SUPPLEMENTAL MATERIAL FOR

Synthesis, biological evaluation, and molecular modeling studies of potent human neutrophil elastase (HNE) inhibitors

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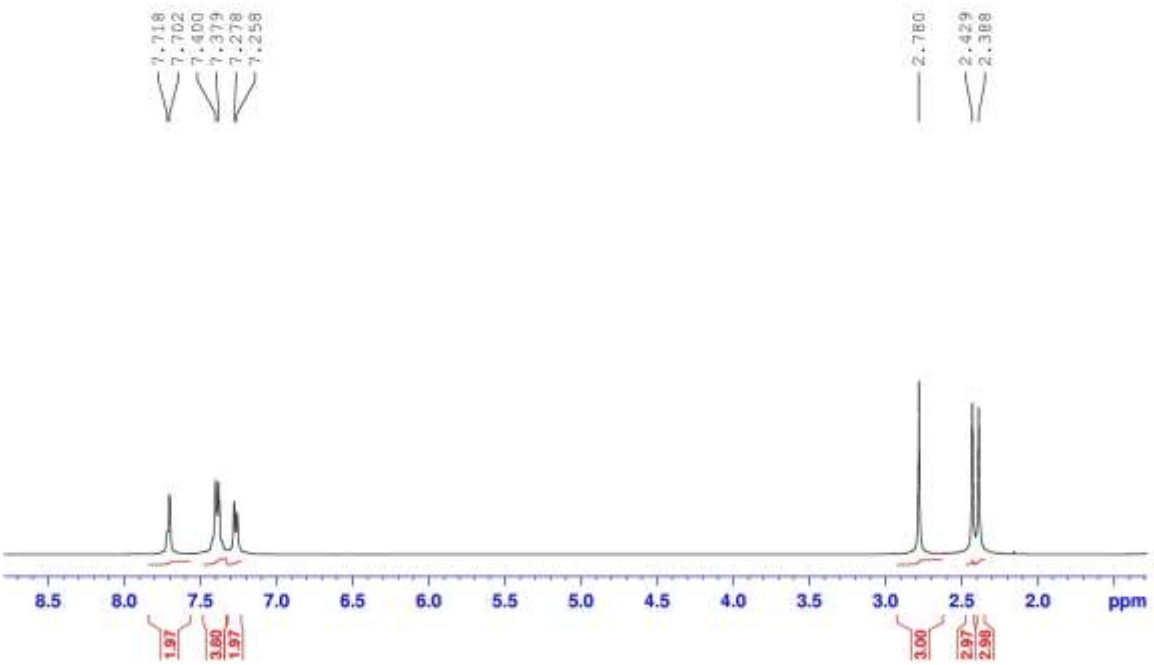
1H NMR compound 7a



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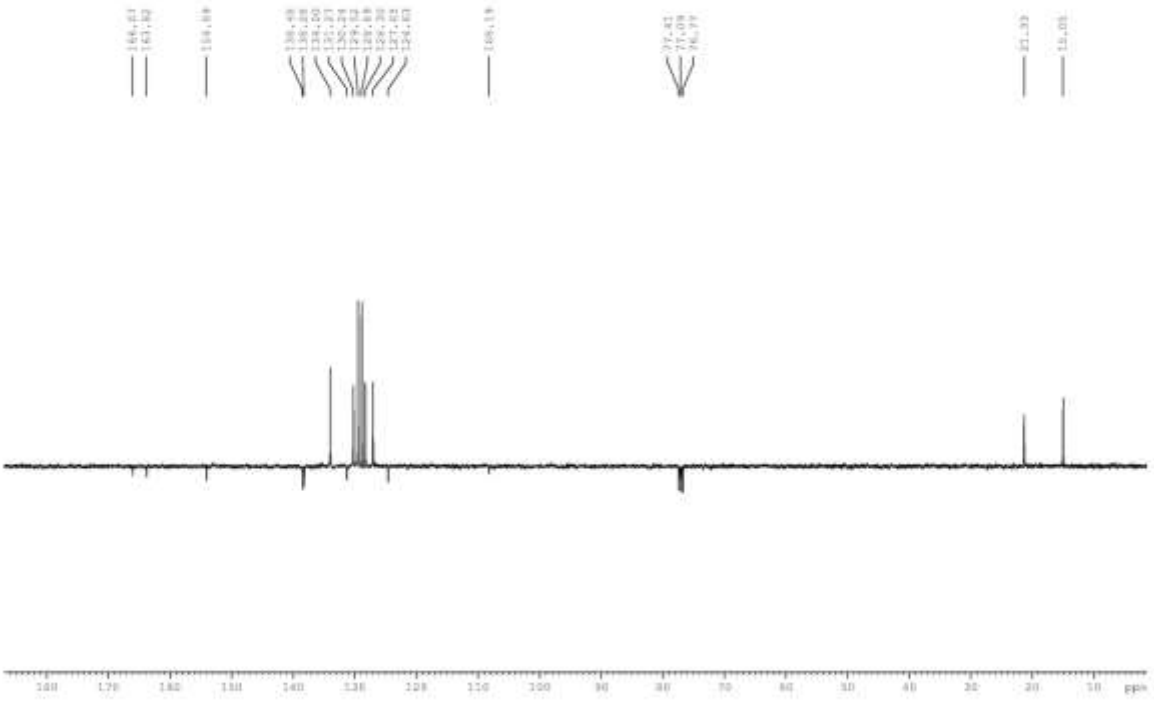

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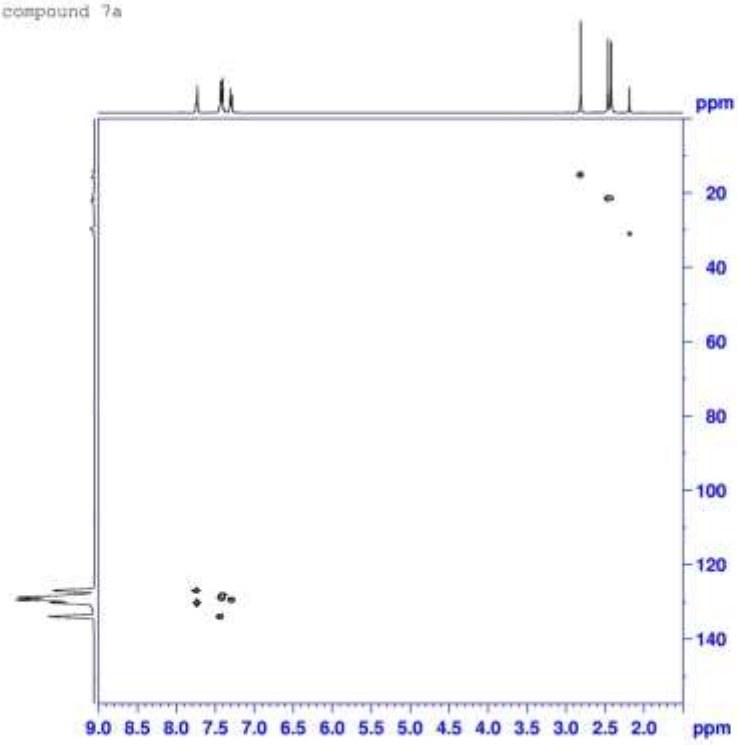

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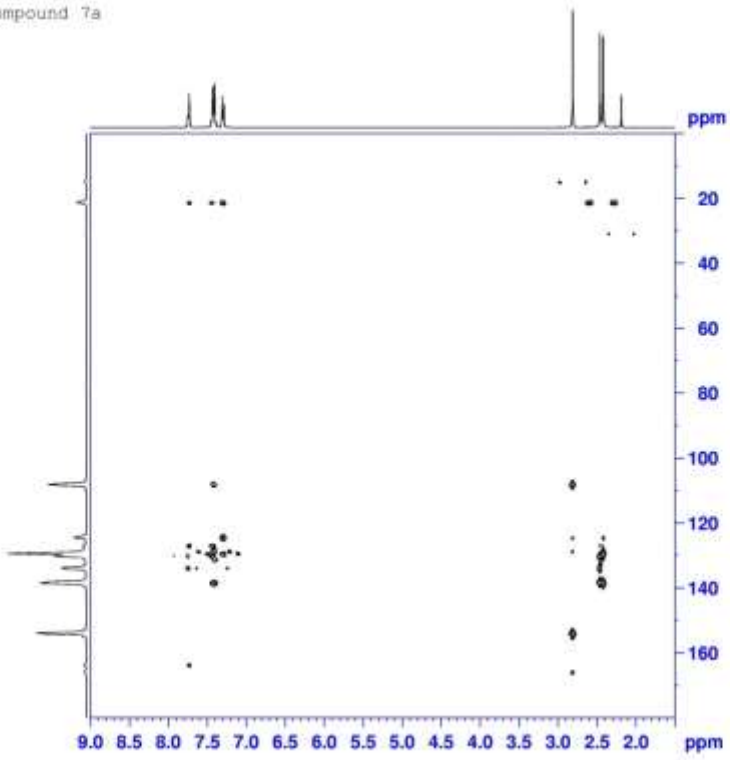

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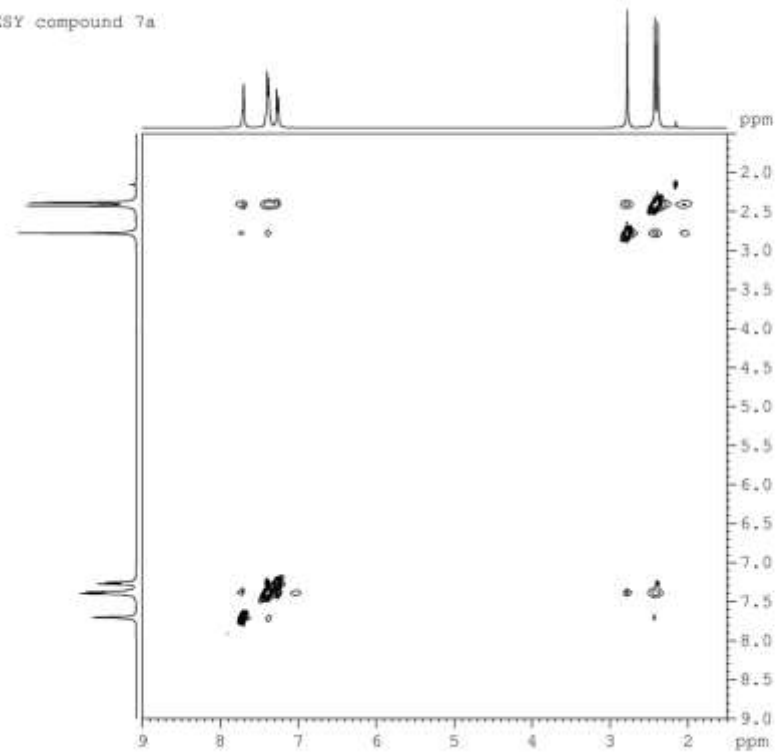

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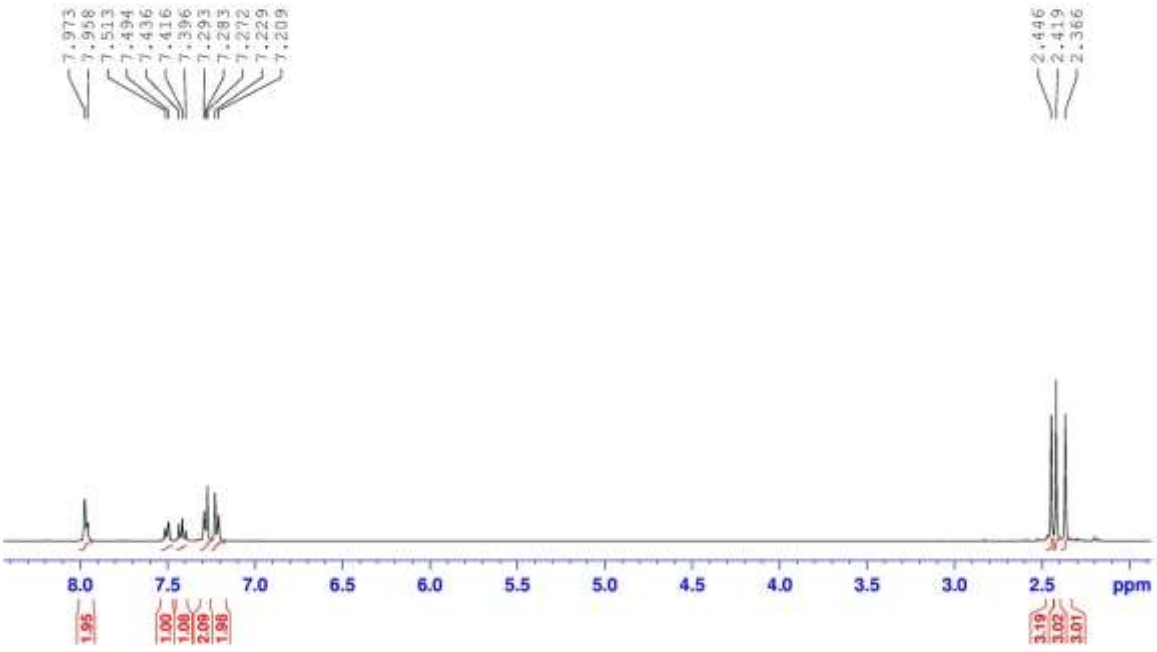

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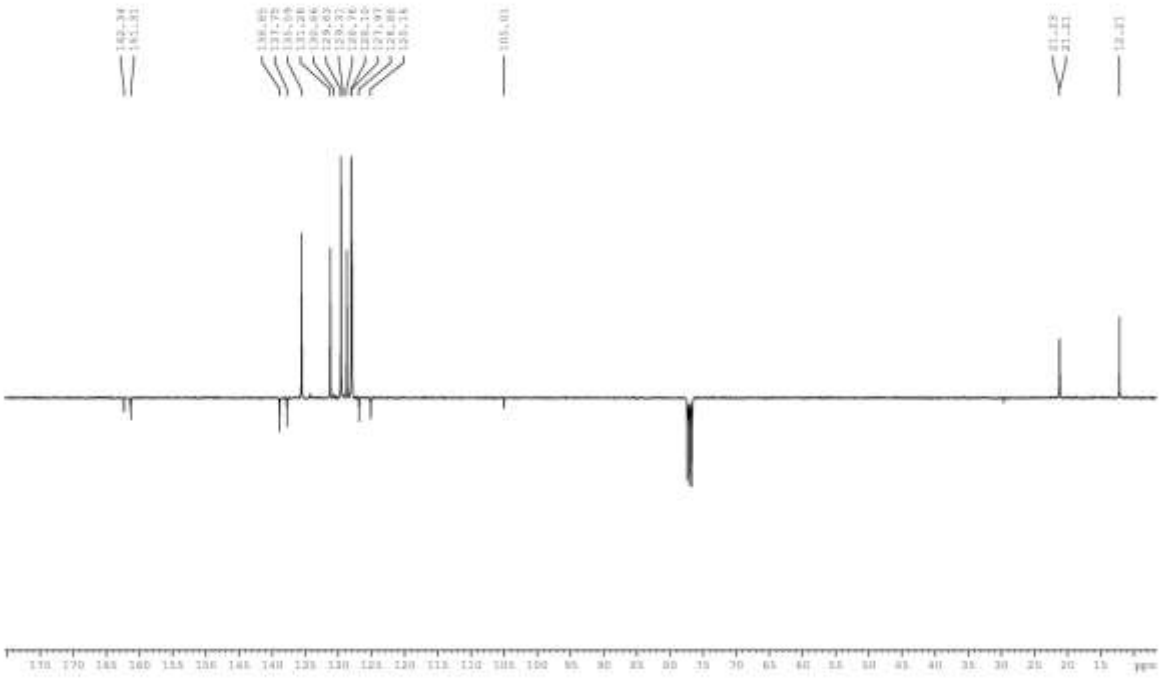

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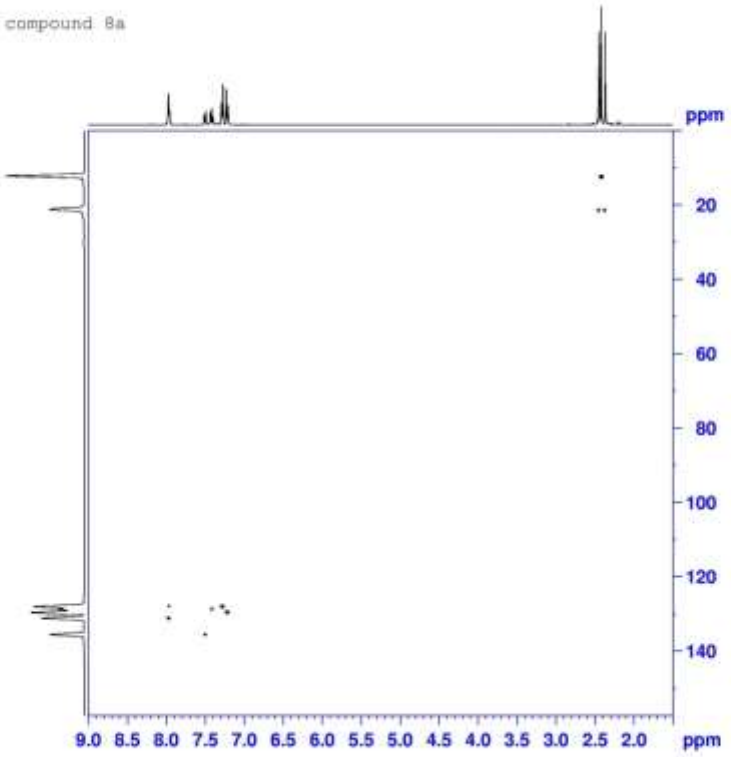

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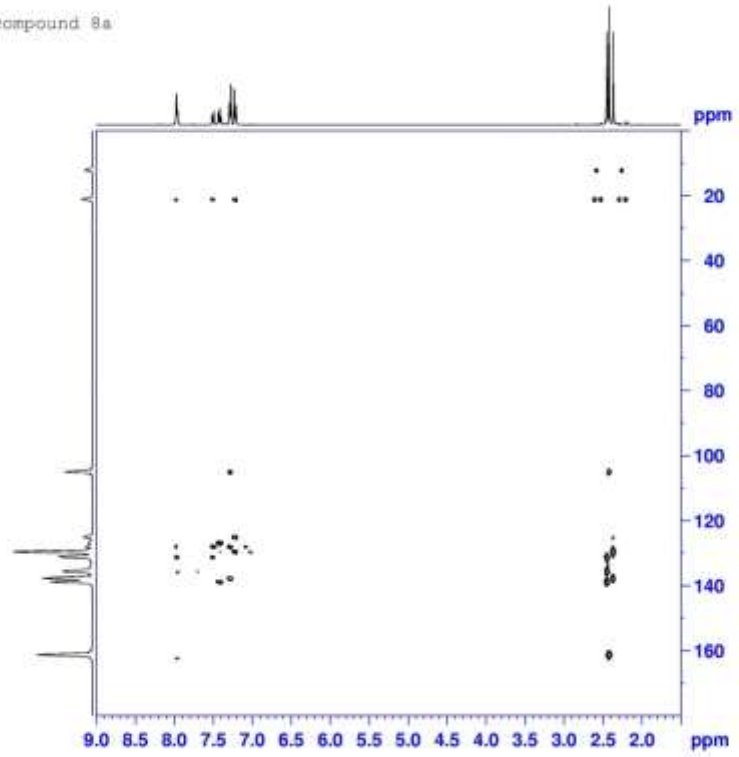

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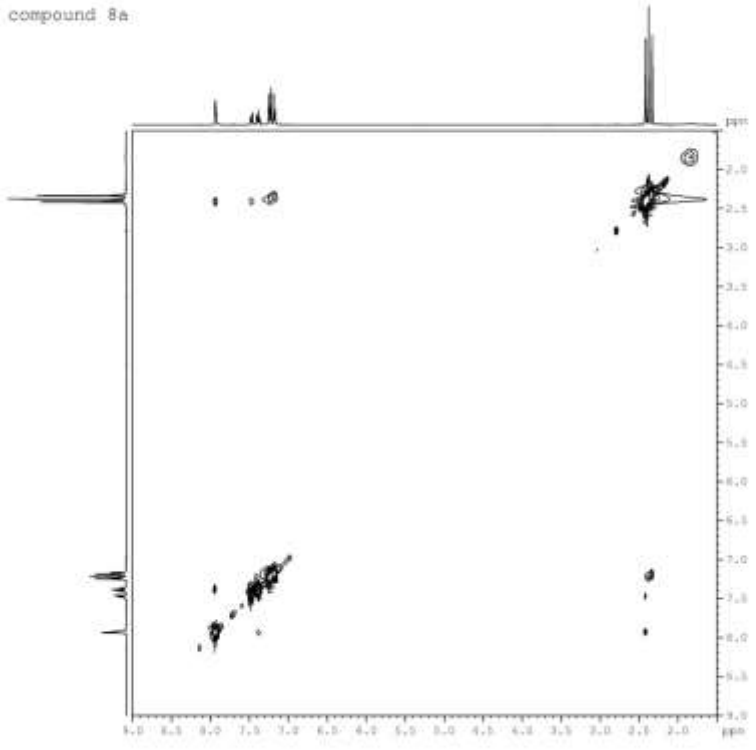

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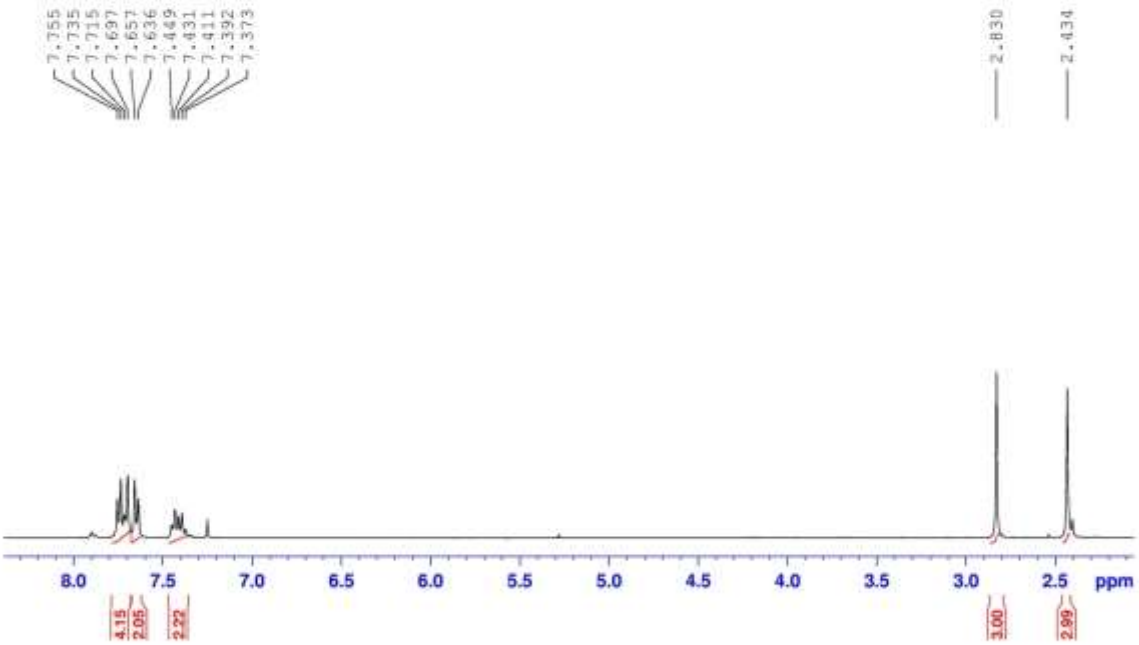

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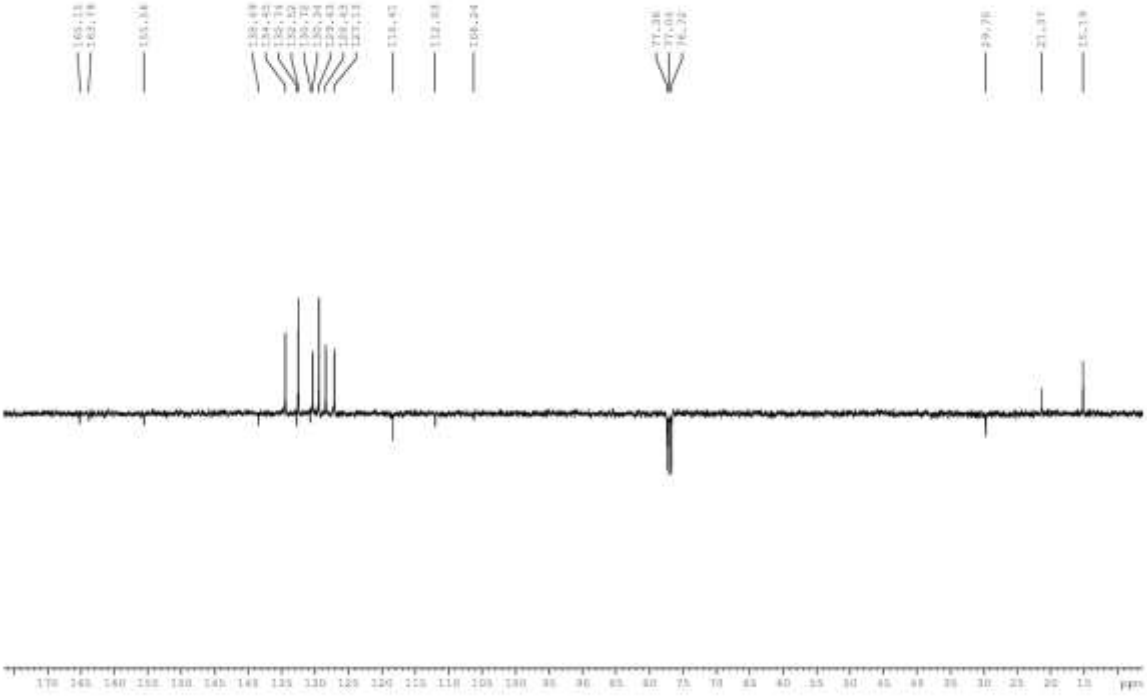

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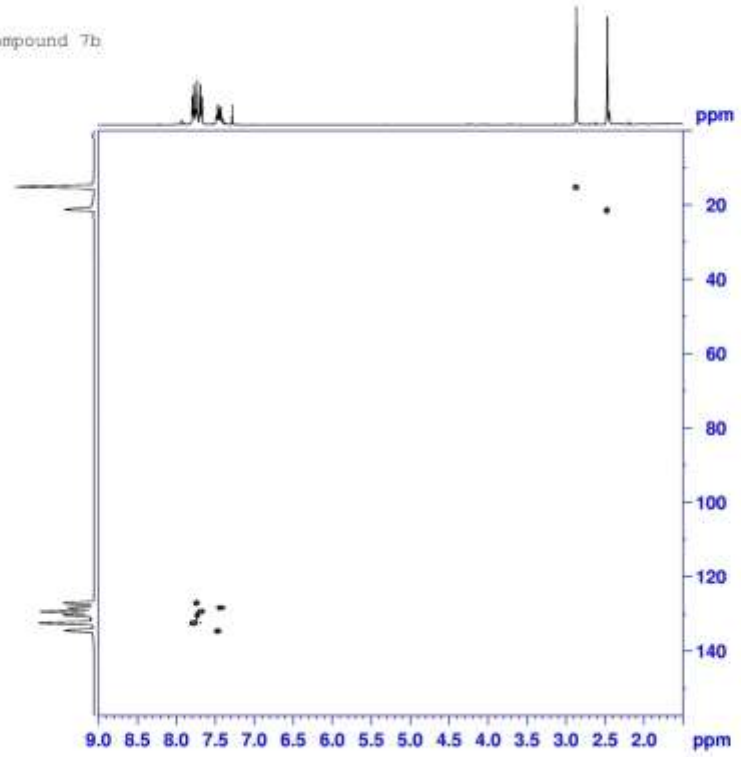

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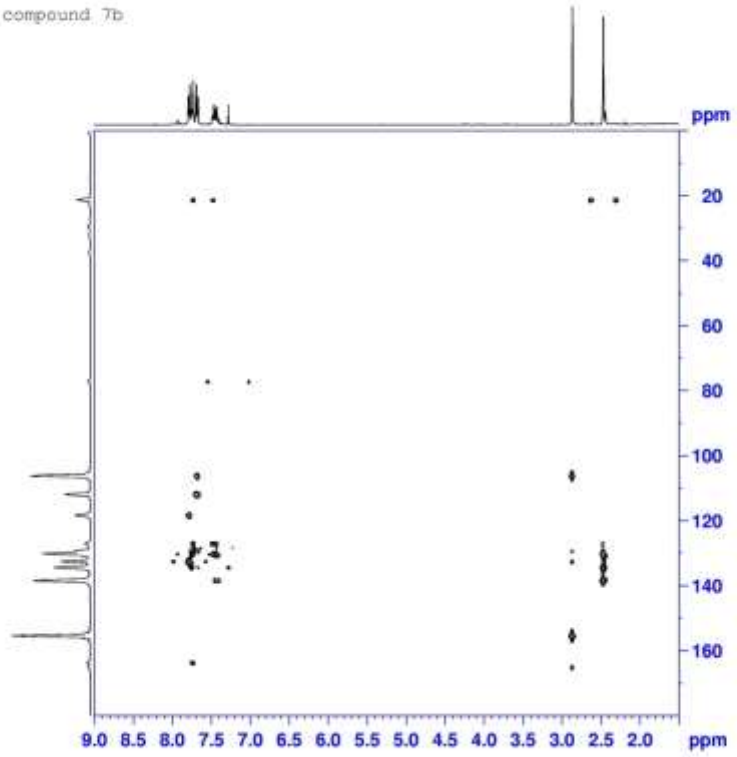

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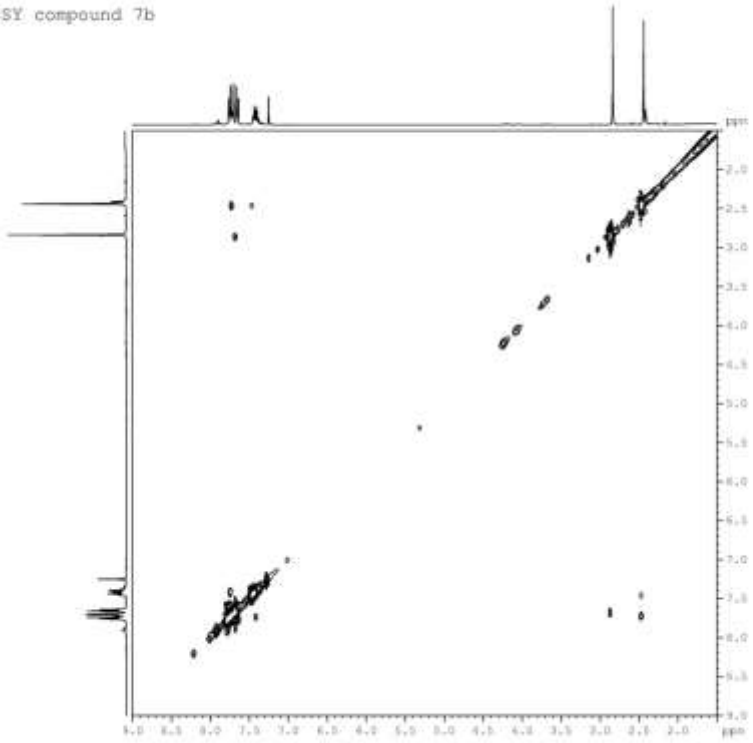

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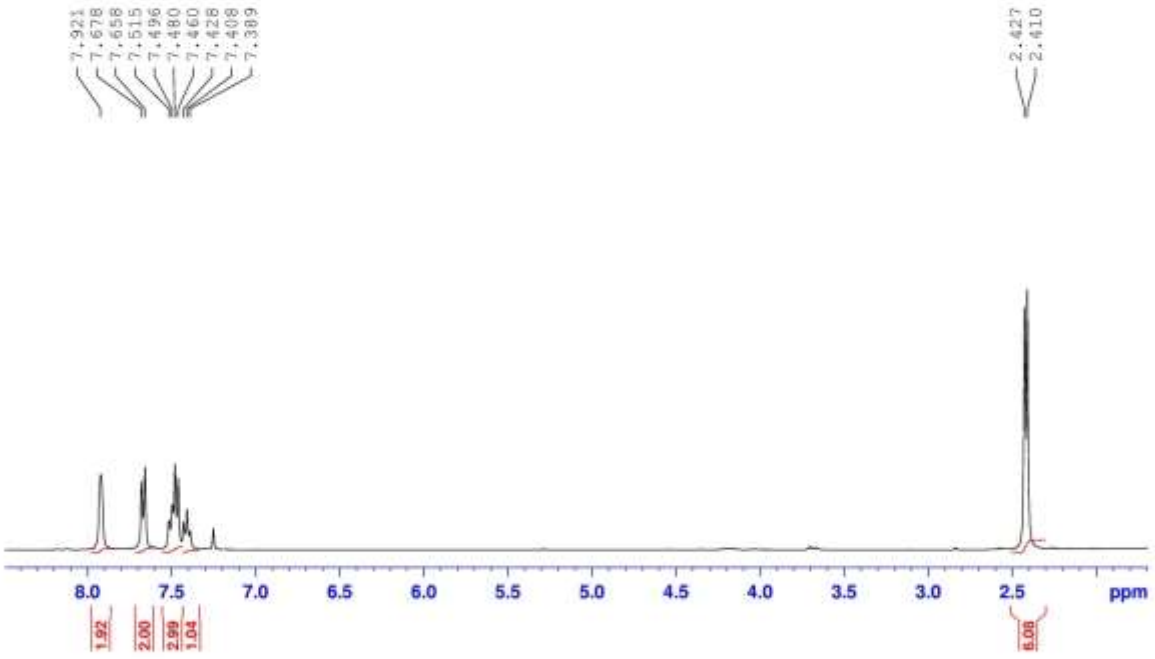

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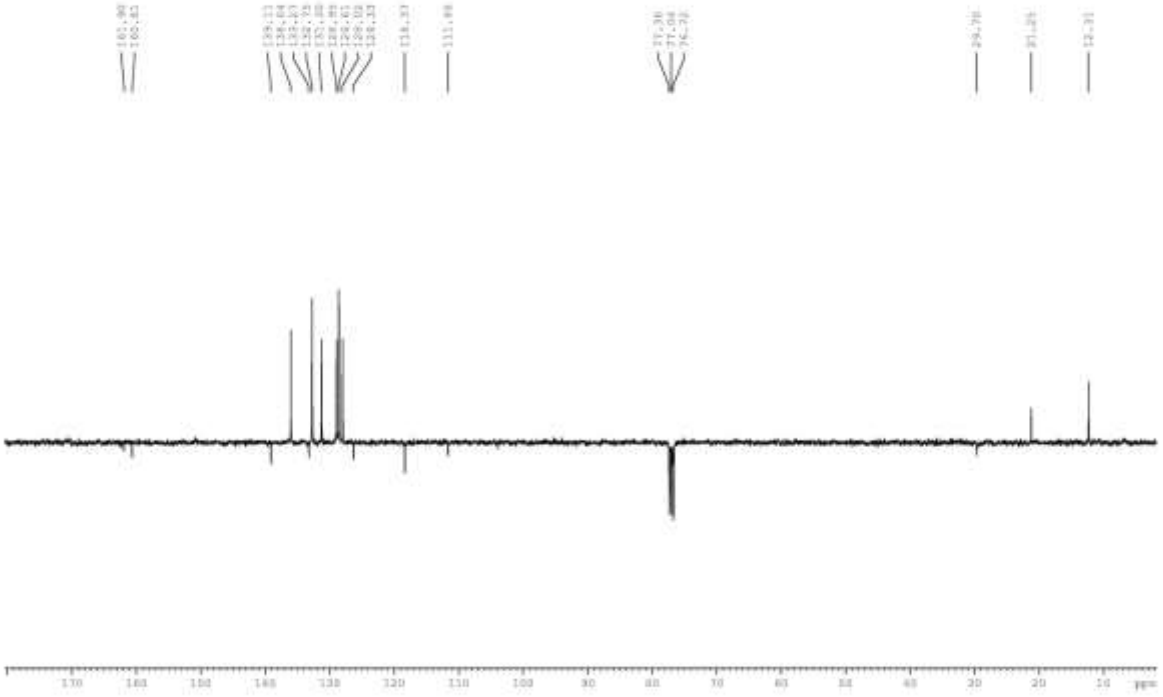

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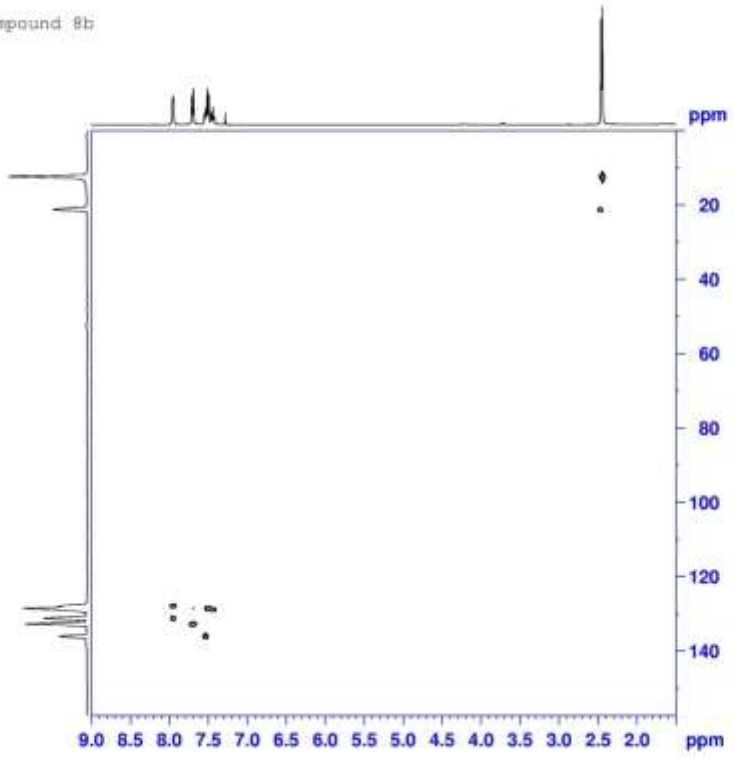

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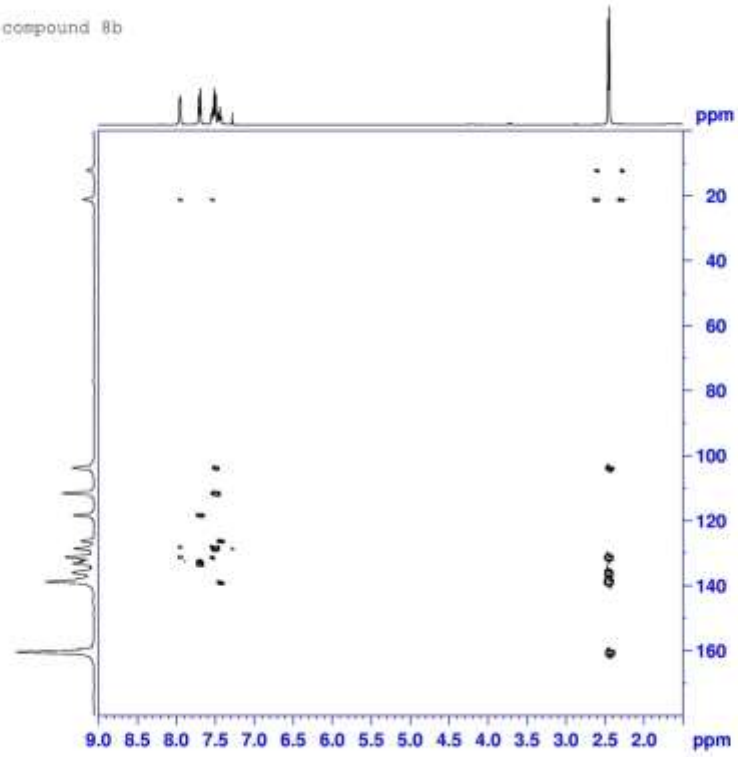

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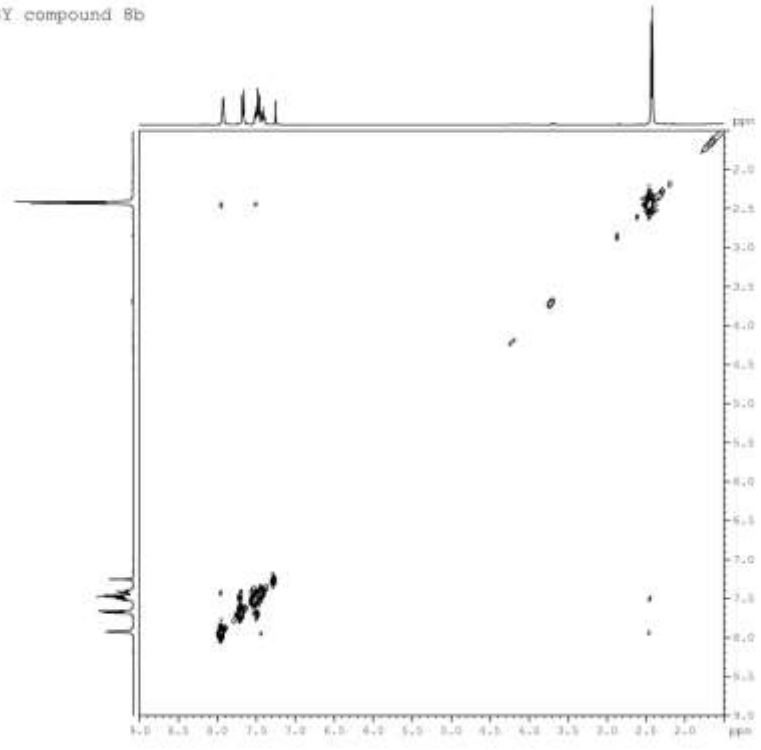

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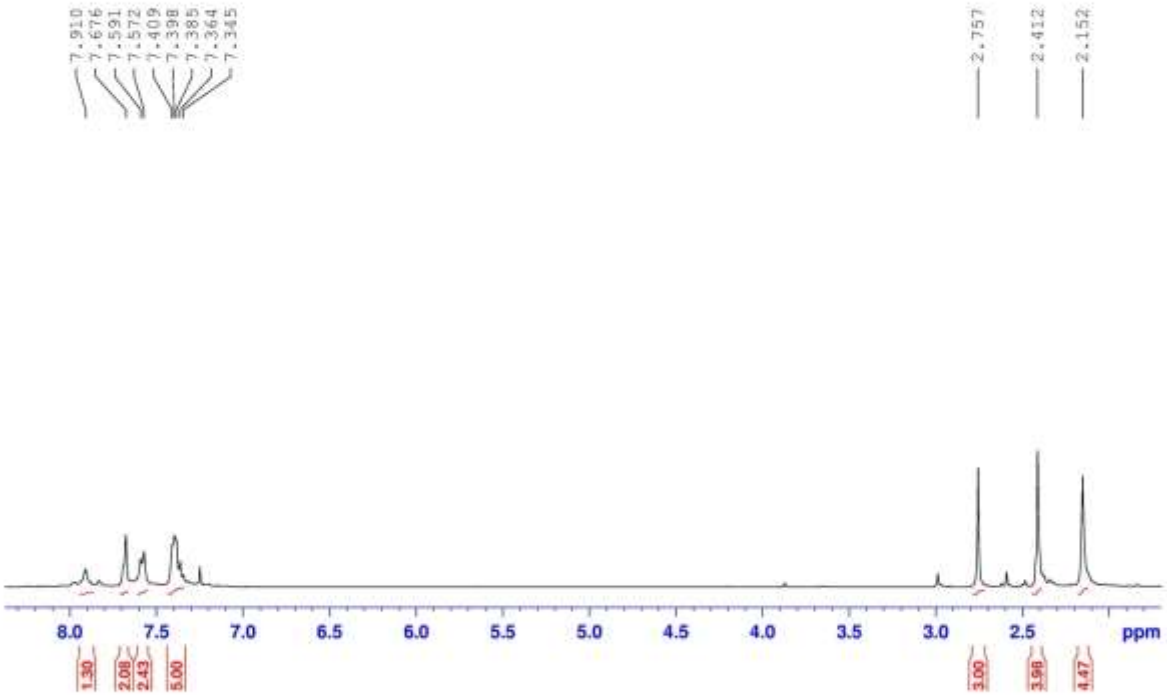

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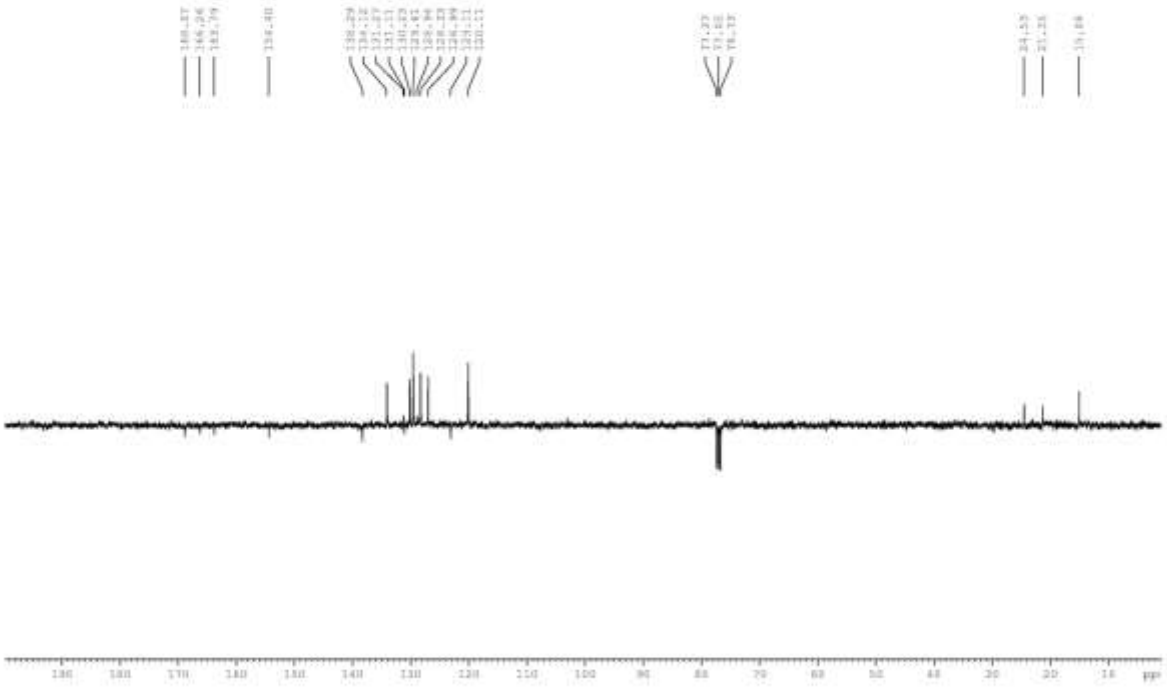

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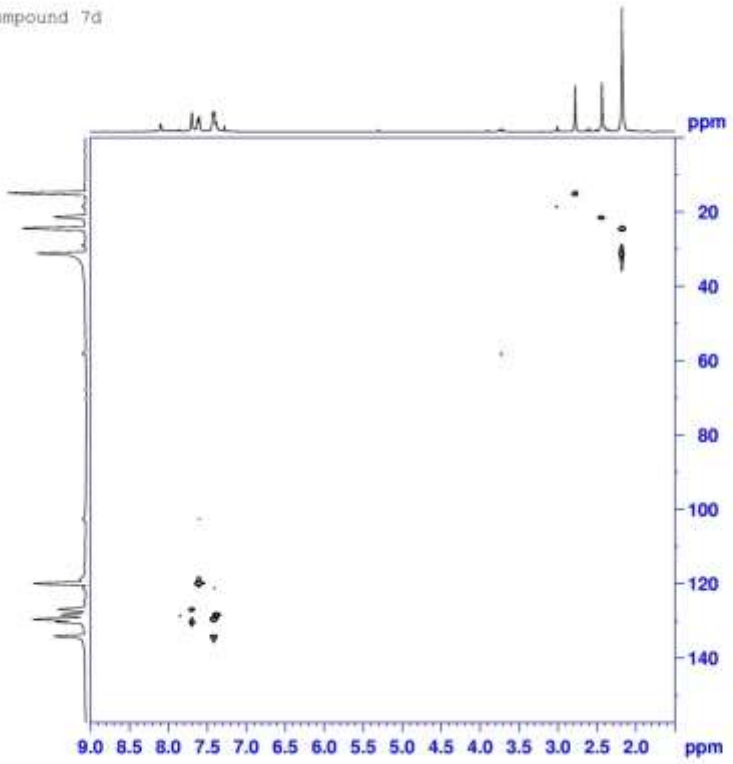

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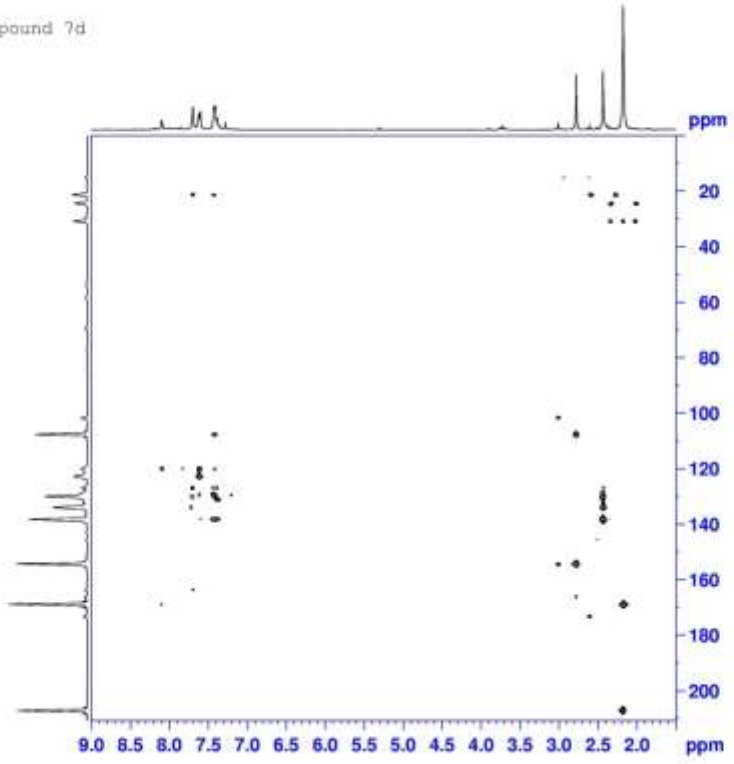

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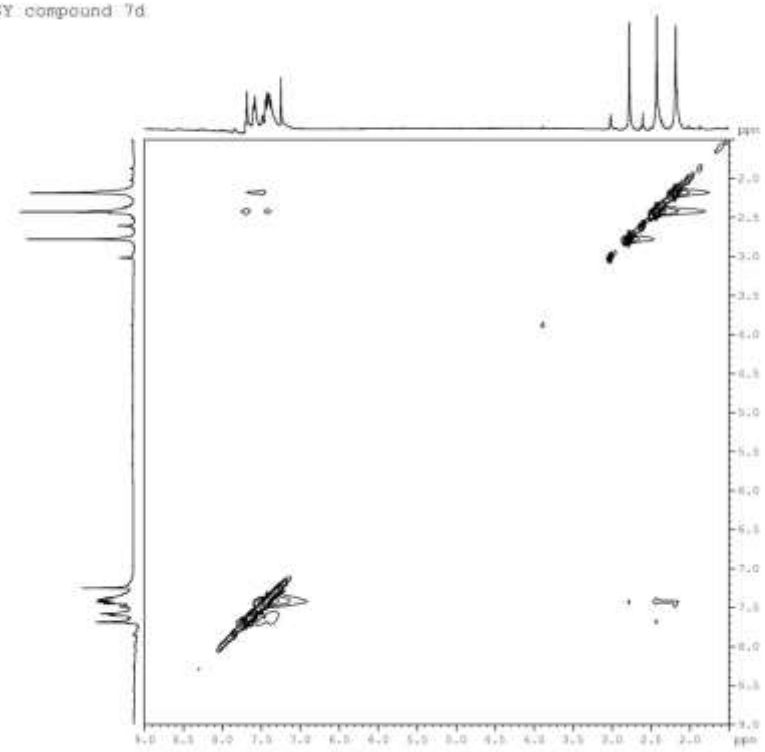

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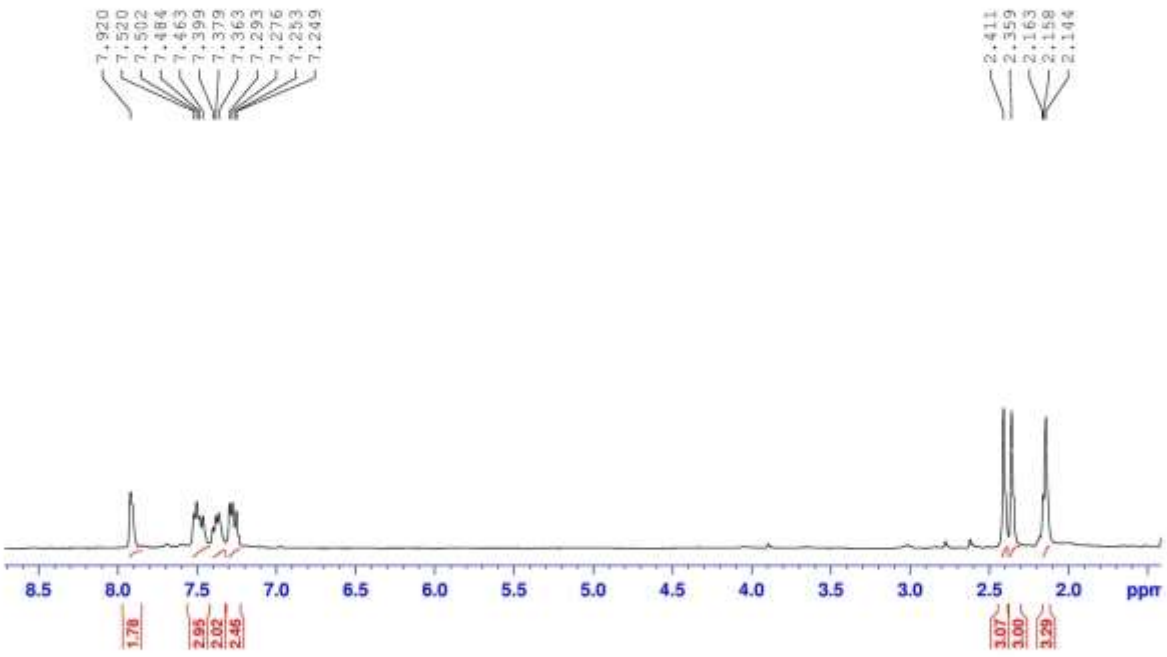

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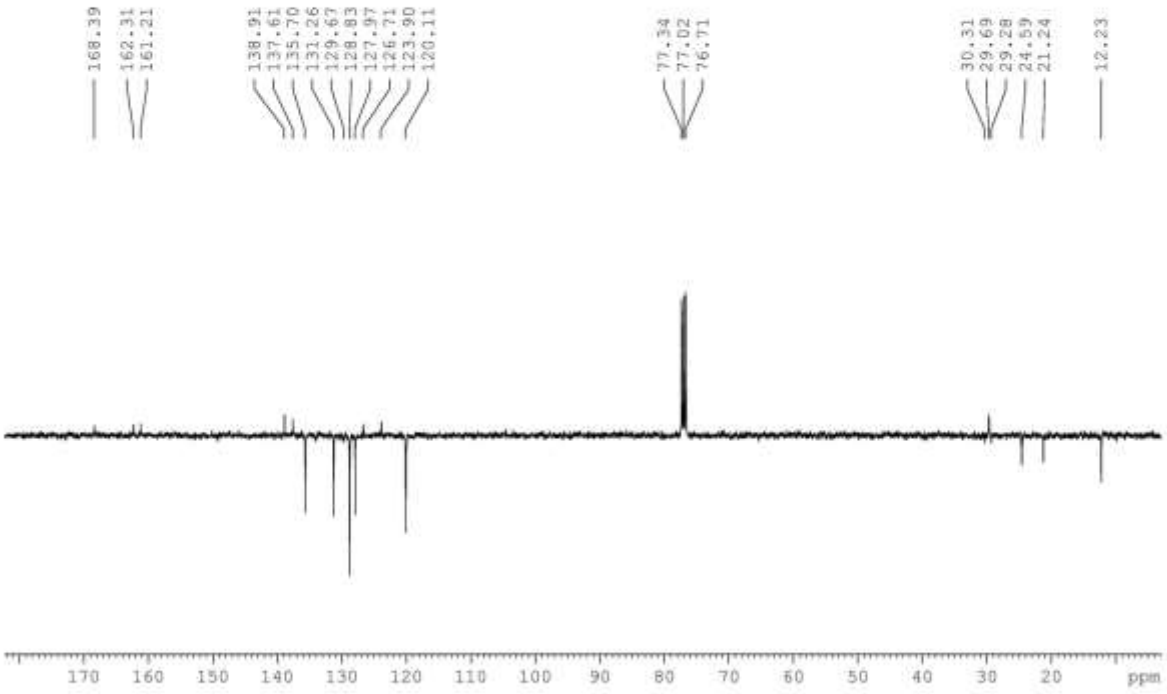

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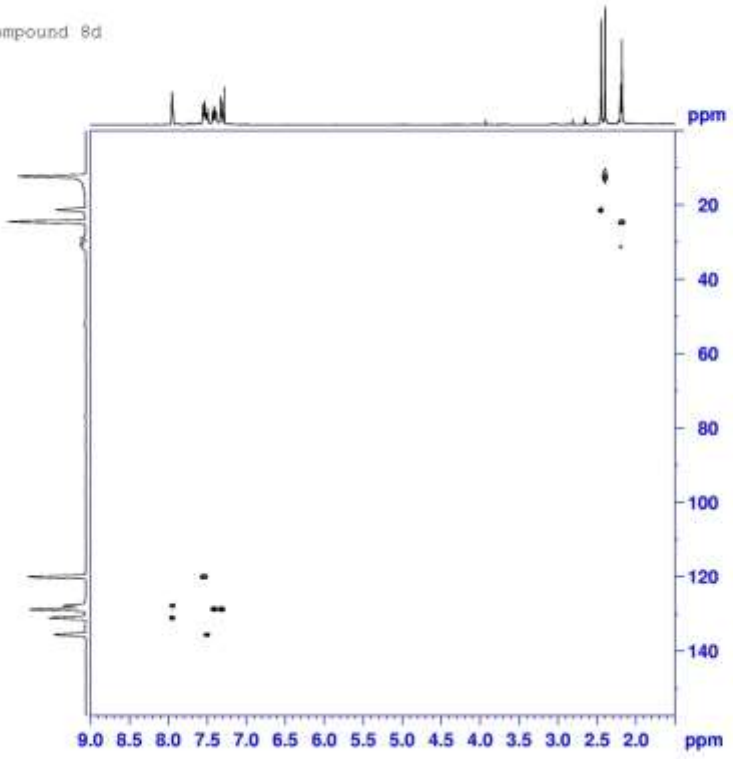

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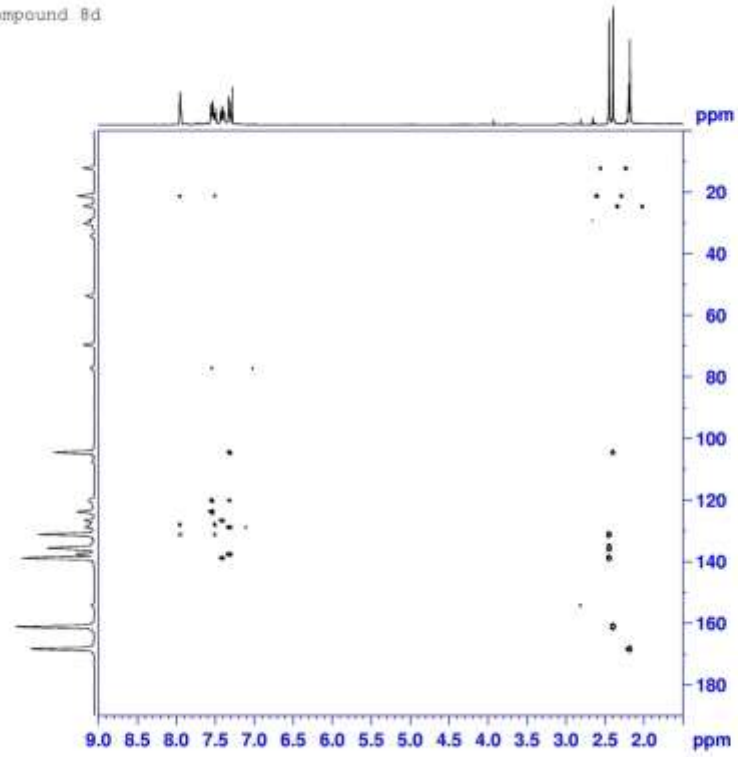

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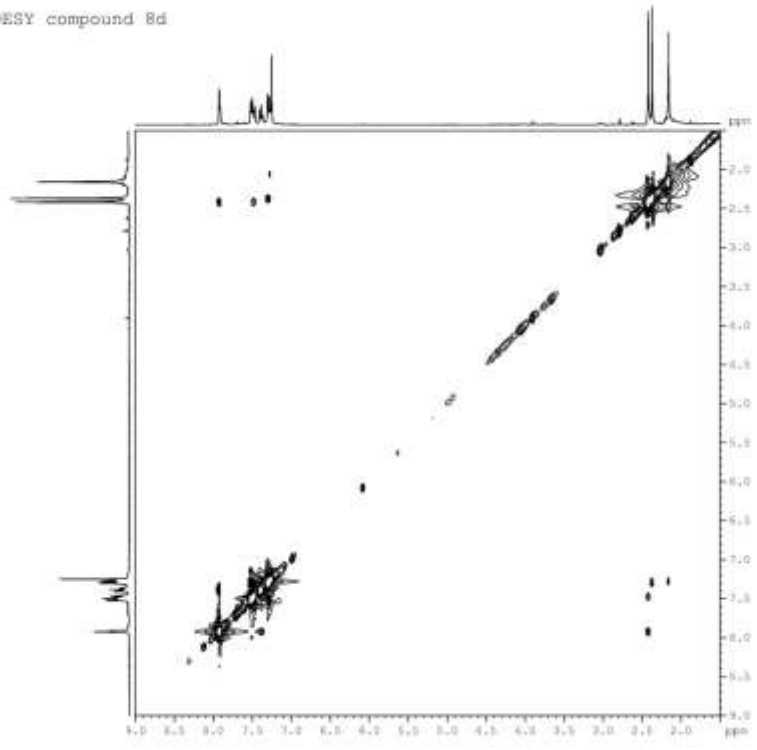

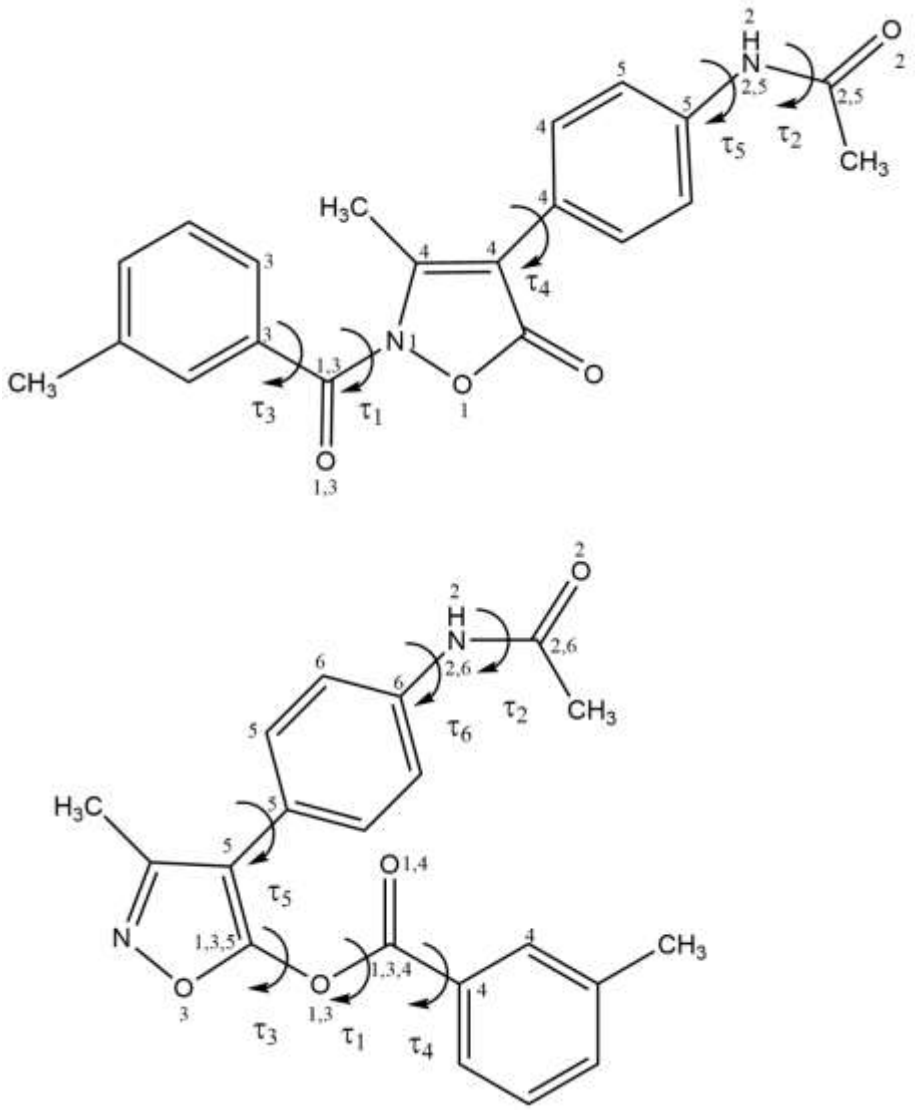

Fig. S1. Schematic drawing of **7d** and **8d** showing the torsion angles defining the molecular conformation monitored during MD simulations (numbers identify the set of atoms which define a given torsion).

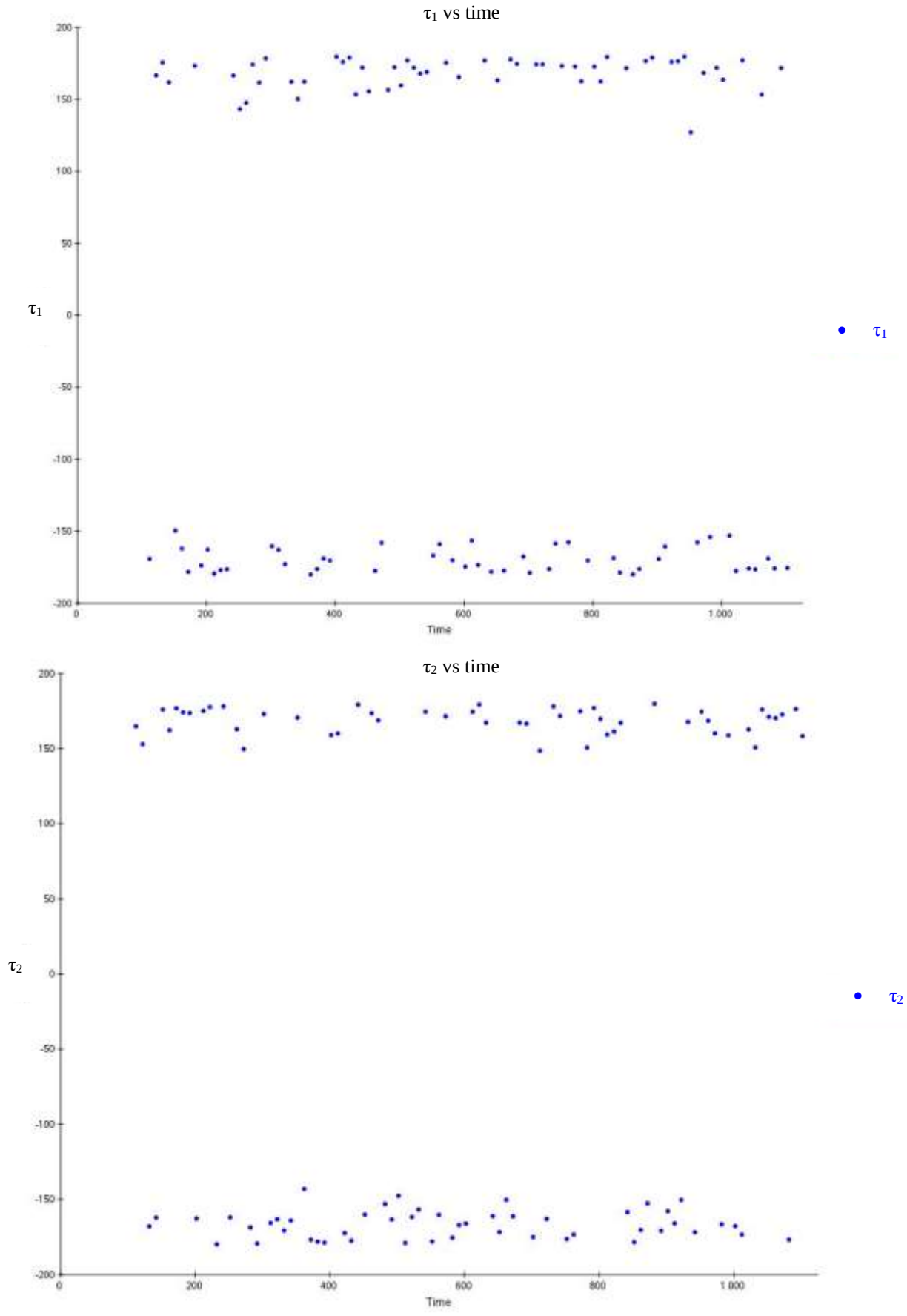

Fig. S2. Dihedral angle τ_1- τ_2 distribution for **7d** during MD simulation (T=600K, ε=4r).

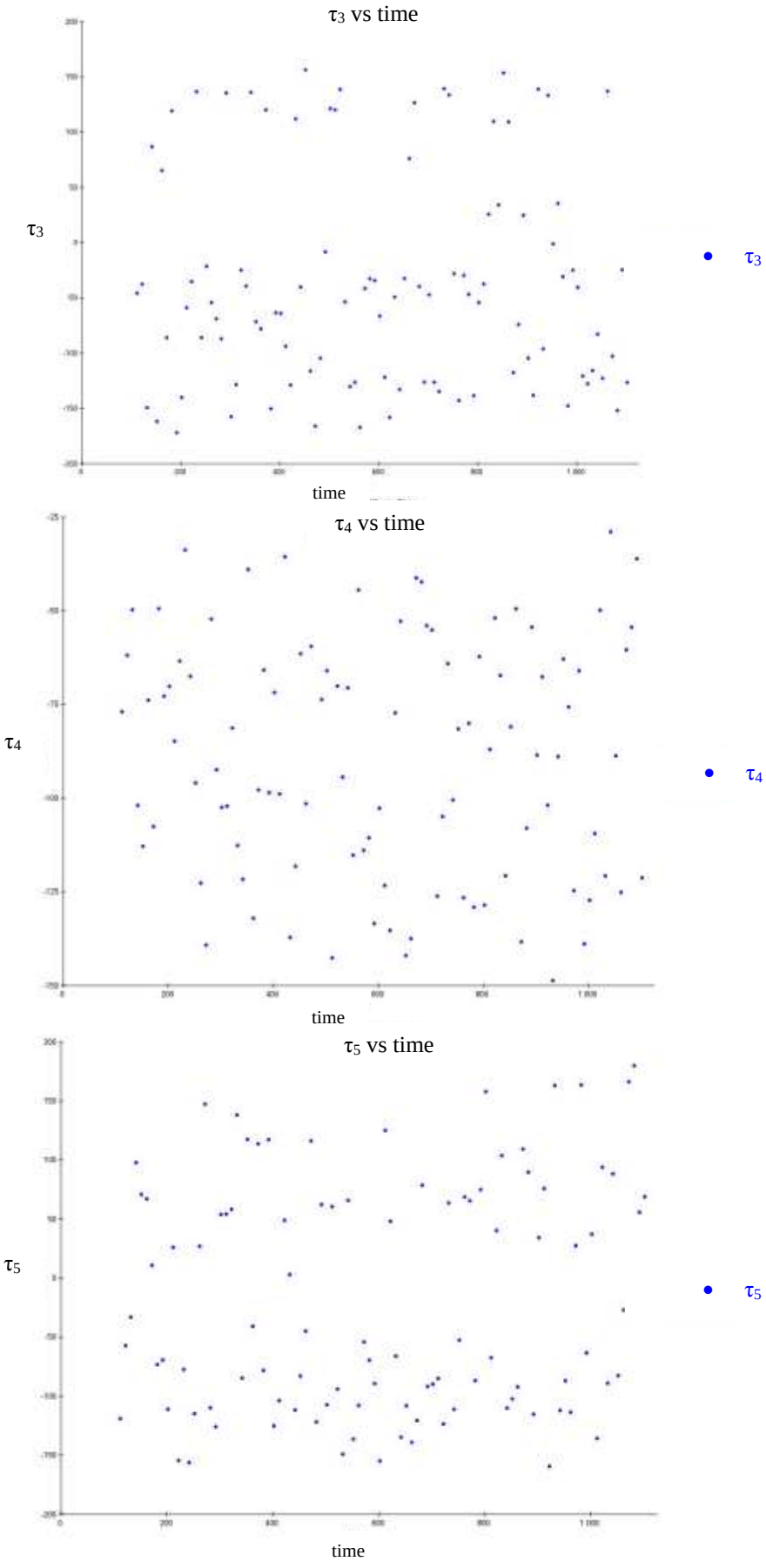

Fig. S3. Dihedral angle τ_3- τ_5 distribution for **7d** during MD simulation (T=600K, ε=4r).

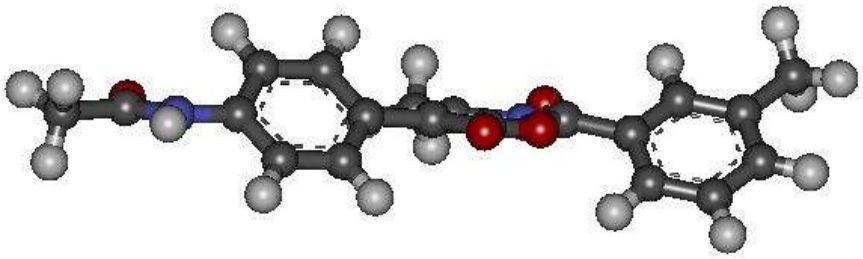

Fig. S4. View of the lowest energy conformer of **7d** as found from MD simulations (T=600K, ε=4r).

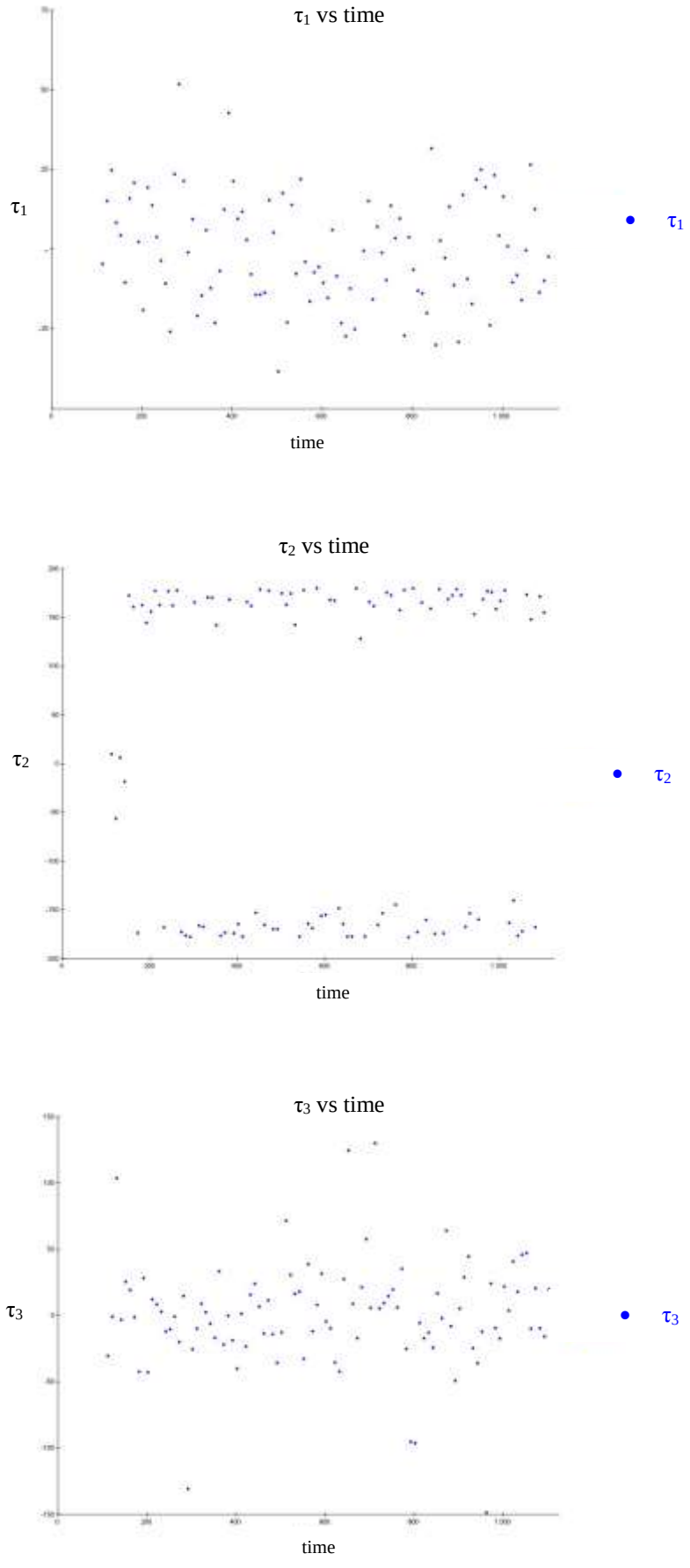

Fig. S5. Dihedral angle τ_1- τ_3 distribution for **8d** during MD simulation (T=600K, ε=4r).

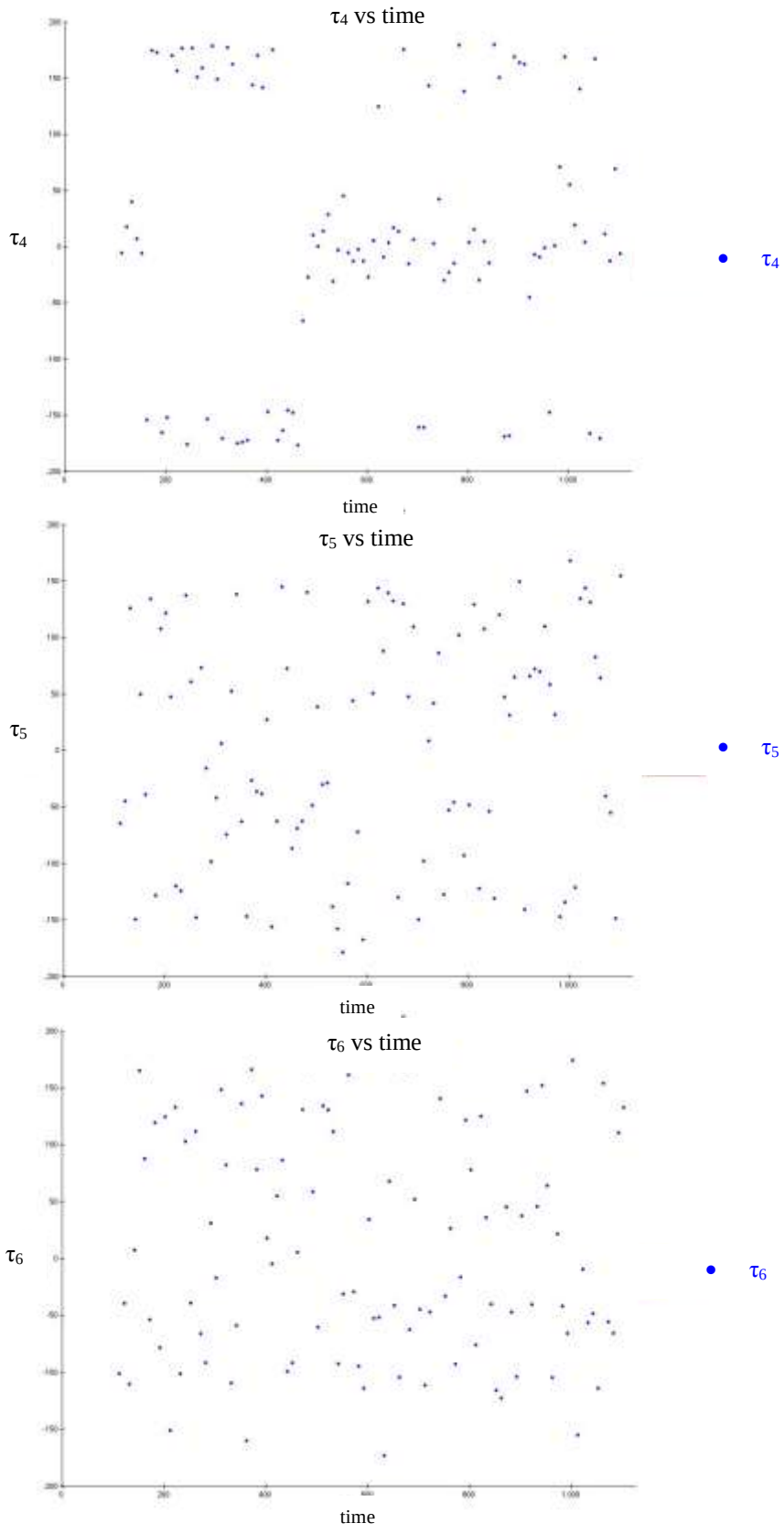

Fig. S6. Dihedral angle τ_4- τ_6 distribution for **8d** during MD simulation (T=600K, ε=4r).

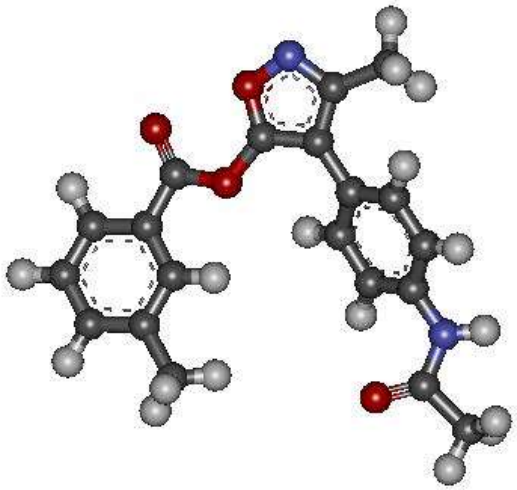

Fig. S7. View of the lowest energy conformer of **8d** as found from MD simulations (T=600K, ε=4r).

Fig. S8. View of the lowest energy conformer of **7d** as found from QC (B3LYP functional).

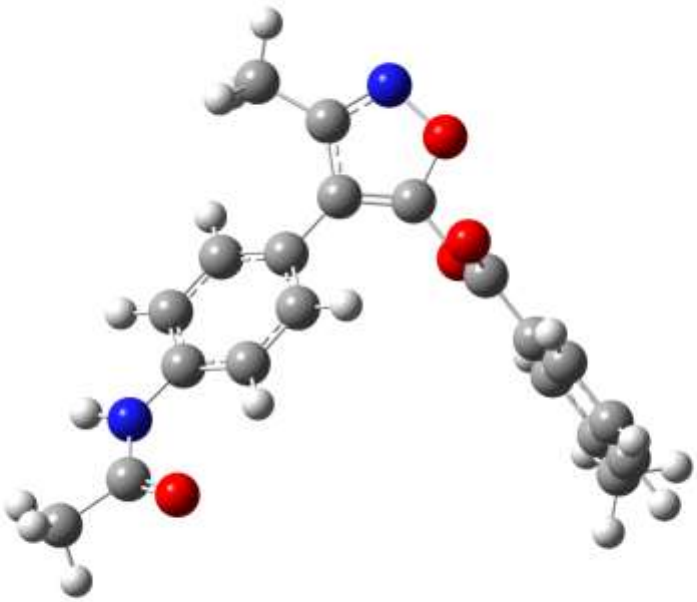

Fig. S9. View of the lowest energy conformer of **8d** as found from QC (B3LYP functional).

Table S1. Elemental analysis

Comp.	Formula (MW)	Anal. Calcd.				Anal. Found		
		C	H	N		C	H	N
2	$C_{18}H_{17}NO_2$ (279.33)	77.40	6.13	5.01		77.94	6.15	5.03
3a	$C_{16}H_{13}NO_5S$ (331.34)	58.00	3.95	4.23		58.23	3.96	4.25
3b	$C_{21}H_{21}NO_6S$ (415.46)	60.71	5.09	3.37		60.95	5.11	3.38
3c	$C_{21}H_{22}N_2O_5S$ (414.47)	60.85	5.35	6.76		61.09	5.37	6.78
4a	$C_{18}H_{15}NO_3$ (293.32)	73.71	5.15	4.78		74.00	5.17	4.80
4b	$C_{14}H_{13}NO_3$ (243.26)	69.12	5.39	5.76		69.39	5.41	5.78
4c	$C_{18}H_{15}NO_3$ (293.32)	73.71	5.15	4.78		74.00	5.17	4.80
4d	$C_{18}H_{15}NO_3$ (293.32)	73.71	5.15	4.78		74.00	5.17	4.80
4e	$C_{18}H_{12}F_3NO_3$ (347.29)	62.25	3.48	4.03		62.50	3.49	4.05
4f	$C_{18}H_{15}NO_5S$ (357.38)	60.49	4.23	3.92		60.73	4.25	3.93
4g	$C_{18}H_{12}N_2O_3$ (304.30)	71.05	3.97	9.21		71.33	3.98	9.25
4h	$C_{18}H_{12}N_2O_3$ (304.30)	71.05	3.97	9.21		71.33	3.98	9.25
4i	$C_{22}H_{22}N_2O_4$ (378.42)	69.83	5.86	7.40		70.10	5.88	7.43
4l	$C_{22}H_{21}NO_5$ (379.41)	69.64	5.58	3.69		69.91	5.60	3.70
4m	$C_{23}H_{17}NO_3$ (355.39)	77.73	4.82	3.94		78.04	4.84	3.95
4n	$C_{19}H_{15}NO_3$ (305.33)	74.74	4.95	4.59		75.03	4.97	4.61
4o	$C_{18}H_{15}NO_3$ (293.32)	73.71	5.15	4.78		74.00	5.17	4.80
4p	$C_{14}H_{13}NO_3$ (243.26)	69.12	5.39	5.76		69.39	5.41	5.78
4q	$C_{17}H_{13}NO_3$ (279.29)	73.11	4.69	5.02		73.40	4.71	5.04
4r	$C_{13}H_{11}NO_3$ (229.23)	68.11	4.84	6.11		68.38	4.86	6.13

4s	$C_{17}H_{12}N_2O_5$ (324.29)	62.96	3.73	8.64		63.21	3.74	8.67
4t	$C_{13}H_{10}N_2O_5$ (274.23)	56.94	3.68	10.22		57.16	3.69	10.26
4u	$C_{19}H_{16}N_2O_4$ (336.34)	67.85	4.79	8.33		68.12	4.81	8.36
7a	$C_{19}H_{17}NO_3$ (307.34)	74.25	5.58	4.56		74.55	5.60	4.58
7b	$C_{19}H_{14}N_2O_3$ (318.33)	71.69	4.43	8.80		71.97	4.45	8.83
7c	$C_{18}H_{14}N_2O_5$ (338.31)	63.90	4.17	8.28		64.15	4.19	8.31
7d	$C_{20}H_{18}N_2O_4$ (350.37)	68.56	5.18	8.00		68.83	5.20	8.03
7e	$C_{22}H_{20}N_2O_4$ (376.41)	70.20	5.36	7.44		70.48	5.38	7.47
8a	$C_{19}H_{17}NO_3$ (307.34)	74.25	5.58	4.56		74.55	5.60	4.58
8b	$C_{19}H_{14}N_2O_3$ (318.33)	71.69	4.43	8.80		71.97	4.45	8.83
8d	$C_{20}H_{18}N_2O_4$ (350.37)	68.56	5.18	8.00		68.83	5.20	8.03
8e	$C_{22}H_{20}N_2O_4$ (376.41)	70.20	5.36	7.44		70.48	5.38	7.47
10a	$C_{10}H_9NO_3$ (191.18)	62.82	4.74	7.33		63.07	4.76	7.36
10b	$C_{12}H_{13}NO_3$ (219.24)	65.74	5.98	6.39		66.00	6.00	6.41
10c	$C_{15}H_{11}NO_3$ (253.25)	71.14	4.38	5.53		71.42	4.40	5.55