

# Supplementary Materials

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## 1. Prisma Interface

Given the large number of molecules in the study, it was decided to develop the PRISMA software to automate some tasks, and its use allowed the rapid analysis of ORCA output, generation of IR spectra and normalization, and identification of possible errors, as well as the reduction of errors in the creation of the input files. Figures S.76 and S.77 and present the tool's interface and infrared spectrum visualization functionality.

Figure S1. PRISMA interface with open ORCA result file: i) suitable result; ii) result with negative frequency.

**i)**

Prisma - Quantum Calculation Tools

Abrir arquivo BatchJob Gerar Input Gerar IR

Input Section

Lucky guy!!  
Wave number (cm<sup>-1</sup>) | T\*\*2 (km/mol)

Atom	x	y	z	Freq (cm <sup>-1</sup> )	T**2 (km/mol)
C	2.43046	-1.12227	-0.67420	33,01	0,246642
C	2.75514	0.97439	0.48063	56,14	0,048250
C	3.27681	-0.07341	-0.27563	88,43	0,506673
H	-1.63992	-0.47779	-1.19561	101,03	1,053590
H	-1.11140	-1.04944	1.26775	206,94	0,049637
H	-1.07516	0.66174	1.62000	220,40	0,318529
H	-0.64911	1.78340	-1.28788	241,43	2,218546
H	-1.83484	2.38352	-0.11410	250,60	0,062655
H	-2.35228	1.84643	-1.72242	345,19	1,638860
H	-3.85878	0.49467	-0.69021	363,75	4,749759
H	0.46975	-1.95125	-0.63239	389,46	6,953980
H	1.01394	1.80095	1.42775	399,04	0,006088
H	-4.74862	-1.35977	0.40360	464,35	2,821314
H	-3.16261	-1.81029	1.01382	496,89	11,931986
H	-3.50686	-1.89510	-0.73486	588,95	14,334251

**ii)**

Prisma - Quantum Calculation Tools

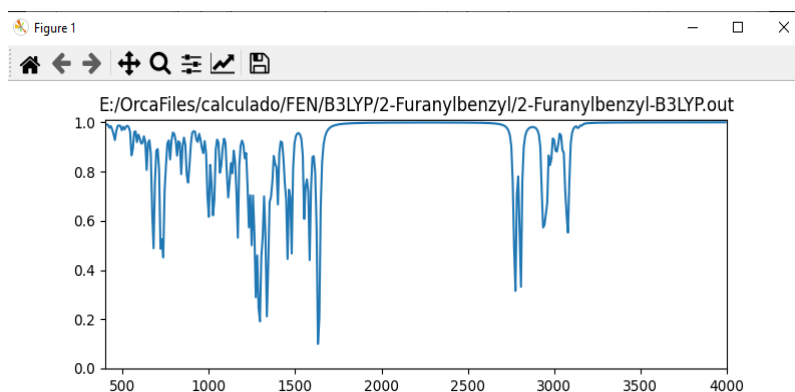
Abrir arquivo BatchJob Gerar Input Gerar IR

Input Section

Oops! Frequências negativas!  
Wave number (cm<sup>-1</sup>) | T\*\*2 (km/mol)

Atom	x	y	z	Freq (cm <sup>-1</sup> )	T**2 (km/mol)
E:\OrcaFiles\new\PBE0\CAT\3-MEC\3-MEC-PBE0.inp					
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! PBE0 TZVP def2/J def2/JK RIJCOSX GridX6 Grid6					
NoFinalGrid D3BJ TightOpt NMR Freq					
%FREQ SCALFREQ 0.9596 END					
%geom					
MaxIter 300					
end					
%scf					
MaxIter 5000					
CNVDIIS 1					
CNVSOSCF 1					
end					
%output					
print[p_mos] true					
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24,52 1,560783					
41,07 0,077904					
63,93 0,752809					
105,71 0,965467					
131,45 1,392771					
140,35 1,680342					
168,27 0,761089					
206,23 0,239210					
208,68 1,533768					
232,77 2,261420					
247,12 0,876799					
283,22 0,962749					
309,35 2,203421					
348,37 5,115171					
403,15 0,259488					
424,25 3,261741					
429,88 1,727649					
477,02 1,717169					
490,14 1,415863					
-17,5					

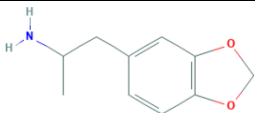
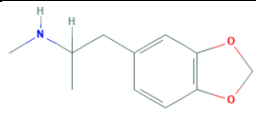
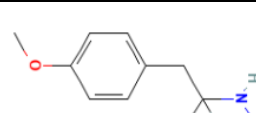
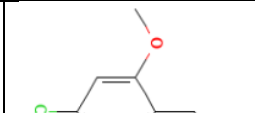
Figure S2. PRISMA: Infrared spectrum visualization module.



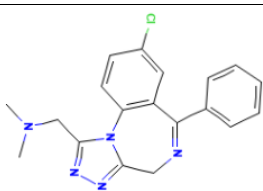
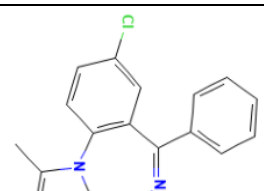
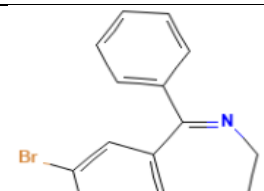
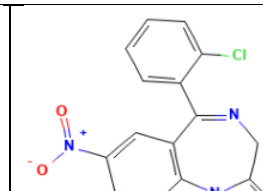
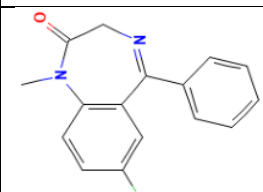
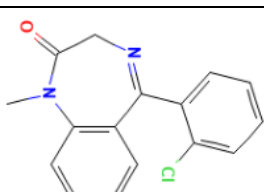
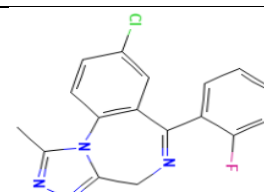
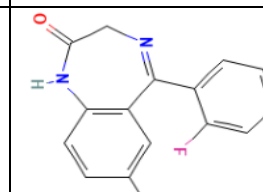
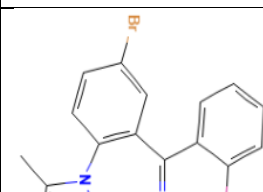
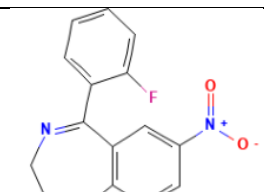
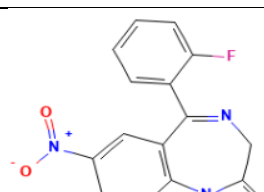
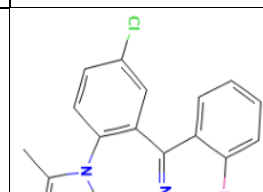
## 2. Studied System

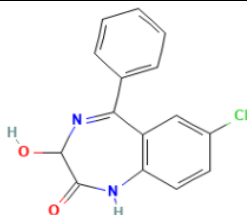
Table S1 - Amphetamines

<p>Anfetamina [1] amphetamine <a href="#">C<sub>9</sub>H<sub>13</sub>N</a></p>	<p>2-Fluoro-amphetamine [2] 2-FA <a href="#">C<sub>9</sub>H<sub>12</sub>FN</a></p>	<p>3-Fluoro-amphetamine [3] 3-FA <a href="#">C<sub>9</sub>H<sub>12</sub>FN</a></p>	<p>4-Fluoro-amphetamine [4] 4-FA <a href="#">C<sub>9</sub>H<sub>12</sub>FN</a></p>
<p>2-Fluoro-methamphetamine 2-FMA [5] <a href="#">C<sub>10</sub>H<sub>14</sub>FN</a></p>	<p>3-Fluoro-methamphetamine 3-FMA [6] <a href="#">C<sub>10</sub>H<sub>14</sub>FN</a></p>	<p>4-Fluoro-methamphetamine 4-FMA [7] <a href="#">C<sub>10</sub>H<sub>14</sub>FN</a></p>	<p>Metanfetamina [8] methamphetamine <a href="#">C<sub>10</sub>H<sub>15</sub>N</a></p>
<p>4-Methyl-amphetamine 4-MA [9] <a href="#">C<sub>10</sub>H<sub>15</sub>N</a></p>	<p>3,4- methylene-dioxyamphetamine 3,4 MDA [10] Tenamfetamine</p>	<p>Dimetilanfetamina DMA [11] <a href="#">C<sub>11</sub>H<sub>17</sub>N</a></p>	<p>2,5-Dimethoxy-amphetamine 2,5-DMA [12]</p>

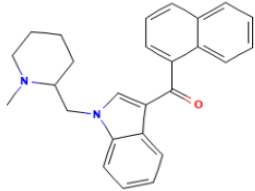
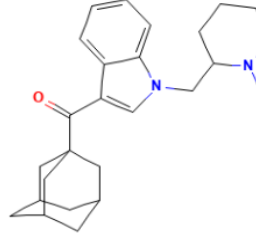
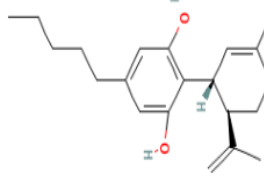
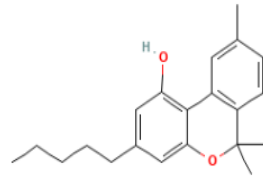
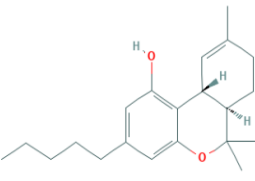
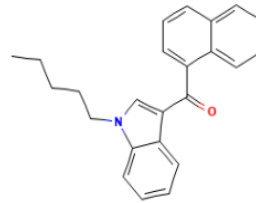
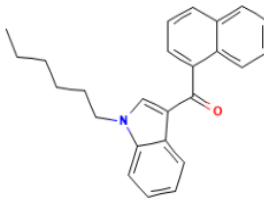
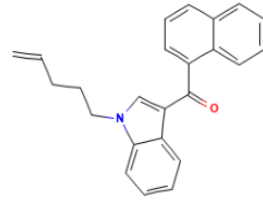
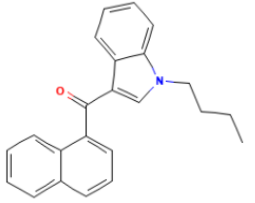
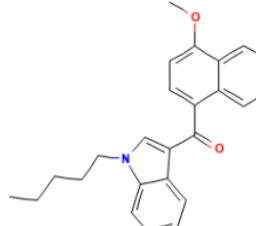
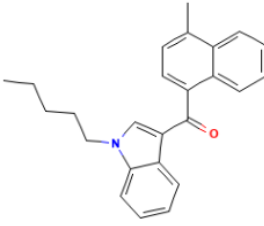
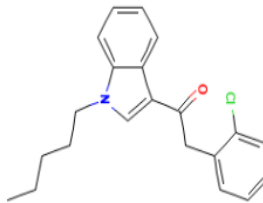
	<a href="#">C<sub>10</sub>H<sub>13</sub>NO<sub>2</sub></a>		<a href="#">C<sub>11</sub>H<sub>17</sub>NO<sub>2</sub></a>
 3,4-Methylenedioxy methamphetamine MDMA [13] Ecstasy <a href="#">C<sub>11</sub>H<sub>15</sub>NO<sub>2</sub></a>	 p-Metoxi- amphetamine PMA [14] <a href="#">C<sub>10</sub>H<sub>15</sub>NO</a>	 p-Methoxy- methamphetamine PMMA [15] <a href="#">C<sub>11</sub>H<sub>17</sub>NO</a>	 1-(4-Chloro-2,5- dimethoxyphenyl)-2- aminoethane 2C-C [16] <a href="#">C<sub>10</sub>H<sub>14</sub>ClNO<sub>2</sub></a>

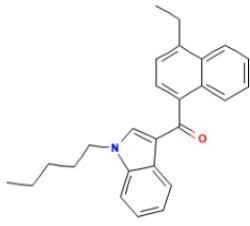
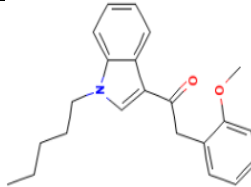
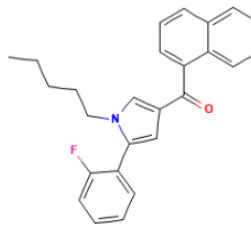
**Table S2. Benzodiazepines**

 Adinazolam [17] Deracyn <a href="#">C<sub>19</sub>H<sub>18</sub>ClN<sub>5</sub></a>	 Alprazolam [18] Xanax <a href="#">C<sub>17</sub>H<sub>13</sub>ClN<sub>4</sub></a>	 Bromazolam [19] <a href="#">C<sub>17</sub>H<sub>13</sub>BrN<sub>4</sub></a>	 Clonazolam [20] <a href="#">C<sub>17</sub>H<sub>12</sub>ClN<sub>5</sub>O<sub>2</sub></a>
 Diazepam [21] Valium <a href="#">C<sub>16</sub>H<sub>13</sub>ClN<sub>2</sub>O</a>	 Diclazepam [22] 2-Chlorodiazepam <a href="#">C<sub>16</sub>H<sub>12</sub>Cl<sub>2</sub>N<sub>2</sub>O</a>	 Flualprazolam [23] <a href="#">C<sub>17</sub>H<sub>12</sub>ClFN<sub>4</sub></a>	 Flubromazepam [24] <a href="#">C<sub>15</sub>H<sub>10</sub>BrFN<sub>2</sub>O</a>
 Flubromazolam [25] <a href="#">C<sub>17</sub>H<sub>12</sub>BrFN<sub>4</sub></a>	 Flunitrazepam [26] Narcozep	 Flunitrazolam [27] UNII-OK016HTR1Y	 Midazolam [28] Dormicum

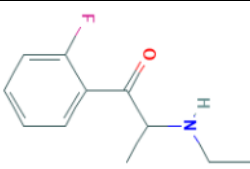
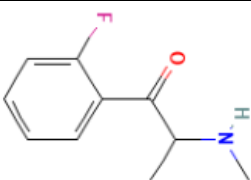
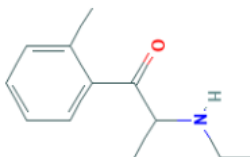
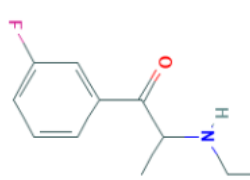
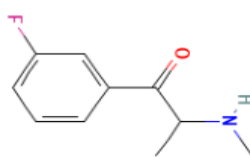
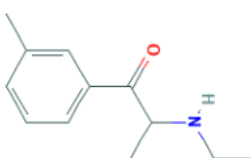
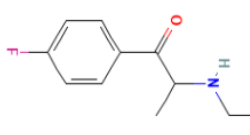
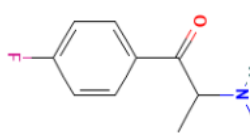
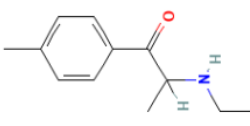
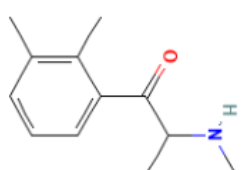
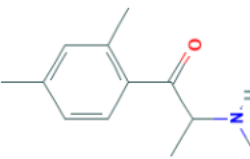
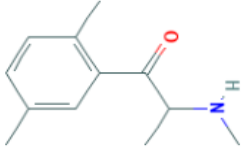
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 Oxazepam [29] Tazepam, Serax, Adumbran <a href="#">C<sub>15</sub>H<sub>11</sub>ClN<sub>2</sub>O<sub>2</sub></a>			

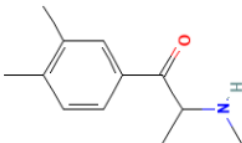
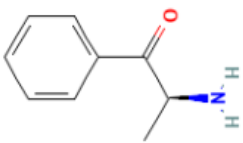
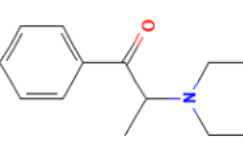
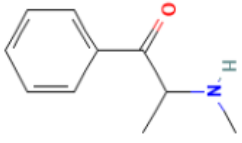
**Table S3. Cannabinoids**

 AM-1220 [30] Methanone <a href="#">C<sub>26</sub>H<sub>26</sub>N<sub>2</sub>O</a>	 AM1248 [31] <a href="#">C<sub>26</sub>H<sub>34</sub>N<sub>2</sub>O</a>	 Cannabidiol [32] Epidiolex <a href="#">C<sub>21</sub>H<sub>30</sub>O<sub>2</sub></a>	 Cannabinol [33] <a href="#">C<sub>21</sub>H<sub>26</sub>O<sub>2</sub></a>
 Δ9-THC [34] Δ9-tetrahydro-cannabinol Marinol, Dronabinol <a href="#">C<sub>21</sub>H<sub>30</sub>O<sub>2</sub></a>	 JWH-018 [35] 1-Pentyl-3-(1-naphthoyl)indole <a href="#">C<sub>24</sub>H<sub>23</sub>NO</a>	 JWH-019 [36] 1-Hexyl-3-(naphthalen-1-oyl)indole <a href="#">C<sub>25</sub>H<sub>25</sub>NO</a>	 JWH-022 [37] naphthalen-1-yl(1-(pent-4-en-1-yl)-1H-indol-3-yl)methanone <a href="#">C<sub>24</sub>H<sub>21</sub>NO</a>
 JWH-073 [38] 1-Butyl-3-(1-naphthoyl)indole <a href="#">C<sub>23</sub>H<sub>21</sub>NO</a>	 JWH-081 [39] 1-Pentyl-3-(4-methoxynaphthoyl)indole <a href="#">C<sub>25</sub>H<sub>25</sub>NO<sub>2</sub></a>	 JWH-122 [40] CHEMBL557004, UNII-44147RI31X <a href="#">C<sub>25</sub>H<sub>25</sub>NO</a>	 JWH-203 [41] UNII-52CP80V8FY <a href="#">C<sub>21</sub>H<sub>22</sub>ClNO</a>

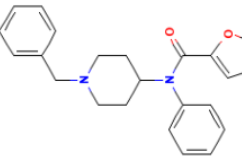
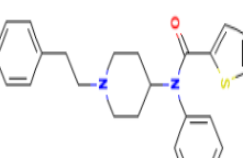
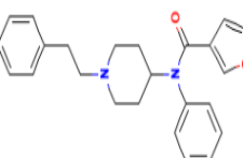
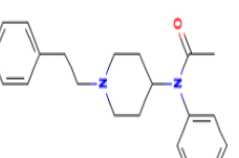
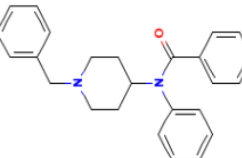
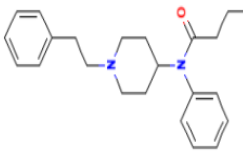
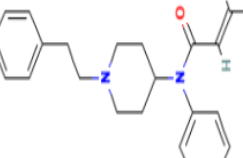
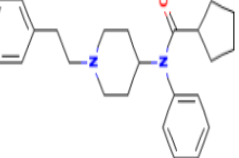
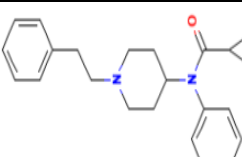
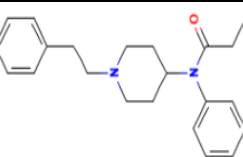
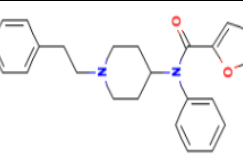
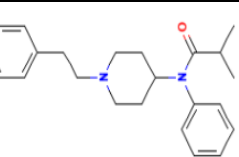
 <p>JWH-210 [42] UNII-R18JYO04PY <a href="#">C<sub>26</sub>H<sub>27</sub>NO</a></p>	 <p>JWH-250 [43] UNII-IP9911R8A0 <a href="#">C<sub>22</sub>H<sub>25</sub>NO<sub>2</sub></a></p>	 <p>JWH-307 [44] 06QTR14ONW <a href="#">C<sub>26</sub>H<sub>24</sub>FNO</a></p>	
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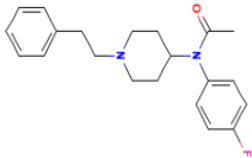
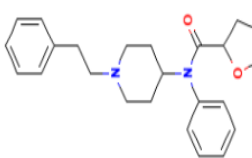
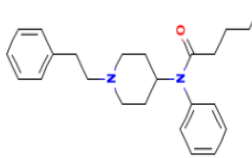
**Table S4. Cathinones**

 <p>2-Fluoroethcathinone 2-FEC [45] 127C7F28AS <a href="#">C<sub>11</sub>H<sub>14</sub>FNO</a></p>	 <p>2-Fluoromethcathinone 2-FMC [46] <a href="#">C<sub>10</sub>H<sub>12</sub>FNO</a></p>	 <p>2-Methylethcathinone 2-MEC [47] <a href="#">C<sub>12</sub>H<sub>17</sub>NO</a></p>	 <p>3-Fluoroethcathinone 3-FEC [48] <a href="#">C<sub>11</sub>H<sub>14</sub>FNO</a></p>
 <p>3-Fluoromethcathinone 3-FMC [49] 3-Flephedrone <a href="#">C<sub>10</sub>H<sub>12</sub>FNO</a></p>	 <p>3-methyl-ethcathinone 3-MEC [50] <a href="#">C<sub>12</sub>H<sub>17</sub>NO</a></p>	 <p>4-Fluoroethcathinone 4-FEC [51] ML7H977FPM <a href="#">C<sub>11</sub>H<sub>14</sub>FNO</a></p>	 <p>4-Fluoromethcathinone 4-FMC [52] Flephedrone <a href="#">C<sub>10</sub>H<sub>12</sub>FNO</a></p>
 <p>4-methyl-ethcathinone 4-MEC [53] <a href="#">C<sub>12</sub>H<sub>17</sub>NO</a></p>	 <p>2,3-Dimethylmethcathinone 2,3-DMMC [54] <a href="#">C<sub>12</sub>H<sub>17</sub>NO</a></p>	 <p>2,4-Dimethylmethcathinone 2,4-DMMC [55] <a href="#">C<sub>12</sub>H<sub>17</sub>NO</a></p>	 <p>2,5-DMMC [56] 1-(2,5-Dimethylphenyl)-2-(methylamino)propan-1-one <a href="#">C<sub>12</sub>H<sub>17</sub>NO</a></p>

			
3,4-Dimethyl-methcathinone 3,4-DMMC [57] <a href="#">C<sub>12</sub>H<sub>17</sub>NO</a>	Cathinone [58] Norephedrone <a href="#">C<sub>9</sub>H<sub>11</sub>NO</a>	Diethylcathinone [59] Amfepramone Diethylpropion <a href="#">C<sub>13</sub>H<sub>19</sub>NO</a>	Methcathinone, Ephedrone [60] <a href="#">C<sub>10</sub>H<sub>13</sub>NO</a>

**Table S5. Fentanys**

			
2-Furanylbenzyl fentanyl [61] 2- Furanylbenzyl Benzyl fu-f <a href="#">C<sub>23</sub>H<sub>24</sub>N<sub>2</sub>O<sub>2</sub></a>	2-Thiophenoyl Fentanyl [62] 5JNS36UH4R <a href="#">C<sub>24</sub>H<sub>26</sub>N<sub>2</sub>OS</a>	3-Furanyl fentanyl 3fuf [63] <a href="#">C<sub>24</sub>H<sub>26</sub>N<sub>2</sub>O<sub>2</sub></a>	Acetyl Fentanyl Acetilfen [64] <a href="#">C<sub>21</sub>H<sub>26</sub>N<sub>2</sub>O</a>
			
Benzoylbenzyl fentanyl Benzoylbenzyl Benzamide [65] <a href="#">C<sub>25</sub>H<sub>26</sub>N<sub>2</sub>O</a>	Butyryl fentanyl Butyrfentanyl Butanamide [66] <a href="#">C<sub>23</sub>H<sub>30</sub>N<sub>2</sub>O</a>	Crotonylfentanyl [67] UNII-R0XLG8CO63 <a href="#">C<sub>23</sub>H<sub>28</sub>N<sub>2</sub>O</a>	Cyclopentanoyl Fentanyl Cyclopentyl-fentanyl [68] <a href="#">C<sub>25</sub>H<sub>33</sub>ClN<sub>2</sub>O</a>
			
Cyclopropyl Fentanyl [69] DEA No. 9845	Fentanyl [70] Fentora <a href="#">C<sub>22</sub>H<sub>28</sub>N<sub>2</sub>O</a>	Furanyl Fentanyl [71] UNII-3F7C9J1LS7 <a href="#">C<sub>24</sub>H<sub>26</sub>N<sub>2</sub>O<sub>2</sub></a>	Isobutyryl fentanyl Isobutyrfentanyl [72]

<a href="#">C<sub>23</sub>H<sub>28</sub>N<sub>2</sub>O</a>			<a href="#">C<sub>23</sub>H<sub>30</sub>N<sub>2</sub>O</a>
 <p>para-Fluoroacetyl fentanyl [73] Acetyl 4'-fluorofentanyl</p> <p><a href="#">C<sub>21</sub>H<sub>25</sub>FN<sub>2</sub>O</a></p>	 <p>Tetrahydrofuran Fentanyl [74] Thf-f</p> <p><a href="#">C<sub>24</sub>H<sub>30</sub>N<sub>2</sub>O<sub>2</sub></a></p>	 <p>Valeryl fentanyl Pentanamide [75] <a href="#">C<sub>24</sub>H<sub>32</sub>N<sub>2</sub>O</a></p>	

### 3. Theoretical Spectra

Figure S3. Infrared Theoretical Spectra for 2C-C:

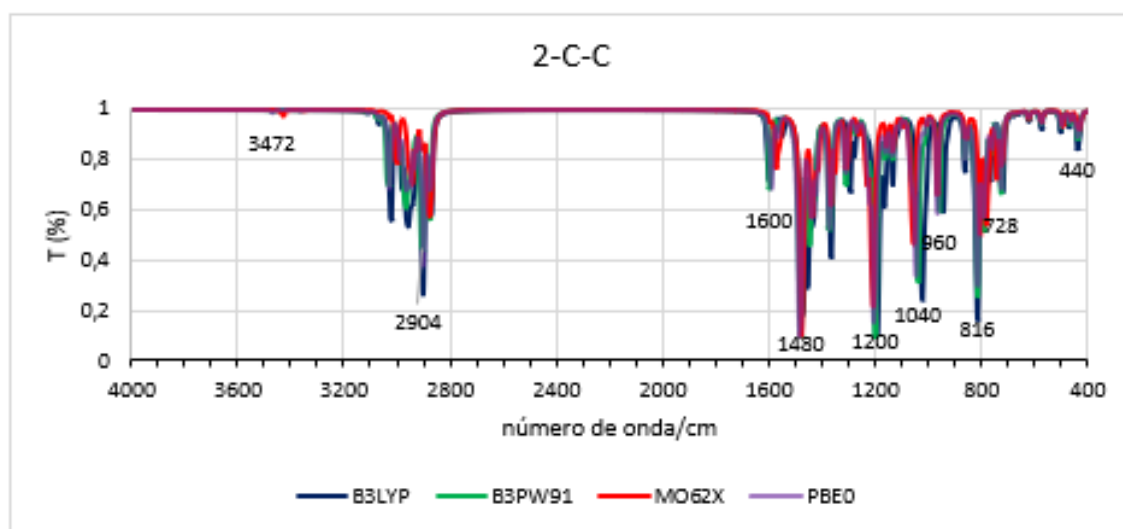


Figure S4. Infrared Theoretical Spectra for 2-FA:

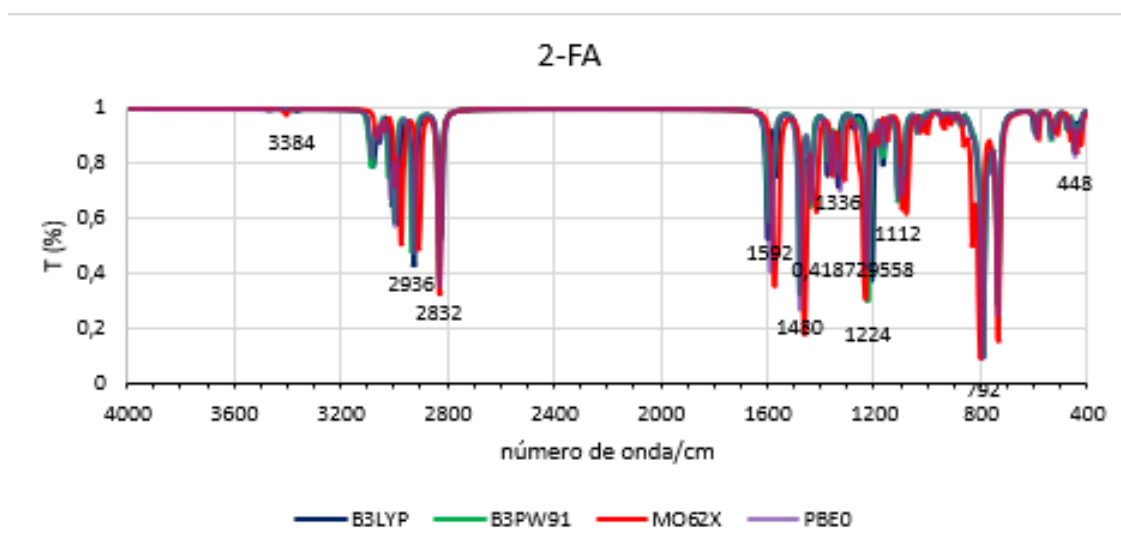


Figure S5. Infrared Theoretical Spectra for 2-FMA:

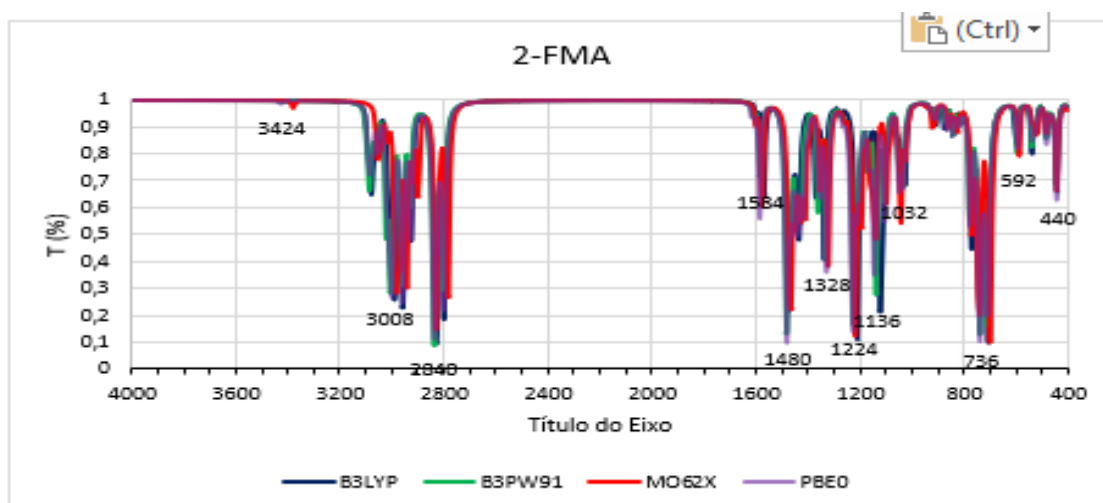


Figure S6. Infrared Theoretical Spectra for 3-FA:

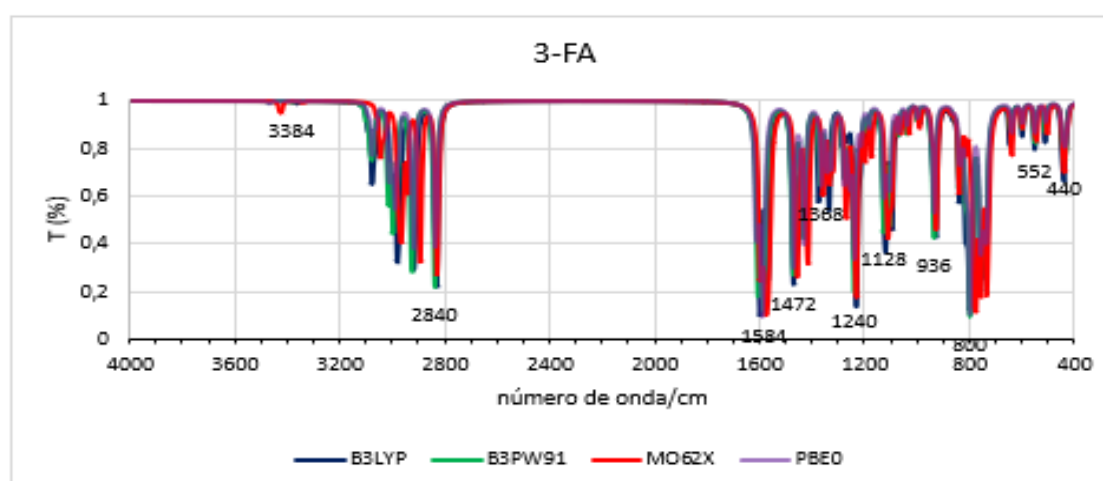


Figure S7. Infrared Theoretical Spectra for 3-FMA:

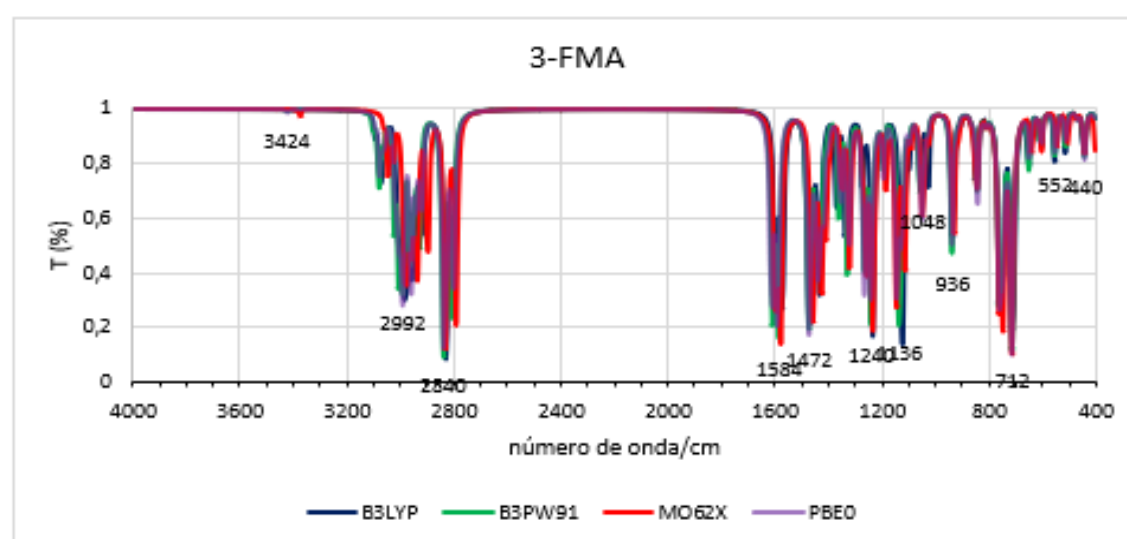


Figure S8. Infrared Theoretical Spectra for 4-FA:

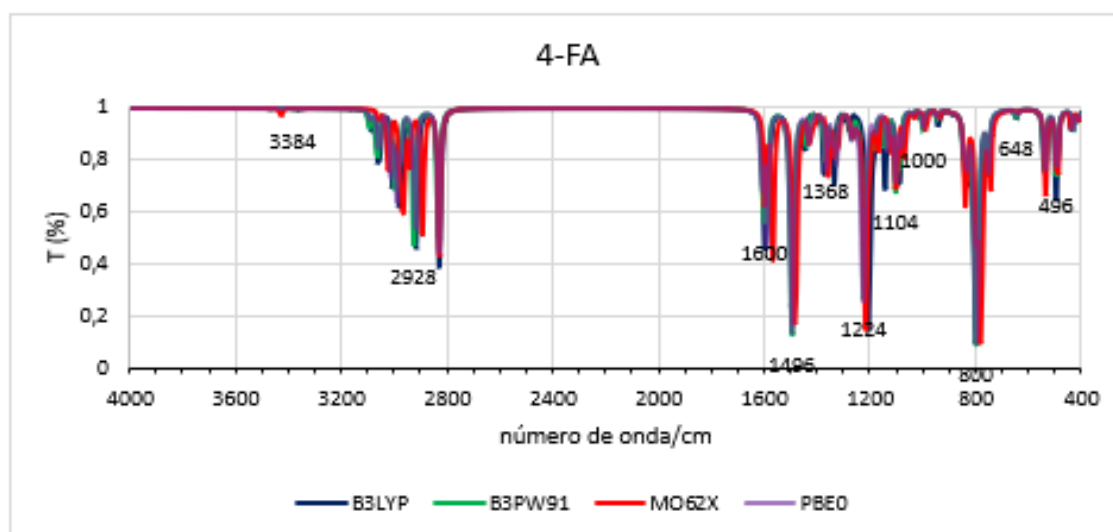


Figure S9. Infrared Theoretical Spectra for 4-FMA:

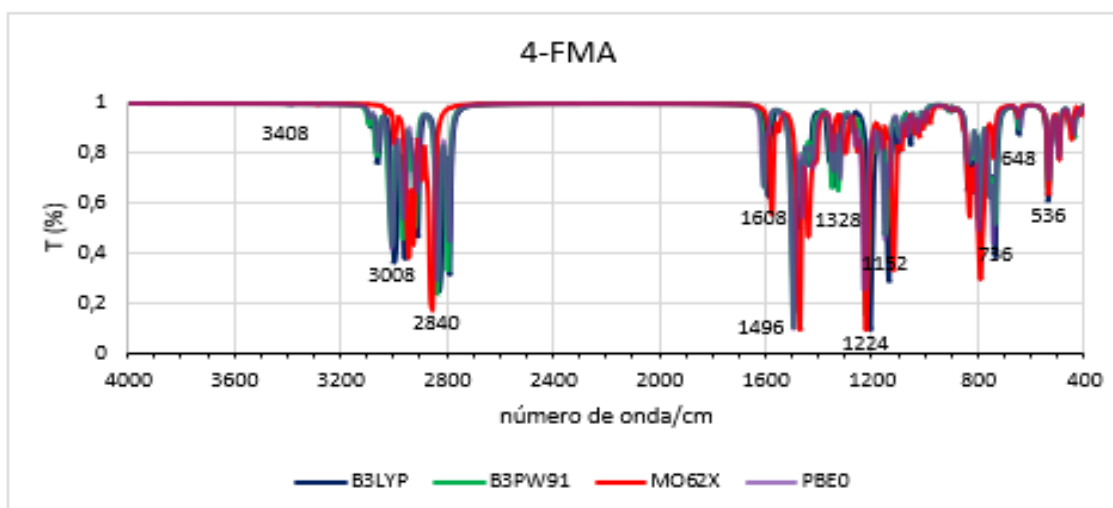


Figure S10. Infrared Theoretical Spectra for 4-MA:

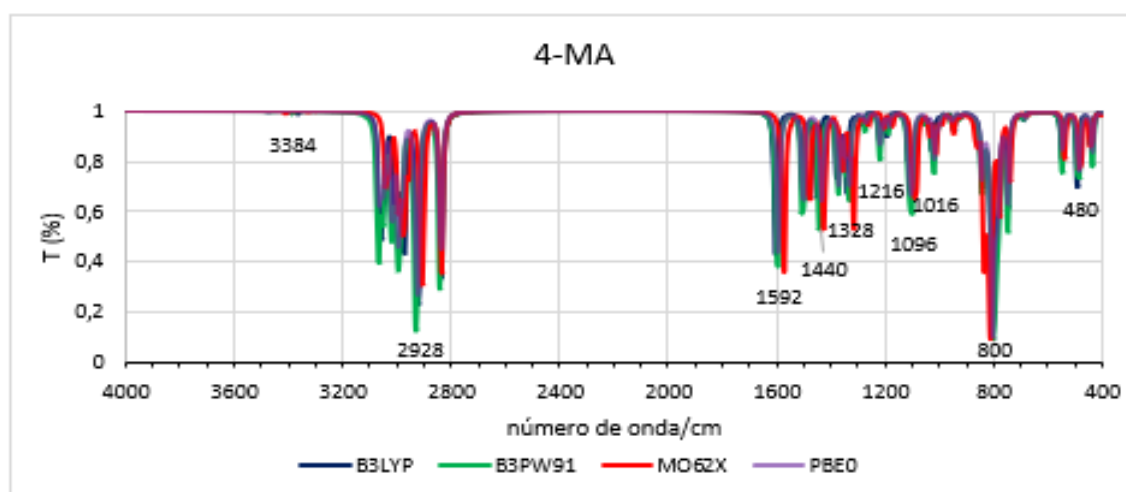


Figure S11. Infrared Theoretical Spectra for 25-DMA:

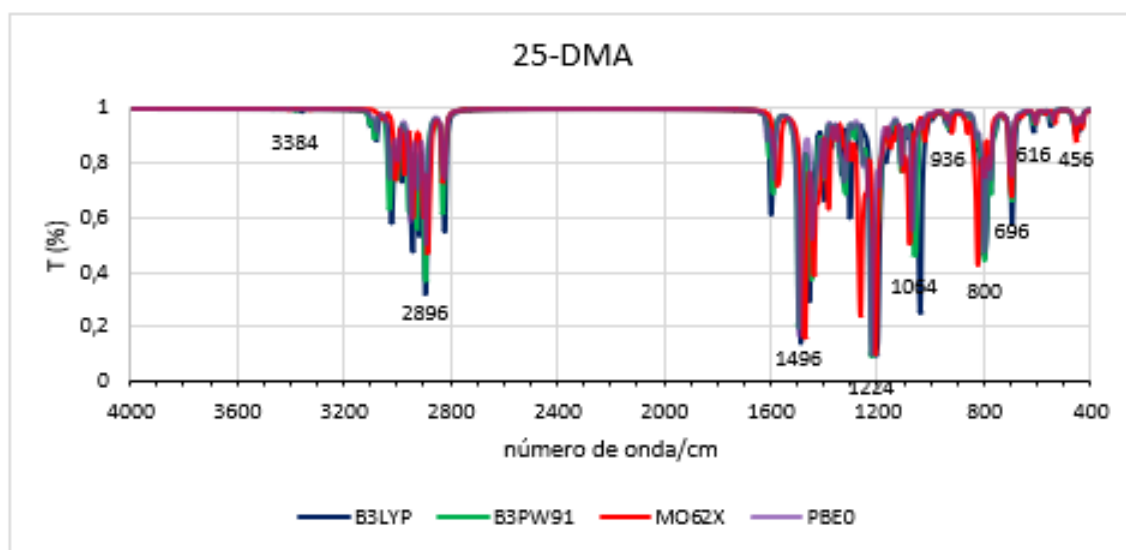


Figure S12. Infrared Theoretical Spectra for 34-MDA:

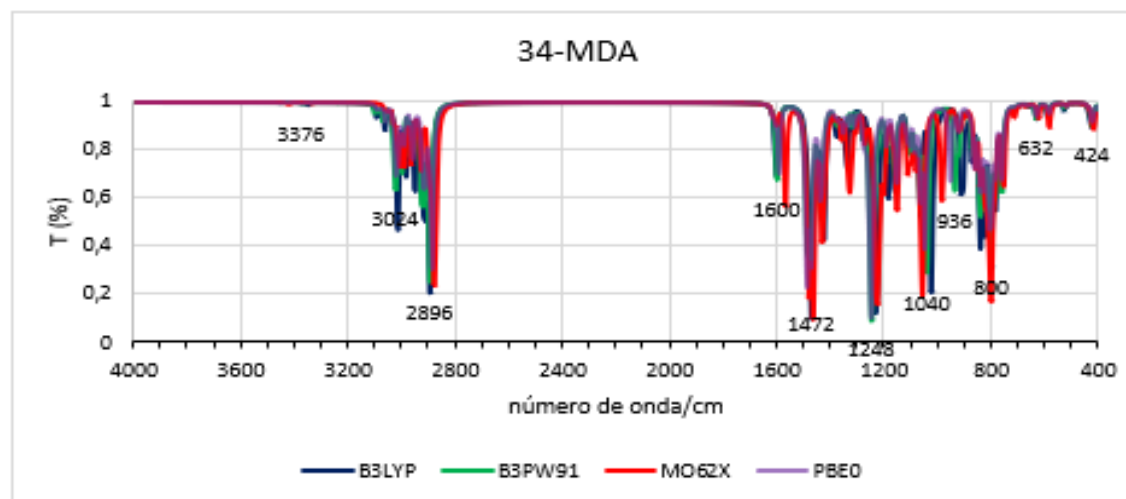


Figure S13. Infrared Theoretical Spectra for amphetamine:

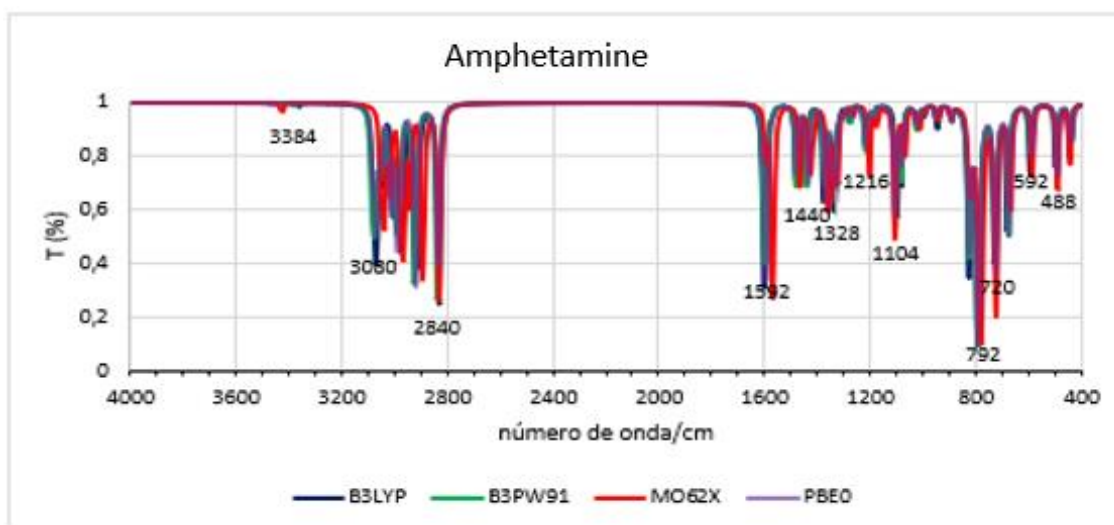


Figure S14. Infrared Theoretical Spectra for DMA:

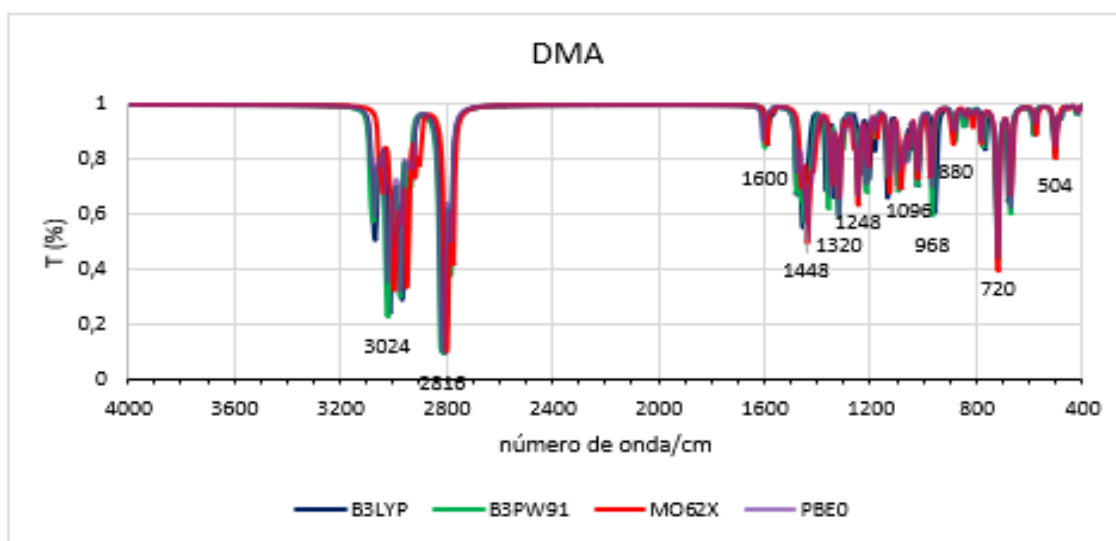


Figure S15. Infrared Theoretical Spectra for MDMA:

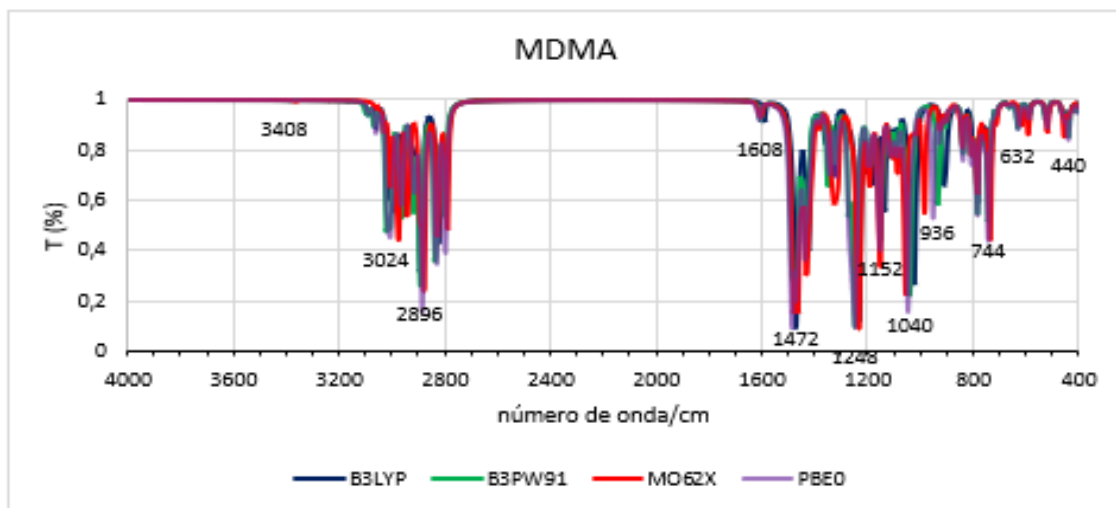


Figure S16. Infrared Theoretical Spectra for methamphetamine:

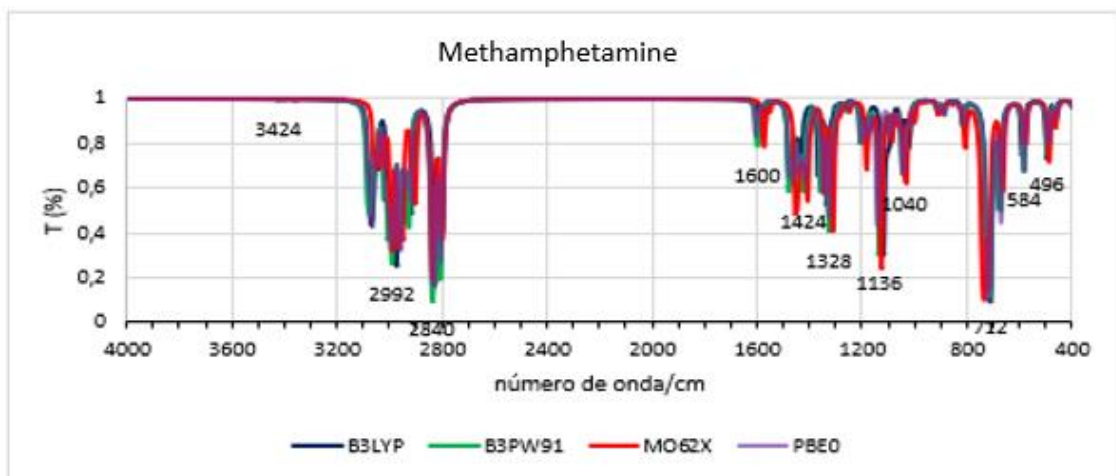


Figure S17. Infrared Theoretical Spectra for PMA:

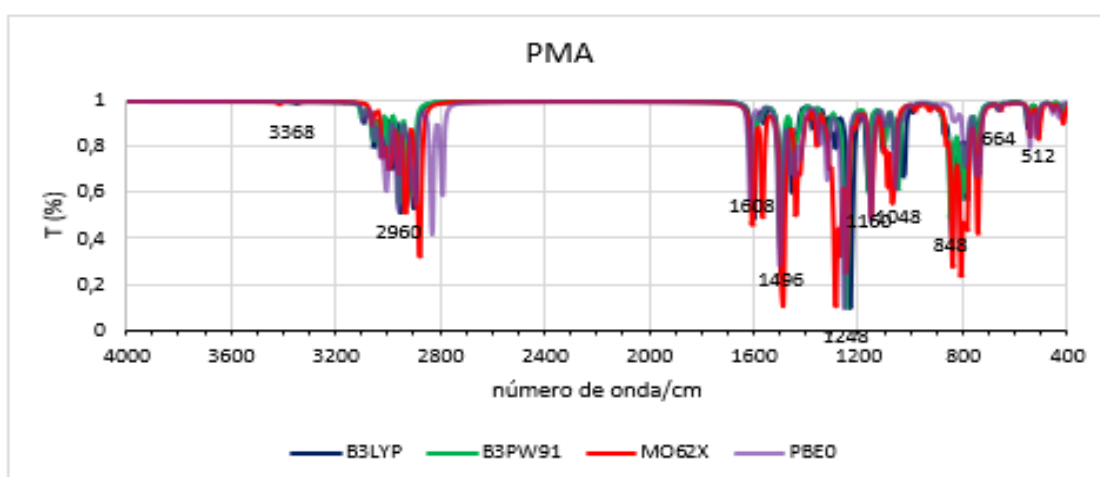


Figure S18. Infrared Theoretical Spectra for PMMA:

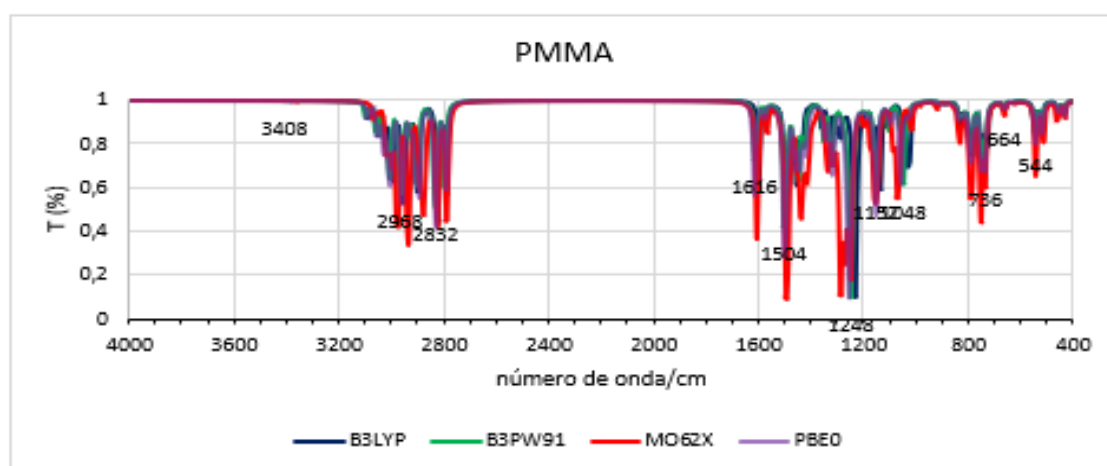


Figure S19. Infrared Theoretical Spectra for Adinazolam:

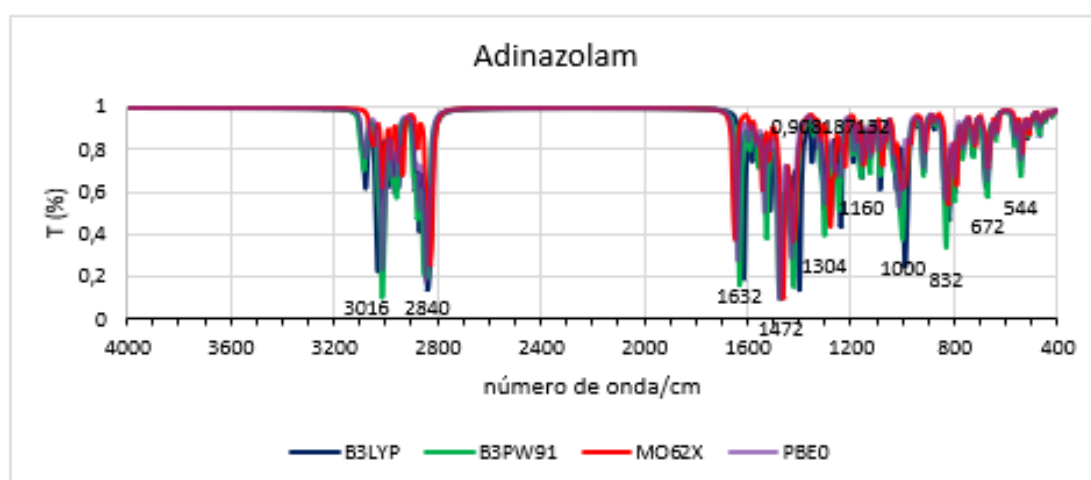


Figure S20. Infrared Theoretical Spectra for Alprazolam:

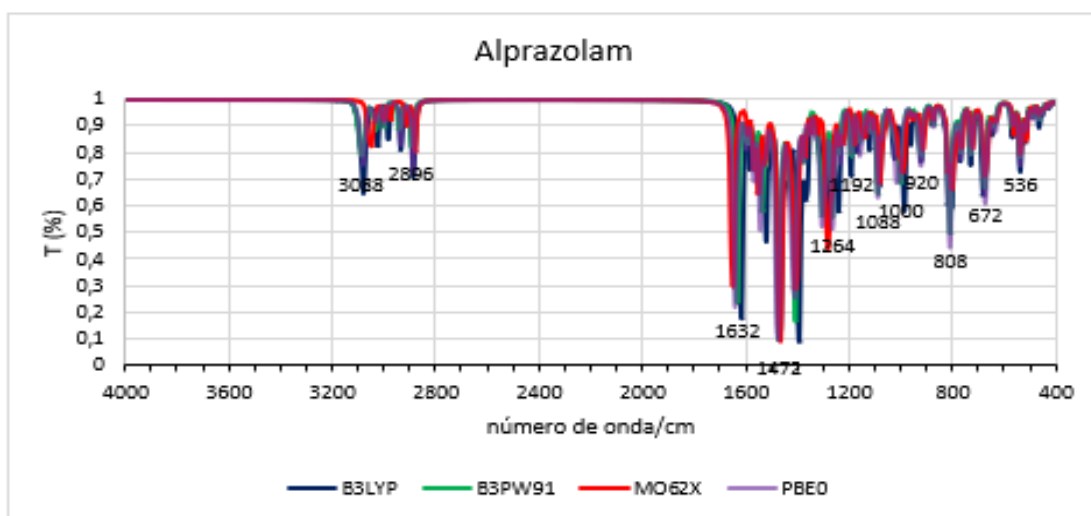


Figure S21. Infrared Theoretical Spectra for Bromazolam:

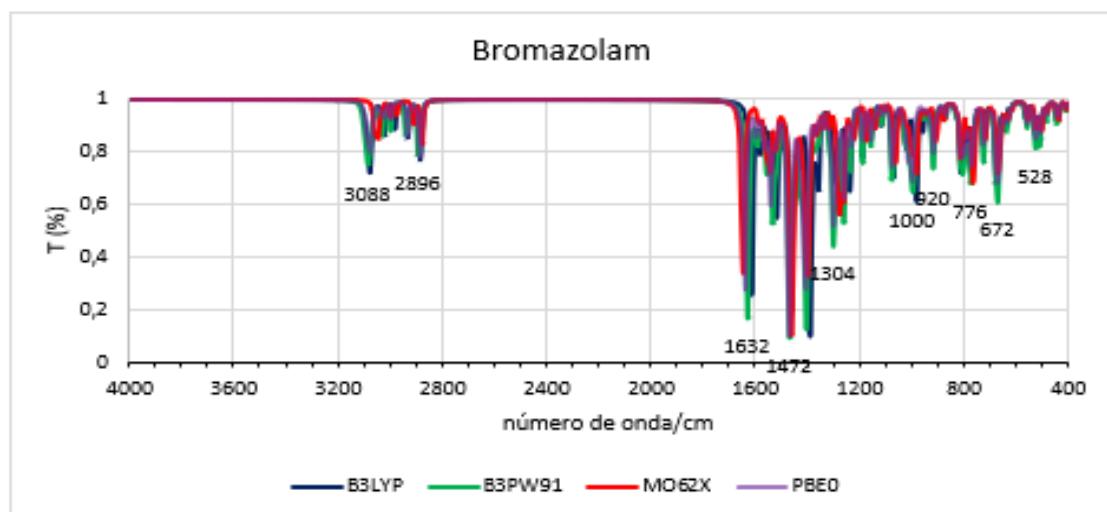


Figure S22. Infrared Theoretical Spectra for Clonazolam:

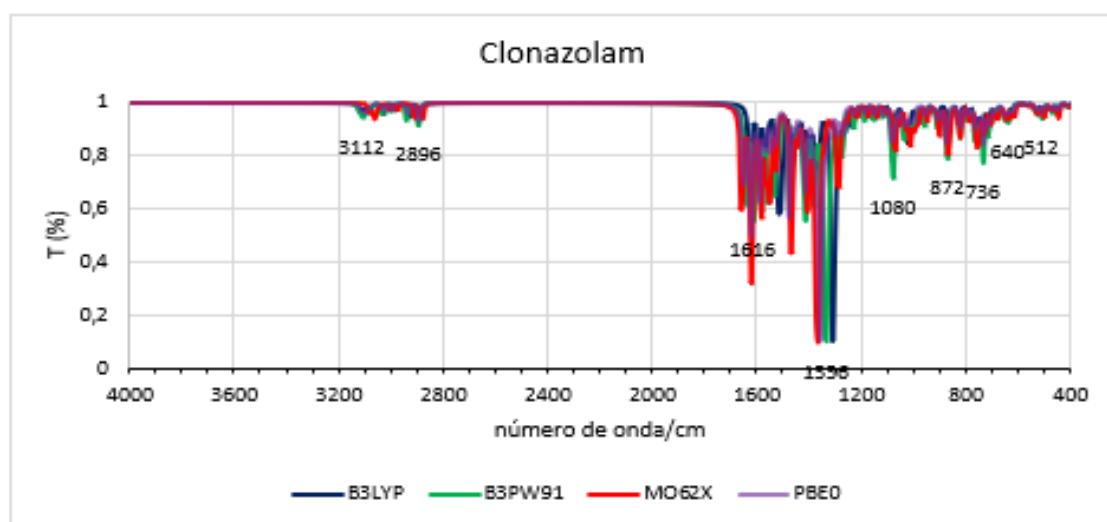


Figure S23. Infrared Theoretical Spectra for Diazepam:

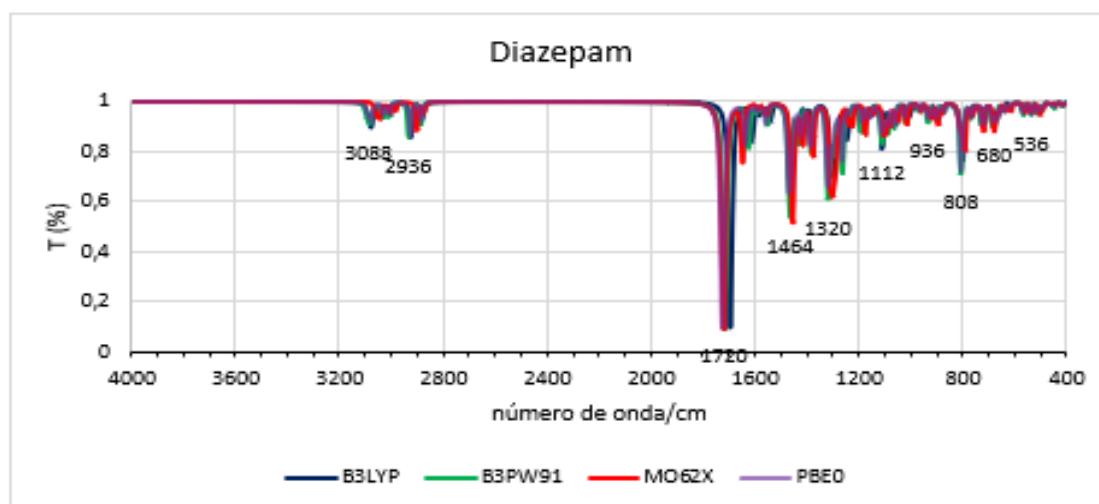


Figure S24. Infrared Theoretical Spectra for Diclazepam:

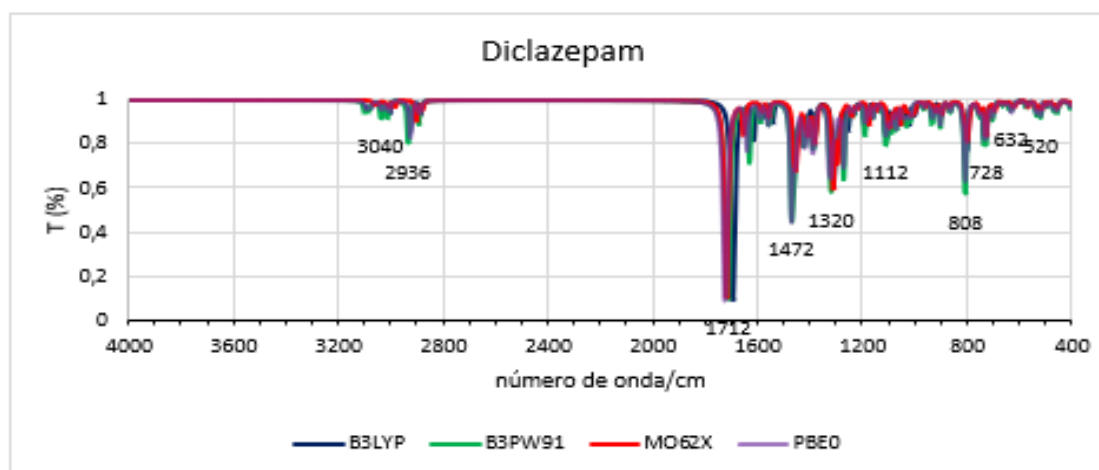


Figure S25. Infrared Theoretical Spectra for Flualprazolam:

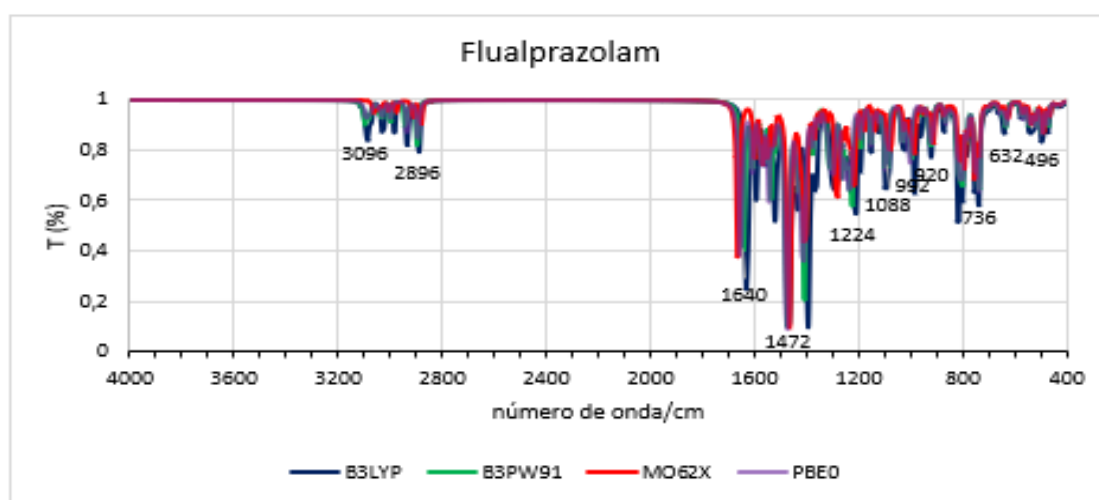


Figure S26. Infrared Theoretical Spectra for Flubromazepam:

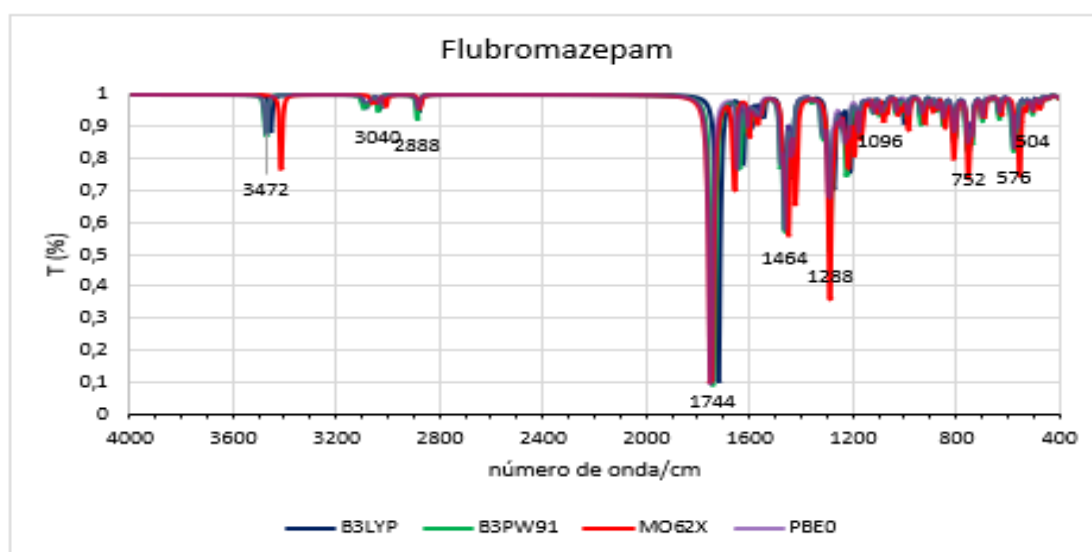


Figure S27. Infrared Theoretical Spectra for Flubromazolam:

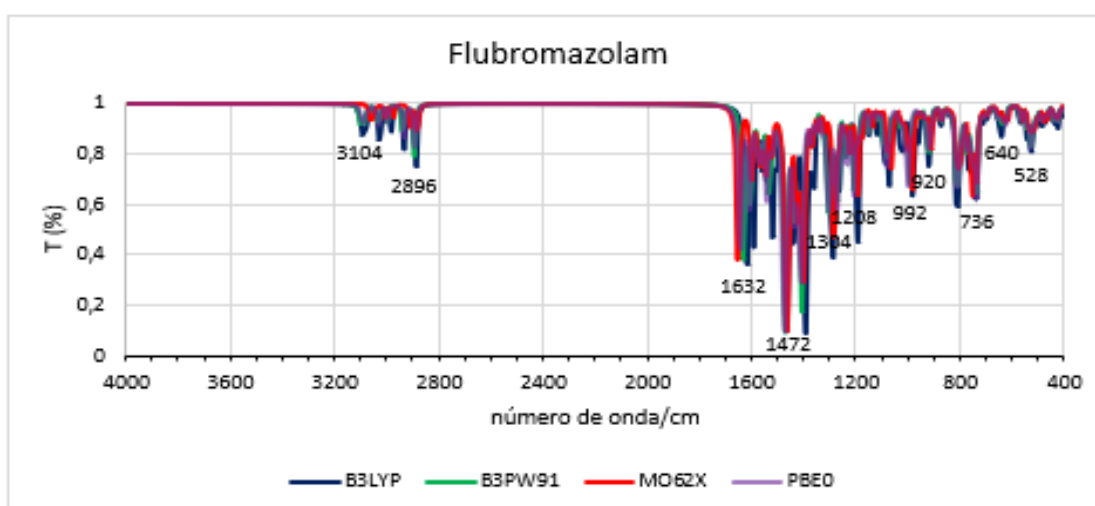


Figure S28. Infrared Theoretical Spectra for Flunitrazepam:

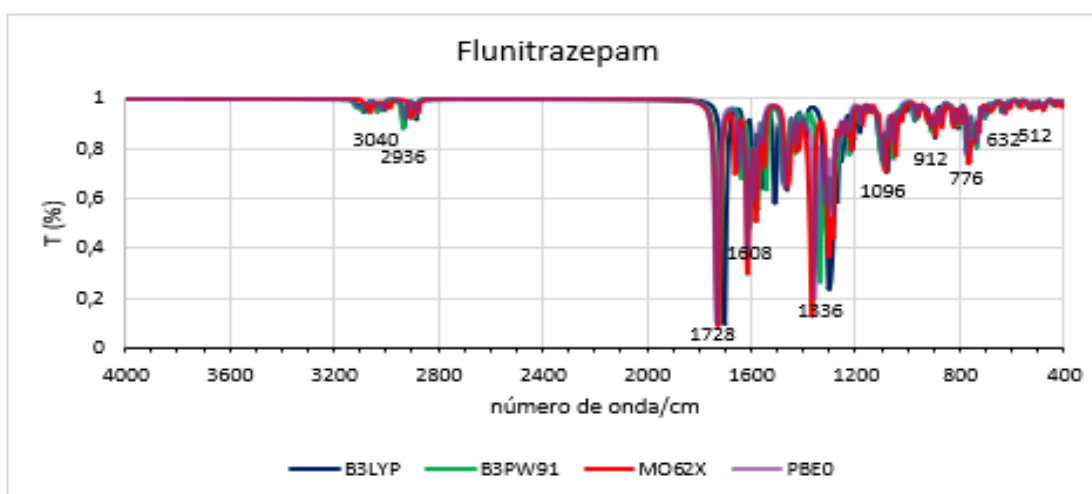


Figure S29. Infrared Theoretical Spectra for Flunitrazolam:

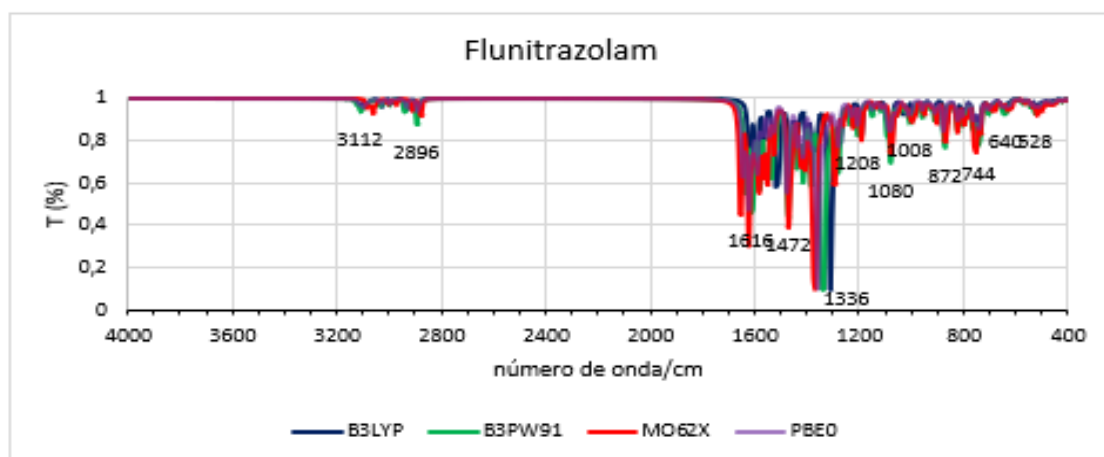


Figure S30. Infrared Theoretical Spectra for Midazolam:

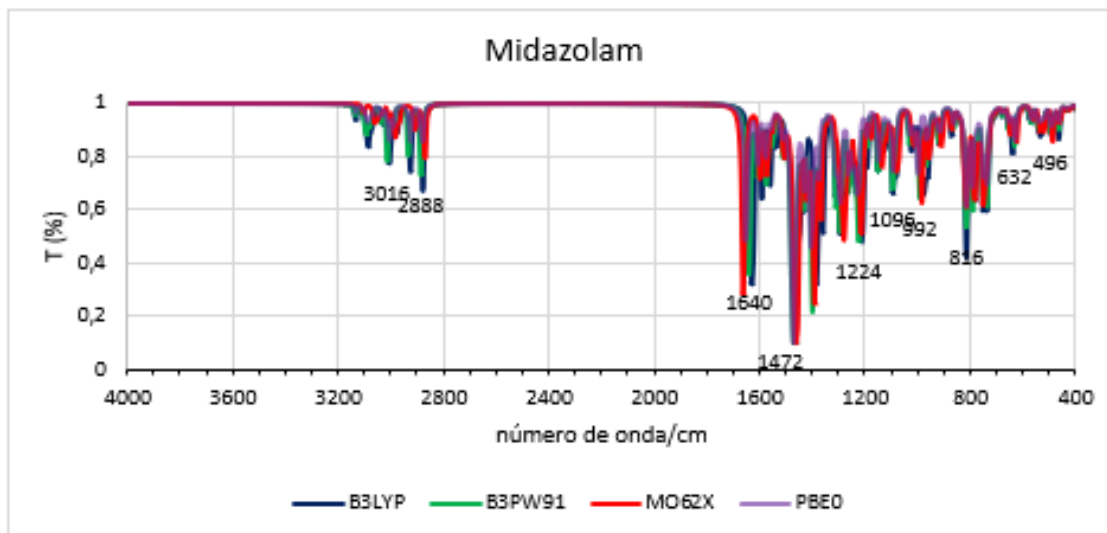


Figure S31. Infrared Theoretical Spectra for Oxazepam:

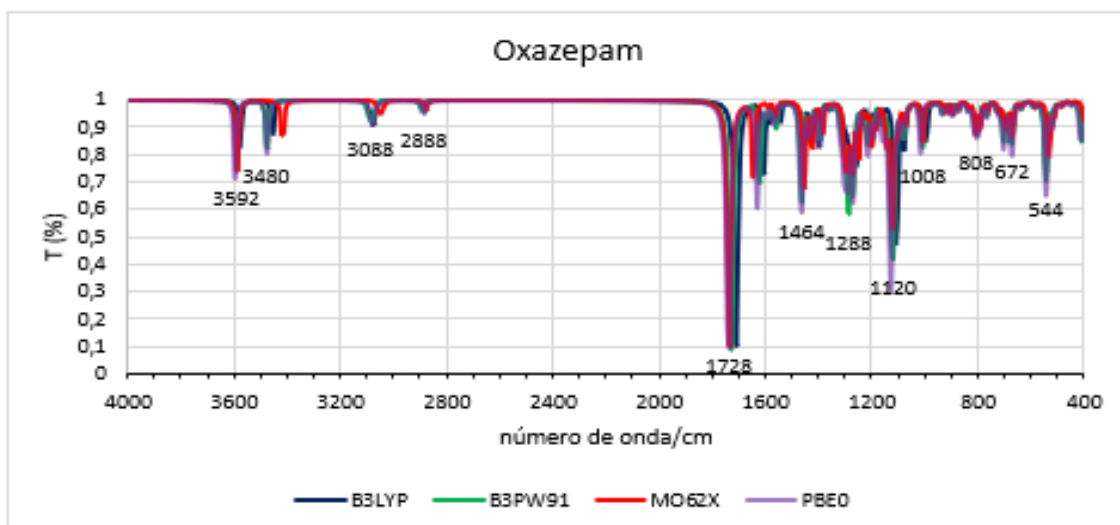


Figure S32. Infrared Theoretical Spectra for AM-1220:

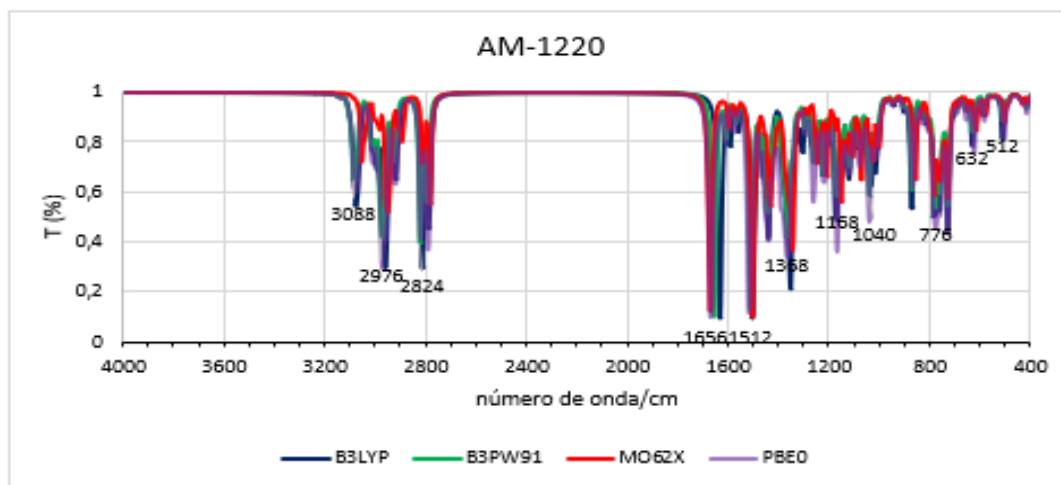


Figure S33. Infrared Theoretical Spectra for AM-1248:

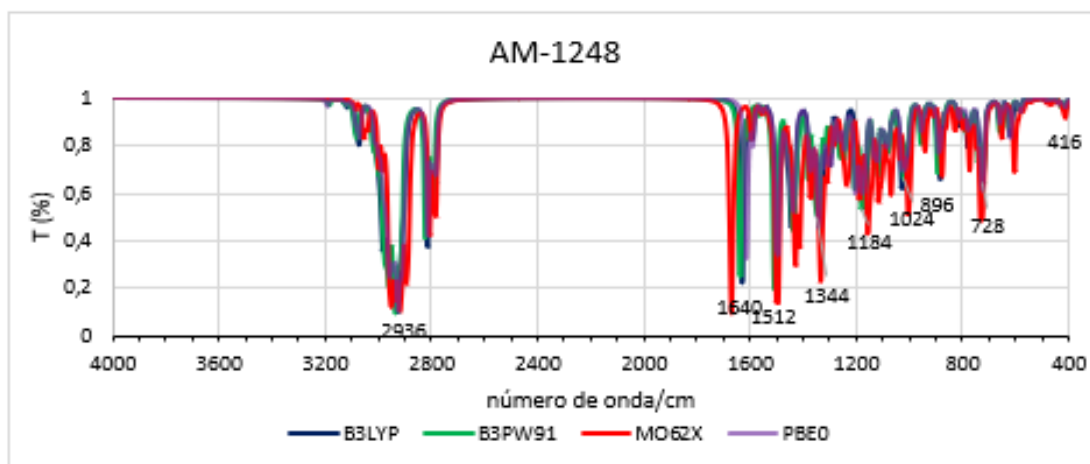


Figure S34. Infrared Theoretical Spectra for Cannabidiol:

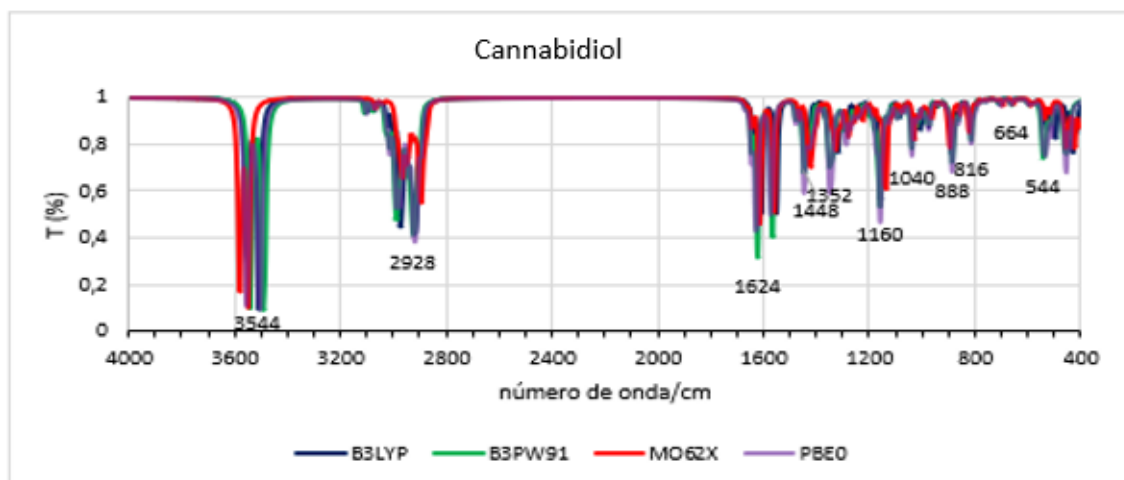


Figure S35. Infrared Theoretical Spectra for Cannabinol:

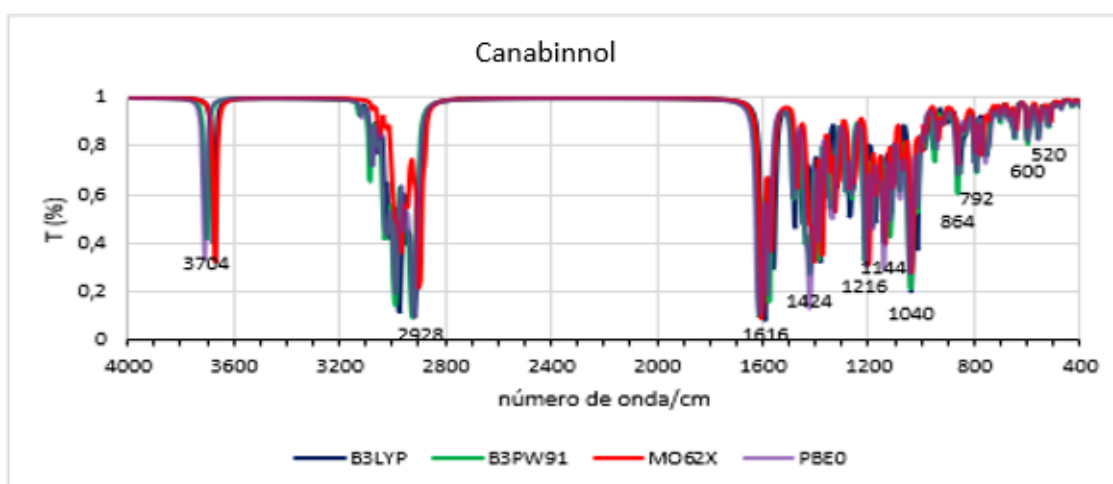


Figure S36. Infrared Theoretical Spectra for  $\Delta^9$ -THC:

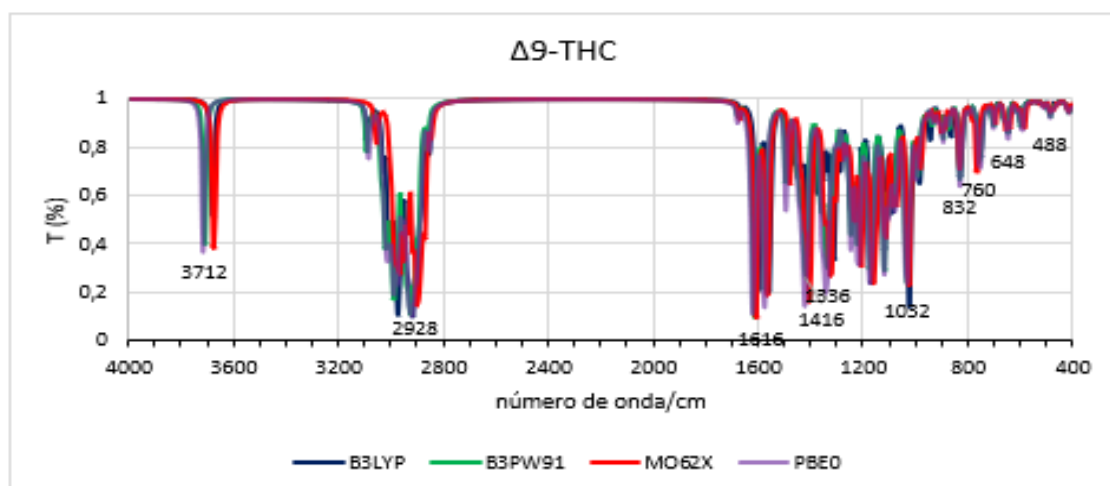


Figure S37. Infrared Theoretical Spectra for JWH-018:

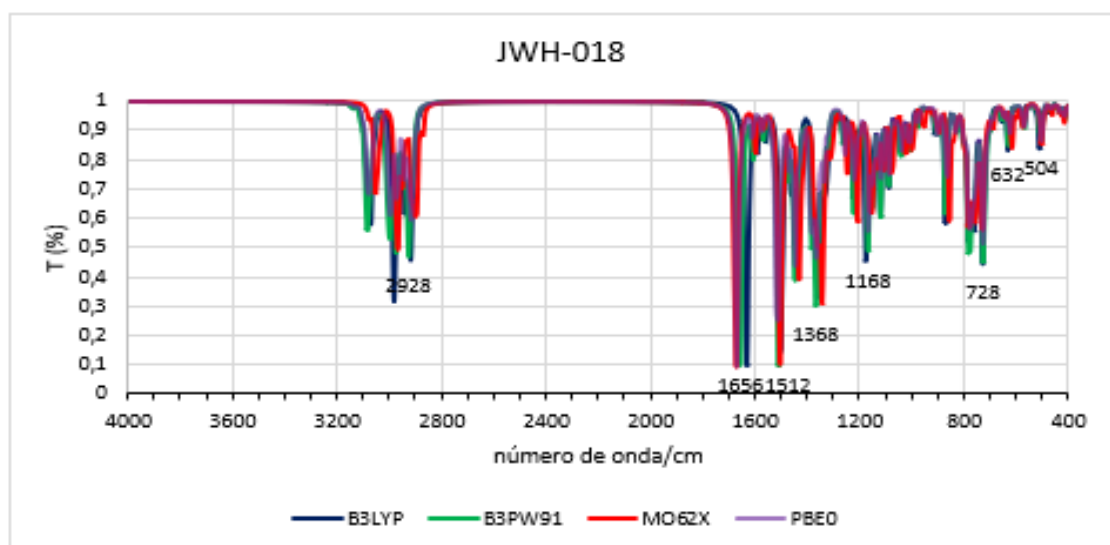


Figure S38. Infrared Theoretical Spectra for JWH-019:

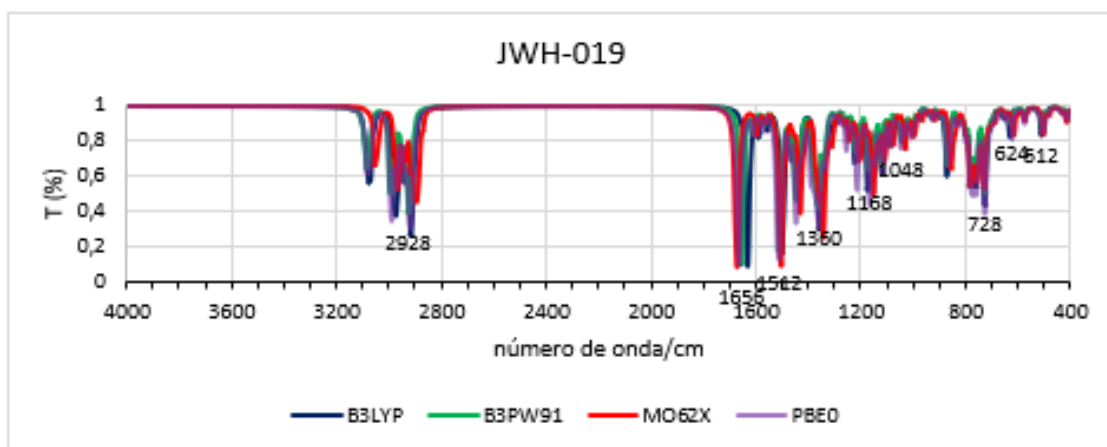


Figure S39. Infrared Theoretical Spectra for JWH-022:

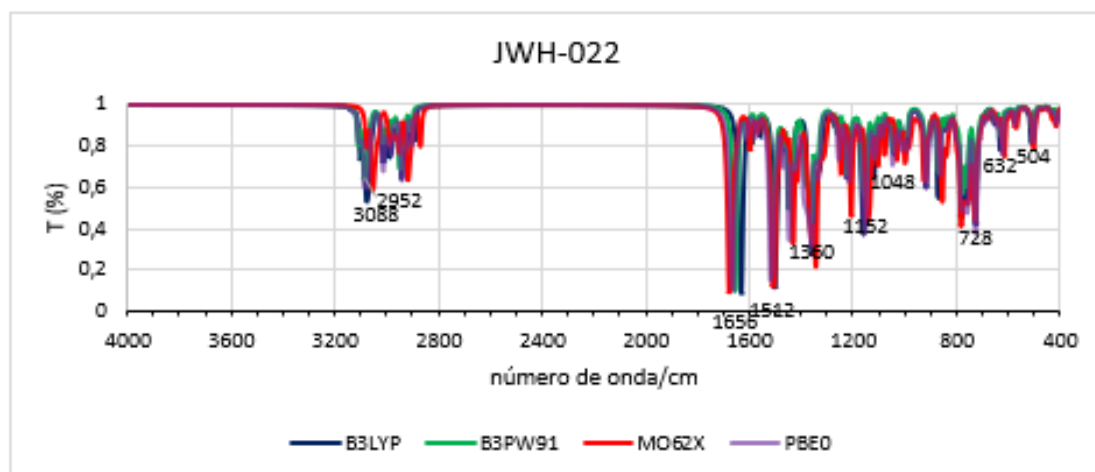


Figure S40. Infrared Theoretical Spectra for JWH-073:

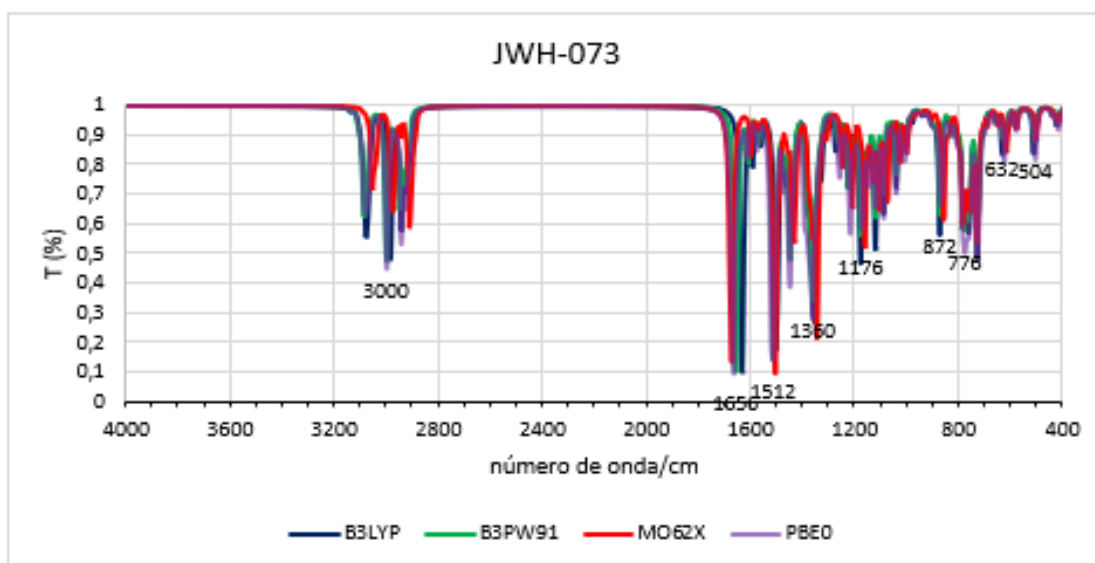


Figure S41. Infrared Theoretical Spectra for JWH-081:

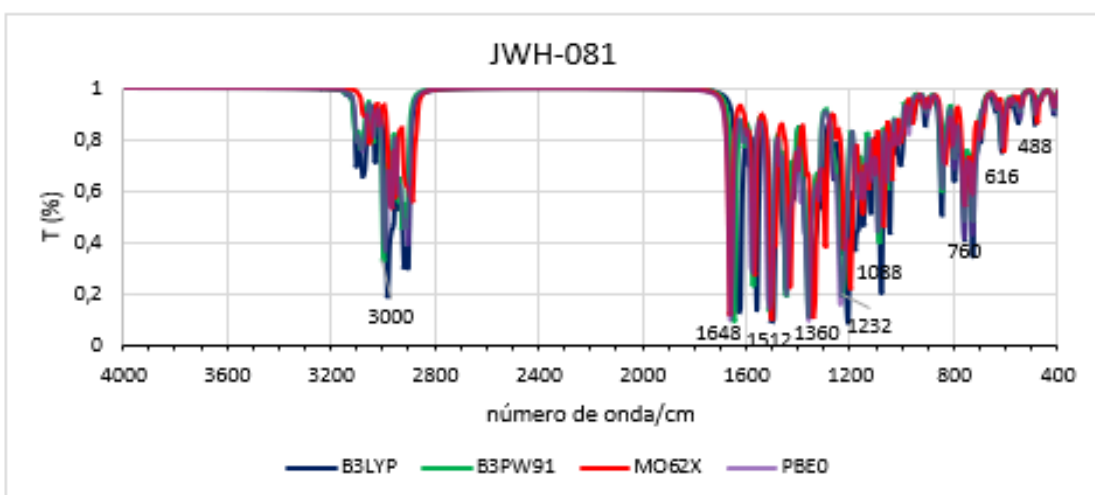


Figure S42. Infrared Theoretical Spectra for JWH-122:

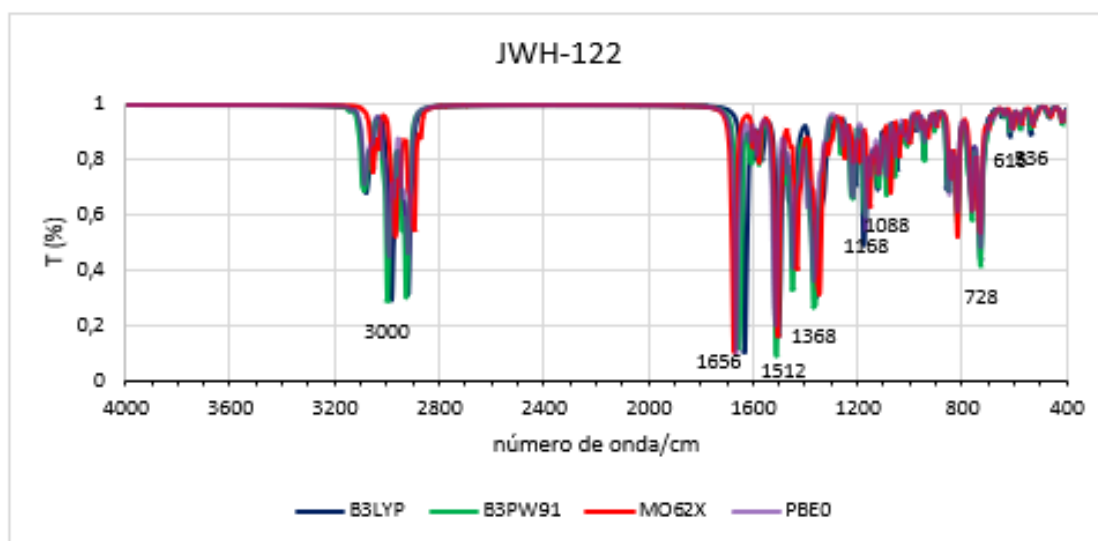


Figure S43. Infrared Theoretical Spectra for JWH-203:

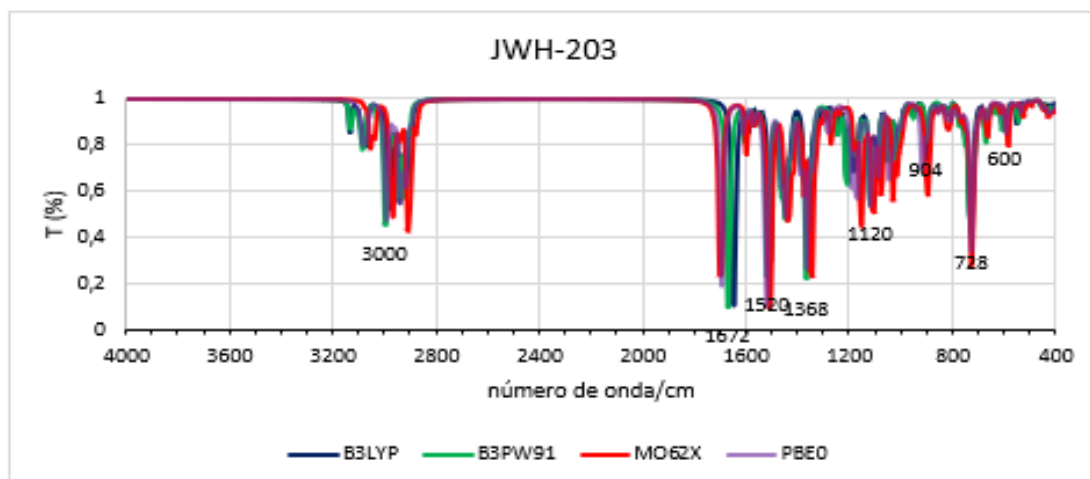


Figure S44. Infrared Theoretical Spectra for JWH-210:

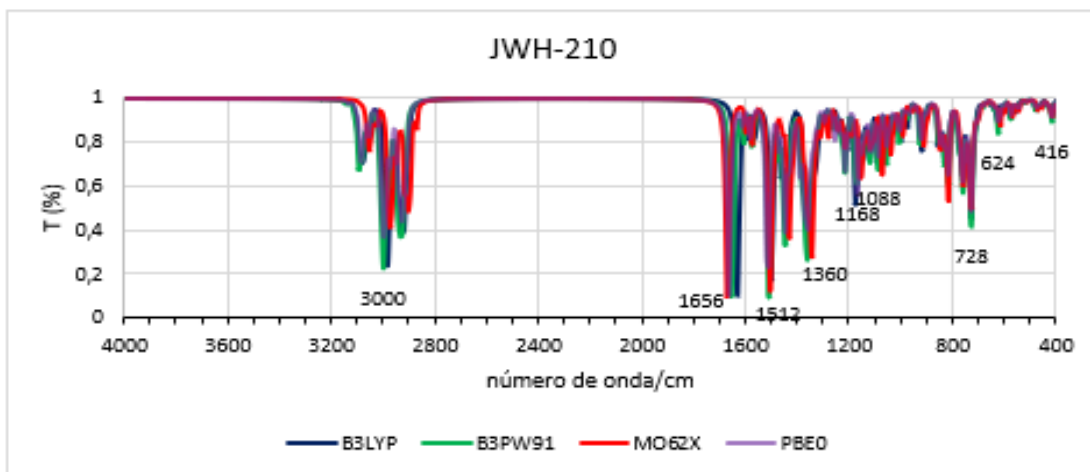


Figure S45. Infrared Theoretical Spectra for JWH-250:

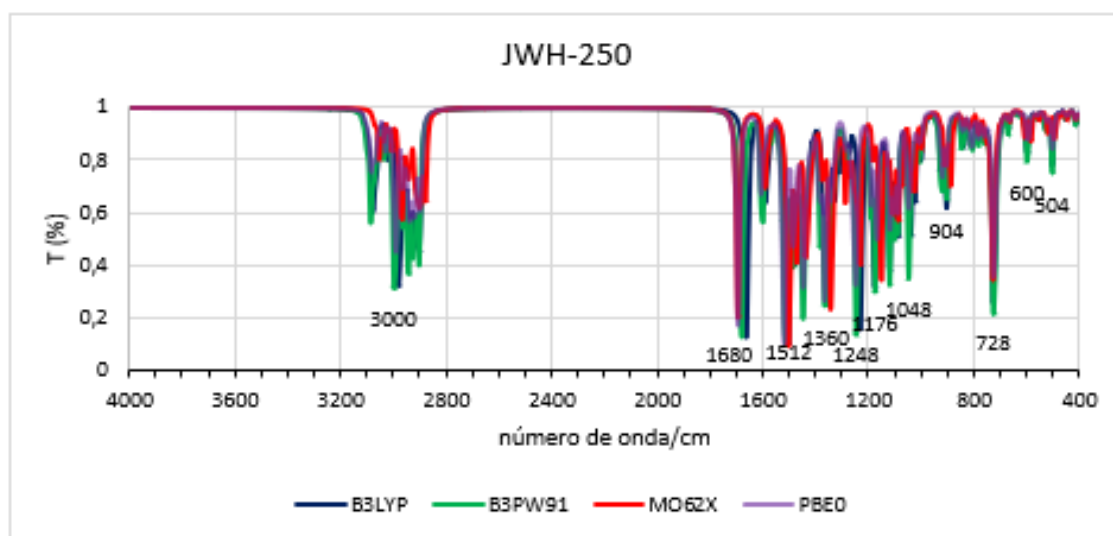


Figure S46. Infrared Theoretical Spectra for JWH-307:

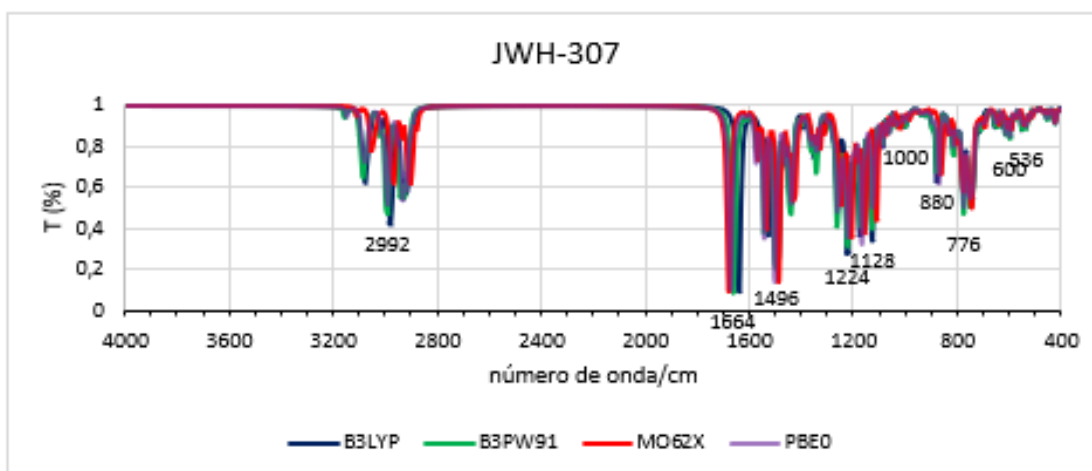


Figure S47. Infrared Theoretical Spectra for 2-FEC:

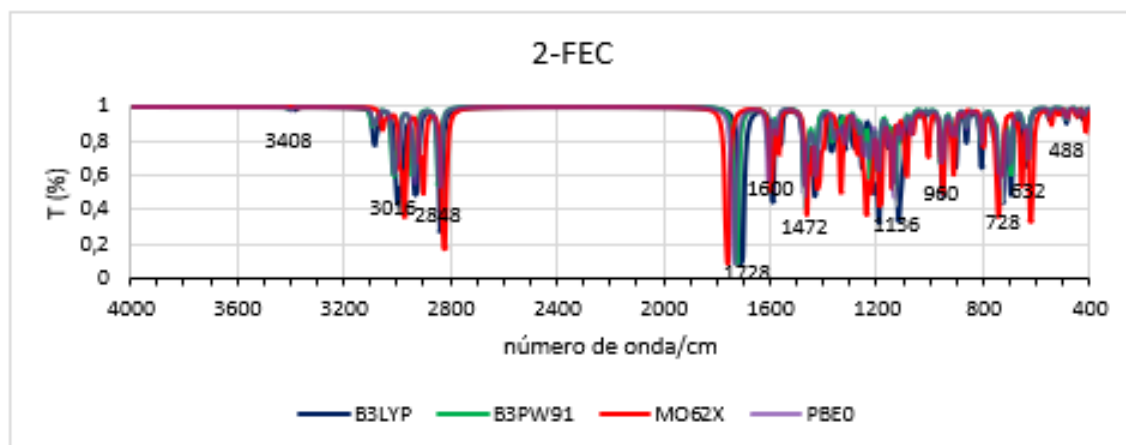


Figure S48. Infrared Theoretical Spectra for 2-FMC:

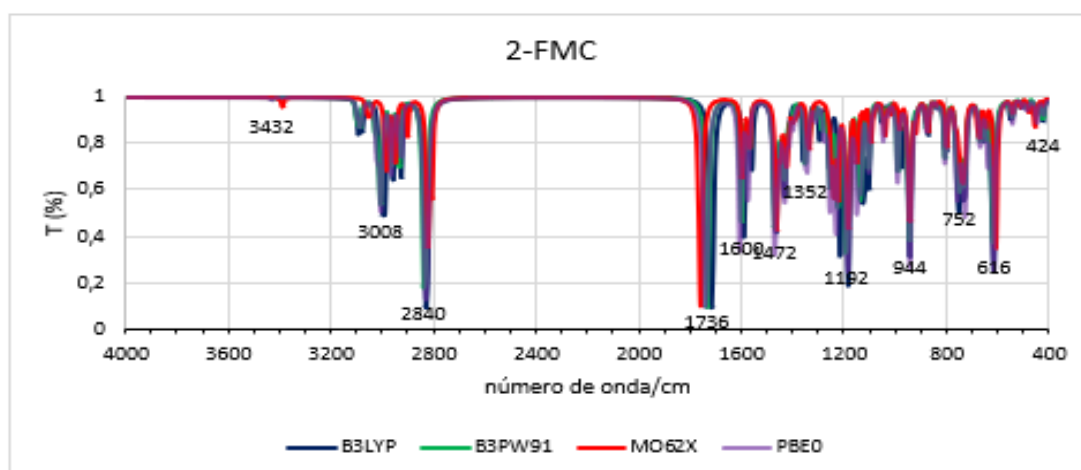


Figure S49. Infrared Theoretical Spectra for 2-MEC:

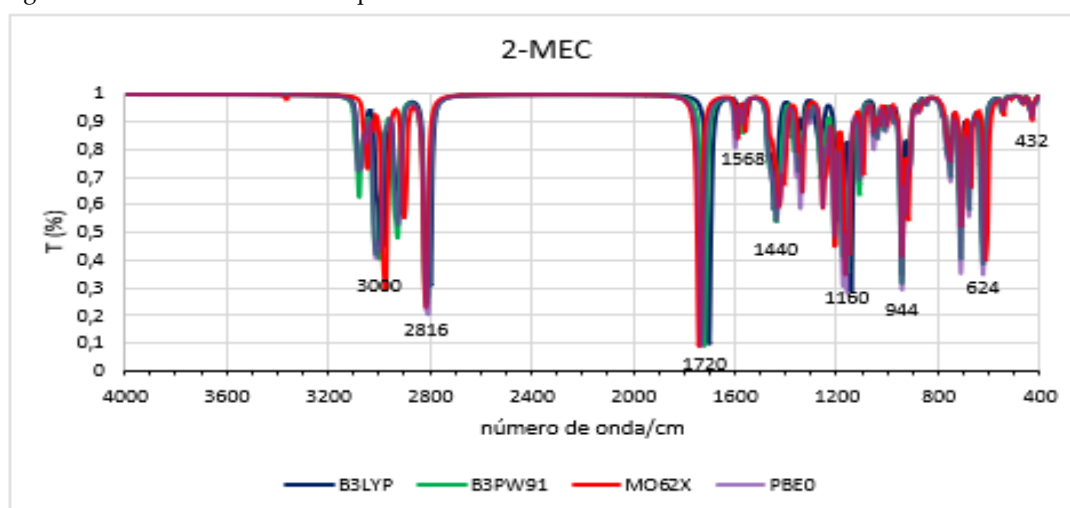


Figure S50. Infrared Theoretical Spectra for 2-FEC:

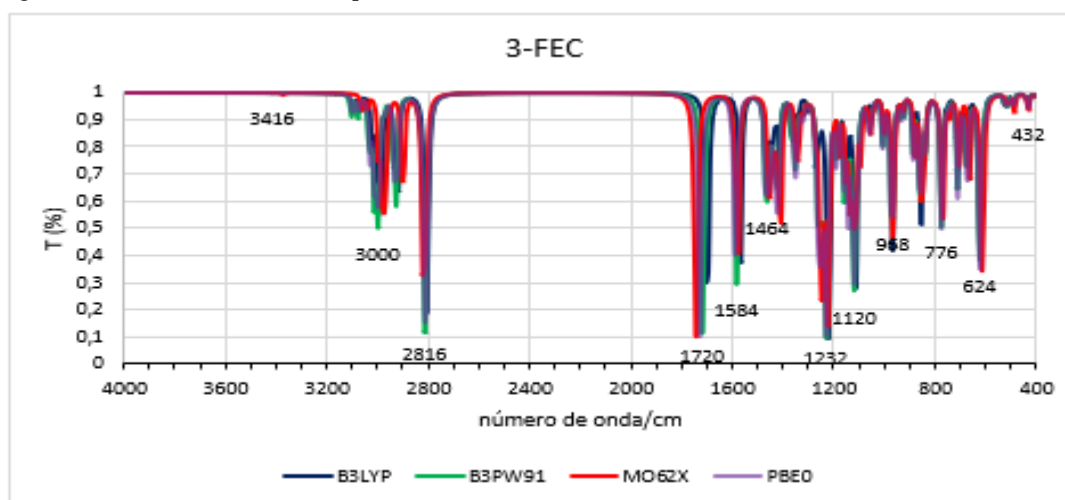


Figure S51. Infrared Theoretical Spectra for 3-FMC:

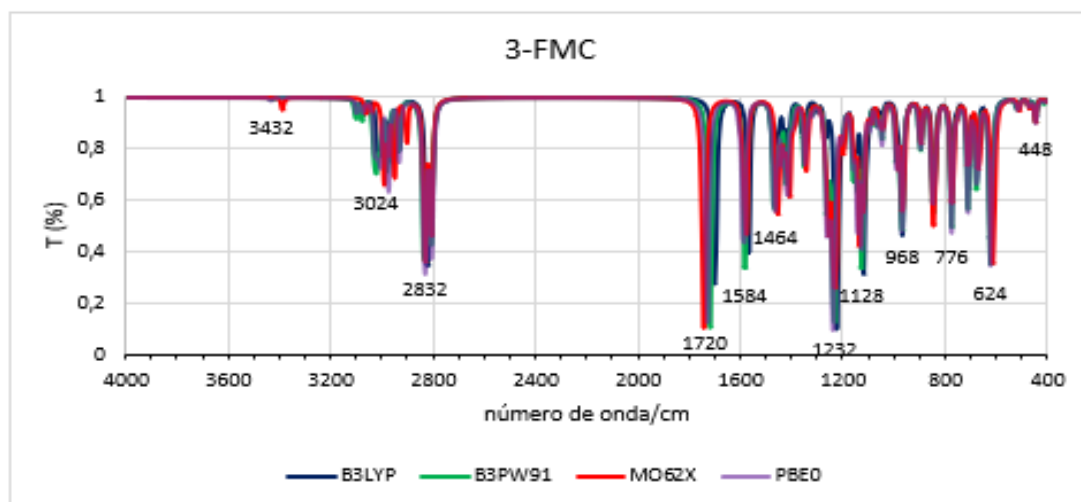


Figure S52. Infrared Theoretical Spectra for 3-MEC:

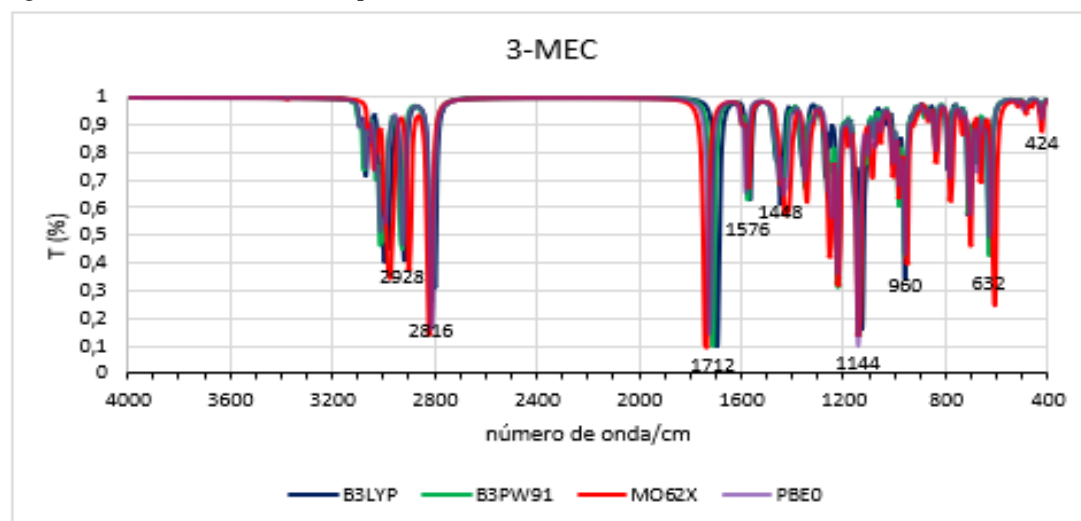


Figure S53. Infrared Theoretical Spectra for 4-FEC:

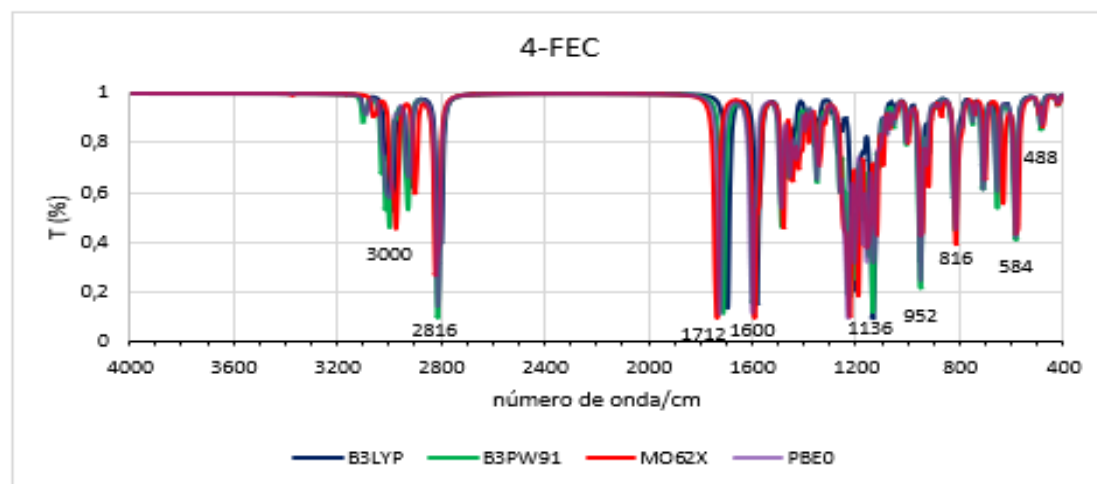


Figure S54. Infrared Theoretical Spectra for 4-FMC:

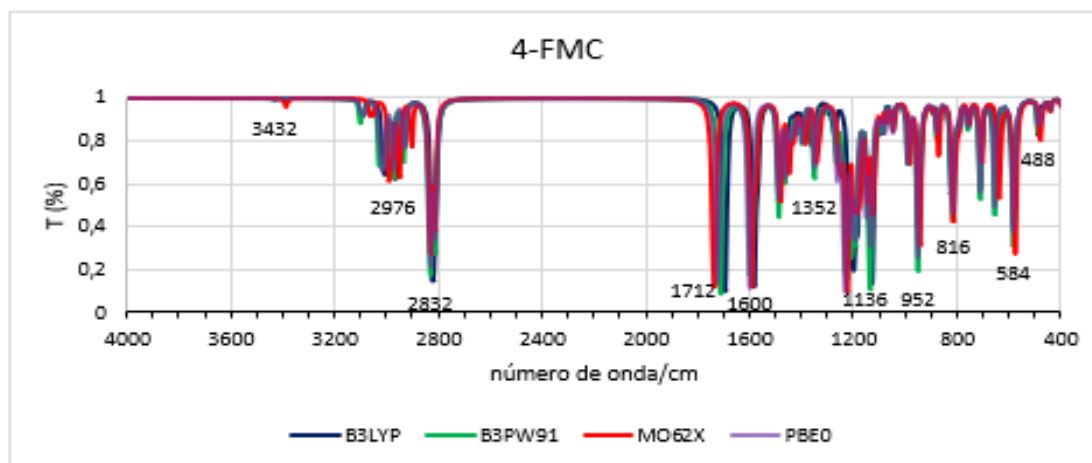


Figure S55. Infrared Theoretical Spectra for 4-MEC:

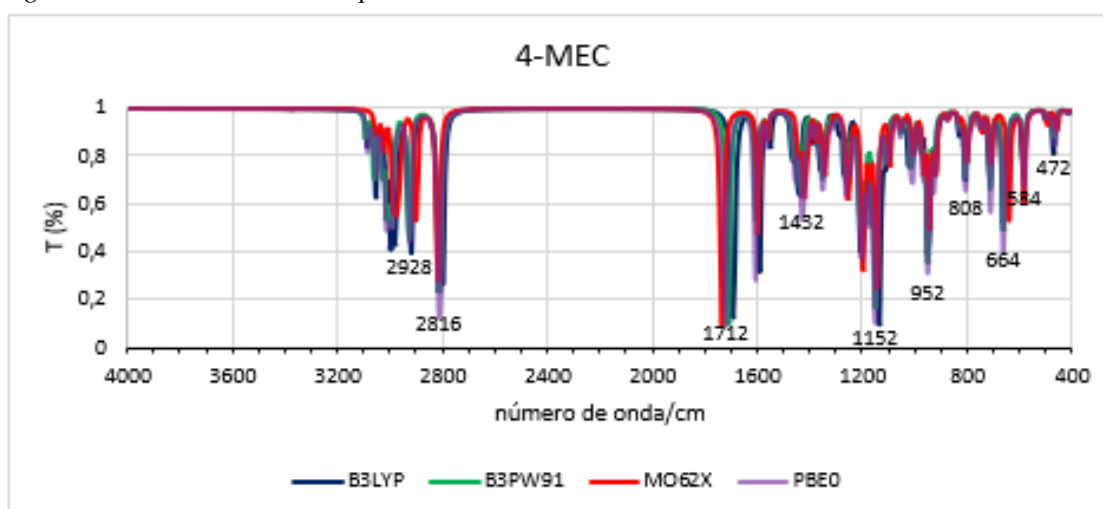


Figure S56. Infrared Theoretical Spectra for 23-DMMC:

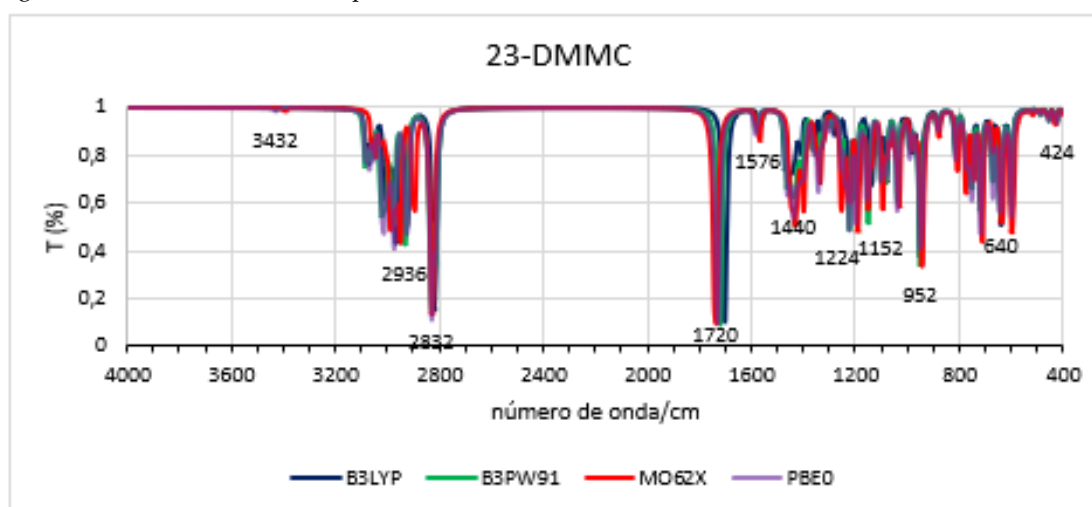


Figure S57. Infrared Theoretical Spectra for 24-DMMC:

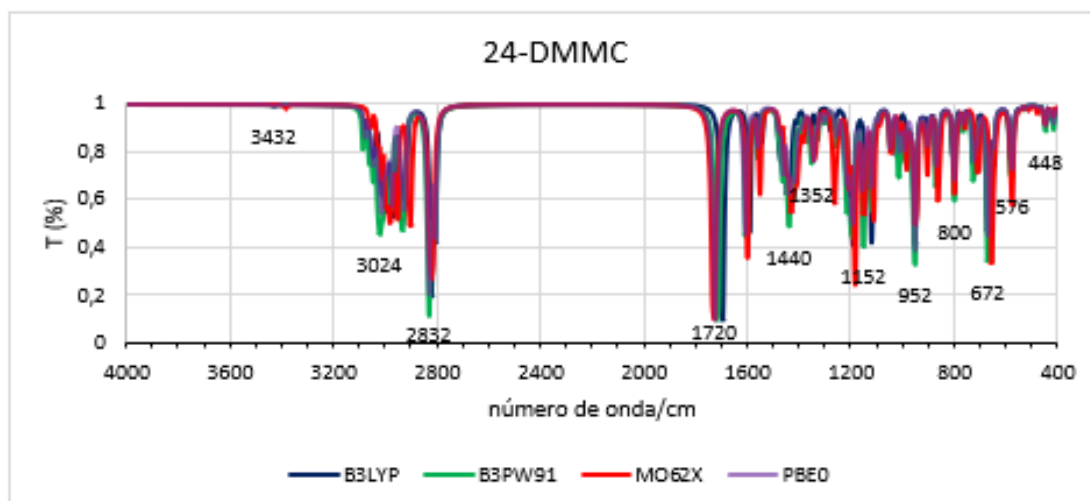


Figure S58. Infrared Theoretical Spectra for 25-DMMC:

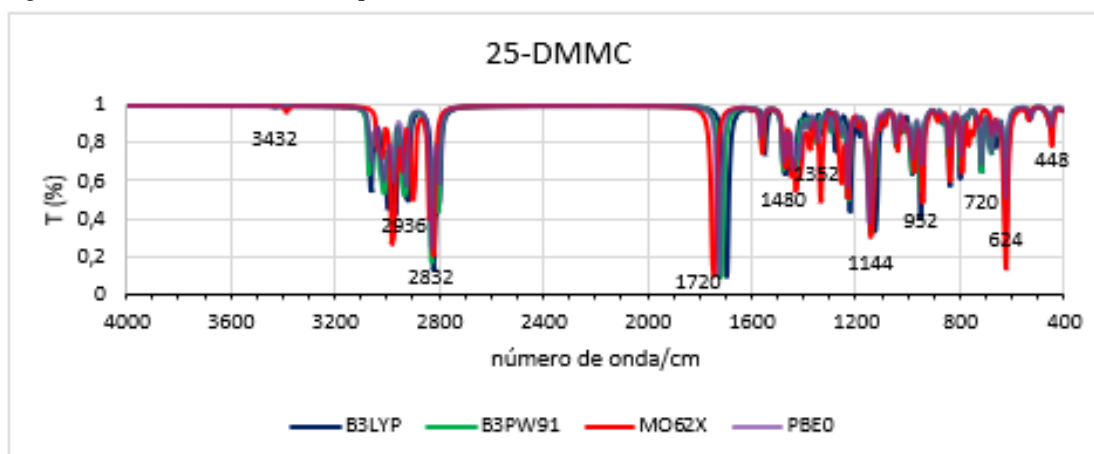


Figure S59. Infrared Theoretical Spectra for 34-DMMC:

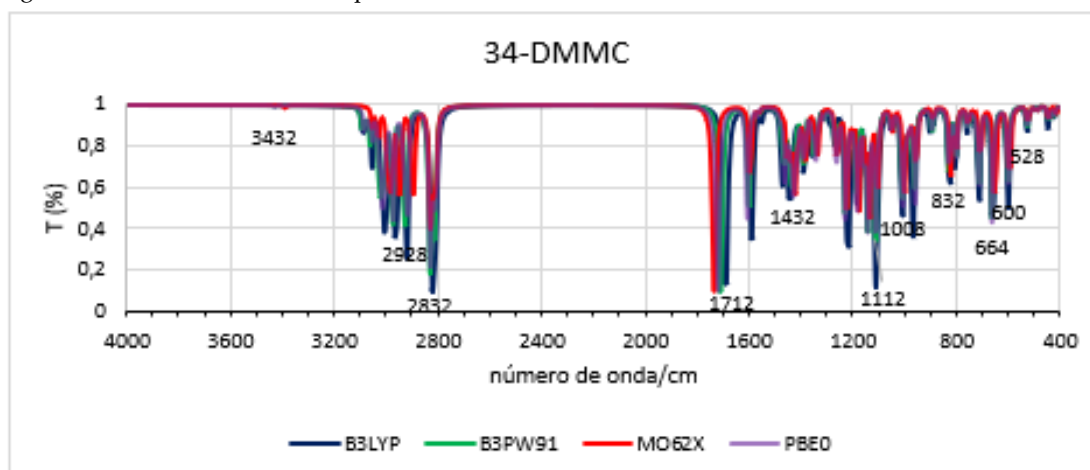


Figure S60. Infrared Theoretical Spectra for Cathinone:

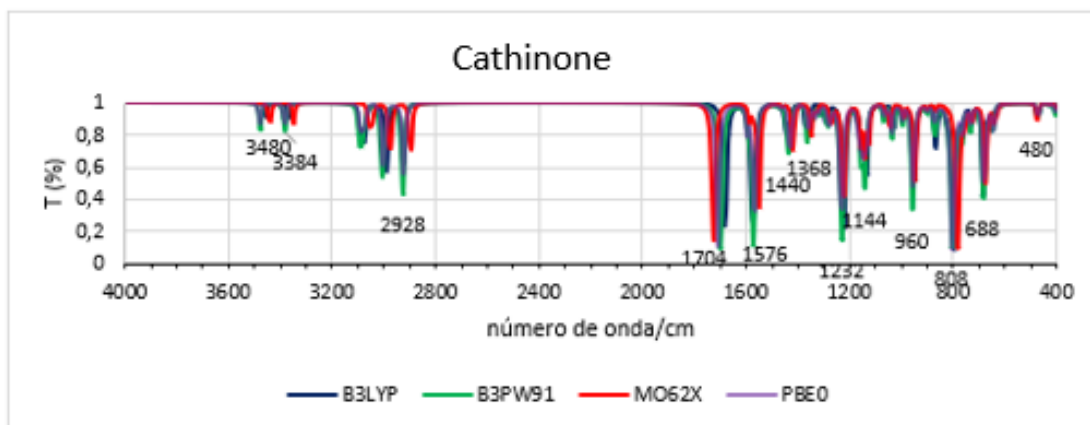


Figure S61. Infrared Theoretical Spectra for Diethylcathinone:

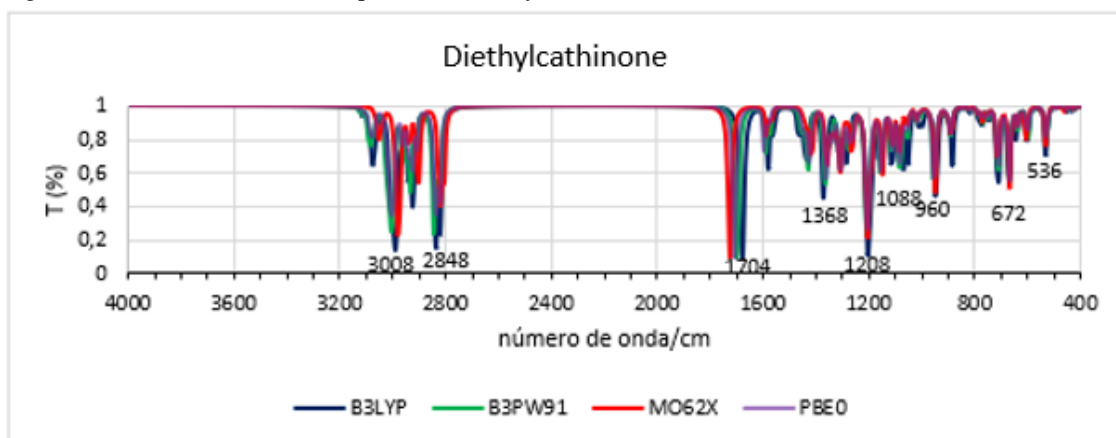


Figure S62. Infrared Theoretical Spectra for Methcathinone:

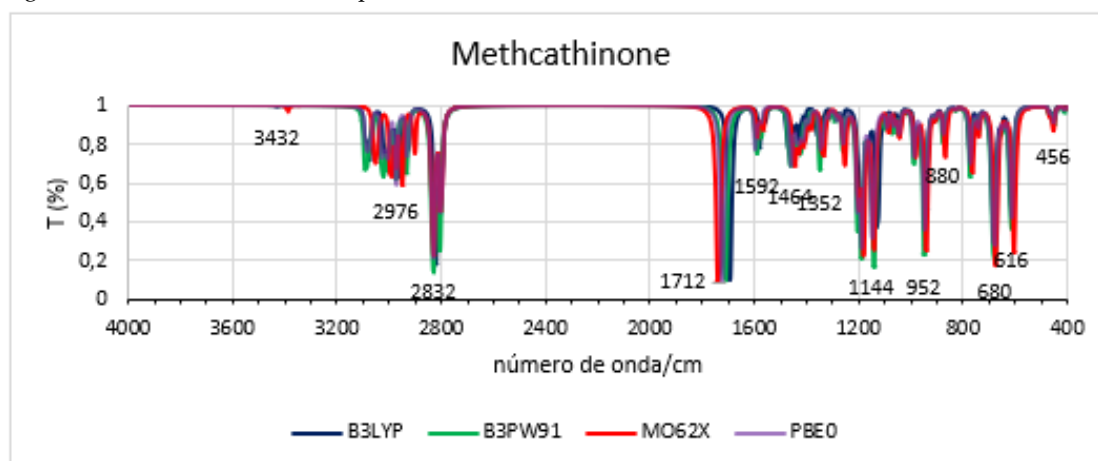


Figure S63. Infrared Theoretical Spectra for 2-Furanylbenzyl:

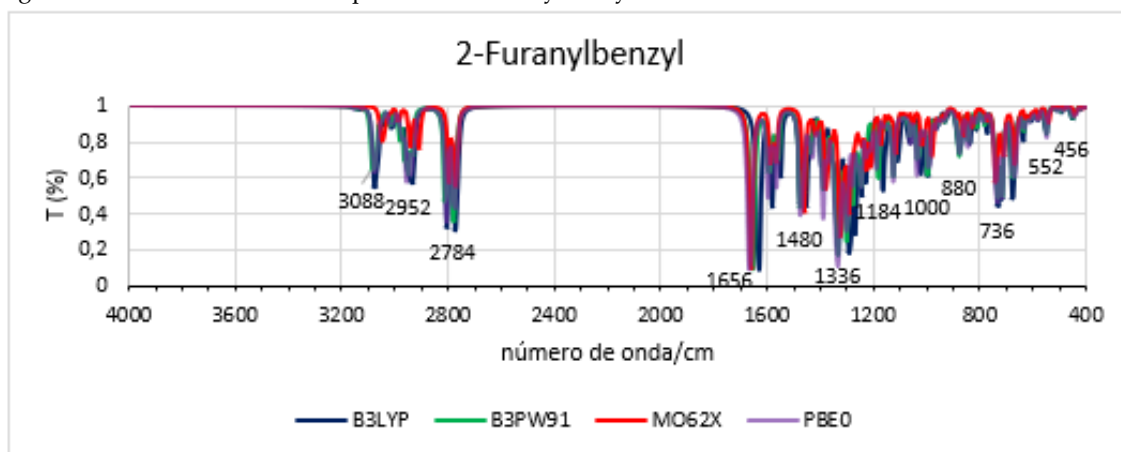


Figure S64. Infrared Theoretical Spectra for 2-Thiophenoyl:

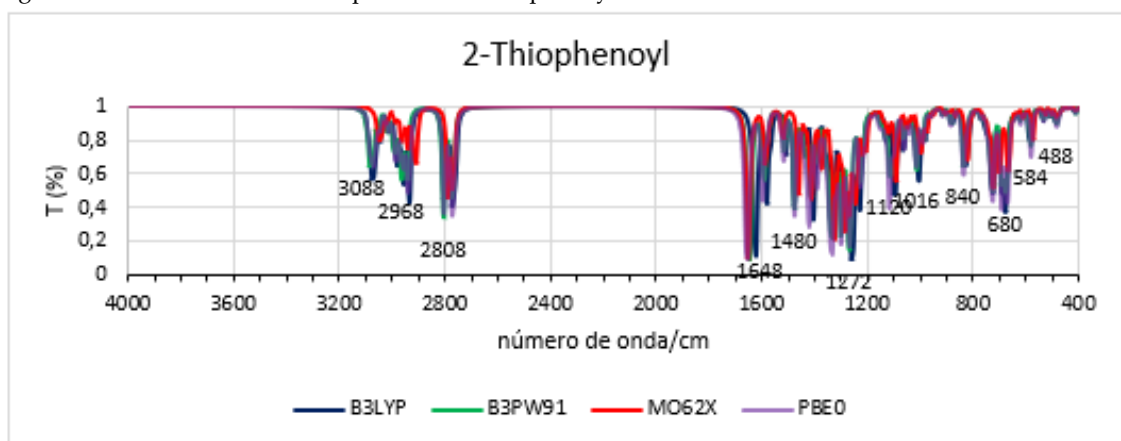


Figure S65. Infrared Theoretical Spectra for 3-Furanyl:

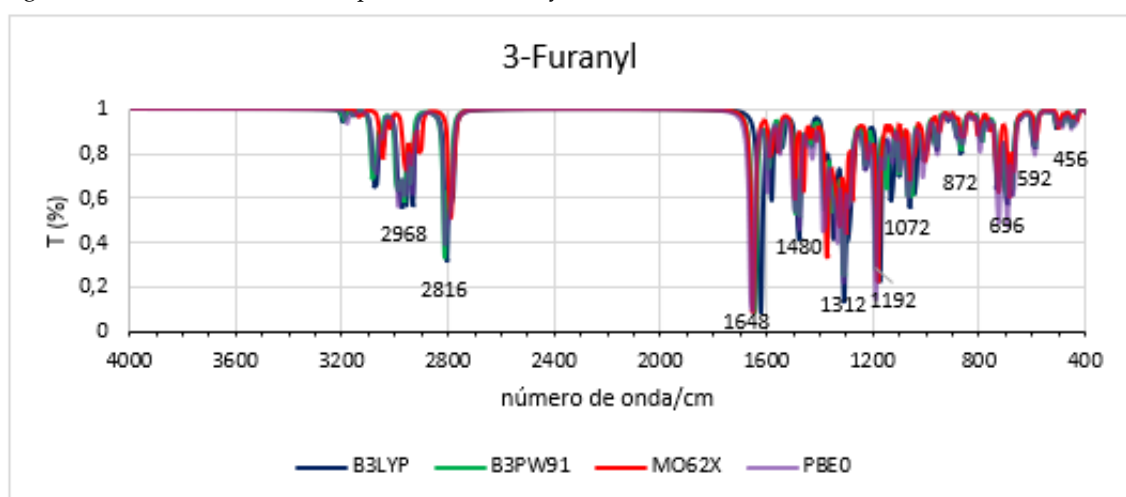


Figure S66. Infrared Theoretical Spectra for Acetilfen:

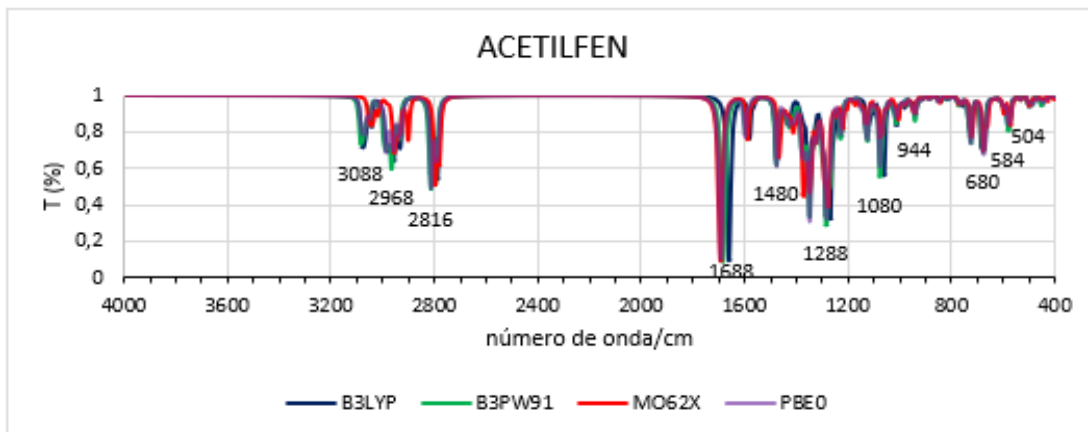


Figure S67. Infrared Theoretical Spectra for Benzoylbenzyl:

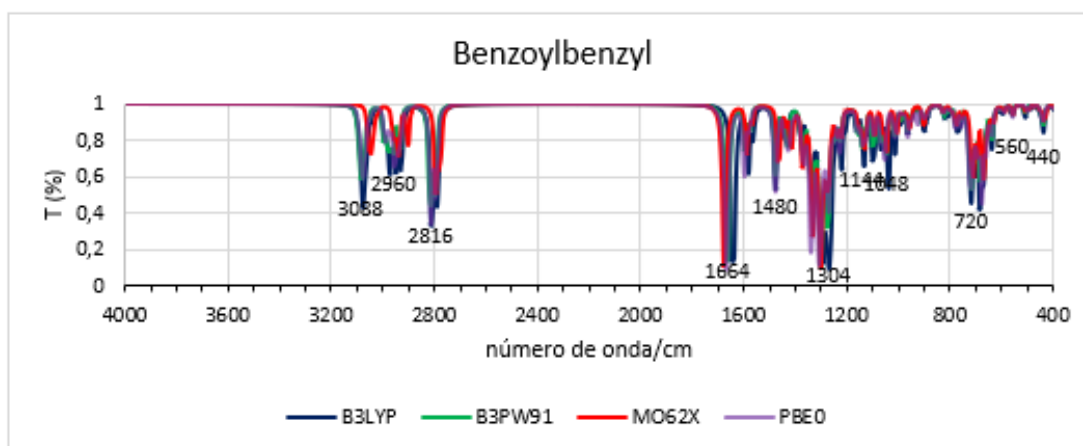


Figure S68. Infrared Theoretical Spectra for Butyryl:

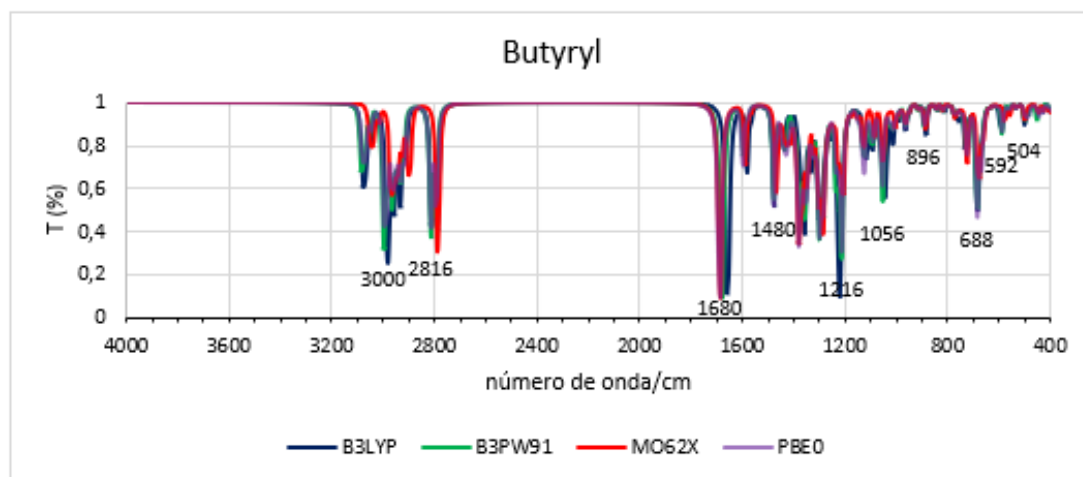


Figure S69. Infrared Theoretical Spectra for Crotonyl-fentanyl:

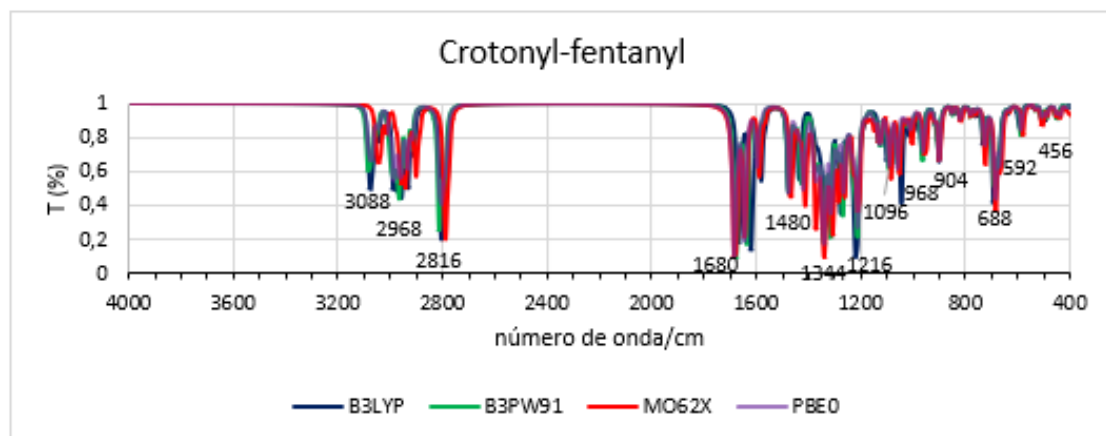


Figure S70. Infrared Theoretical Spectra for Cyclopentanoyl:

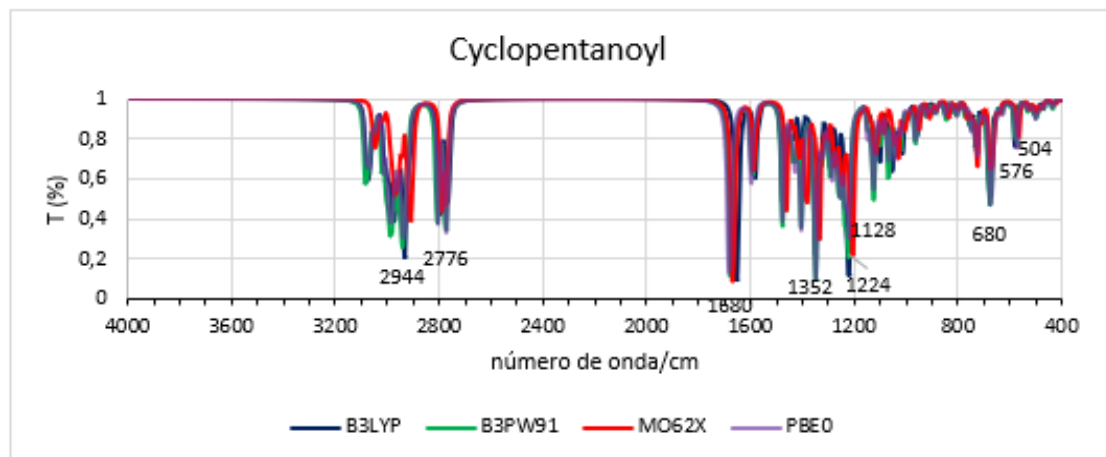


Figure S71. Infrared Theoretical Spectra for Cyclopropyl:

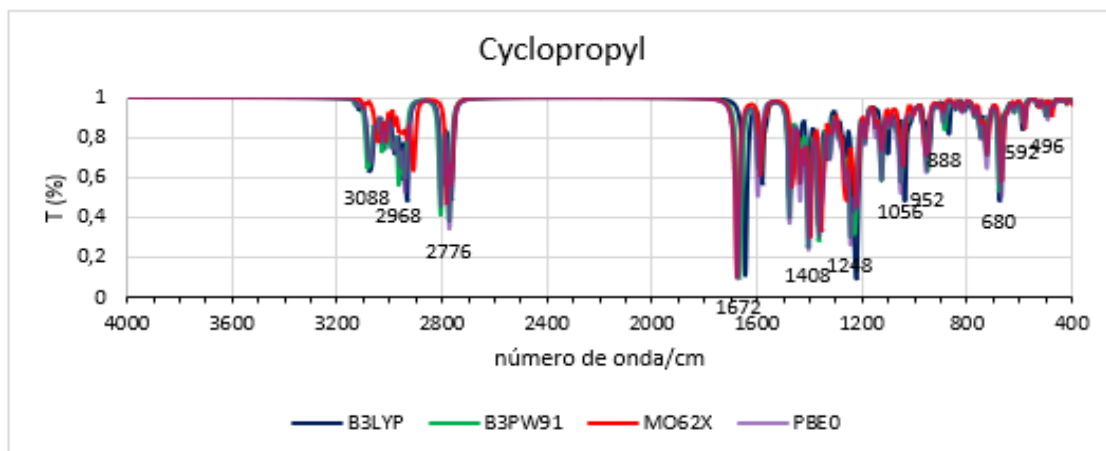


Figure S72. Infrared Theoretical Spectra for Fentanyl:

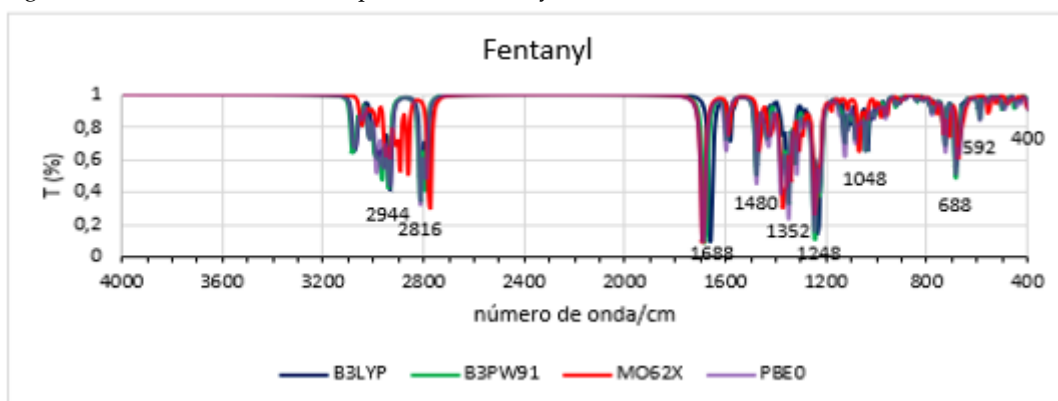


Figure S73. Infrared Theoretical Spectra for Furanylfentanyl:

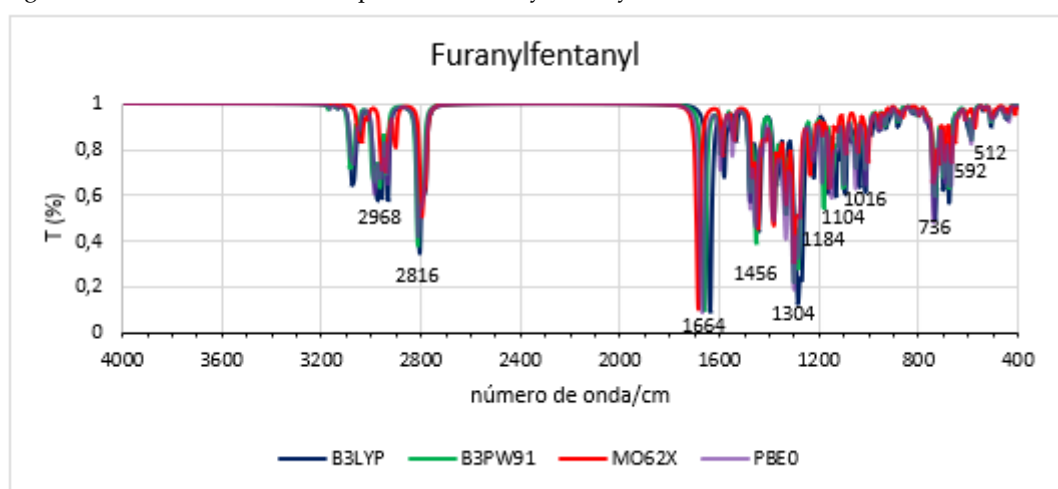


Figure S74. Infrared Theoretical Spectra for Isobutyryl-fentanyl:

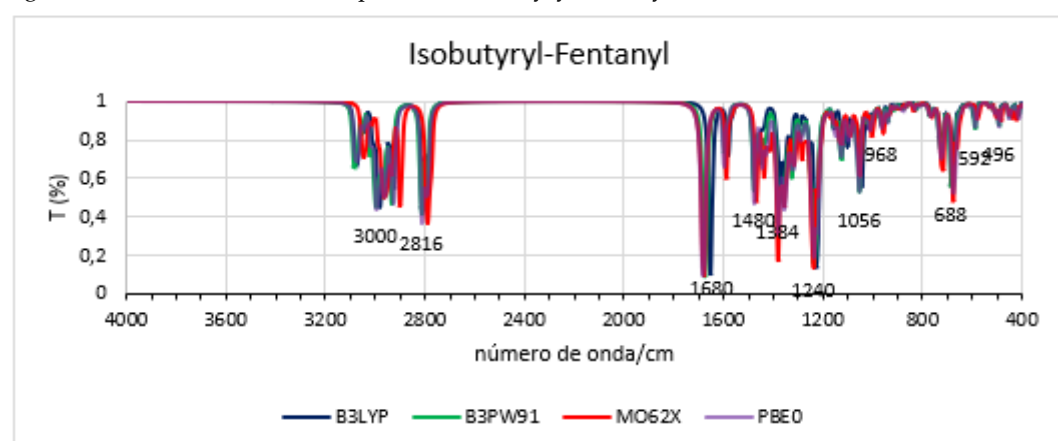


Figure S75. Infrared Theoretical Spectra for P-F-ACETILFEN:

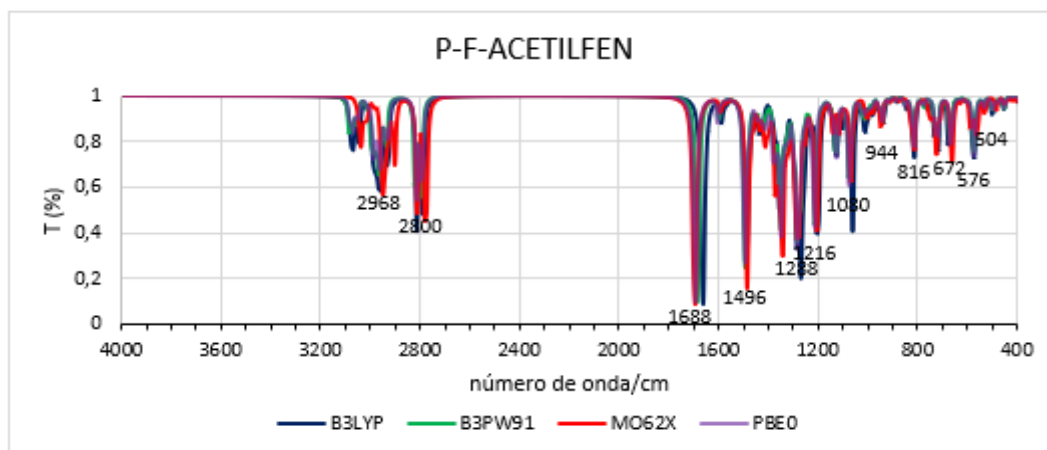


Figure S76. Infrared Theoretical Spectra for Tetrahydrofuranfentanyl:

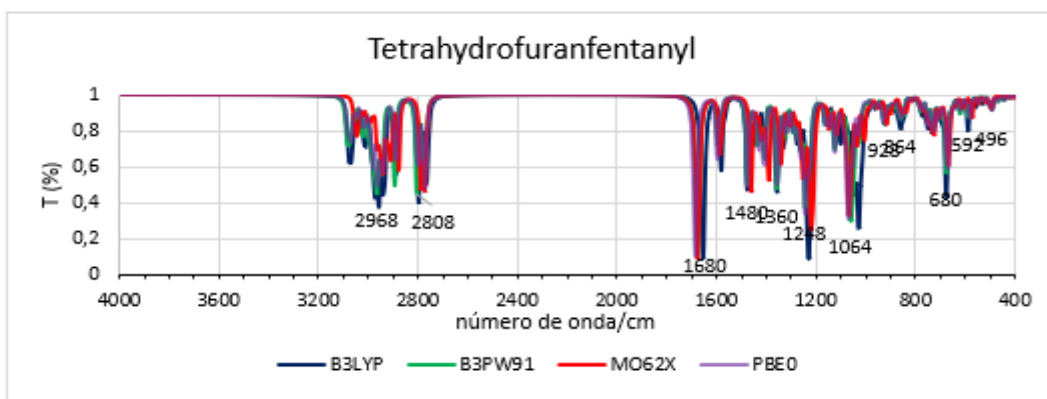
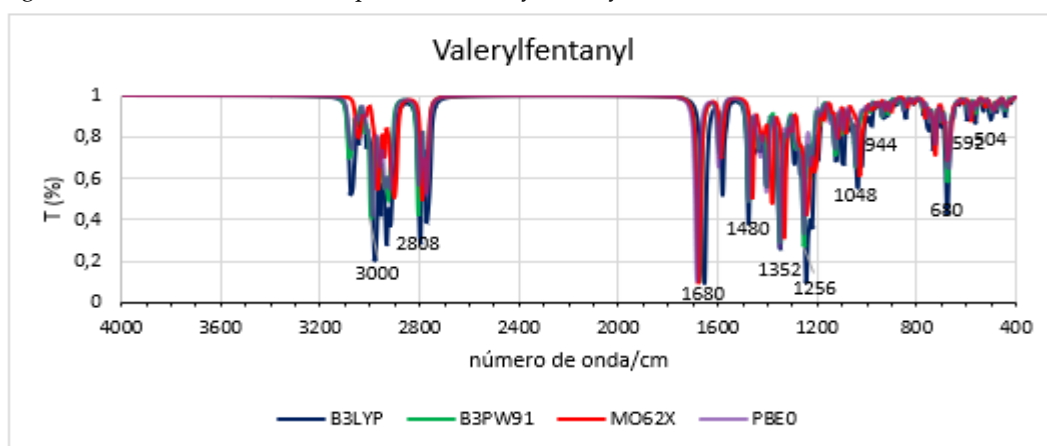


Figure S77. Infrared Theoretical Spectra for Valerylentanyl:



1. PubChem CID 3007 Available online:  
<https://pubchem.ncbi.nlm.nih.gov/compound/3007#section=3D-Conformer> (accessed on 10 June 2020).
2. PubChem CID 121531 Available online:  
<https://pubchem.ncbi.nlm.nih.gov/compound/121531#section=3D-Conformer> (accessed on 10 June 2020).
3. PubChem CID 121501 Available online:  
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4. PubChem CID 9986 Available online:  
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5. PubChem CID 24257263 Available online:  
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6. PubChem CID 58216164 Available online:  
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7. PubChem CID 11745017 Available online:  
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8. PubChem CID 10836 Available online:  
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9. PubChem CID 199116 Available online:  
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10. PubChem CID 1614 Available online:  
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11. PubChem CID 20006 Available online:  
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12. PubChem CID 62787 Available online:  
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13. PubChem CID 1615 Available online:  
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14. PubChem CID 31721 Available online: <https://pubchem.ncbi.nlm.nih.gov/compound/31721> (accessed on 10 June 2020).

15. PubChem CID 90766 Available online:  
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16. PubChem CID 29979100 Available online:  
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17. PubChem CID 37632 Available online:  
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18. PubChem CID 2118 Available online:  
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19. PubChem CID 12562546 Available online:  
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20. PubChem CID 12317881 Available online:  
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21. PubChem CID 3016 Available online:  
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22. PubChem CID 76168 Available online:  
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23. PubChem CID 10359044 Available online:  
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24. PubChem CID 12947024 Available online:  
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25. PubChem CID 21930924 Available online:  
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26. PubChem CID 3380 Available online:  
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27. PubChem CID 137700379 Available online:  
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28. PubChem CID 4192 Available online:  
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29. PubChem CID 4616 Available online:  
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30. PubChem CID 9929889 Available online:  
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31. PubChem CID 10293794 Available online:  
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32. PubChem CID 644019 Available online:  
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33. PubChem CID 2543 Available online:  
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34. PubChem CID 16078 Available online:  
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35. PubChem CID 10382701 Available online:  
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36. PubChem CID 52224389 Available online:  
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37. PubChem CID 91936930 Available online:  
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38. PubChem CID 10471670 Available online:  
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39. PubChem CID 10547208 Available online:  
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40. PubChem CID 44466638 Available online:  
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41. PubChem CID 44397500 Available online:  
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42. PubChem CID 45270396 Available online:  
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43. PubChem CID 44397540 Available online:  
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44. PubChem CID 16049783 Available online:  
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45. PubChem CID 101877579 Available online:  
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46. PubChem CID 71316821 Available online:  
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47. PubChem CID 91696118 Available online:  
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48. PubChem CID 91696120 Available online:  
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49. PubChem CID 53415330 Available online:  
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50. PubChem CID 91696119 Available online:  
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51. PubChem CID 82100444 Available online:  
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52. PubChem CID 49853406 Available online:  
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53. PubChem CID 52988259 Available online:  
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54. PubChem CID 91693751 Available online:  
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55. PubChem CID 82100563 Available online:  
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56. PubChem CID 82281429 Available online:  
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57. PubChem CID 52988261 Available online:  
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58. PubChem CID 62258 Available online:  
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59. PubChem CID 7029 Available online:  
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60. PubChem CID 1576 Available online:  
<https://pubchem.ncbi.nlm.nih.gov/compound/Methcathinone#section=3D-Conformer> (accessed on 19 March 2020).
61. PubChem CID 137700436 Available online:  
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62. PubChem CID 137700027 Available online:  
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63. PubChem CID 13653684 Available online:  
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64. PubChem CID 527015 Available online:  
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65. PubChem CID 10044685 Available online:  
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66. PubChem CID 621174 Available online:  
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67. PubChem CID 10472960 Available online:  
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68. PubChem CID 137699913 Available online:  
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69. PubChem CID 137332271 Available online:  
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70. PubChem CID 3345 Available online:  
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71. PubChem CID 13653606 Available online:  
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72. PubChem CID 14402357 Available online:  
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73. PubChem CID 527014 Available online:  
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74. PubChem CID 137332293 Available online:  
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75. PubChem CID 21595398 Available online:  
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