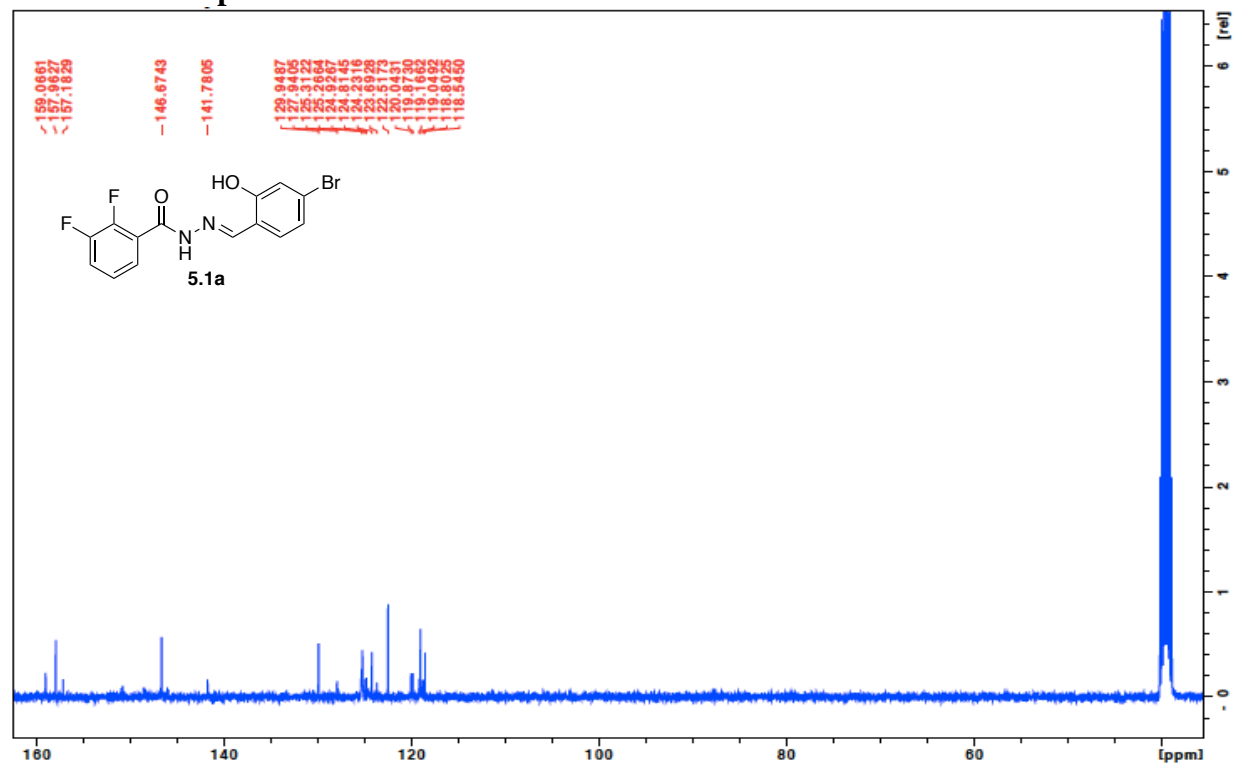
<sup>1</sup>H NMR of compound 5.1



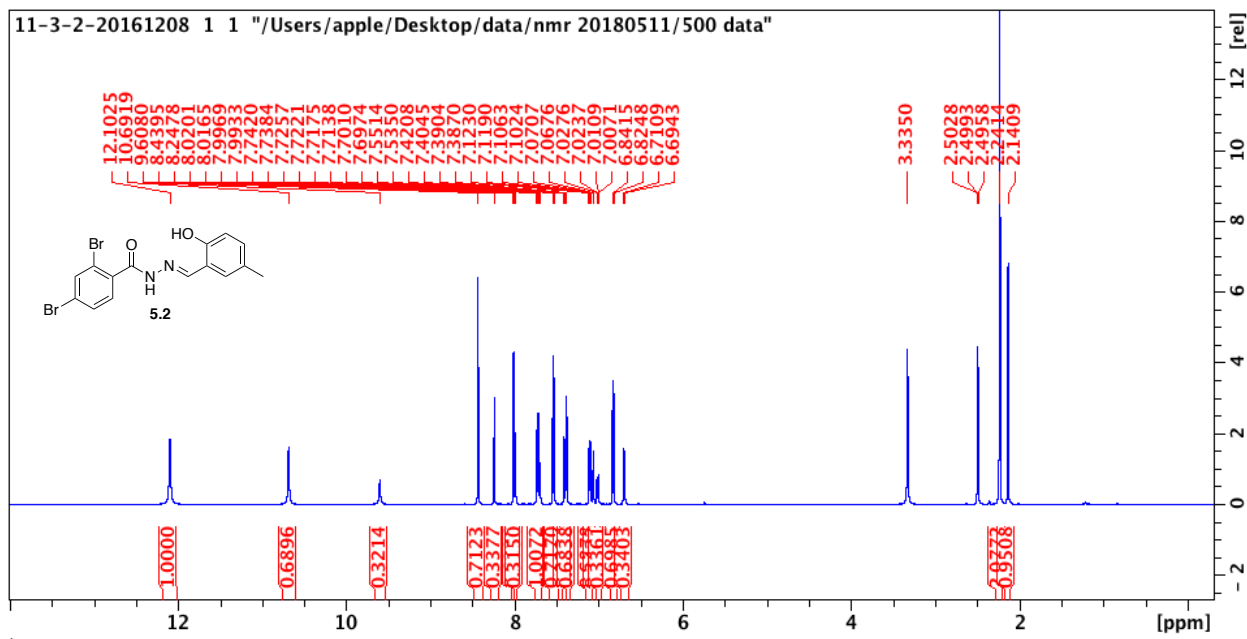
<sup>13</sup>C NMR of compound 5.1



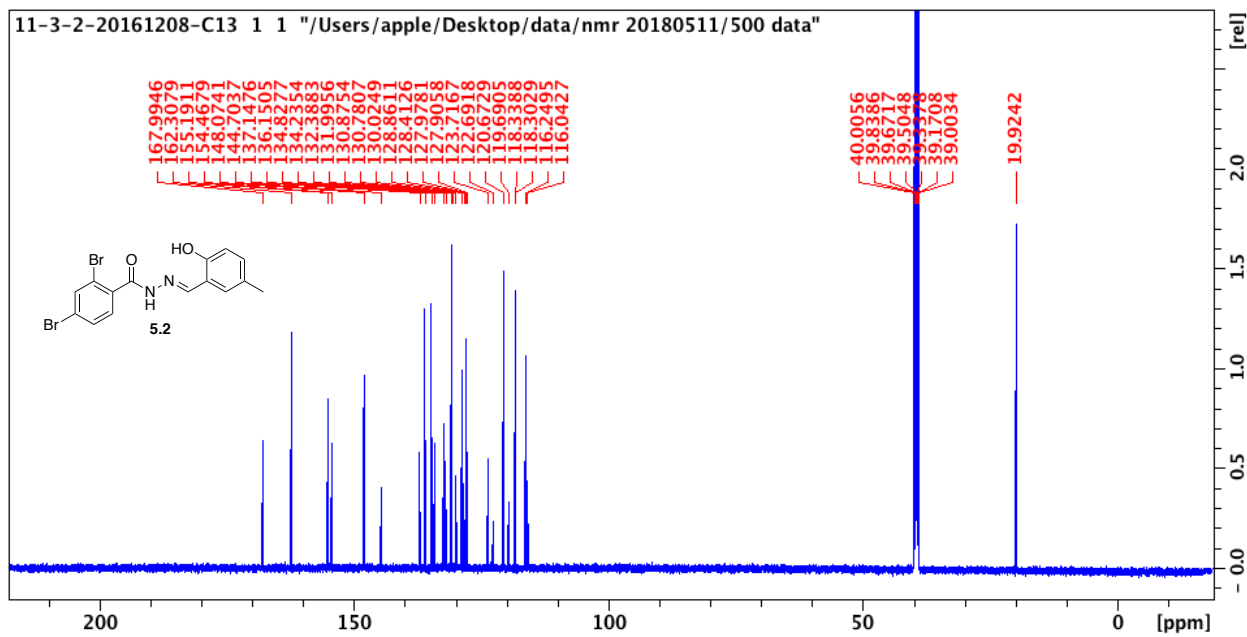
<sup>1</sup>H NMR of compound 5.1a



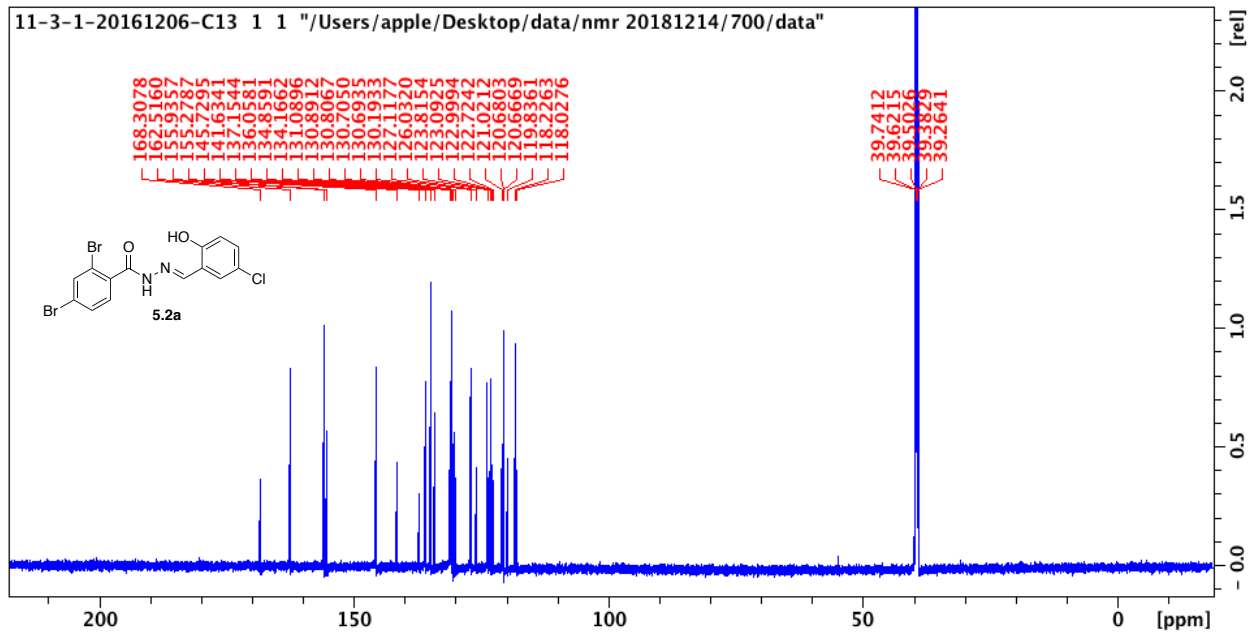
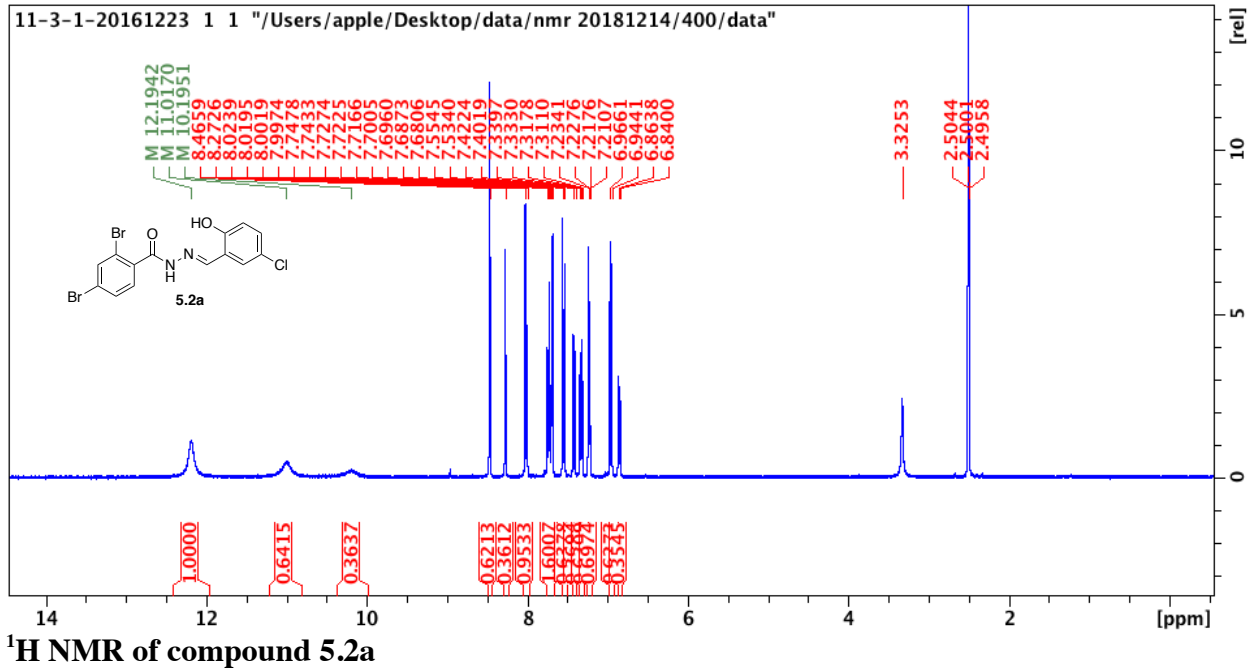
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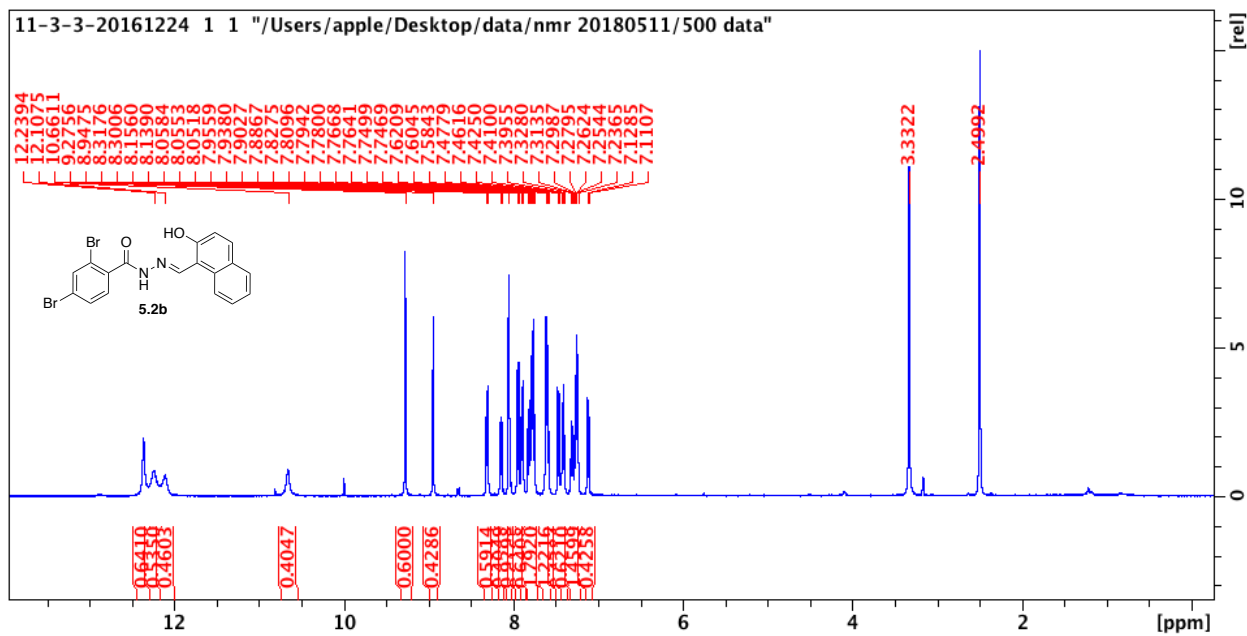


<sup>1</sup>H NMR of compound 5.2

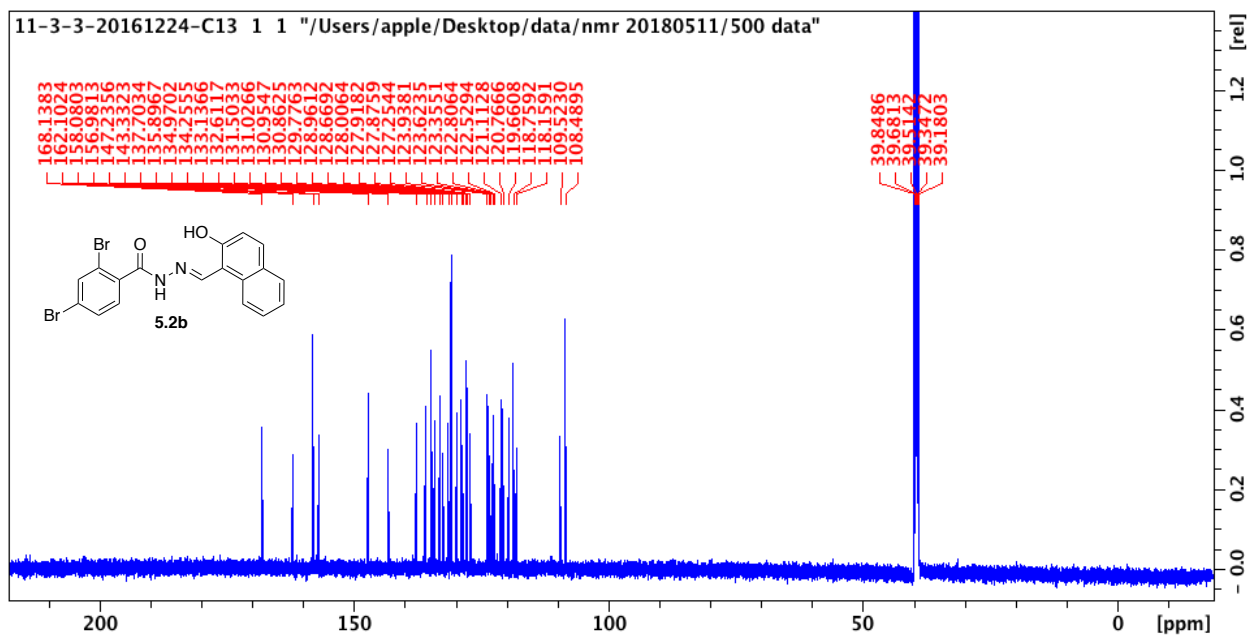


<sup>13</sup>C NMR of compound 5.2

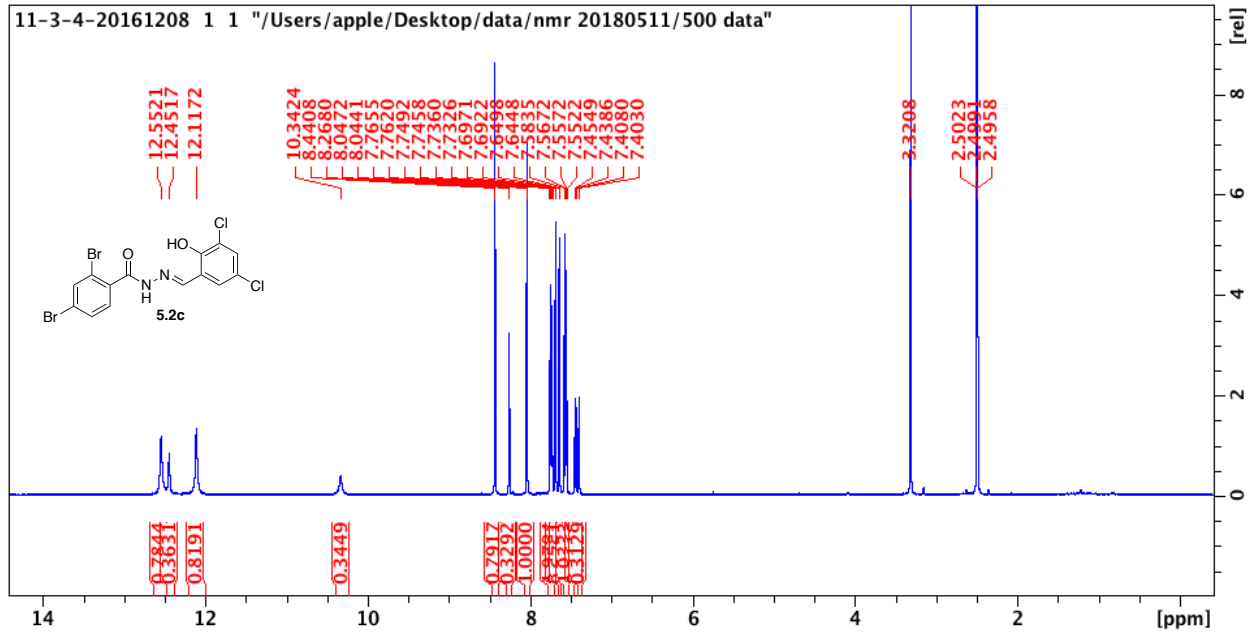




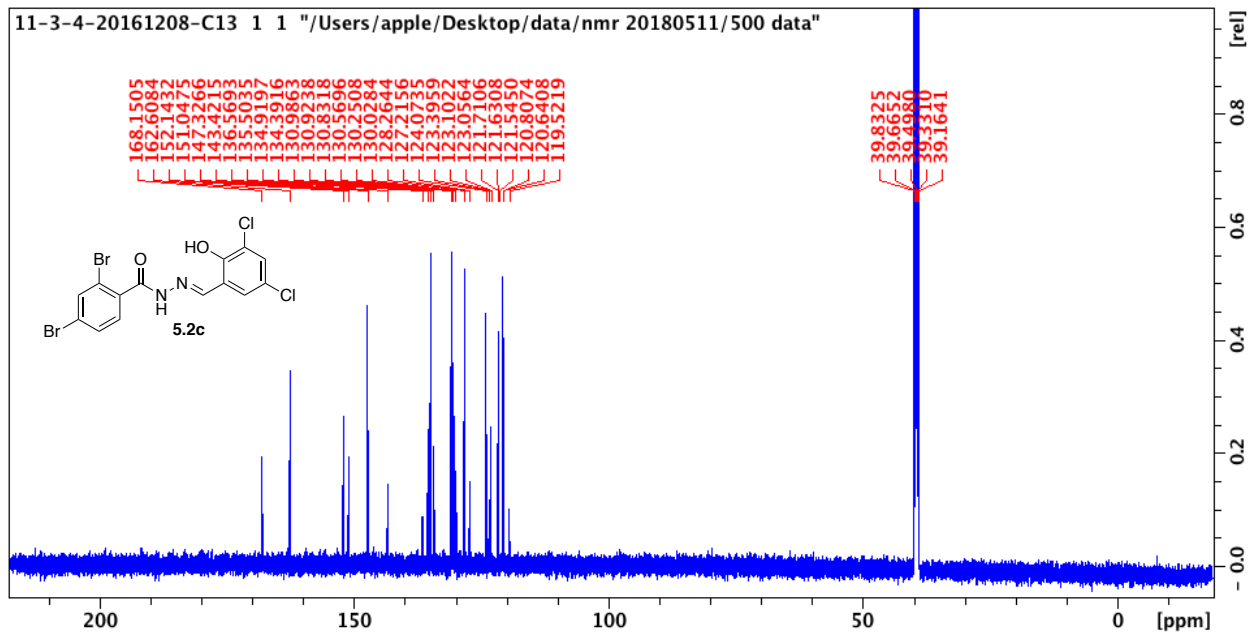
<sup>1</sup>H NMR of compound 5.2b



<sup>13</sup>C NMR of compound 5.2b

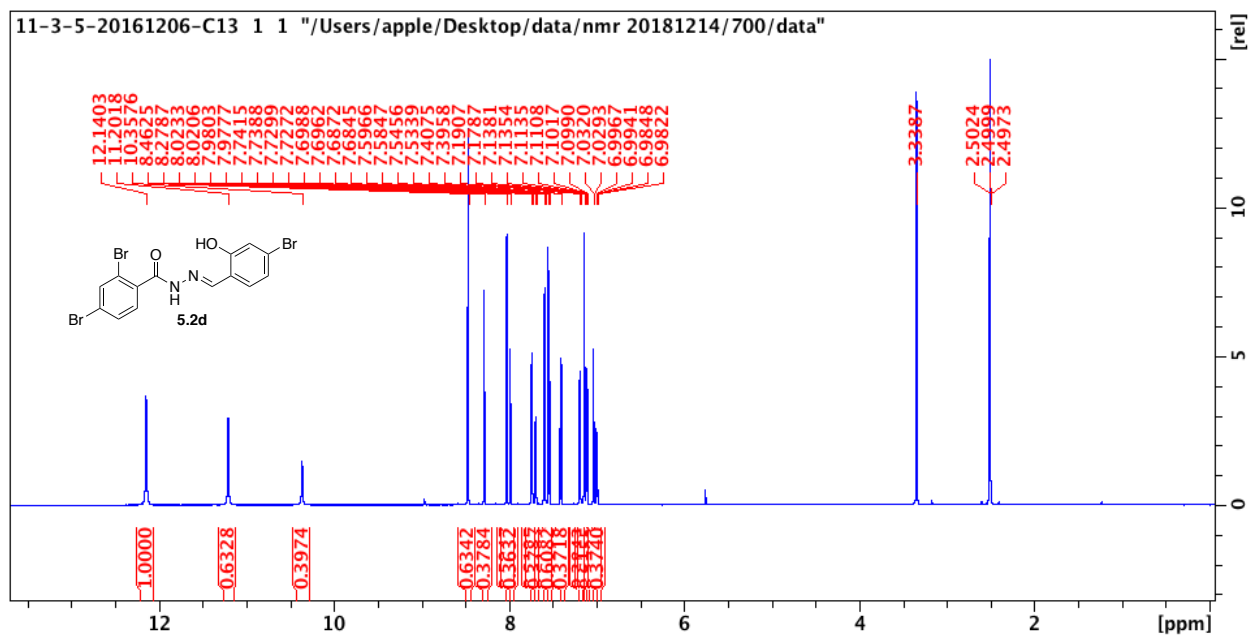


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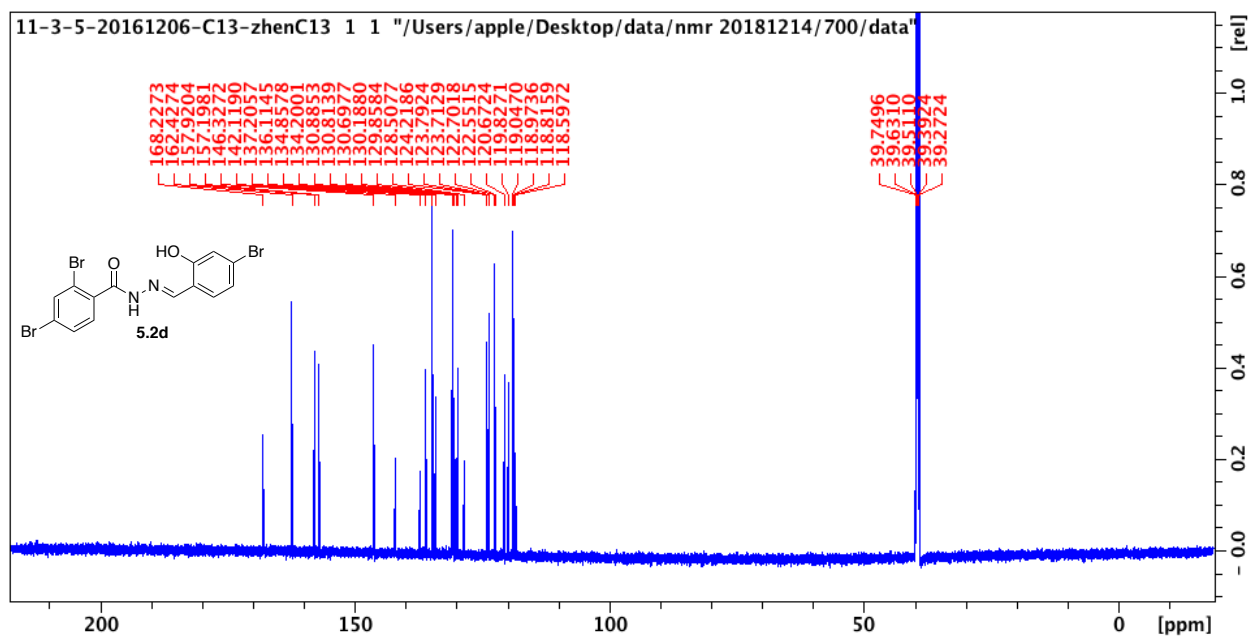


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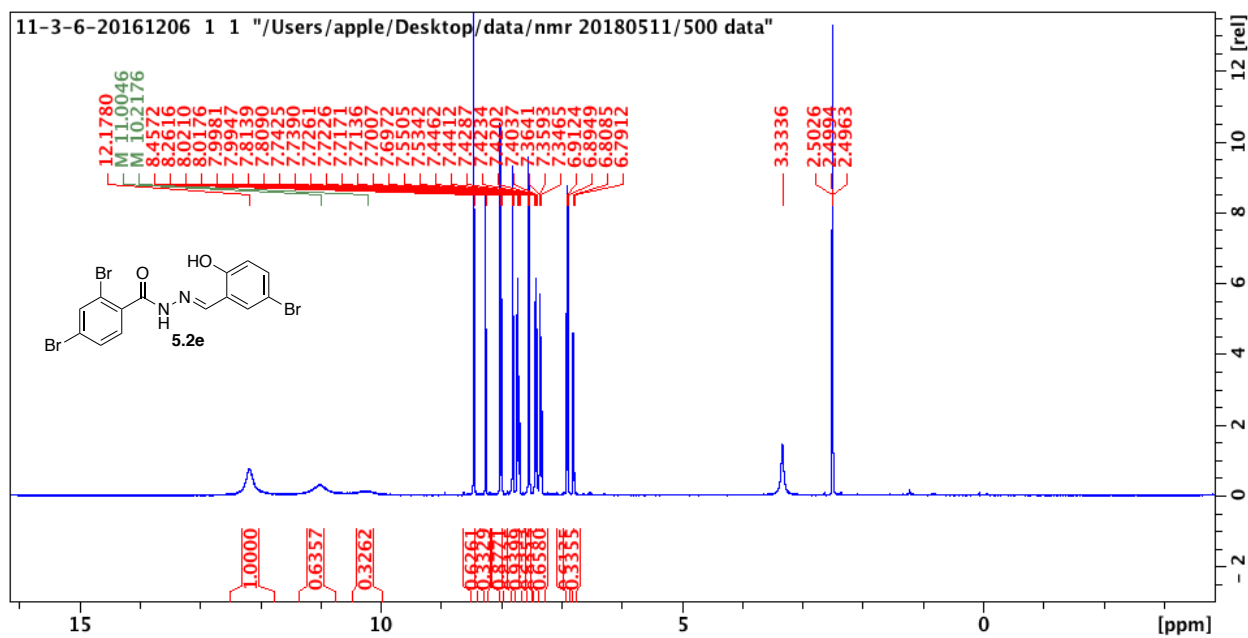




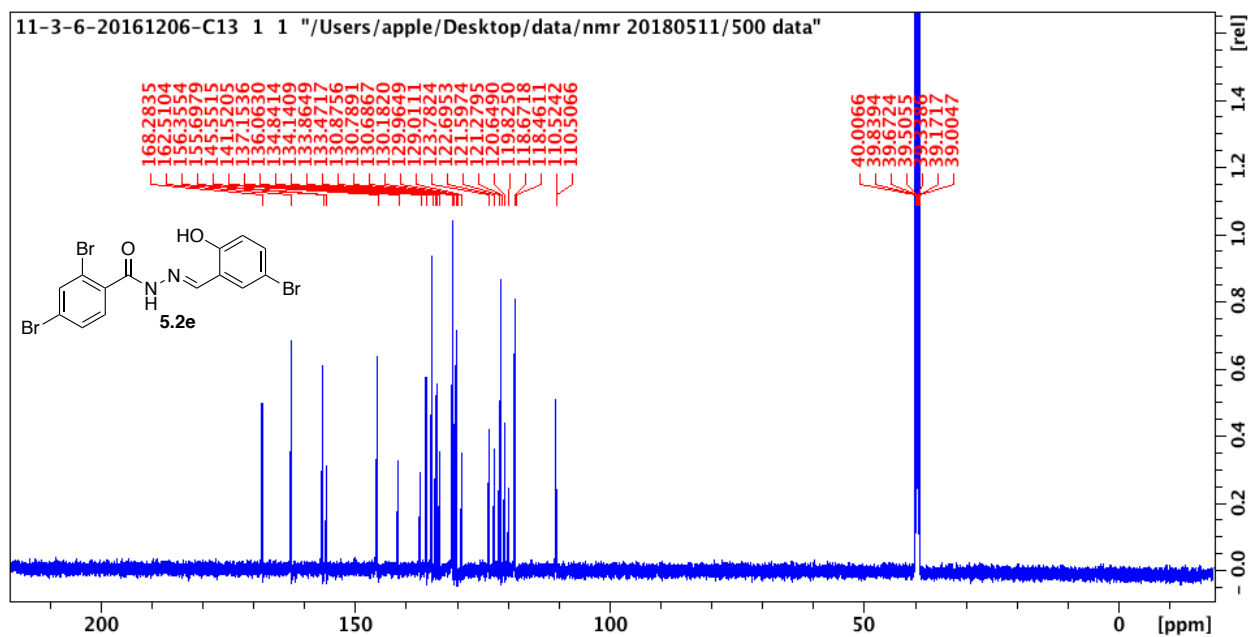
<sup>1</sup>H NMR of compound 5.2d



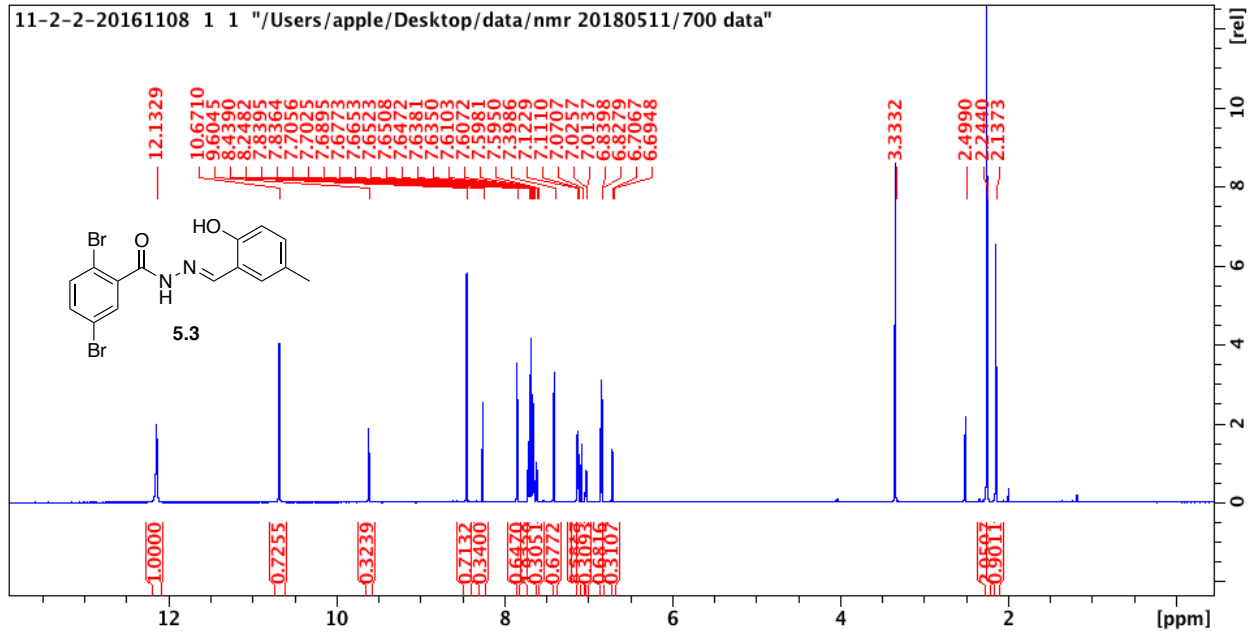
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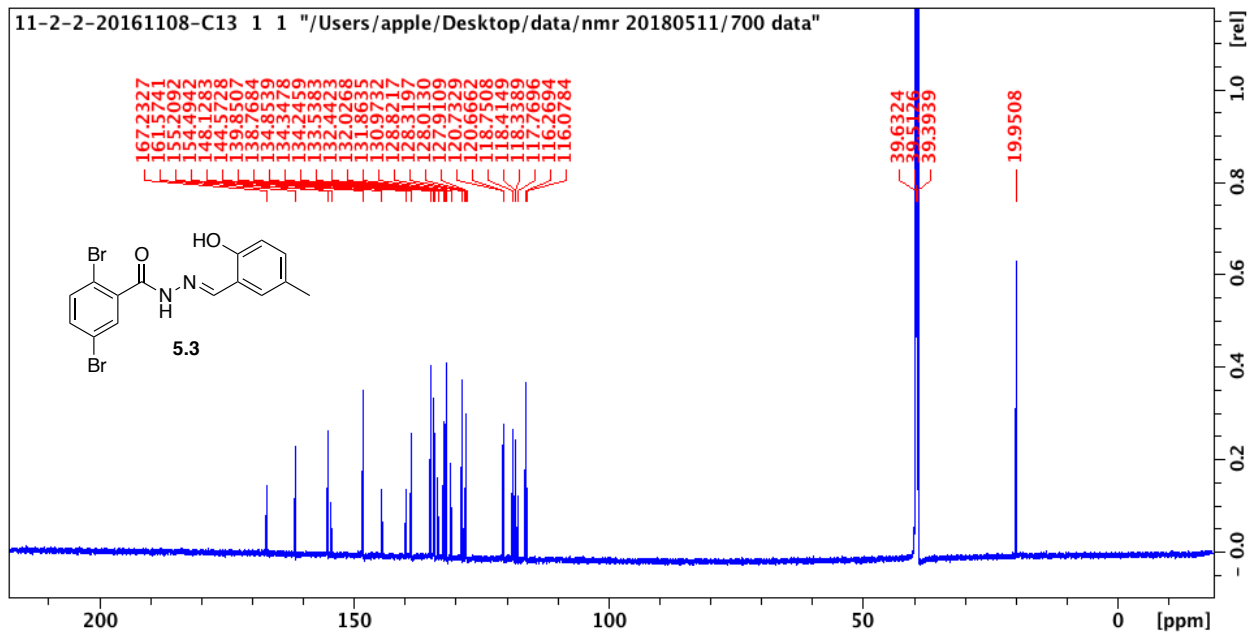
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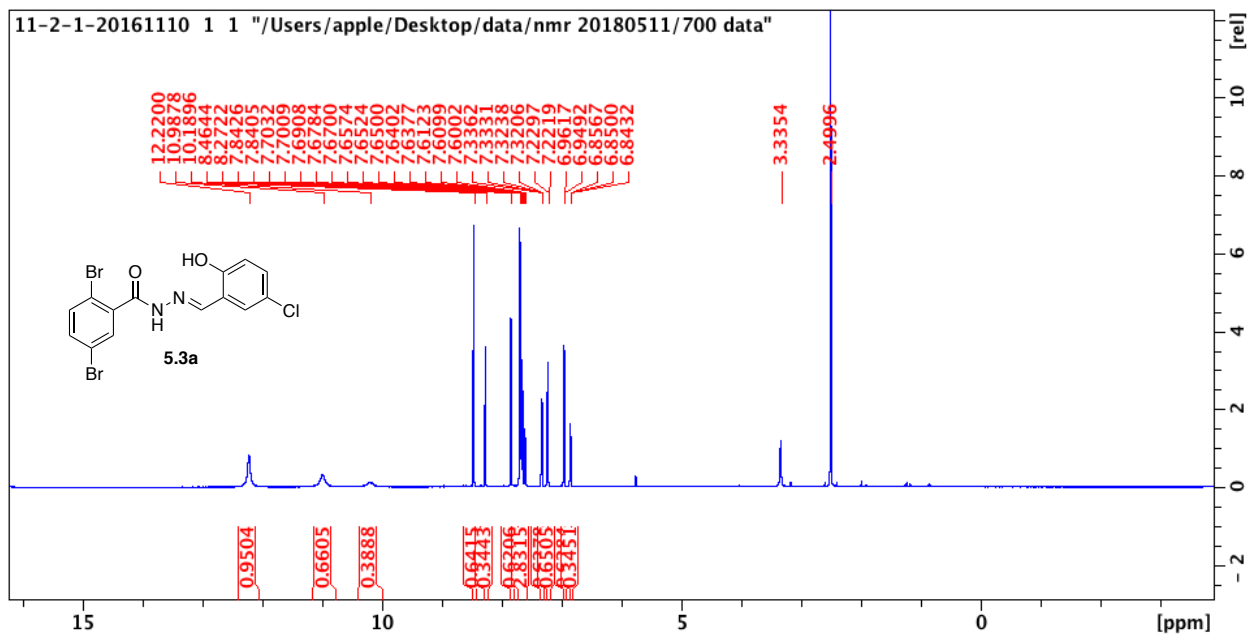
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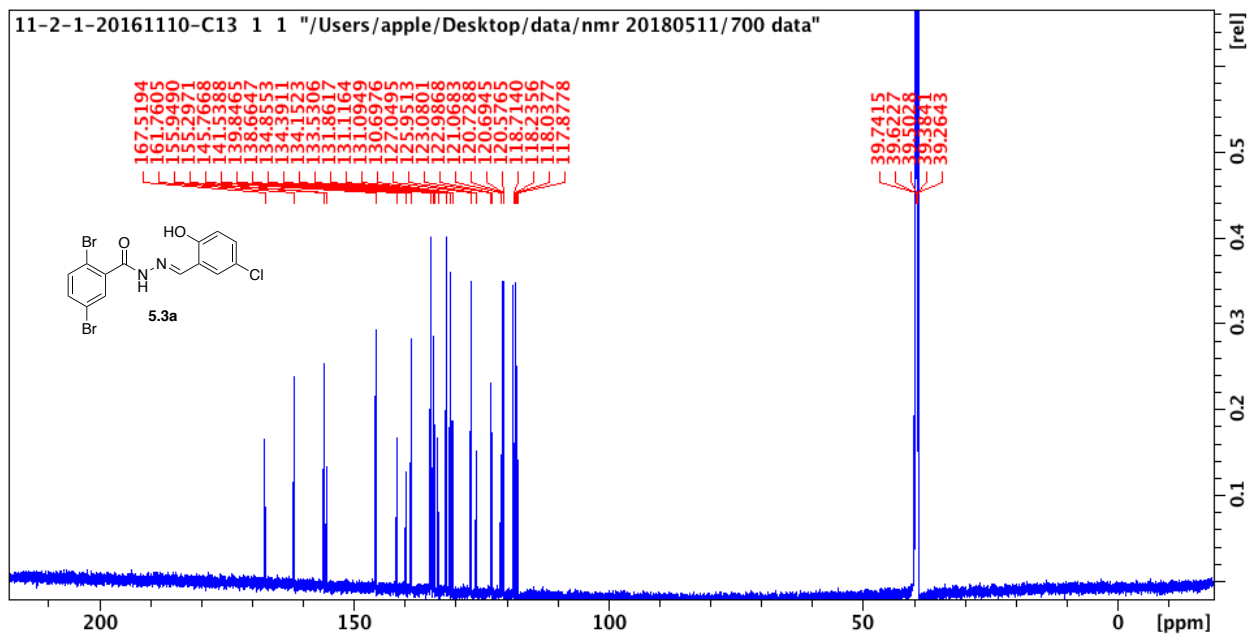
**<sup>1</sup>H NMR of compound 5.3**



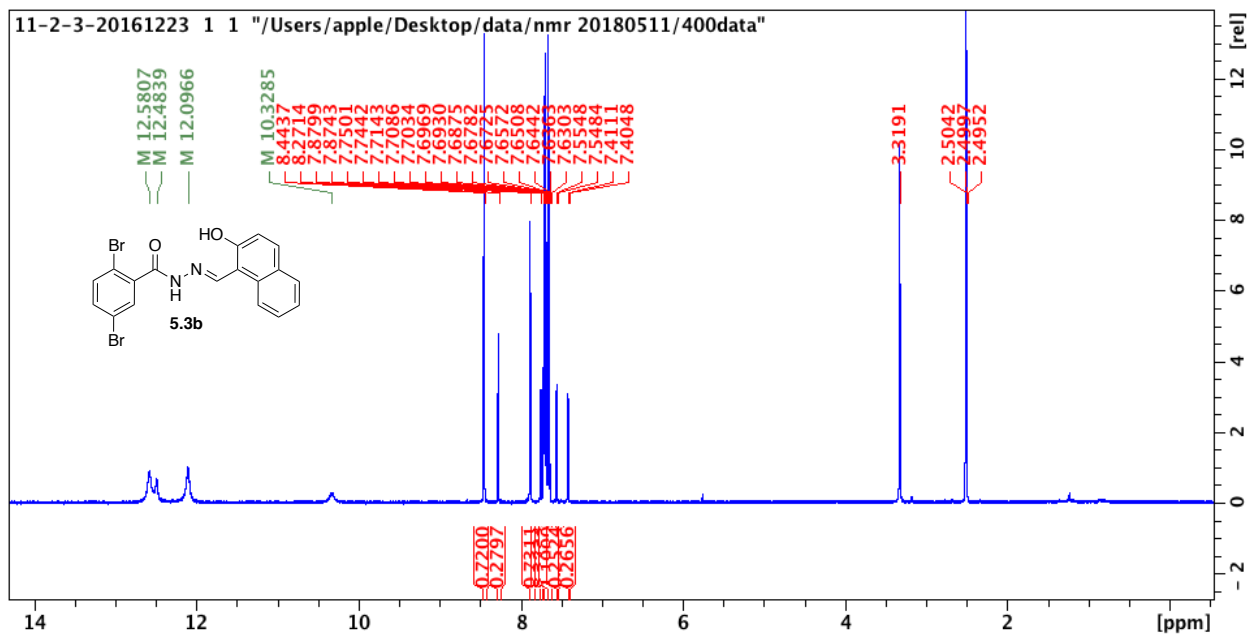
**<sup>13</sup>C NMR of compound 5.3**



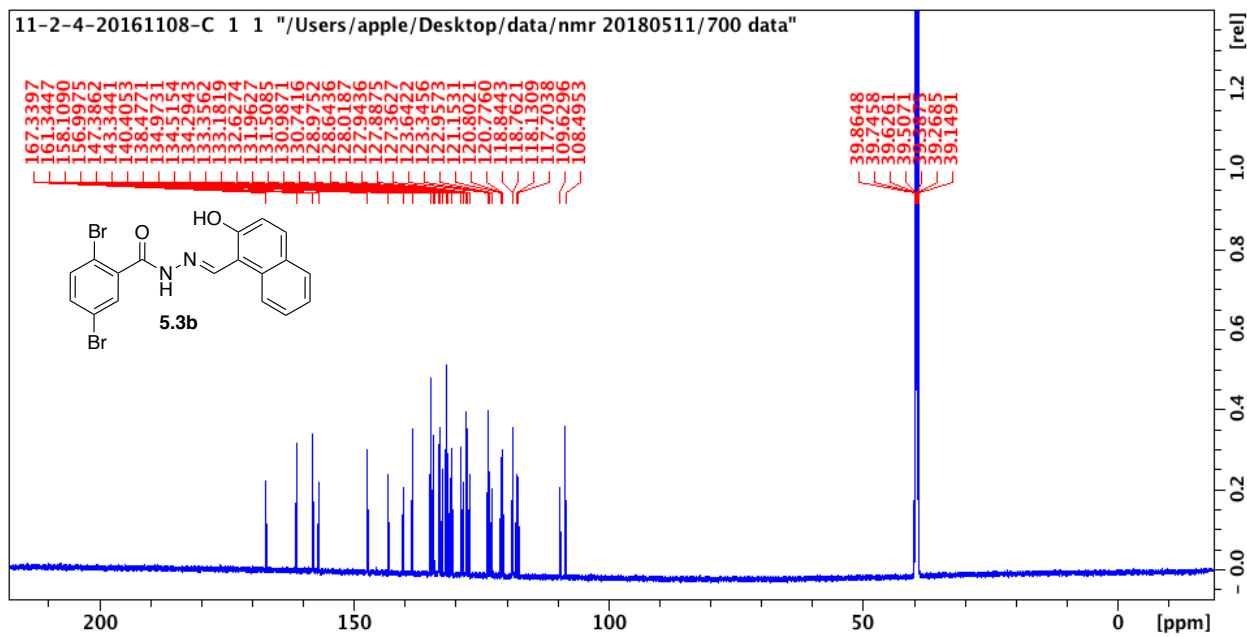
**<sup>1</sup>H NMR of compound 5.3a**



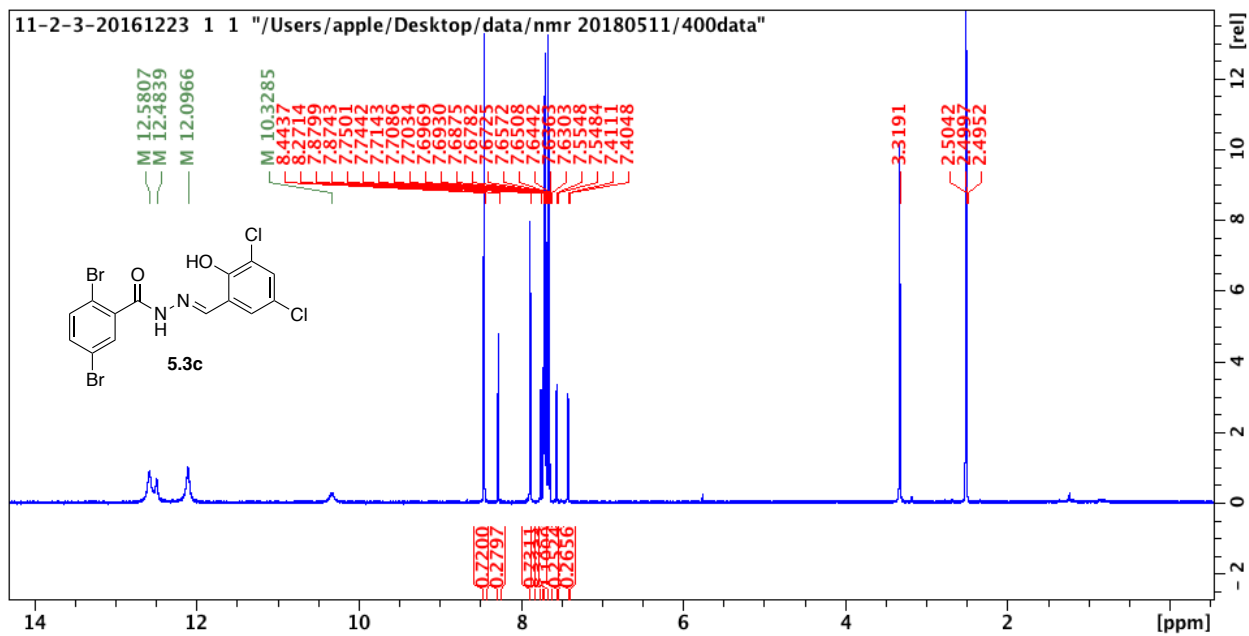
**<sup>13</sup>C NMR of compound 5.3a**



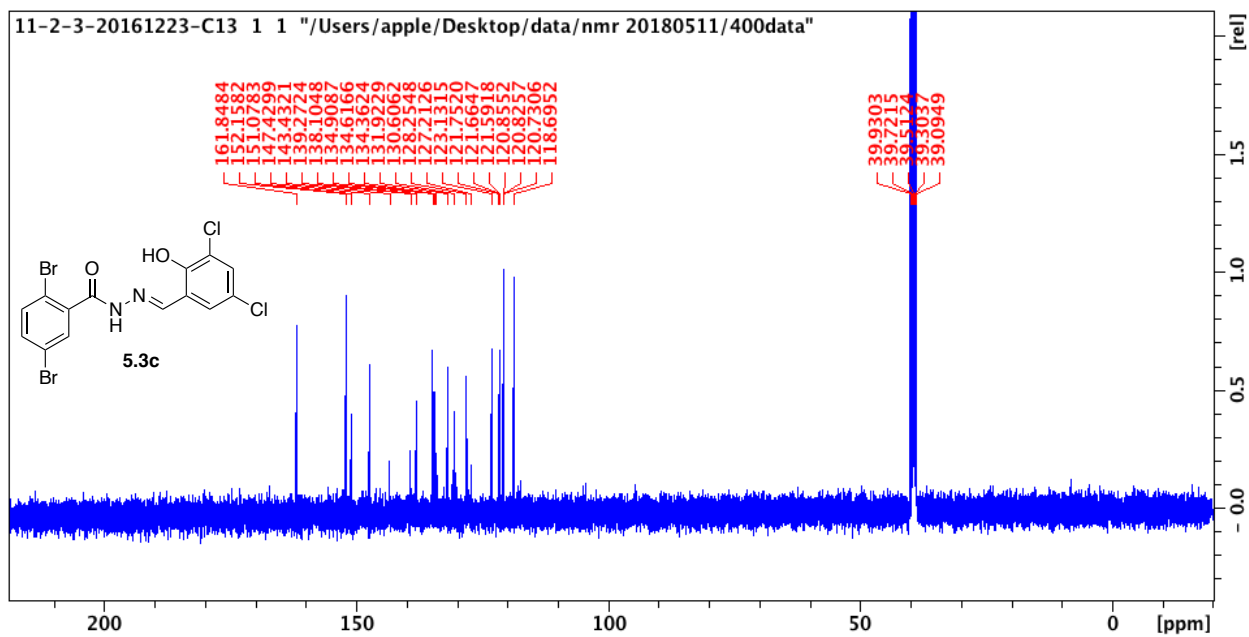
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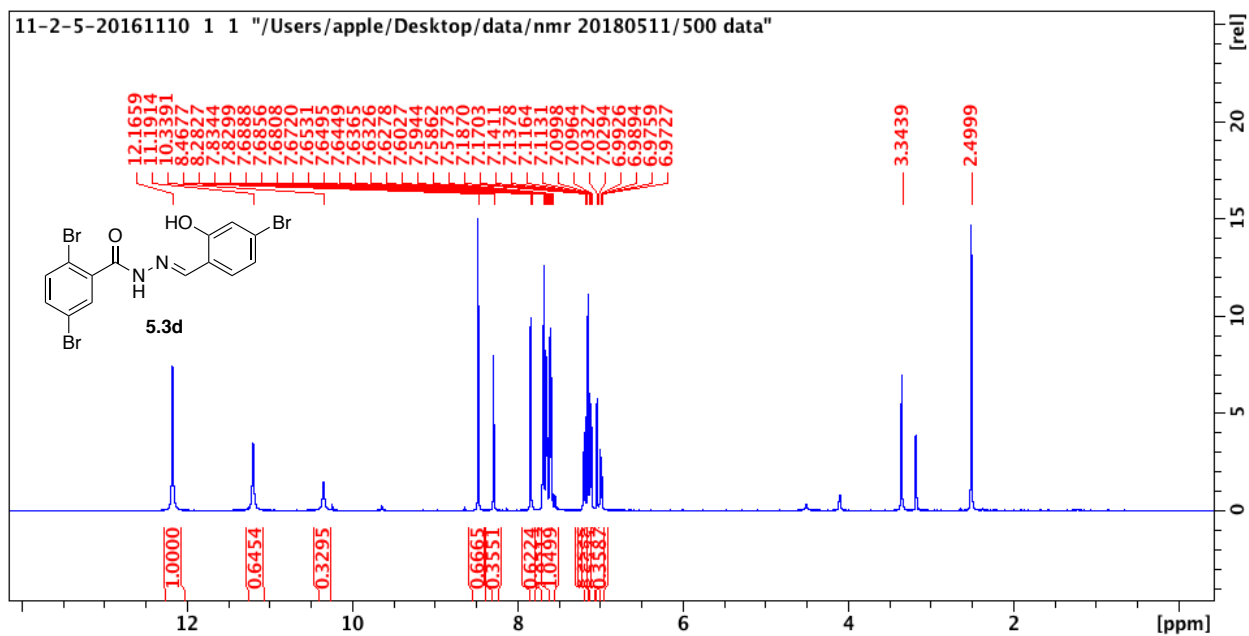
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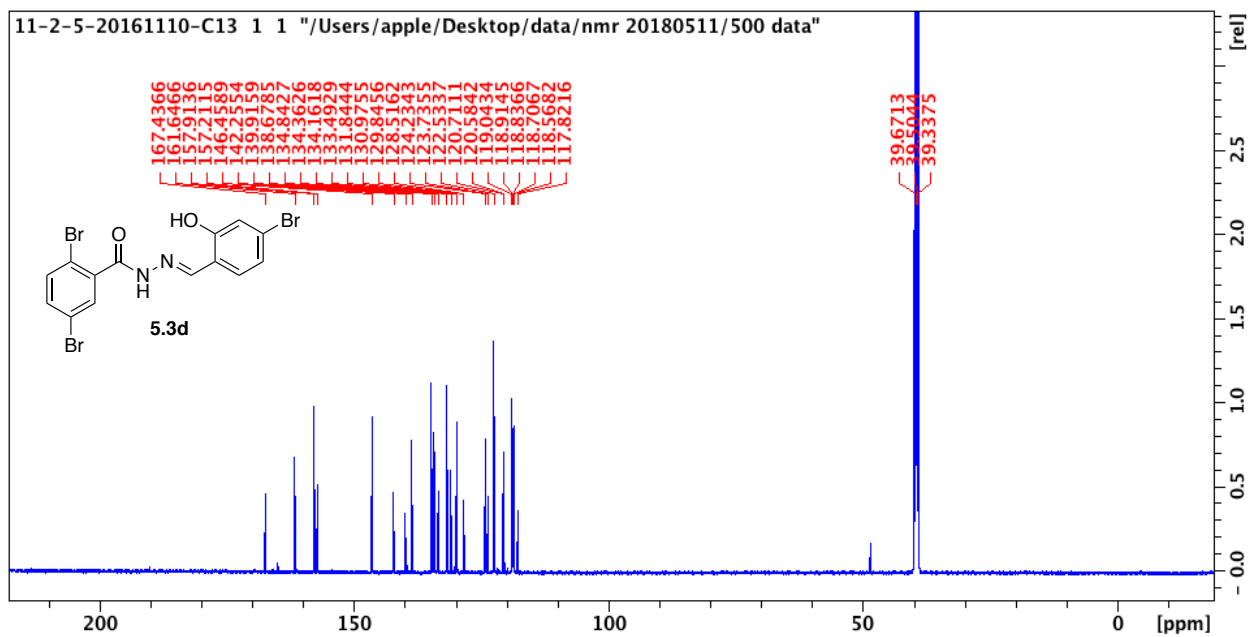
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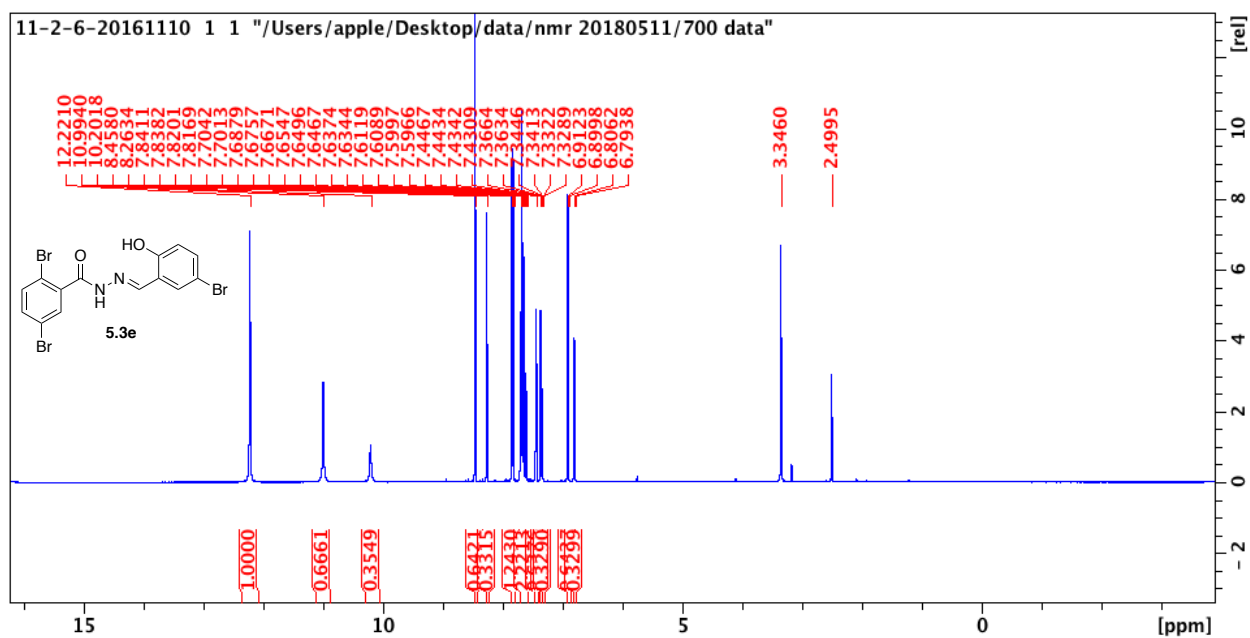
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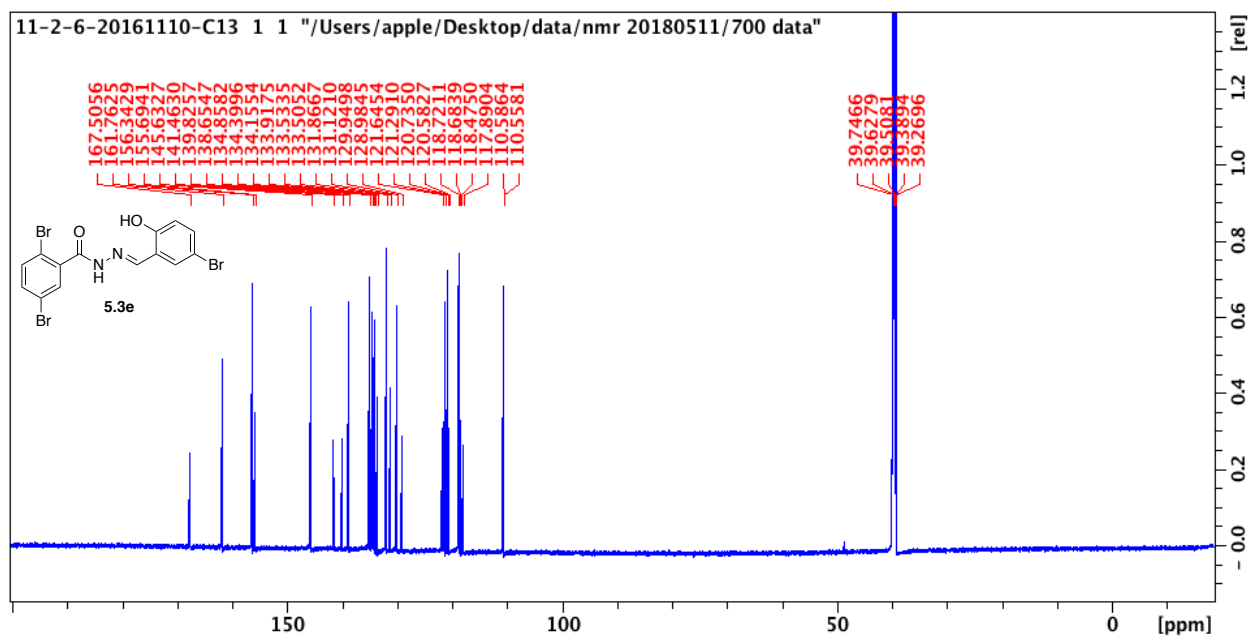
<sup>1</sup>H NMR of compound 5.3d



<sup>13</sup>C NMR of compound 5.3d

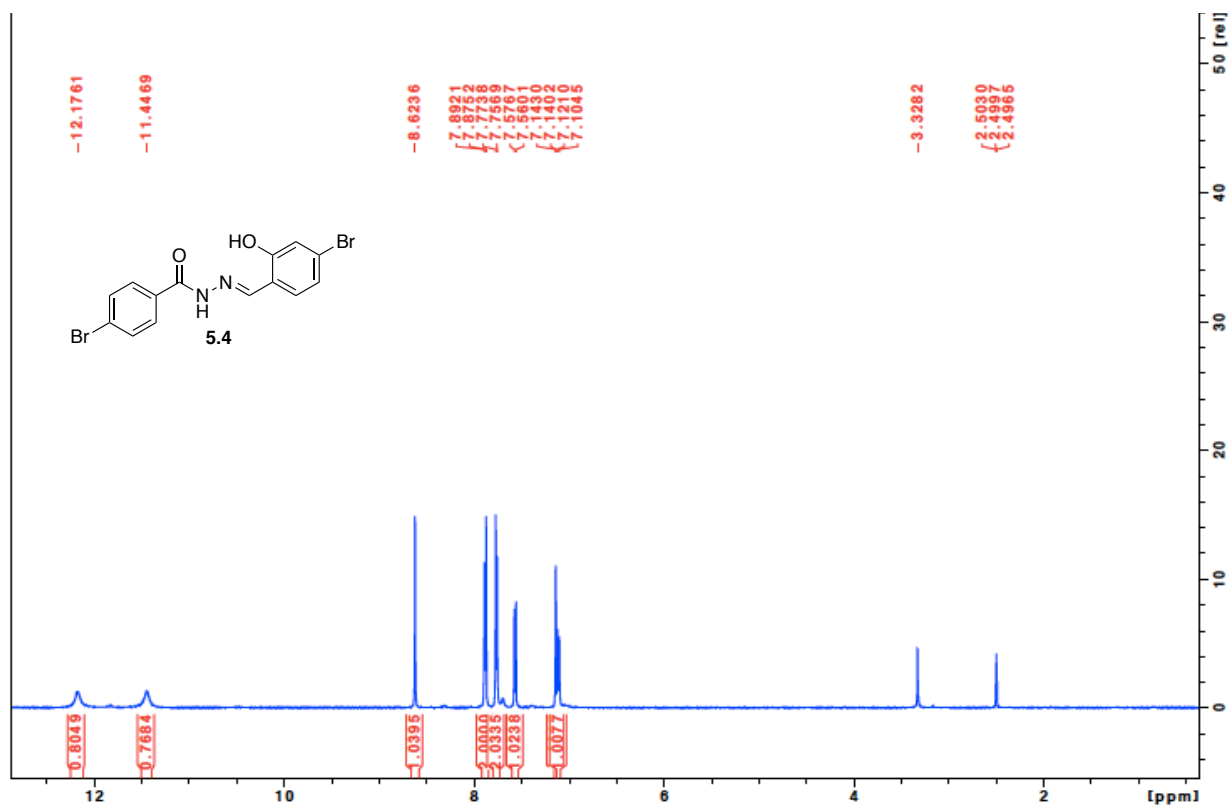


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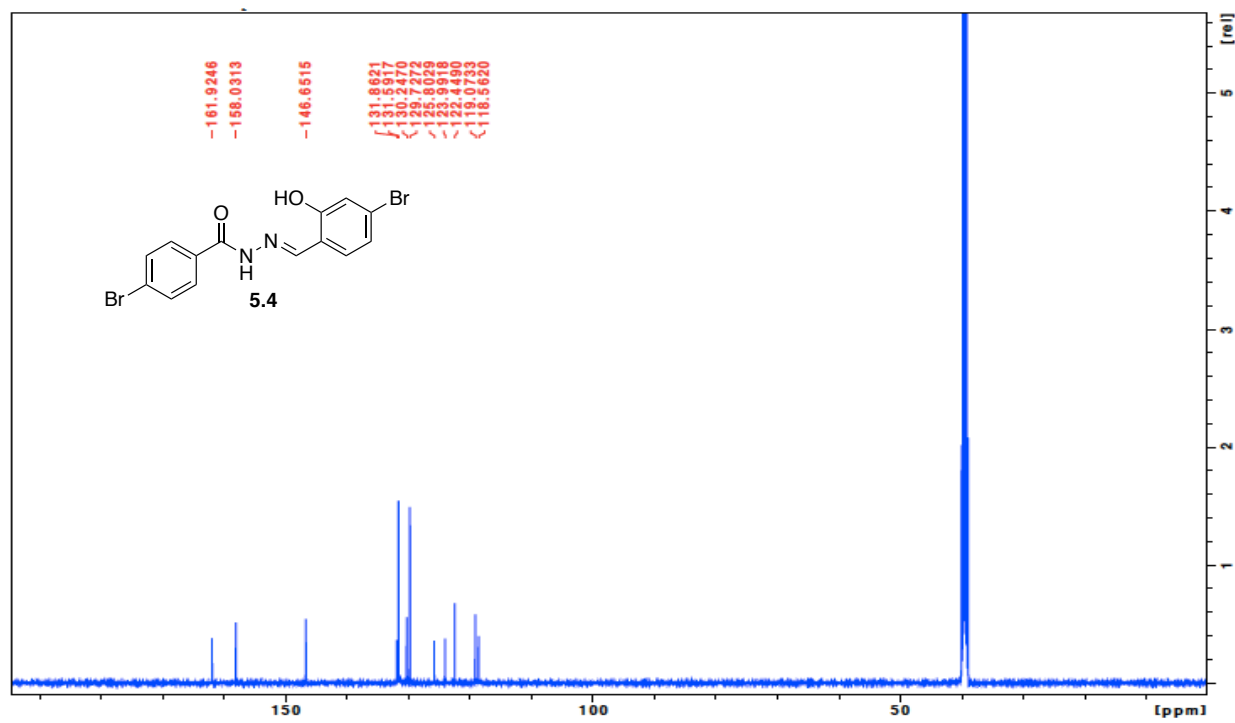


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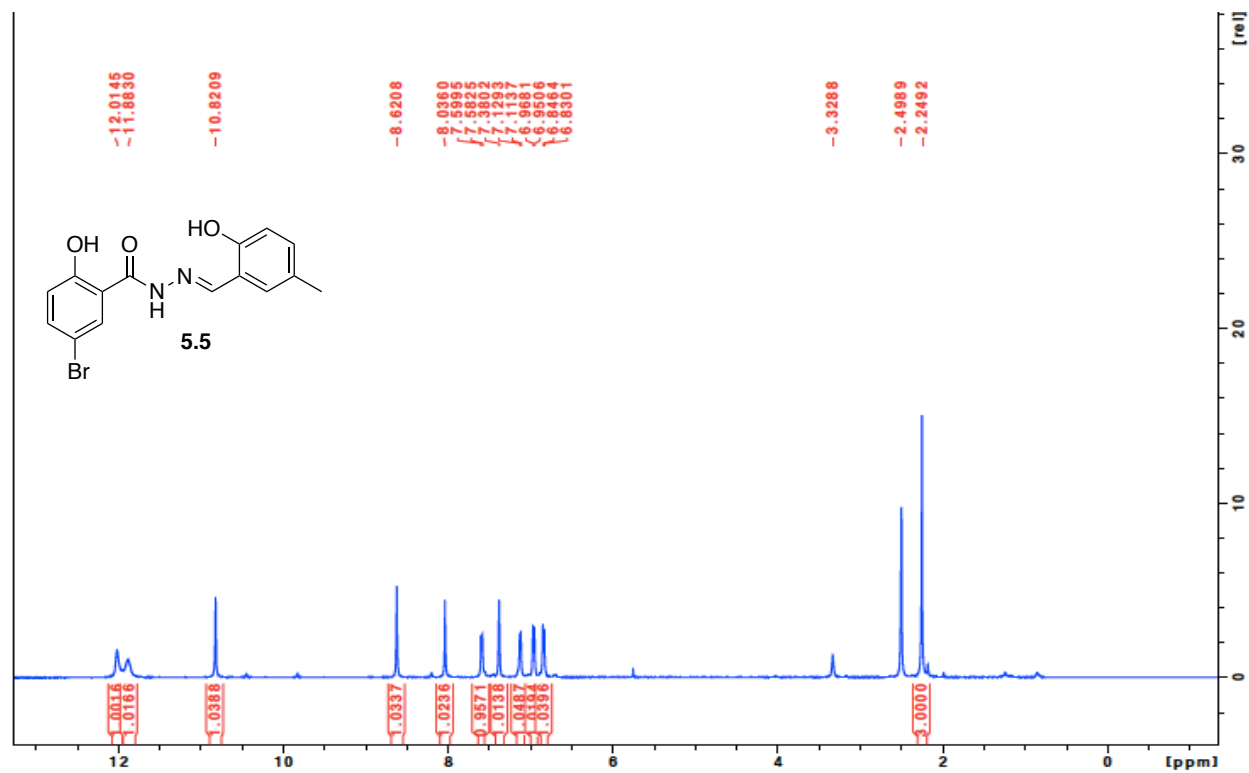




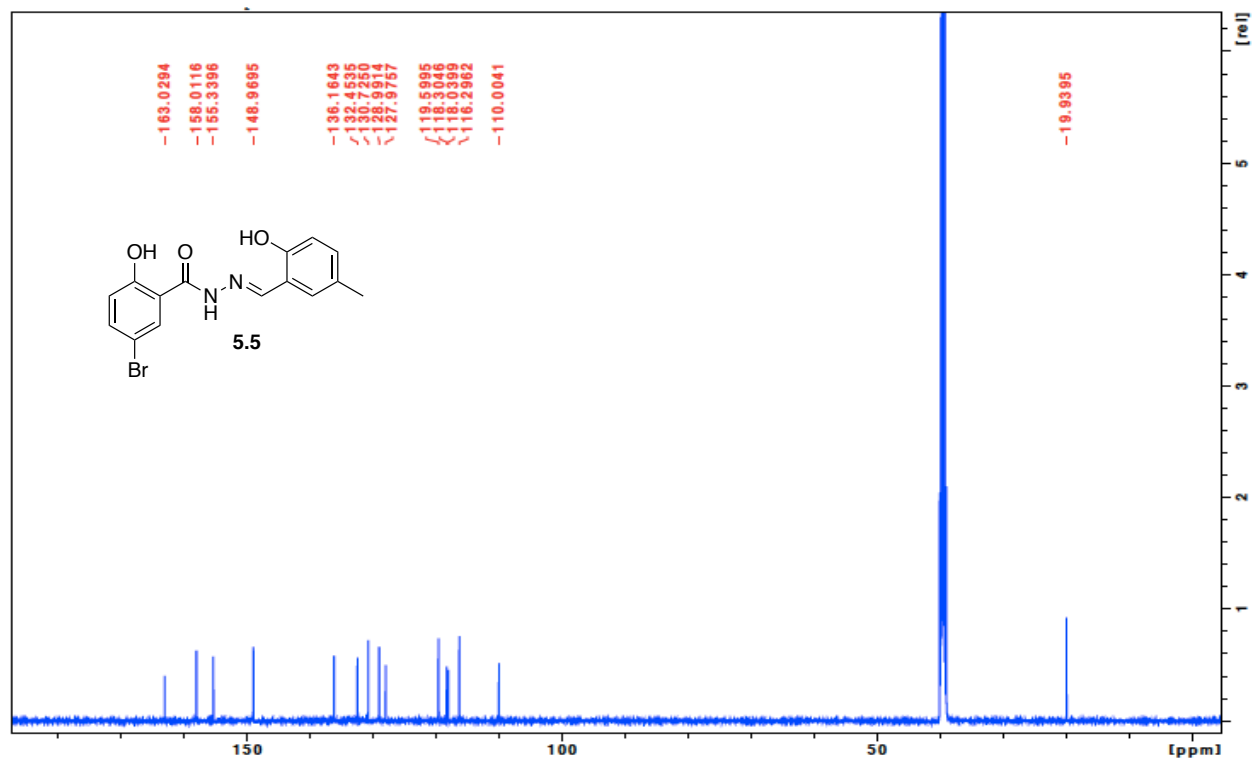
**<sup>1</sup>H NMR of compound 5.4**



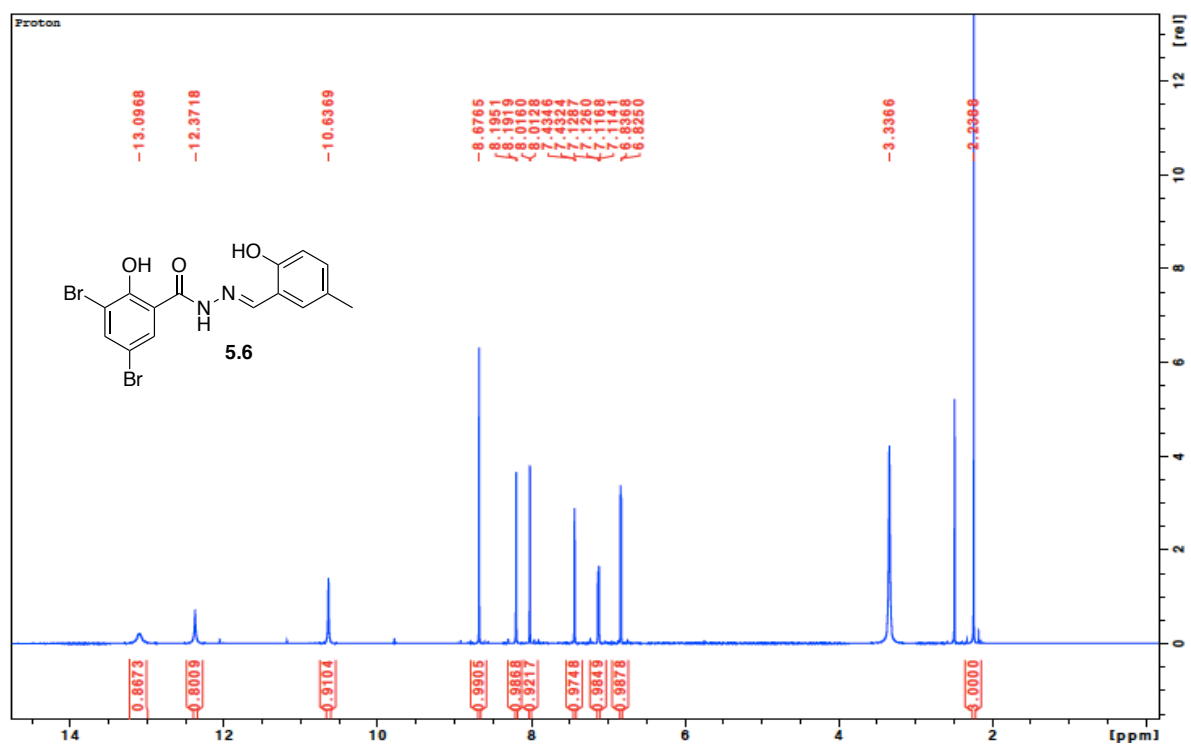
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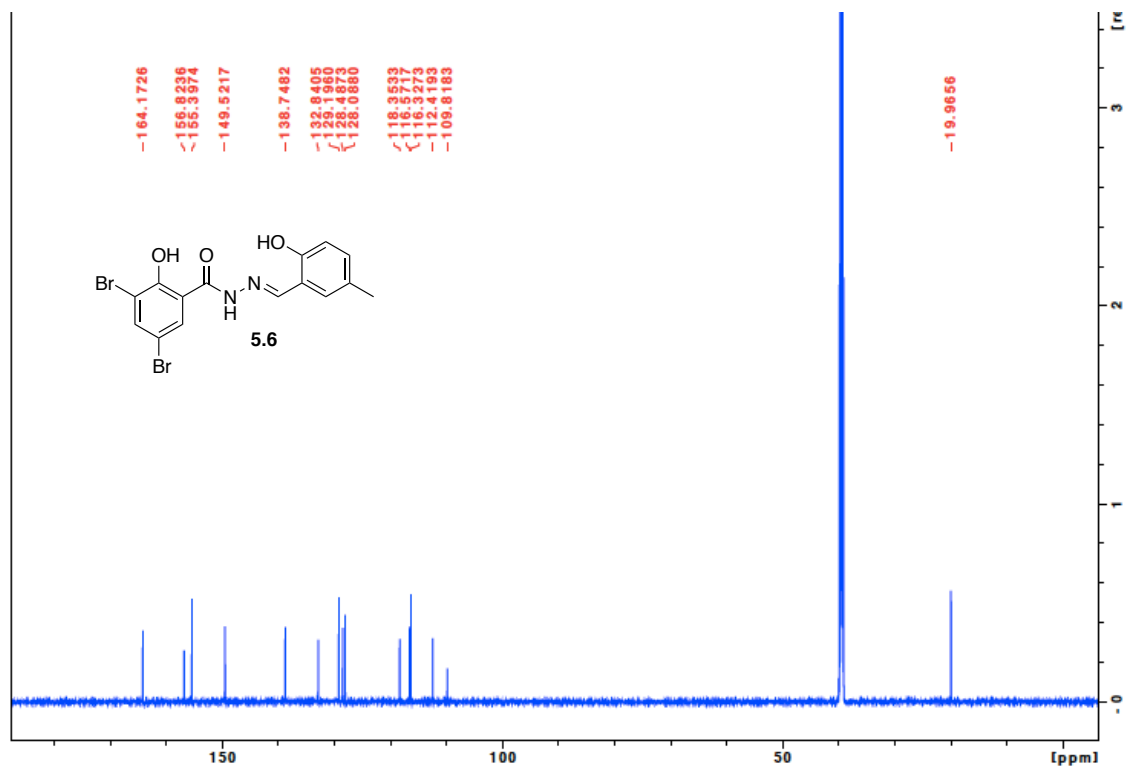
**<sup>1</sup>H NMR of compound 5.5**



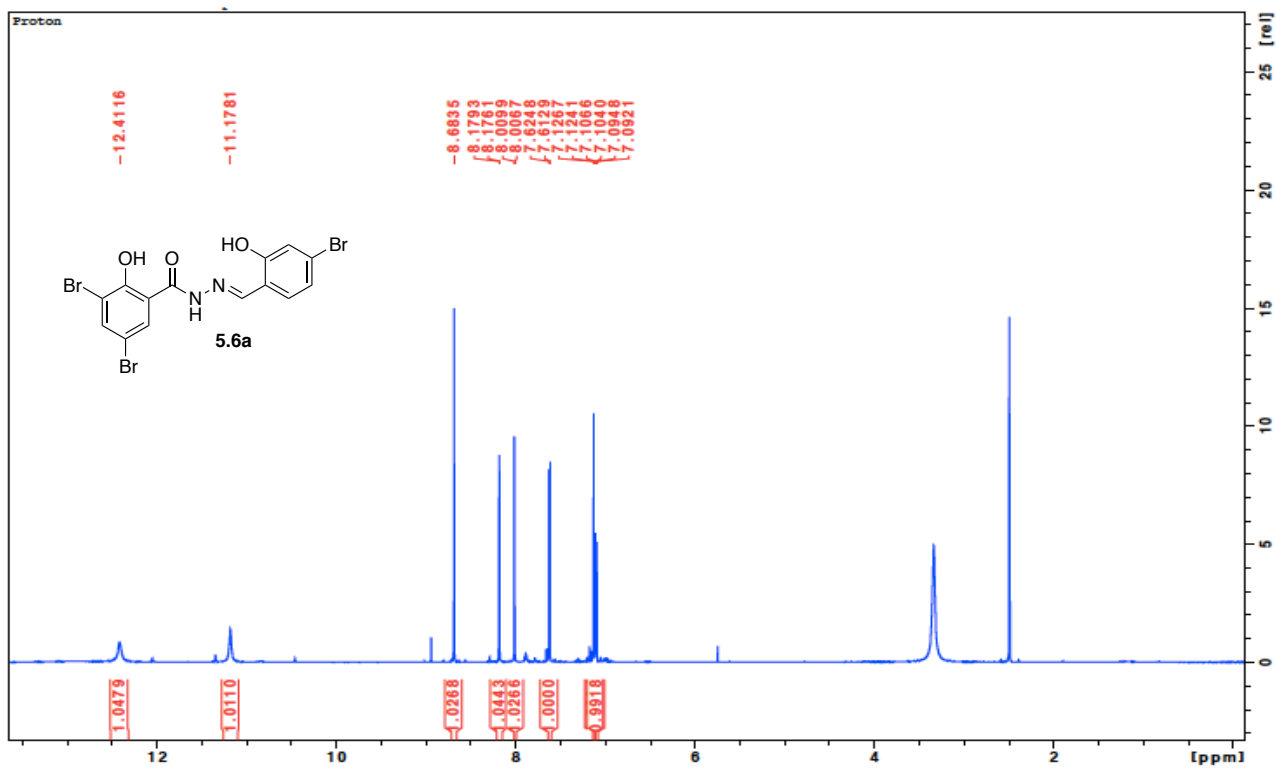
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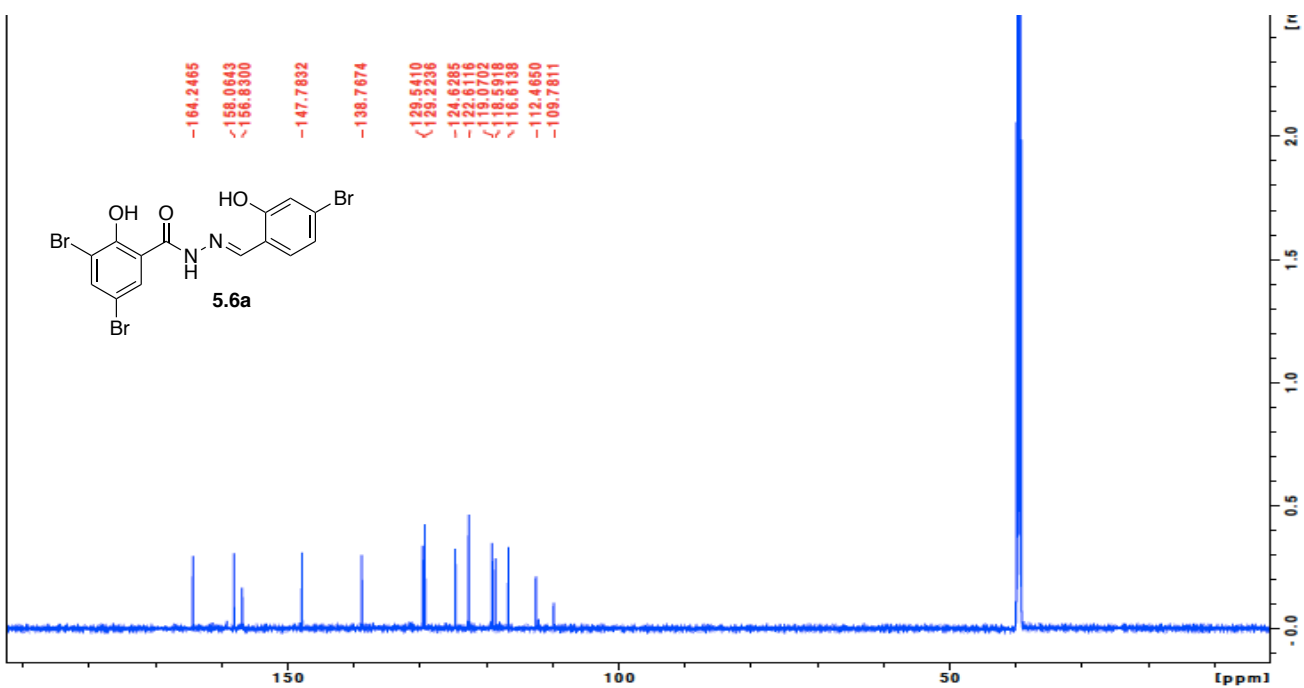
<sup>1</sup>H NMR of compound 5.6



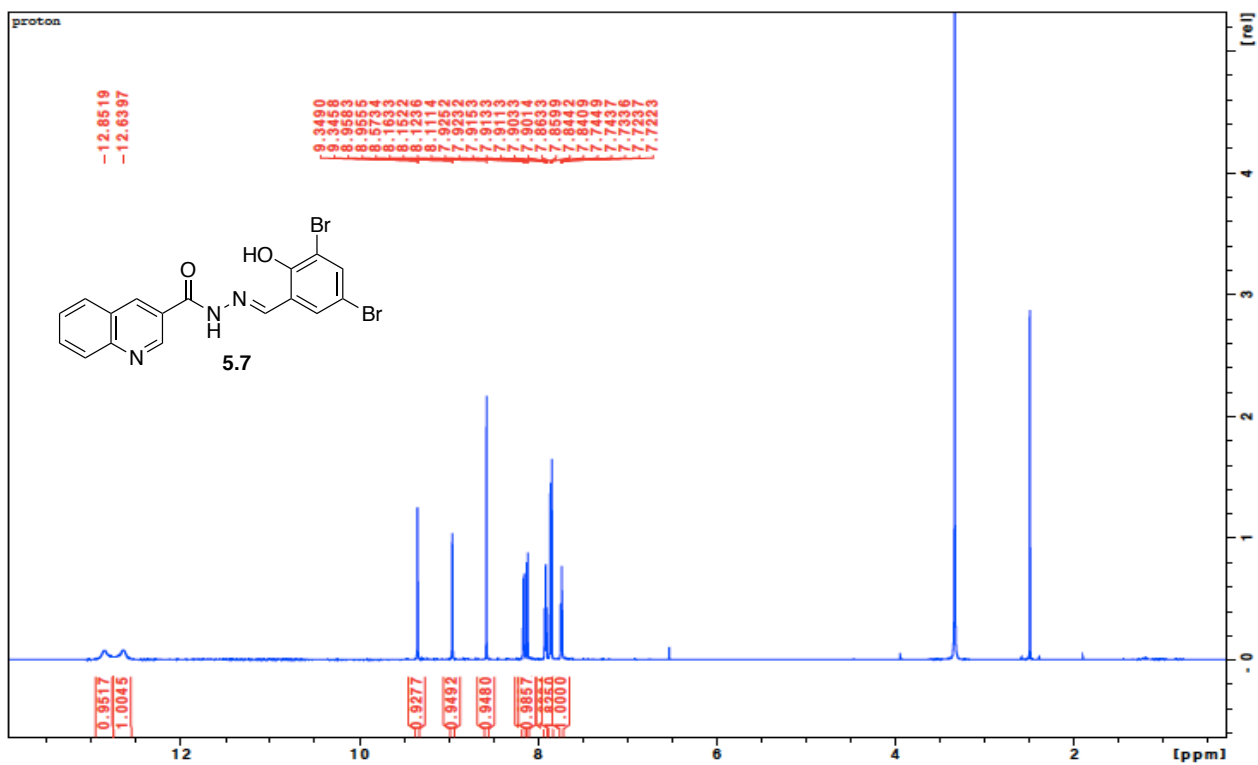
<sup>13</sup>C NMR of compound 5.6



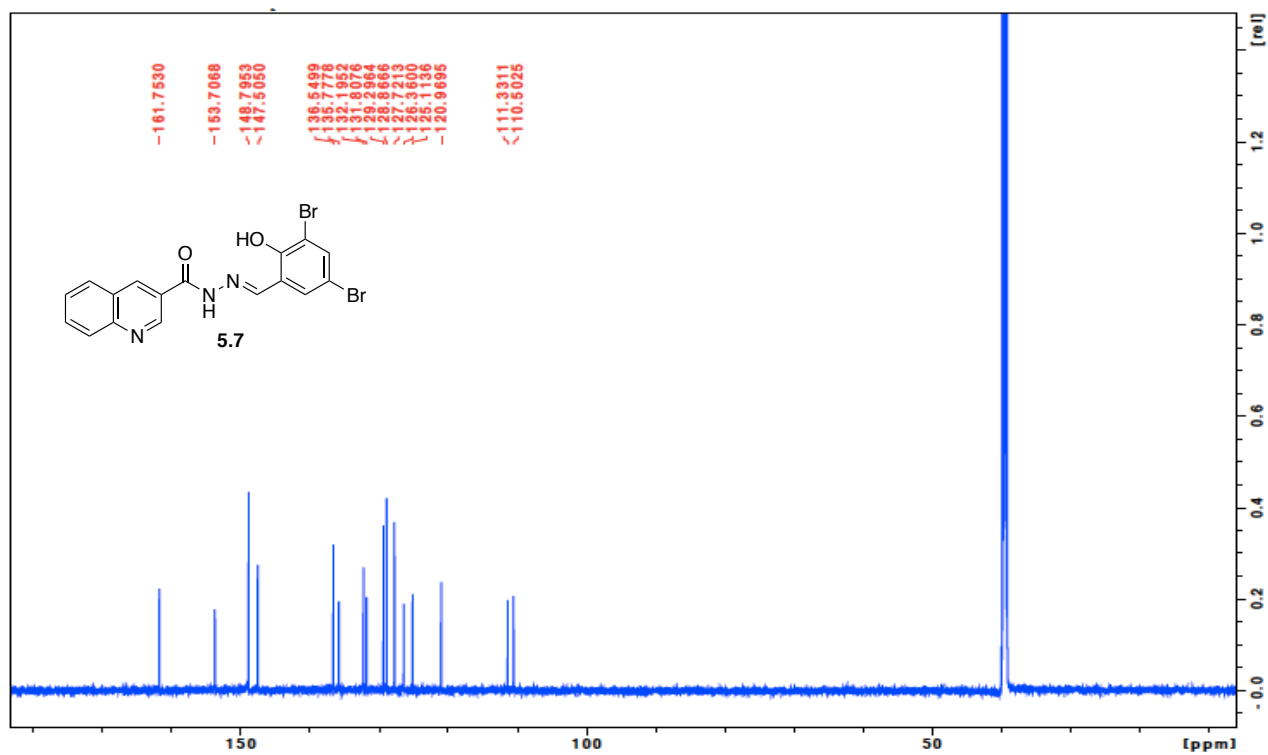
**<sup>1</sup>H NMR of compound 5.6a**



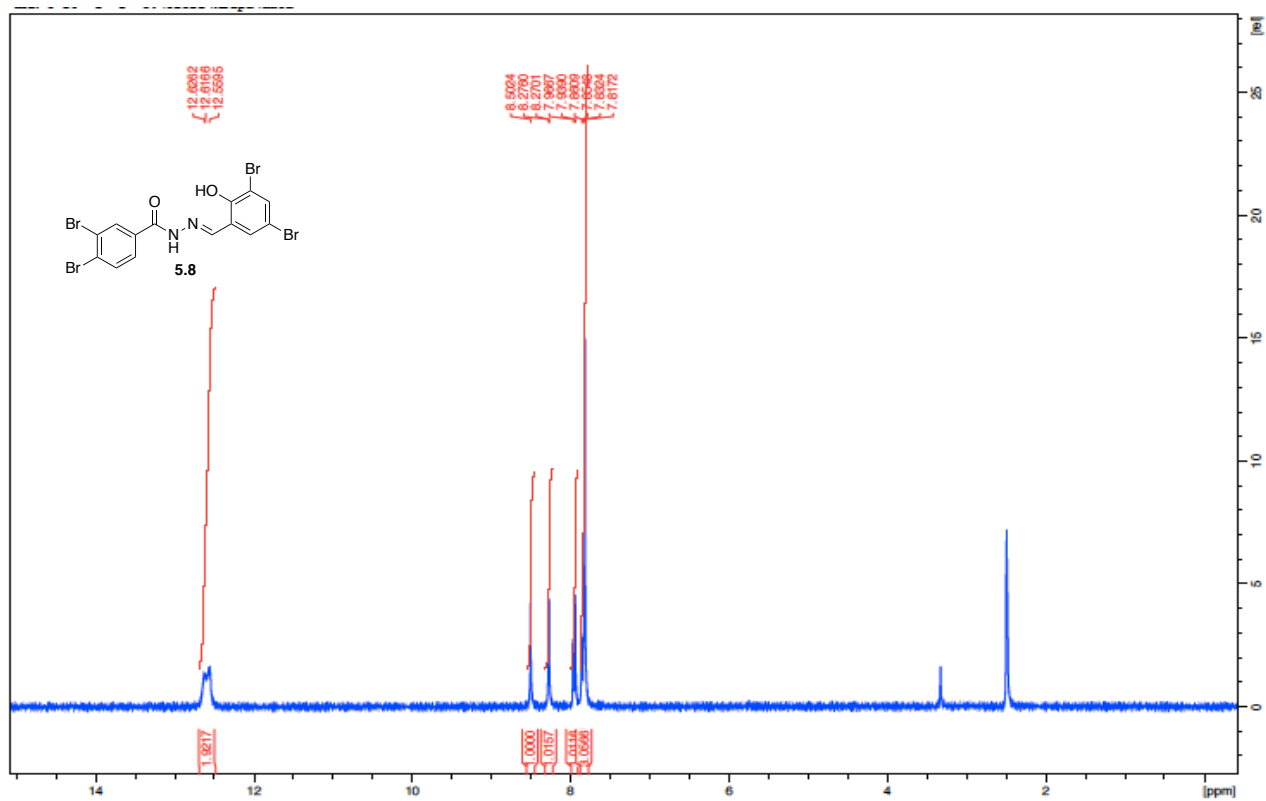
**<sup>13</sup>C NMR of compound 5.6a**



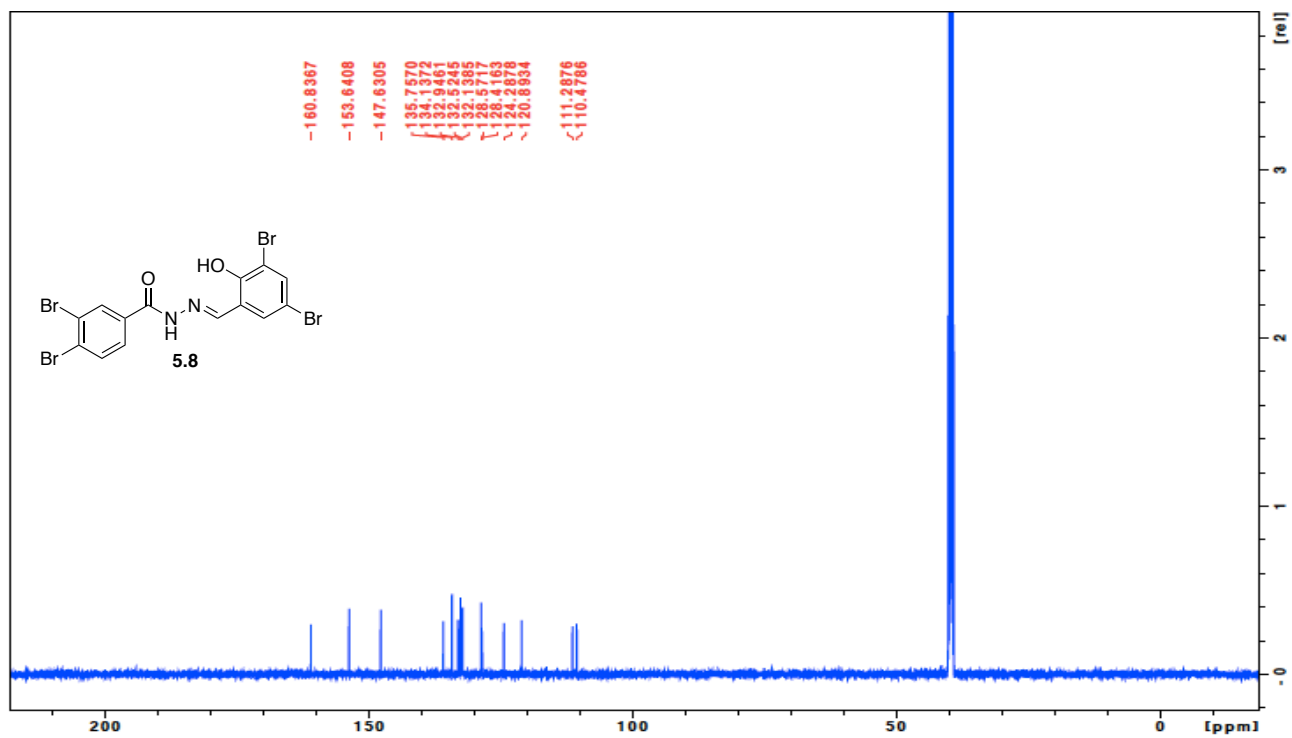
<sup>1</sup>H NMR of compound 5.7



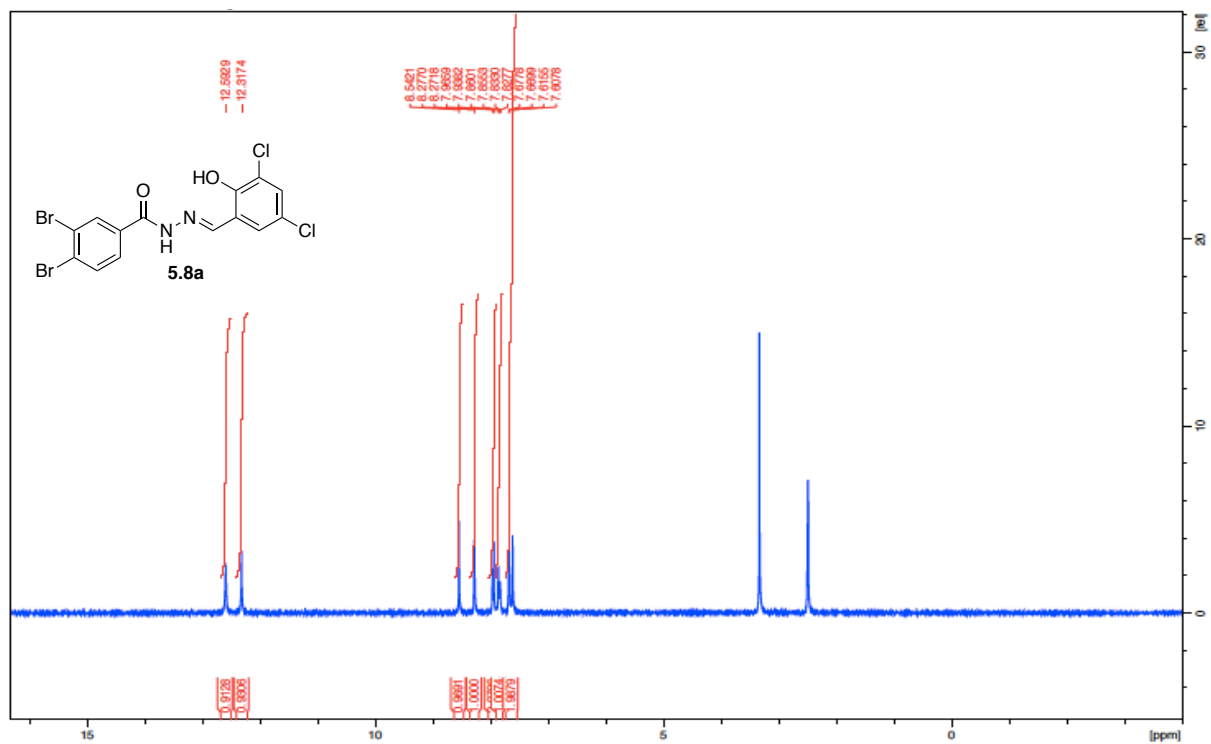
<sup>13</sup>C NMR of compound 5.7



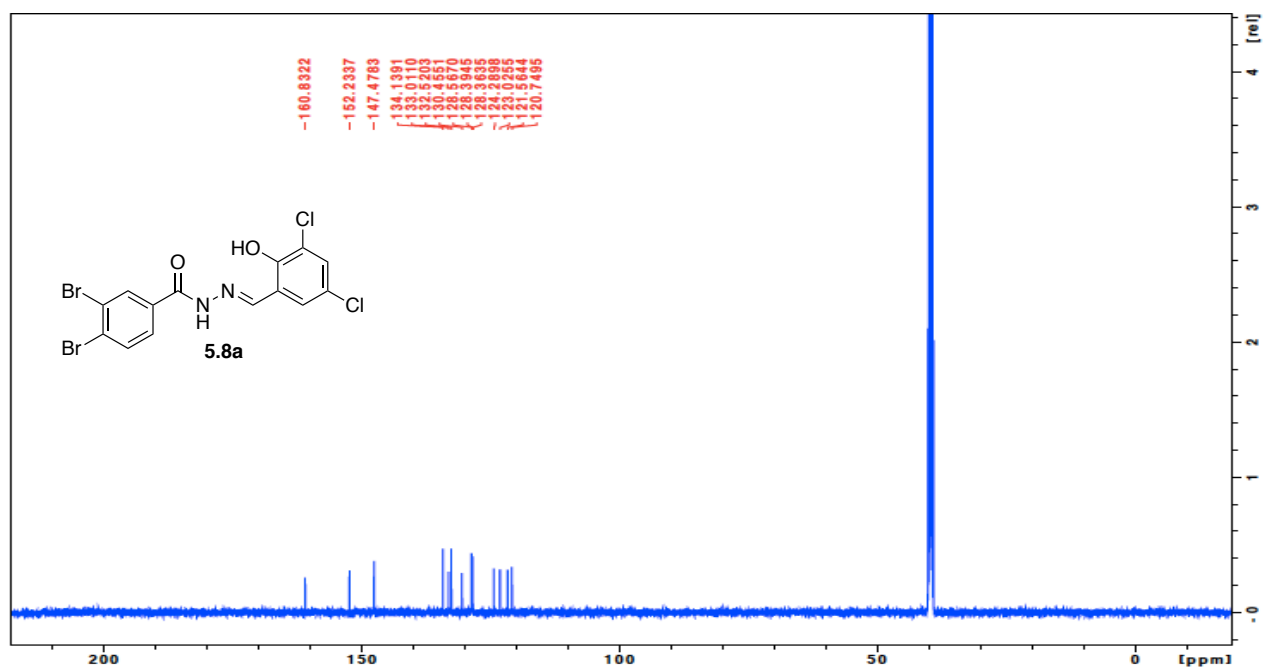
**<sup>1</sup>H NMR of compound 5.8**



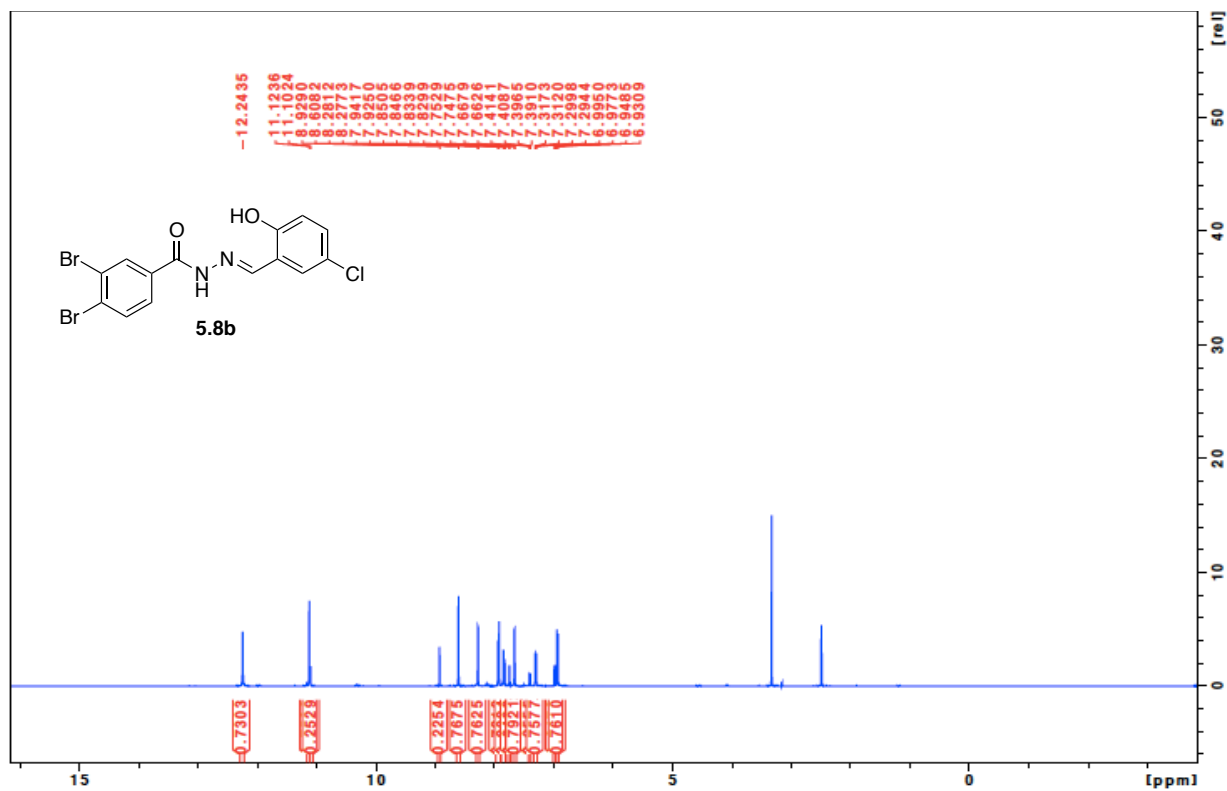
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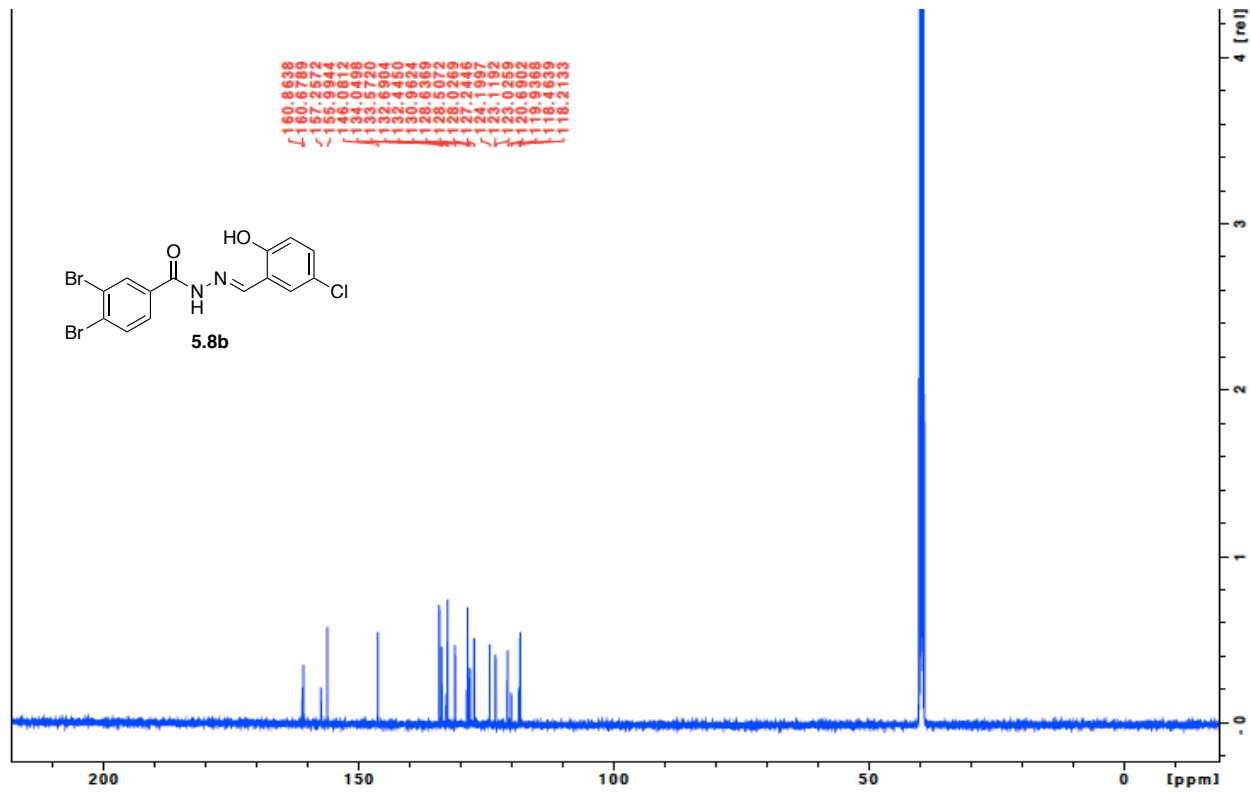
<sup>1</sup>H NMR of compound 5.8a



<sup>13</sup>C NMR of compound 5.8a

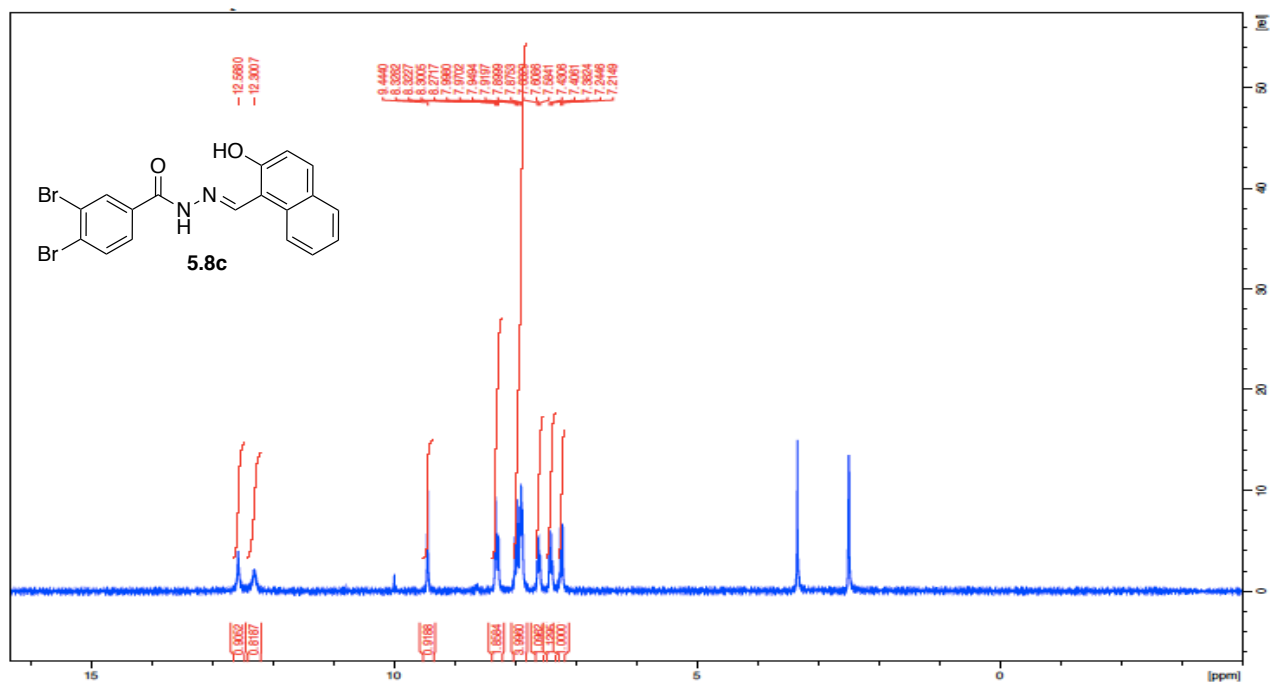


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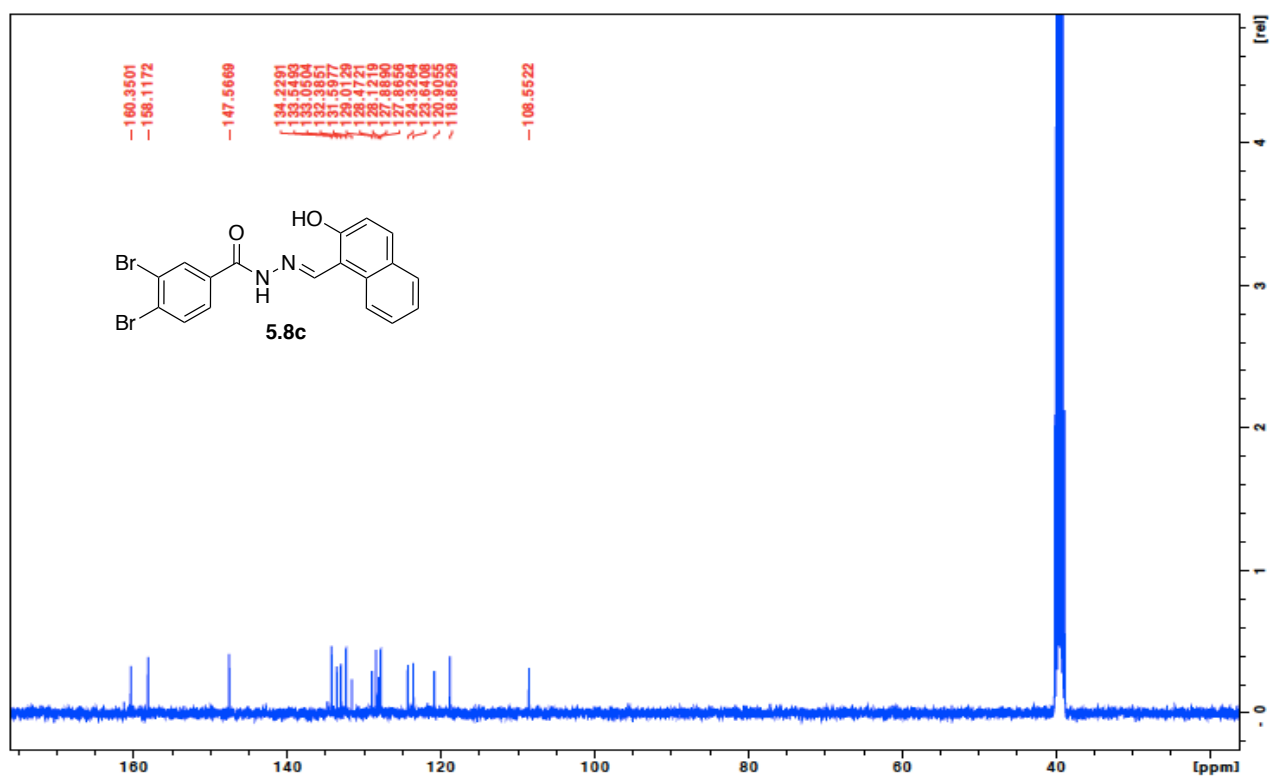


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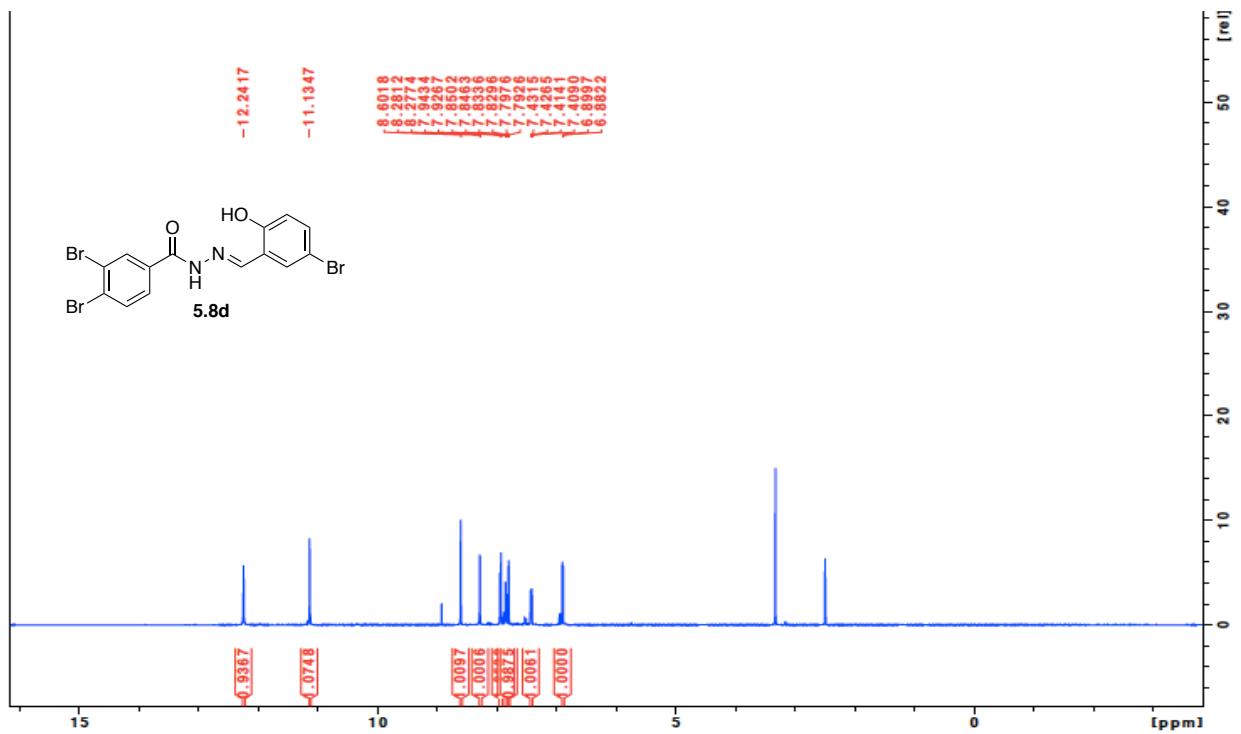




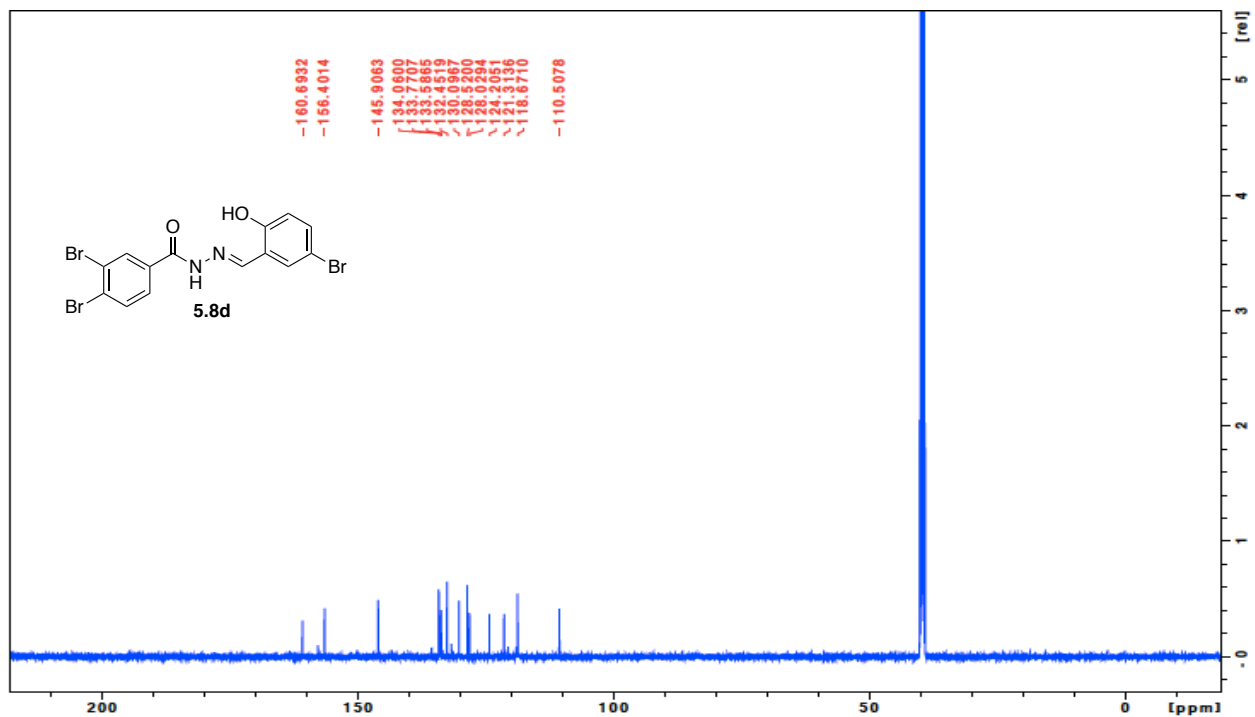
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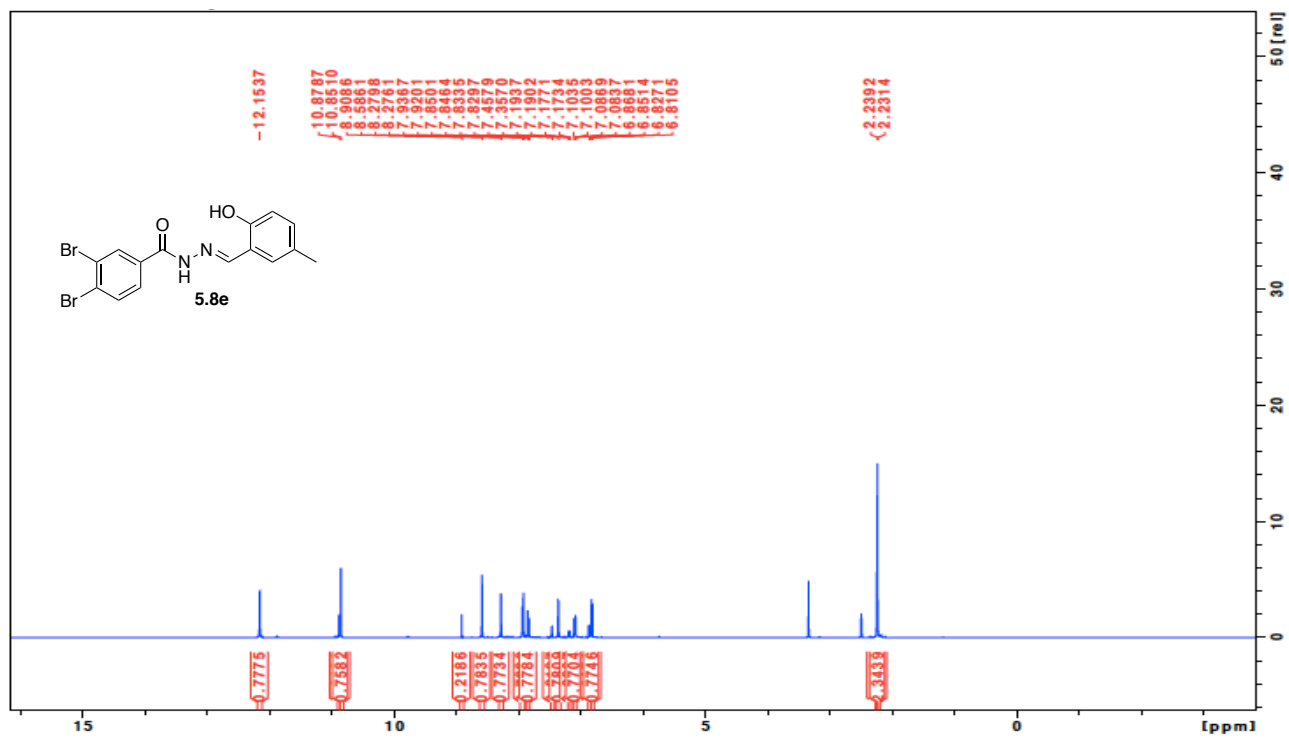
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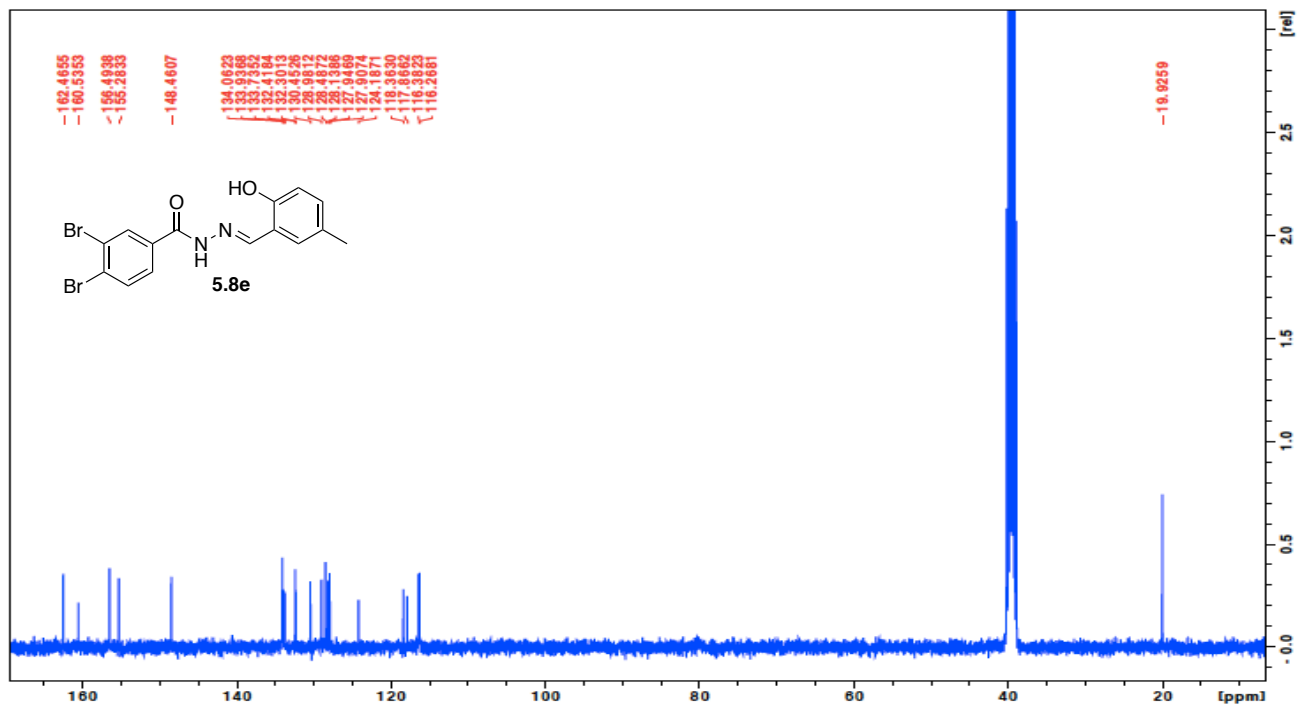
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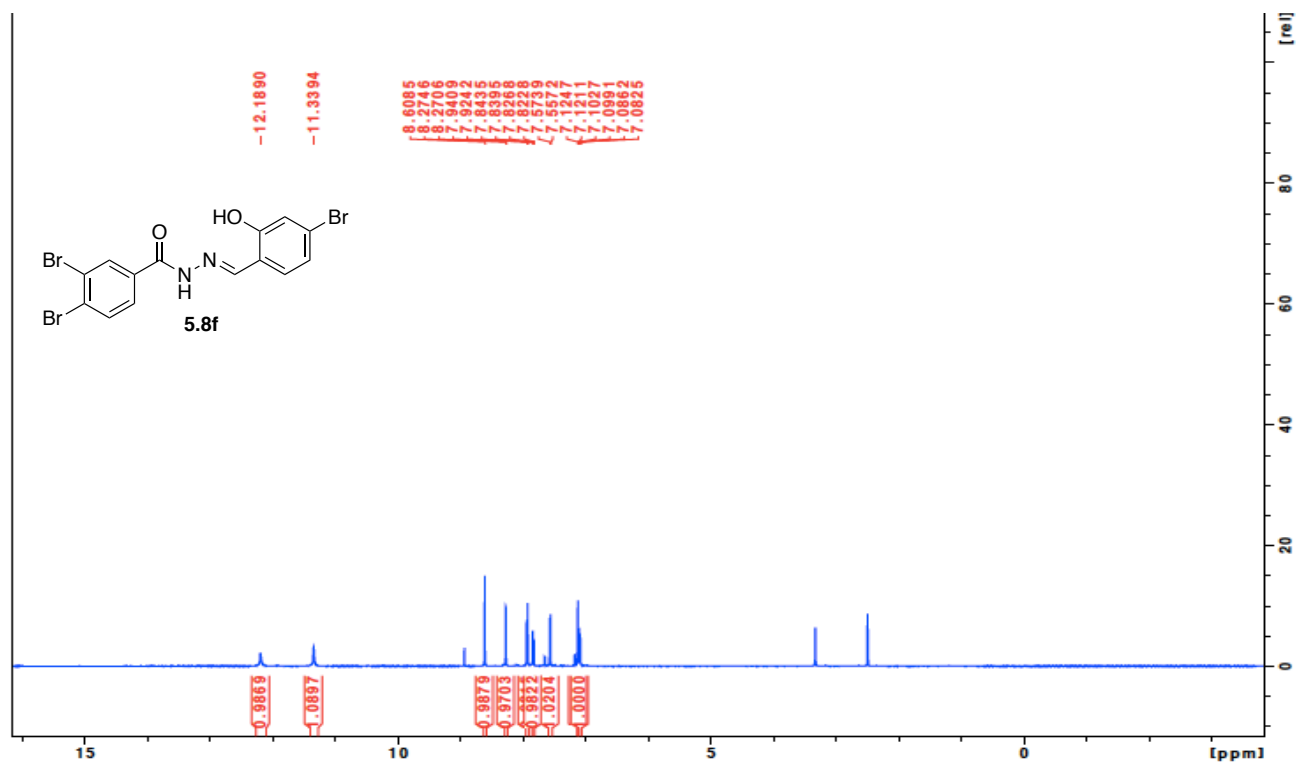
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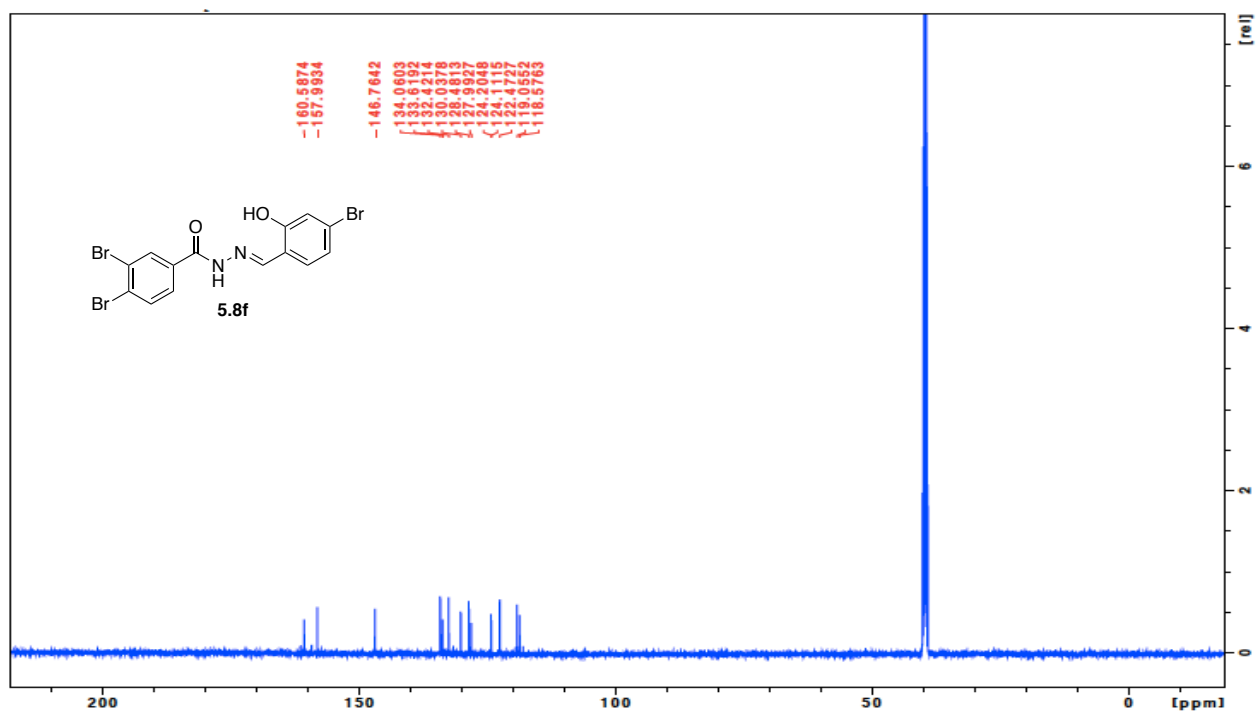
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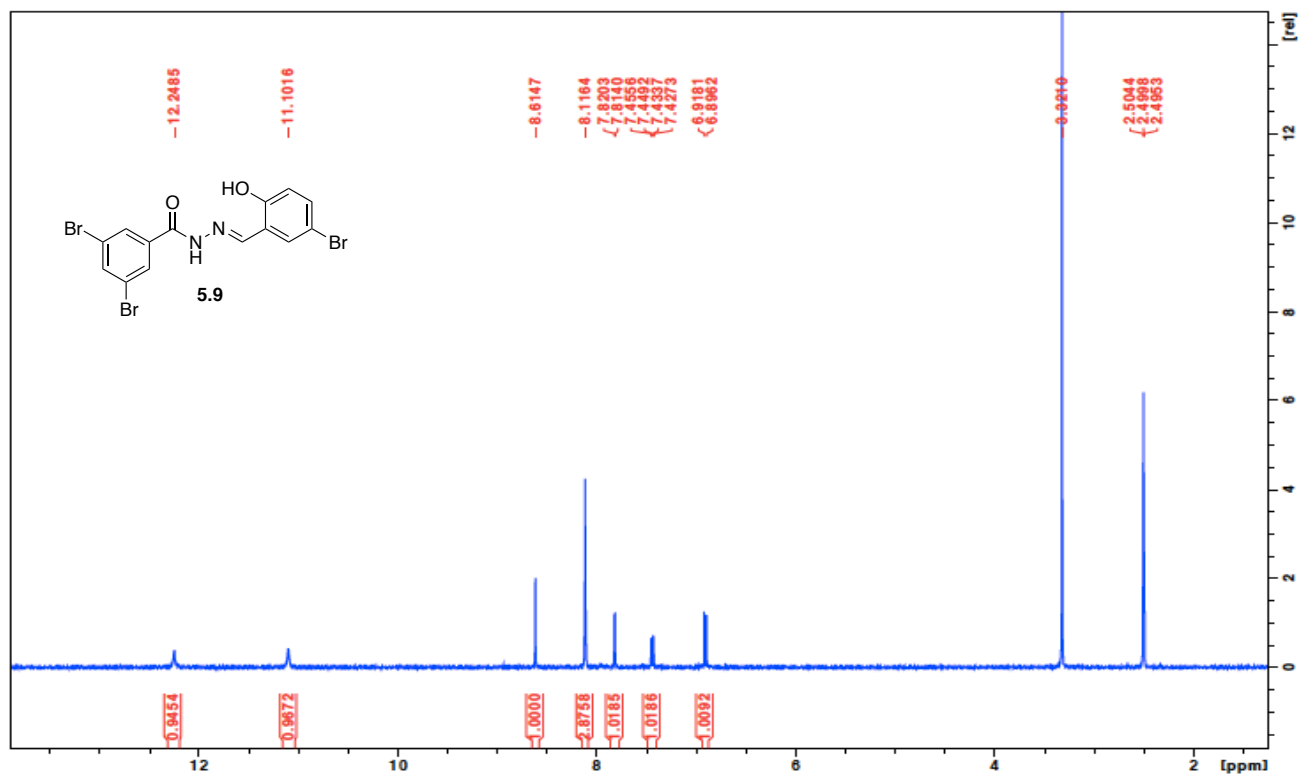
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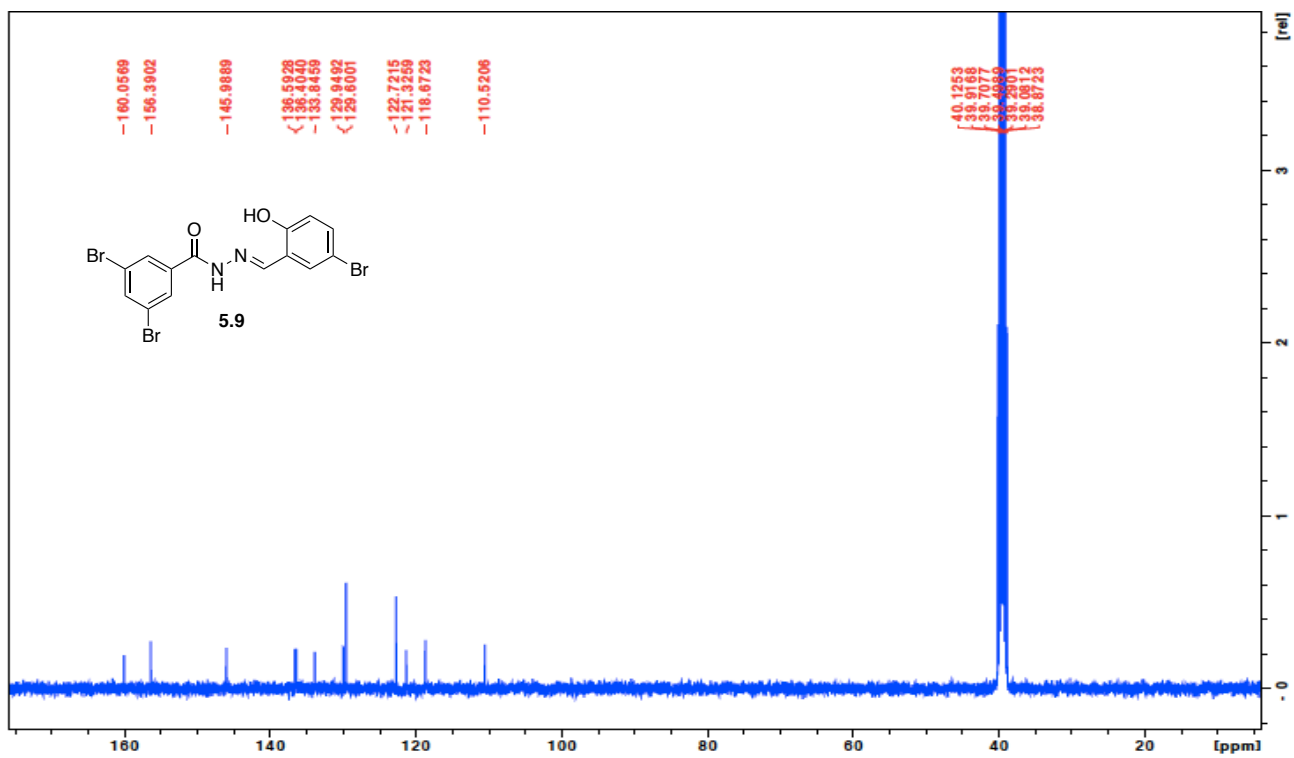
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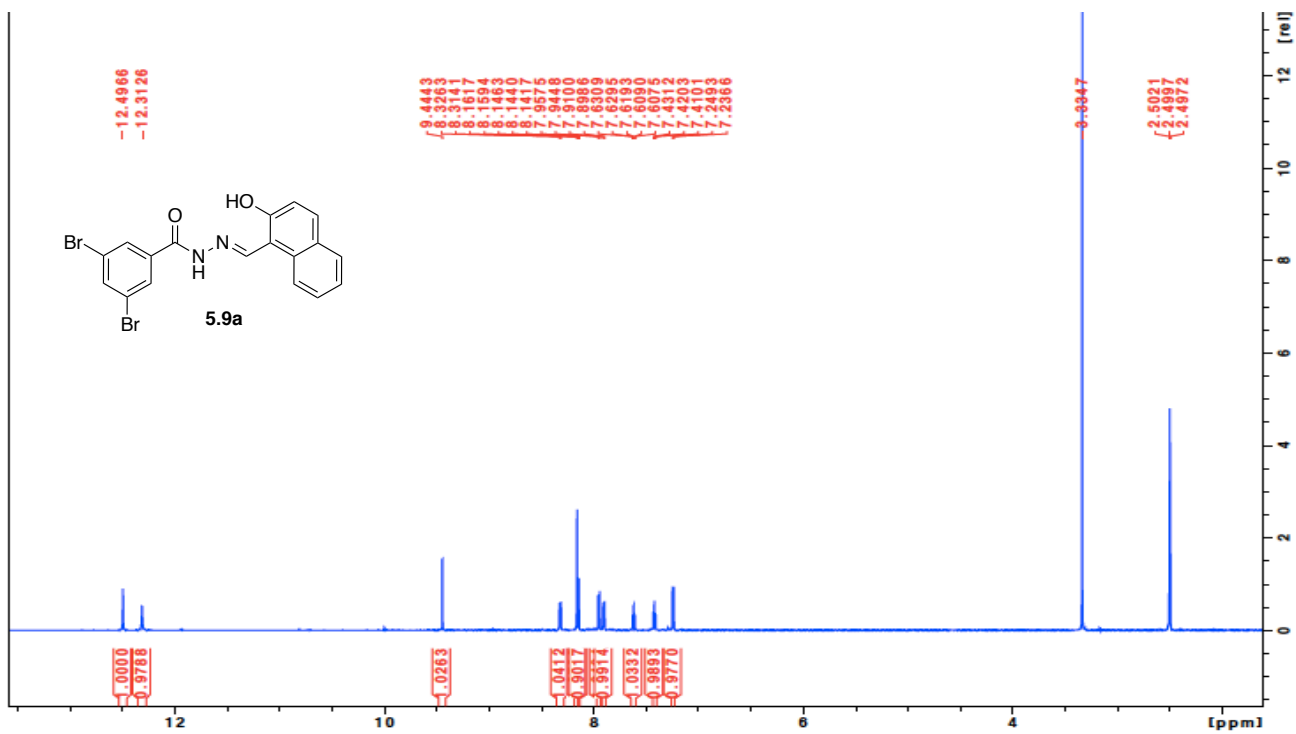
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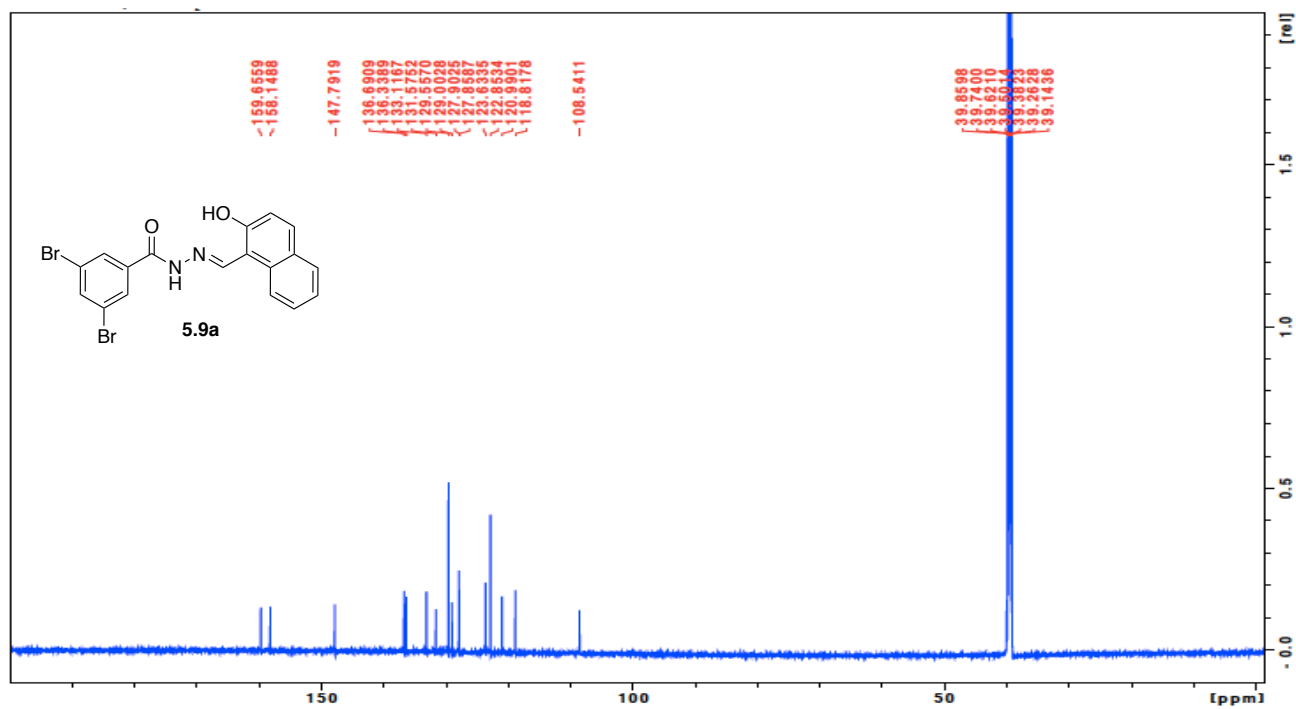
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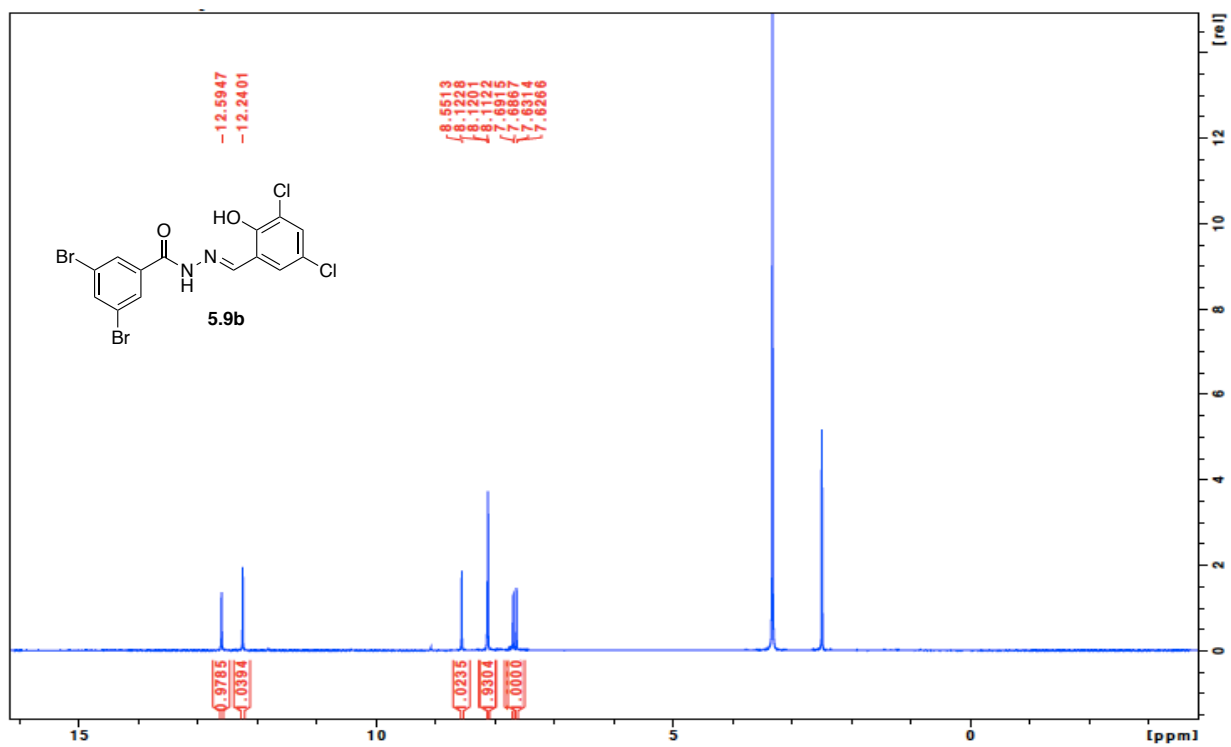
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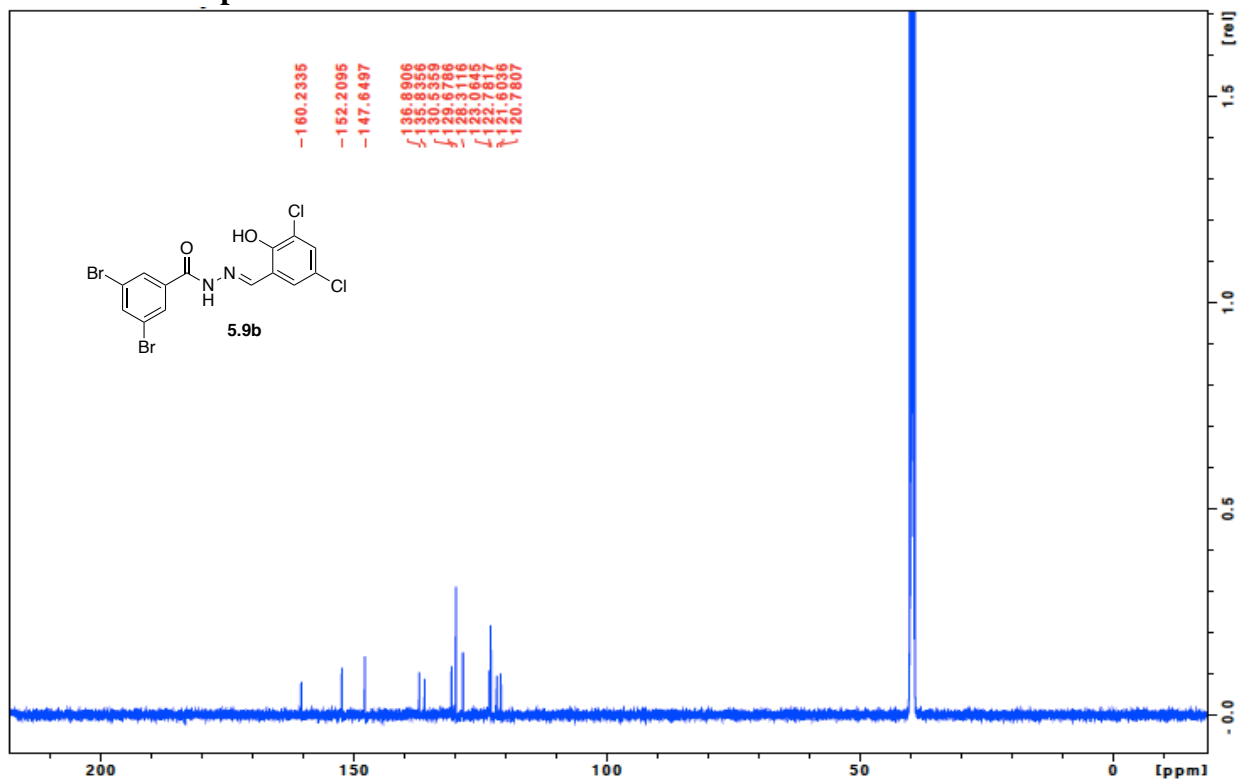
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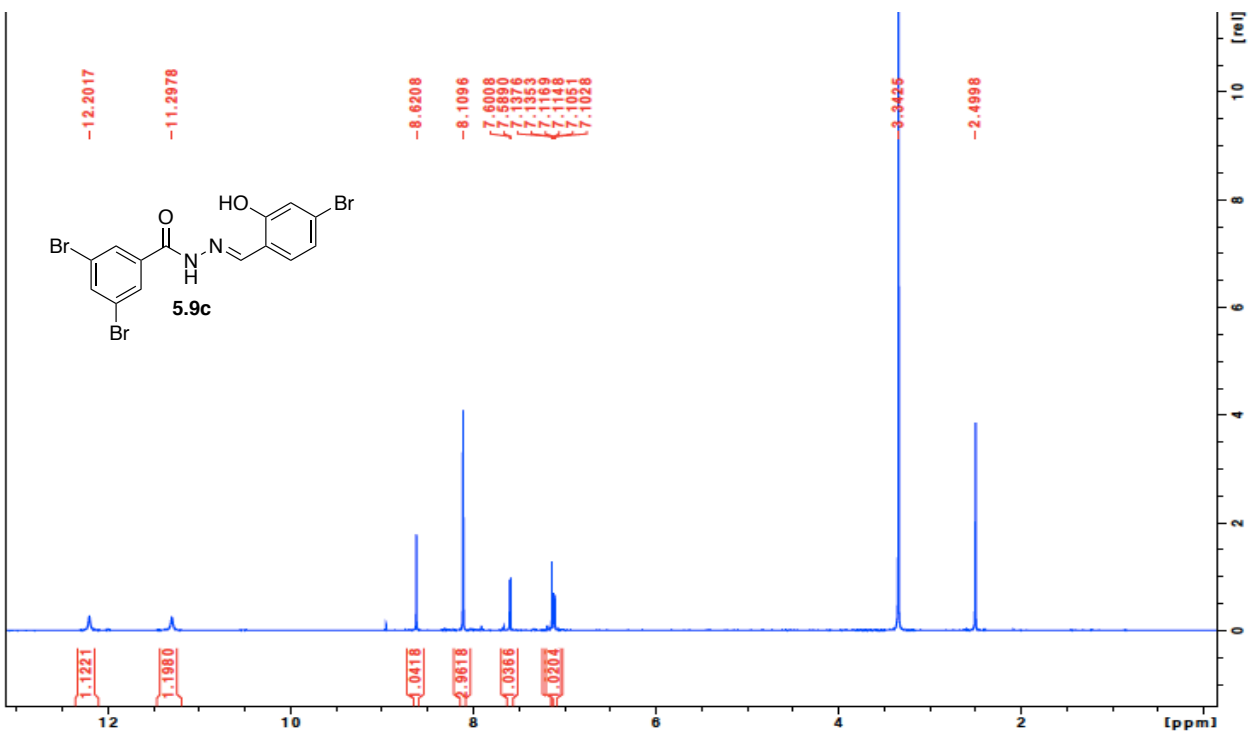
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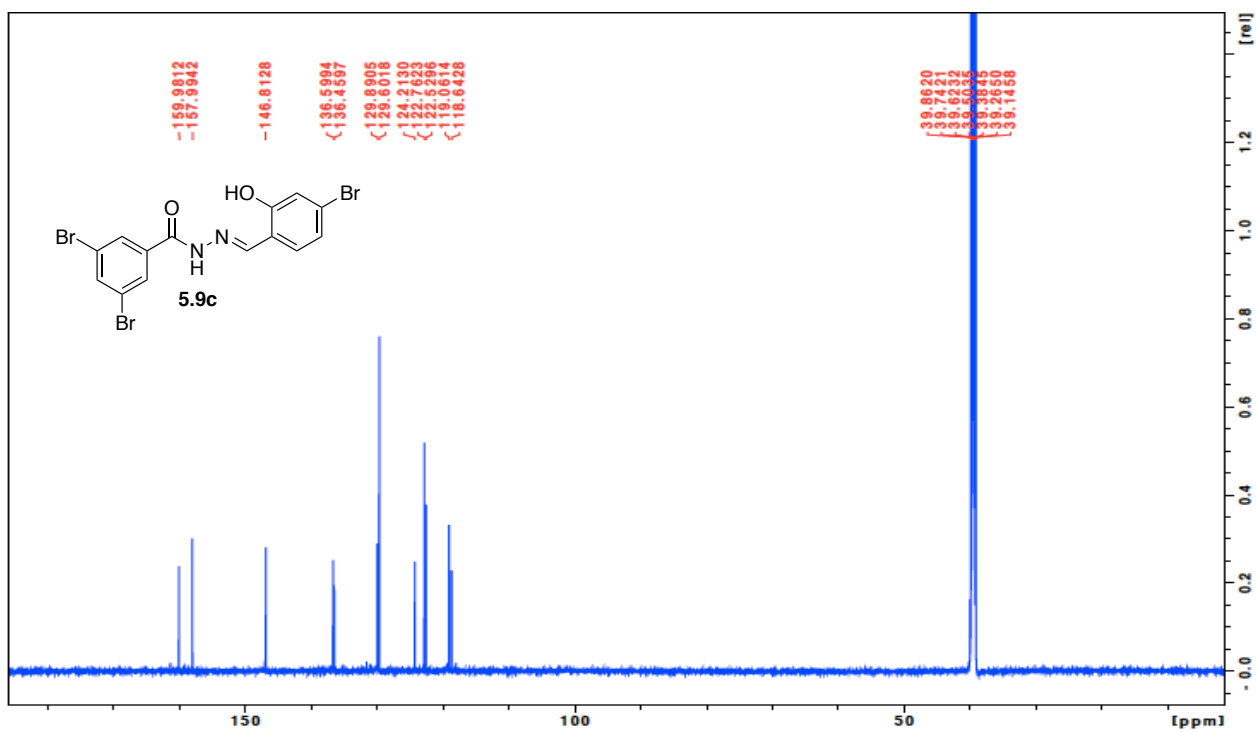
**<sup>1</sup>H NMR of compound 5.9b**



**<sup>13</sup>C NMR of compound 5.9b**

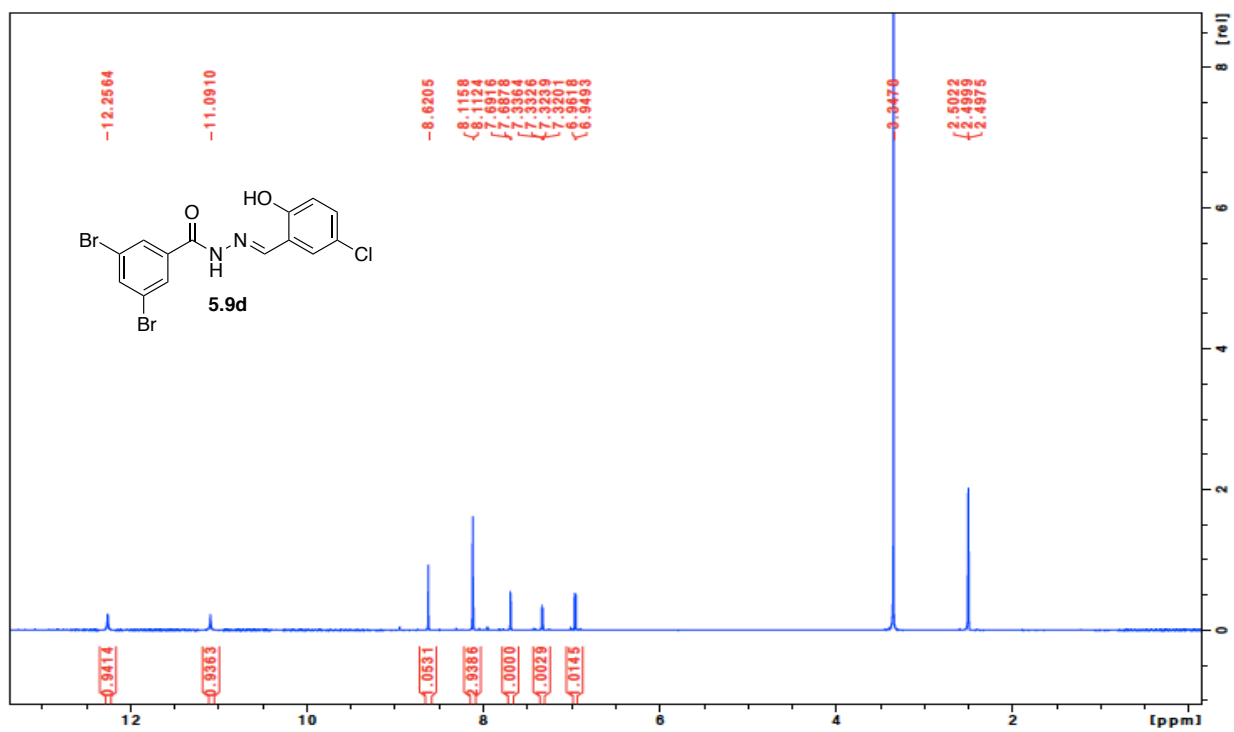


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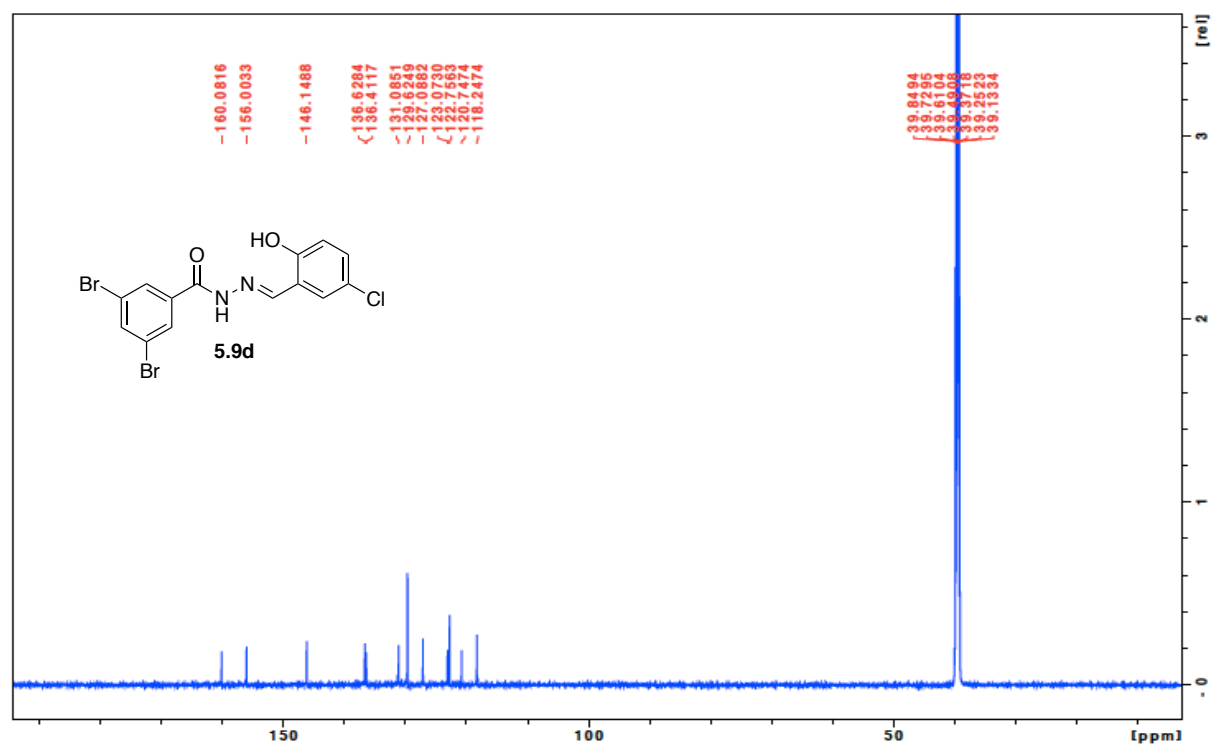


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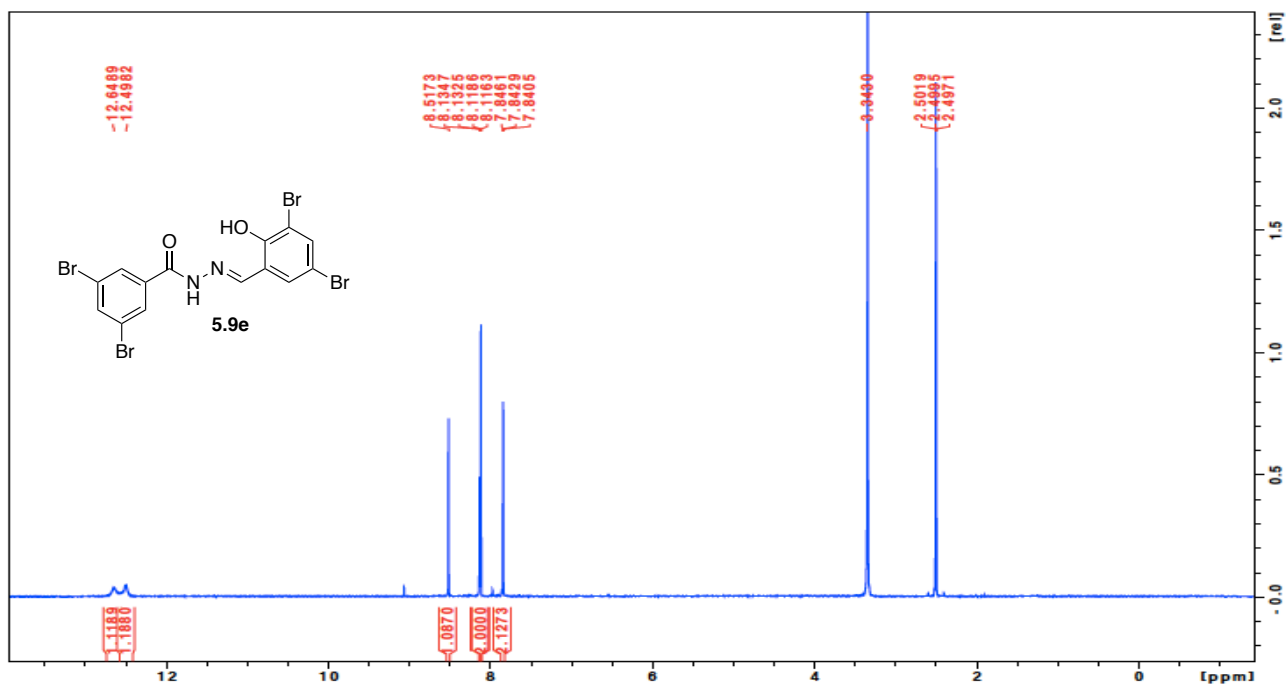




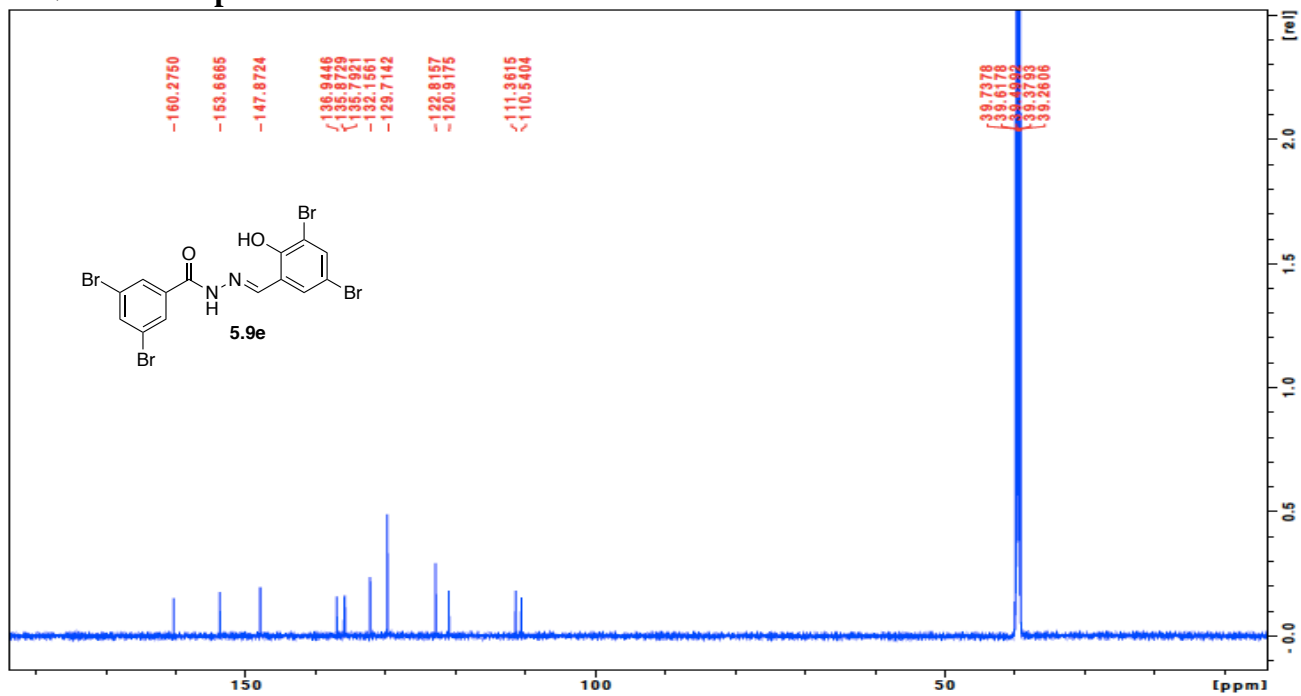
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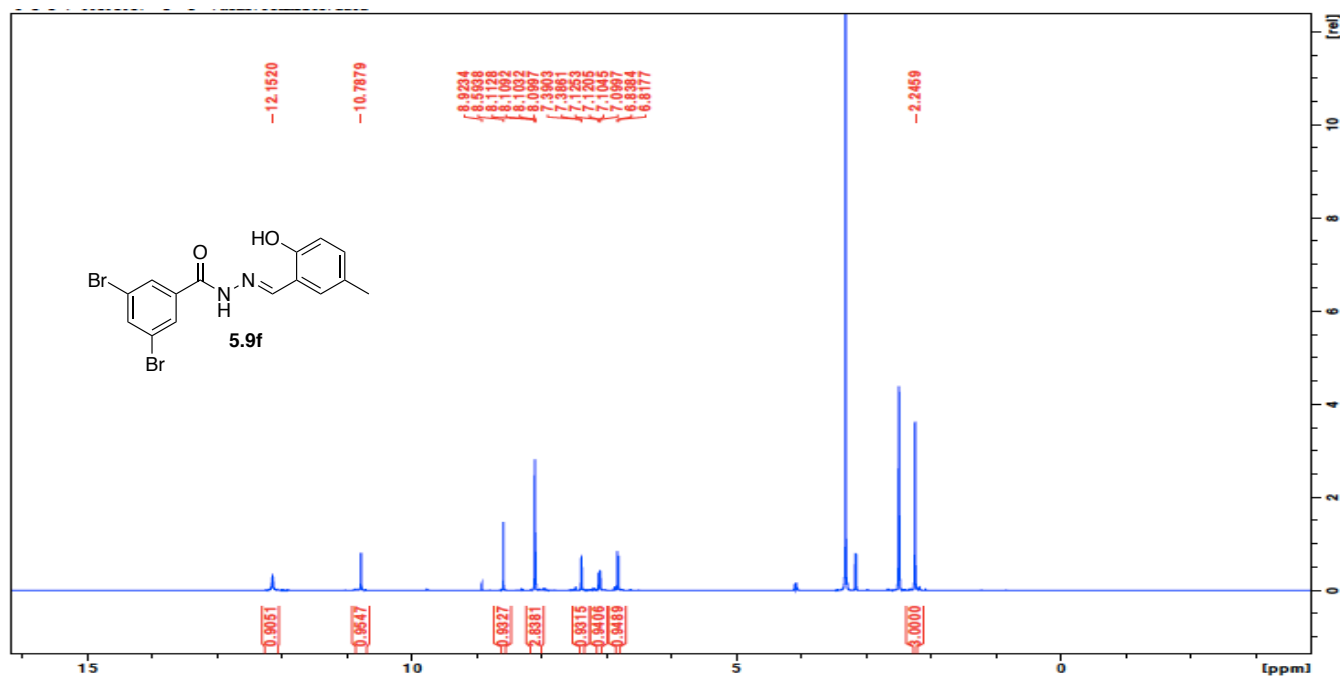
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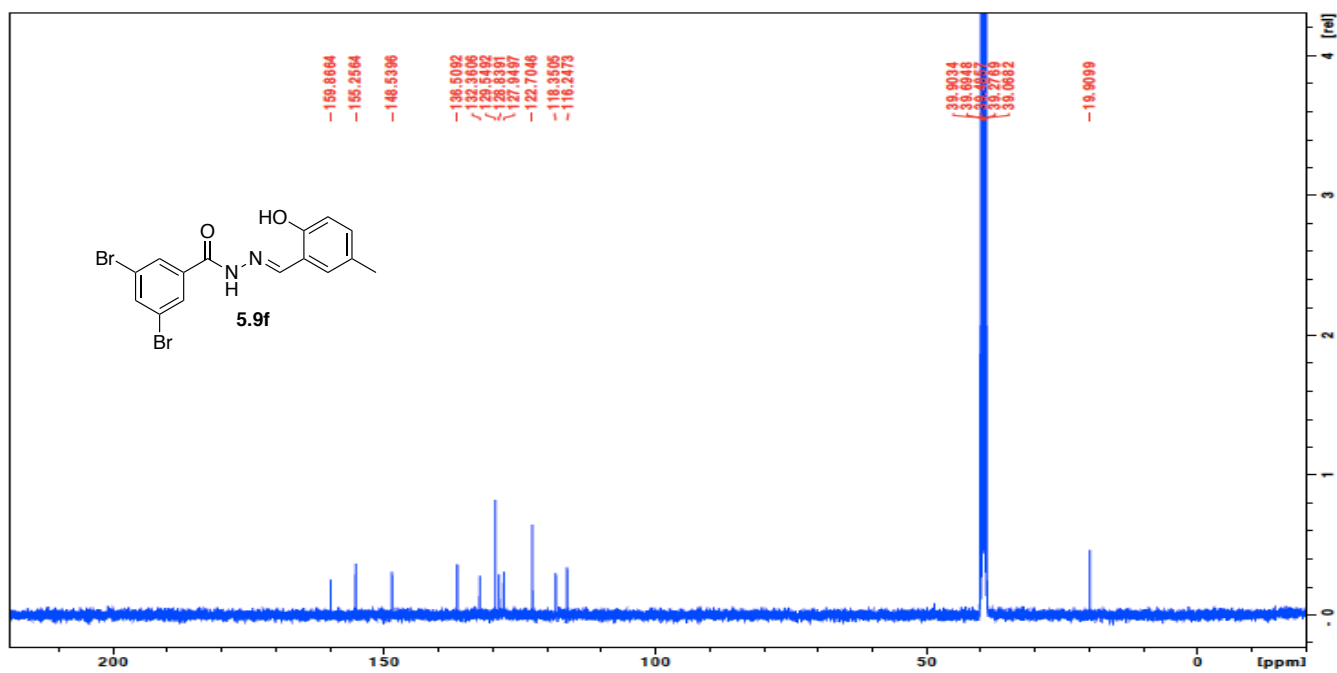
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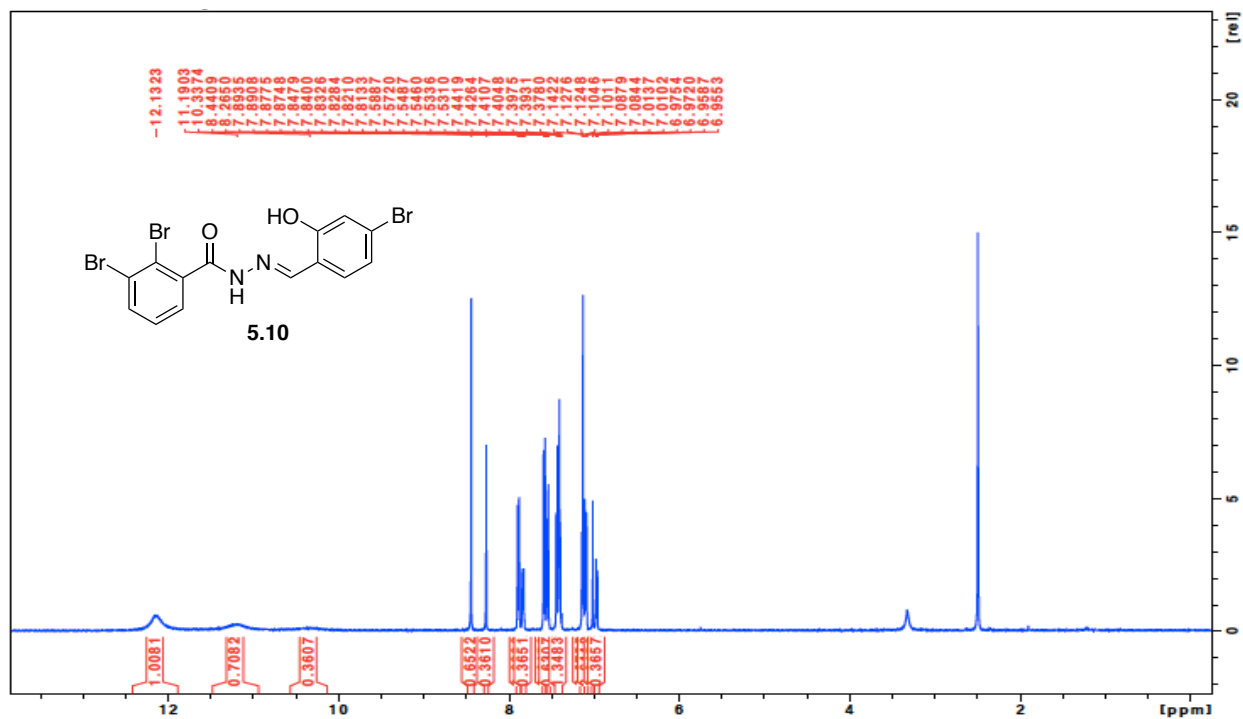
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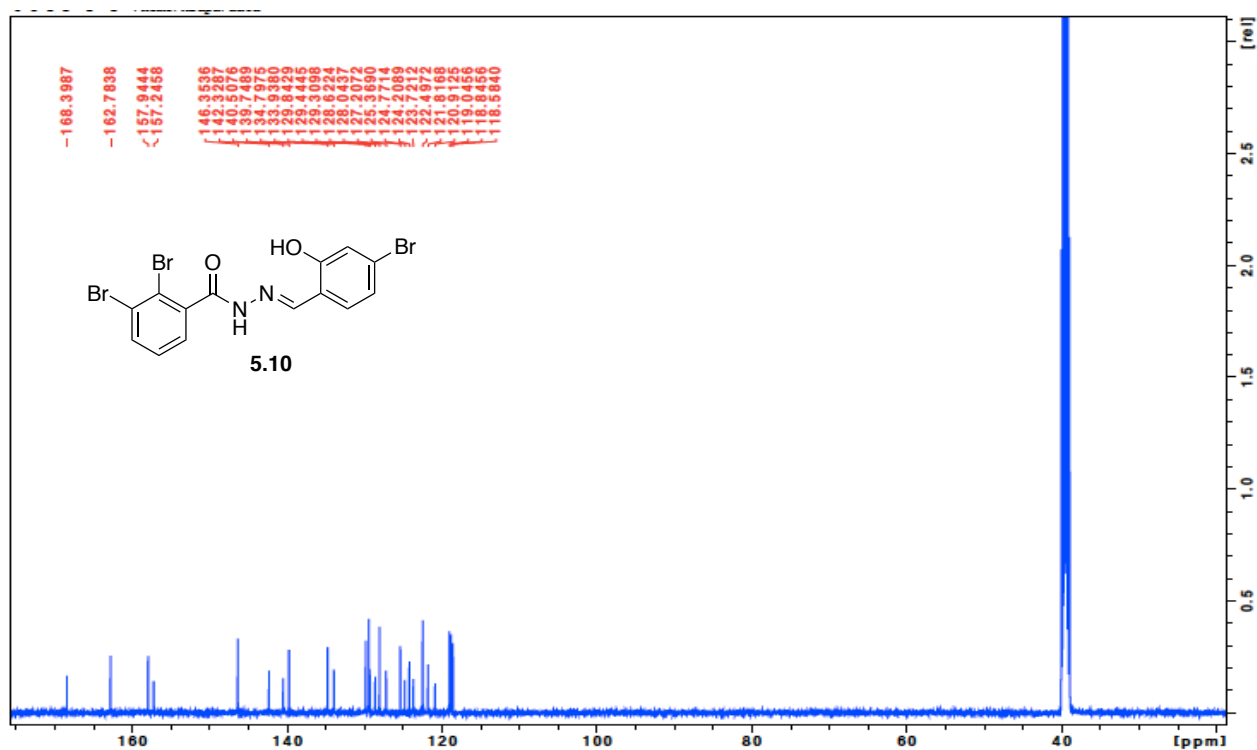
**<sup>1</sup>H NMR of compound 5.9f**



**<sup>13</sup>C NMR of compound 5.9f**

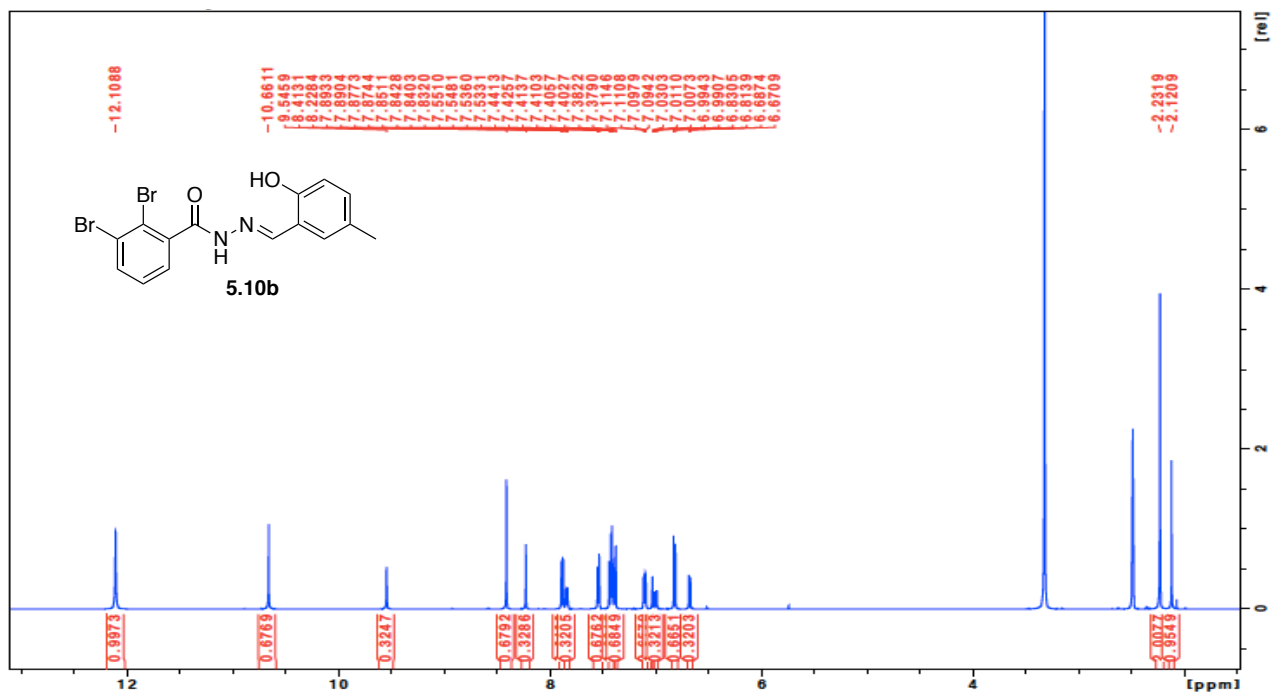


**<sup>1</sup>H NMR of compound 5.10**

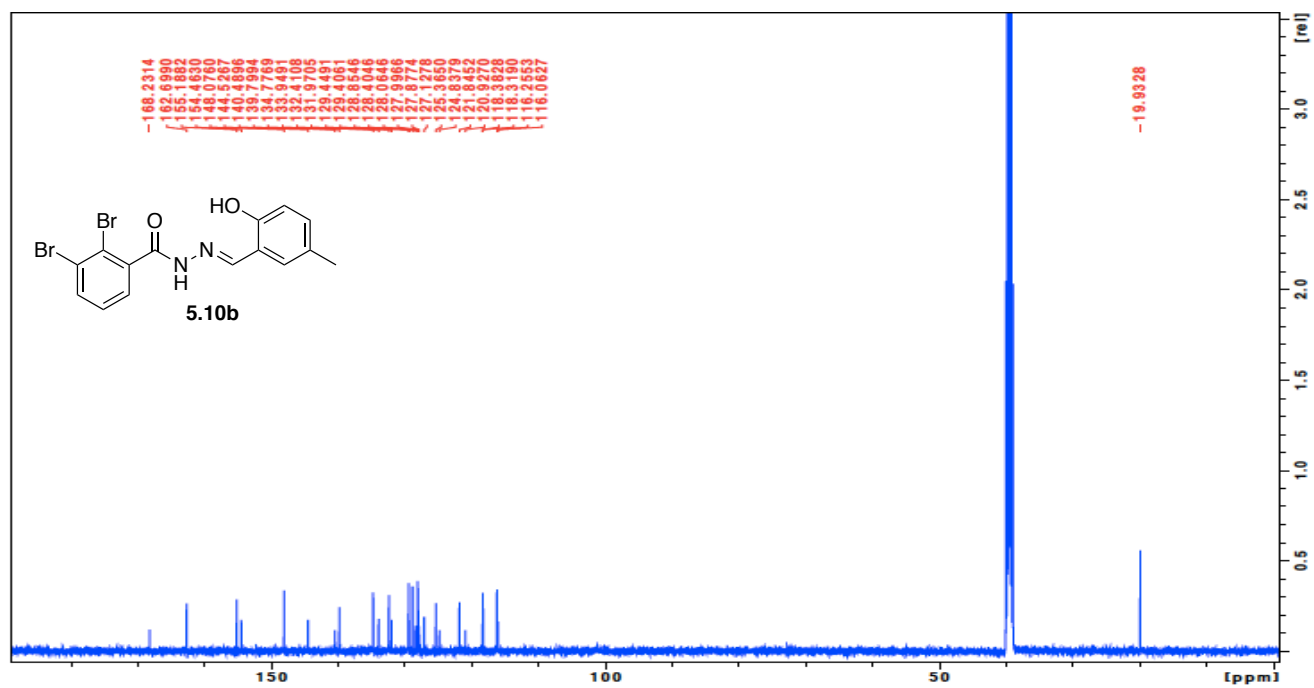


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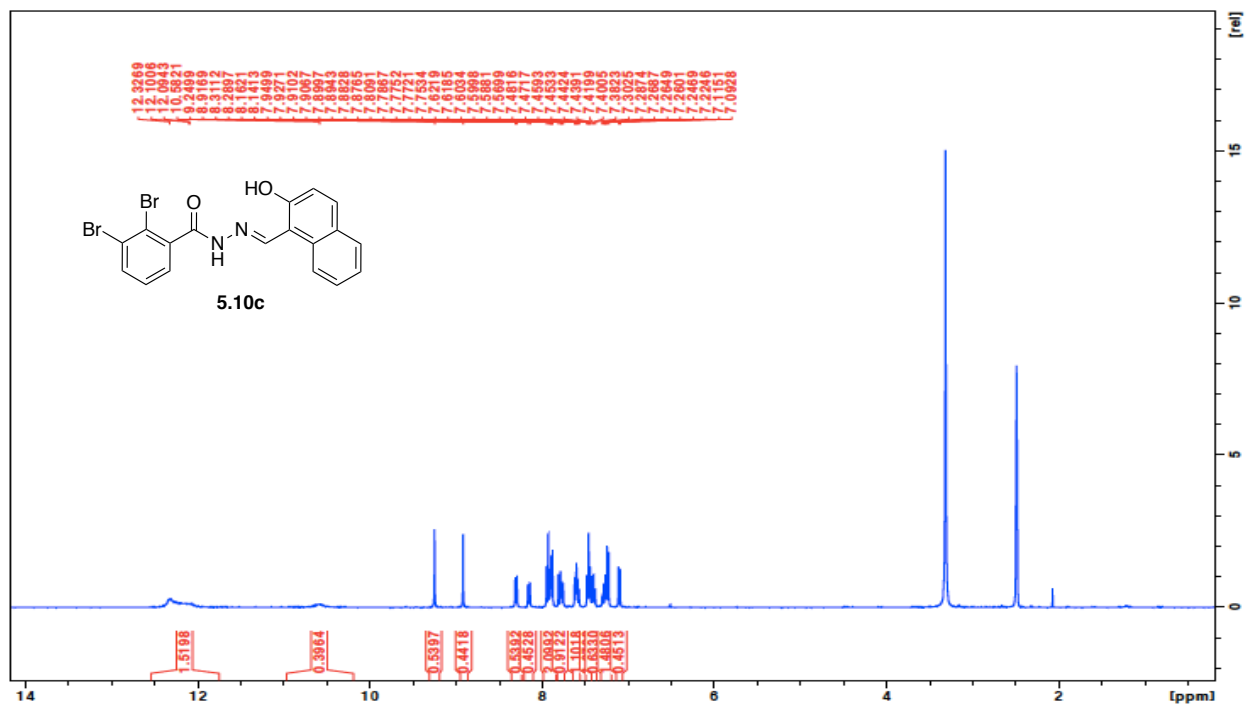




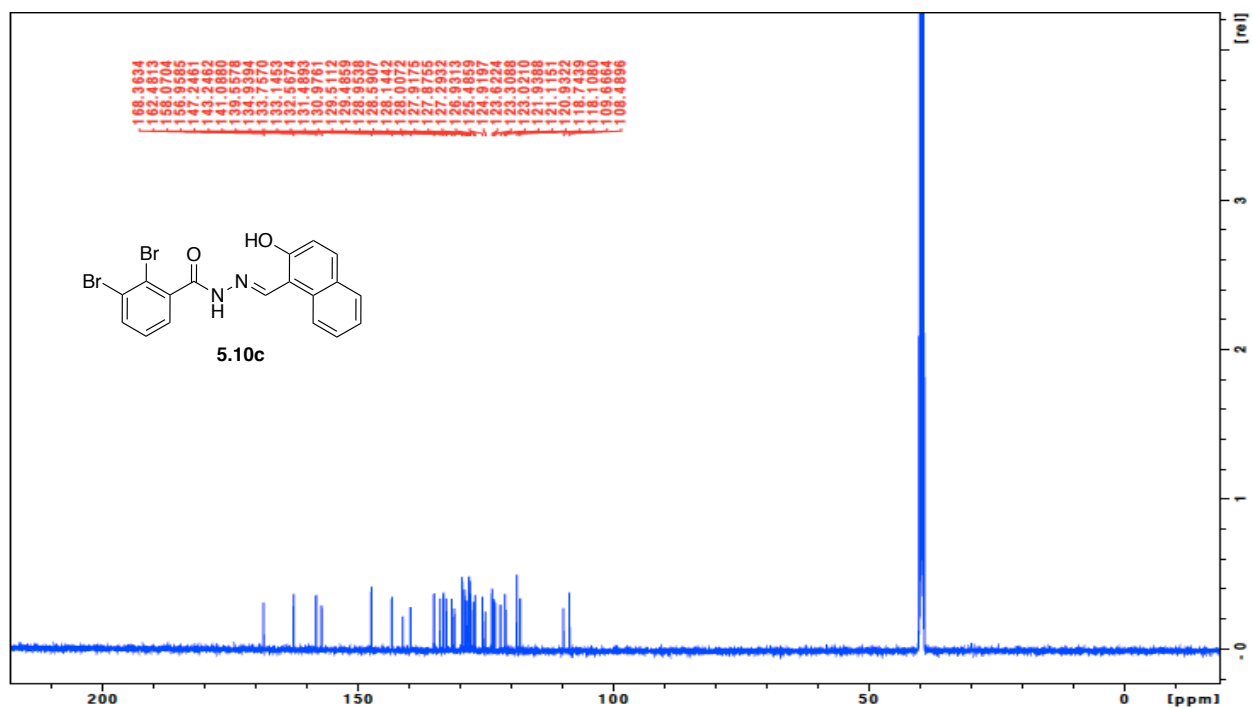
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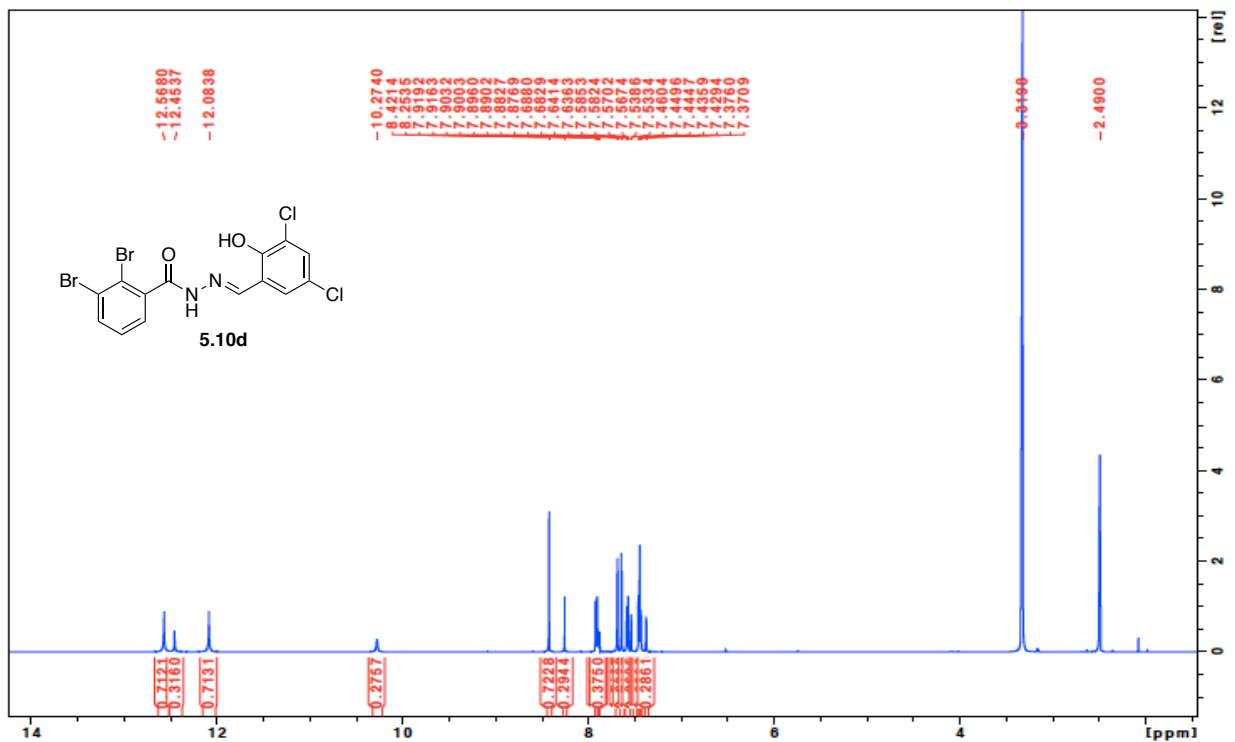
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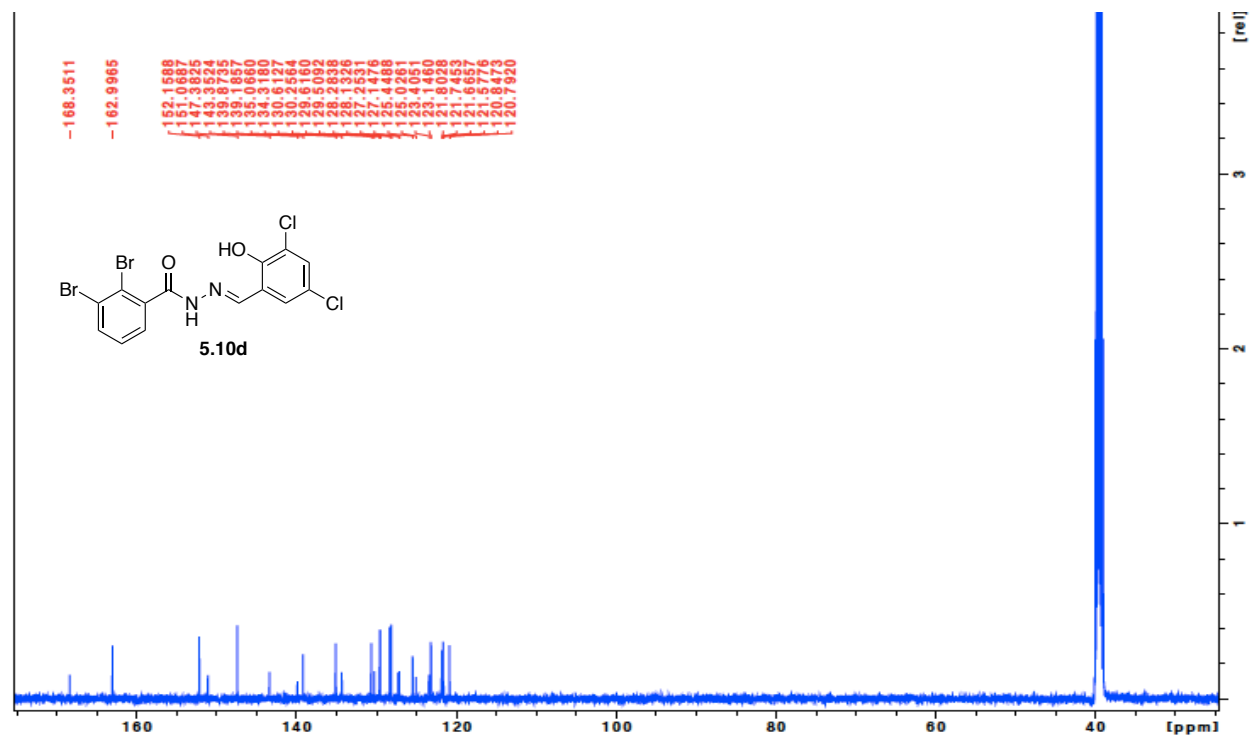
**<sup>1</sup>H NMR of compound 5.10c**



**<sup>13</sup>C NMR of compound 5.10c**

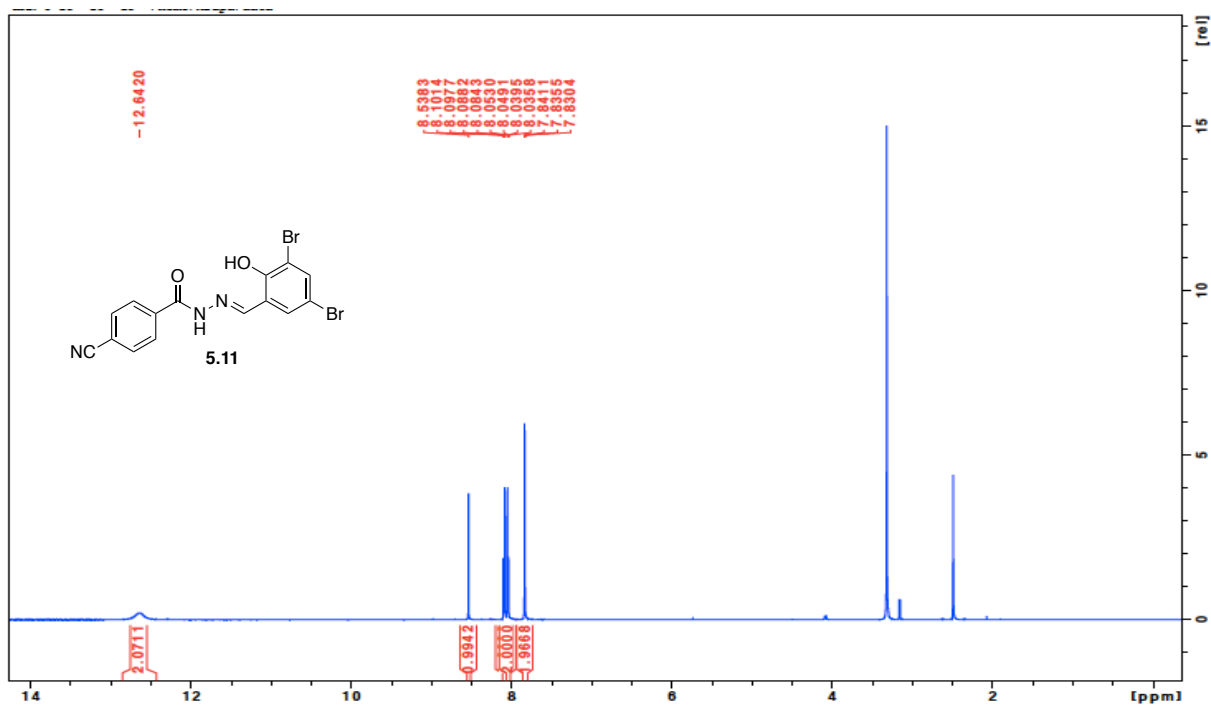


**<sup>1</sup>H NMR of compound 5.10d**

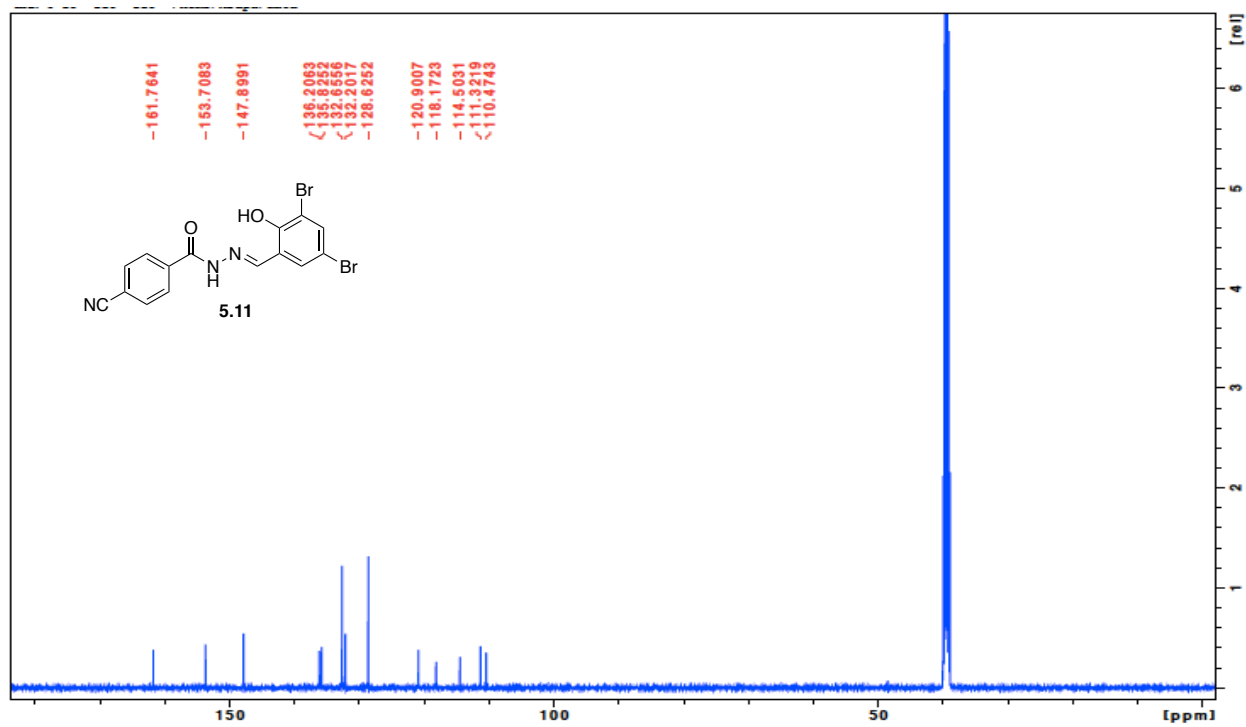


**<sup>13</sup>C NMR of compound 5.10d**

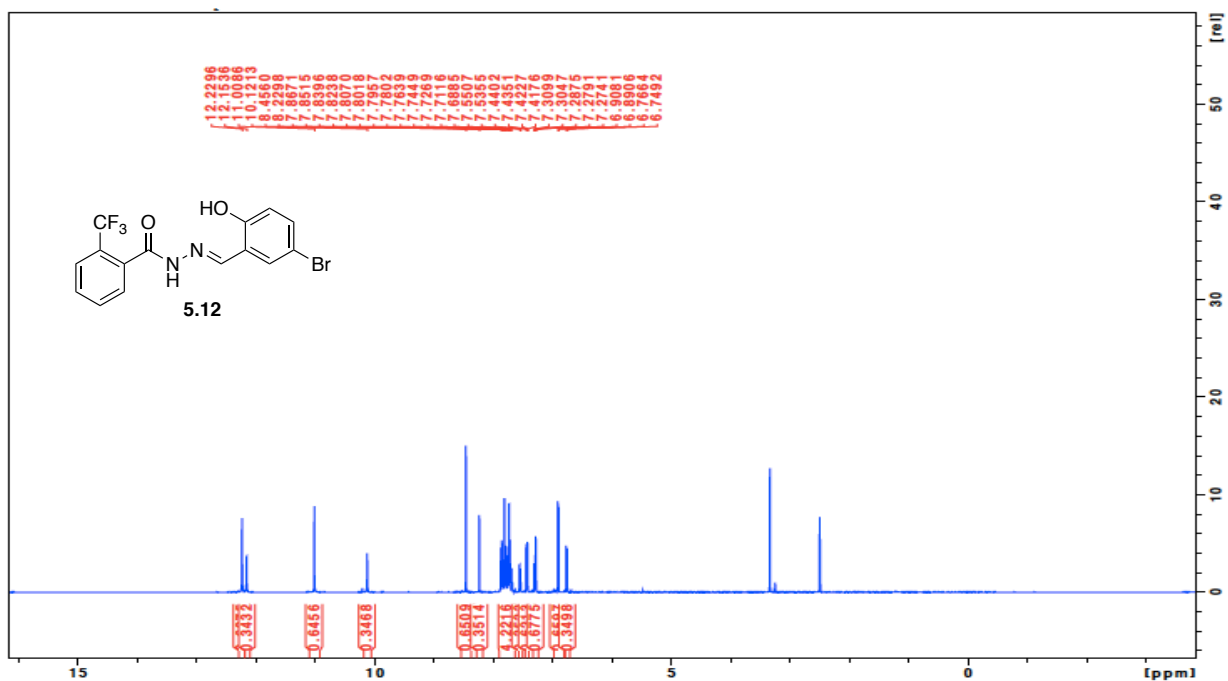




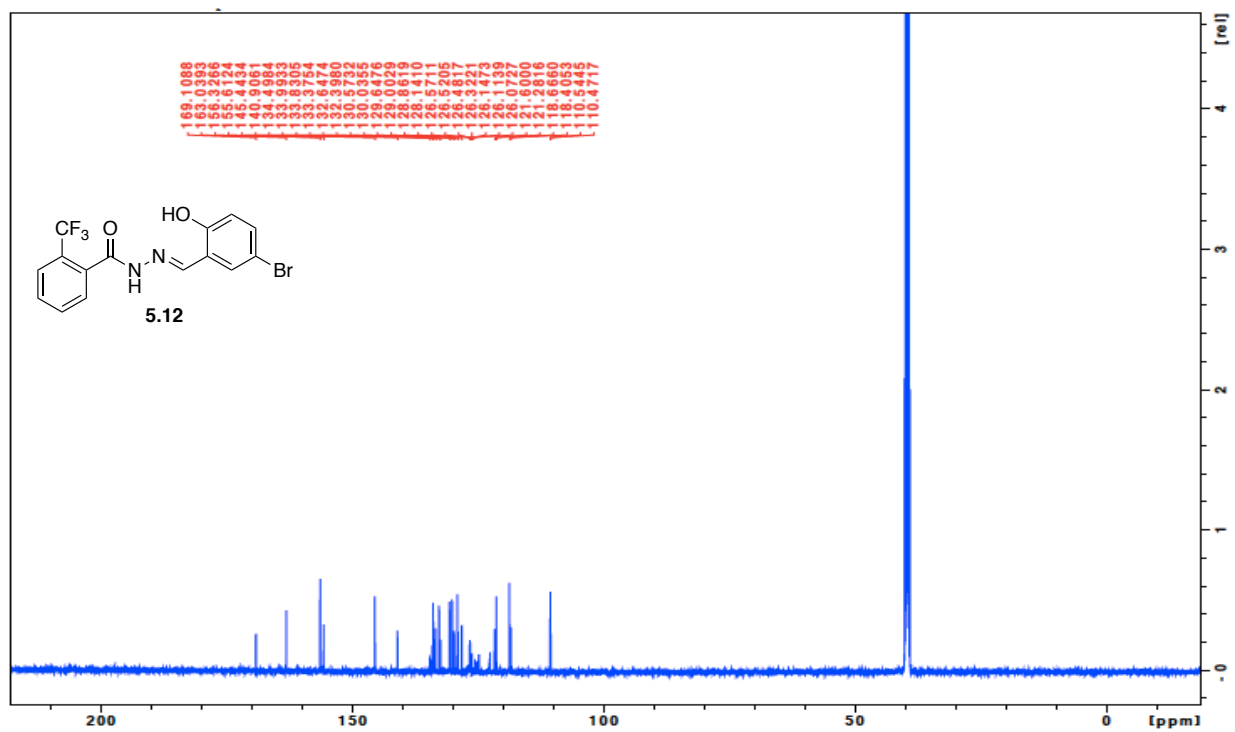
<sup>1</sup>H NMR of compound 5.11



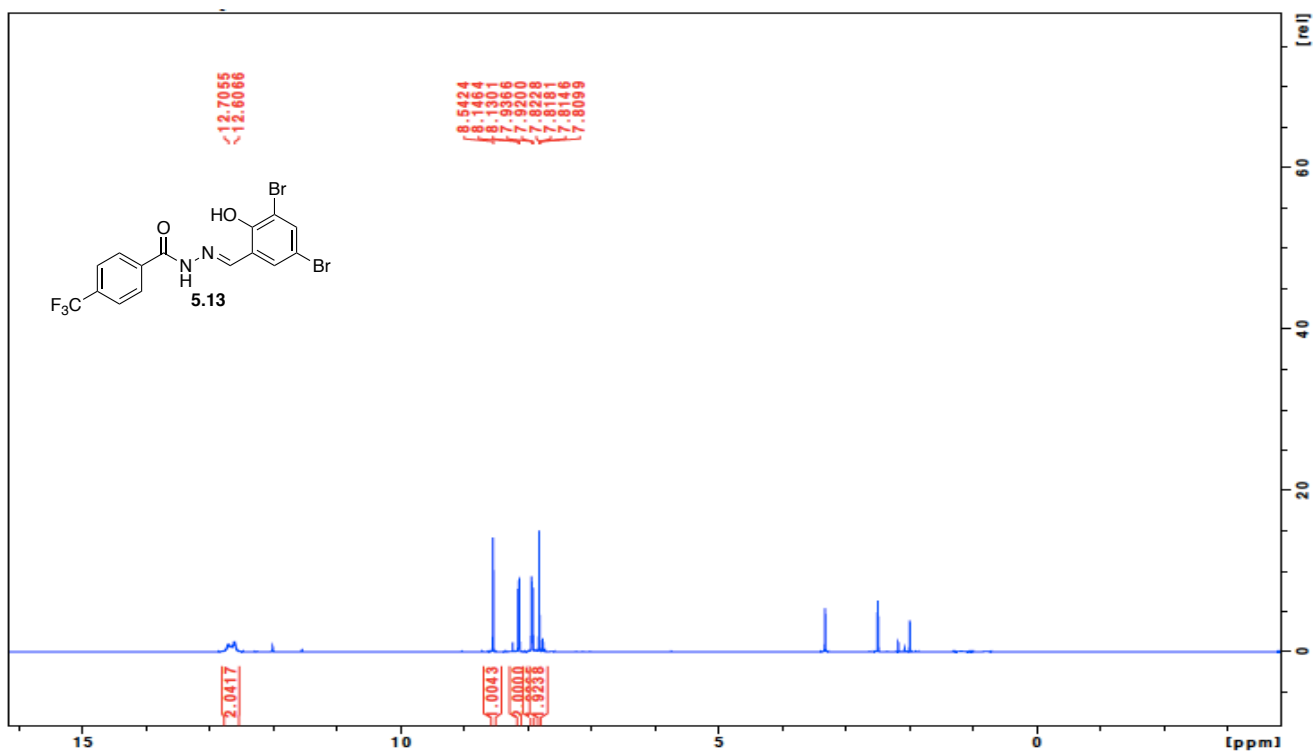
<sup>13</sup>C NMR of compound 5.11



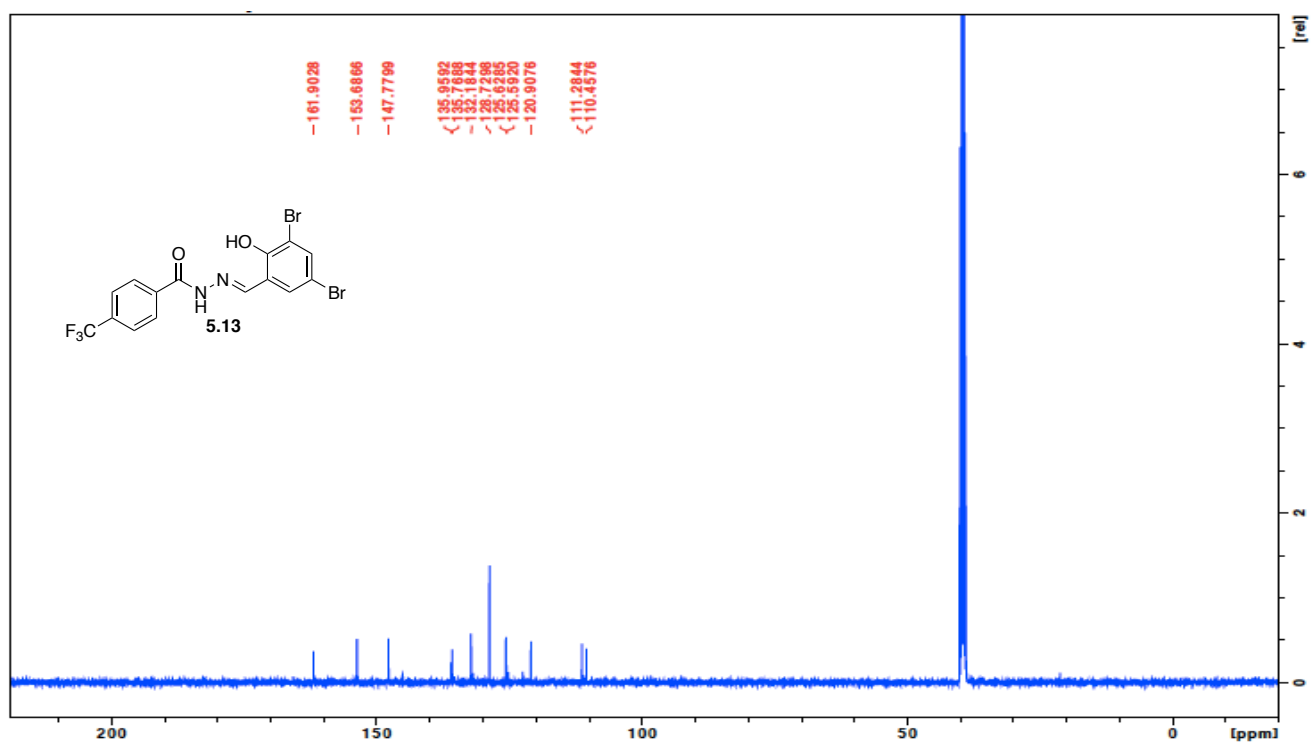
<sup>1</sup>H NMR of compound 5.12



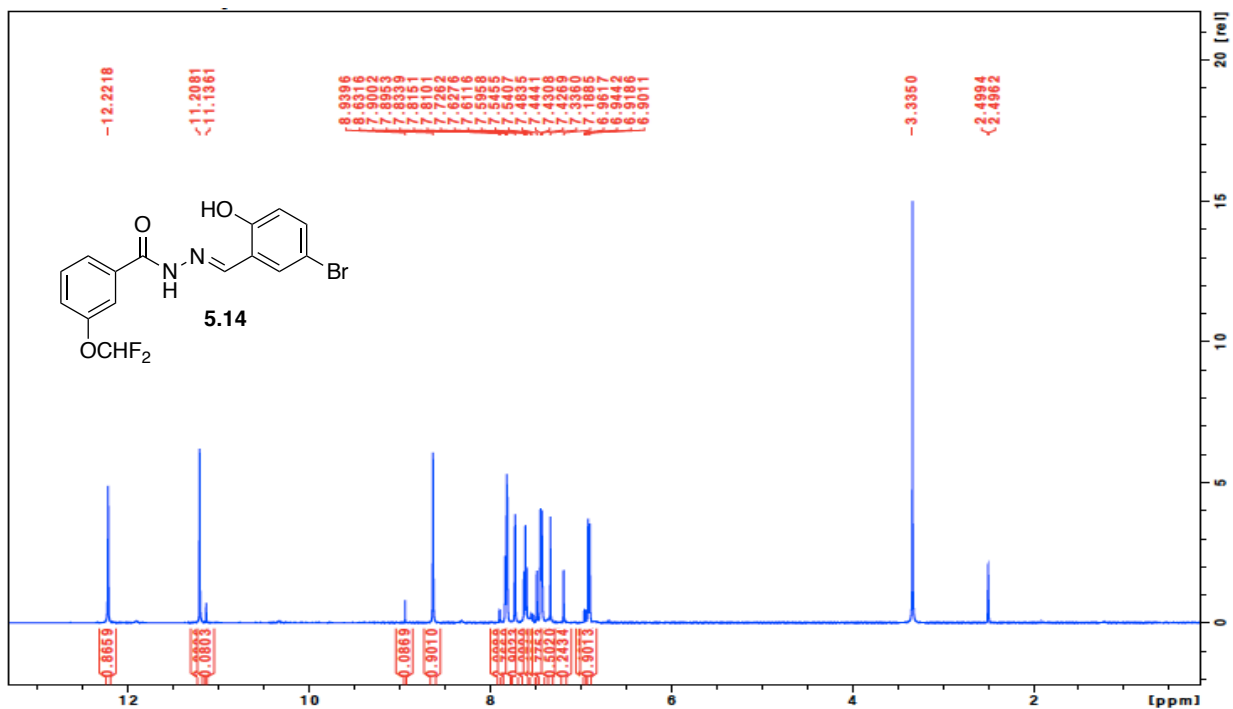
<sup>13</sup>C NMR of compound 5.12



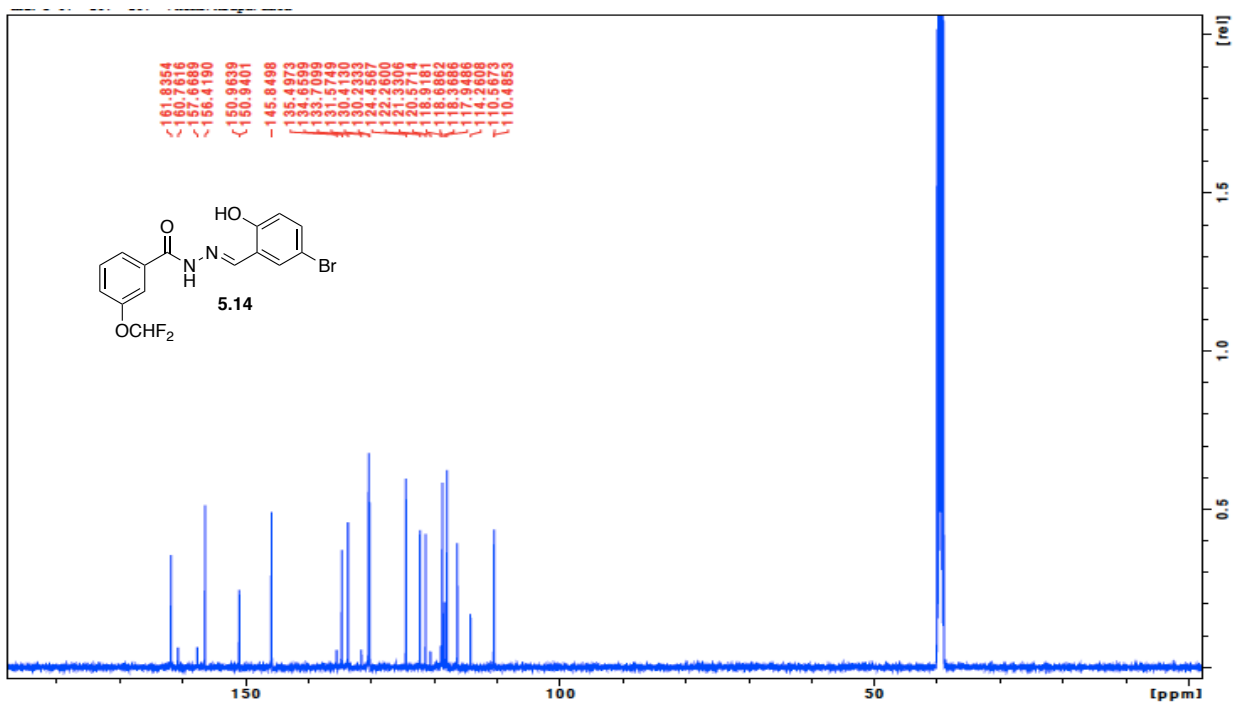
**<sup>1</sup>H NMR of compound 5.13**



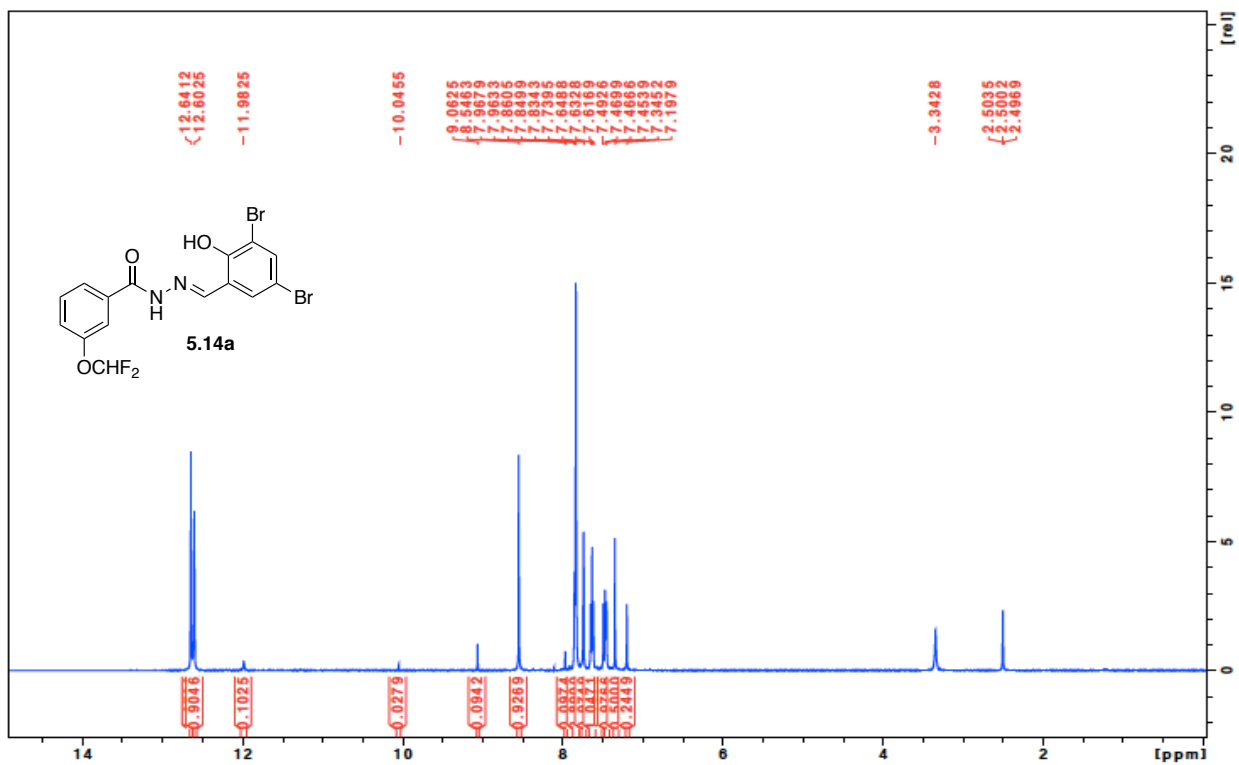
**<sup>13</sup>C NMR of compound 5.13**



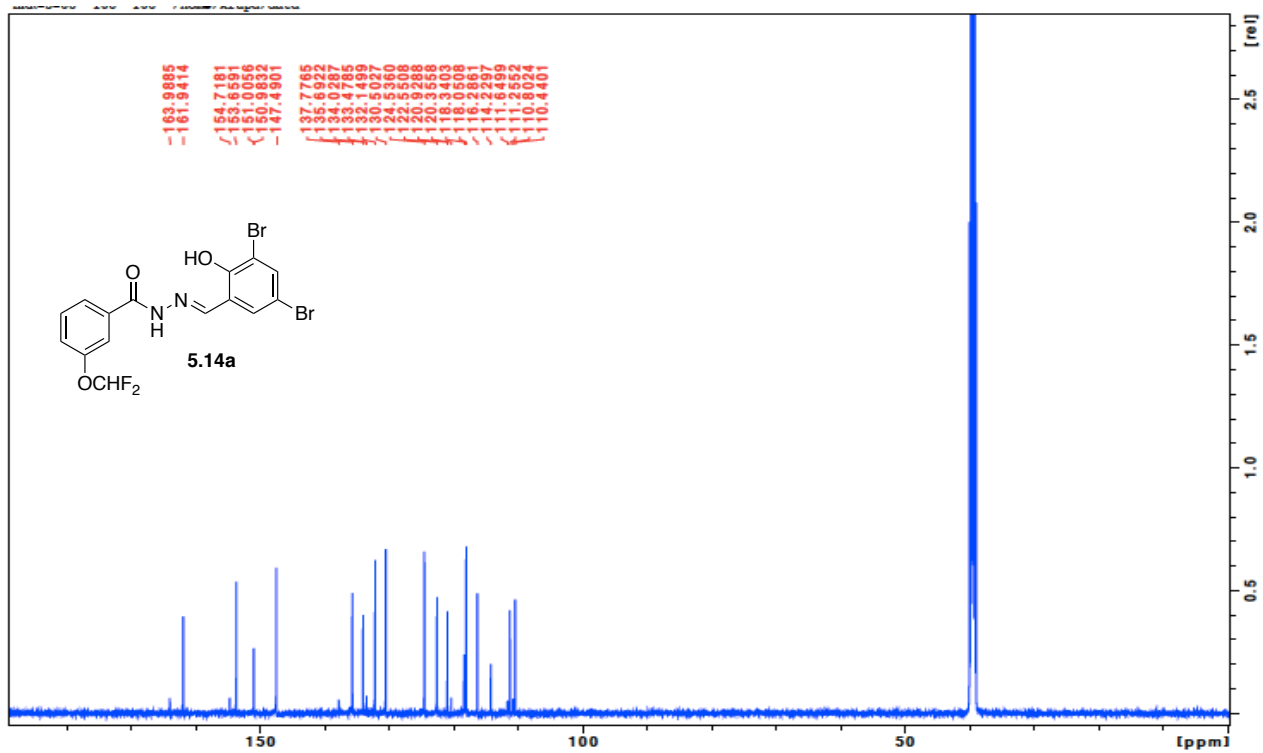
<sup>1</sup>H NMR of compound 5.14



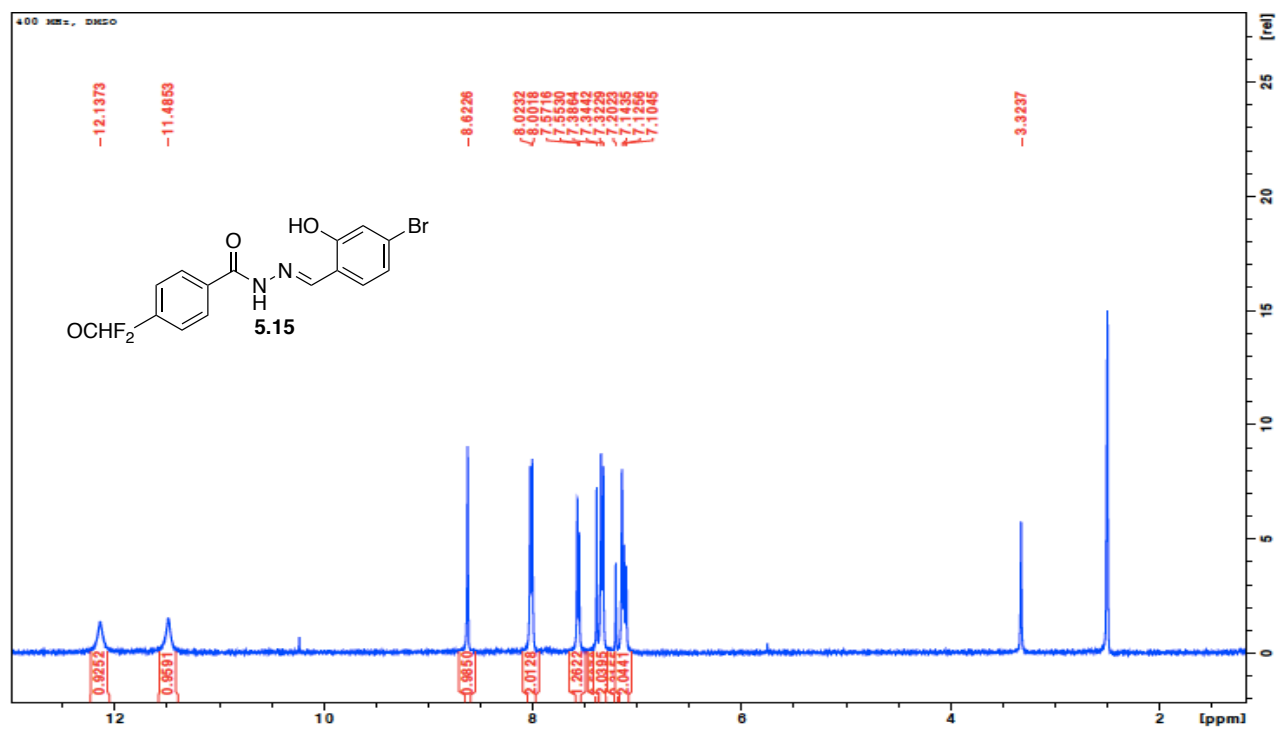
<sup>13</sup>C NMR of compound 5.14



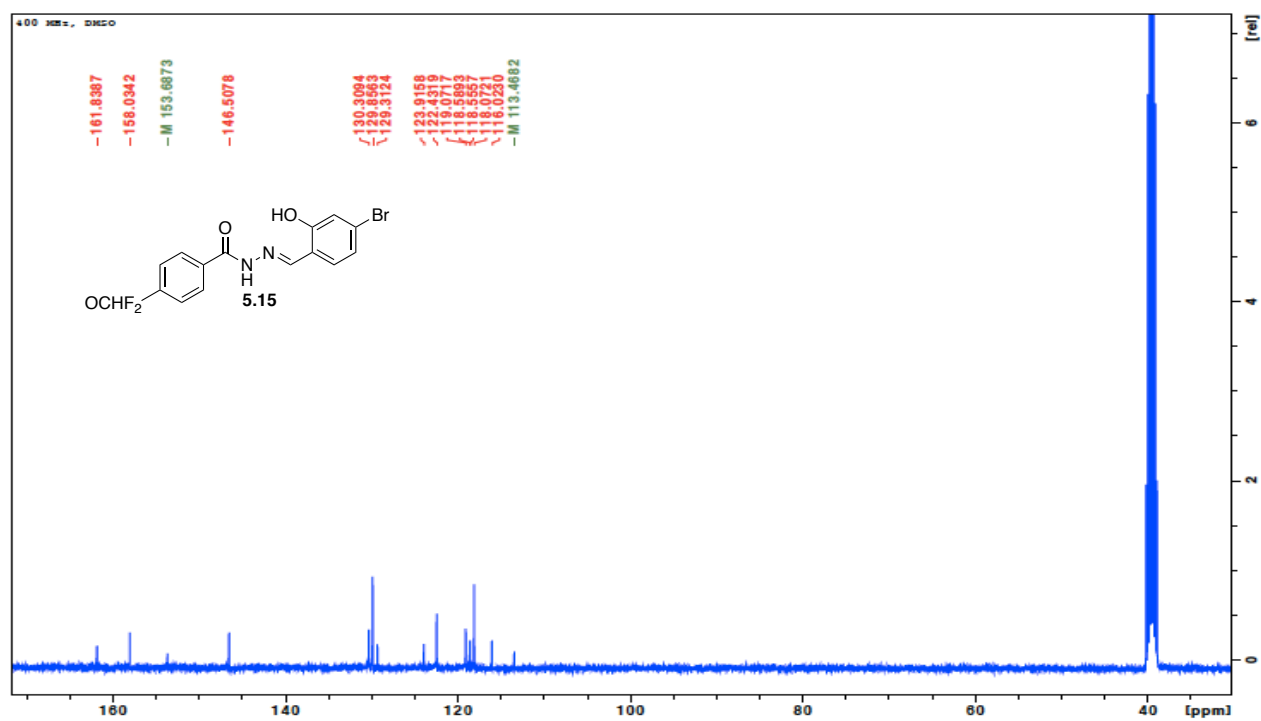
**<sup>1</sup>H NMR of compound 5.14a**



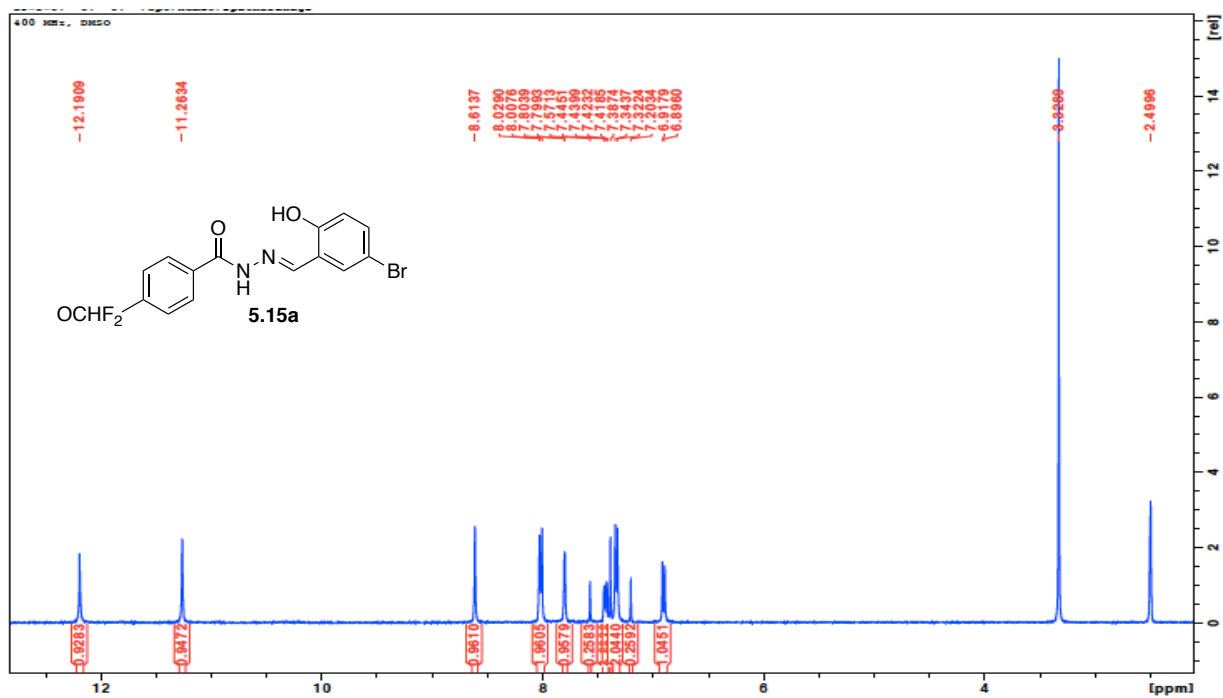
**<sup>13</sup>C NMR of compound 5.14a**



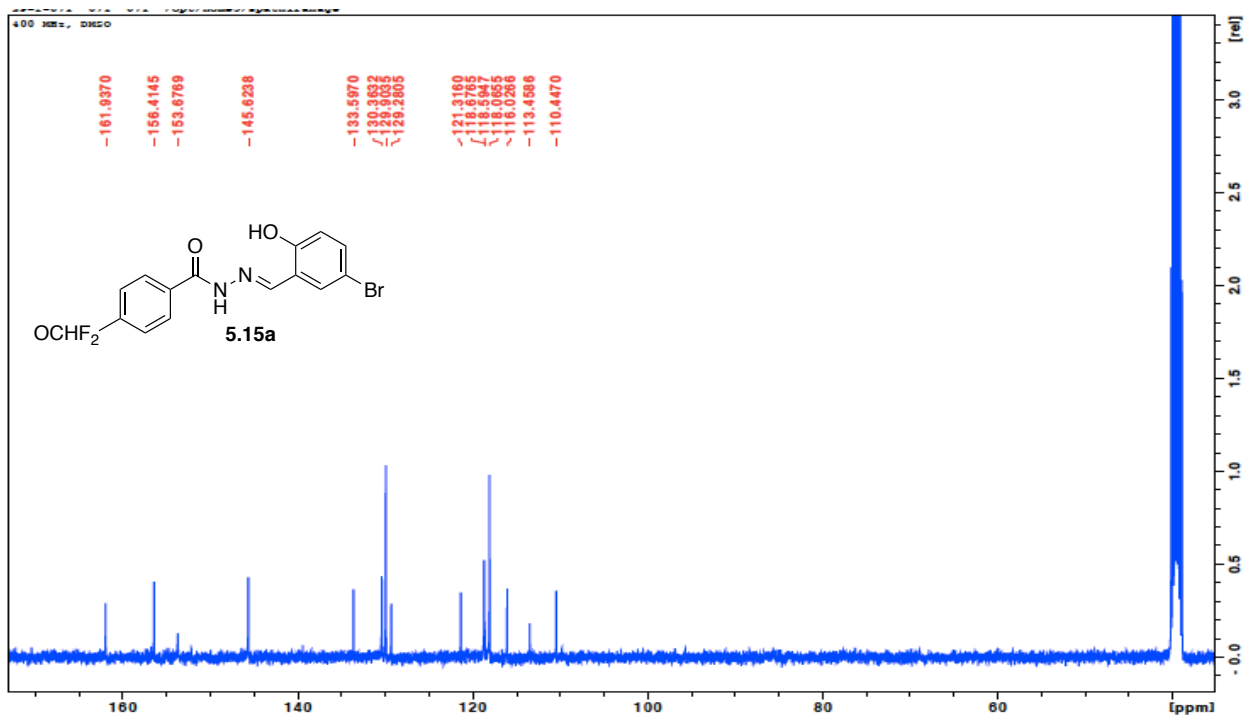
<sup>1</sup>H NMR of compound 5.15



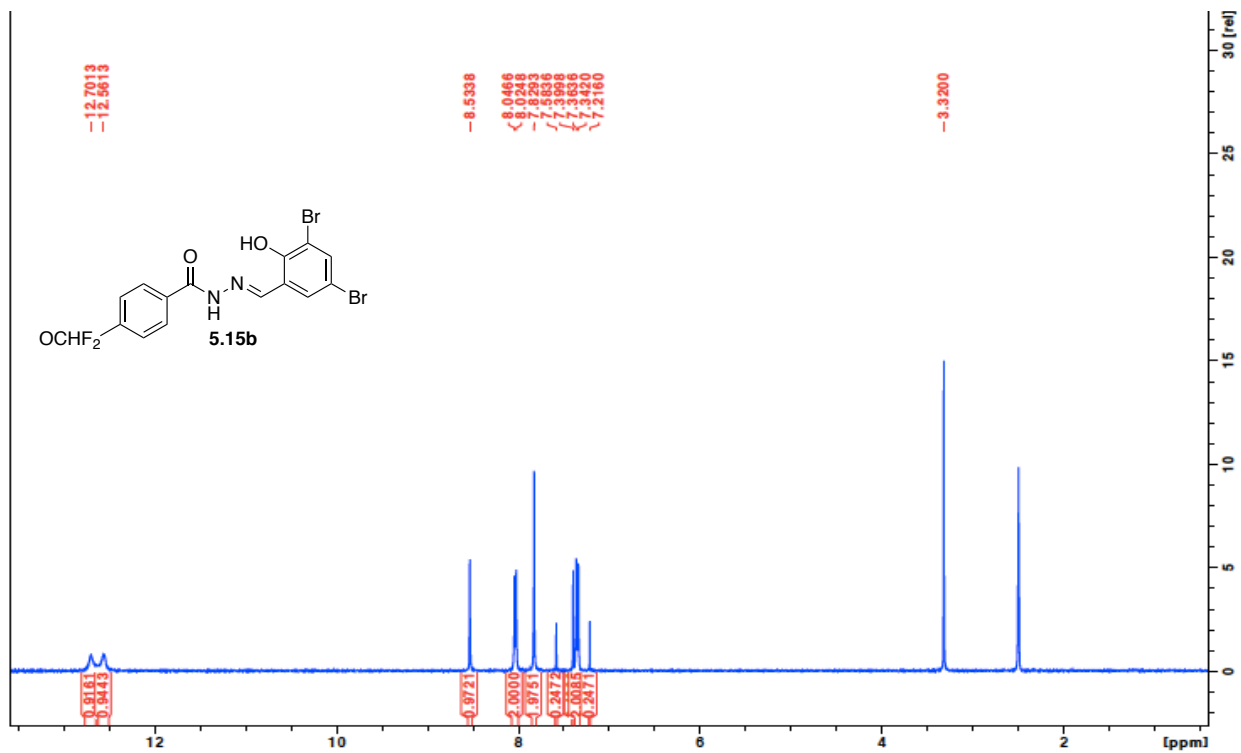
<sup>13</sup>C NMR of compound 5.15



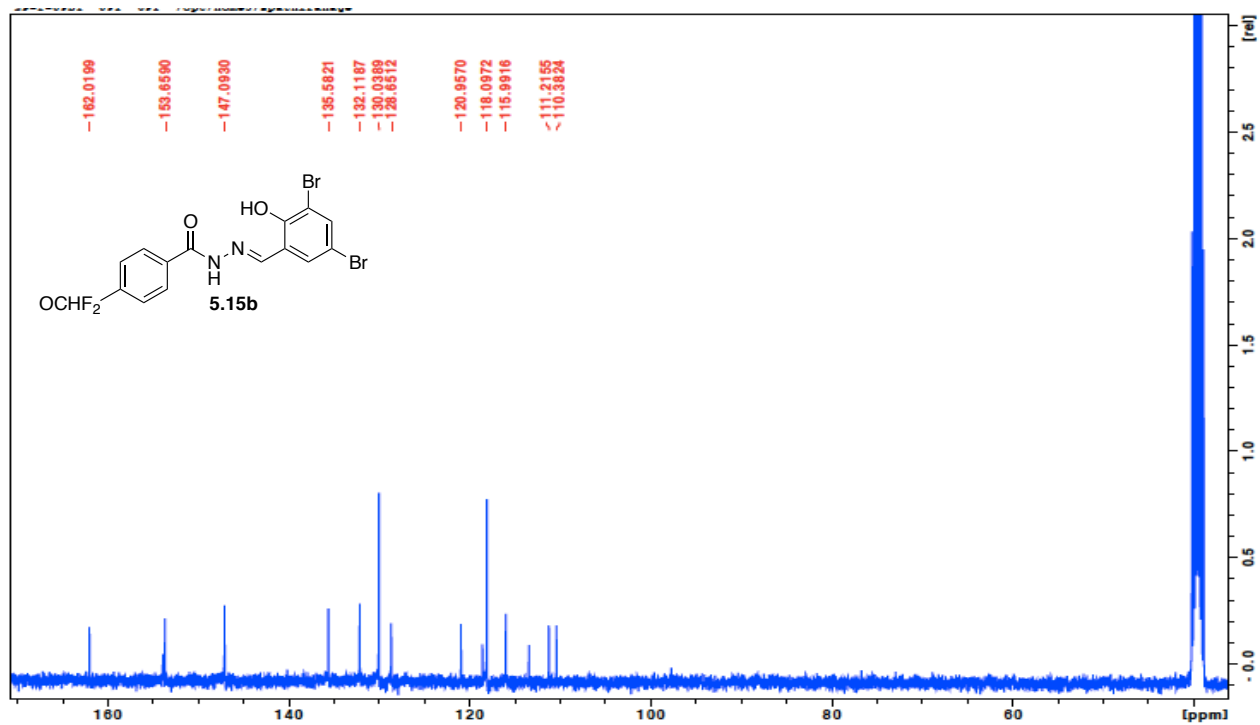
**<sup>1</sup>H NMR of compound 5.15a**



**<sup>13</sup>C NMR of compound 5.15a**

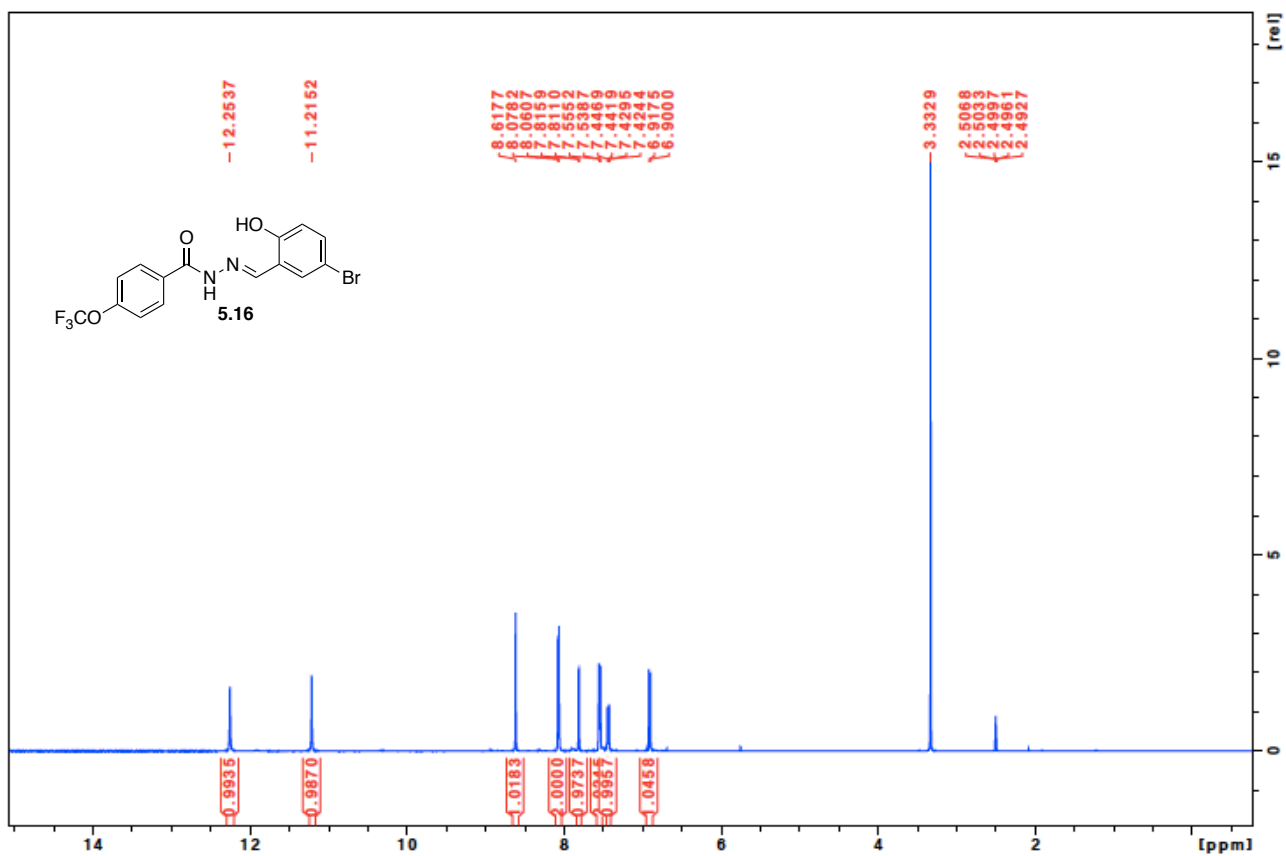


<sup>1</sup>H NMR of compound 5.15b

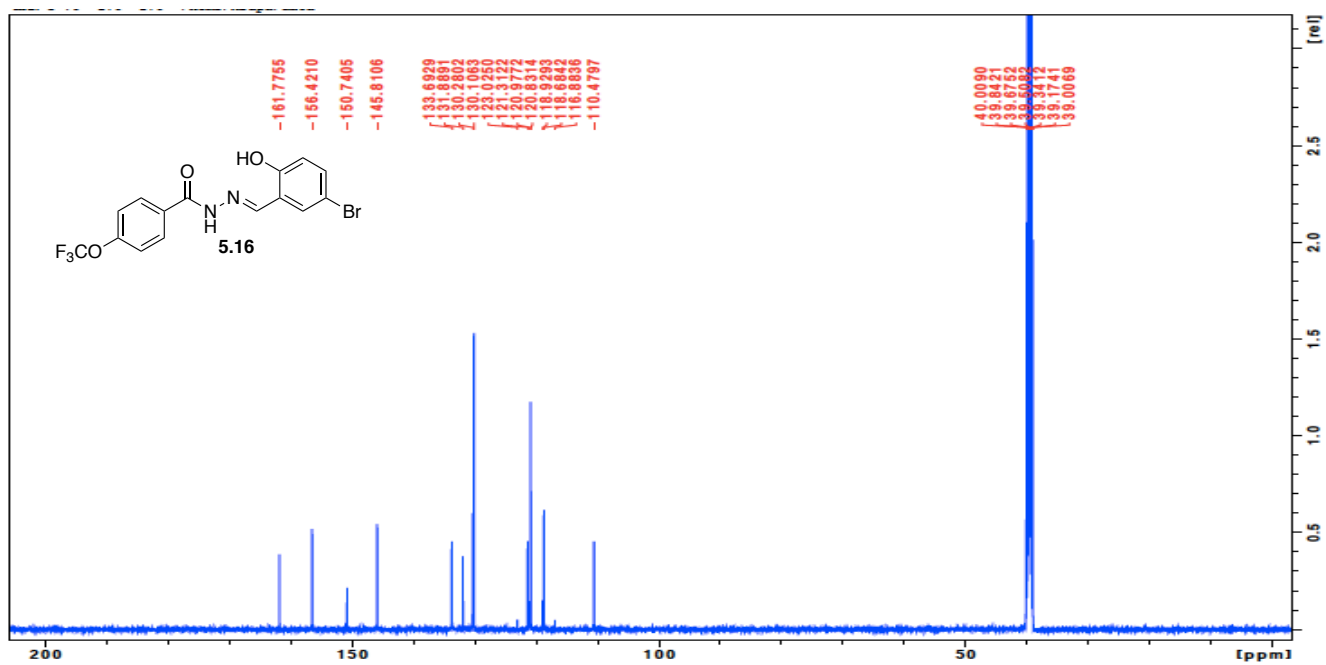


<sup>13</sup>C NMR of compound 5.15b

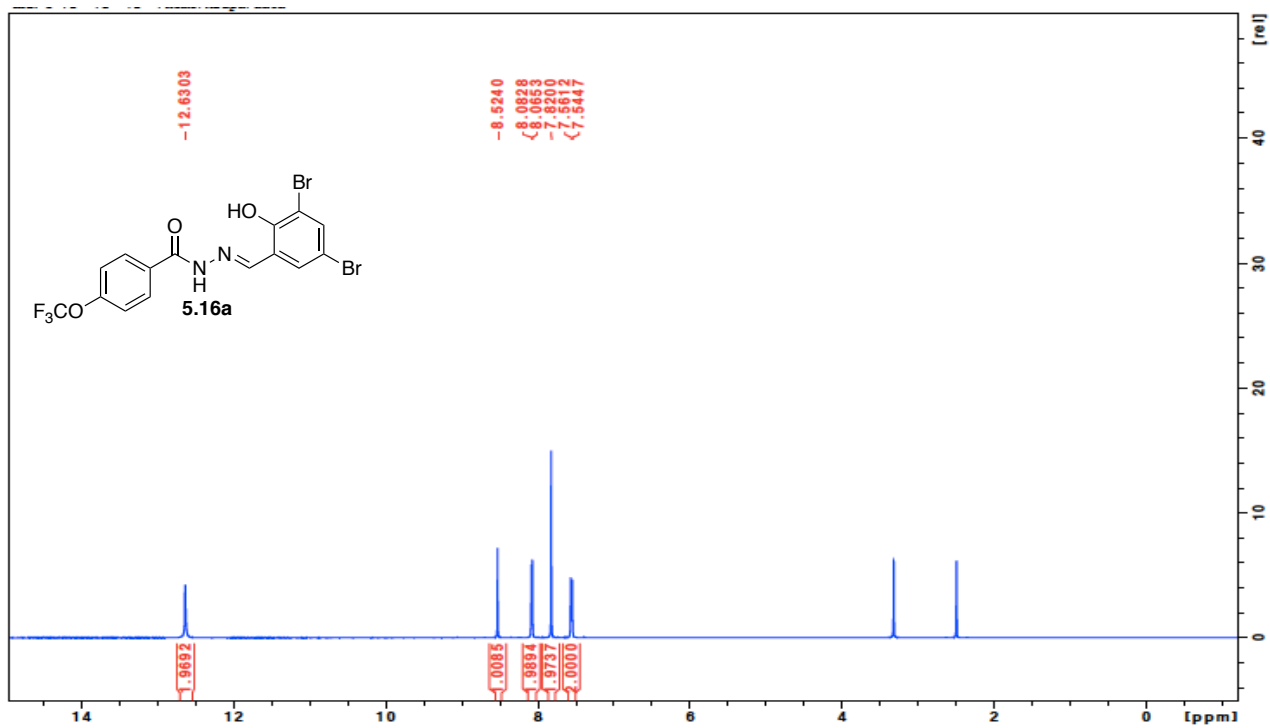




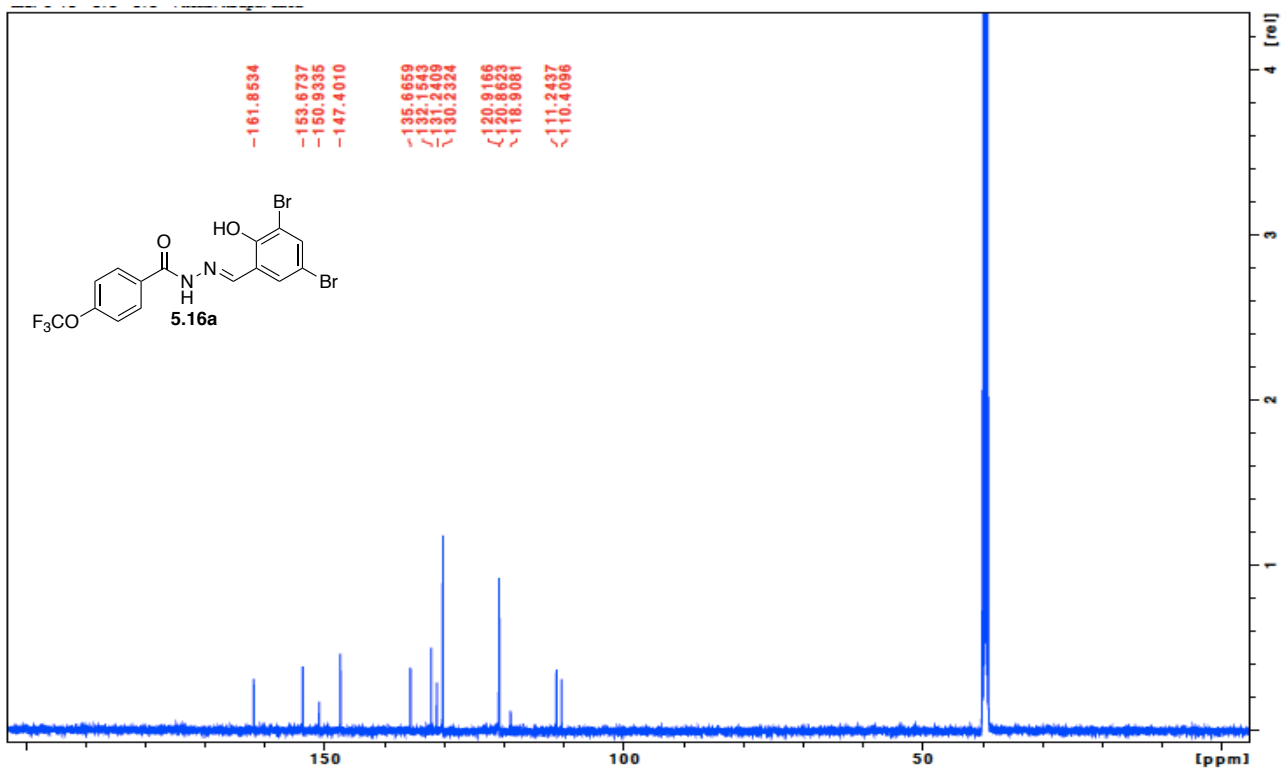
**<sup>1</sup>H NMR of compound 5.16**



**<sup>13</sup>C NMR of compound 5.16**

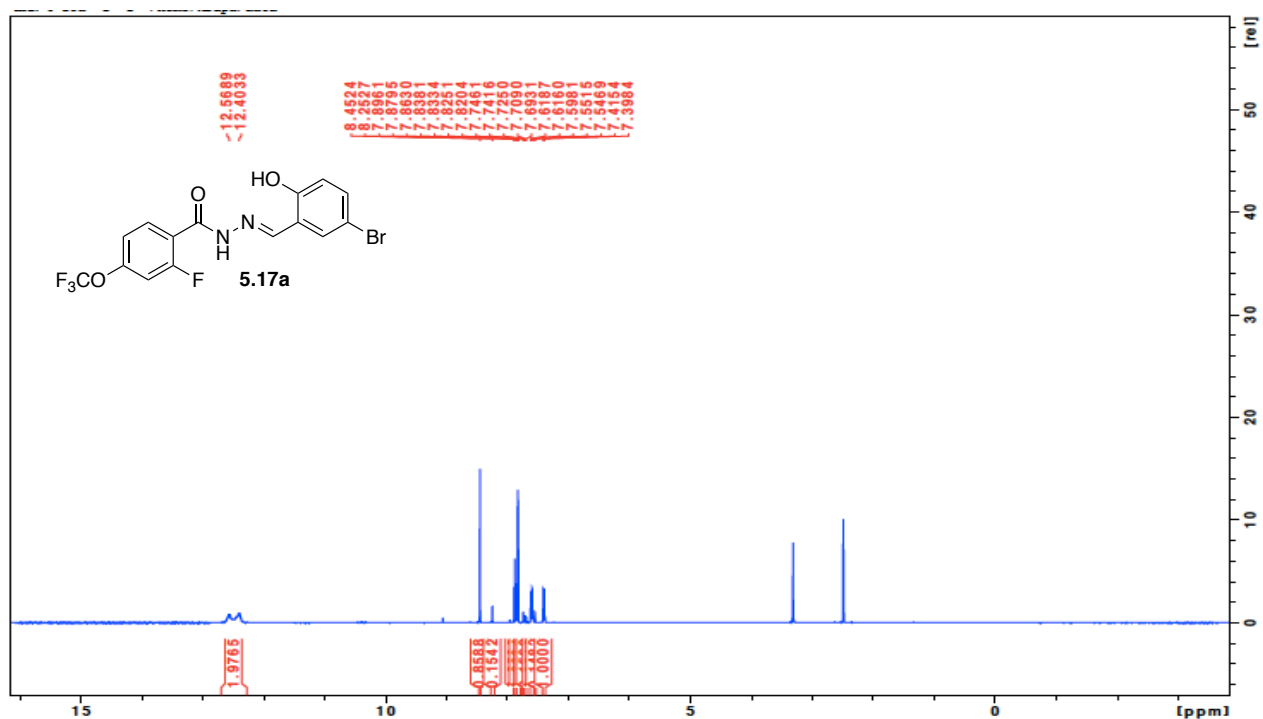


**<sup>1</sup>H NMR of compound 5.16a**

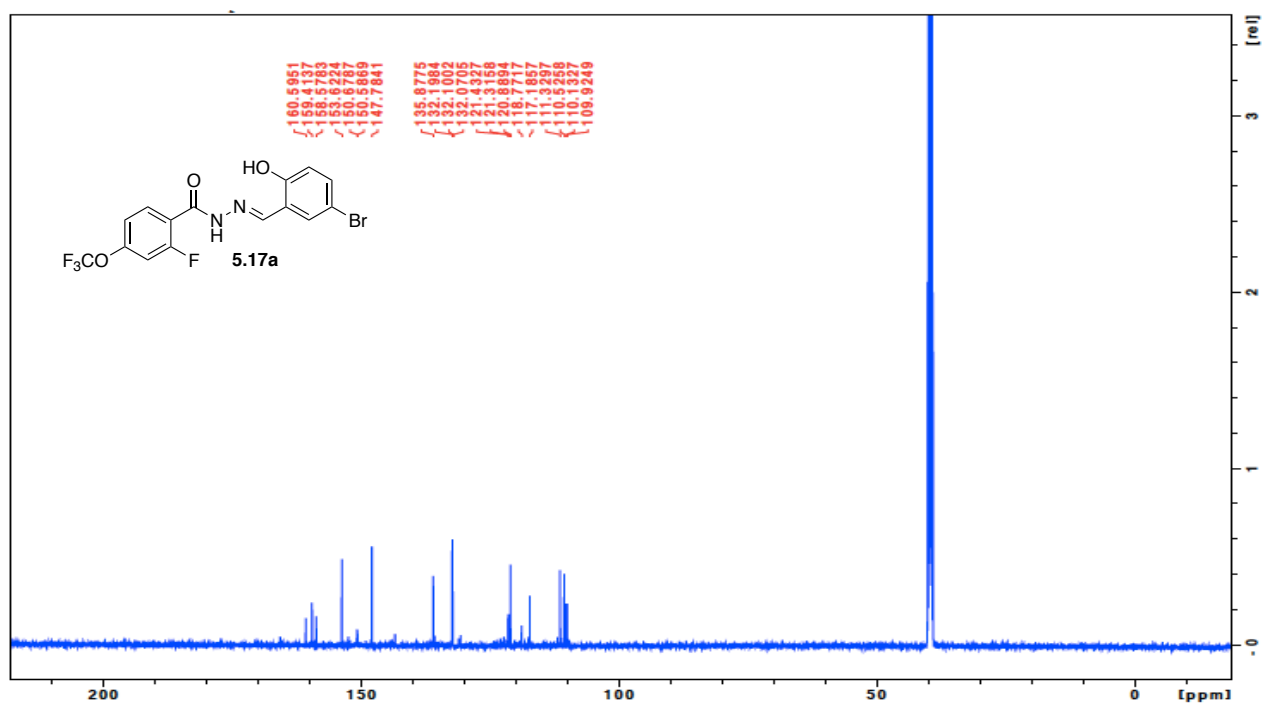


**<sup>13</sup>C NMR of compound 5.16a**

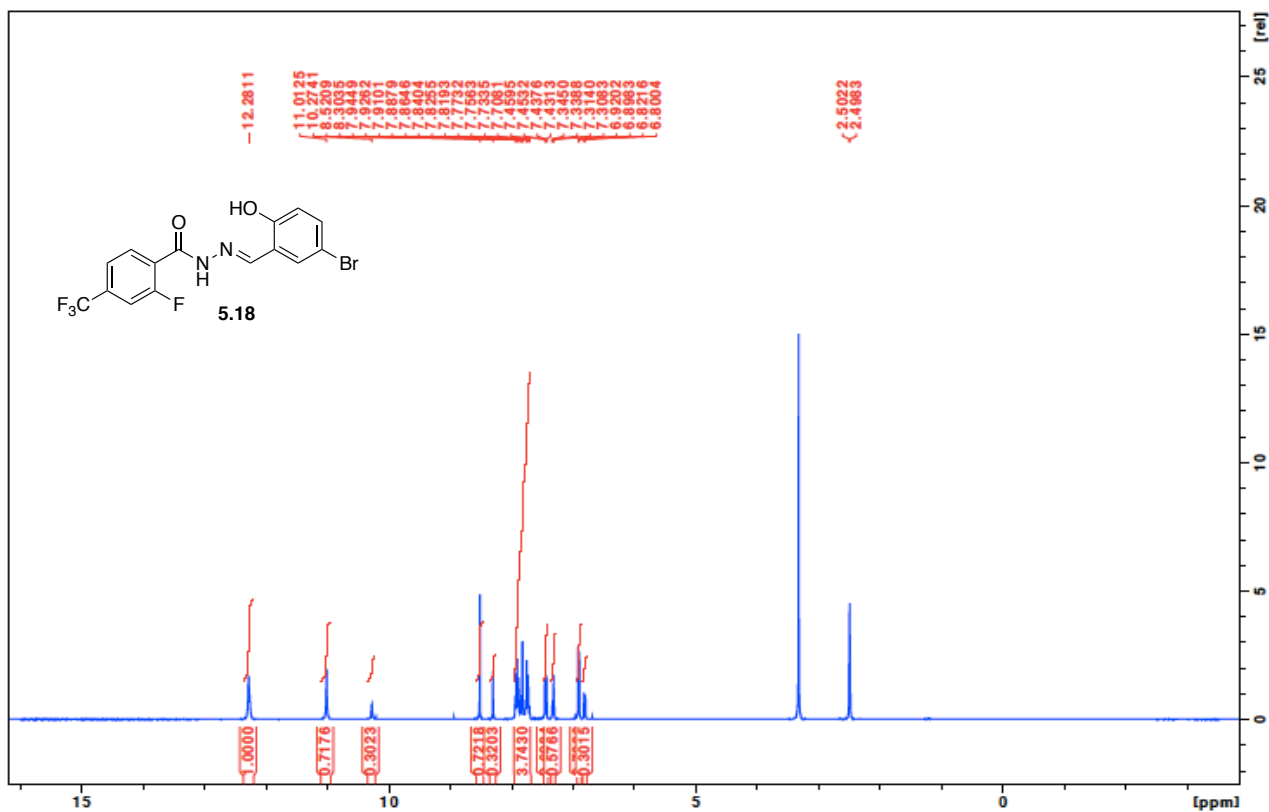




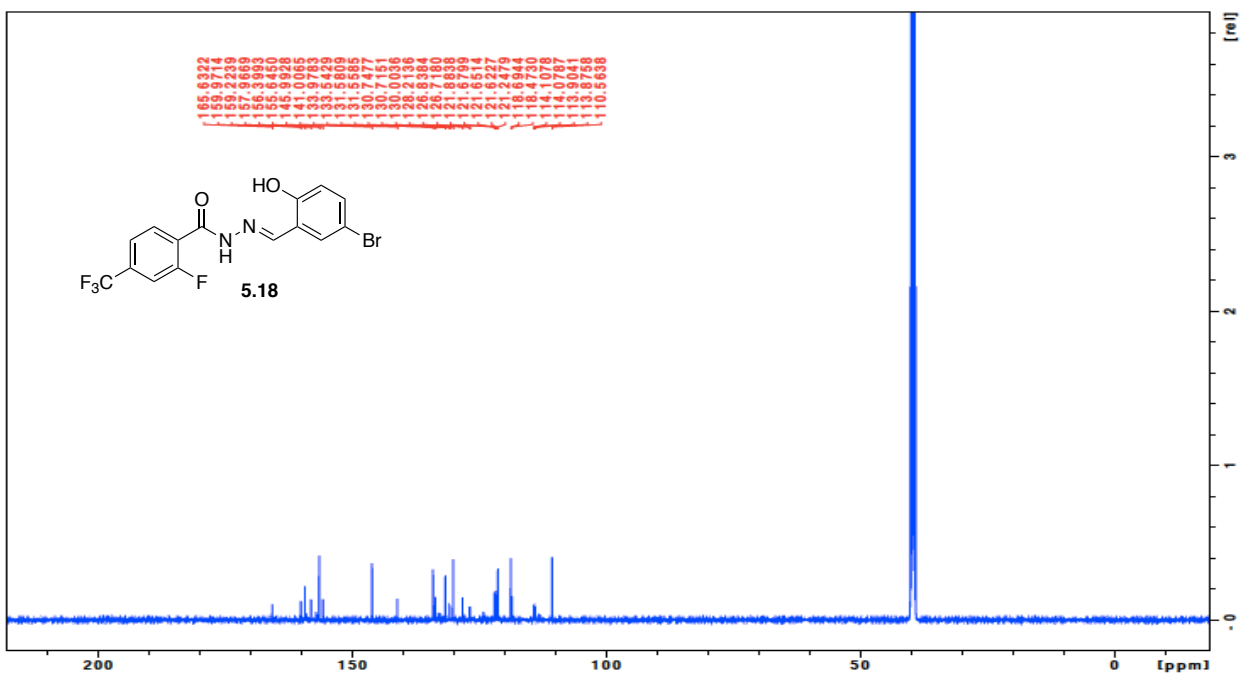
<sup>1</sup>H NMR of compound 5.17a



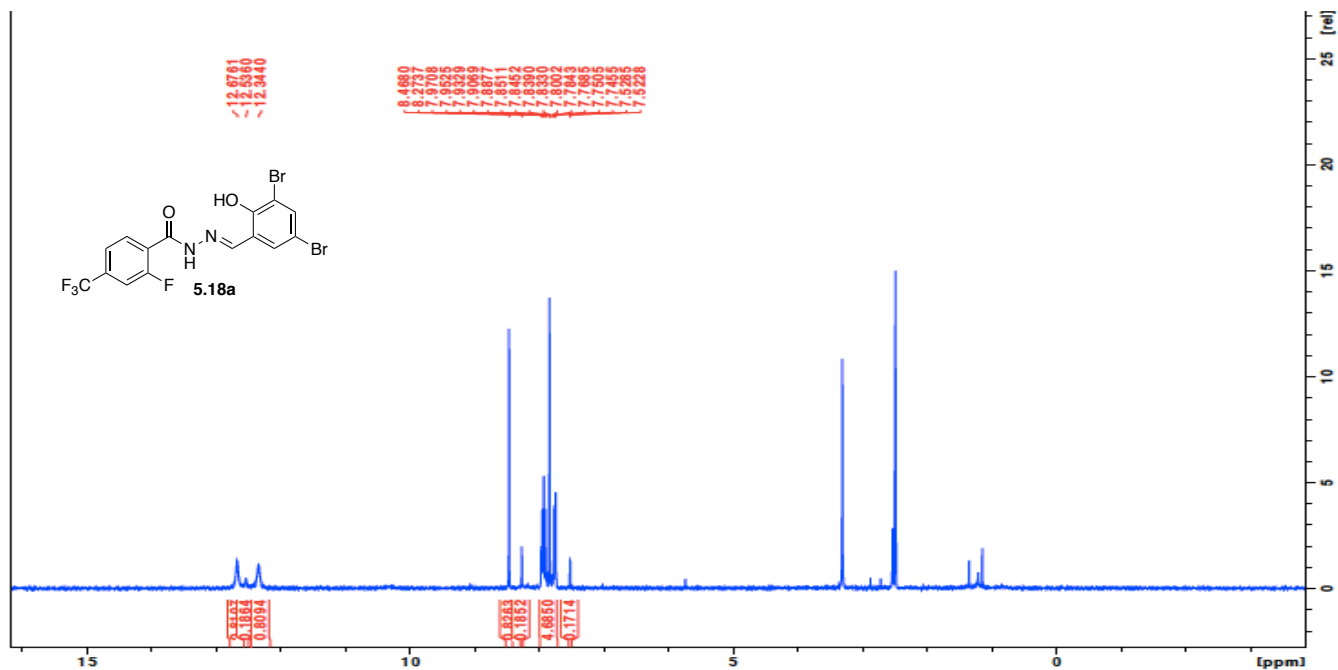
<sup>13</sup>C NMR of compound 5.17a



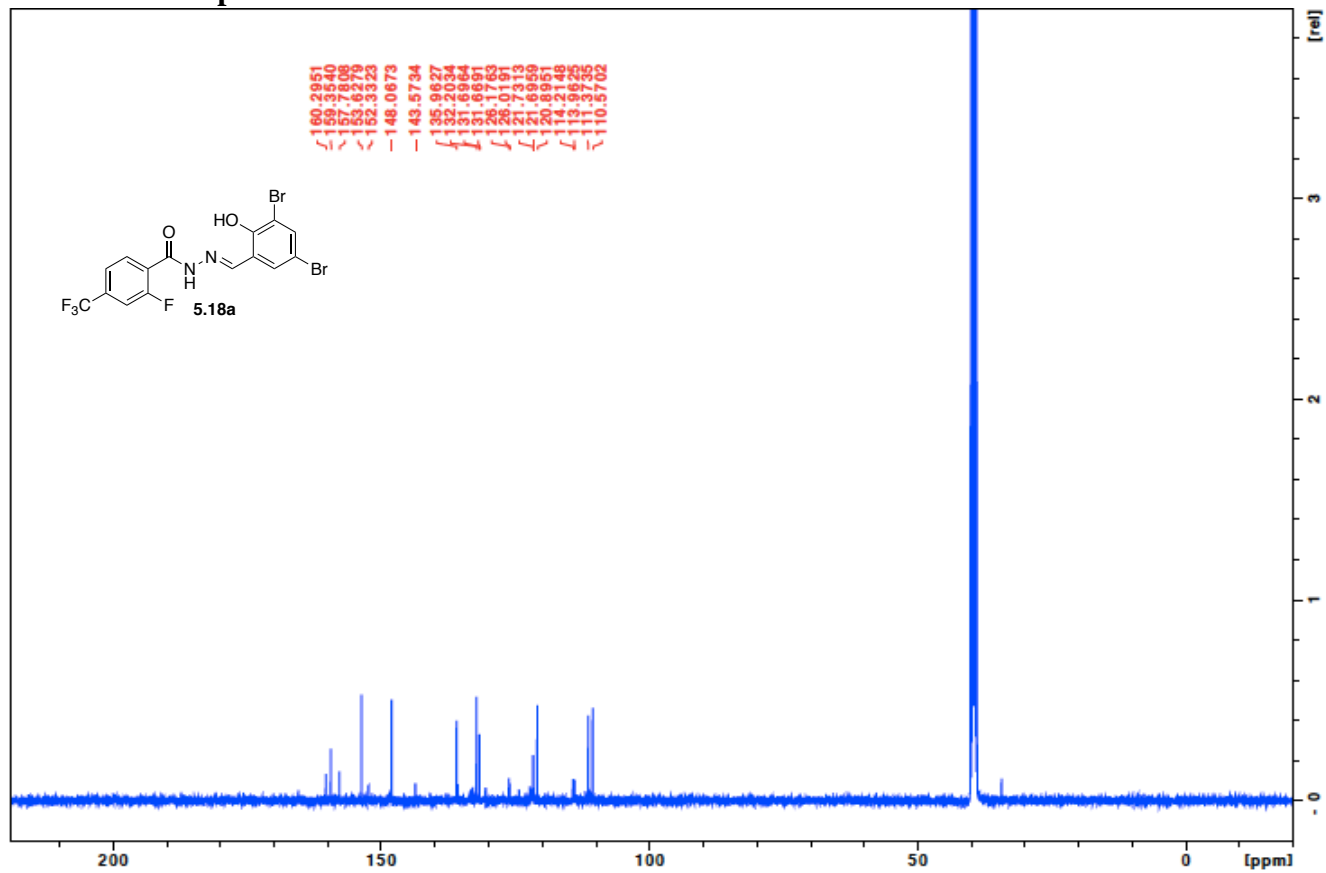
**<sup>1</sup>H NMR of compound 5.18**



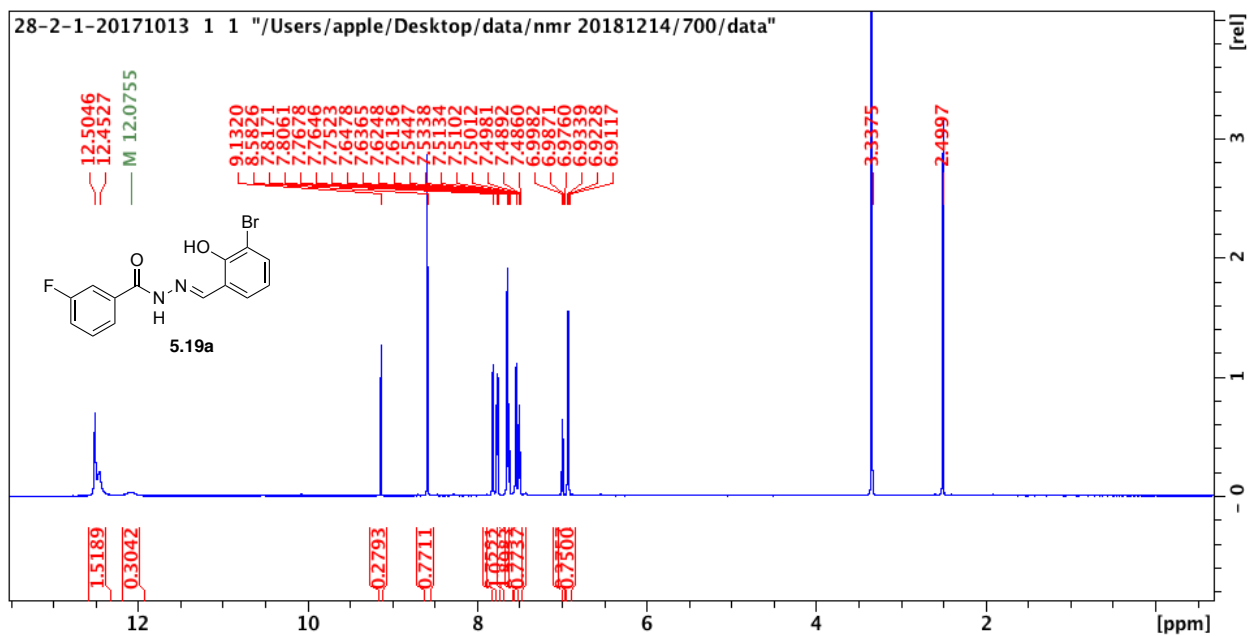
**<sup>13</sup>C NMR of compound 5.18**



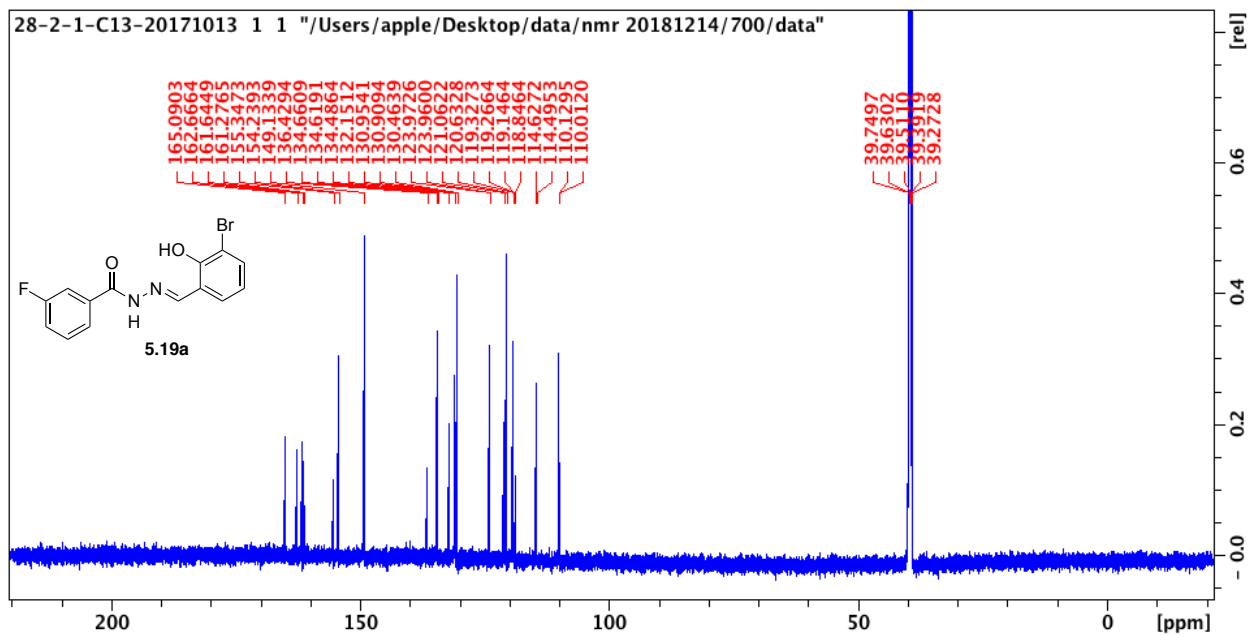
**<sup>1</sup>H NMR of compound 5.18a**



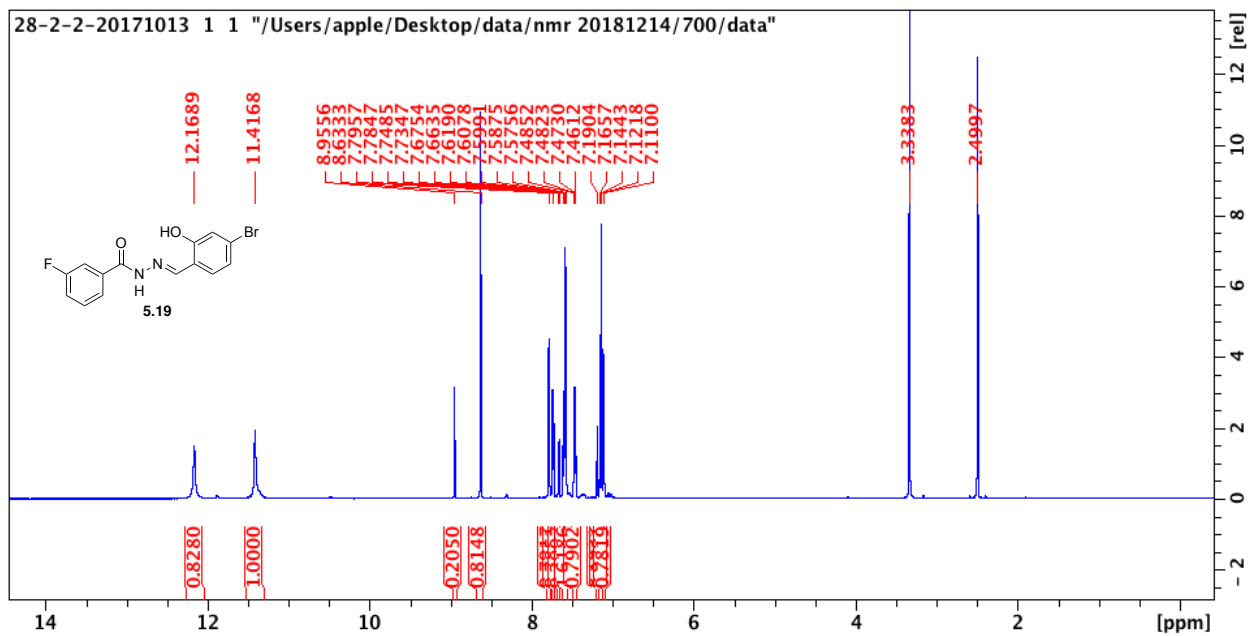
**<sup>13</sup>C NMR of compound 5.18a**



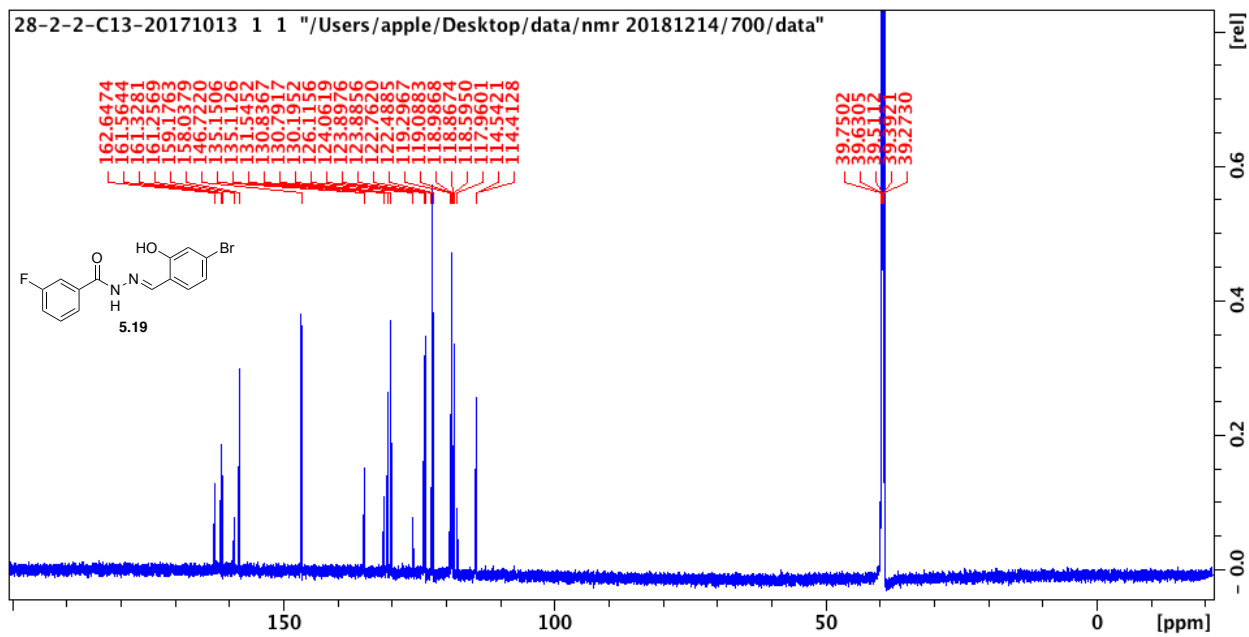
<sup>1</sup>H NMR of compound 5.19a



<sup>13</sup>C NMR of compound 5.19a

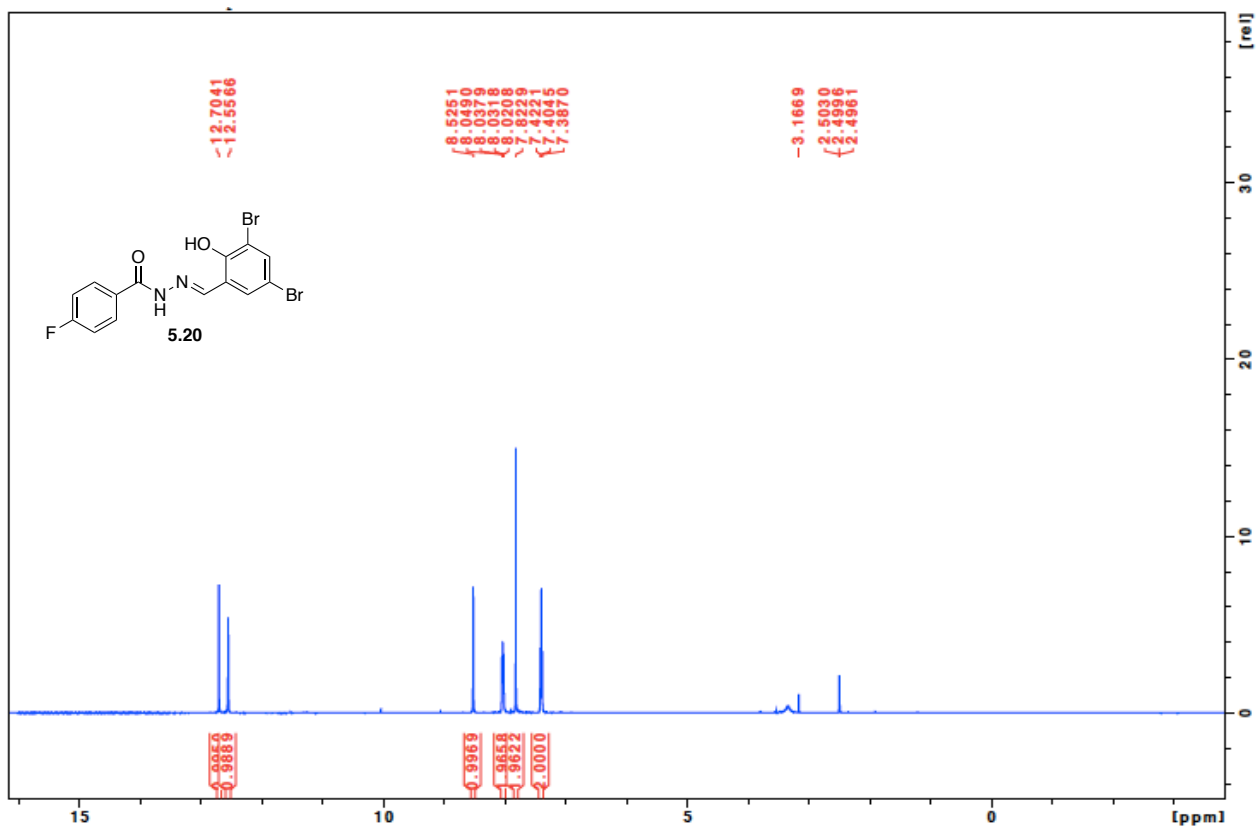


<sup>1</sup>H NMR of compound 5.19

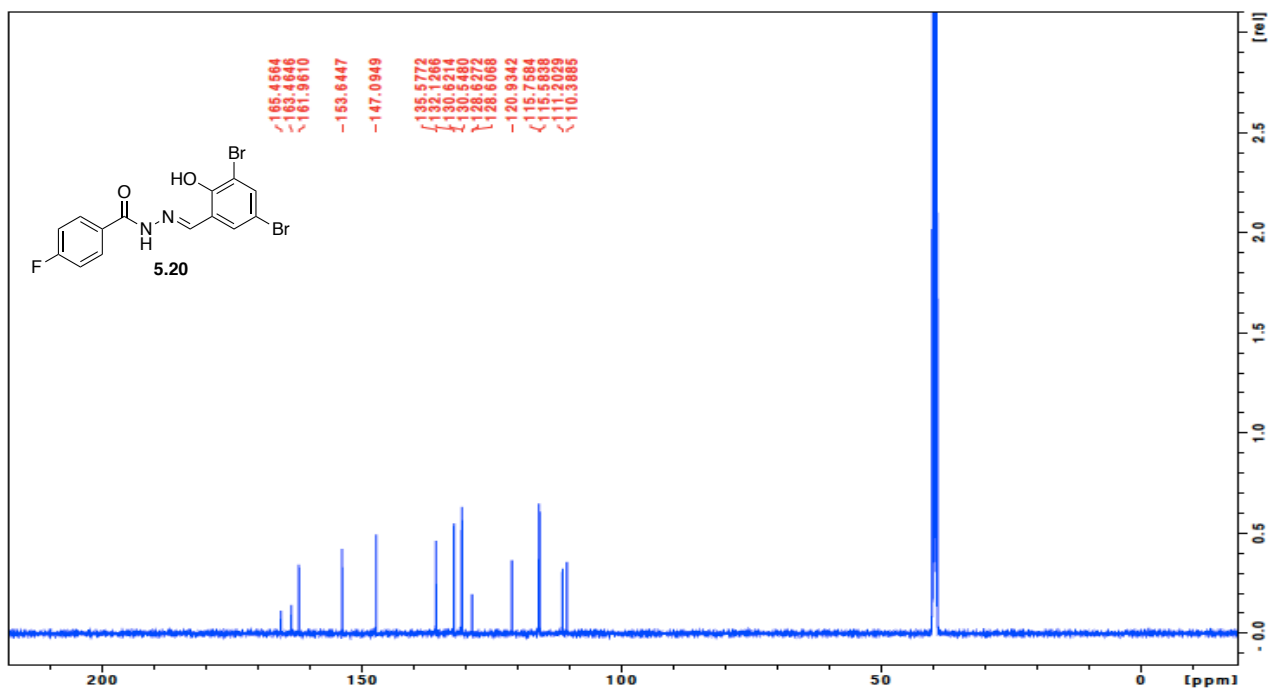


<sup>13</sup>C NMR of compound 5.19

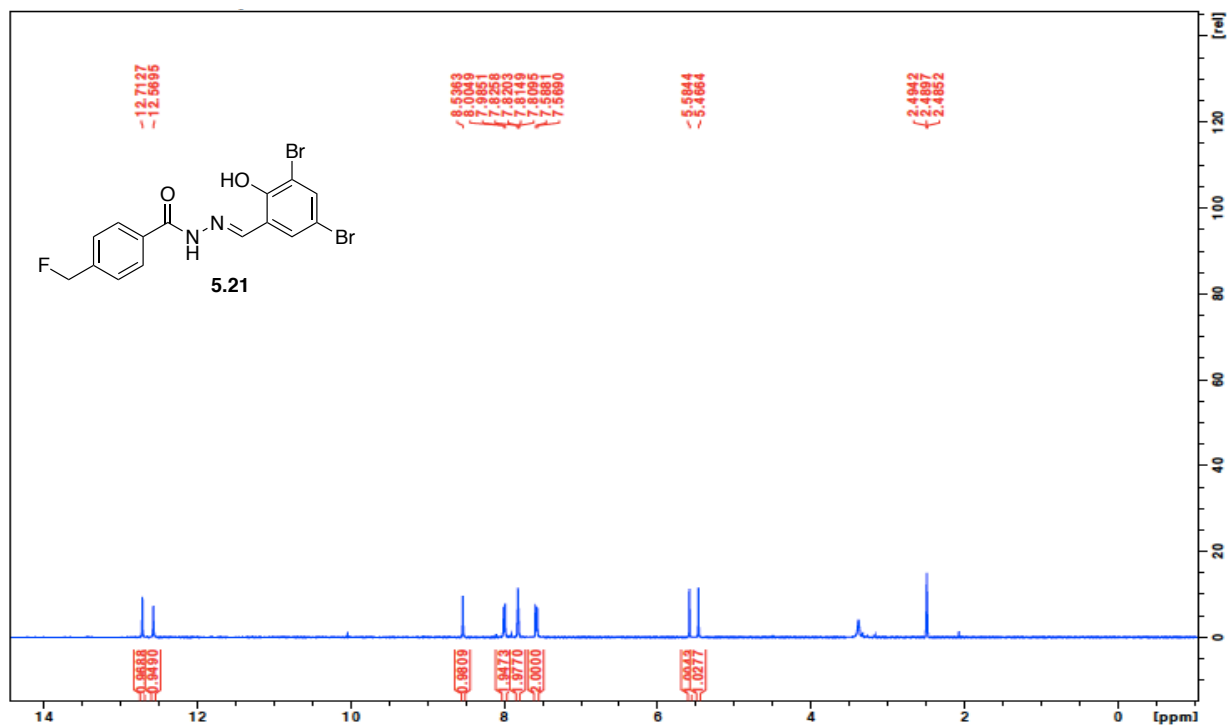




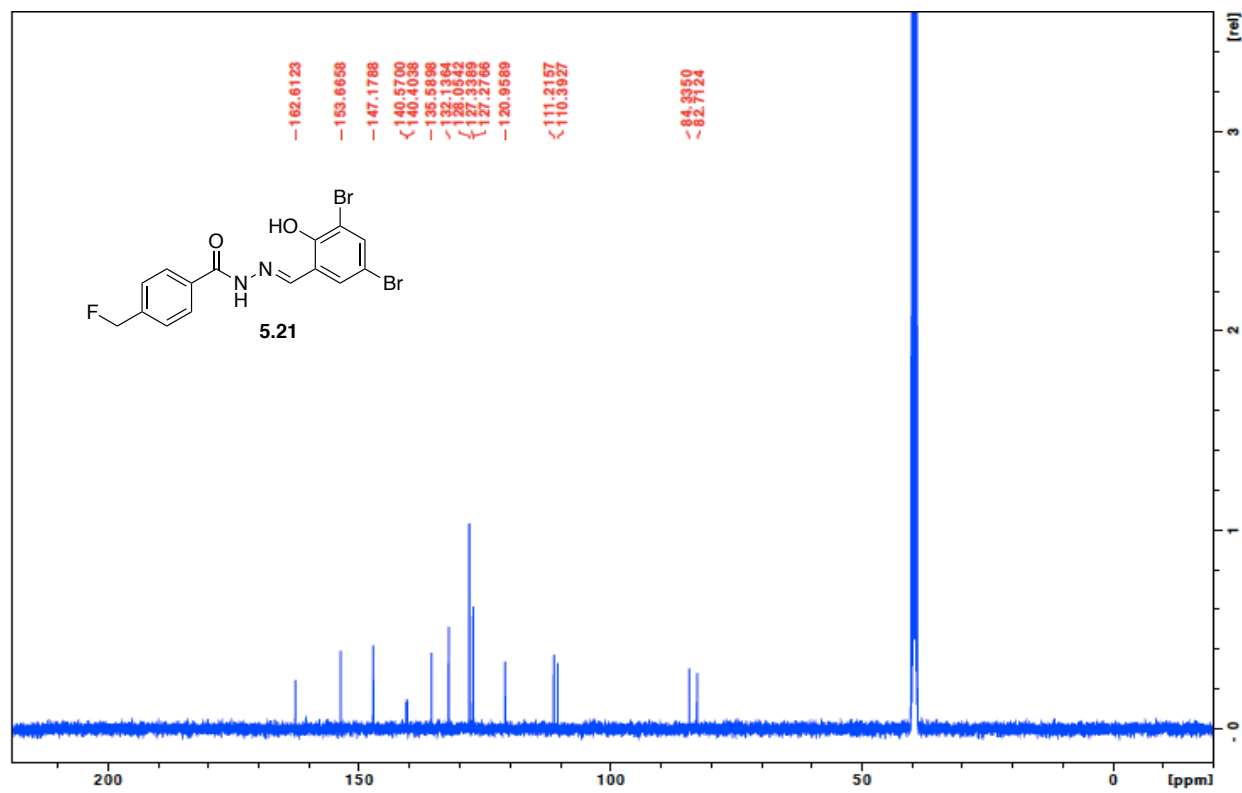
**<sup>1</sup>H NMR of compound 5.20**



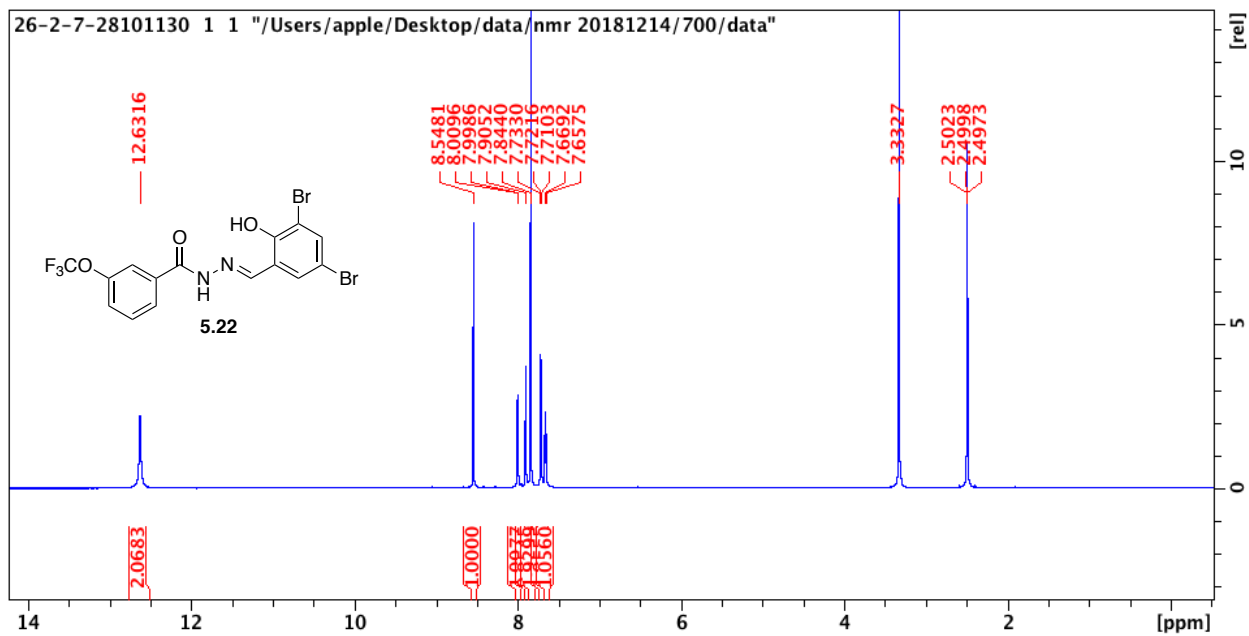
**<sup>13</sup>C NMR of compound 5.20**



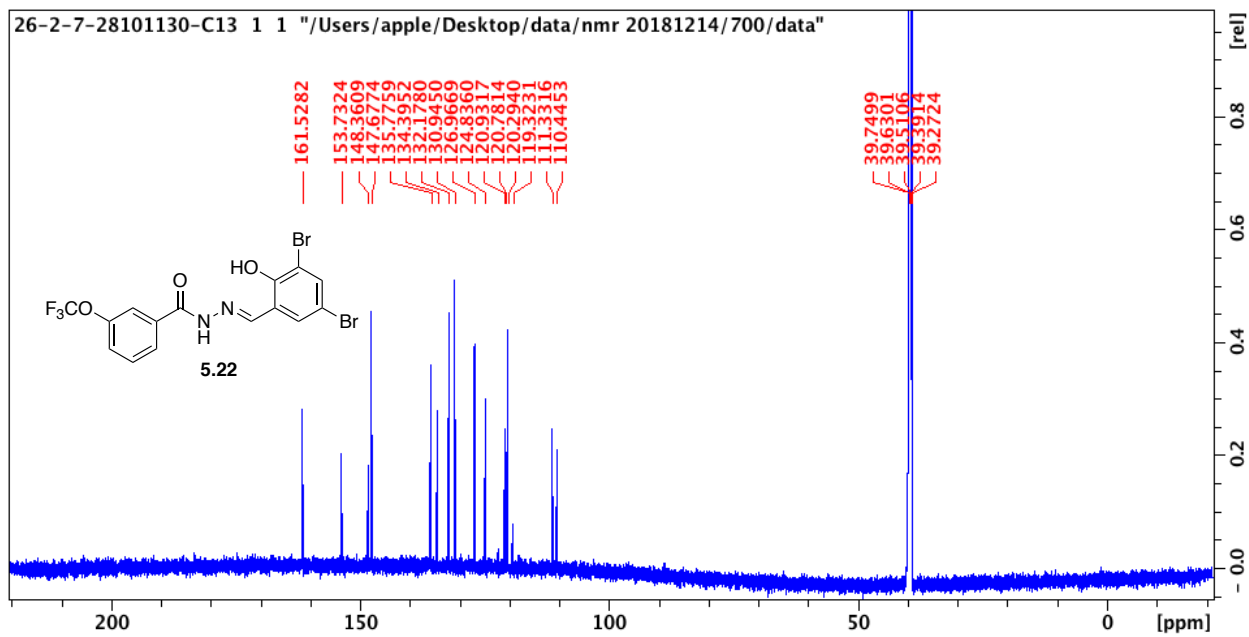
**<sup>1</sup>H NMR of compound 5.21**



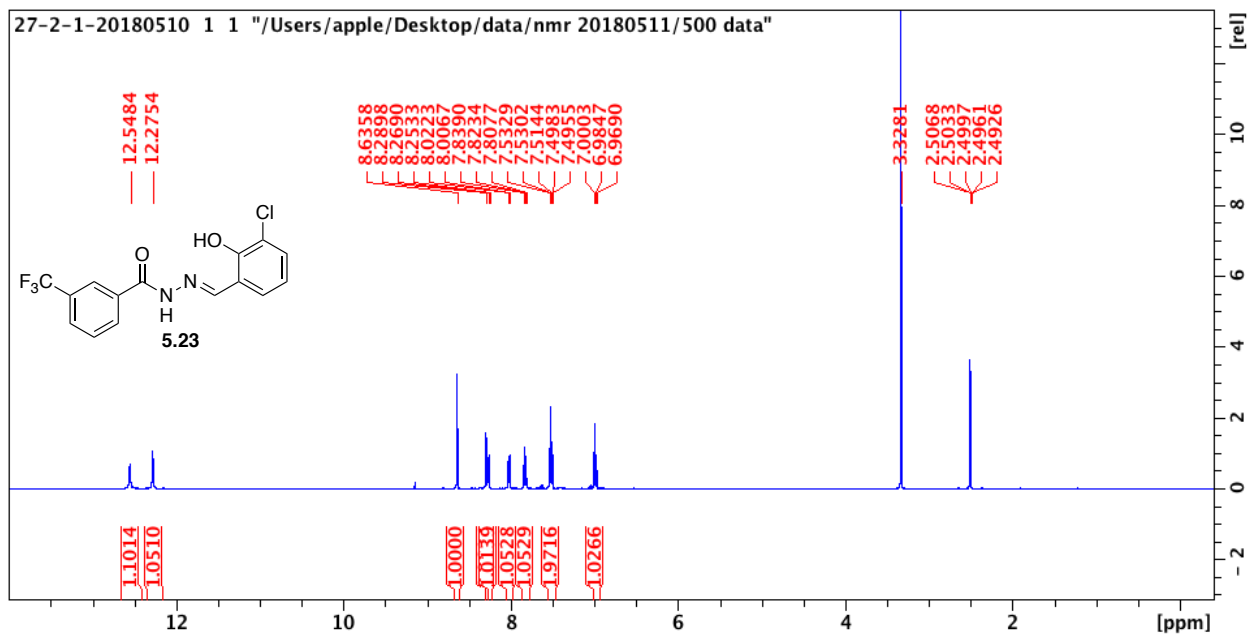
**<sup>13</sup>C NMR of compound 5.21**



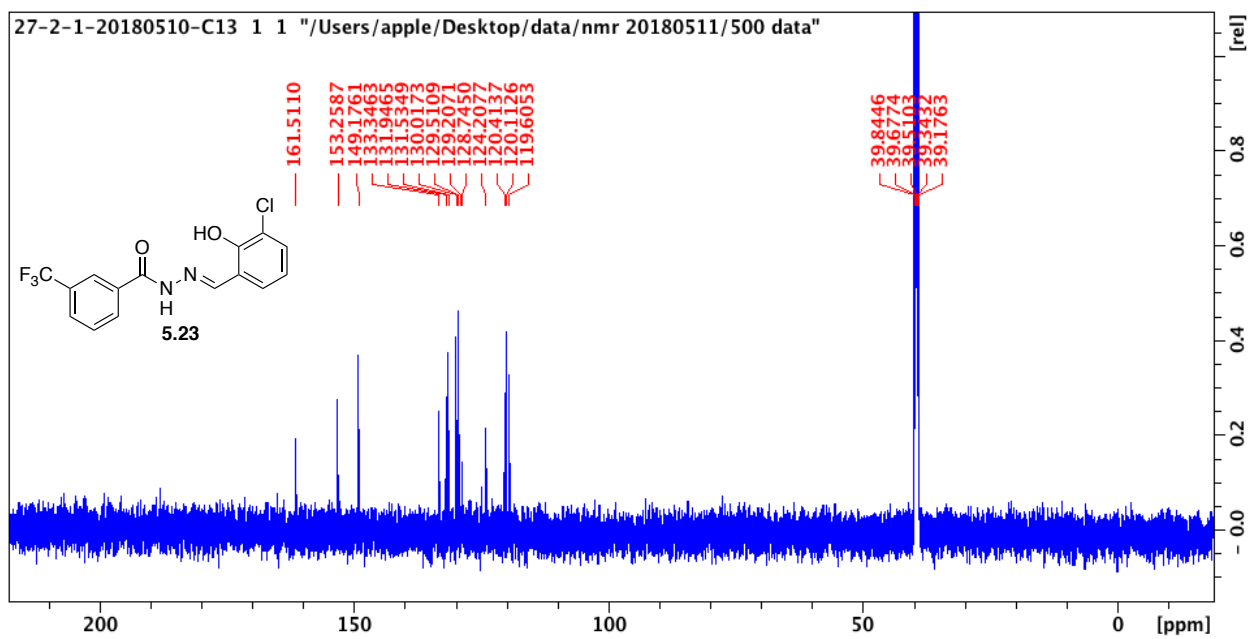
<sup>1</sup>H NMR of compound 5.22



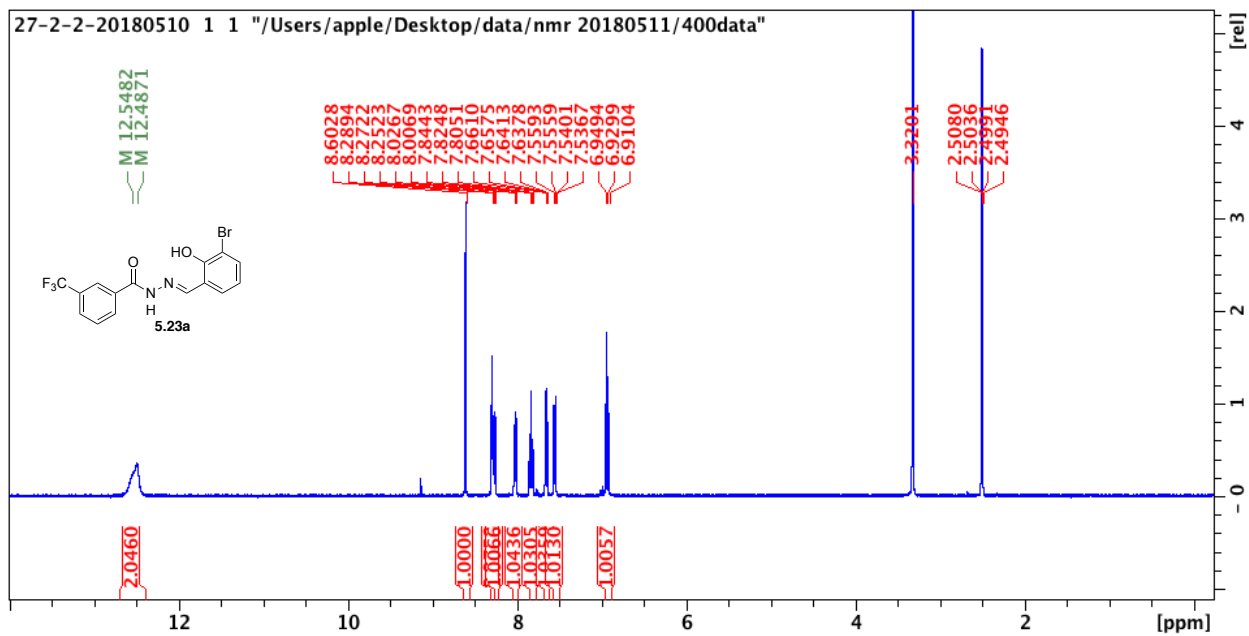
<sup>13</sup>C NMR of compound 5.22



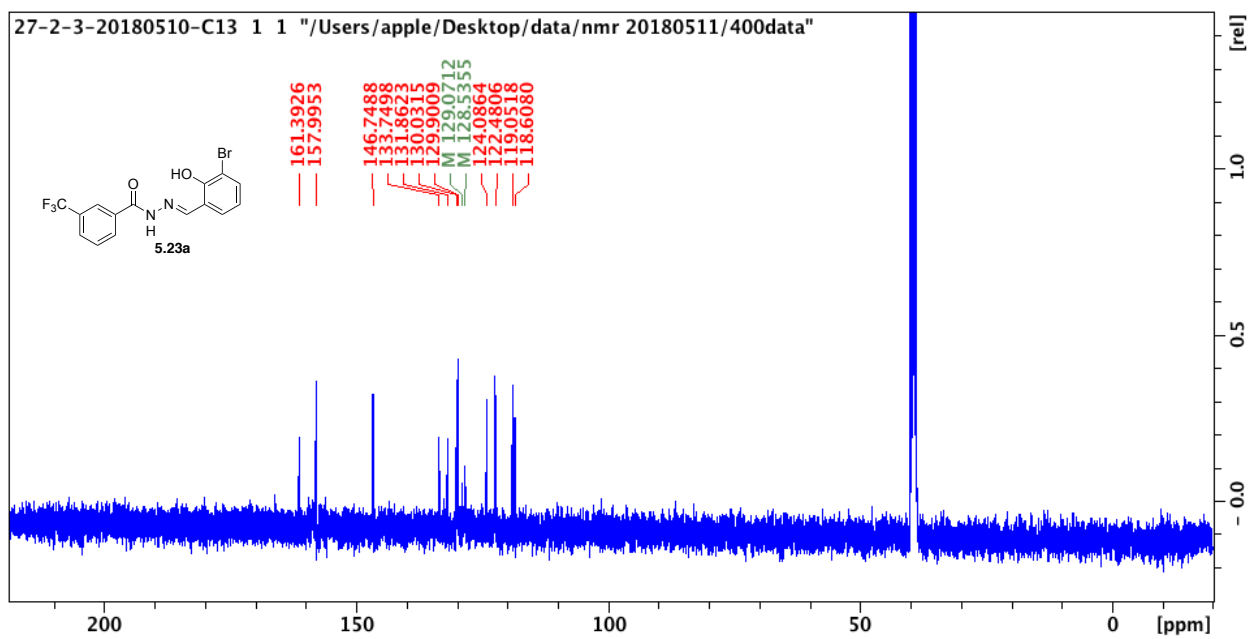
**<sup>1</sup>H NMR of compound 5.23**



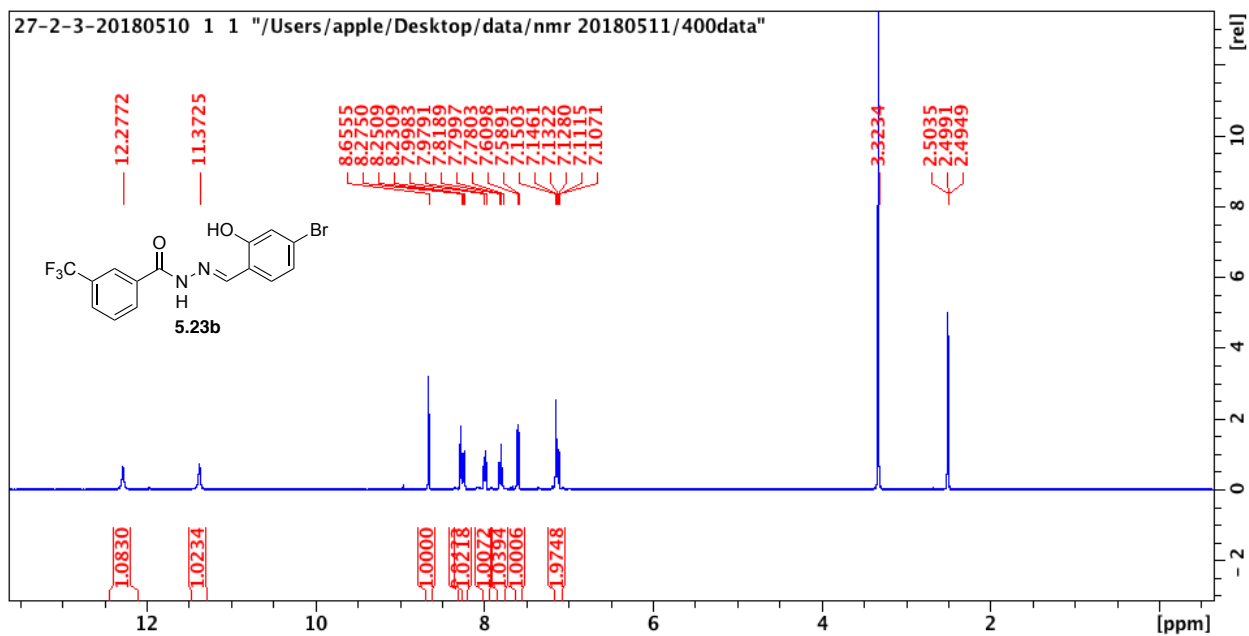
**<sup>13</sup>C NMR of compound 5.23**



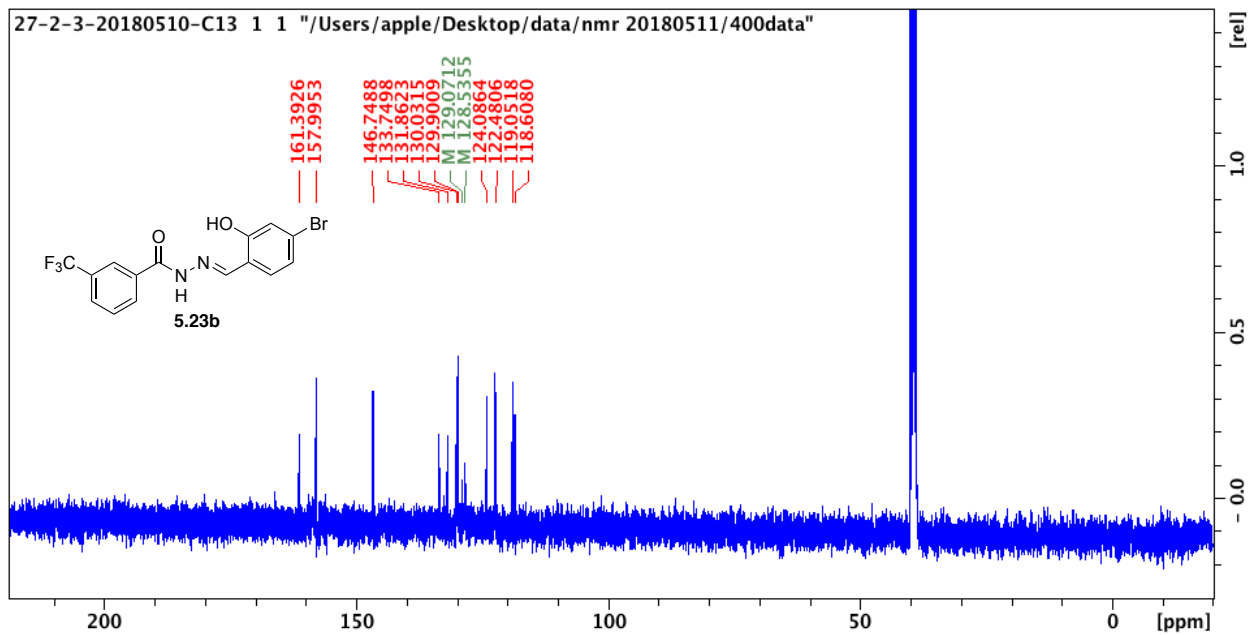
<sup>1</sup>H NMR of compound 5.23a



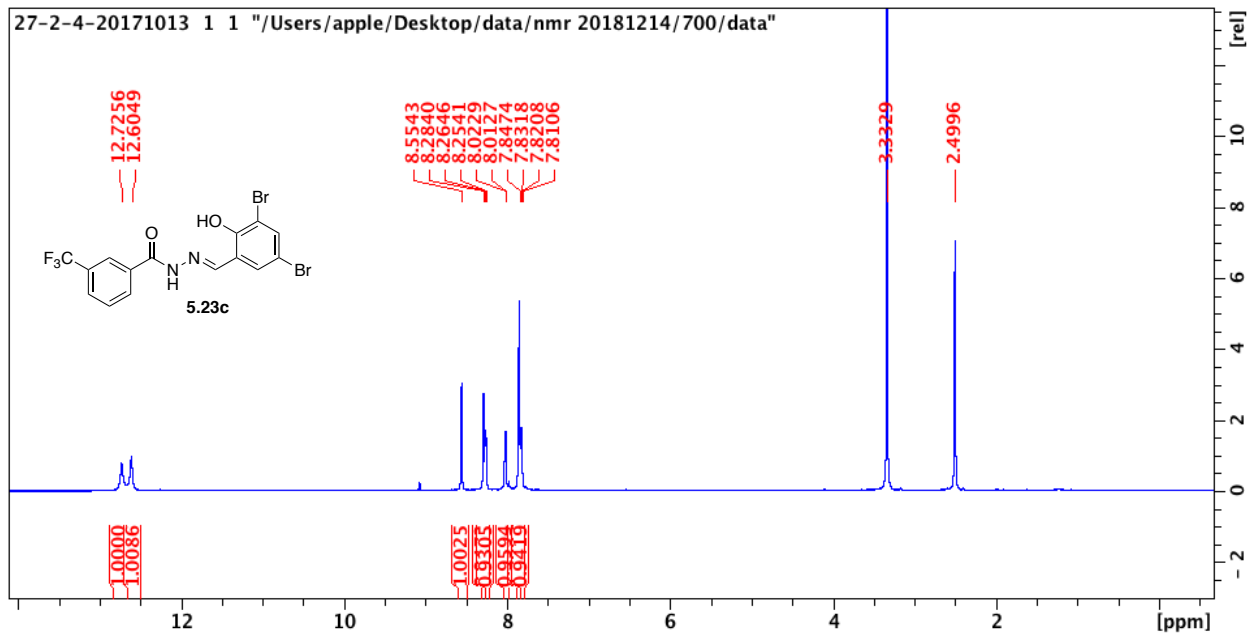
<sup>13</sup>C NMR of compound 5.23a



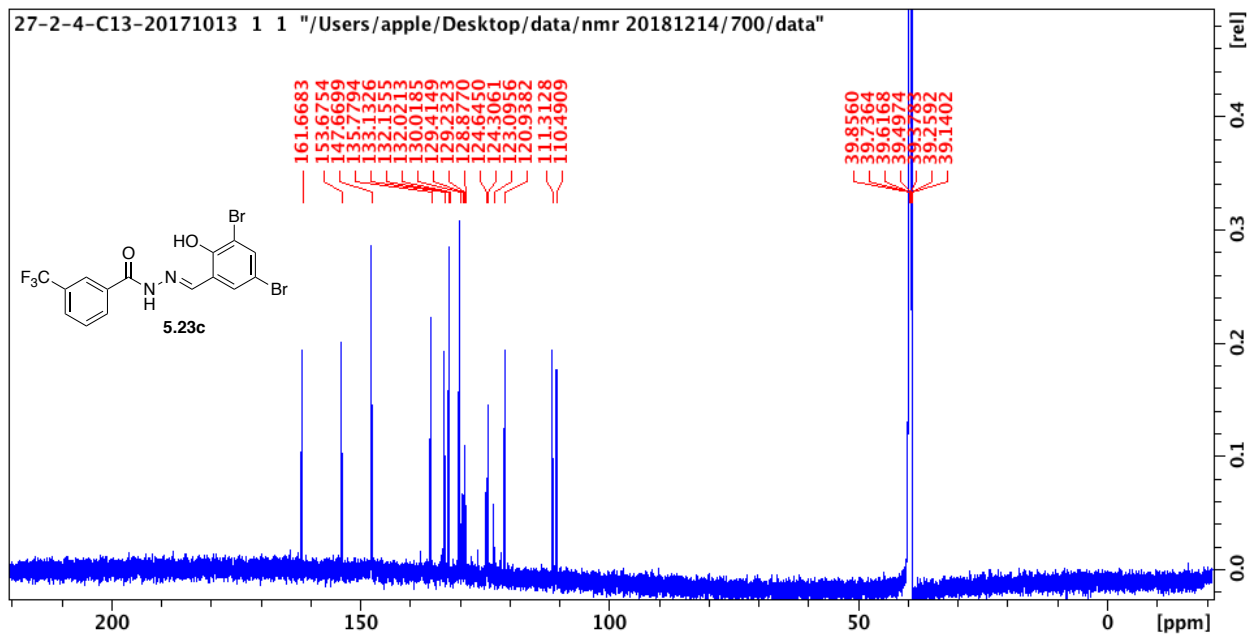
<sup>1</sup>H NMR of compound 5.23b



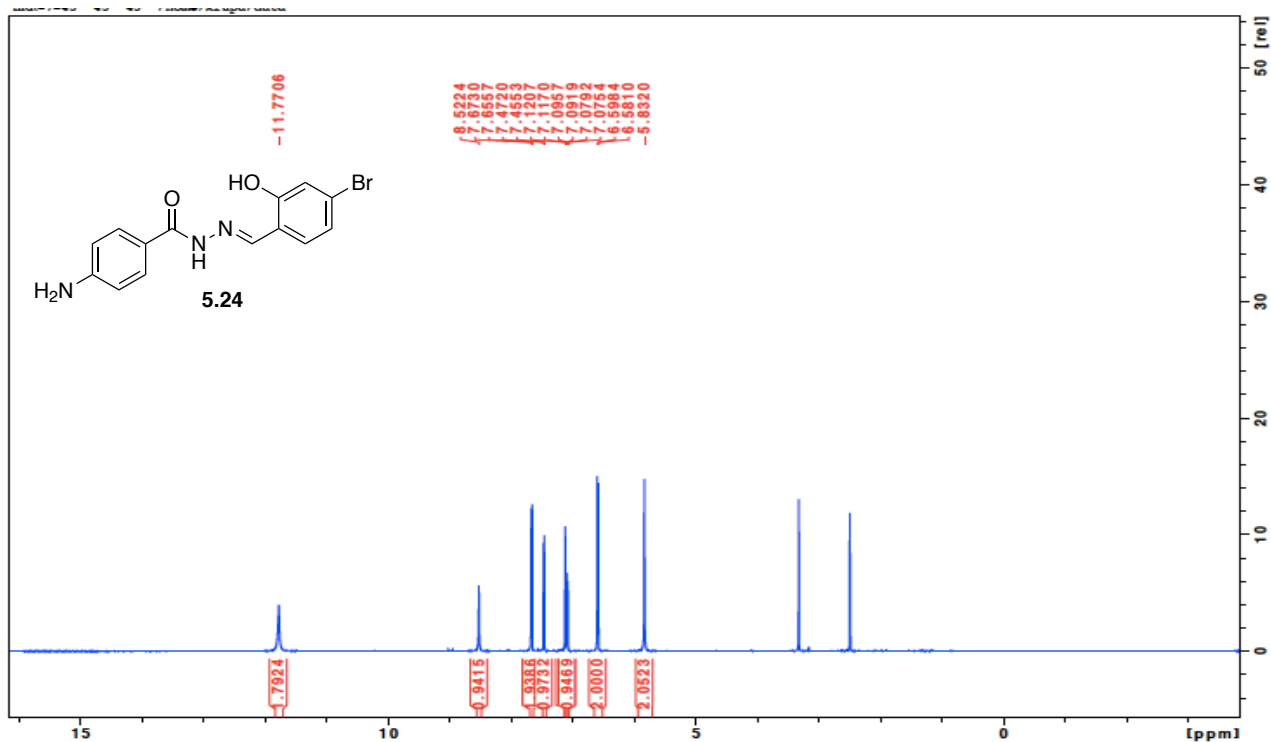
<sup>13</sup>C NMR of compound 5.23b



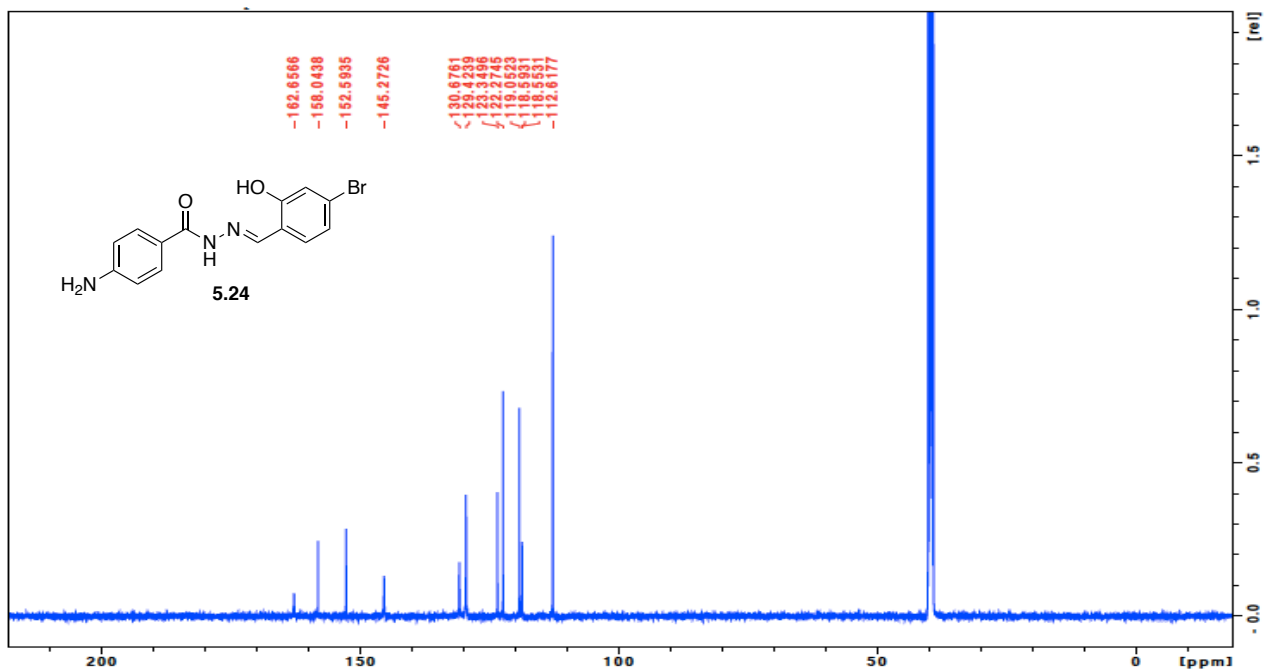
<sup>1</sup>H NMR of compound 5.23c



<sup>13</sup>C NMR of compound 5.23c

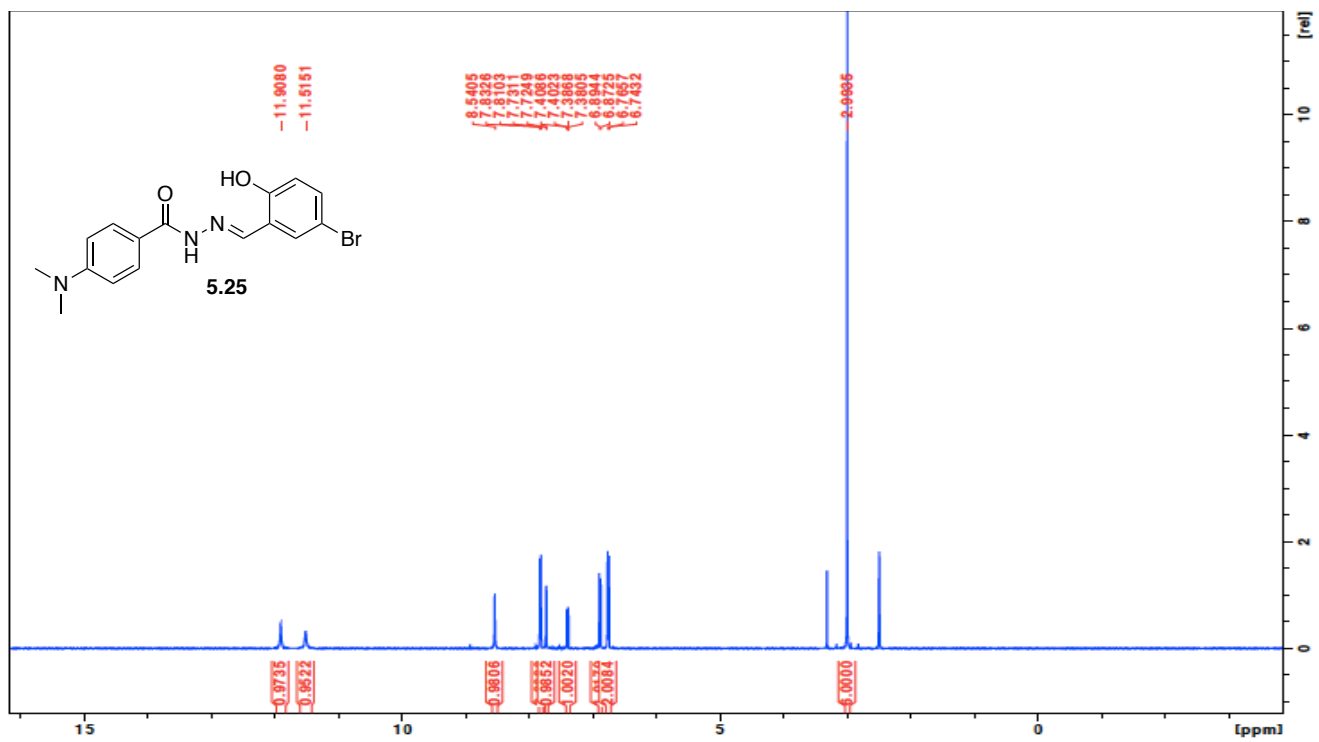


<sup>1</sup>H NMR of compound 5.24

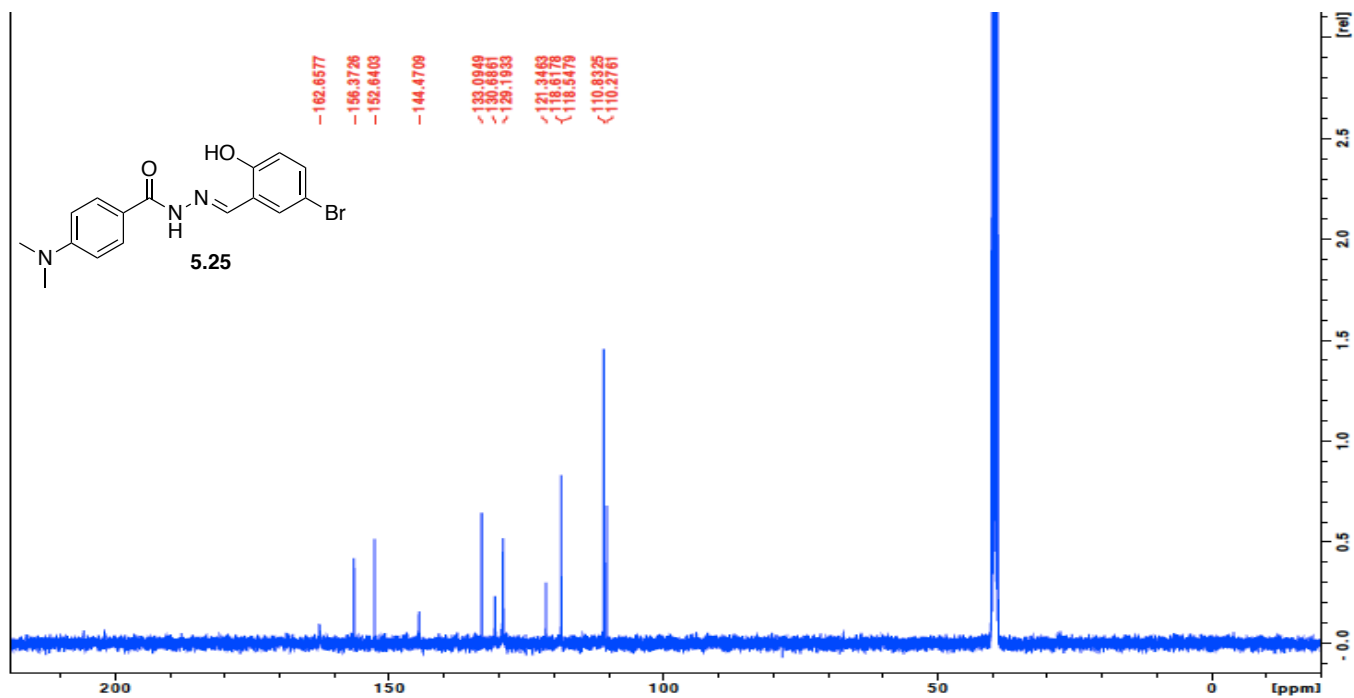


<sup>13</sup>C NMR of compound 5.24

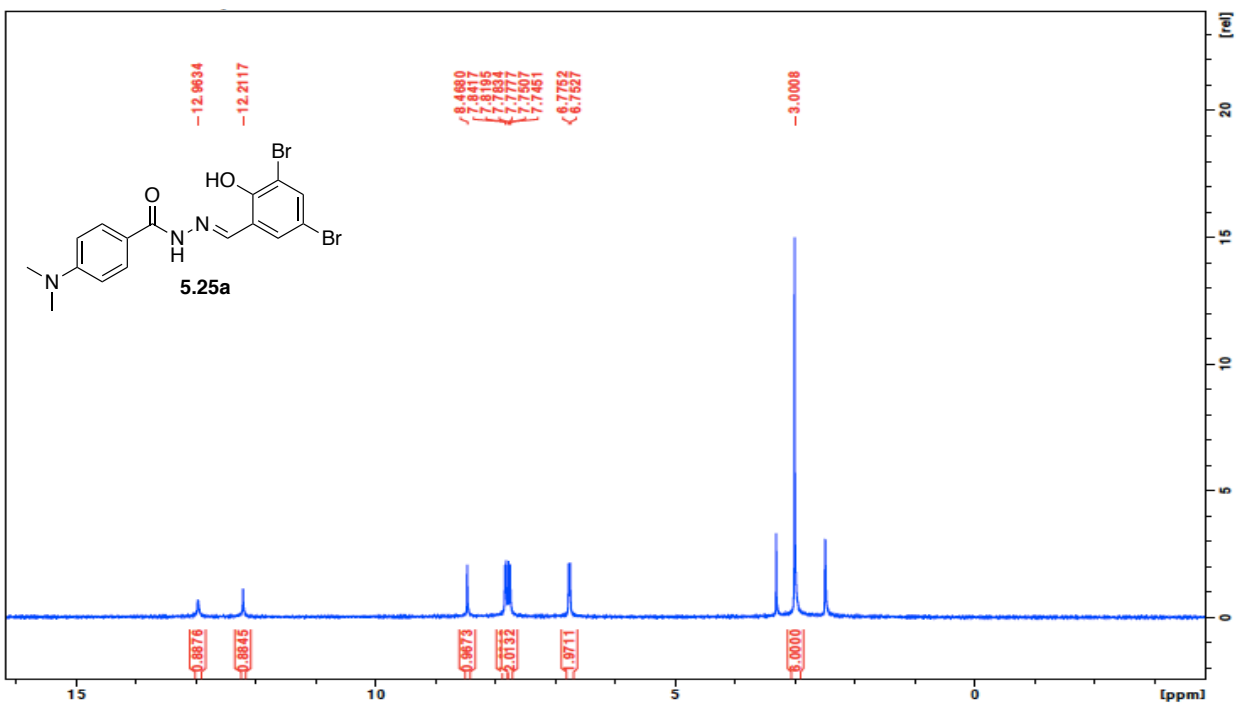




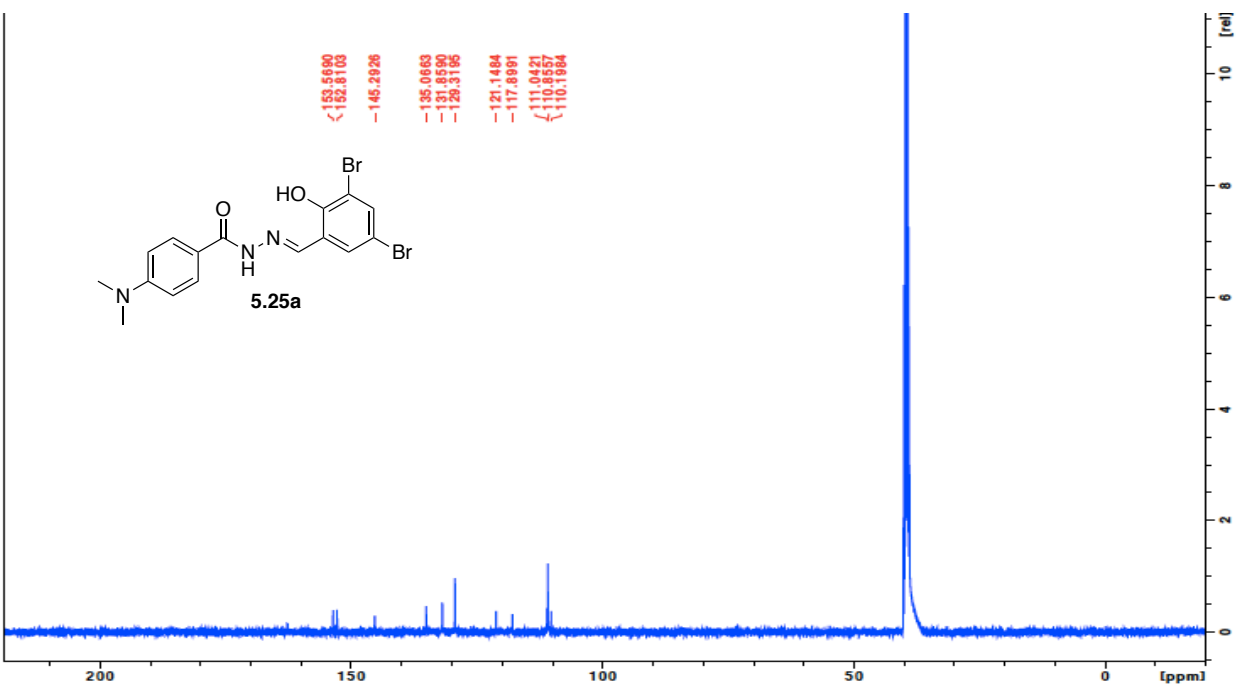
<sup>1</sup>H NMR of compound 5.25



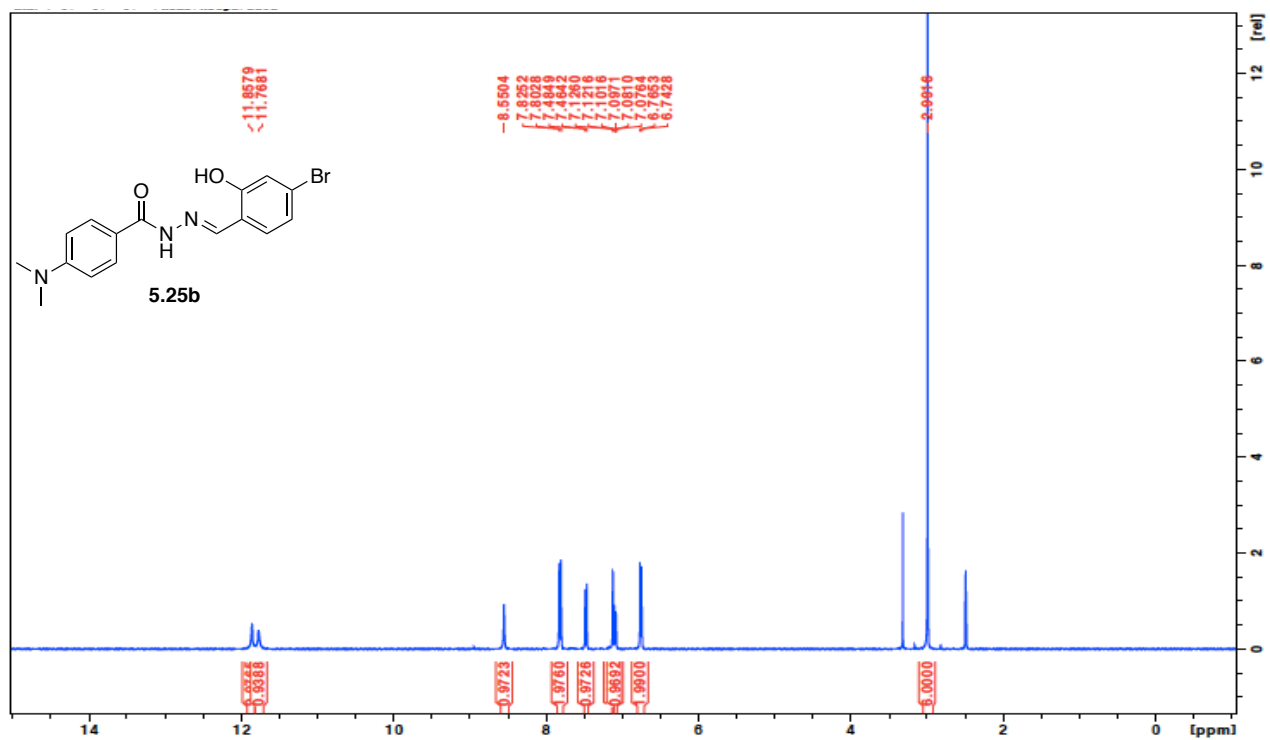
<sup>13</sup>C NMR of compound 5.25



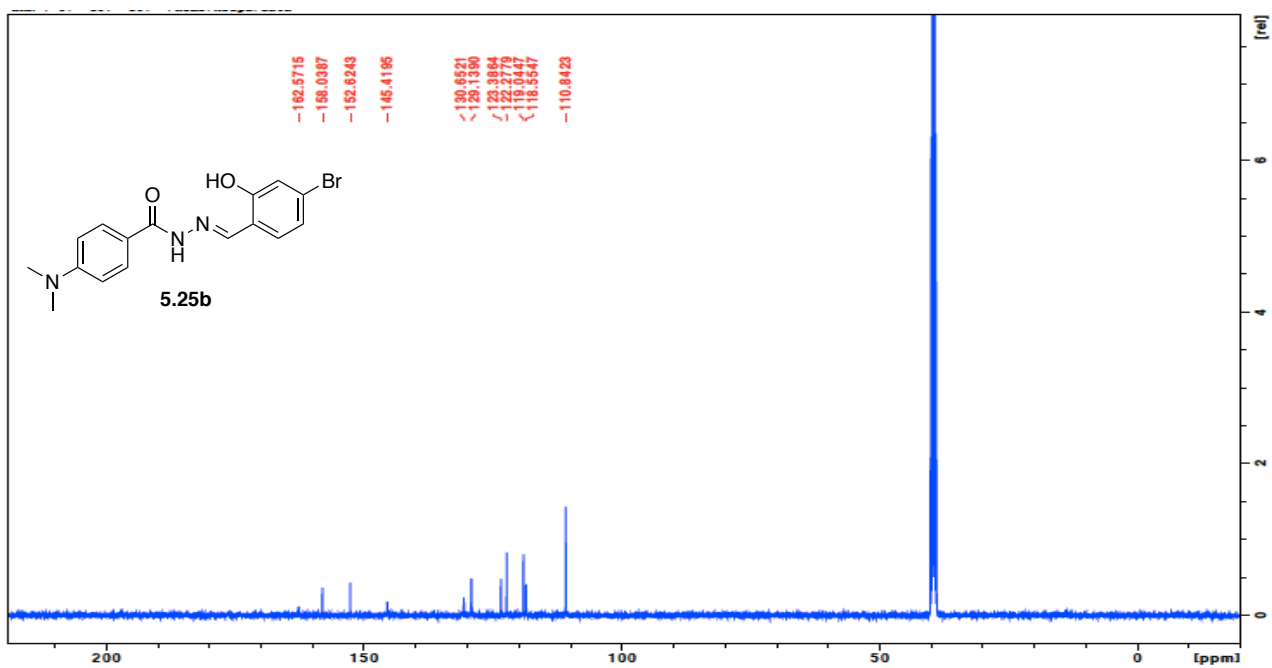
**<sup>1</sup>H NMR of compound 5.25a**



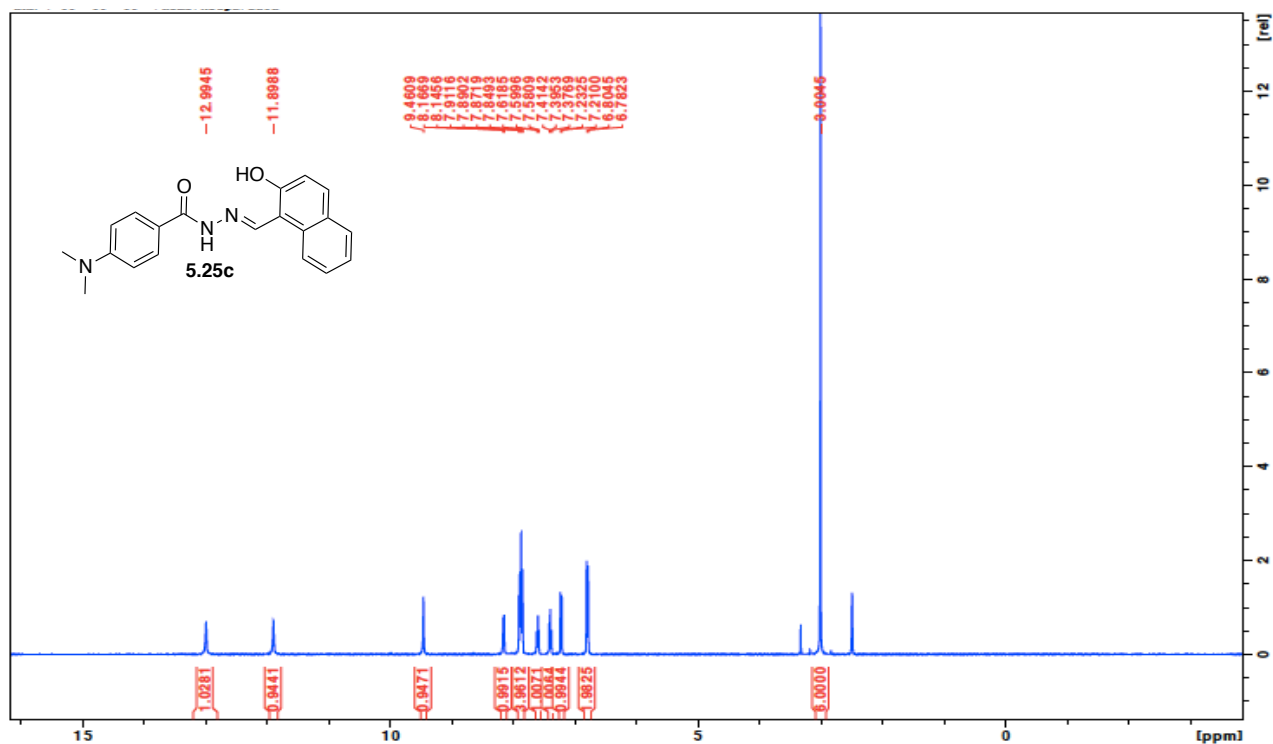
**<sup>13</sup>C NMR of compound 5.25a**



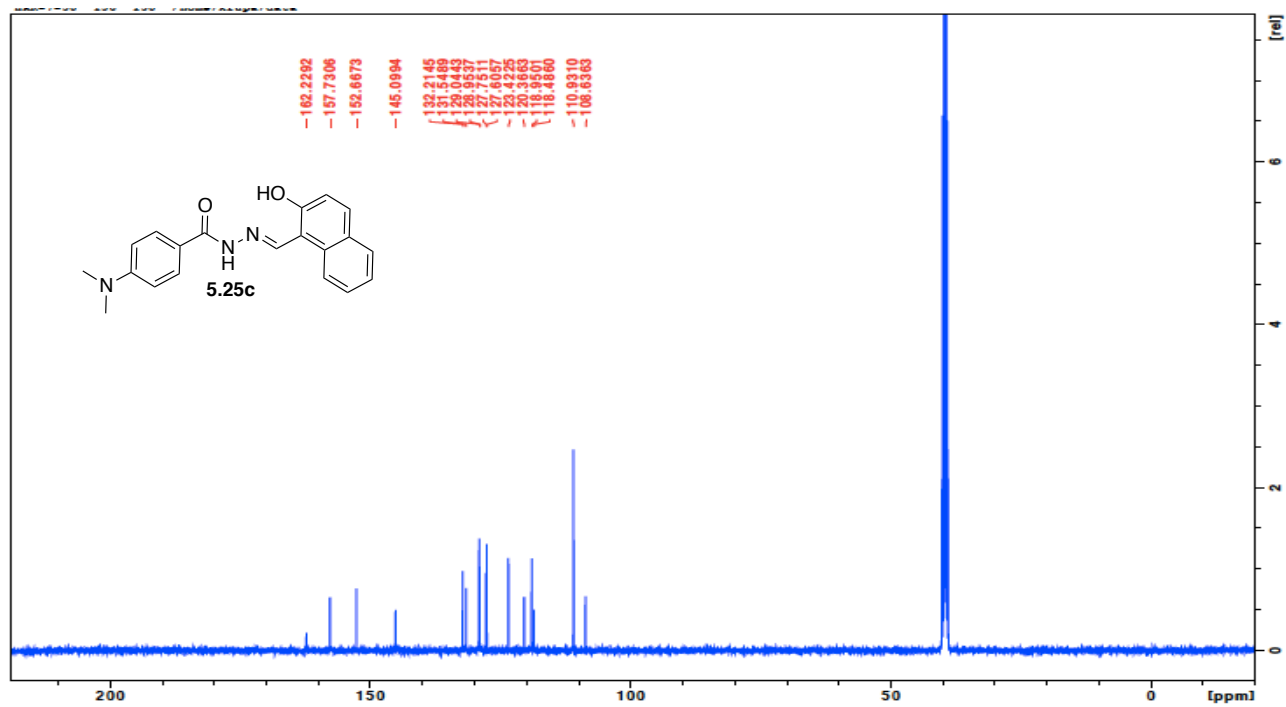
**<sup>1</sup>H NMR of compound 5.25b**



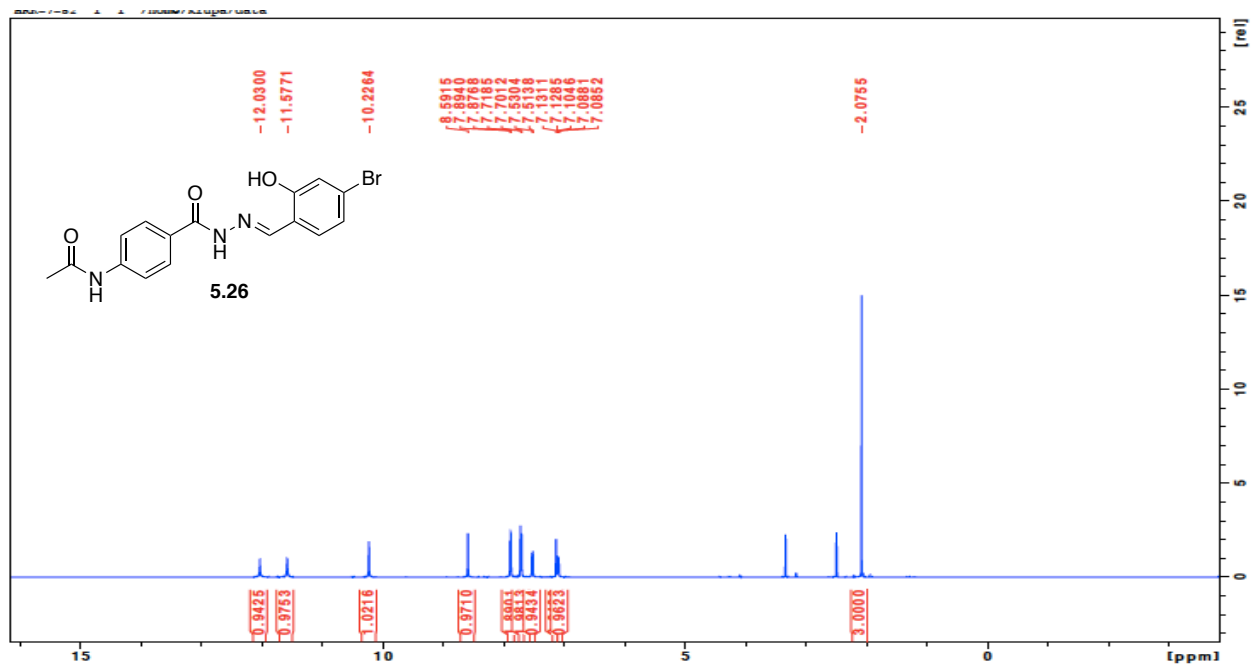
**<sup>13</sup>C NMR of compound 5.25b**



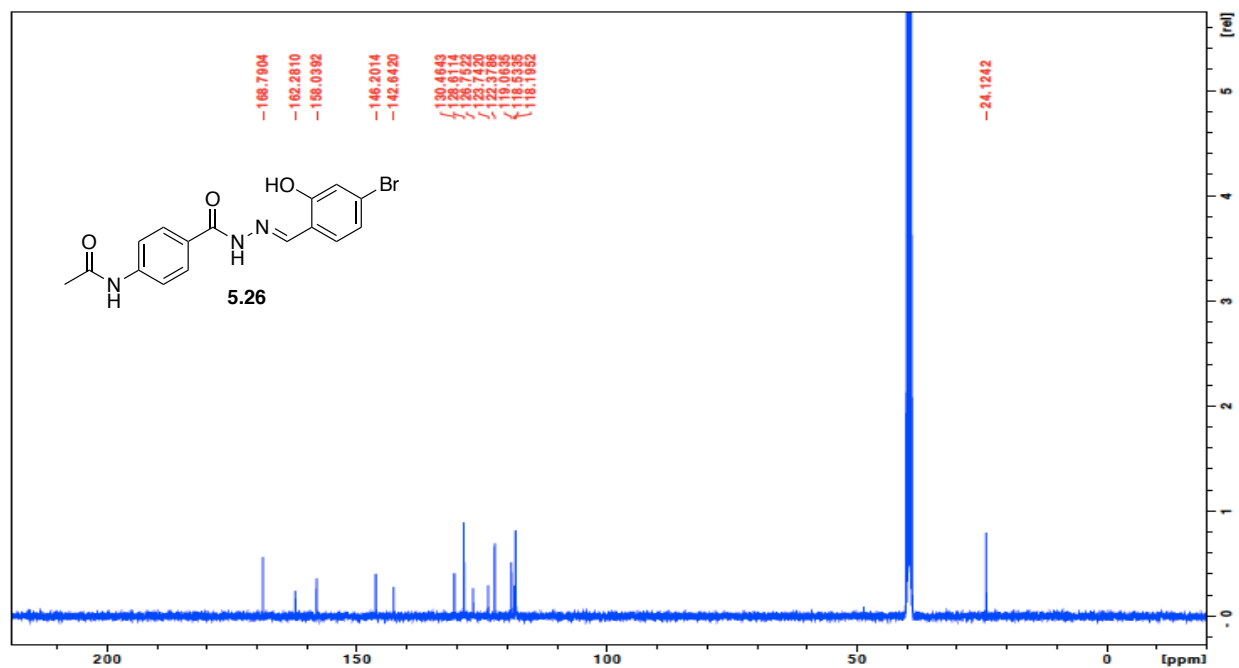
<sup>1</sup>H NMR of compound 5.25c



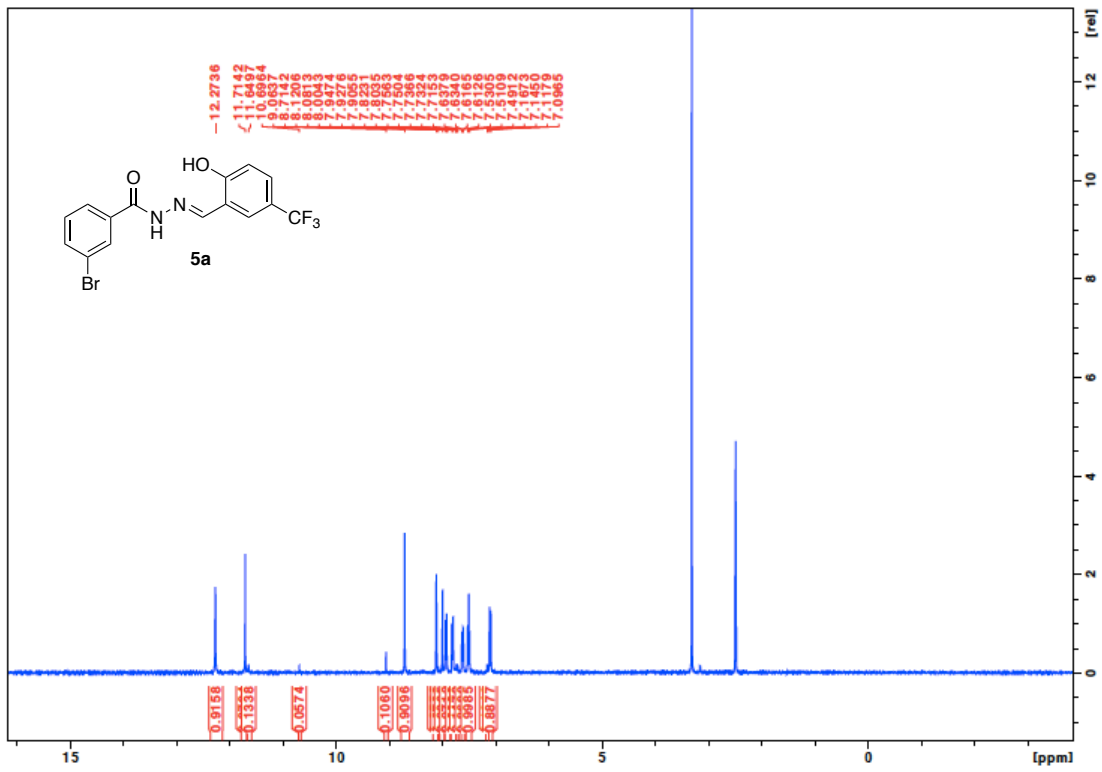
<sup>13</sup>C NMR of compound 5.25c



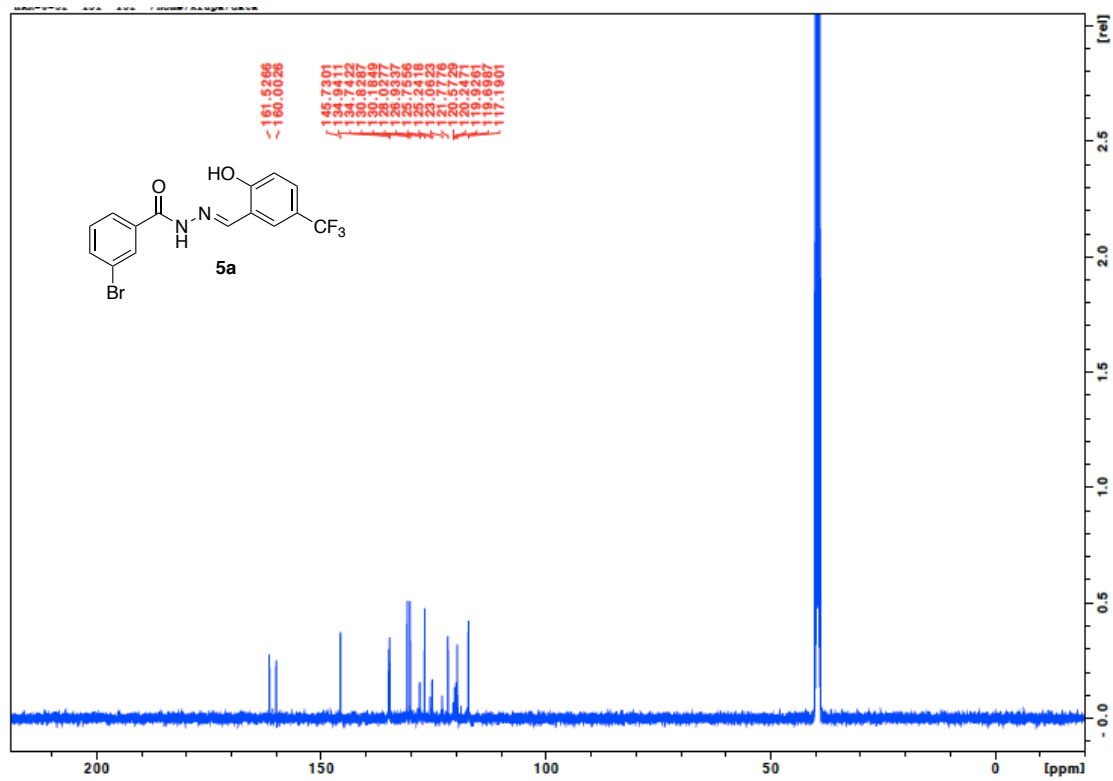
**<sup>1</sup>H NMR of compound 5.26**



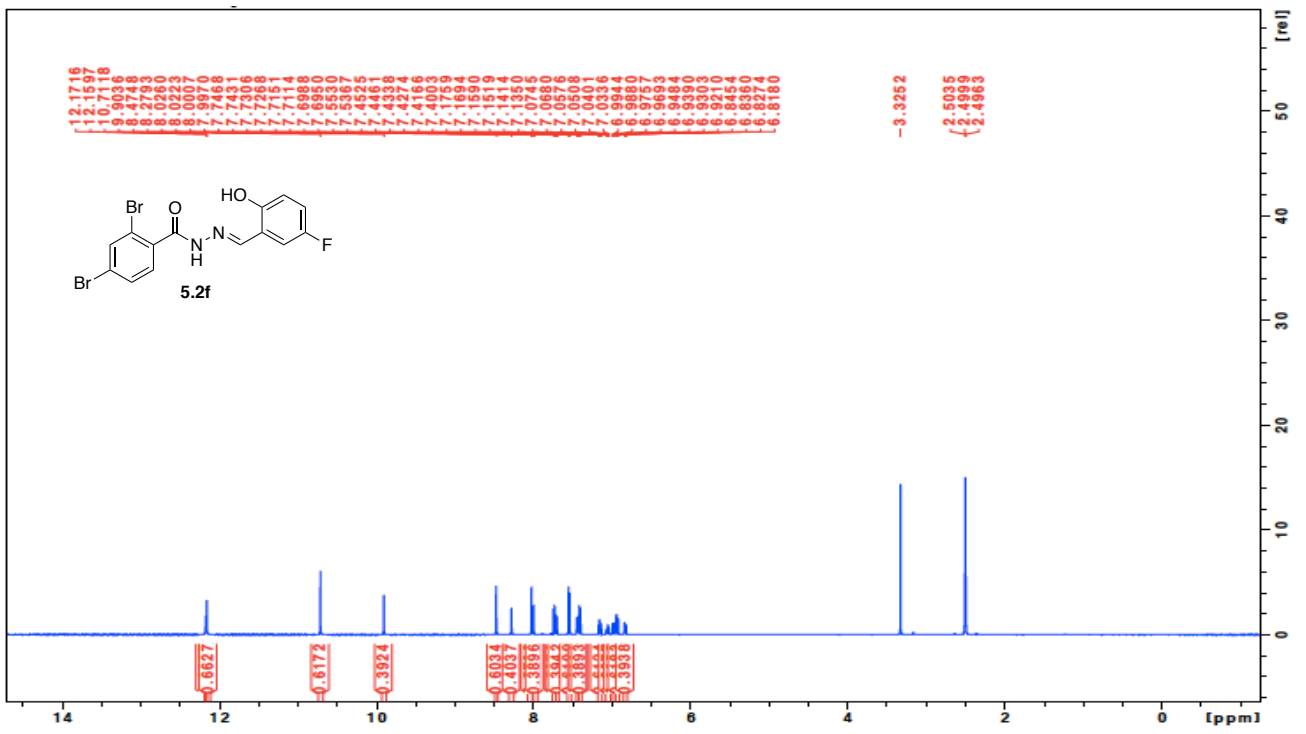
**<sup>13</sup>C NMR of compound 5.26**



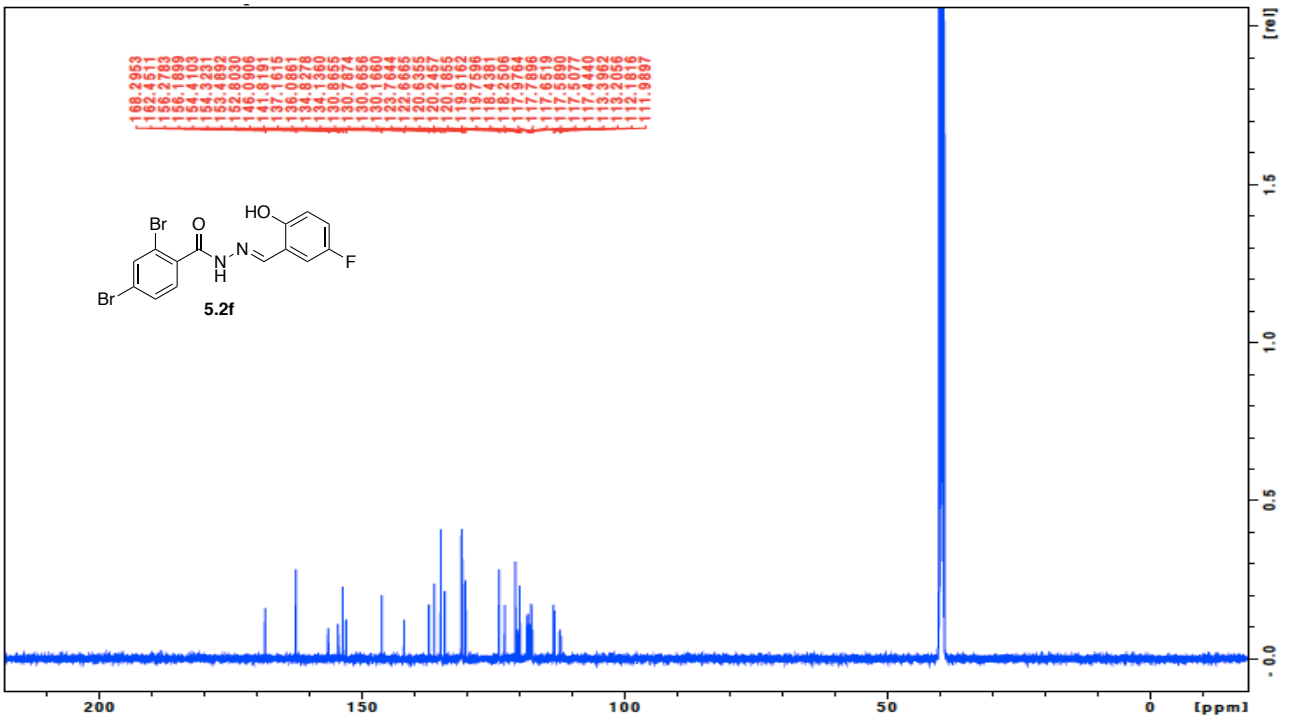
**<sup>1</sup>H NMR of compound 5a**



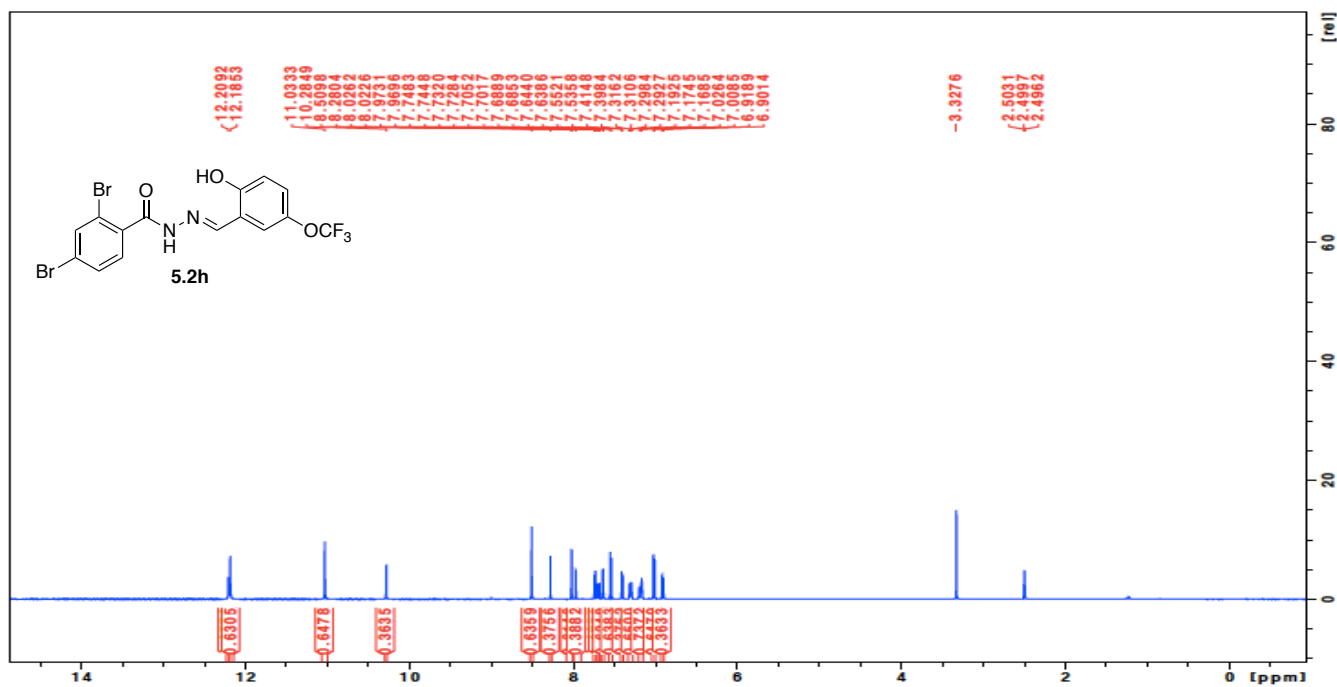
**<sup>13</sup>C NMR of compound 5a**



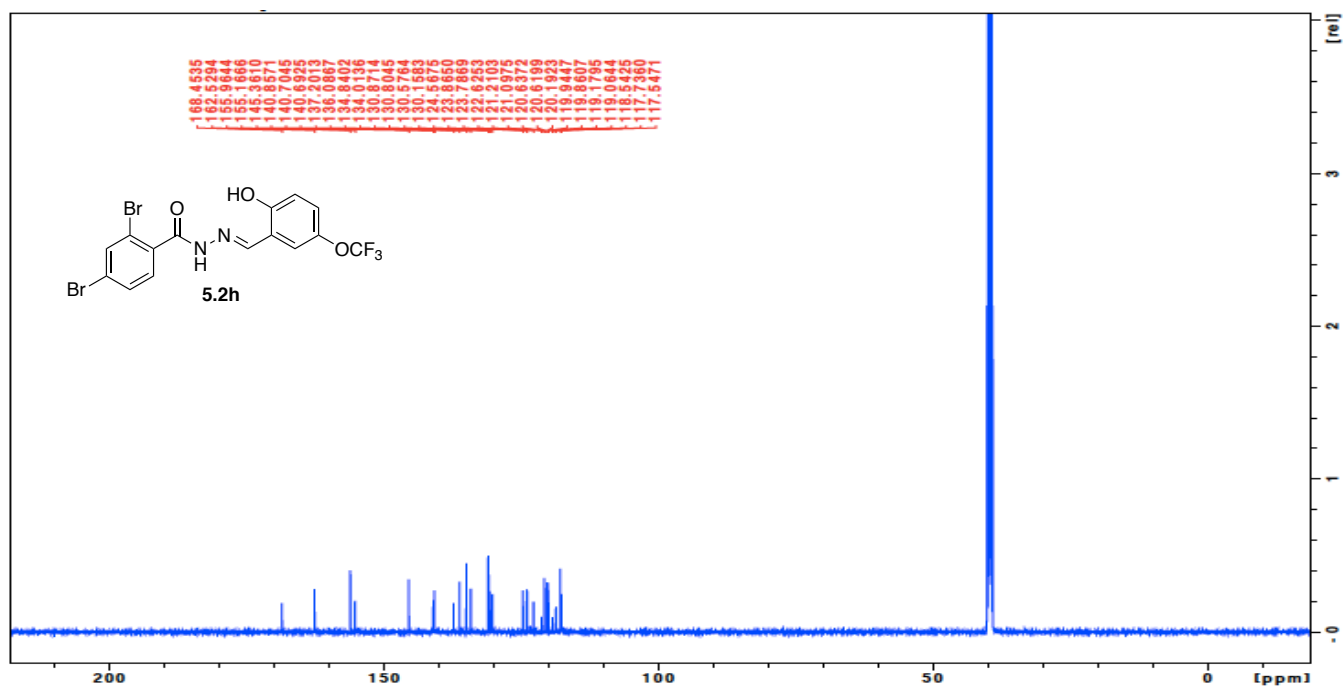
<sup>1</sup>H NMR of compound 5.2f



<sup>13</sup>C NMR of compound 5.2f

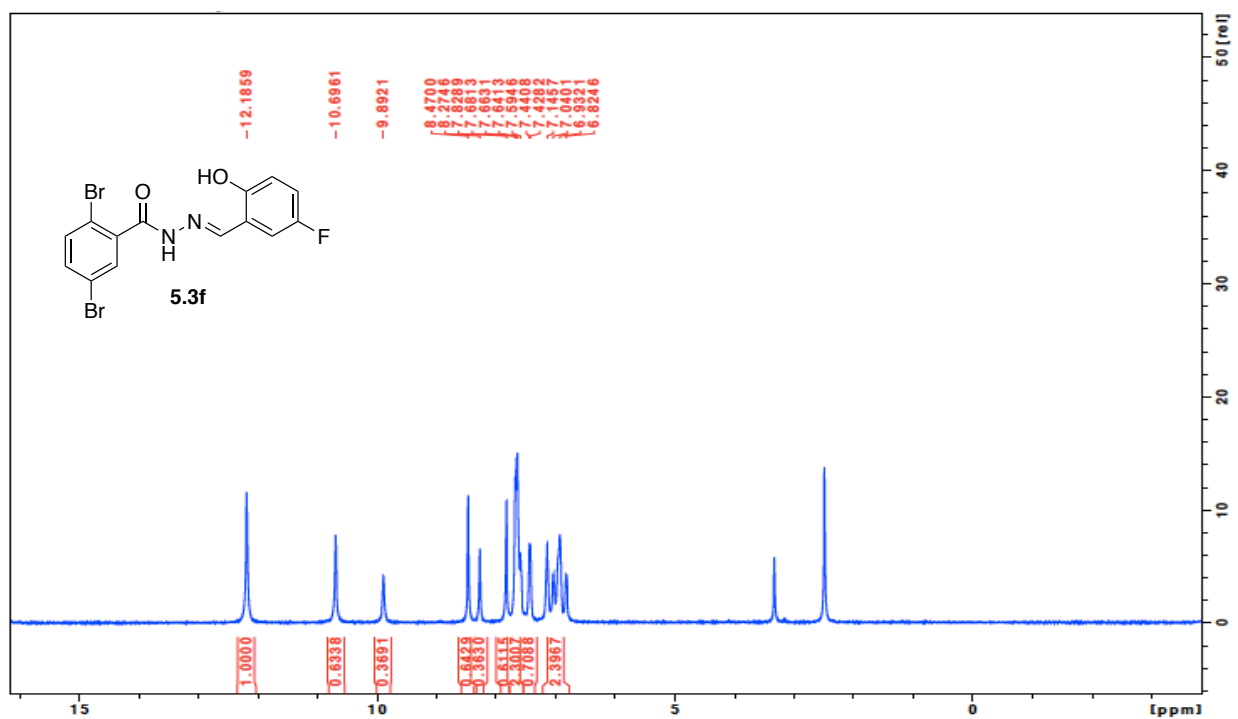


**<sup>1</sup>H NMR of compound 5.2h**

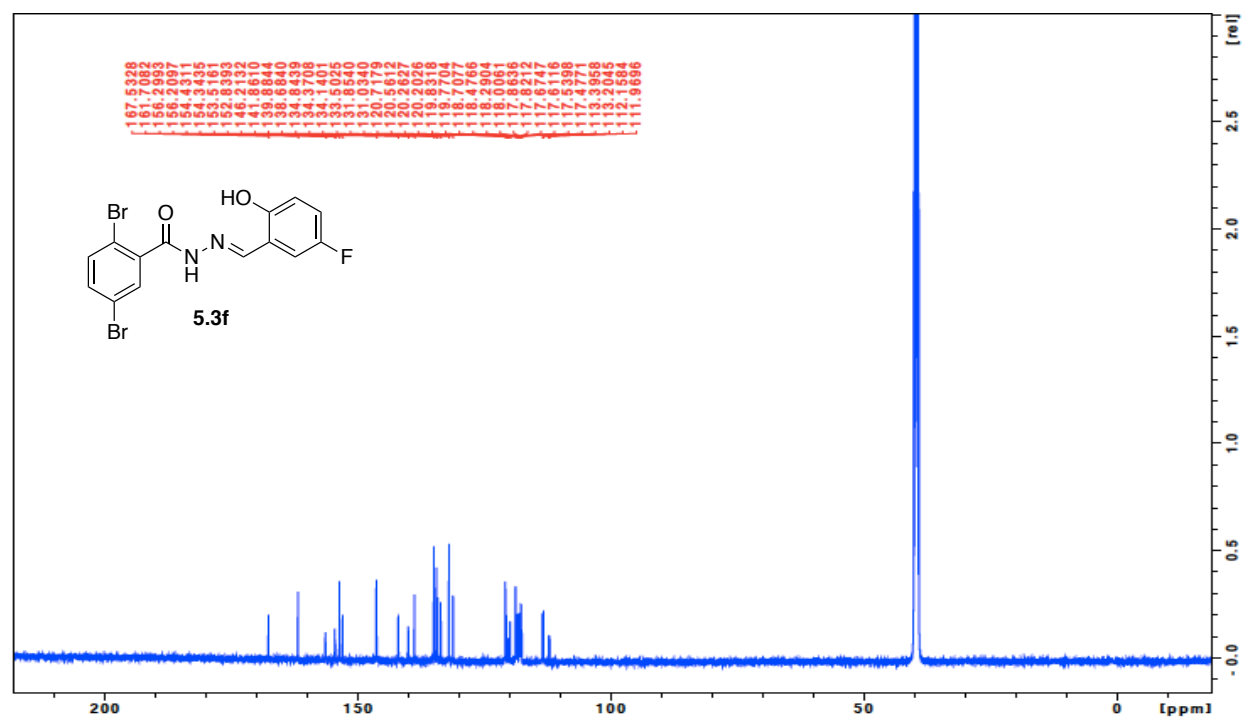


**<sup>13</sup>C NMR of compound 5.2h**

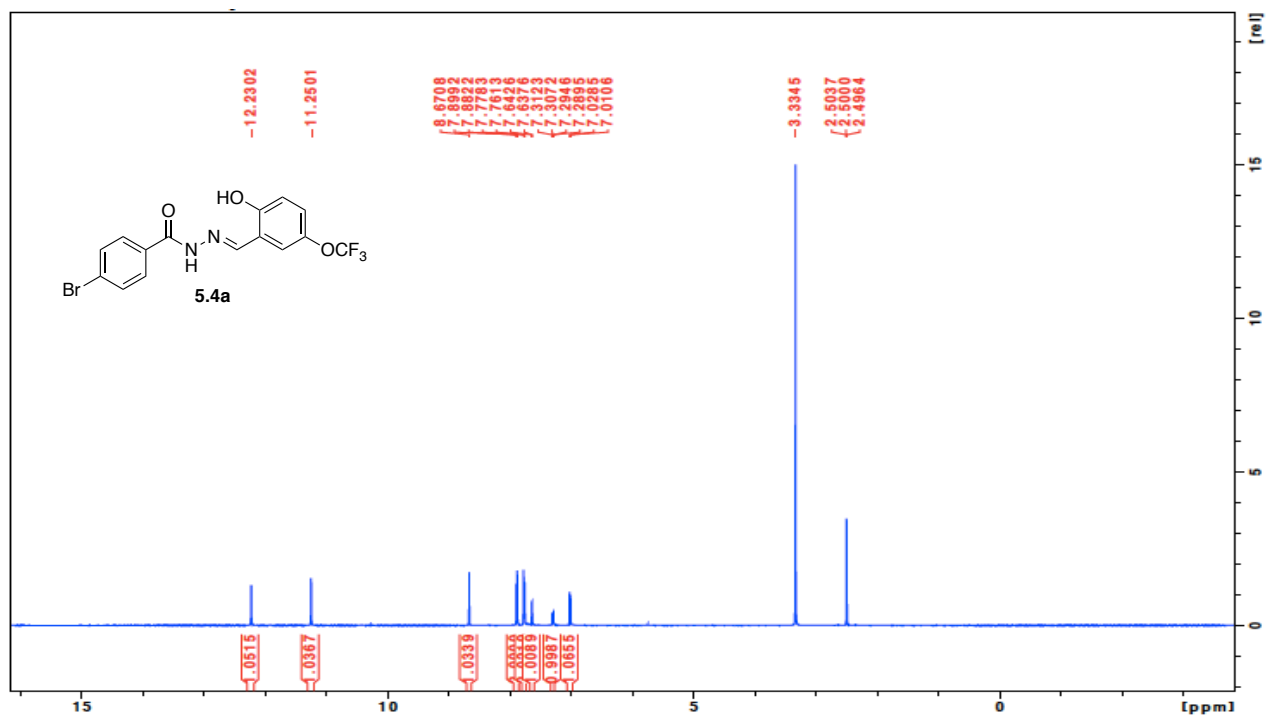




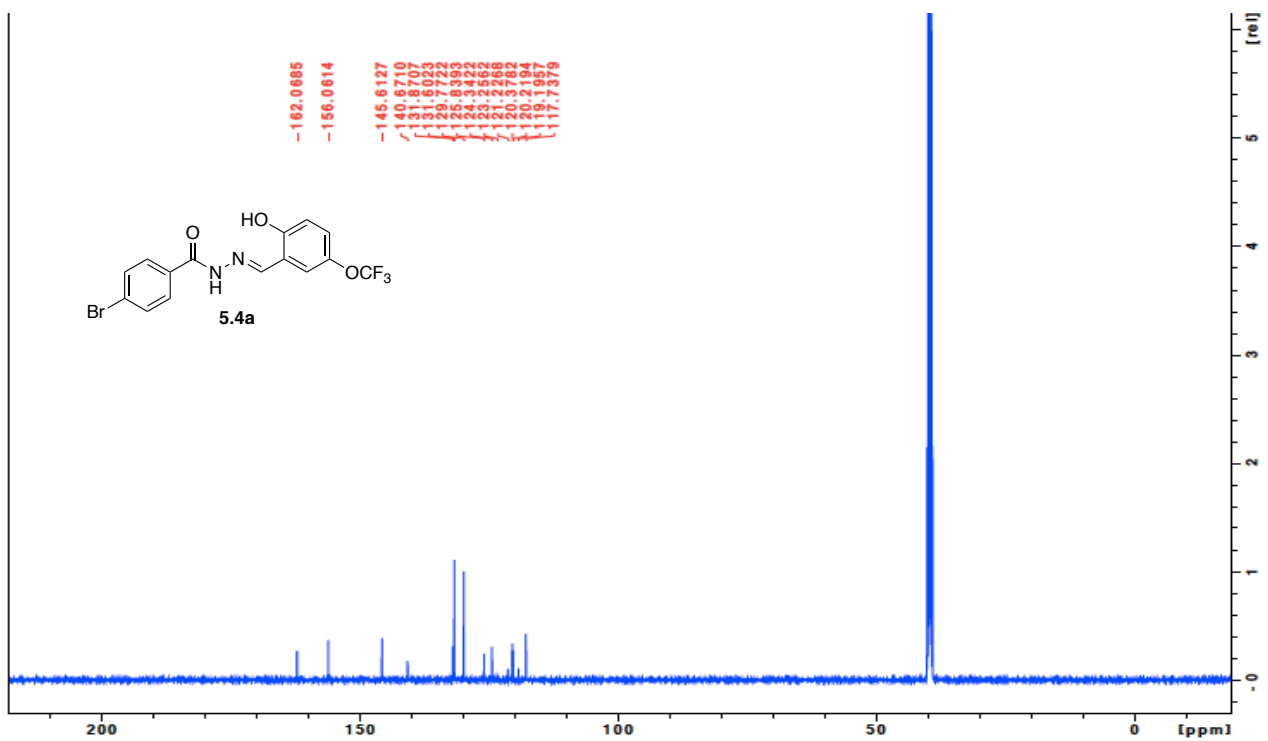
<sup>1</sup>H NMR of compound 5.3f



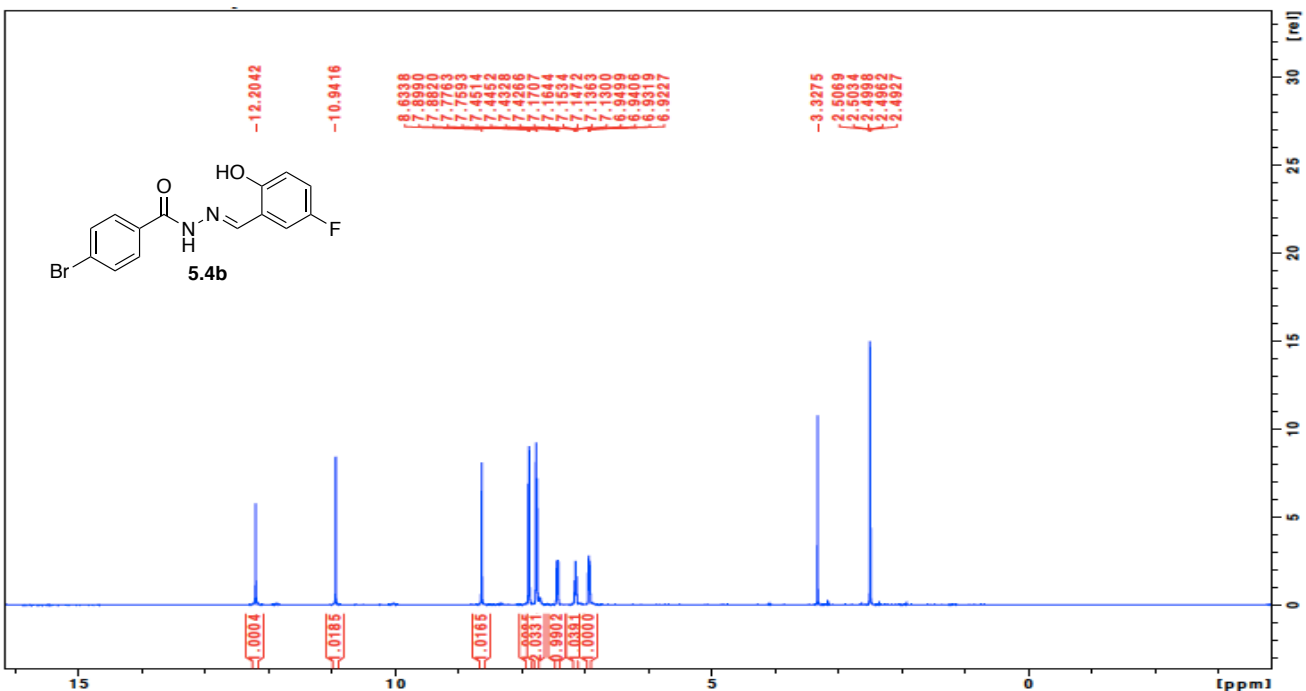
<sup>13</sup>C NMR of compound 5.3f



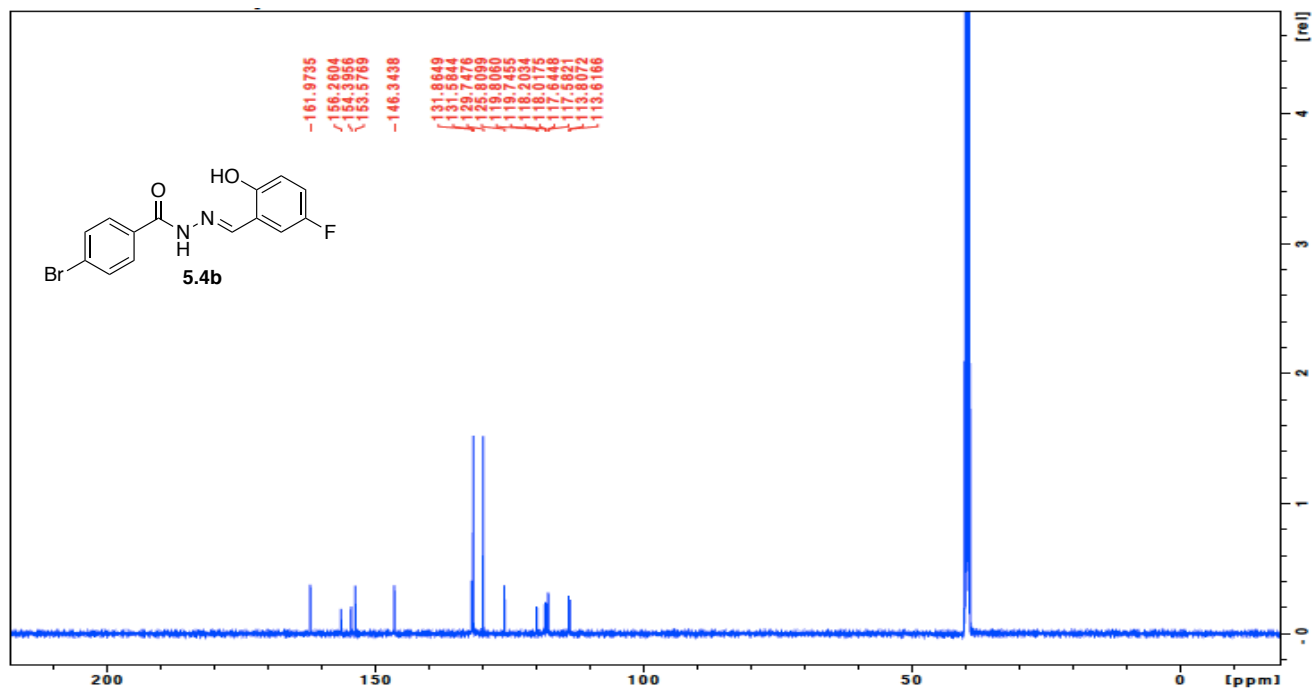
<sup>1</sup>H NMR of compound 5.4a



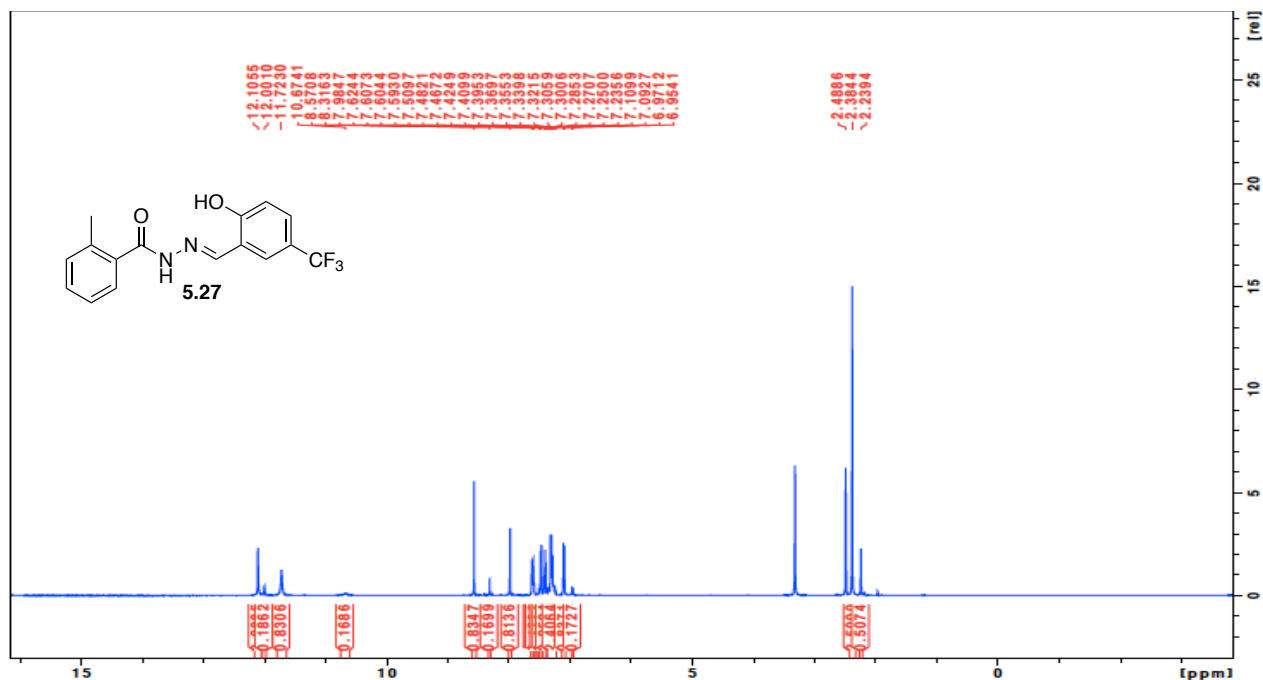
<sup>13</sup>C NMR of compound 5.4a



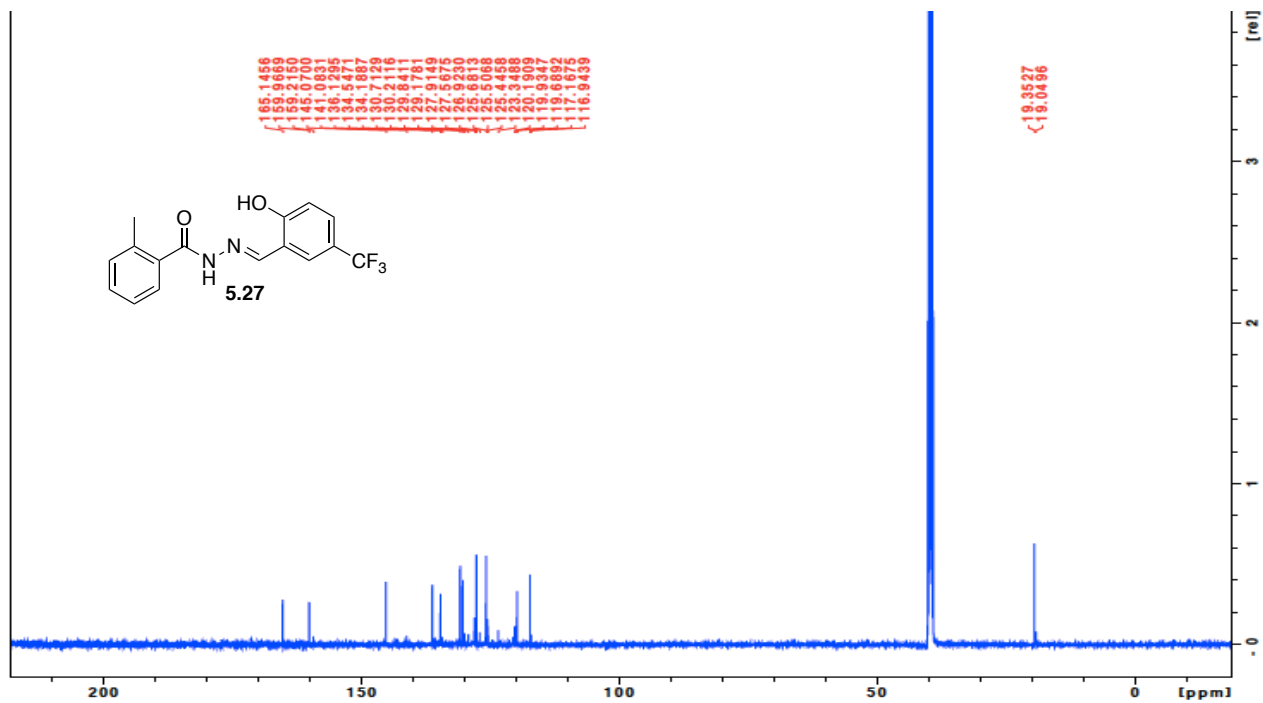
<sup>1</sup>H NMR of compound 5.4b



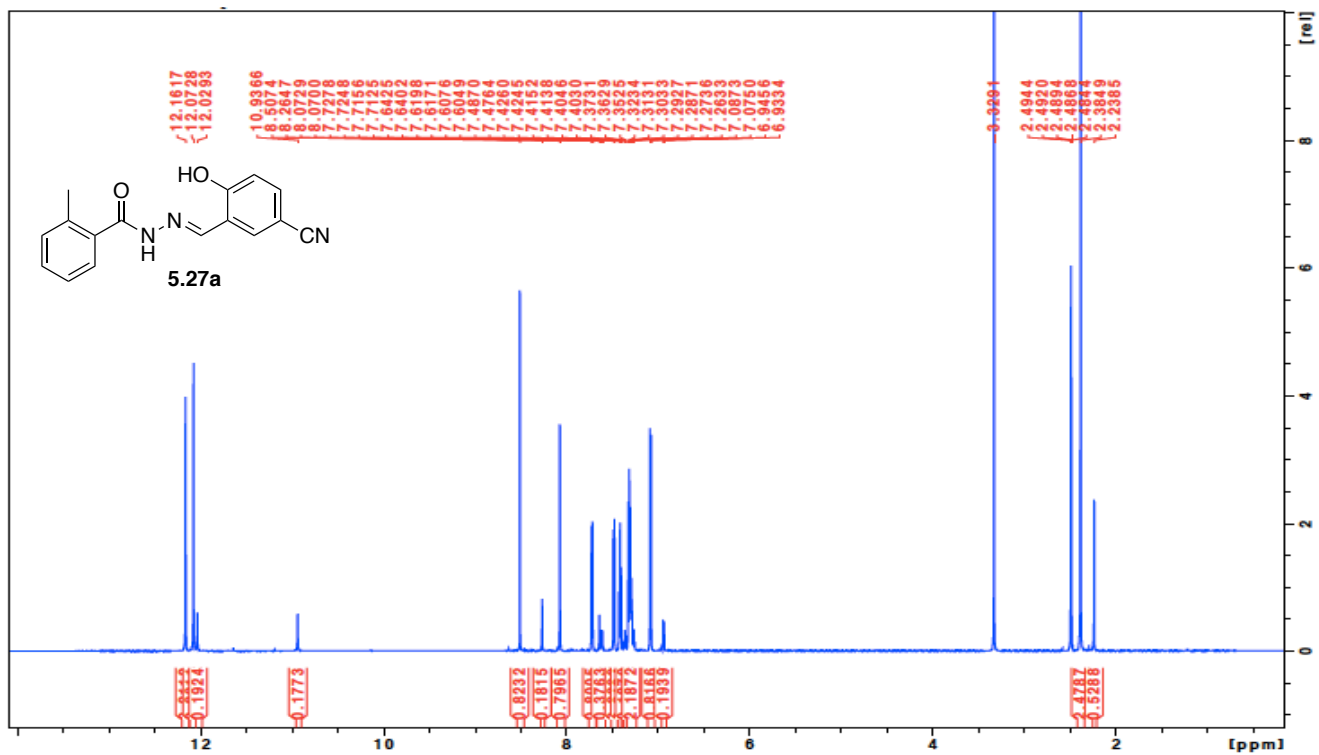
<sup>13</sup>C NMR of compound 5.4b



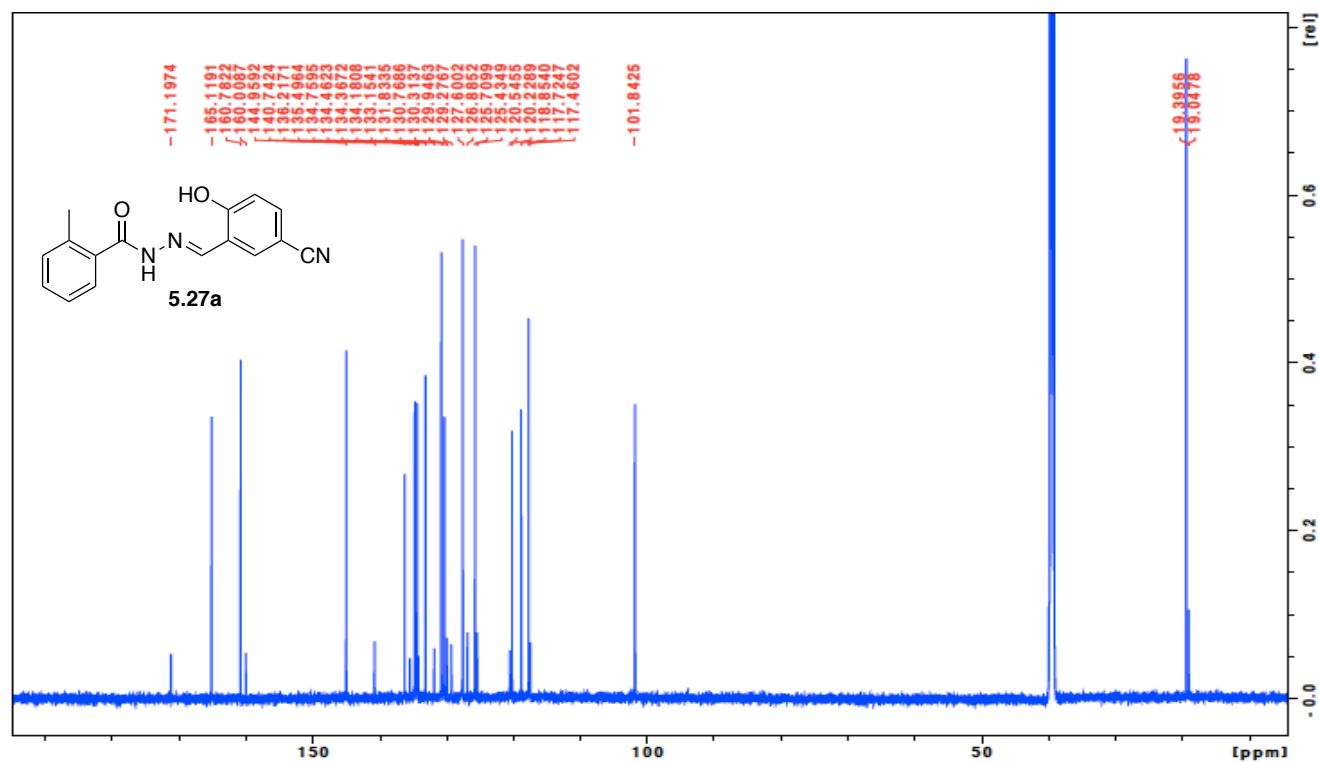
**<sup>1</sup>H NMR of compound 5.27**



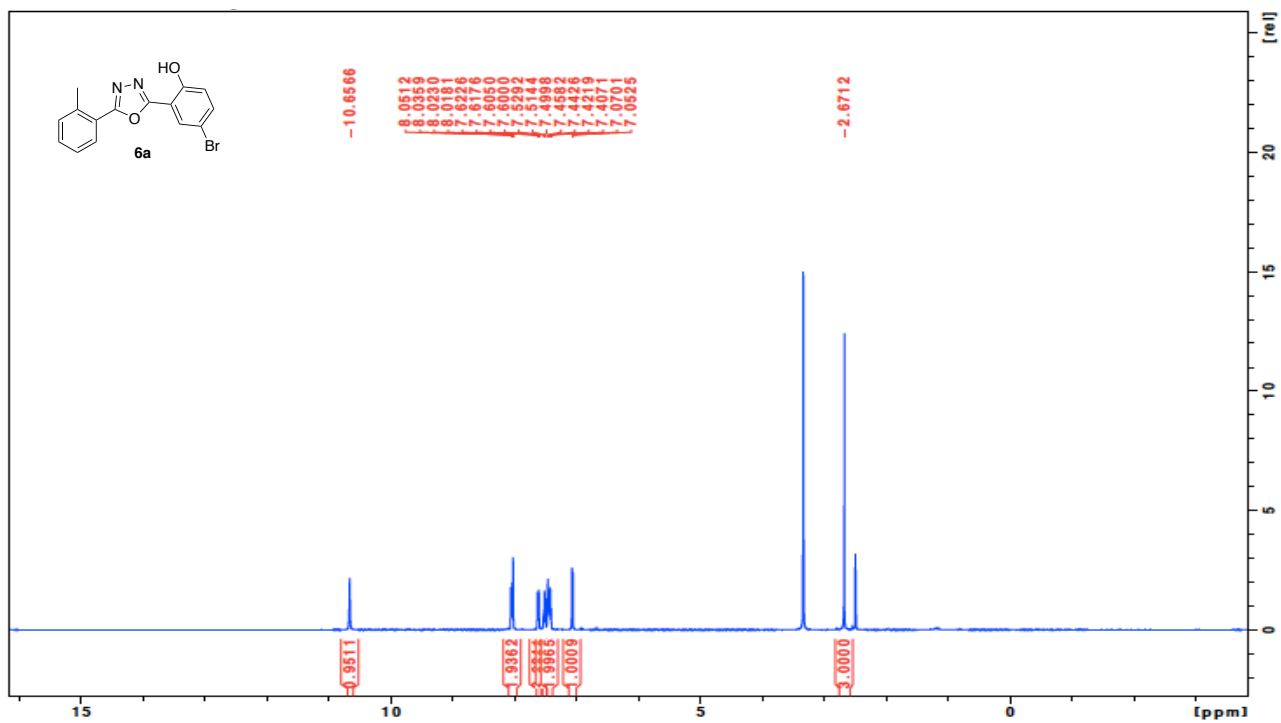
**<sup>13</sup>C NMR of compound 5.27**



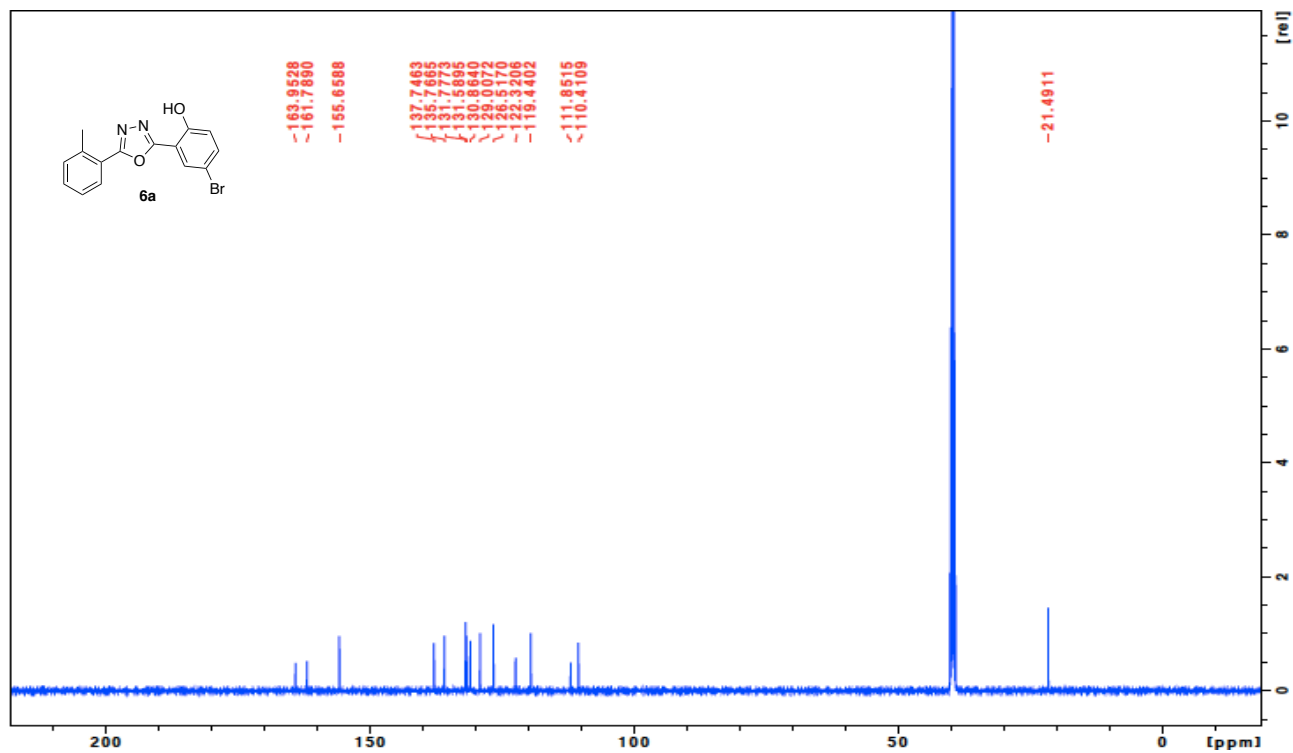
<sup>1</sup>H NMR of compound 5.27a



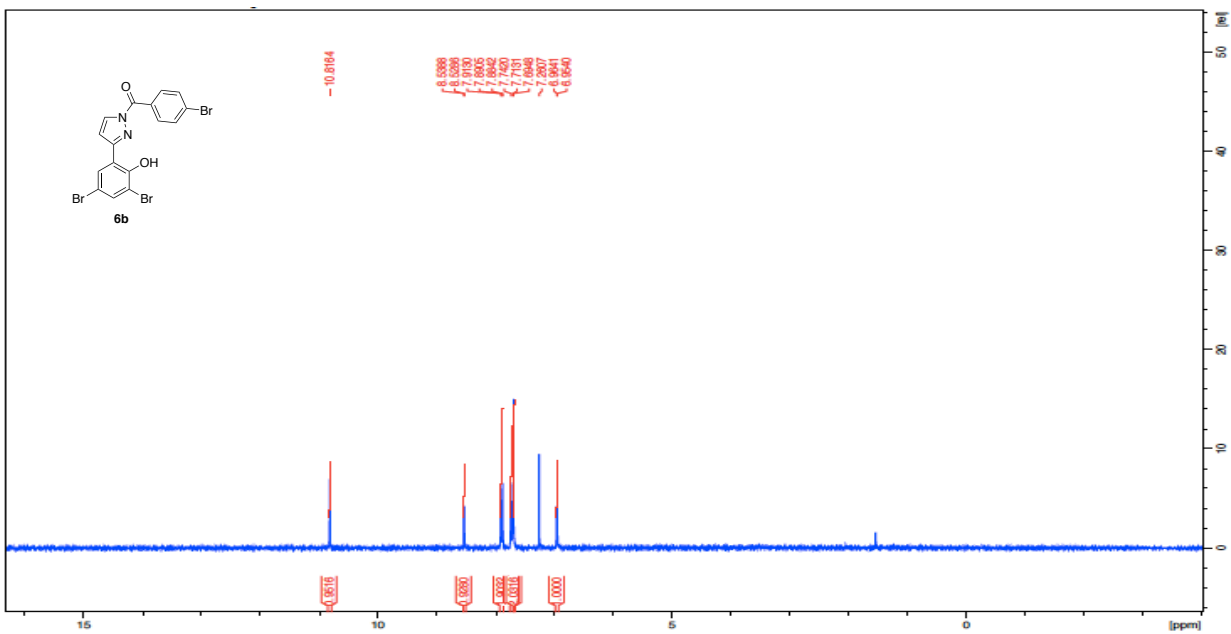
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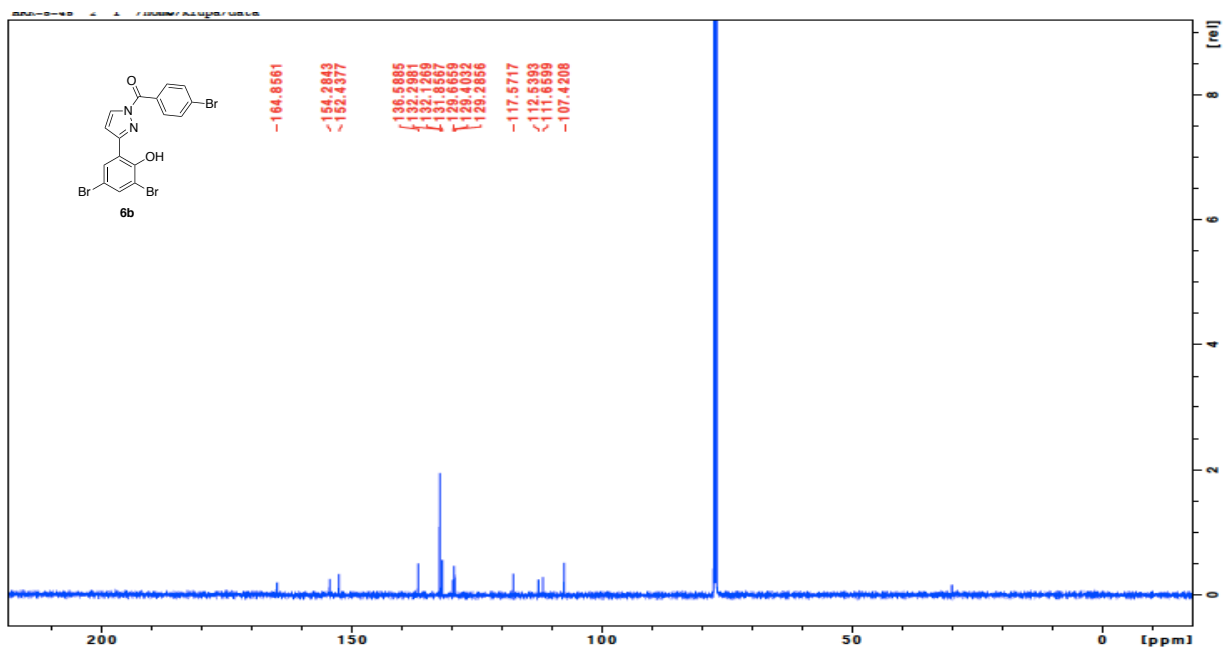
<sup>1</sup>H NMR of compound 6a



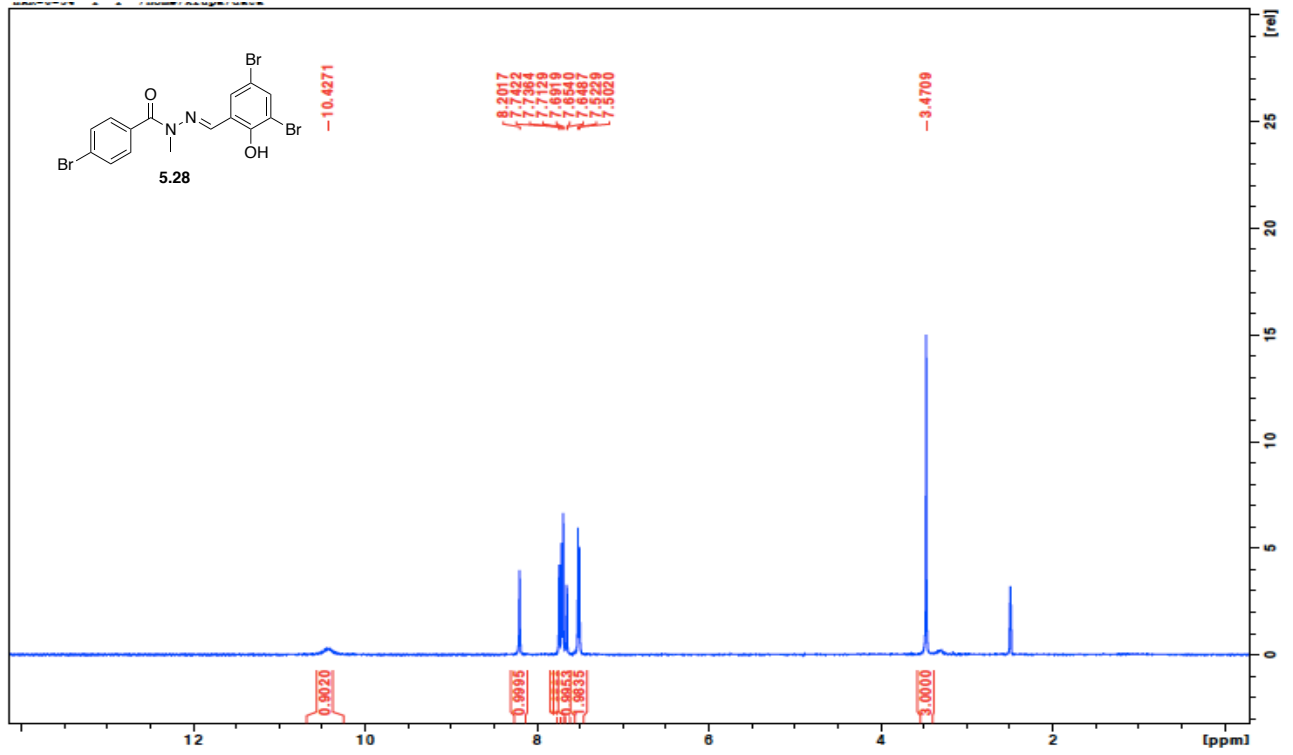
<sup>13</sup>C NMR of compound 6a



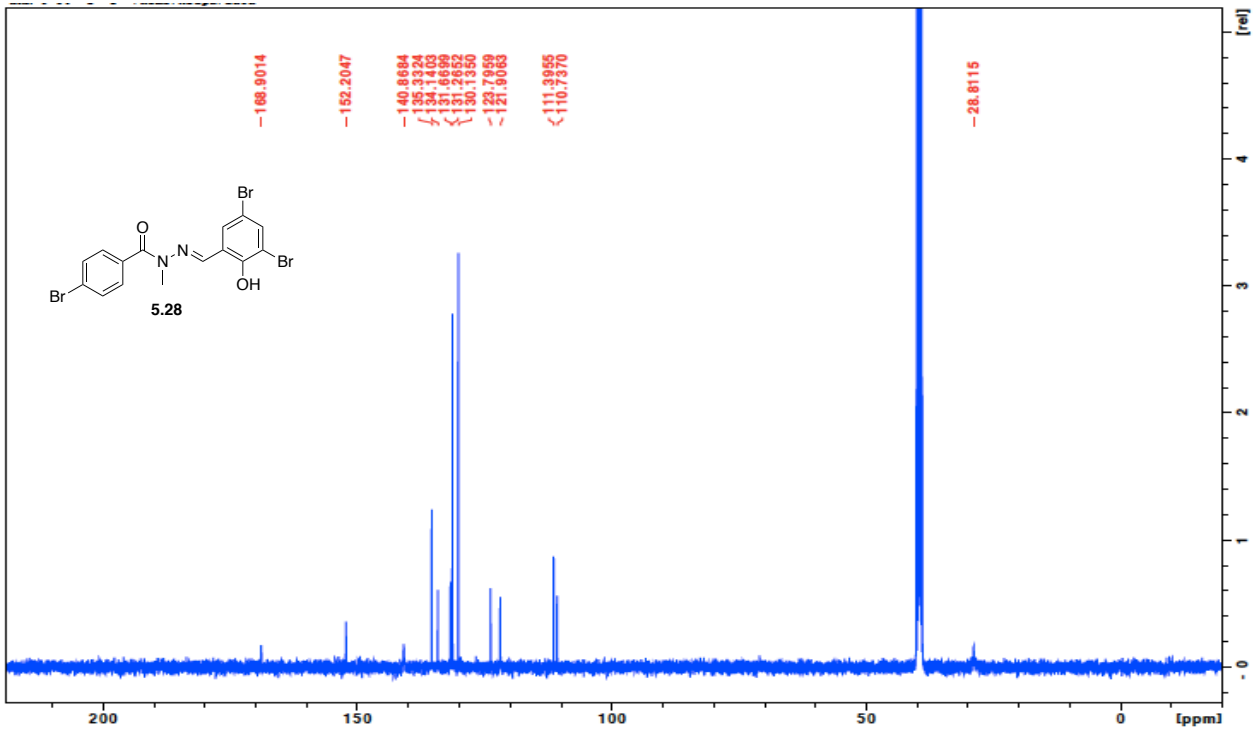
<sup>1</sup>H NMR of compound 6b



<sup>13</sup>C NMR of compound 6b

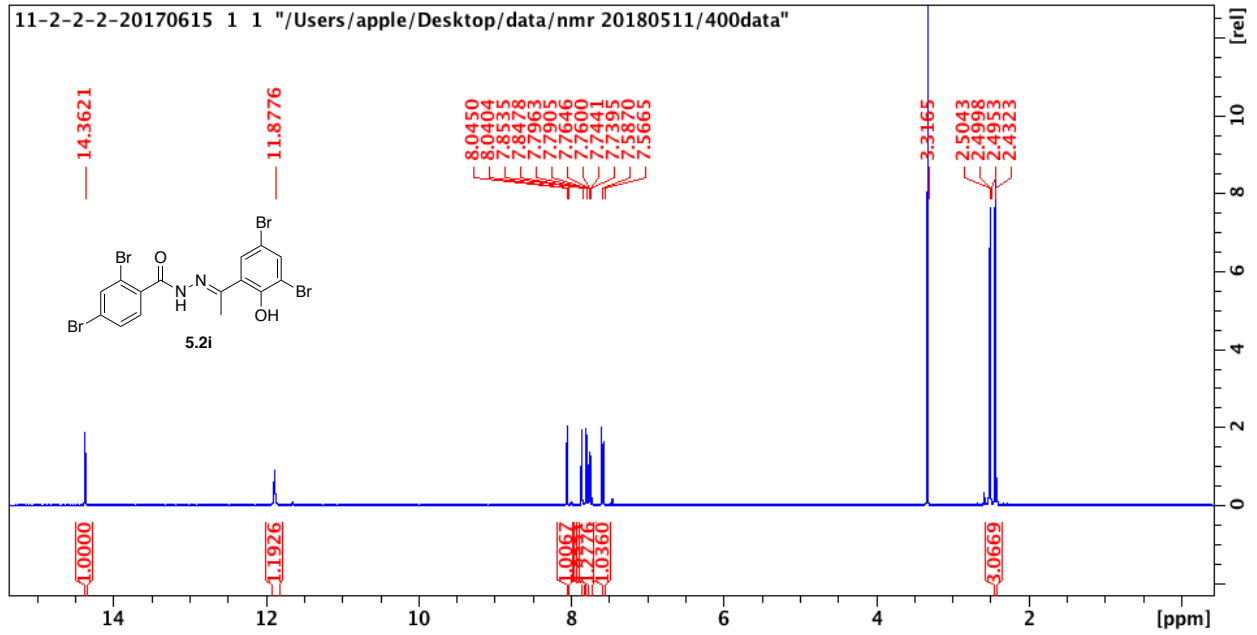


**<sup>1</sup>H NMR of compound 5.28**

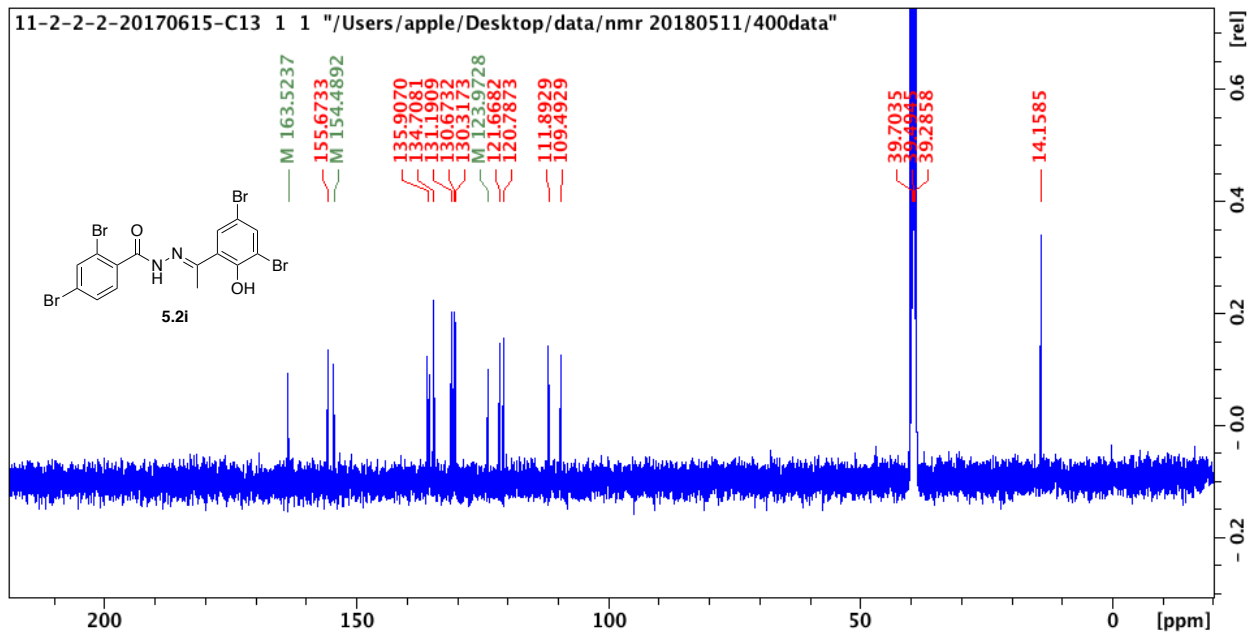


**<sup>13</sup>C NMR of compound 5.28**

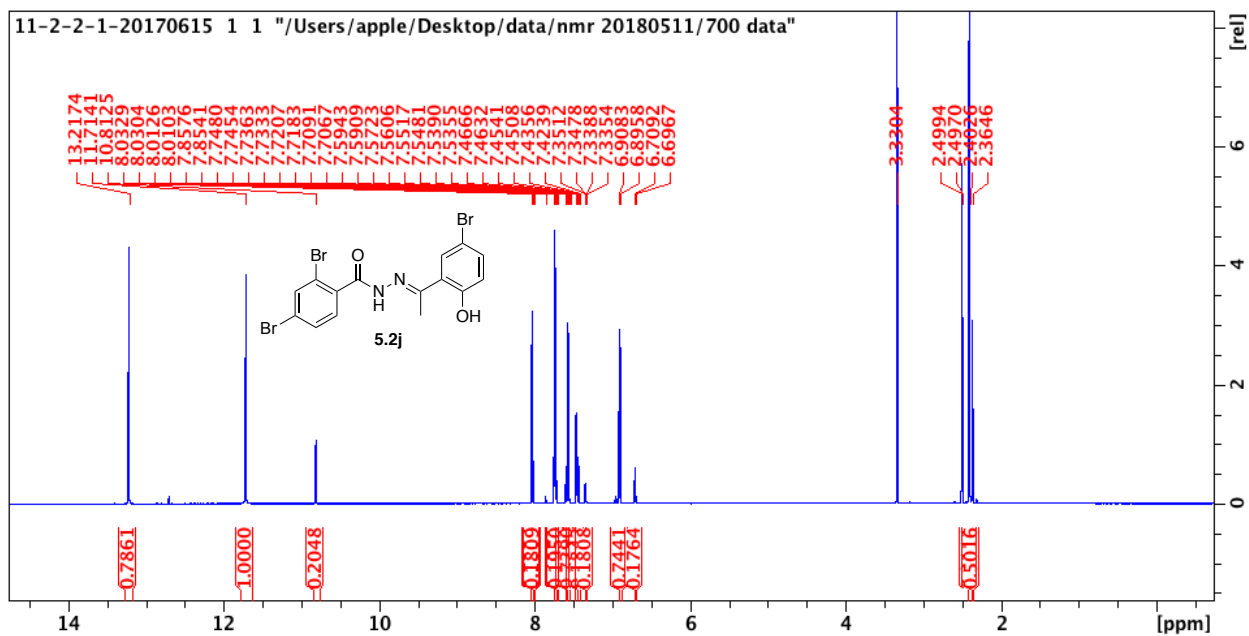




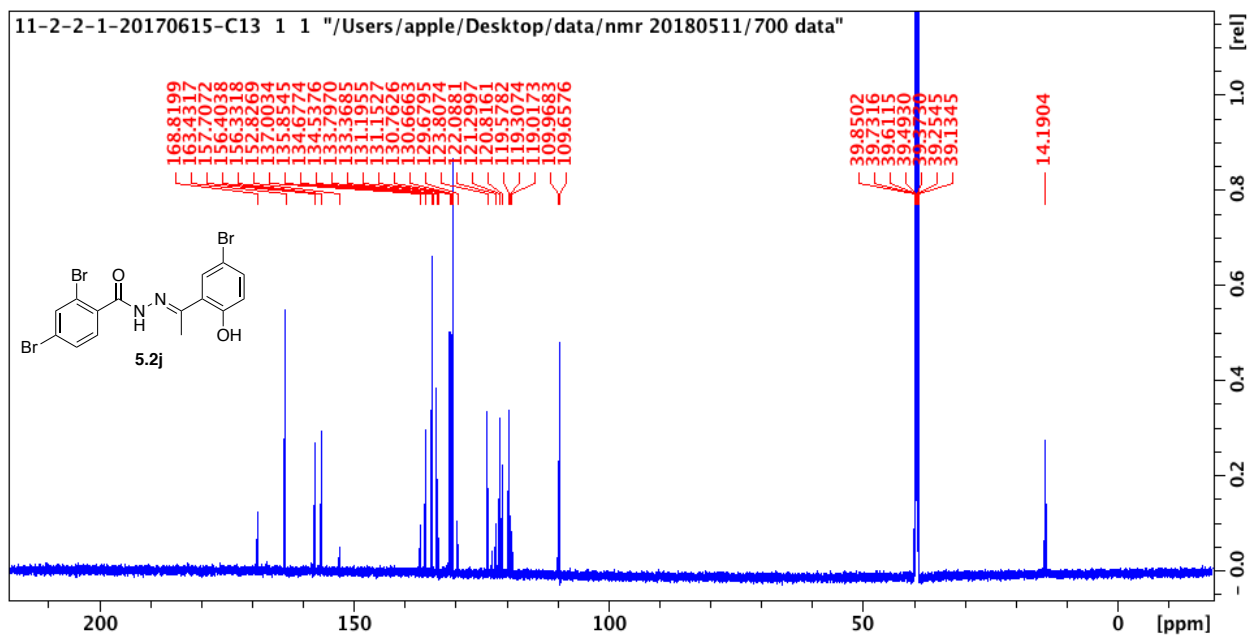
<sup>1</sup>H NMR of compound 5.2i



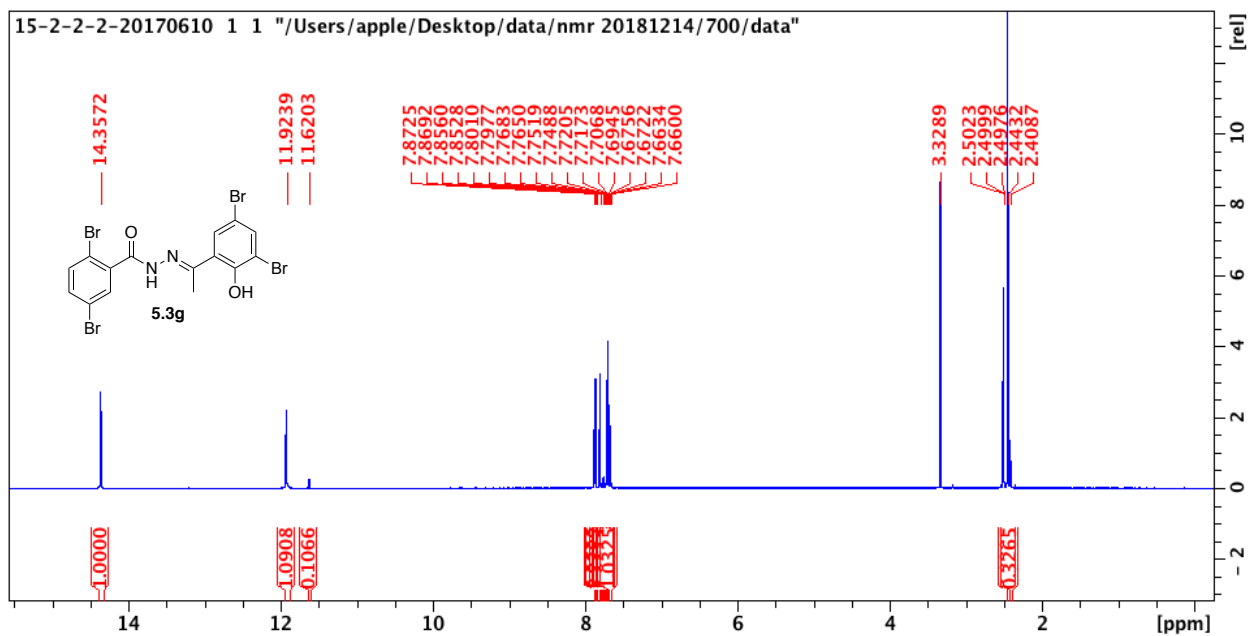
<sup>13</sup>C NMR of compound 5.2i



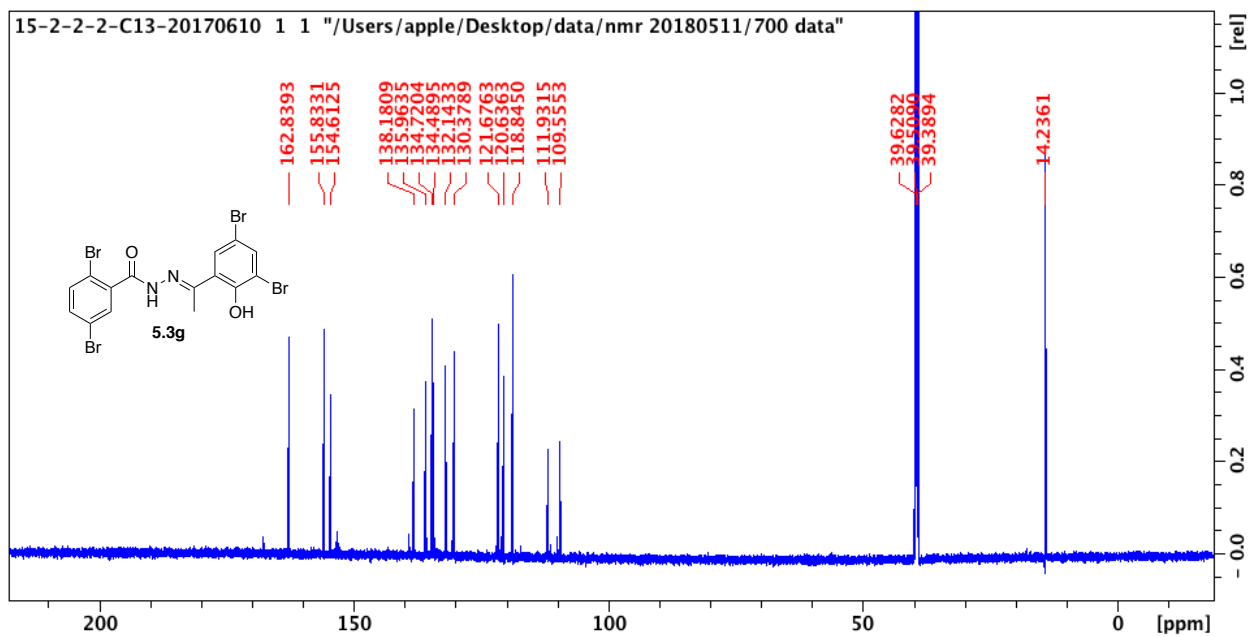
<sup>1</sup>H NMR of compound 5.2j



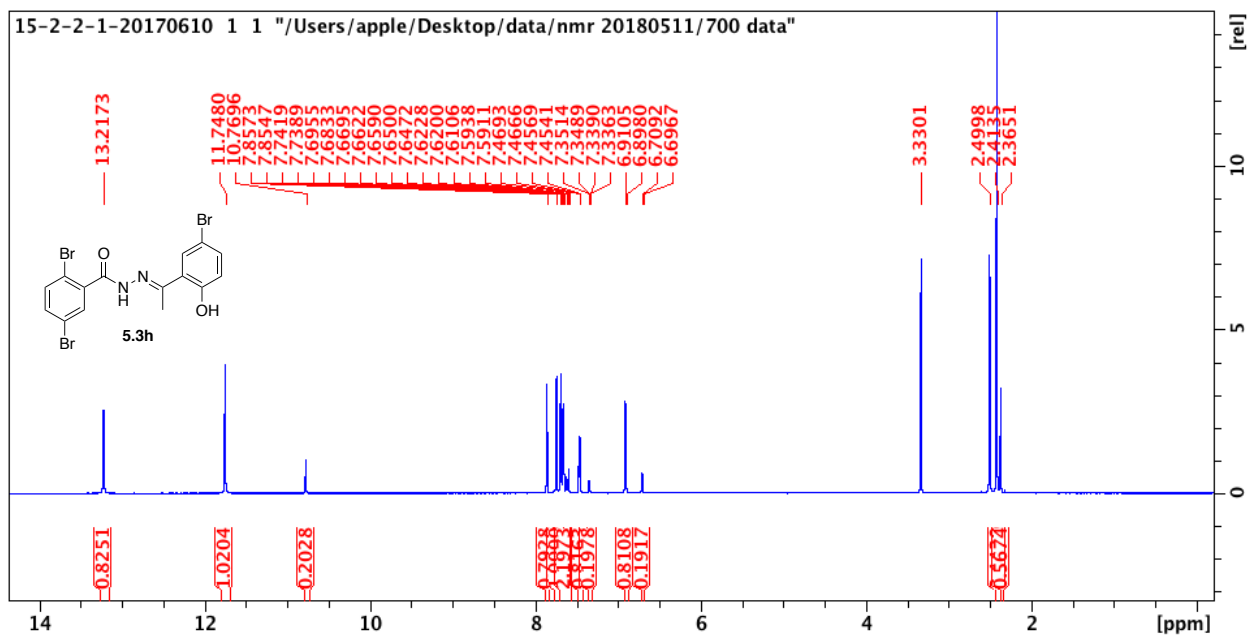
<sup>13</sup>C NMR of compound 5.2j



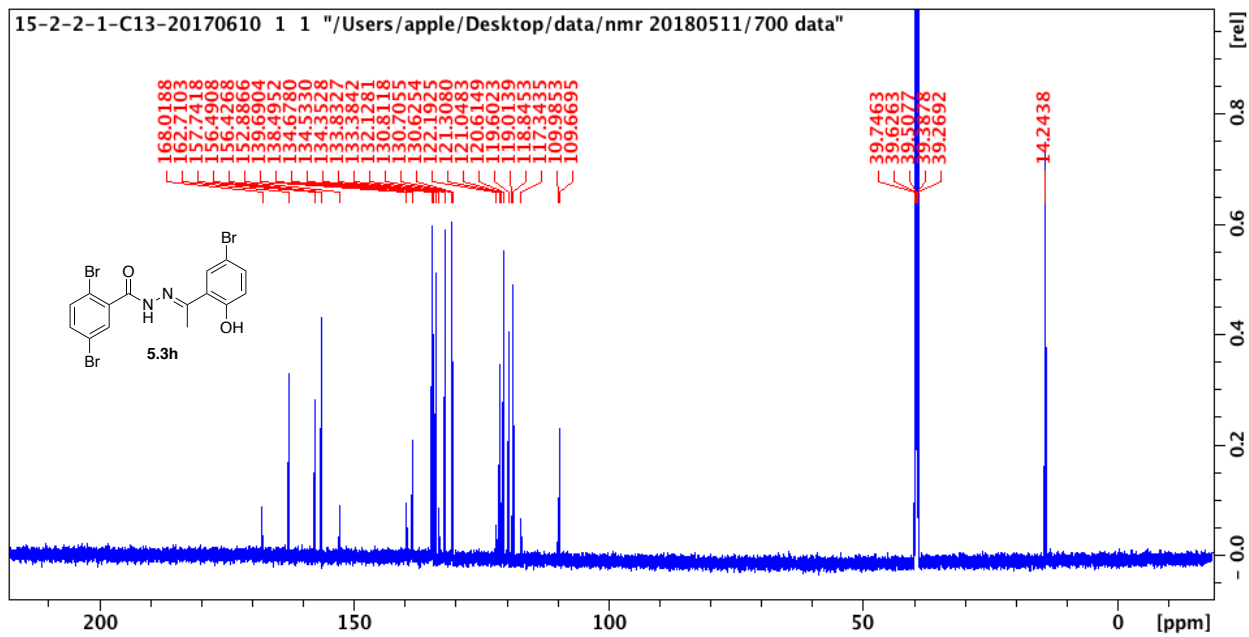
<sup>1</sup>H NMR of compound 5.3g



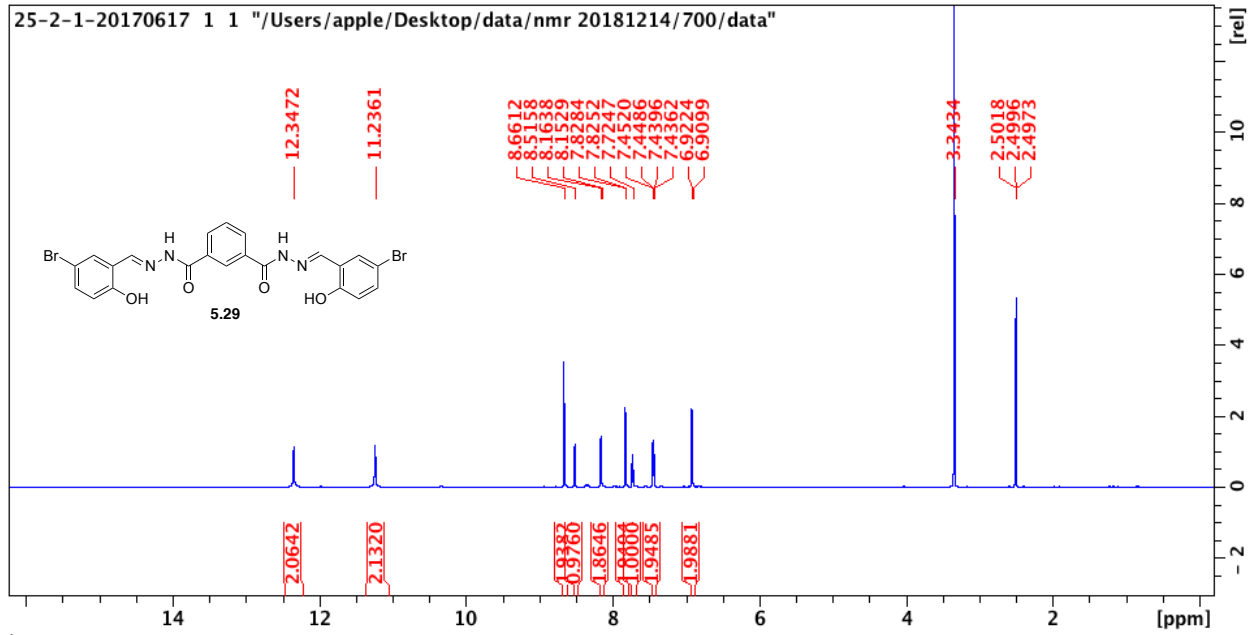
<sup>13</sup>C NMR of compound 5.3g



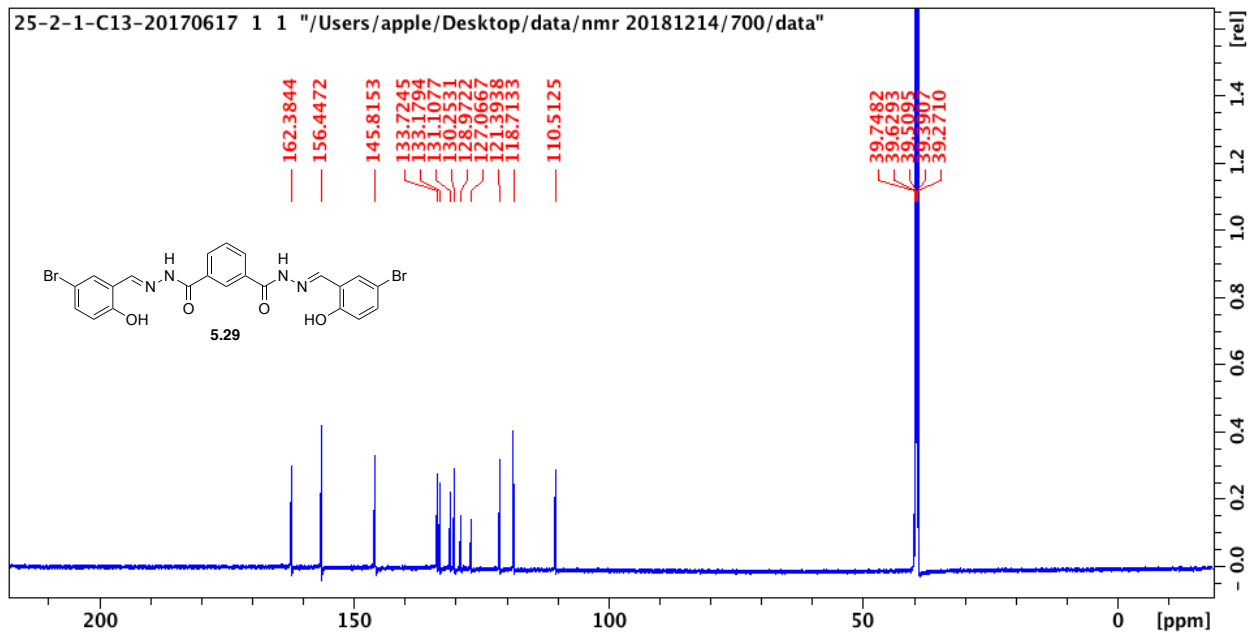
**<sup>1</sup>H NMR of compound 5.3h**



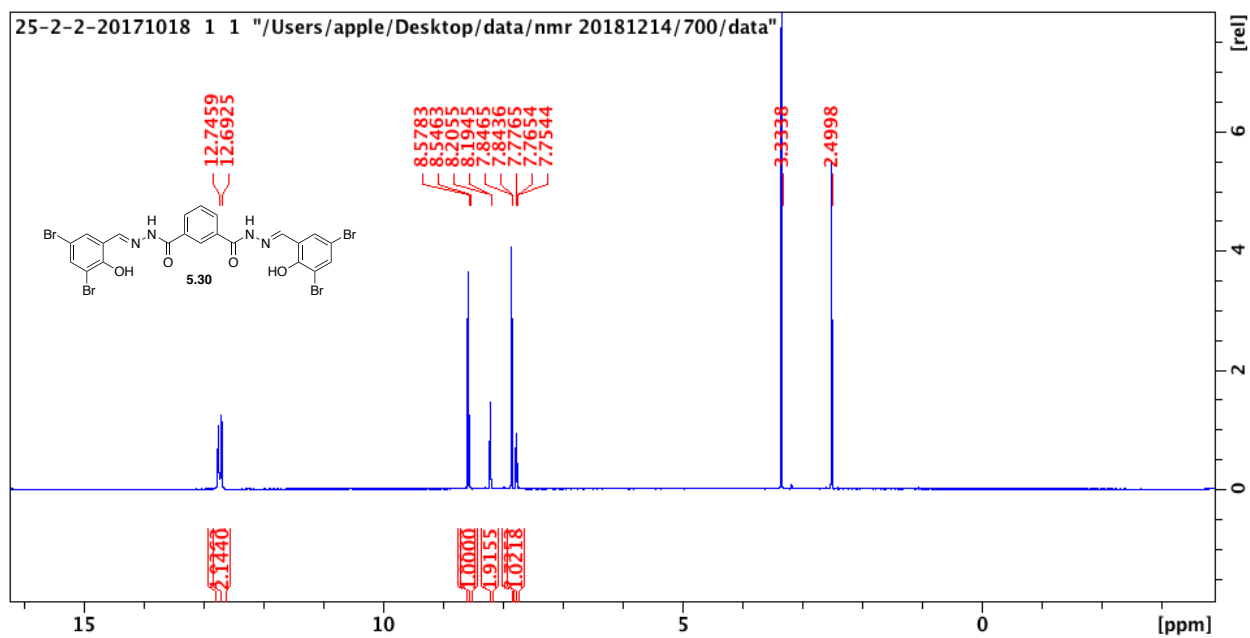
**<sup>13</sup>C NMR of compound 5.3h**



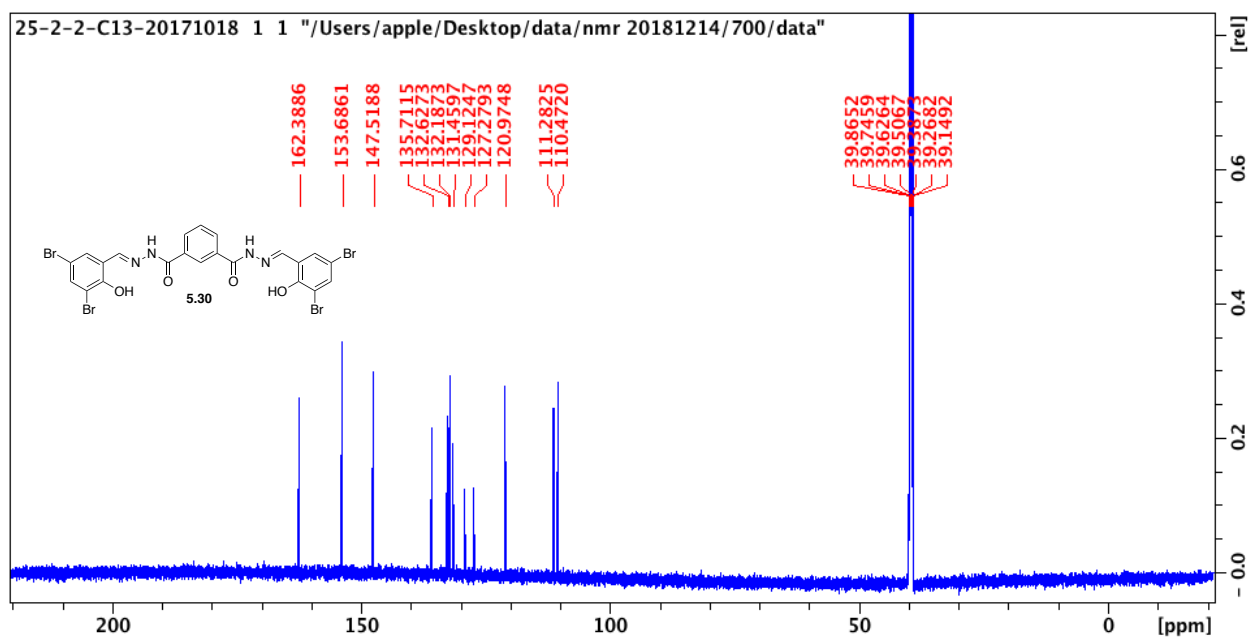
<sup>1</sup>H NMR of compound 5.29



<sup>13</sup>C NMR of compound 5.29



<sup>1</sup>H NMR of compound 5.30



<sup>13</sup>C NMR of compound 5.30