

***In vitro* antitumor activity, molecular dynamics simulation, DFT study, ADME prediction, and Eg5 binding of Enastron analogues**

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<sup>b</sup>*Environmental Research Center (CRE), 23000 Annaba, Algeria.*

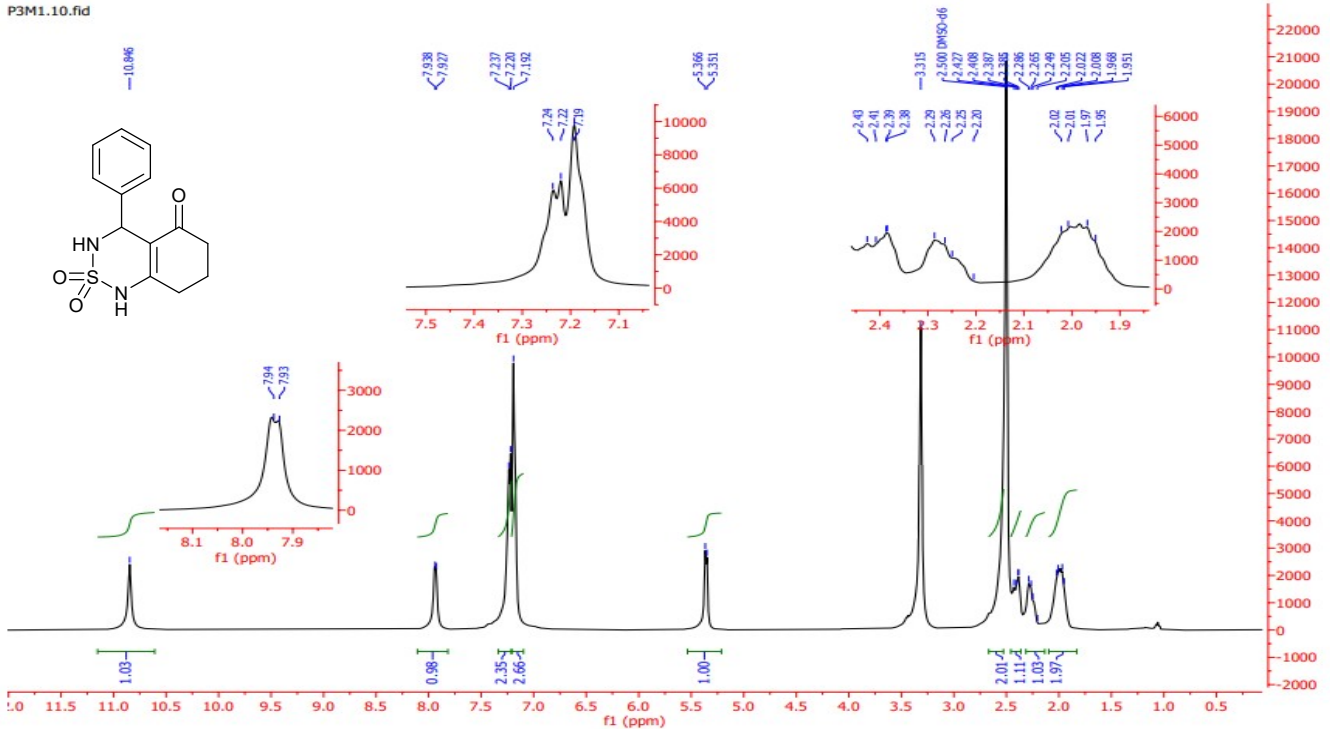
<sup>c</sup>*Université de Limoges, LABCiS, UR 22722, F-87000 Limoges, France.*

<sup>d</sup>*Research Unit in Medicinal Plants, URPM, 3000 Laghouat, attached to Research Center of Biotechnology, CRBT, 25000 Constantine, Algeria.*

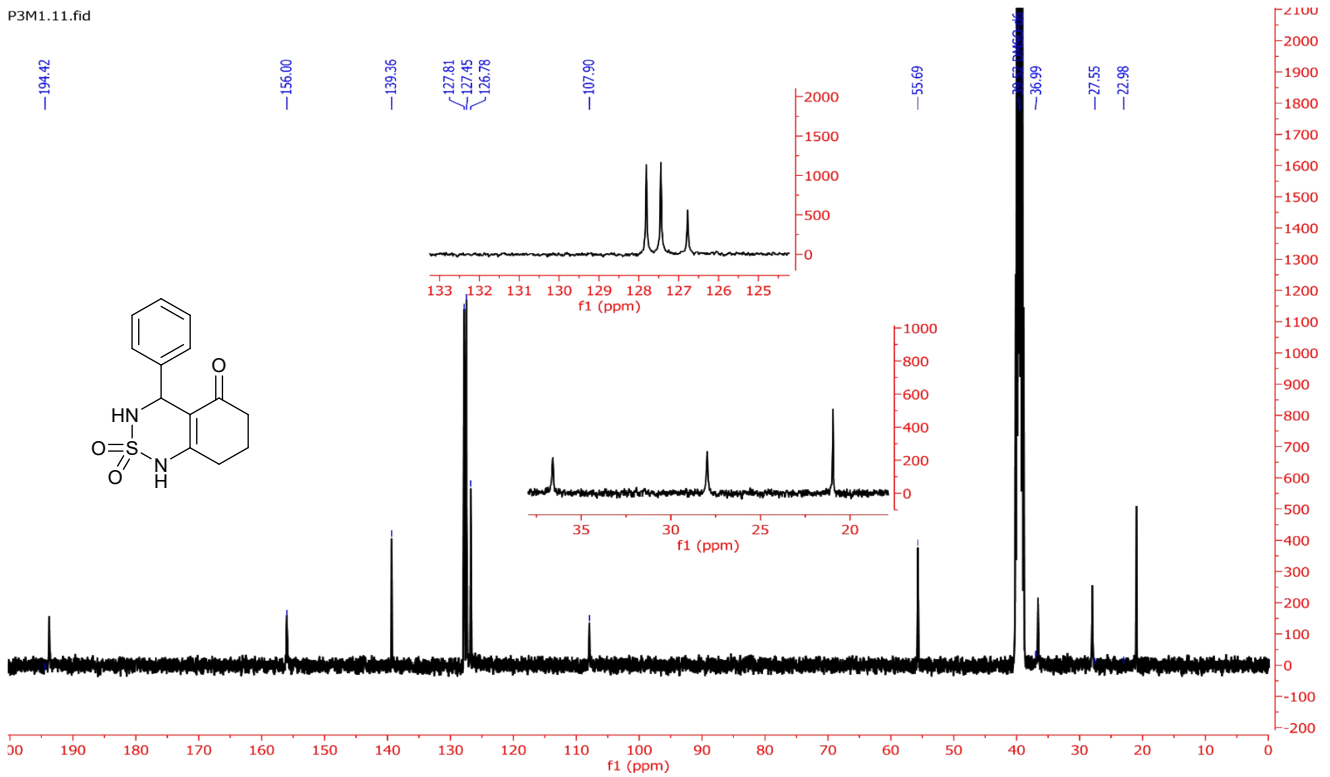
<sup>e</sup>*Aix Marseille Univ, CNRS, Centrale Marseille, iSm2, Marseille F-13397, France*

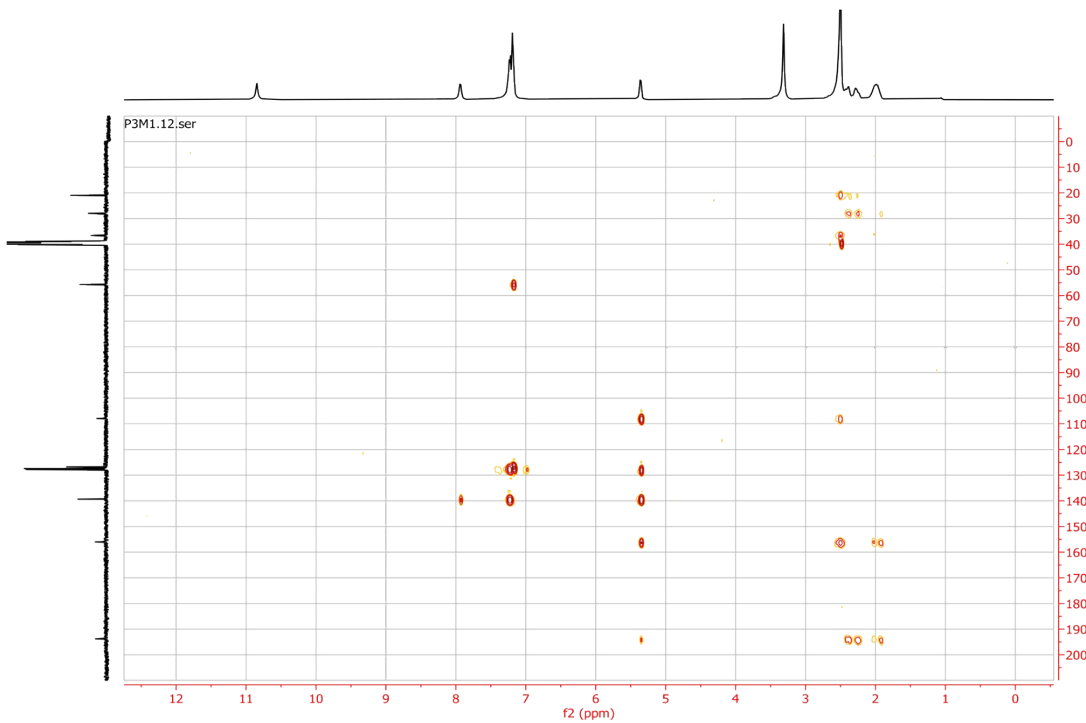
\*Corresponding author. Email: [abdeslem.bouzina@univ-annaba.dz](mailto:abdeslem.bouzina@univ-annaba.dz), [bouzinaabdeslem@yahoo.fr](mailto:bouzinaabdeslem@yahoo.fr)

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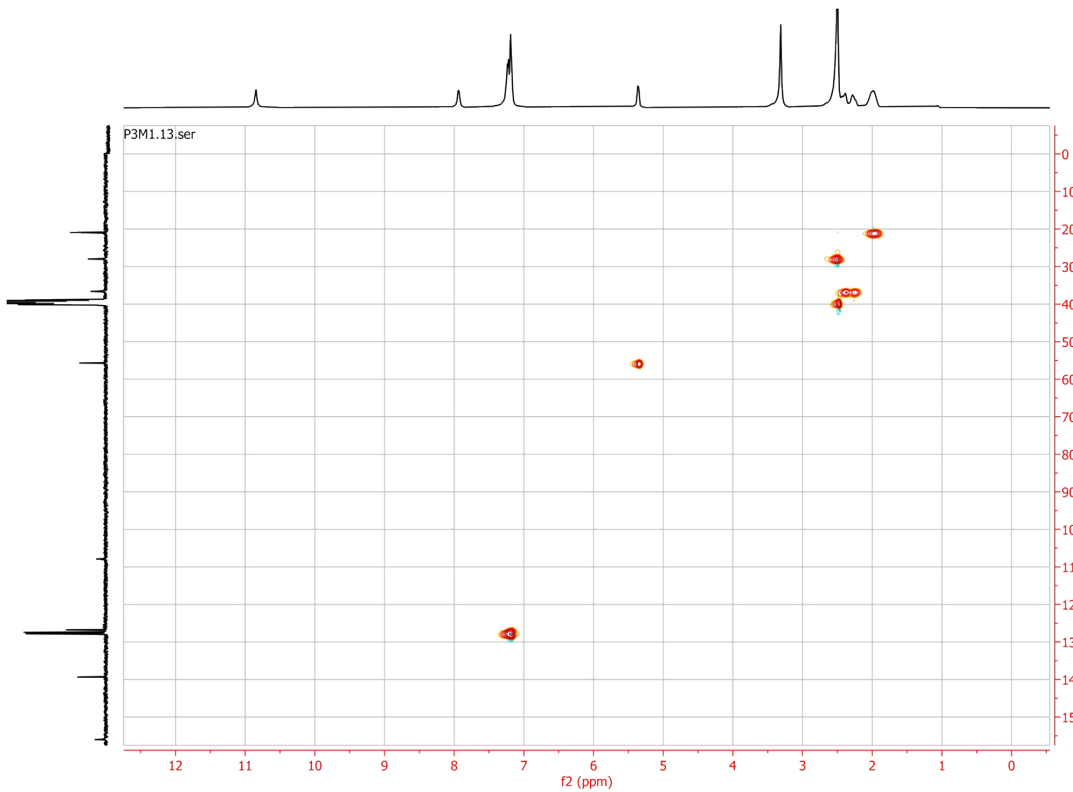
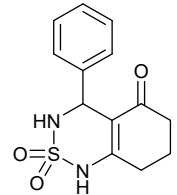
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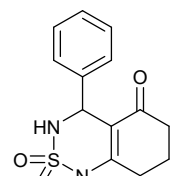


ro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

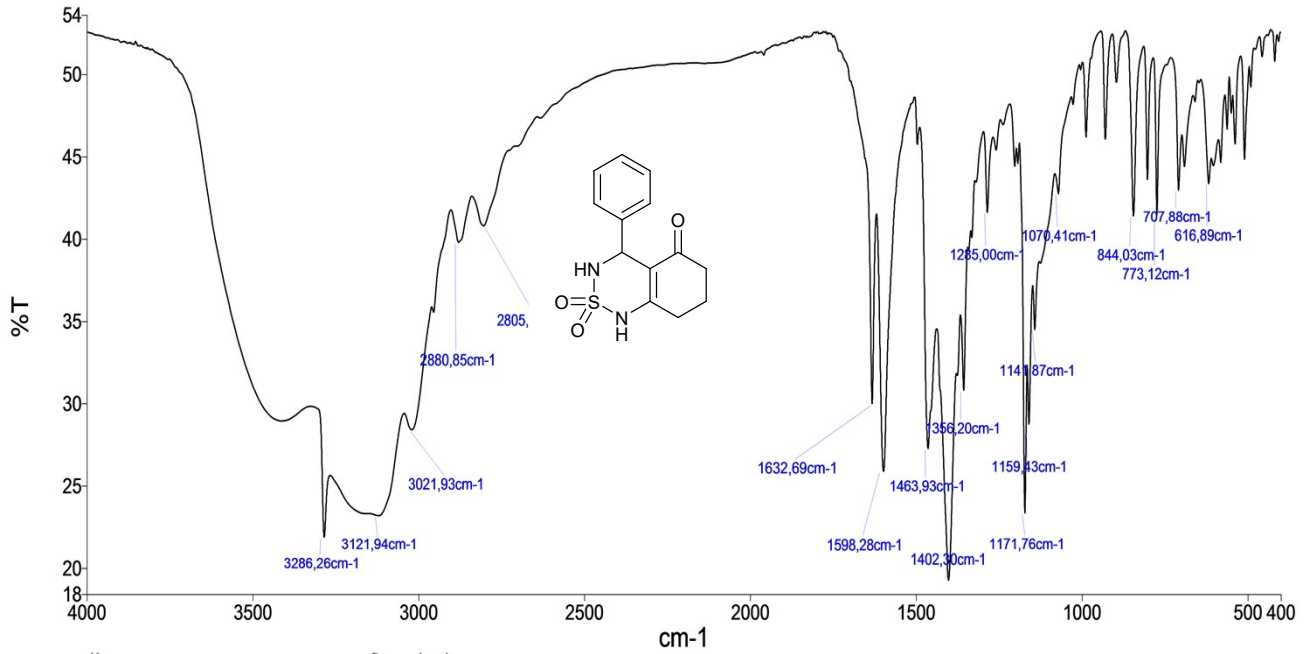
**HMBC  
Spectru  
m: 4-  
phenyl-  
4,6,7,8-  
tetrahyd**



**HMQC  
Spectru  
m: 4-  
phenyl-  
4,6,7,8-  
tetrahy  
dro-1H-**

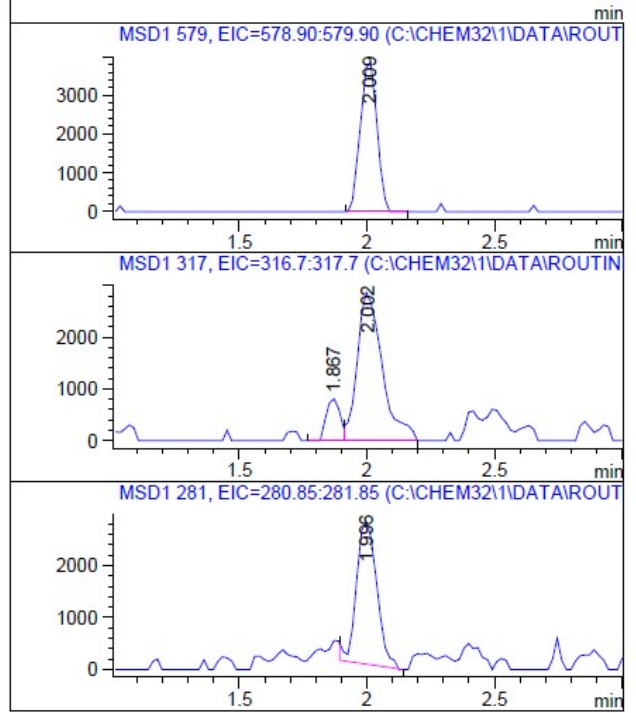
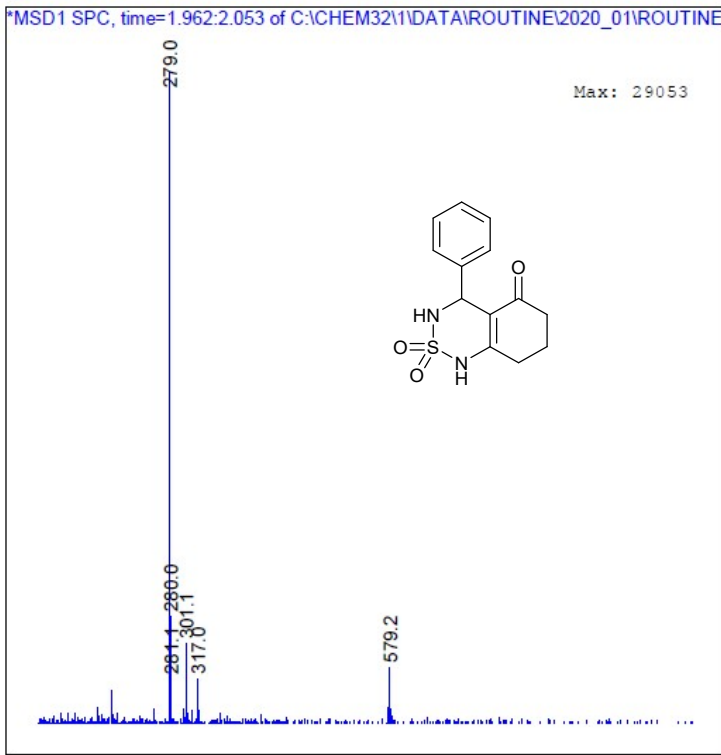


benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

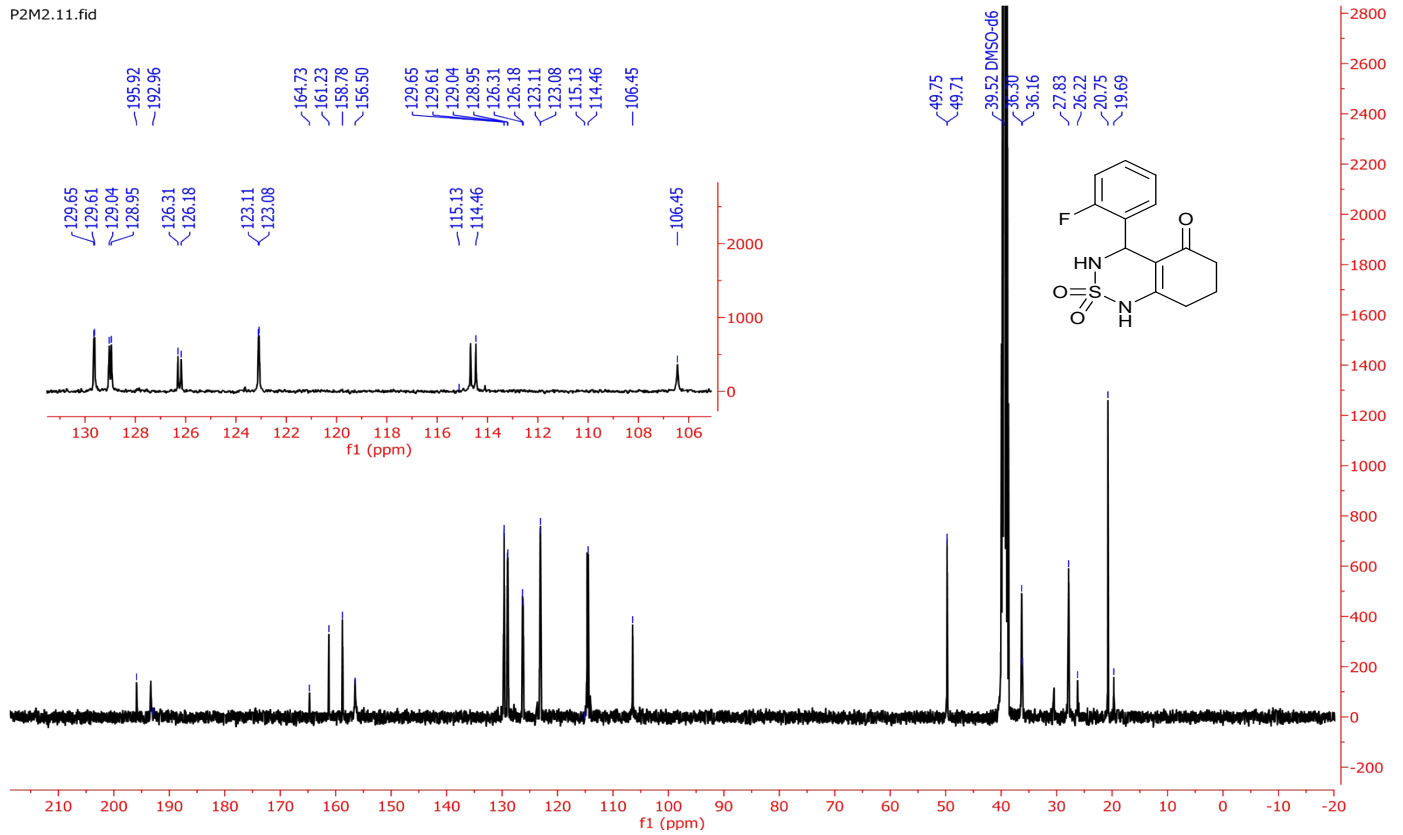
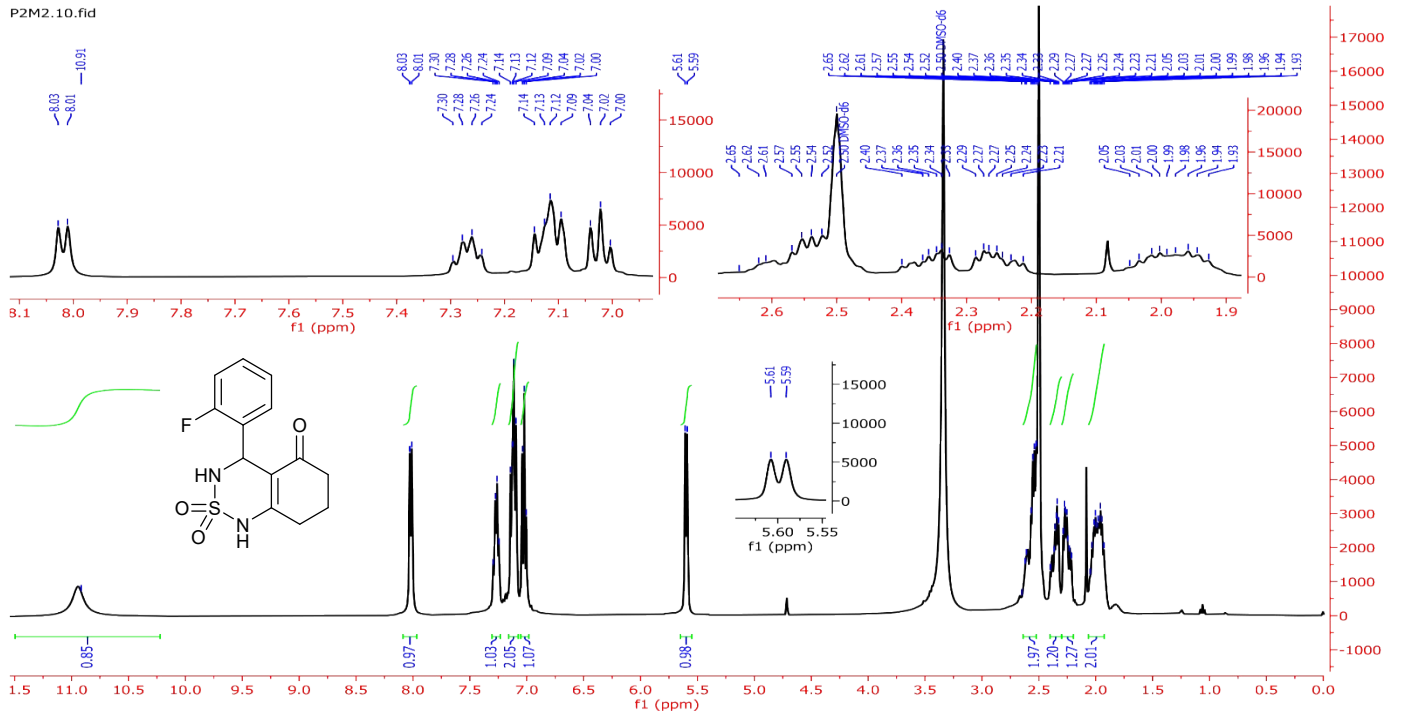


Nom Description  
 BABB\_1 Échantillon 009 Par Administrator Date jeudi, décembre 13 2018

IR Spectrum: 4-phenyl-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

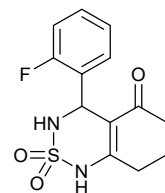
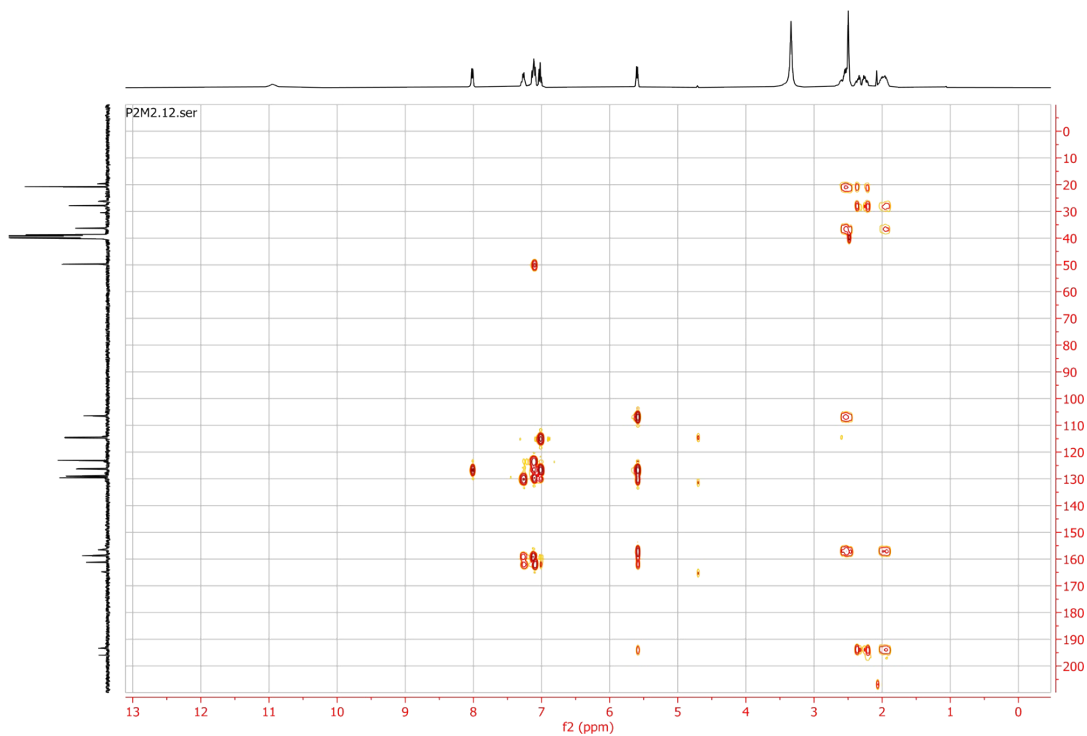


LC-MS: 4-phenyl-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

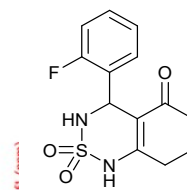
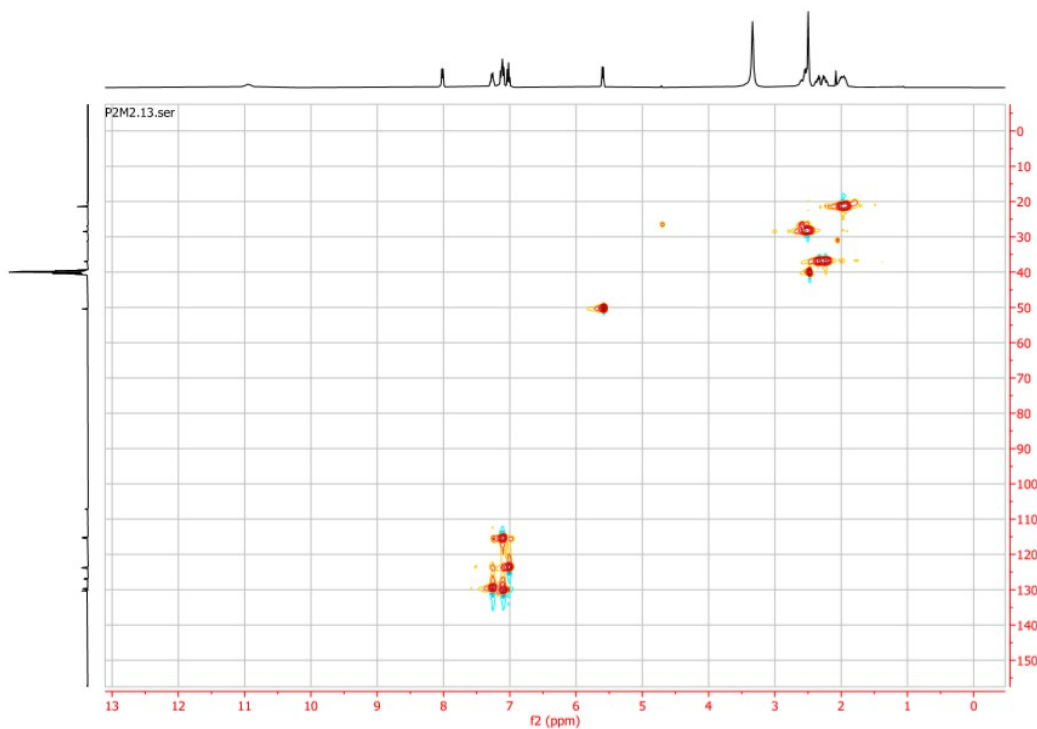


dioxide

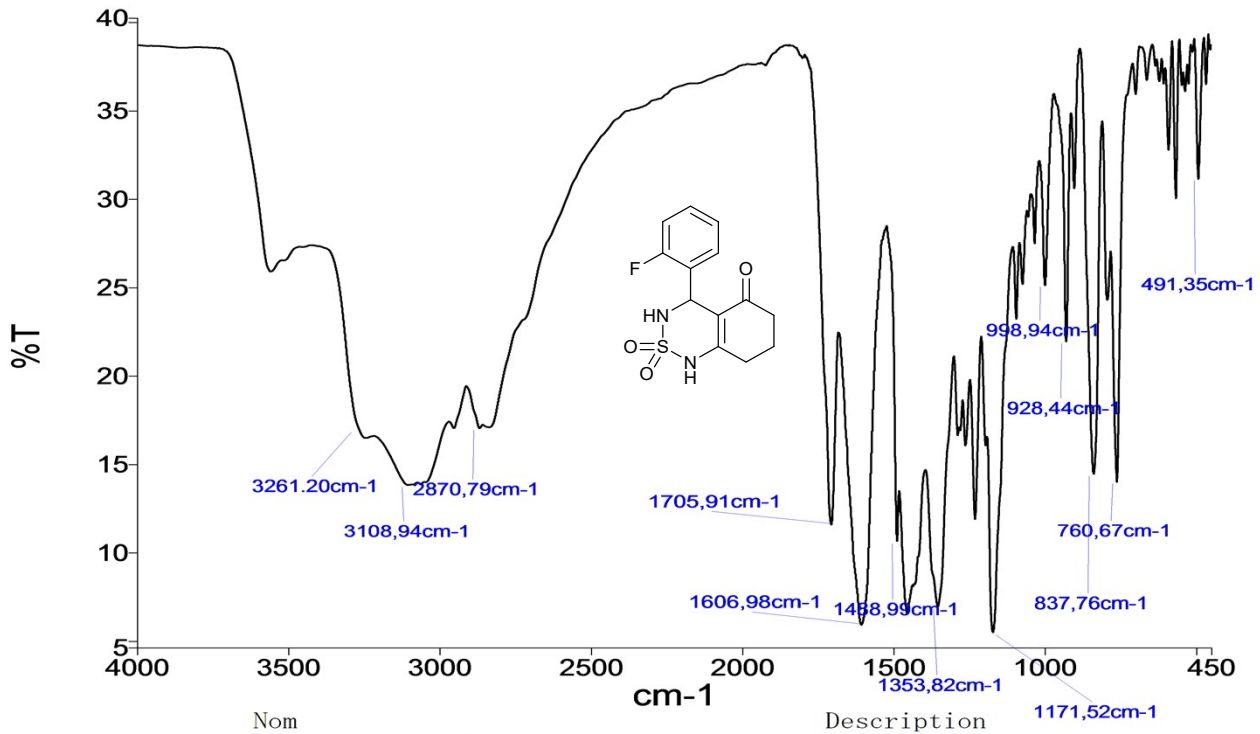
**<sup>13</sup>C NMR Spectrum: 4-(2-fluorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**



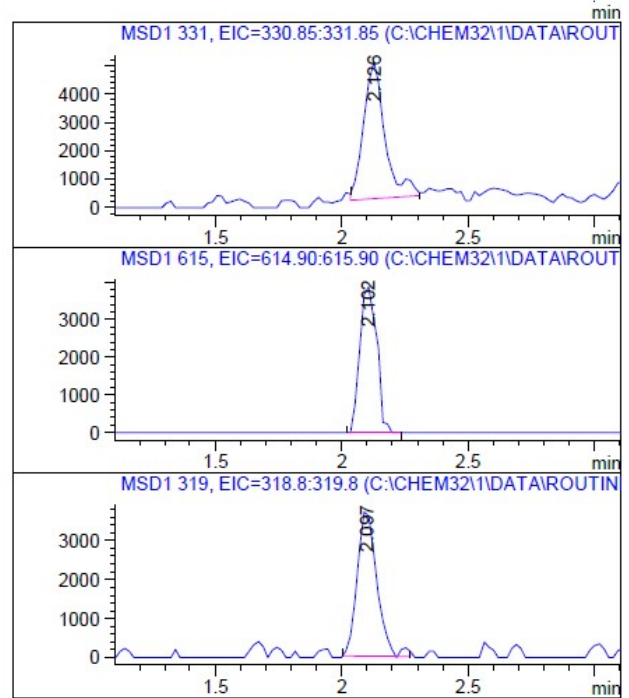
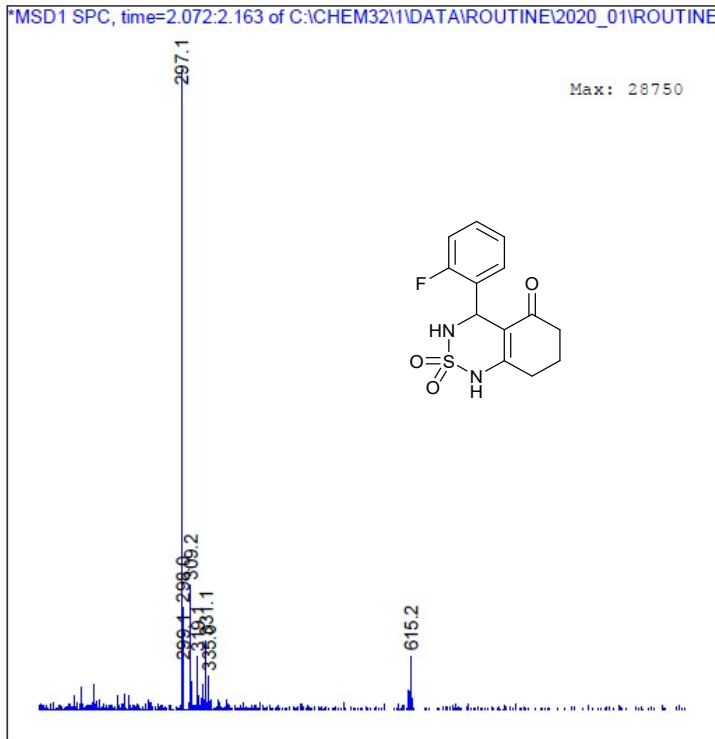
**HMBC Spectrum: 4-(2-fluorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**



**HMQC Spectrum:** 4-(2-fluorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide



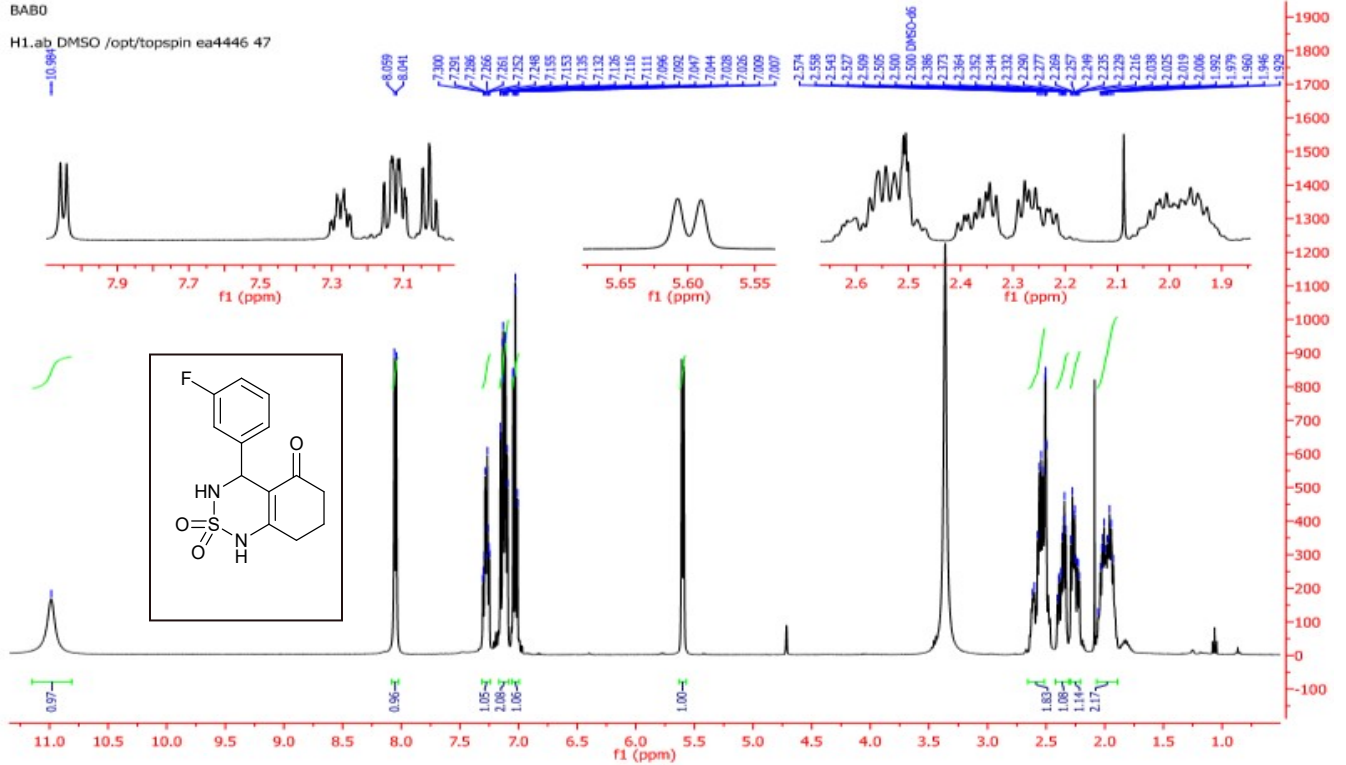
Administrator 141\_1\_1 Échantillon 141 Par Administrator Date jeudi, juillet 04 2019



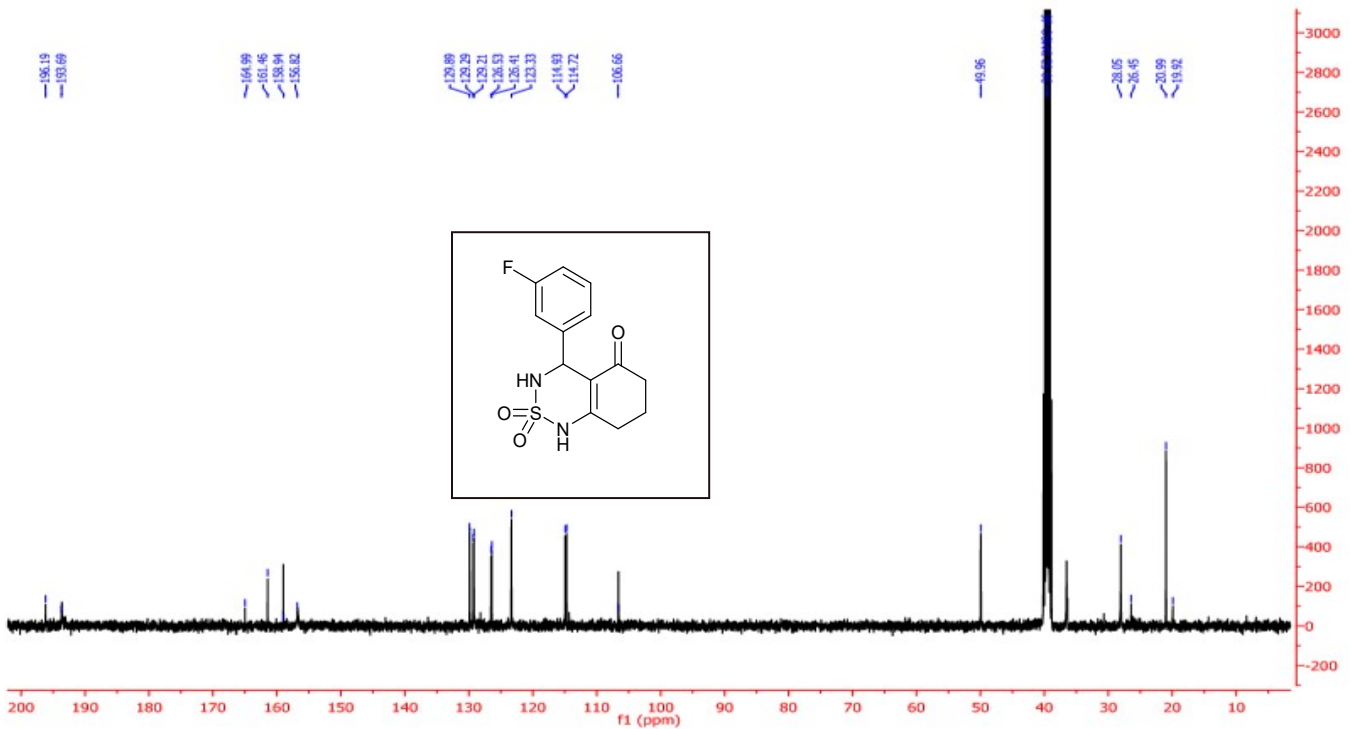
IR Spectrum: 4-(2-fluorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide



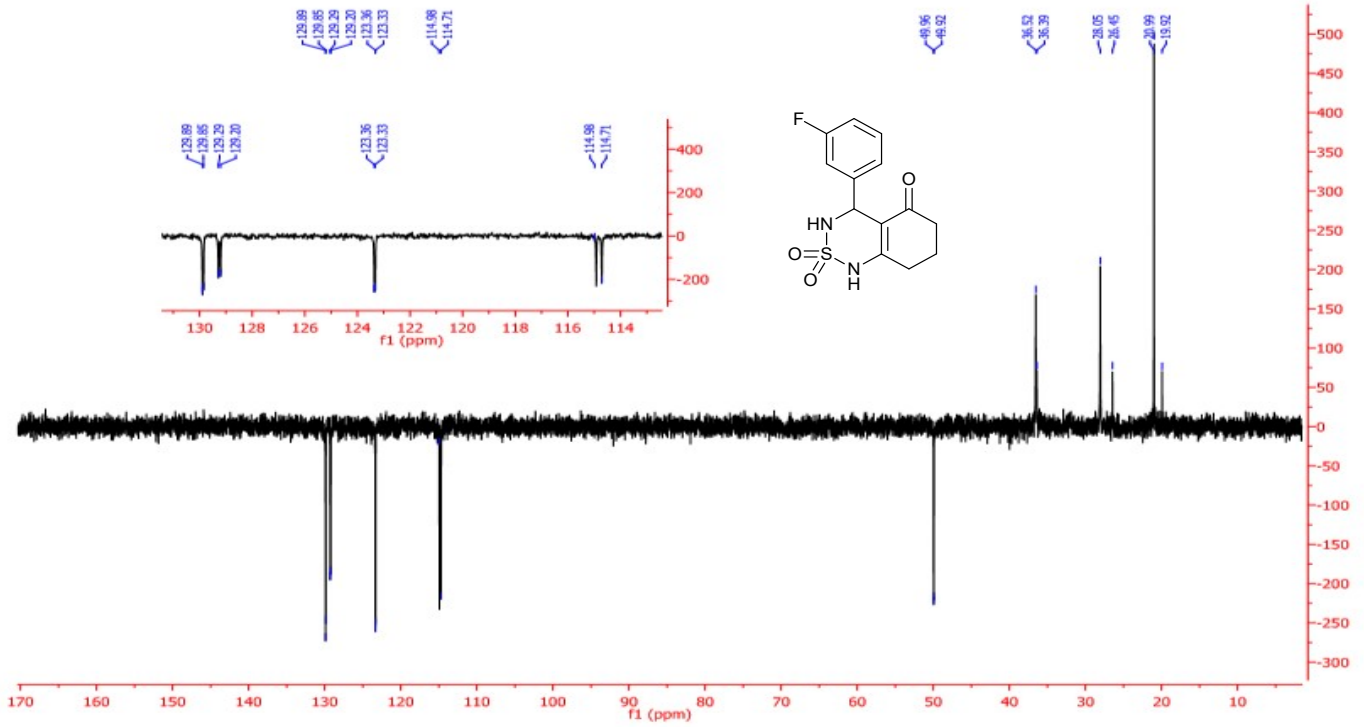
LC-MS: 4-(2-fluorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide



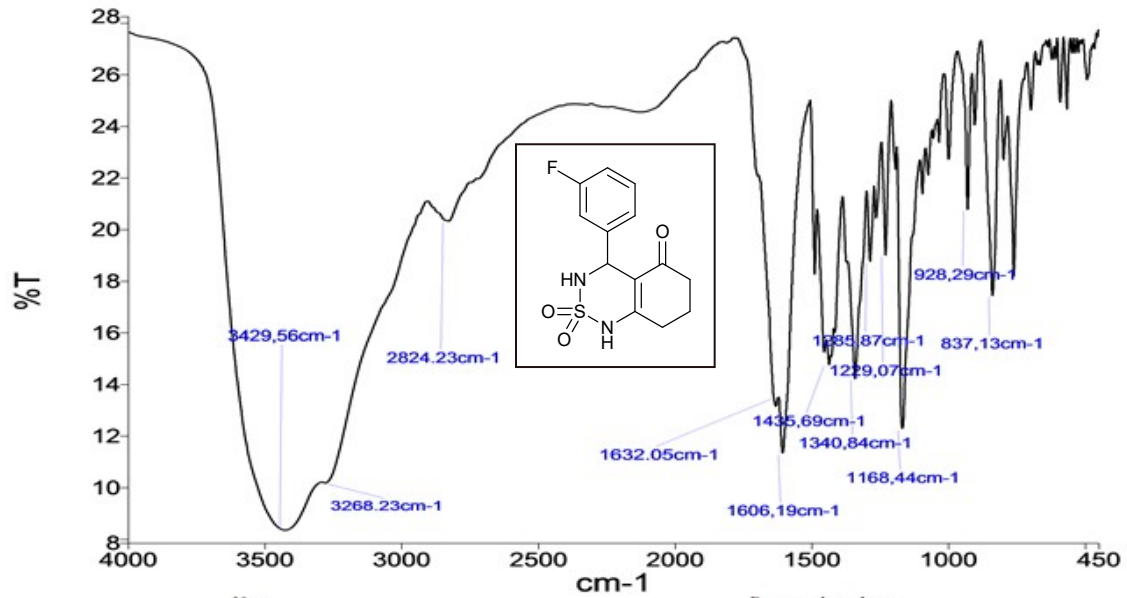
<sup>1</sup>H NMR Spectrum: 4-(3-fluorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide



**<sup>13</sup>C NMR Spectrum: 4-(3-fluorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**



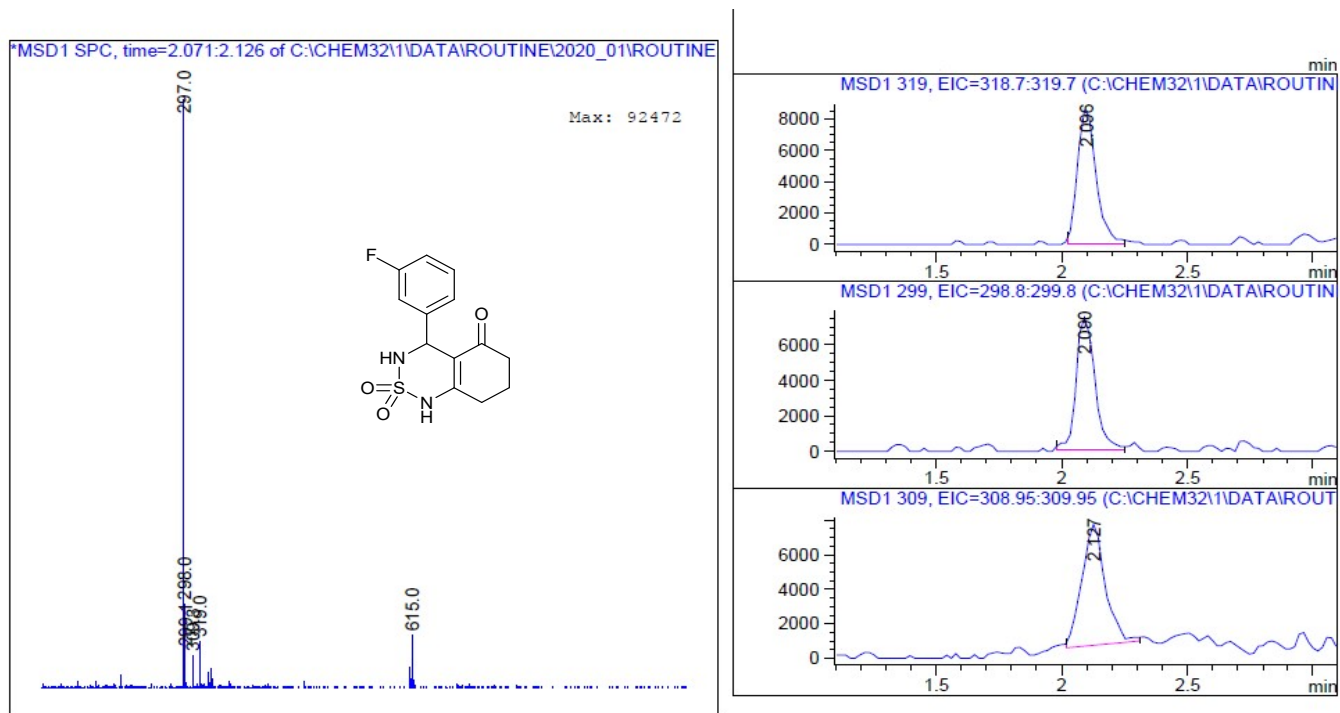
**DEPT NMR Spectrum: 4-(3-fluorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**



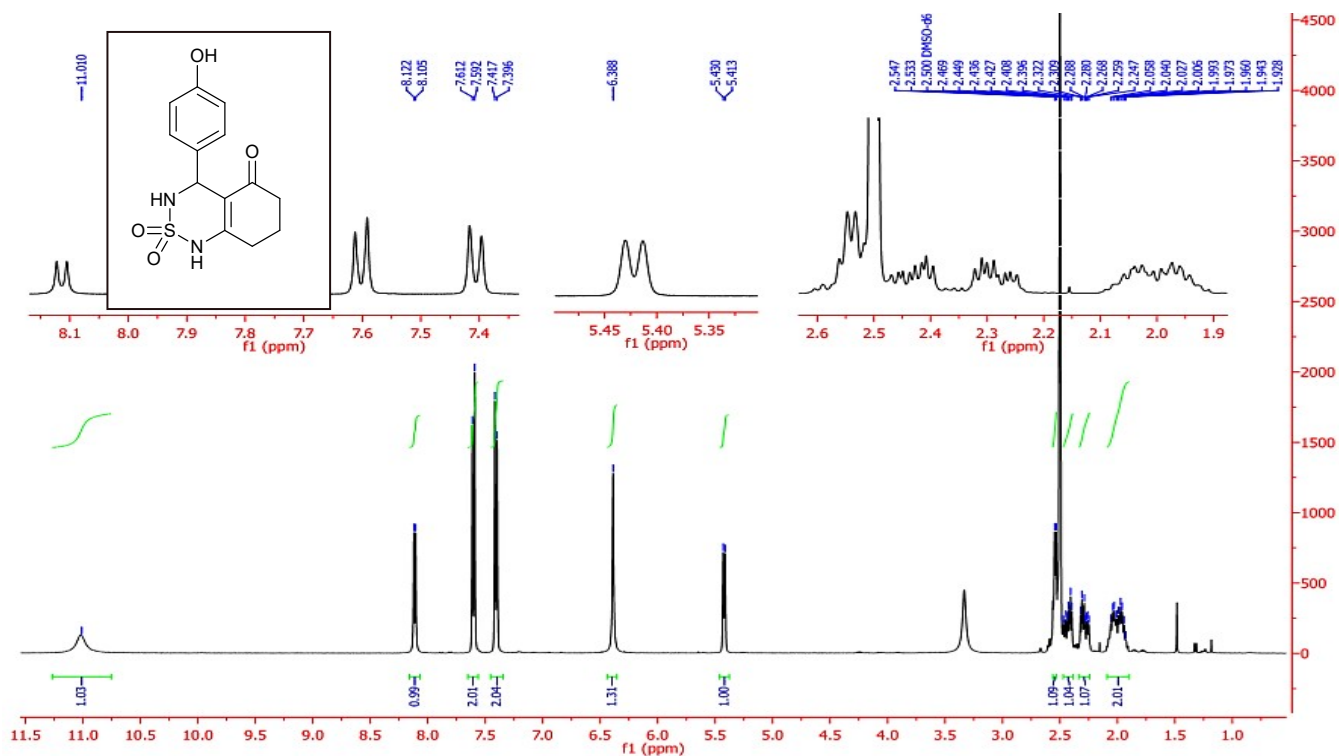
Nom: Administrator 143\_1\_1 Échantillon 143 Par Administrator Date jeudi, juillet 04 2019

dioxide

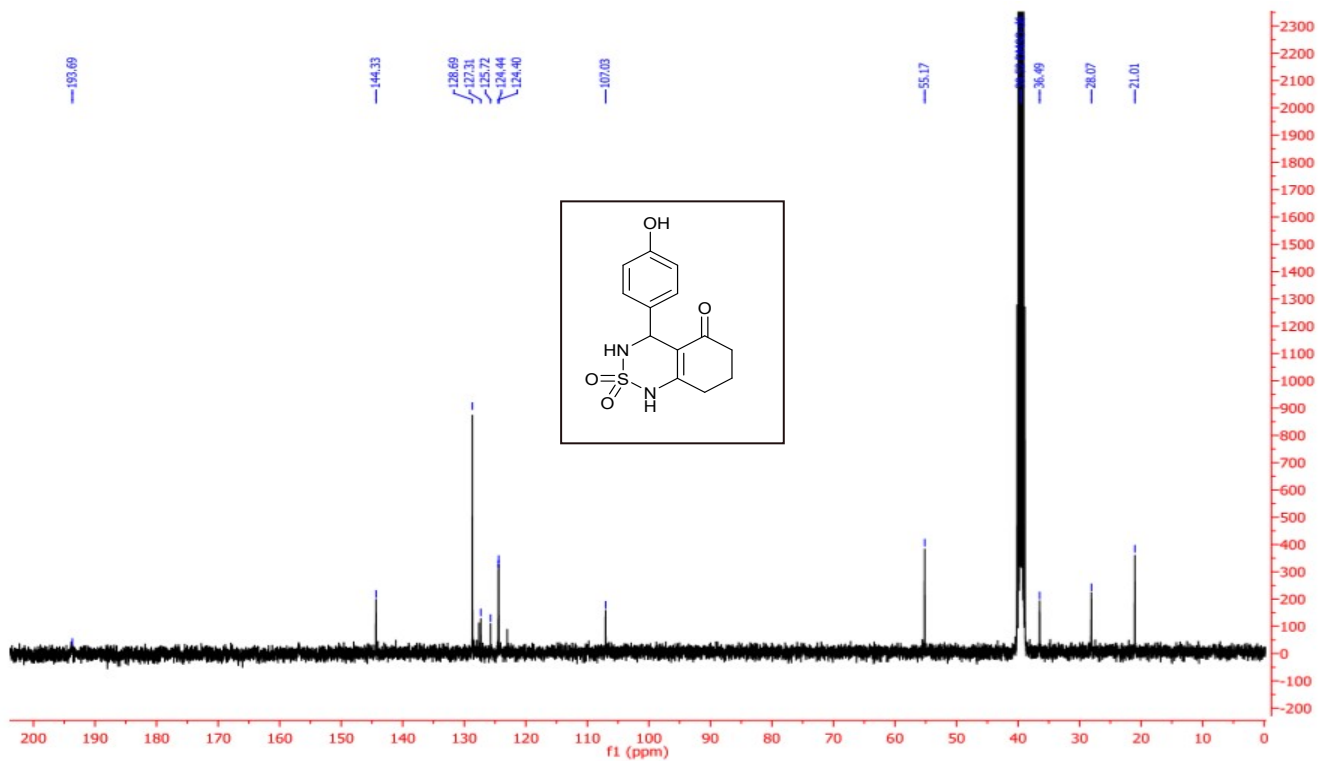
**IR Spectrum: 4-(3-fluorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**



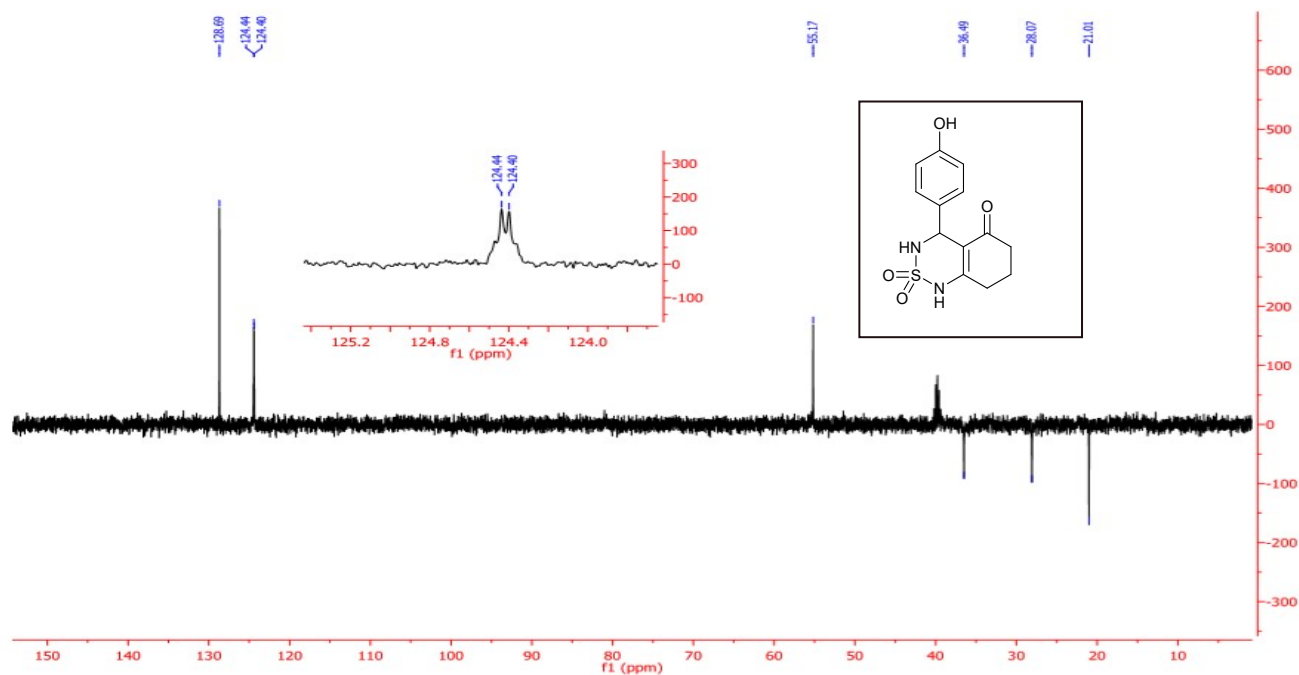
**LC-MS: 4-(3-fluorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**



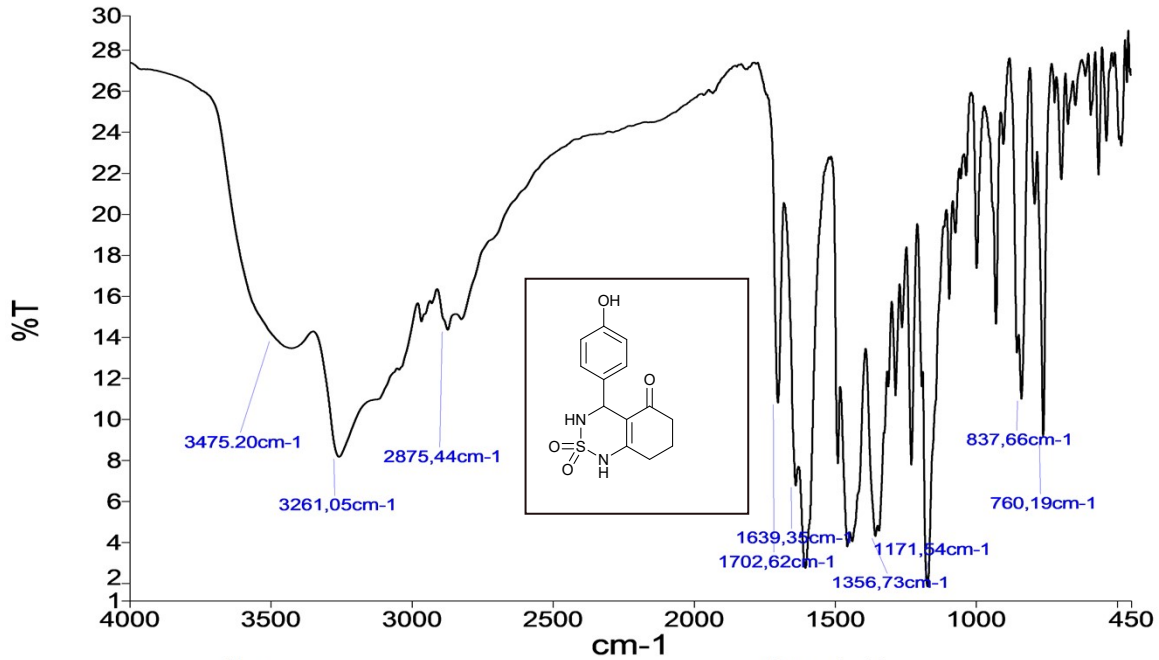
**1H NMR Spectrum: 4-(4-hydroxyphenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**



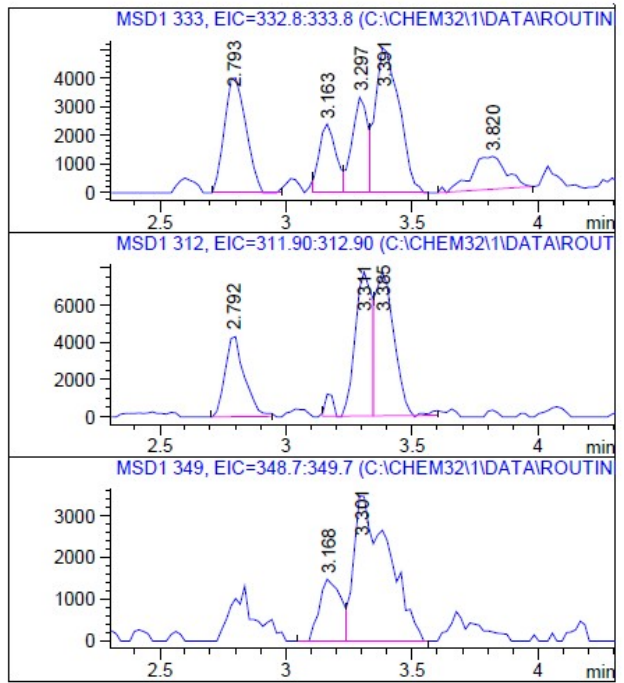
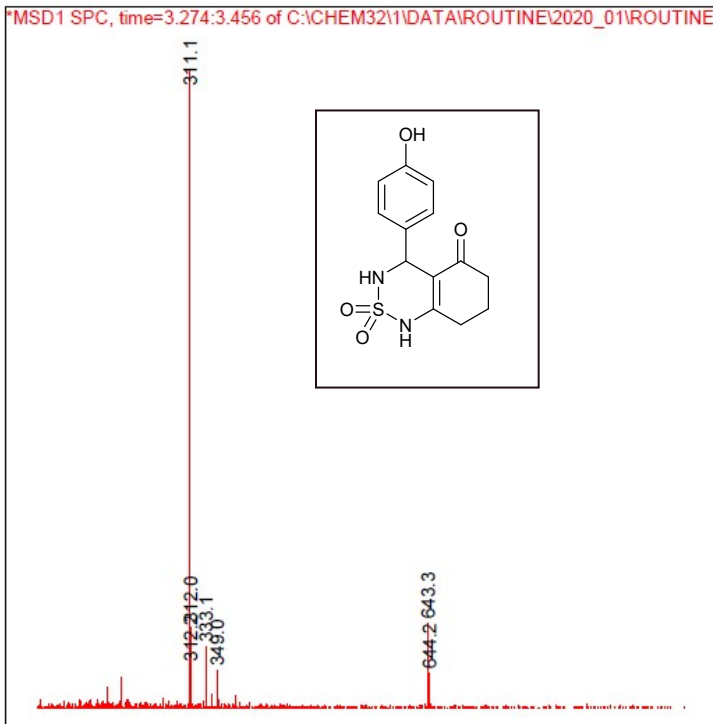
**<sup>13</sup>C NMR Spectrum:** 4-(4-hydroxyphenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide



**DEPT NMR Spectrum:** 4-(4-hydroxyphenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide



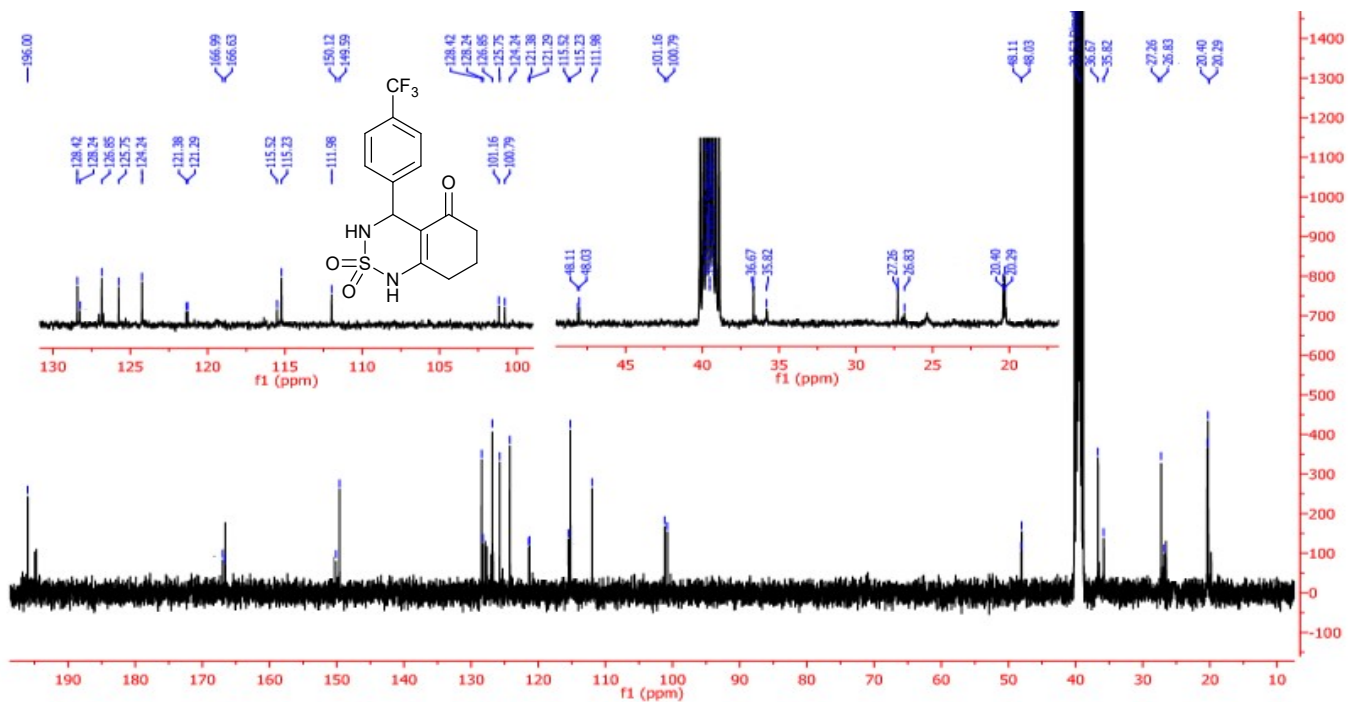
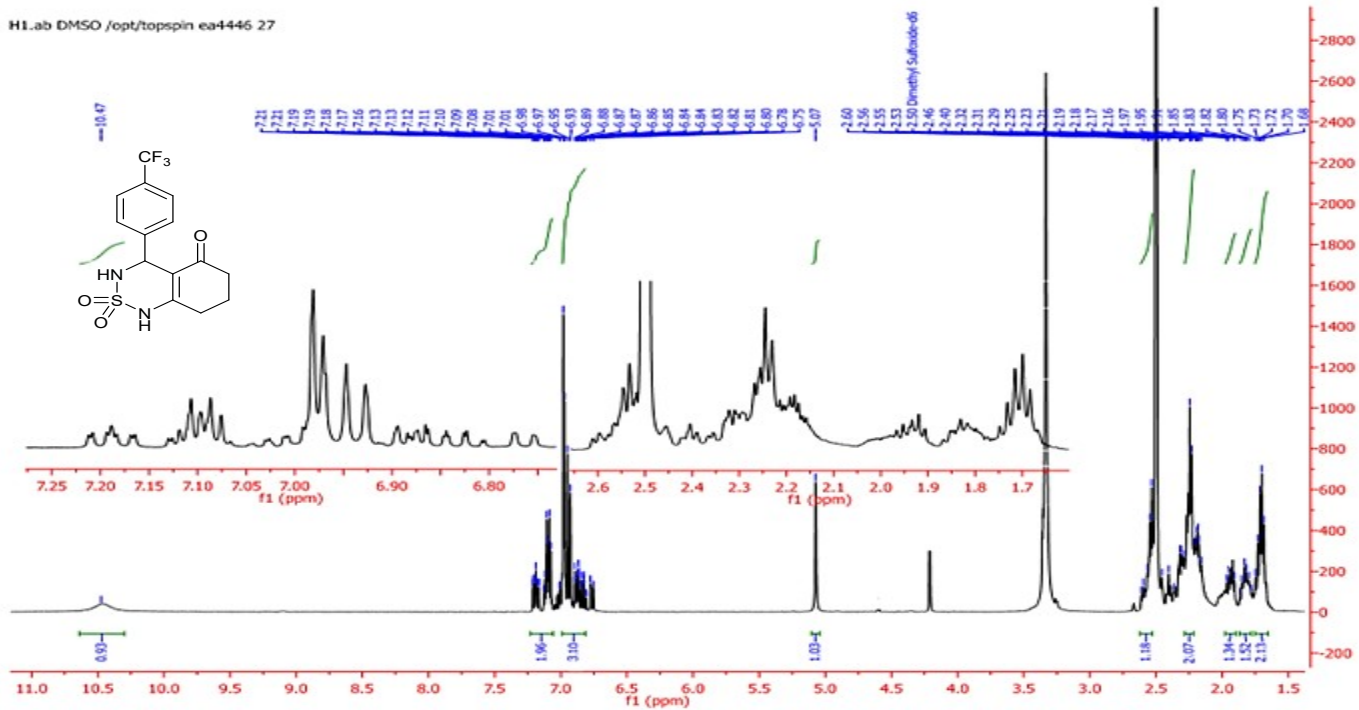
Nom Description  
 Administrateur 244\_1 Échantillon 244 Par Administrateur Date mercredi, janvier 22 2020  
**IR Spectrum: 4-(4-hydroxyphenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**

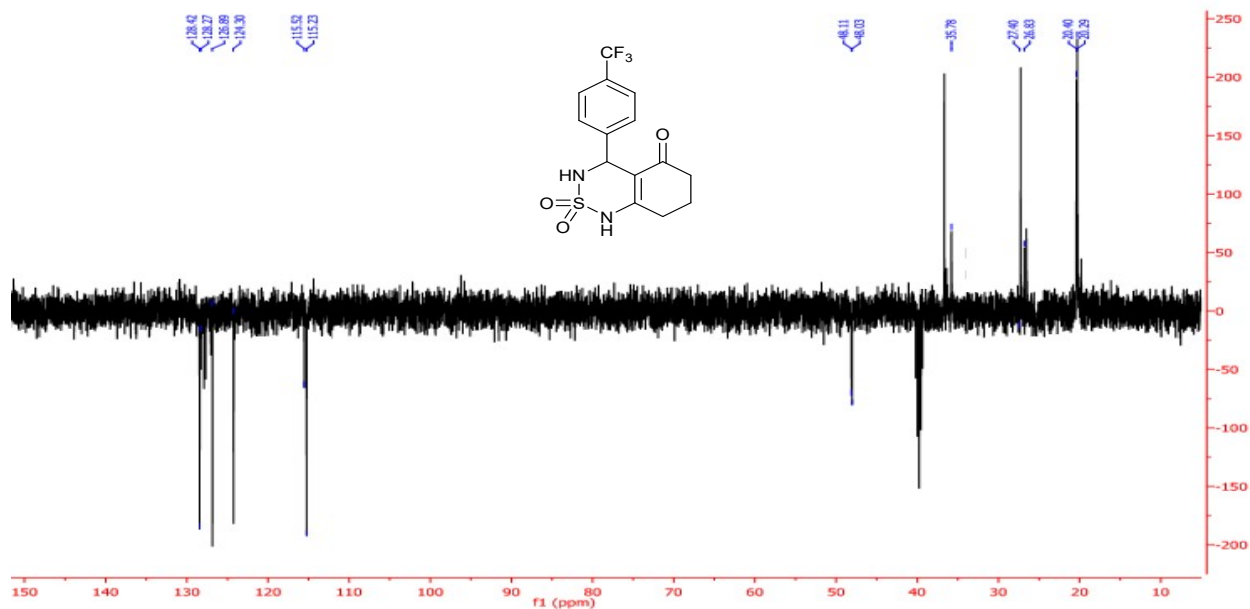


**LC-MS: 4-(4-hydroxyphenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**

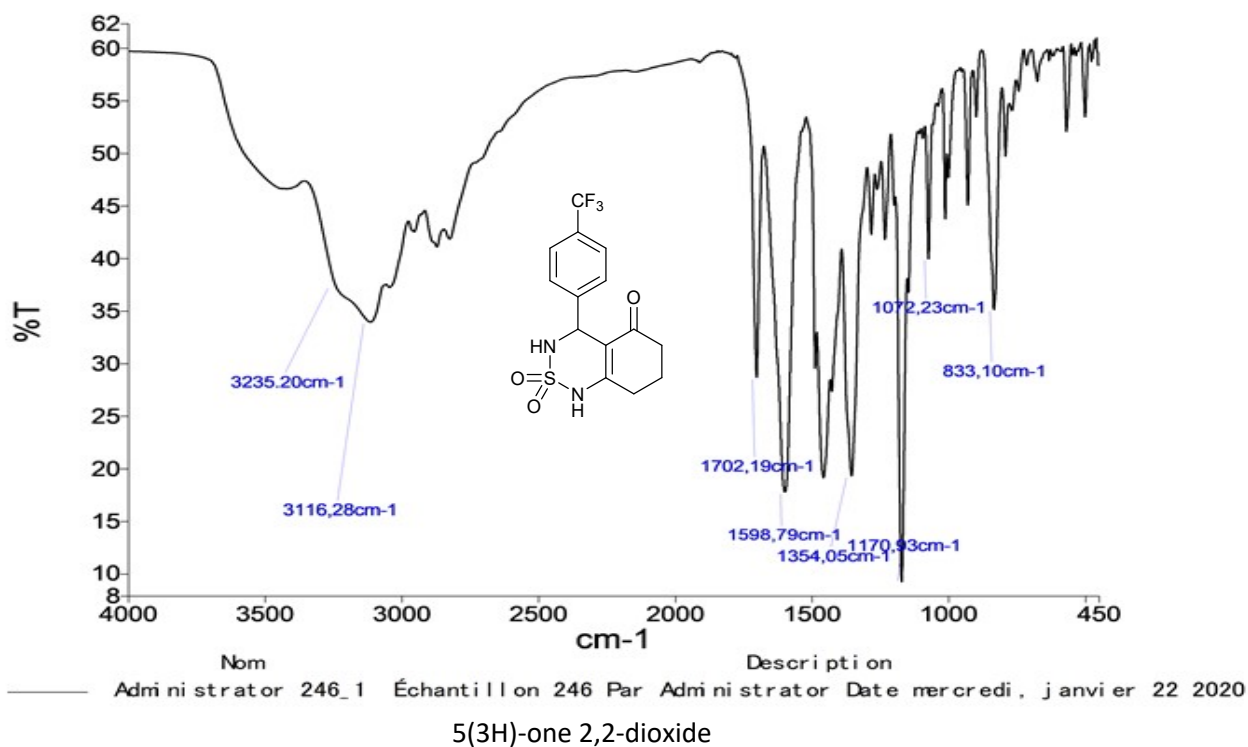


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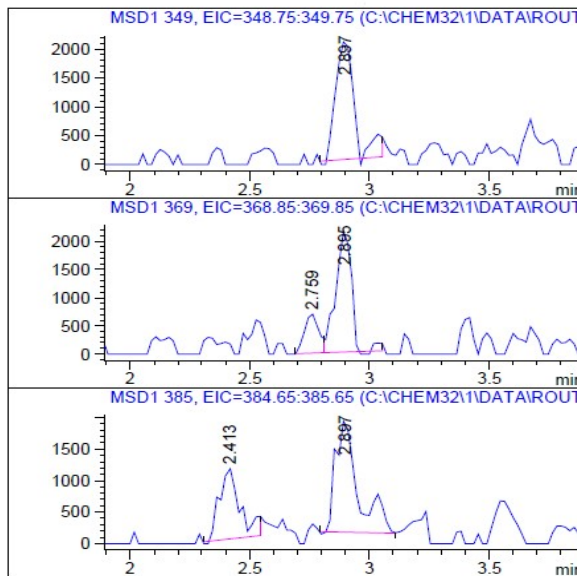
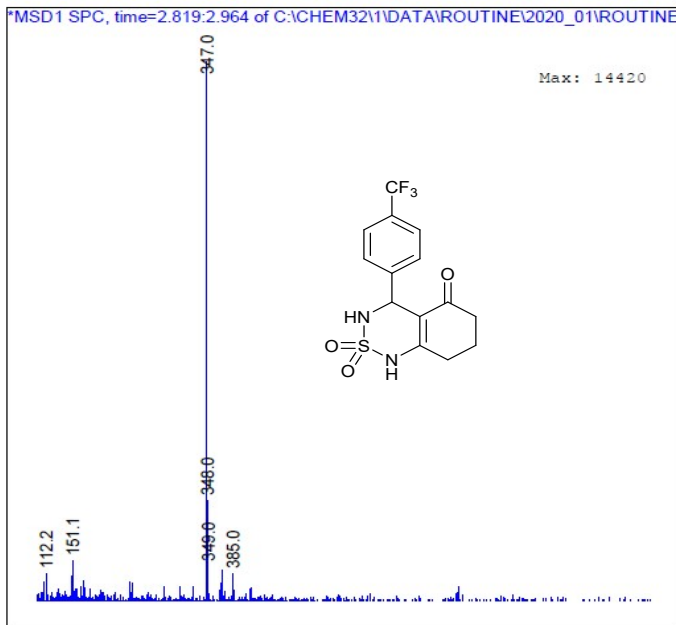




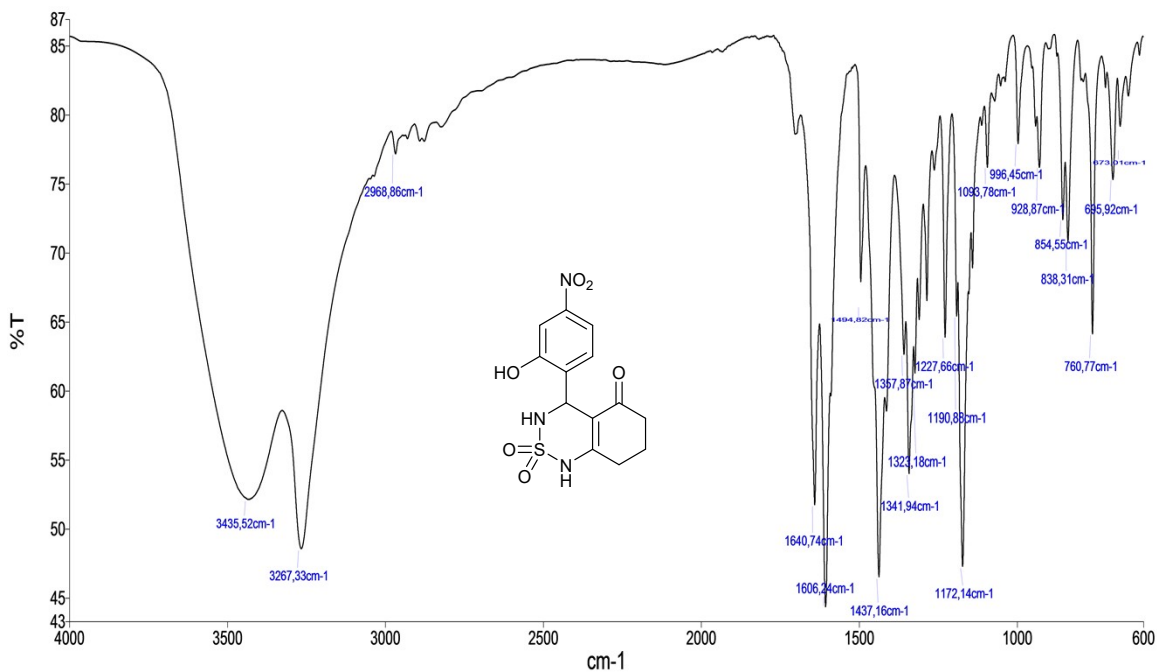
**DEPT NMR Spectrum:** 4-(4-(trifluoromethyl)phenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-



**IR Spectrum:** 4-(4-(trifluoromethyl)phenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

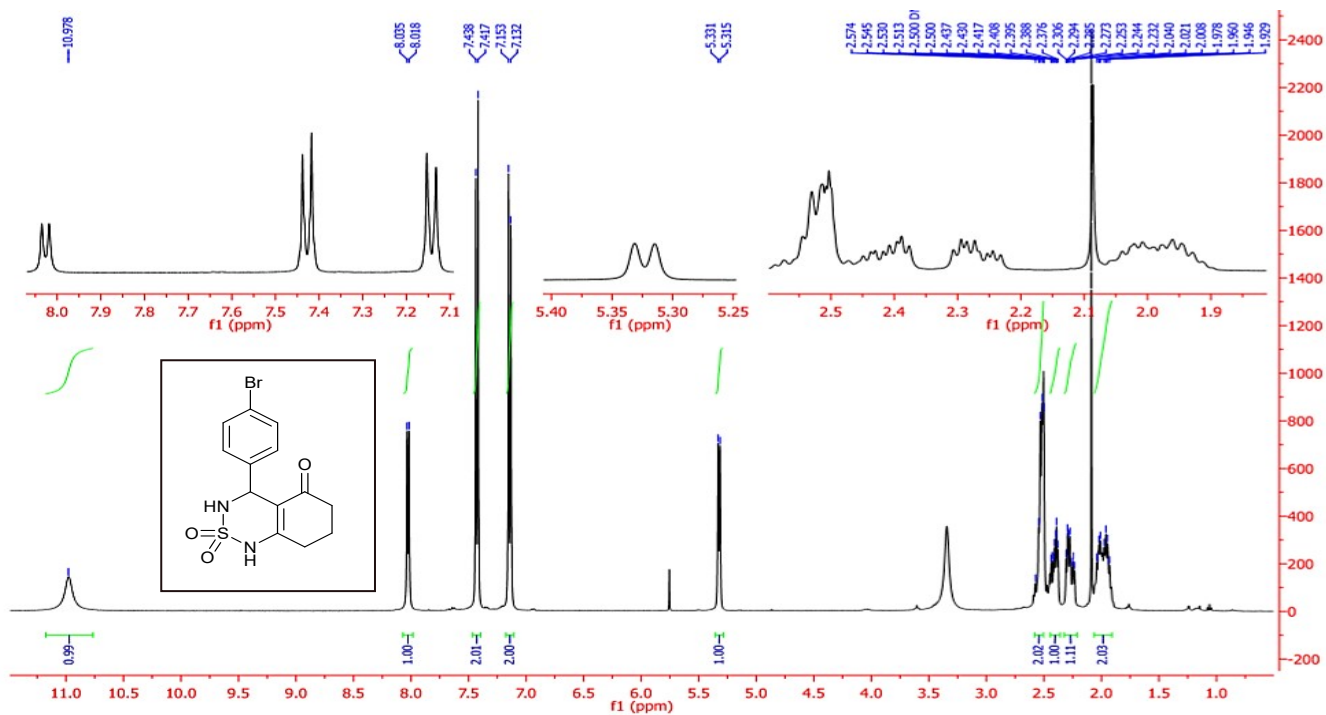


LC-MS: 4-(4-(trifluoromethyl)phenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

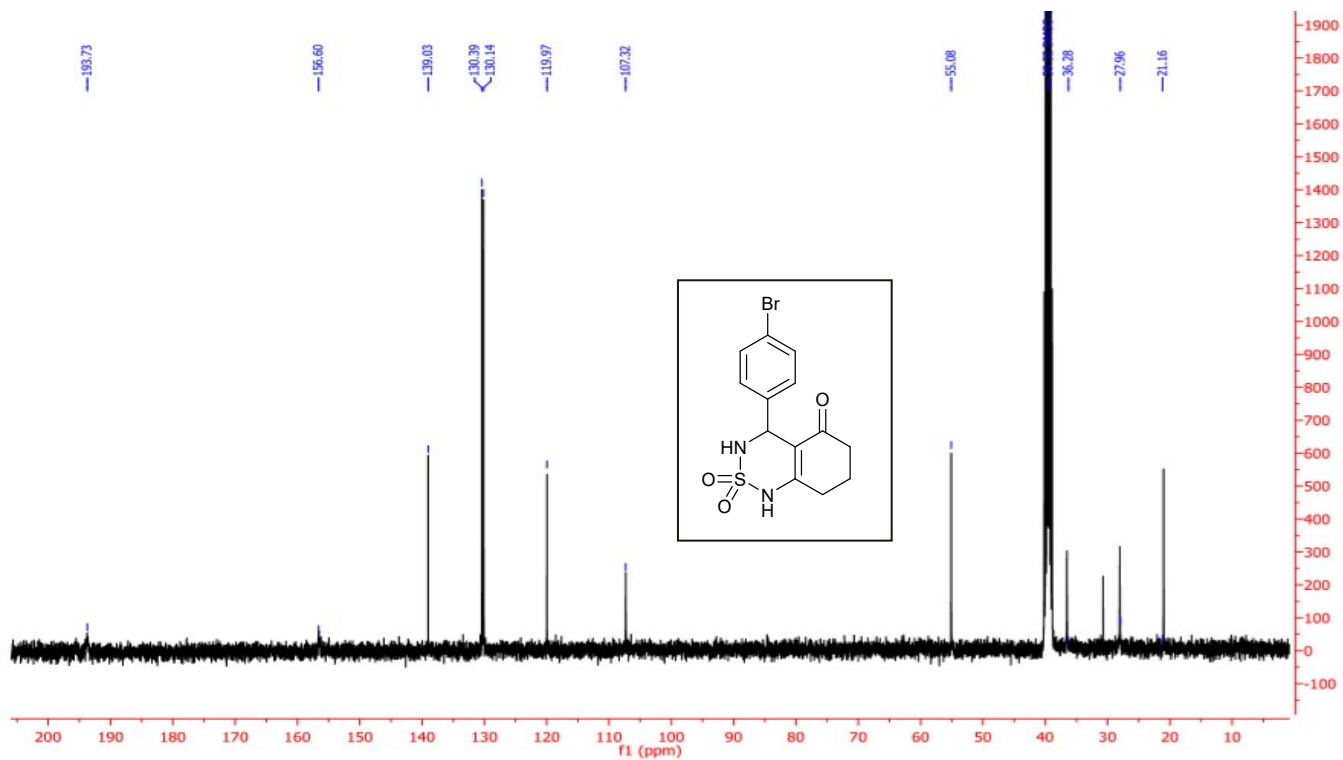


IR Spectrum: 4-(4-bromophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

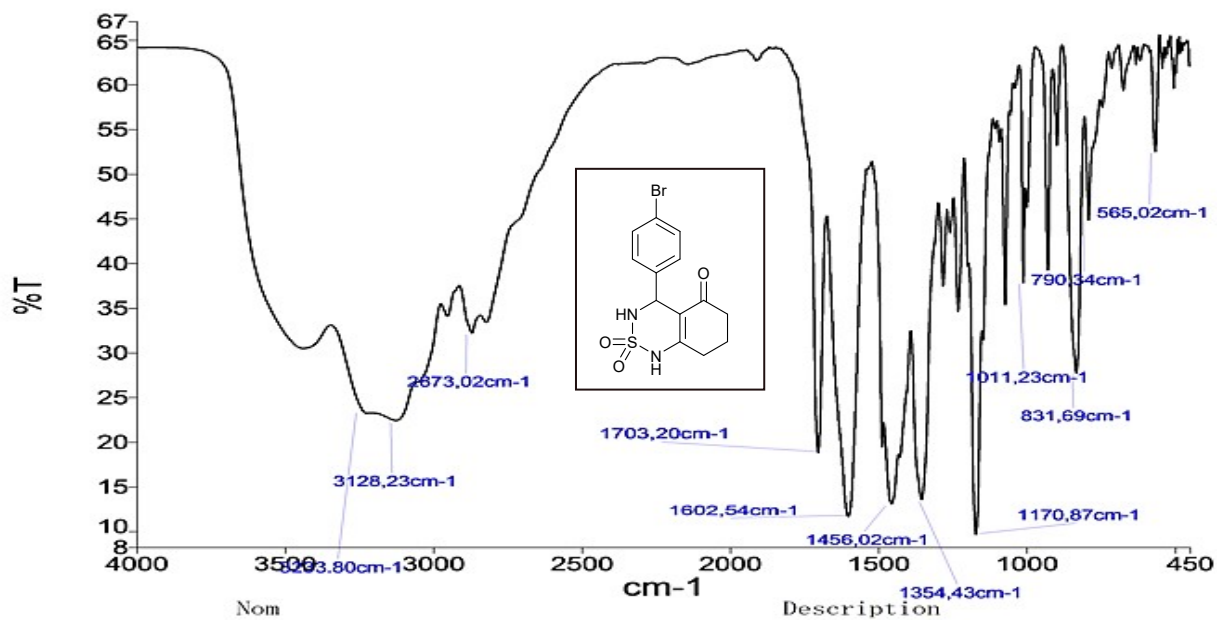
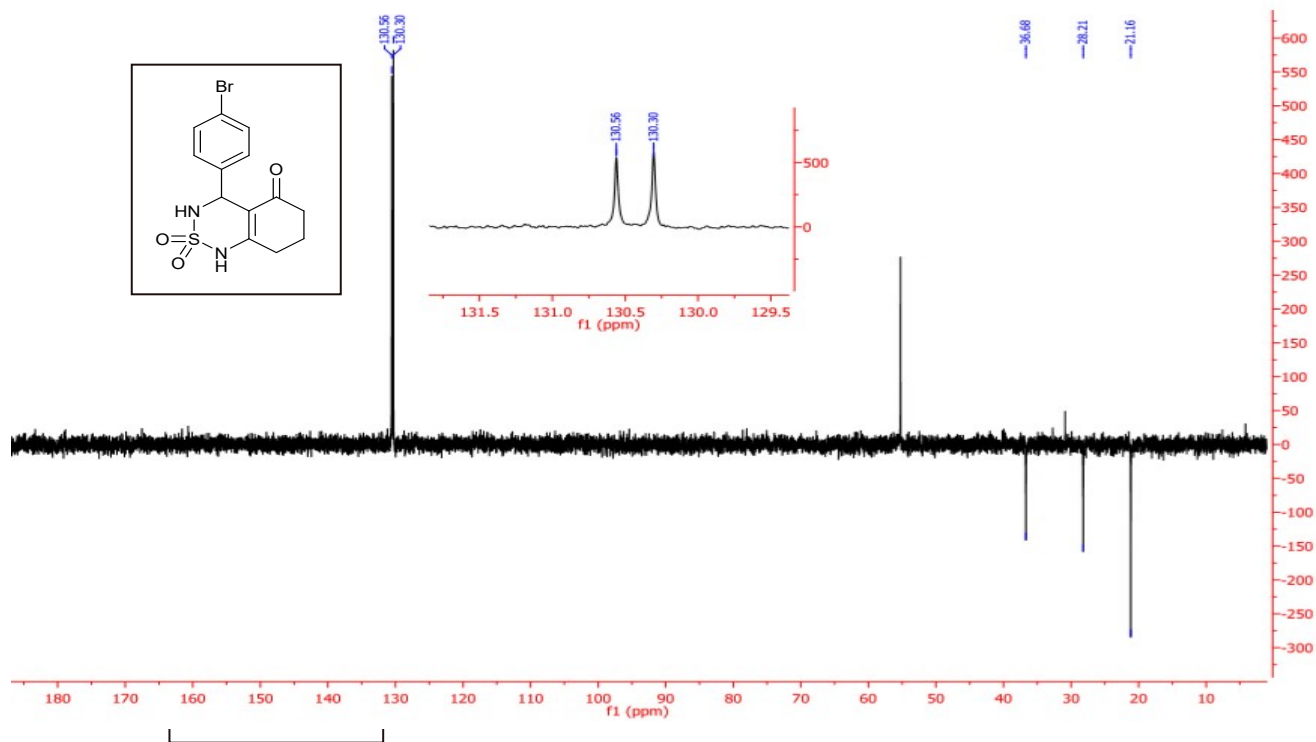




**<sup>1</sup>H NMR Spectrum: 4-(4-bromophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**

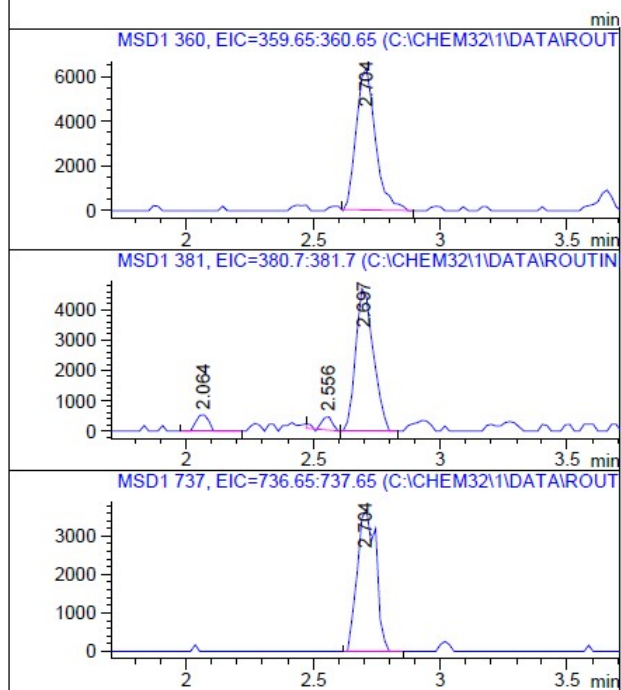
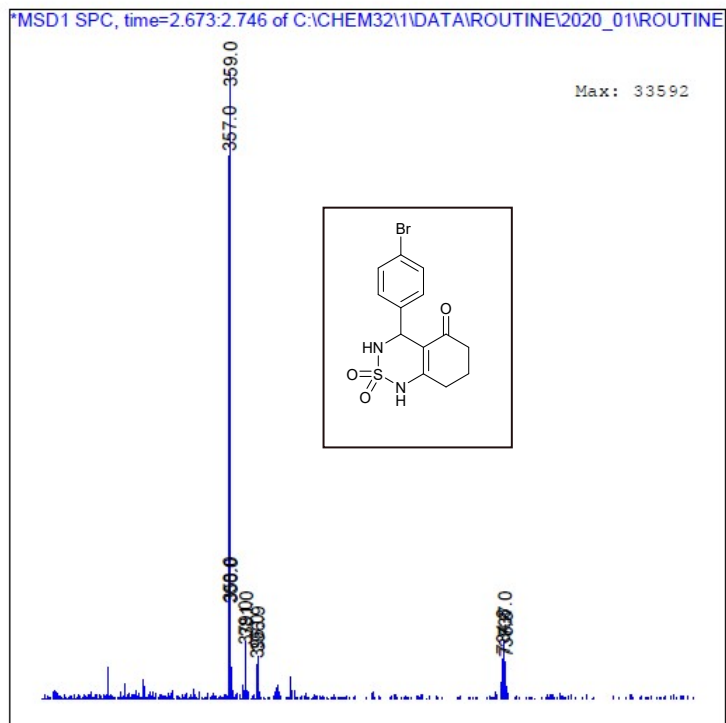


**<sup>13</sup>C NMR Spectrum: 4-(4-bromophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**

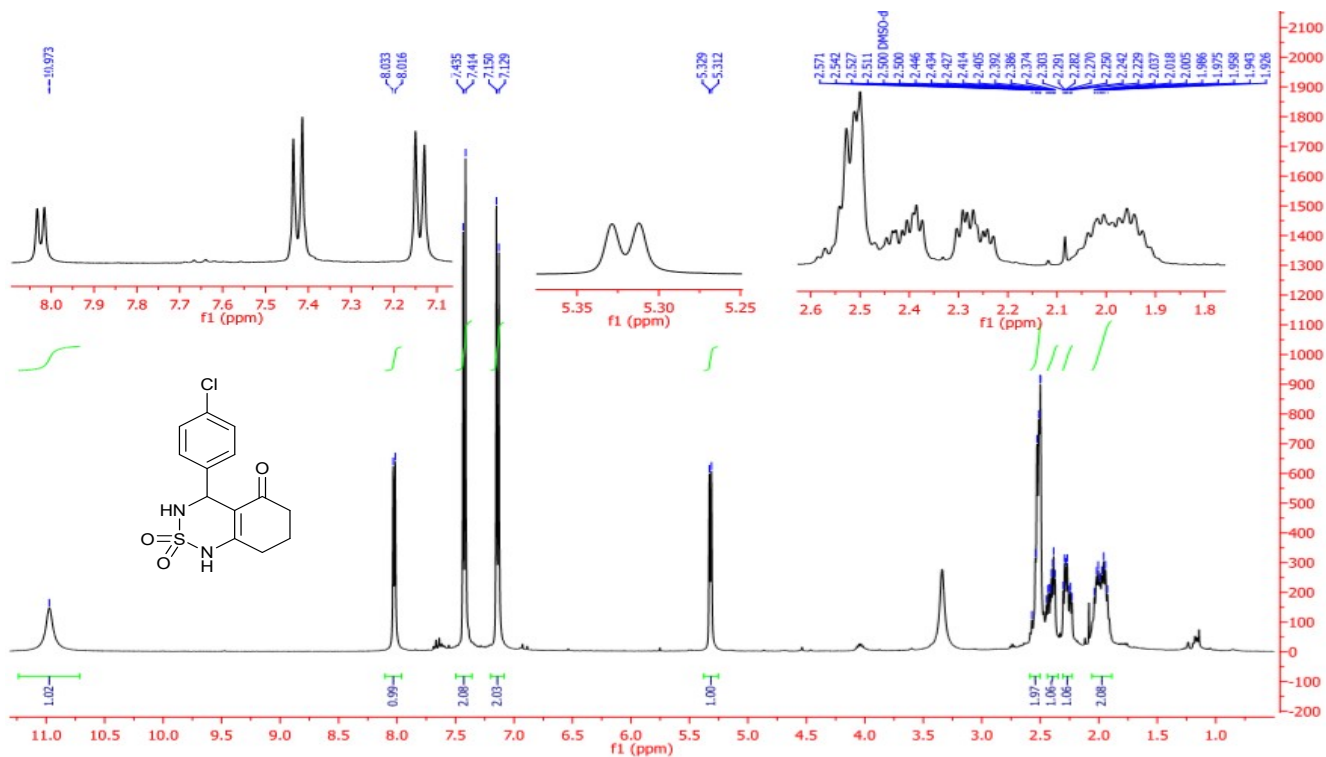


Administrator 142\_1 Échantillon 142 Par Administrator Date jeudi, juillet 04 2019

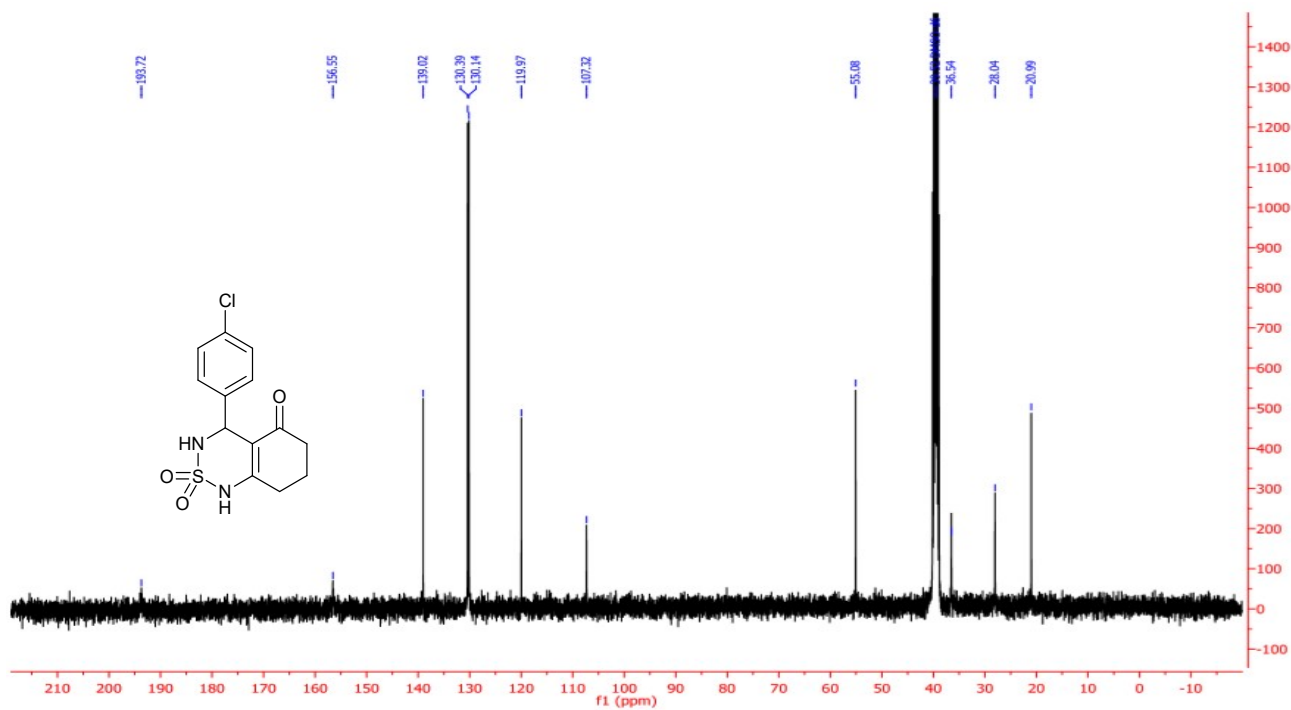
IR Spectrum: 4-(4-bromophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide



LC-MS: 4-(4-bromophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

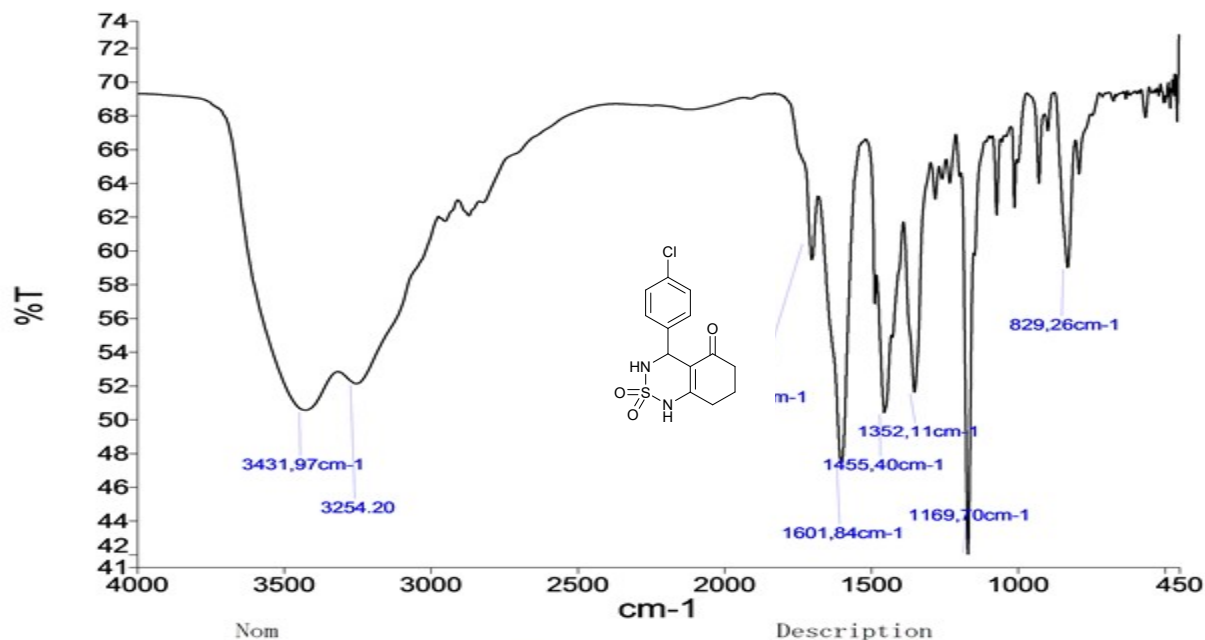
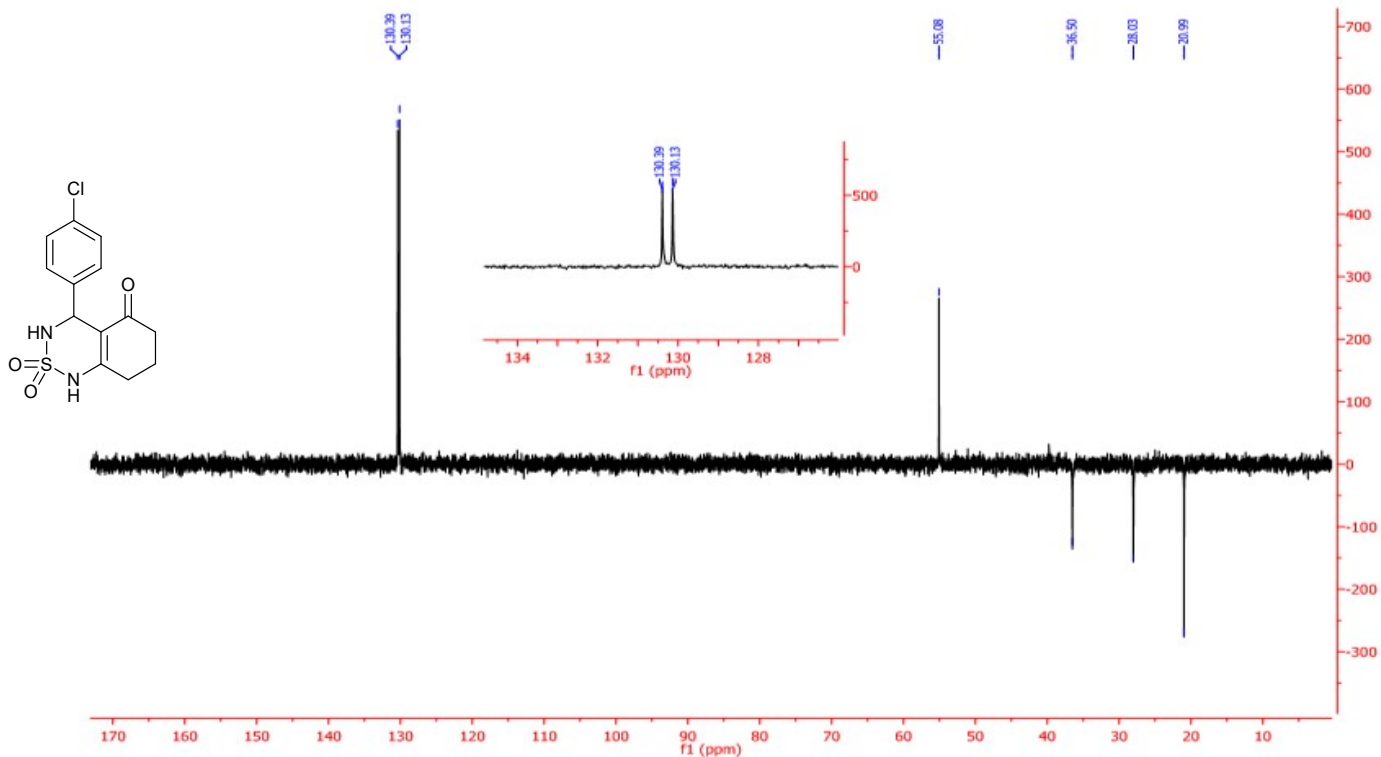


**<sup>1</sup>H NMR Spectrum: 4-(4-chlorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-**



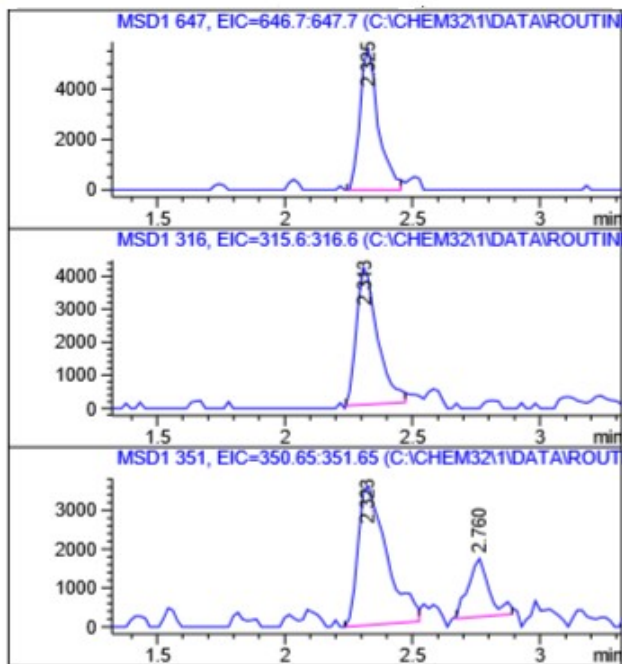
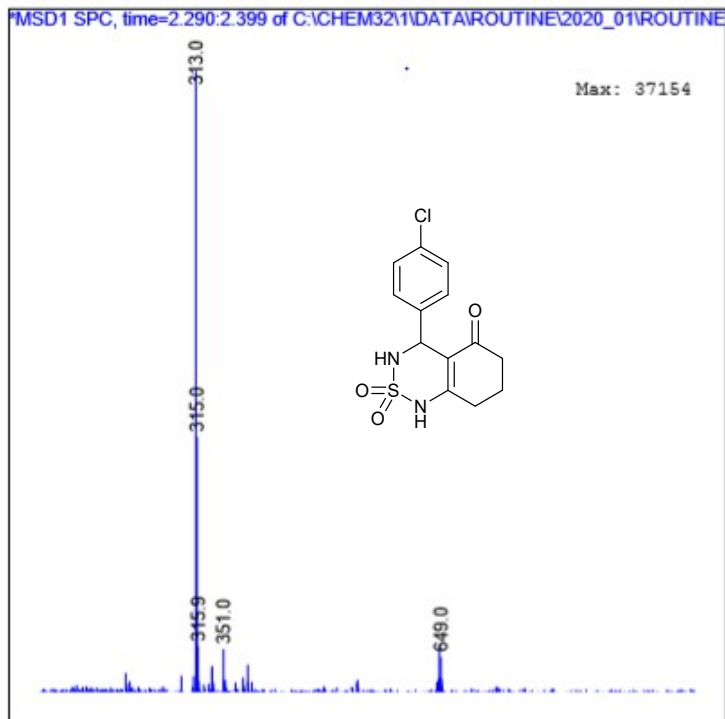
dioxide

**<sup>13</sup>C NMR Spectrum: 4-(4-chlorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide**

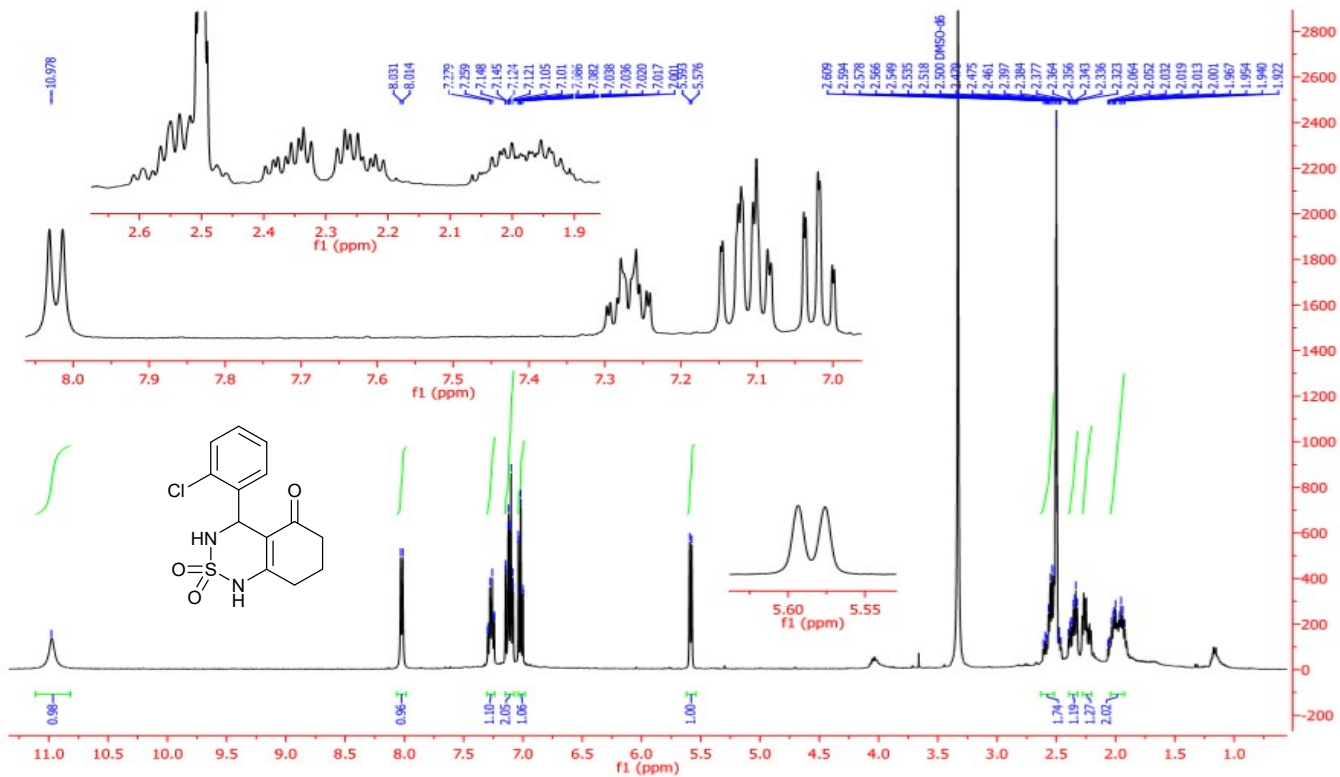


Nom Administrator 139\_1 Échantillon 139 Par Administrator Date jeudi, juillet 04 2019

IR Spectrum: 4-(4-chlorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

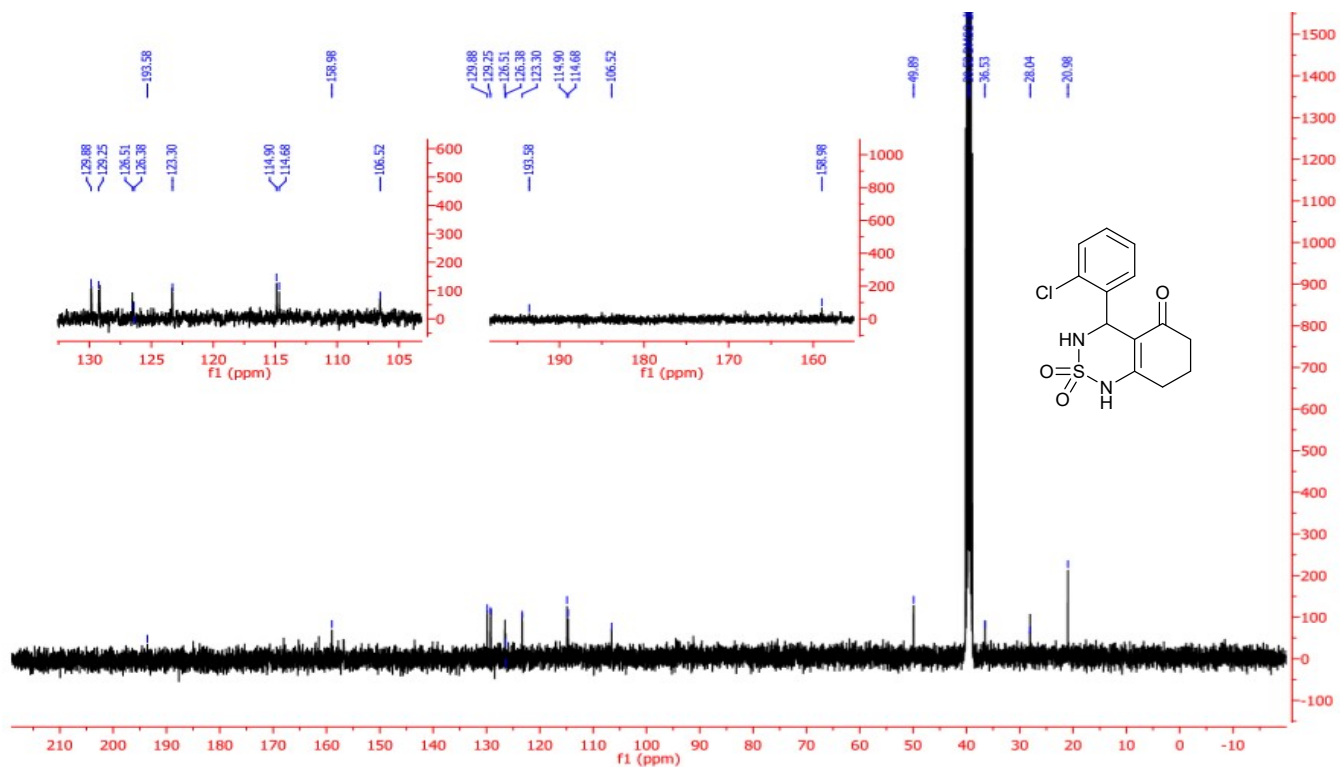


LC-MS: 4-(4-chlorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

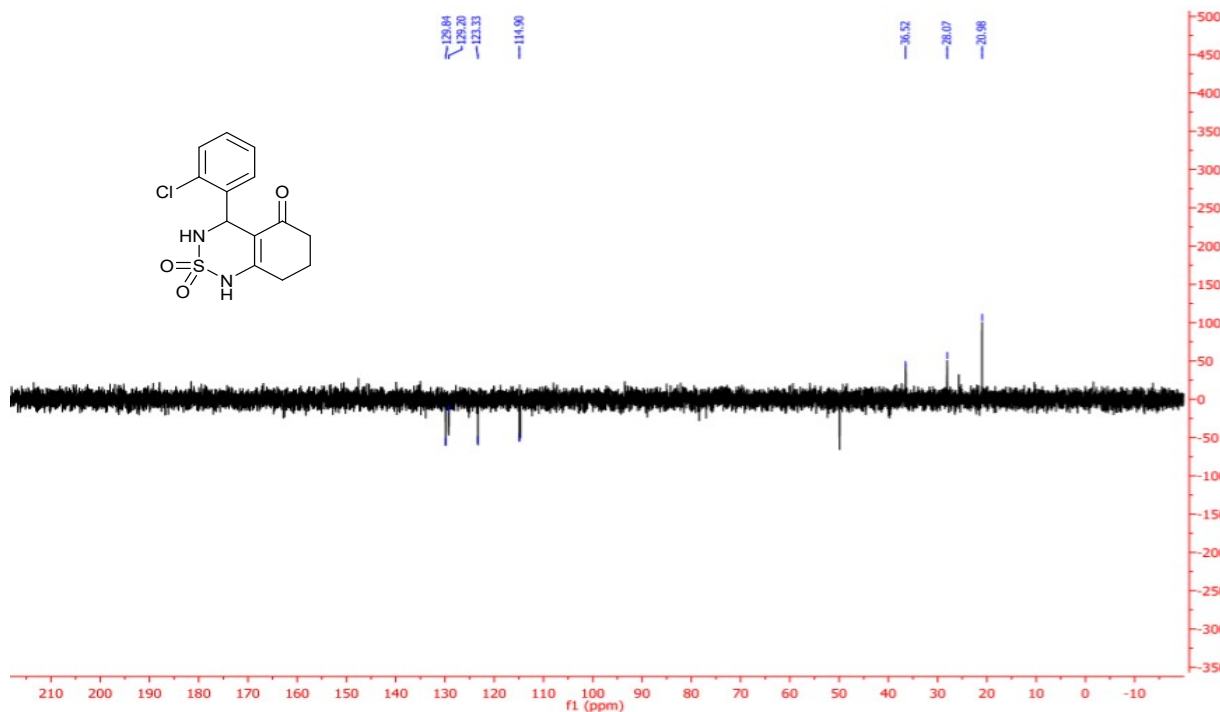


<sup>1</sup>H NMR Spectrum: 4-(4-bromophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

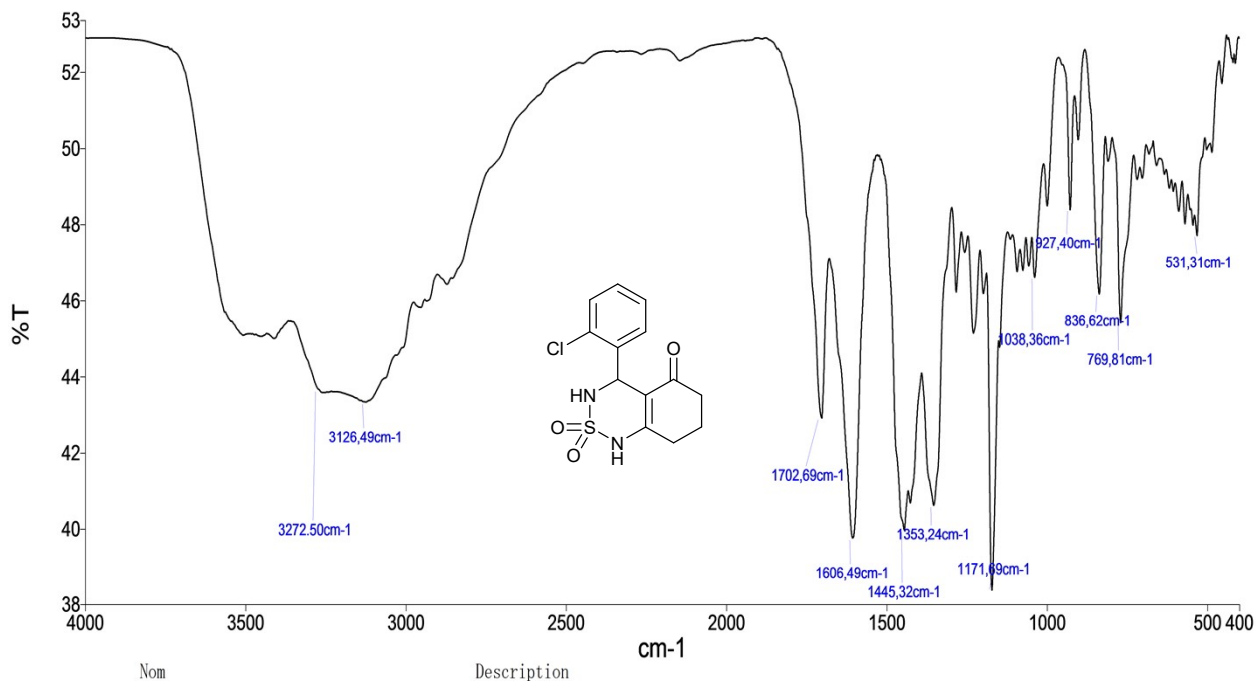




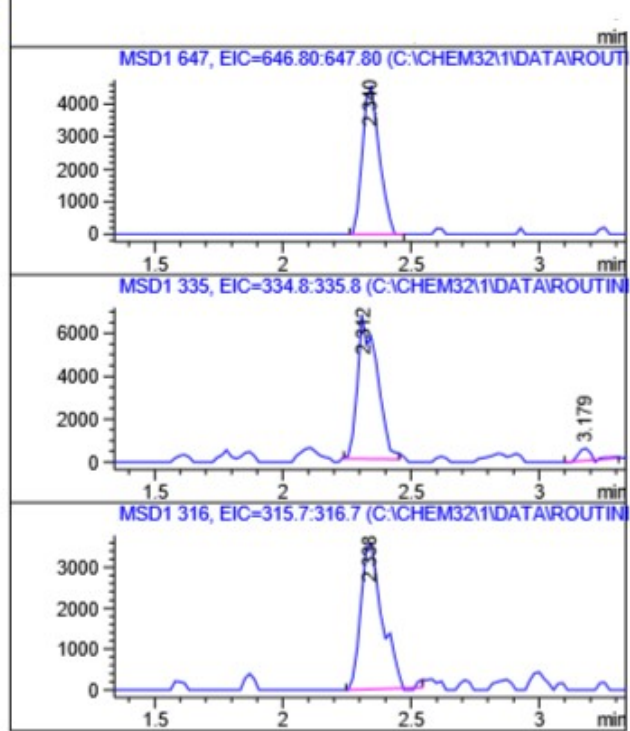
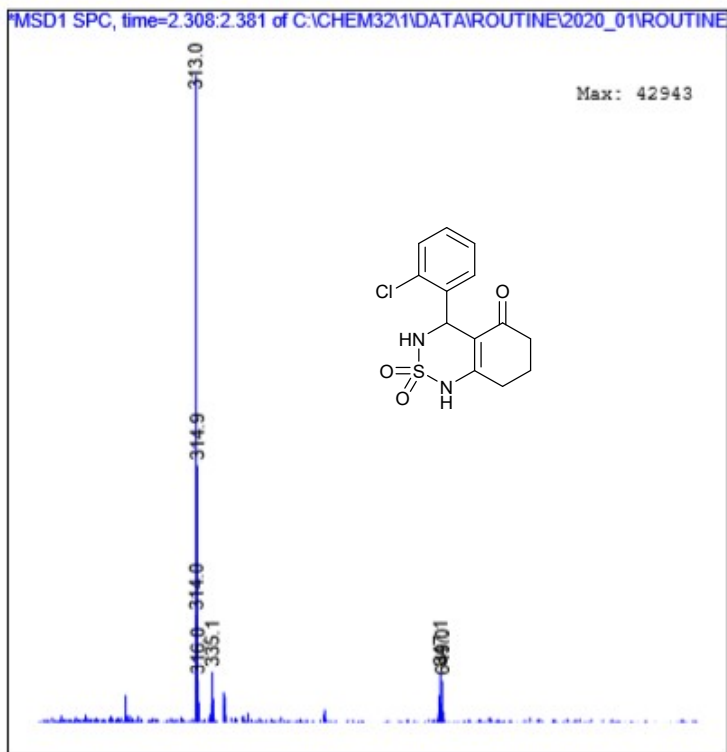
$^{13}\text{C}$  NMR Spectrum: 4-(4-bromophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide



DEPT NMR Spectrum: 4-(4-bromophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide



Nom Description  
 Administrator 29\_1 Échantillon 029 Par Administrator Date mercredi, décembre 19 2018

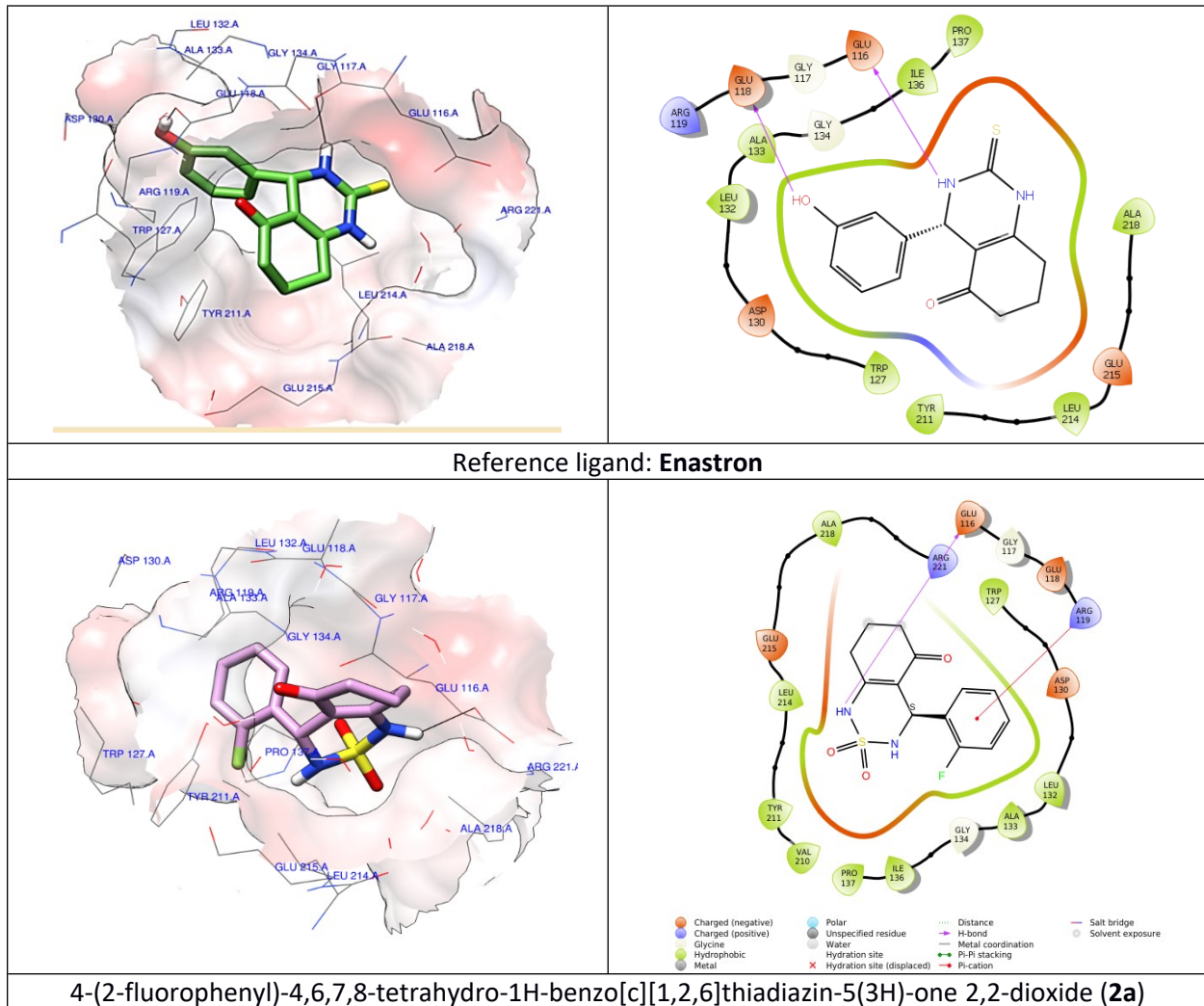


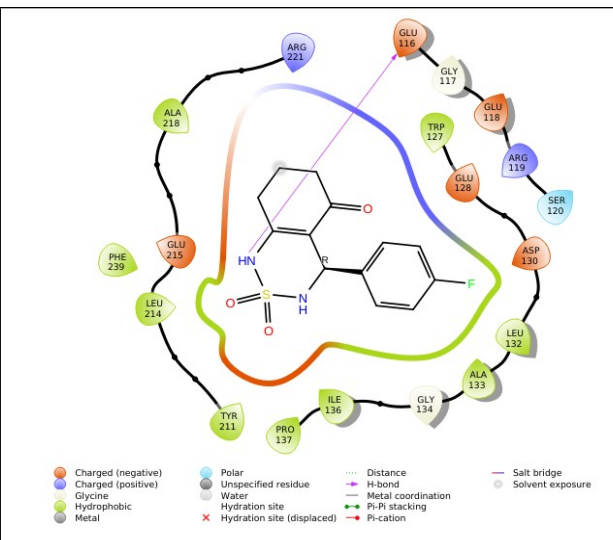
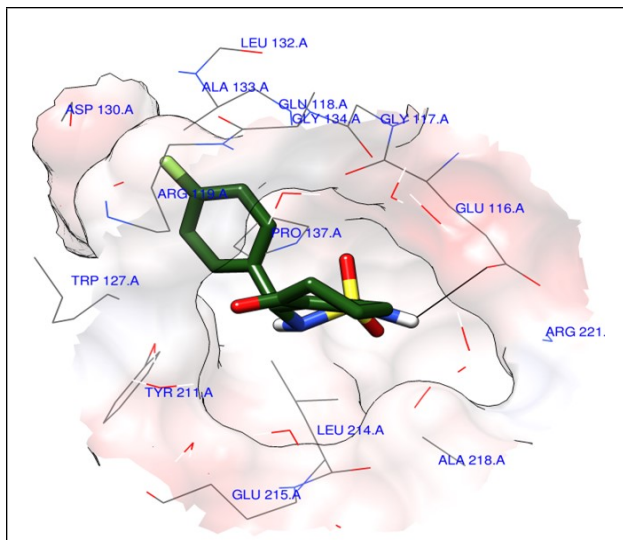
**IR Spectrum:** 4-(2-chlorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

**LC-MS:** 4-(2-chlorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide

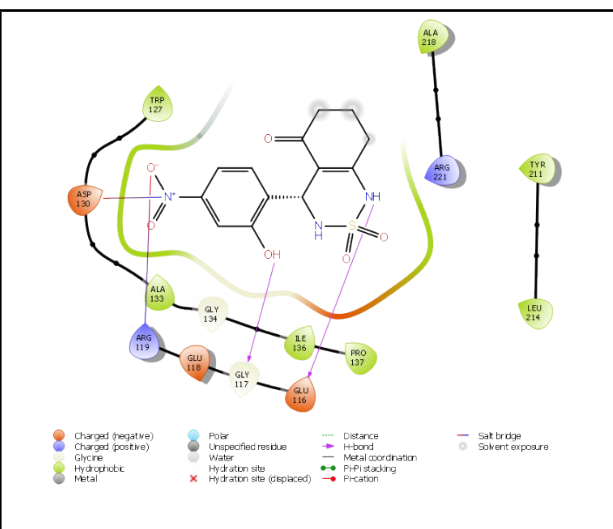
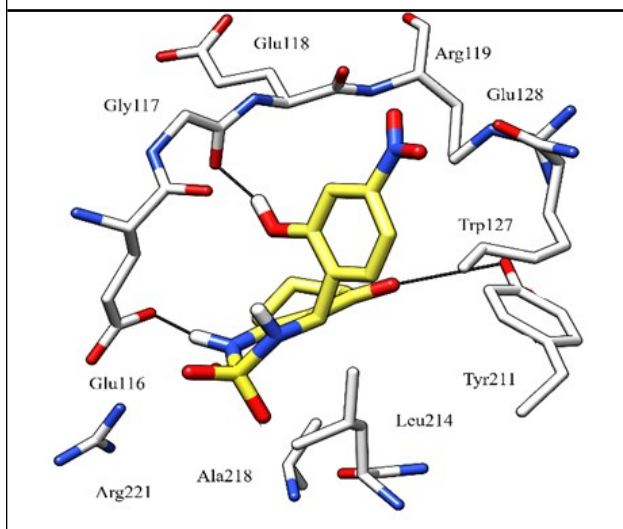


## Binding disposition of compounds after docking calculations in the active site of Eg5

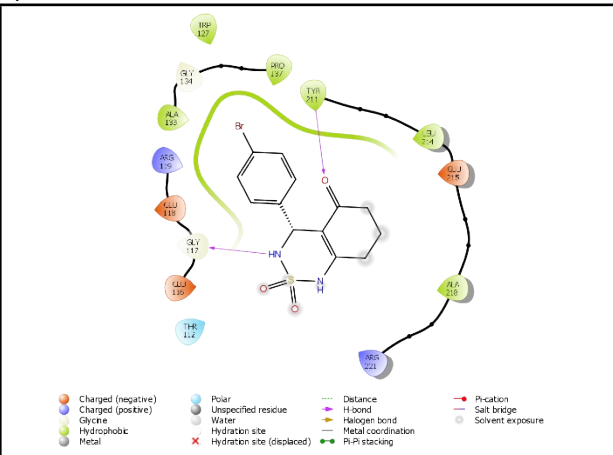
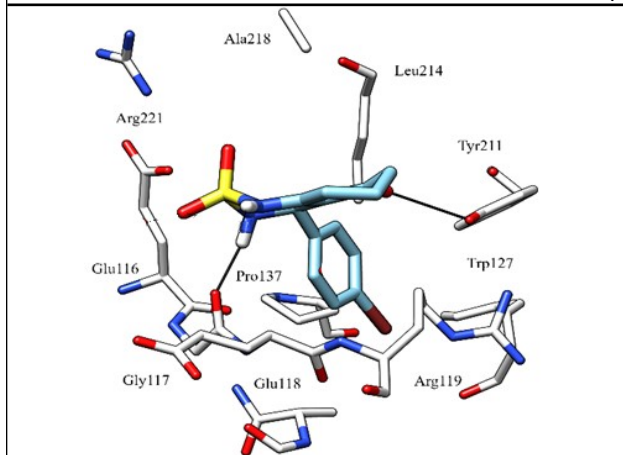




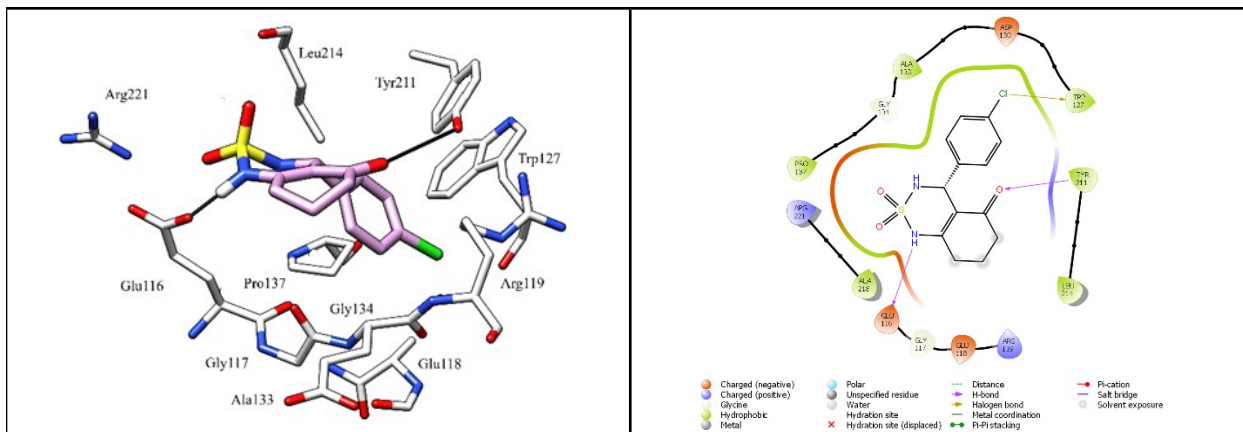
4-(4-fluorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide (**3a**)



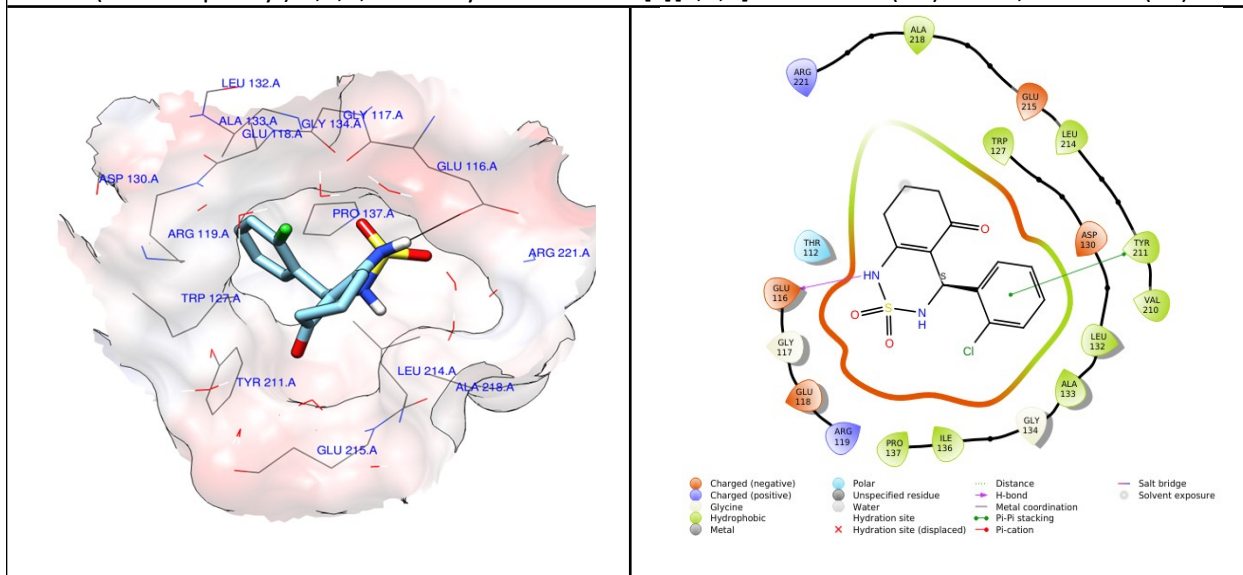
4-(2-hydroxy-4-nitrophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide (**6a**)



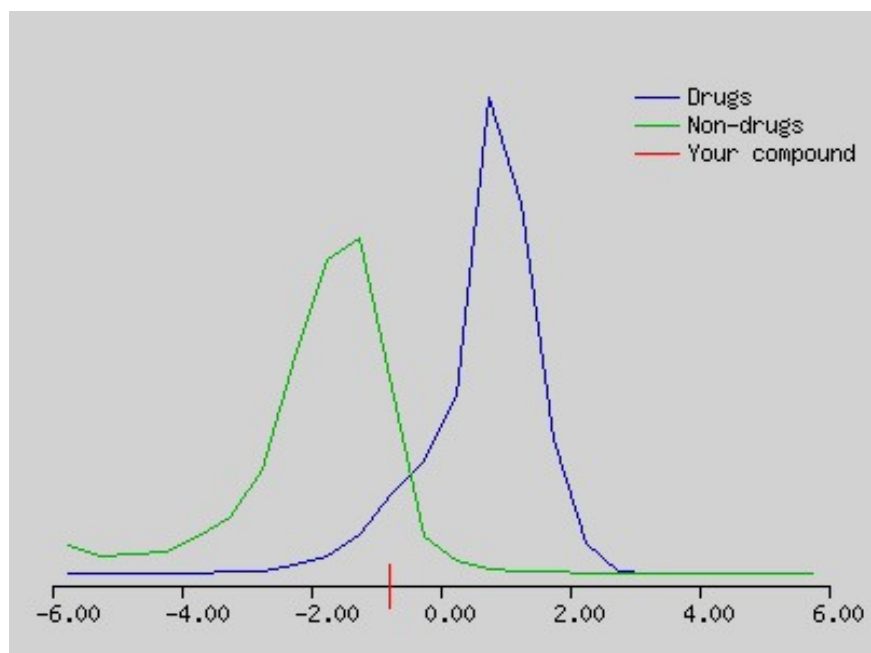
4-(4-bromophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide (**7a**)



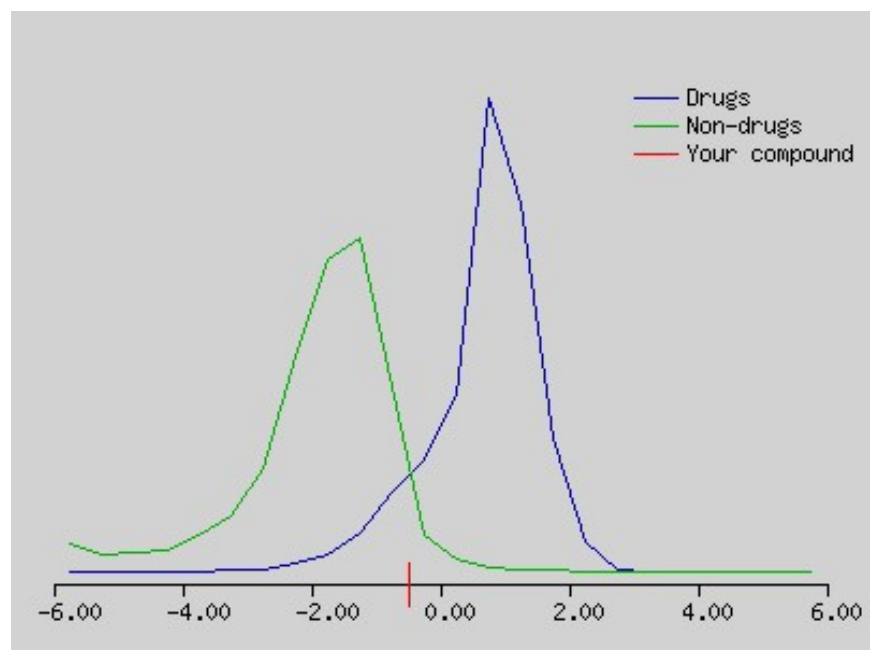
4-(4-chlorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide (**8a**)



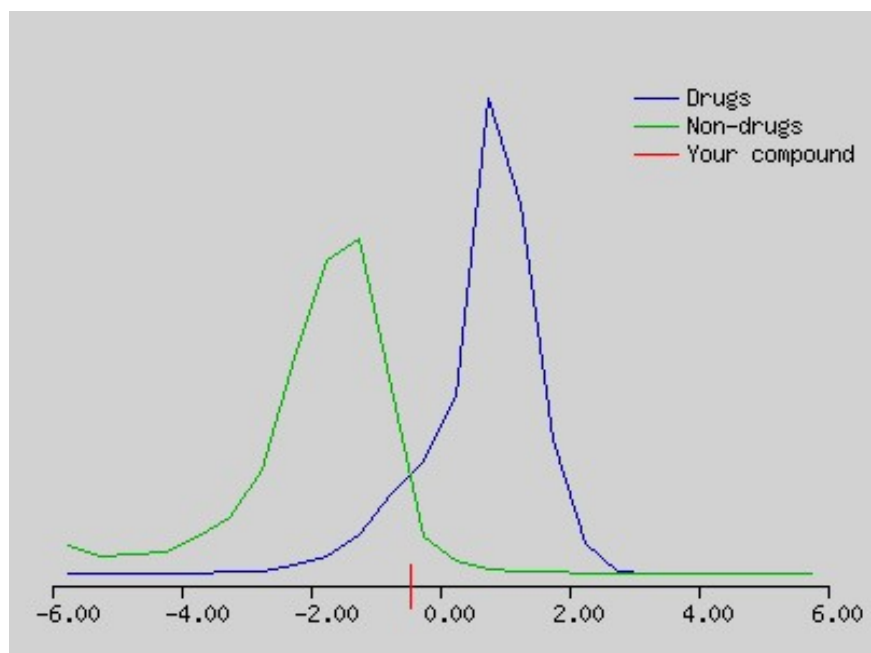
4-(2-chlorophenyl)-4,6,7,8-tetrahydro-1H-benzo[c][1,2,6]thiadiazin-5(3H)-one 2,2-dioxide (**9a**)



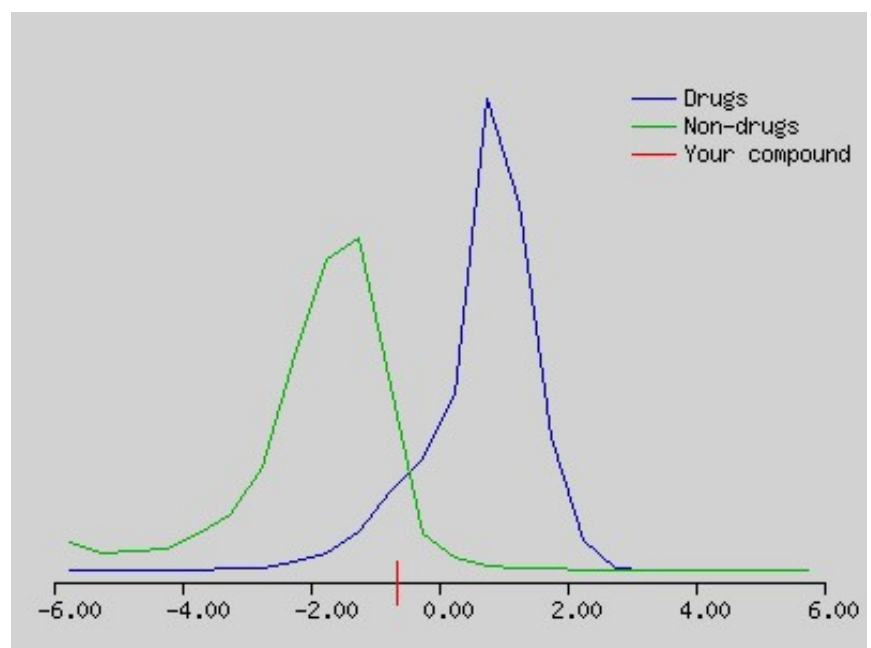
DLS of 1a



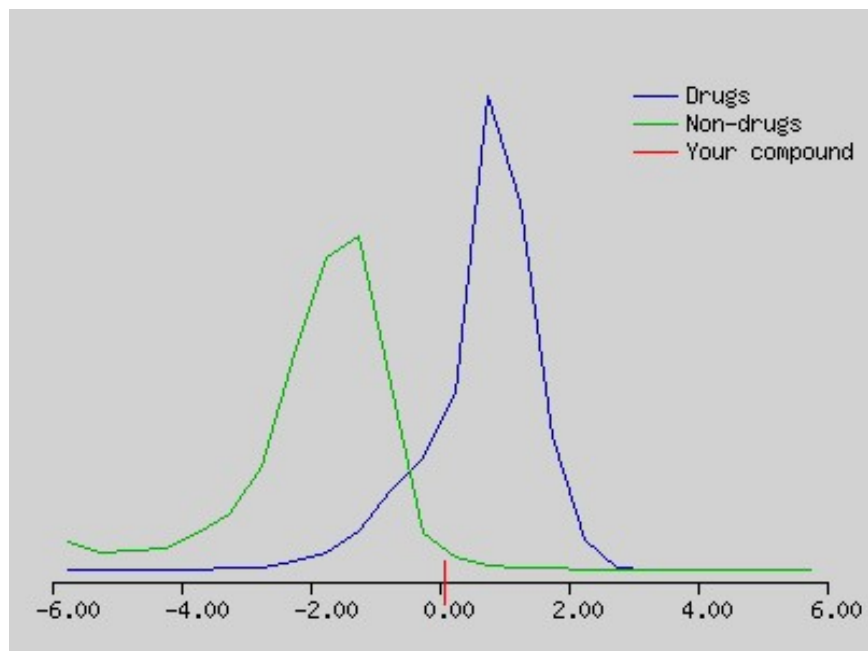
DLS of 2a



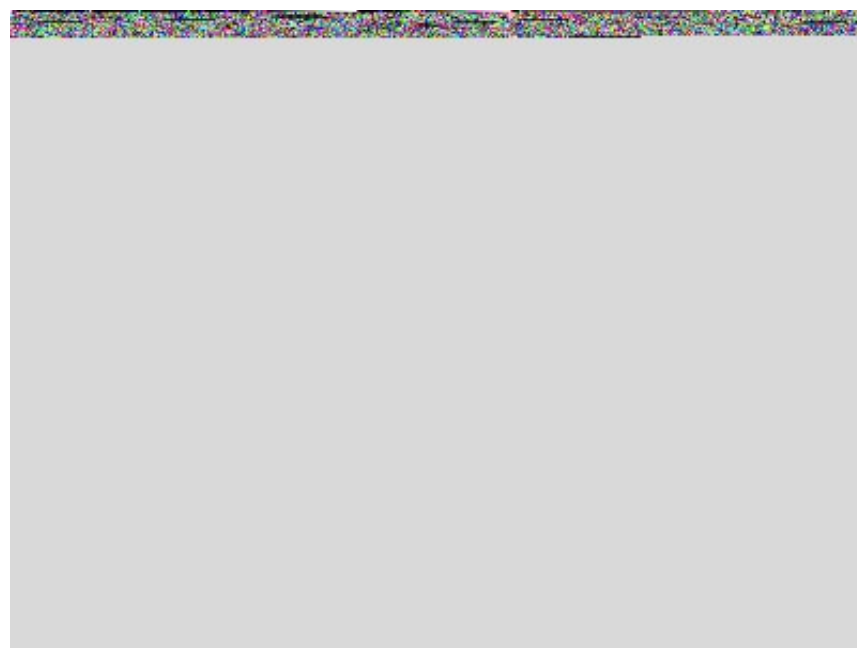
DLS of 3a



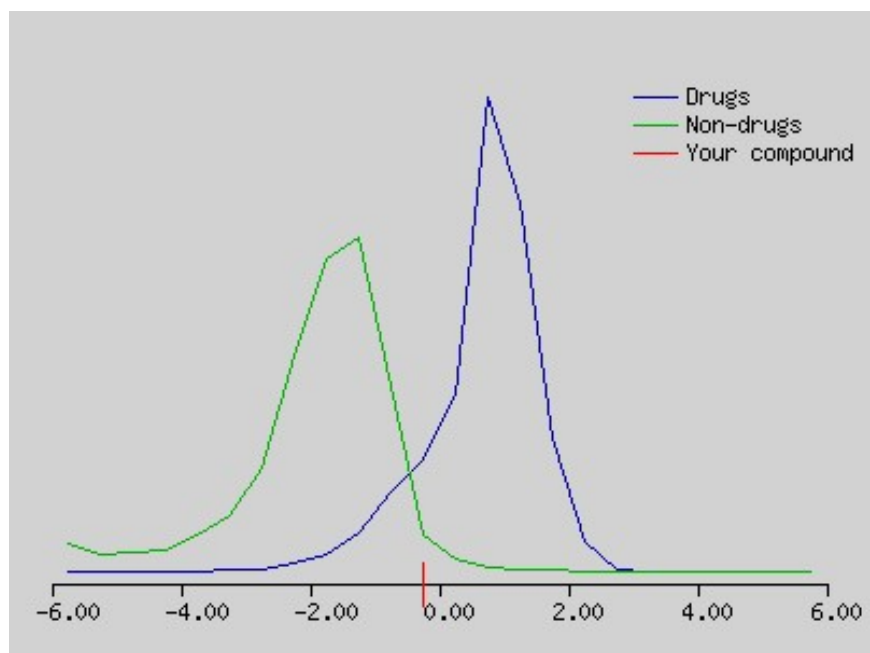
DLS of 4a



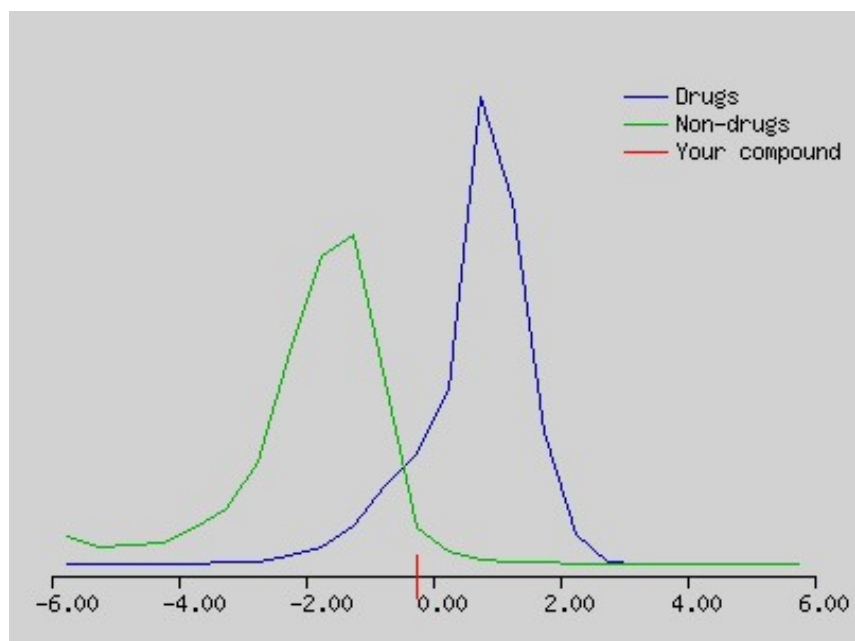
DLS of 6a



DLS of 7a



DLS of 8a



DLS of 9a