Experimental Supporting Information

Formation of *N*-sulfonyl imines from iminoiodinanes by iodine-promoted, N-centered radical sulfonamidation of aldehydes

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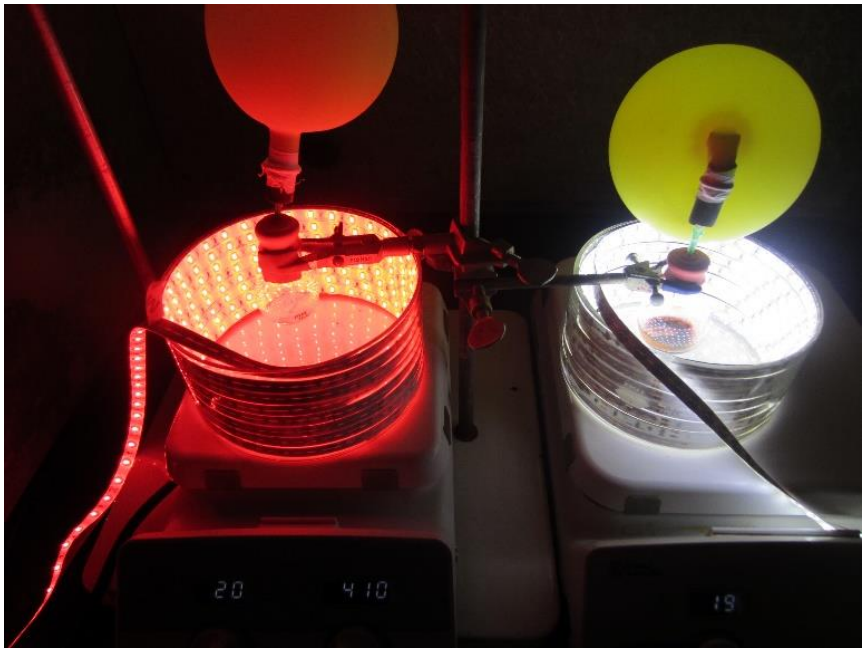
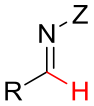
Index



On the left – A red LED strip (630 nm) light bath reaction vessel

On the right – A white LED strip (cool white) light bath reaction vessel

Photocatalytic reactions were set up in a light bath which was constructed in our laboratory as follows. Waterproof 5050 LED strips (12V with power adapter, 18 LEDs/foot, approximately 0.24 Watt per LED – 72 Watt per strip) are coiled around the interior of evaporating dish (170mm x 90mm) using the adhesive backing of the LED strip. A Petri dish (150 x 20 mm) is placed upside down at the bottom of the dish to serve as an elevated glass "floor" to ensure that a round-bottom flask receives maximum light exposure. The temperature inside the dish is monitored and is generally maintained between 19-22 °C (the temperature has not been observed above 25 °C).



δ imine C-H (ppm)

Product	NMR intgn crude	isol.	lit. (ref.)
1a	8.94	8.98	8.97 (3)
1b	9.09	9.08	9.08 (4)
1c	8.95	9.01	9.02 (7)
1d	8.97	-	8.99 (6)
1e	9.12	-	-
2a	8.91	-	8.91 (3)
2b	8.98	9.01	9.02 (4)
2c	8.87	8.96	9.05 (2)
3a	9.01	-	9.03 (3)
3b	9.11	9.13	9.13 (1)
3c	8.93	8.98	9.06 (6)
4a	8.96	-	8.98 (3)
4b	9.05	9.07	9.08 (5)
4c	8.93	9.02	-
5a	8.96	-	8.98 (3)
5b	9.04	-	9.09 (1)
5c	8.91	8.94	9.04 (7)
6a	8.97	-	8.98 (6)
6b	9.05	-	9.09 (1)
6c	8.94	-	-
7a	8.92	-	8.94 (2)
7b	9.03	-	9.07 (1)
7c	8.89	9.00	-

δ imine C-H (ppm)

Product	NMR intgn crude	isol.	lit. (ref.)
8a	8.94	-	8.97 (8)
8b	9.05	-	9.08 (1)
8c	8.90	-	-
9a	9.48	-	9.55 (9)
9b	9.54	9.63	-
9c	9.44	9.58	-
10a	9.37	-	9.41 (3)
10b	9.49	9.56	-
10c	9.33	9.48	-
11a	9.30	-	9.32 (6)
11b	9.40	-	9.43 (4)
11c	9.30	-	-
12a	9.07	-	9.10 (3)
12b	9.20	-	-
12c	9.06	9.15	-
13a	9.01	-	9.05 (6)
13b	9.14	9.17	-
13c	9.06	9.09	-
14a	8.83	-	8.87 (6)
14b	8.89	8.96	-
14c	8.78	9.04	-
15a	9.58	-	9.60 (6)
15b	9.61	-	9.69 (4)
16a	8.70	-	8.78* (6)
16b	8.81	-	-

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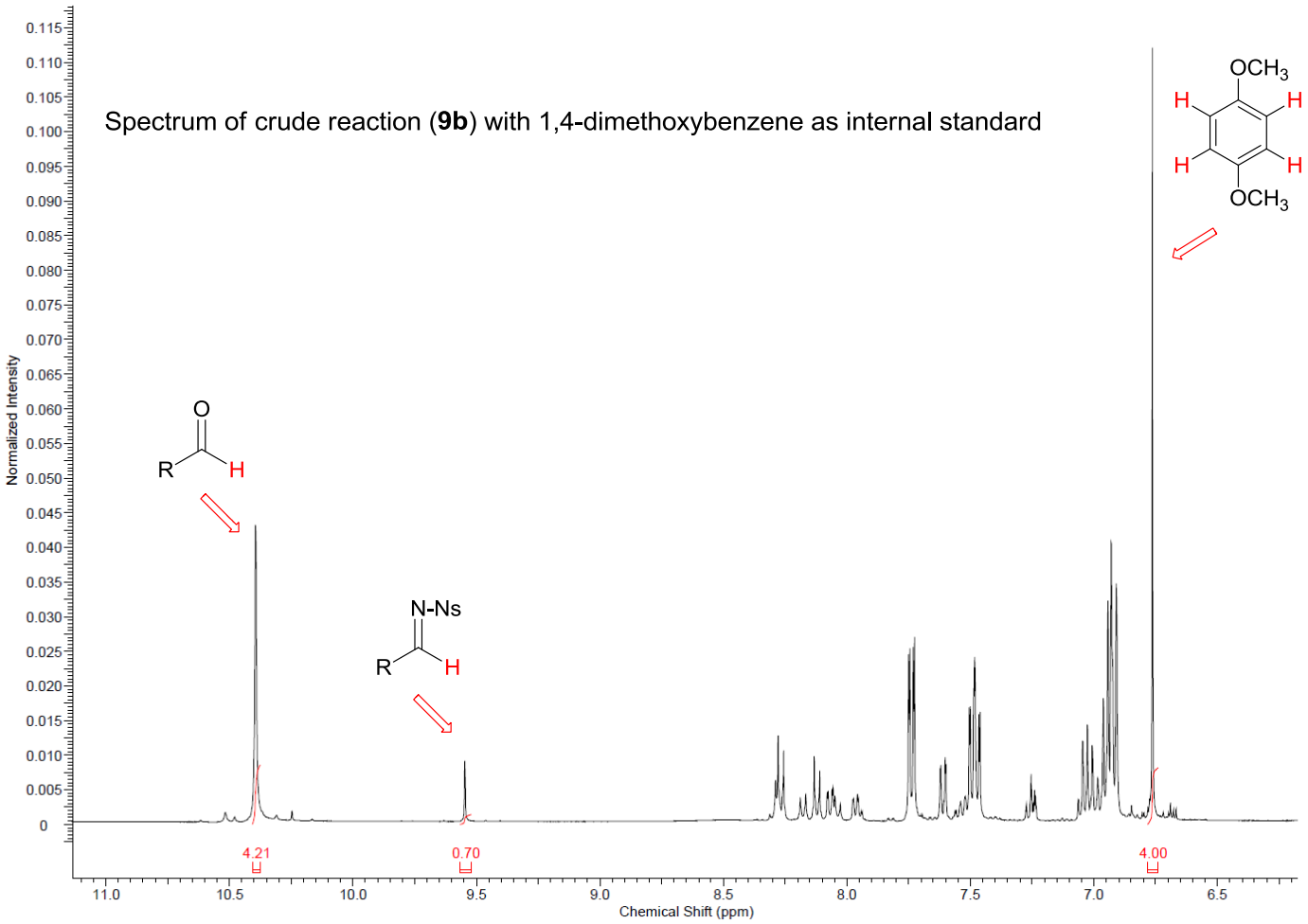
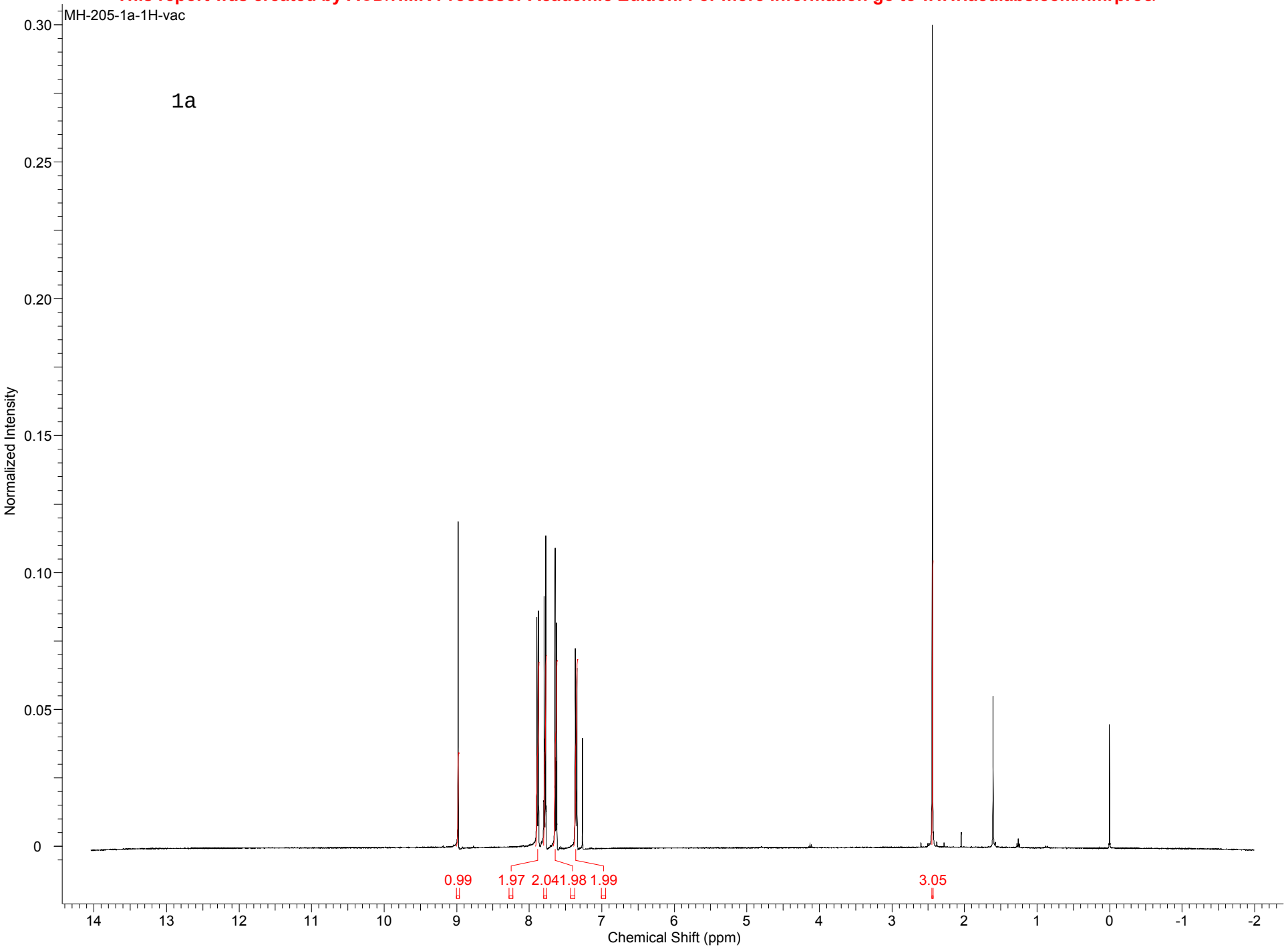
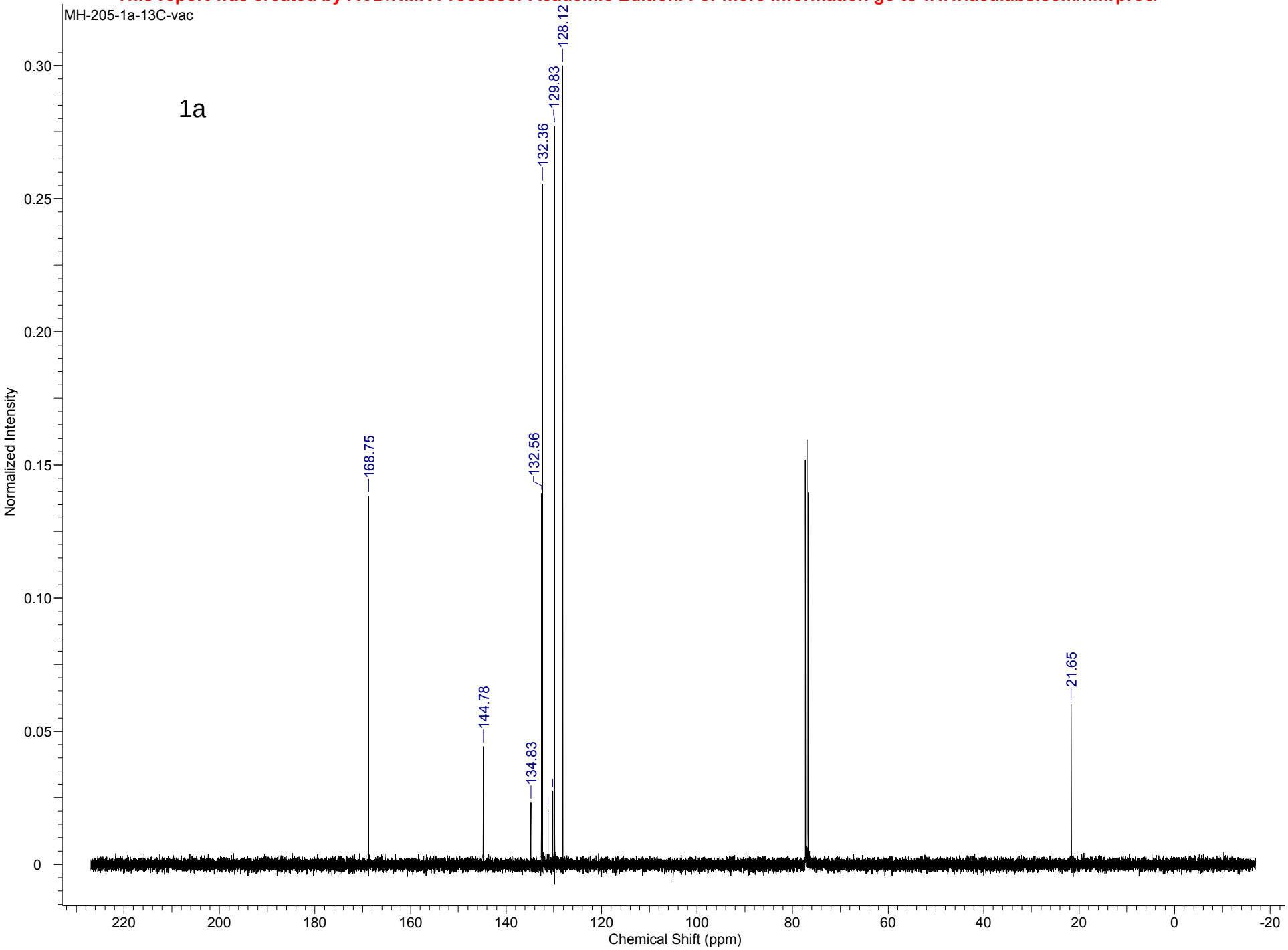
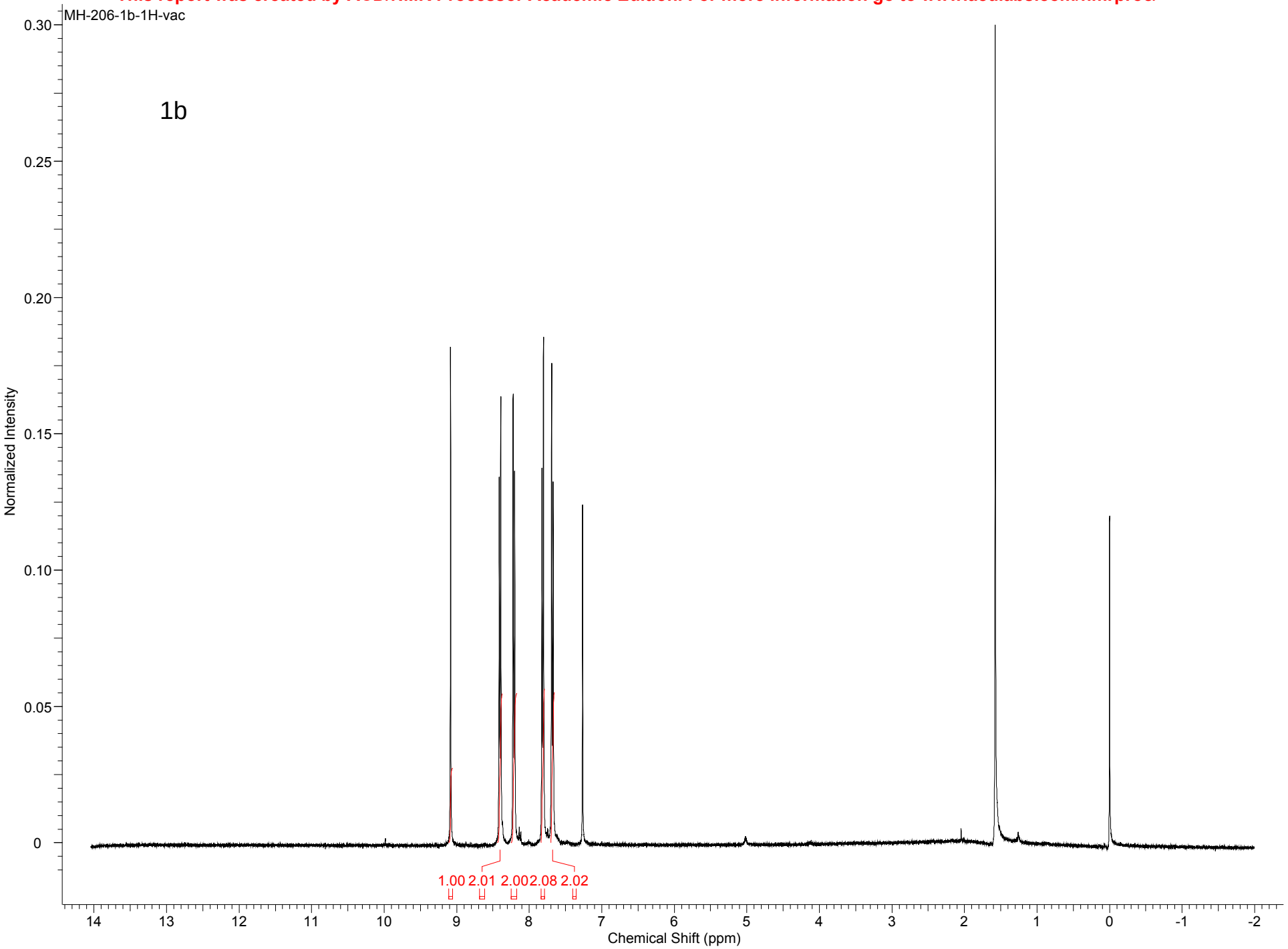
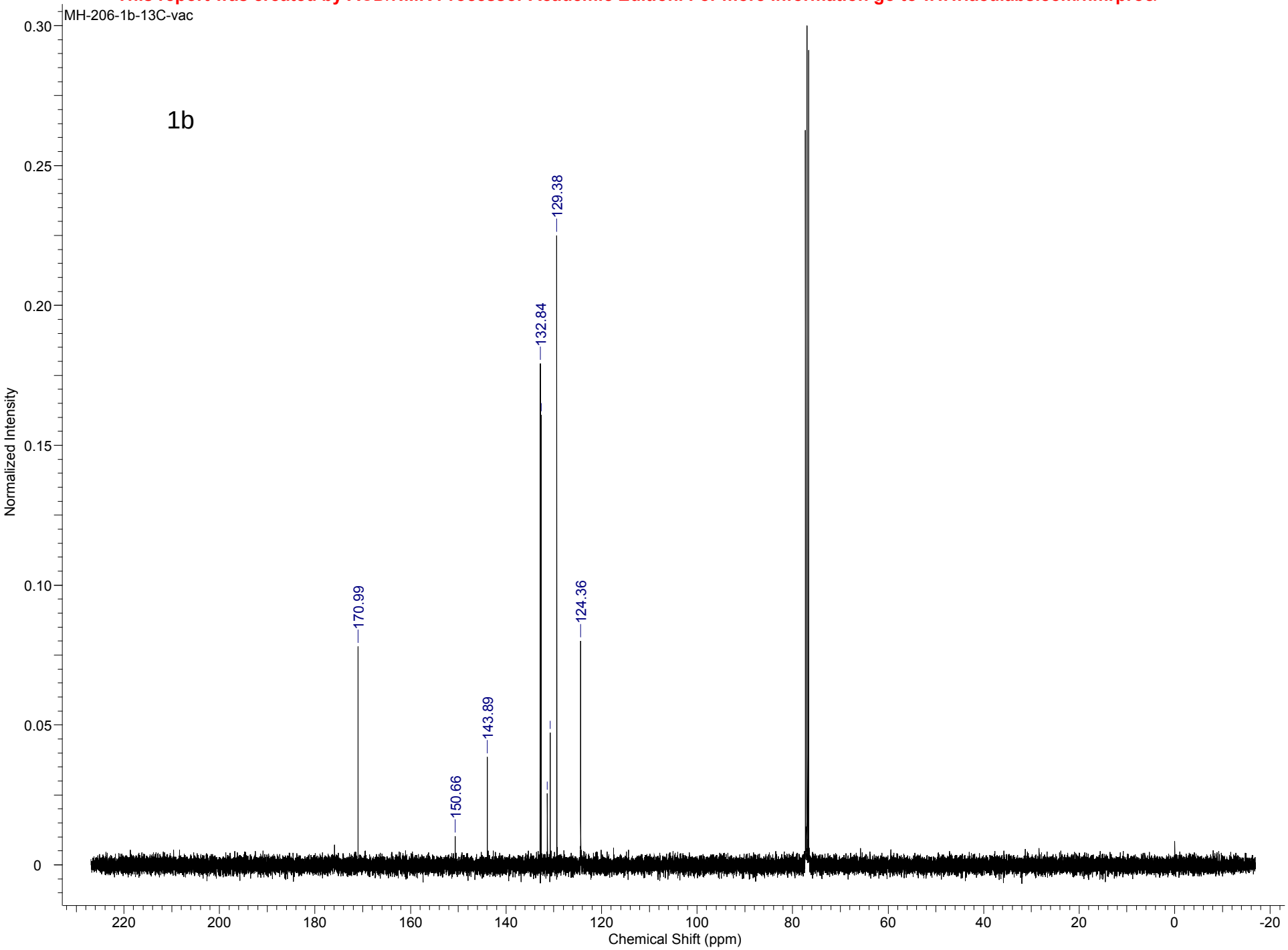


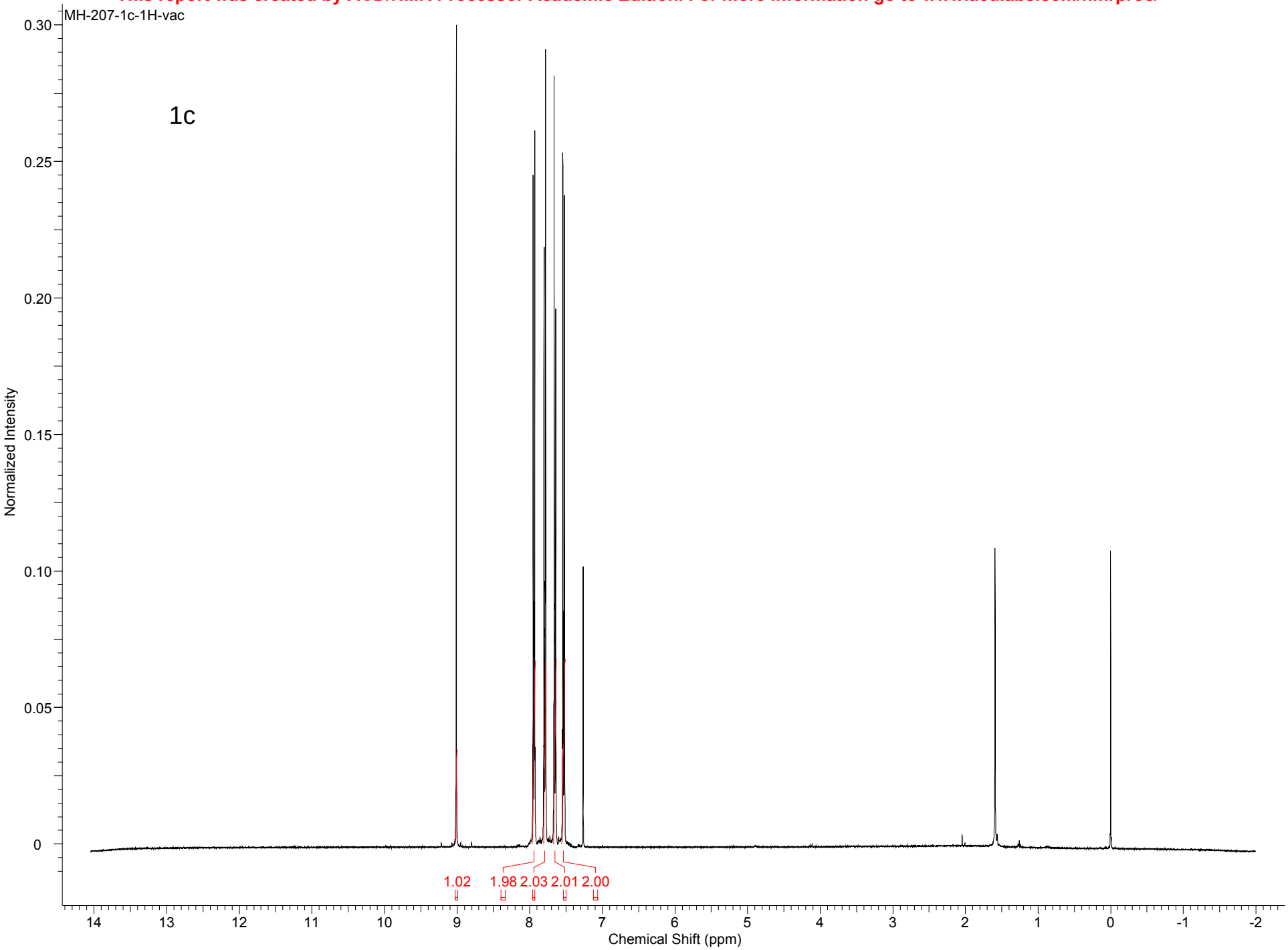
Reaction conditions: 5 equiv aldehyde (4.21 equiv of aldehyde remains after reaction; 70% yield of imine according to integration of imine C-H), 1 equiv PhI=NNs, 1 equiv I_2, rt, 48 hrs, $CDCl_3$, 1 equiv 1,4-dimethoxybenzene added at conclusion of reaction.

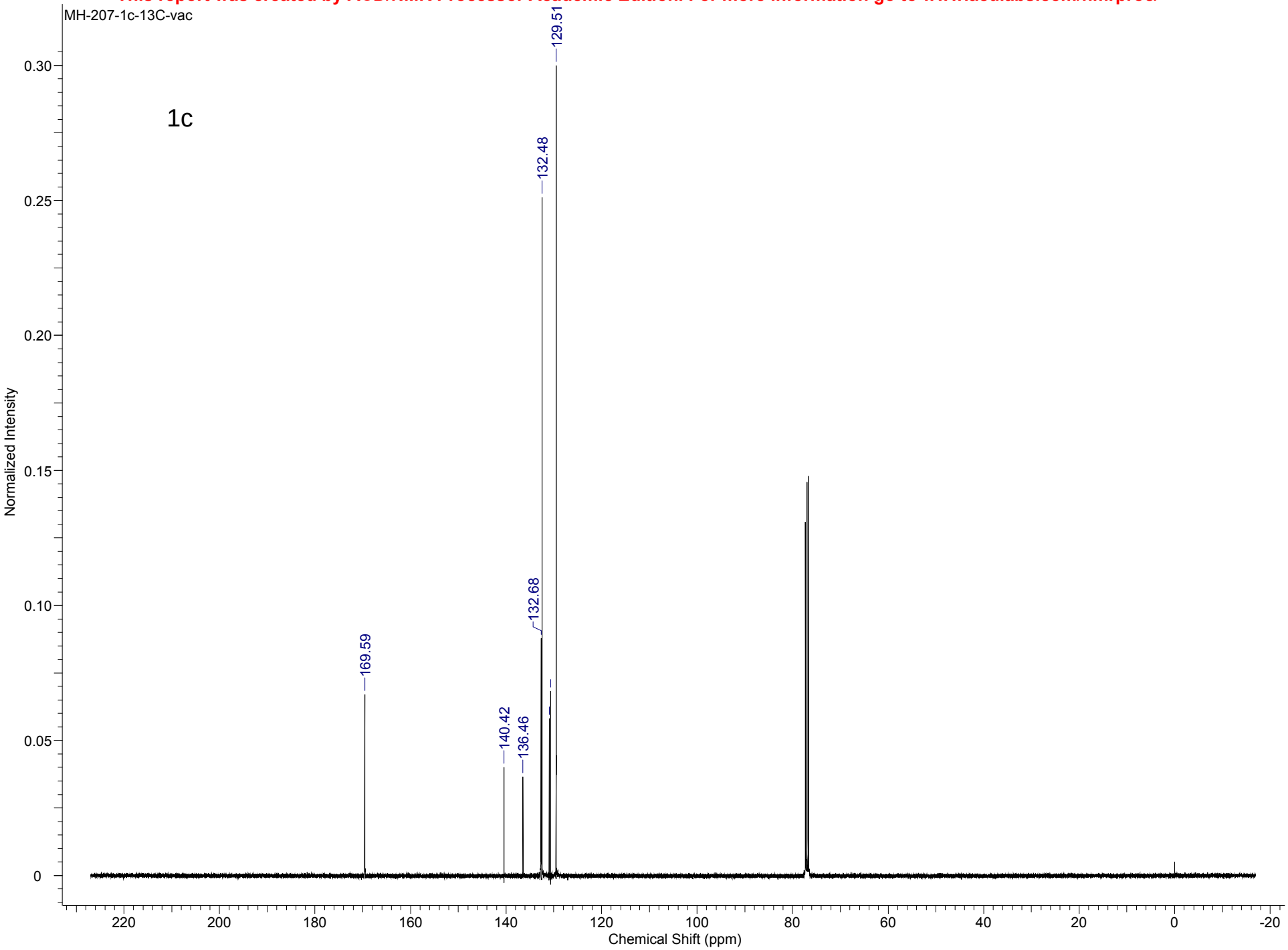


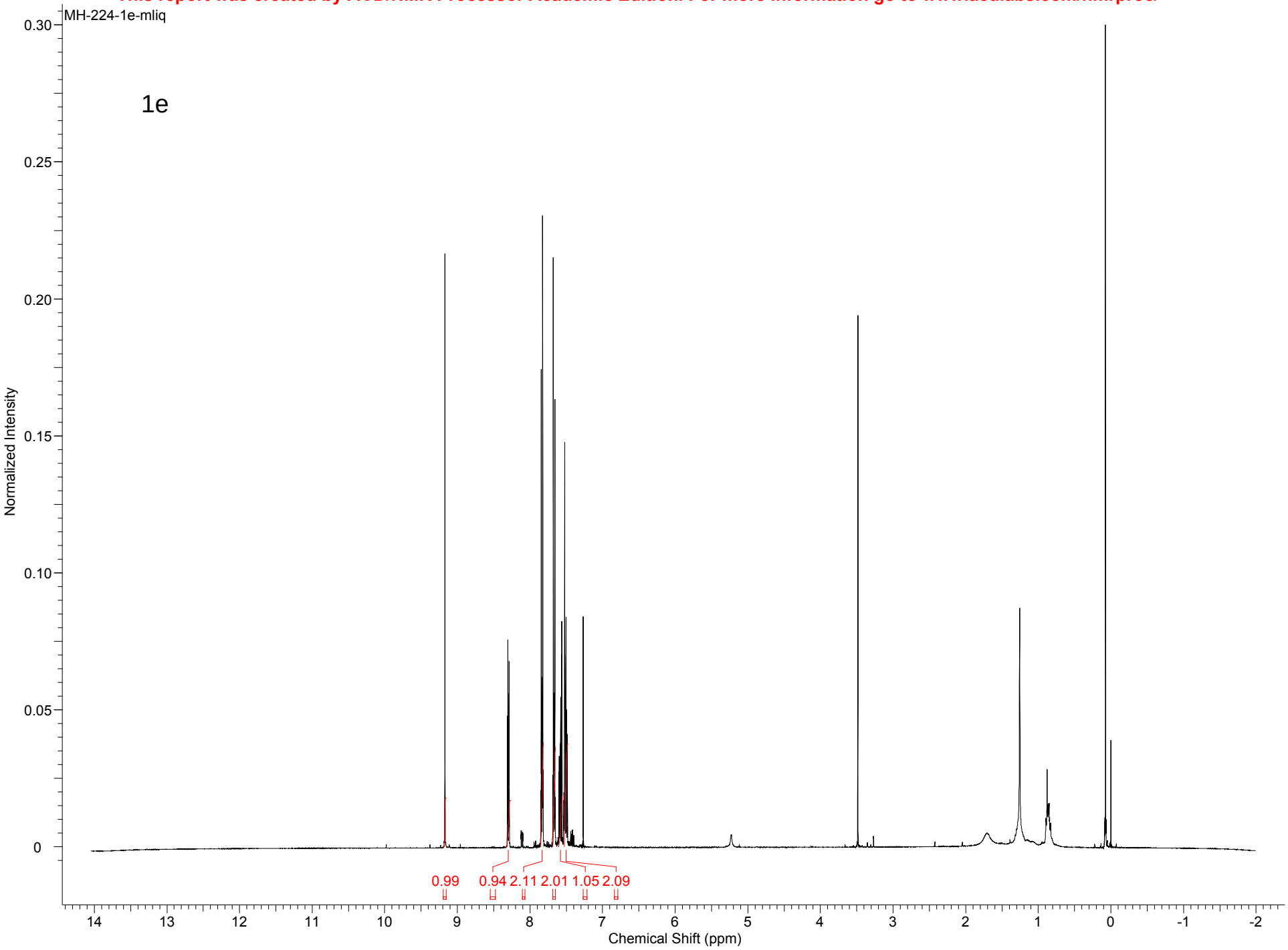


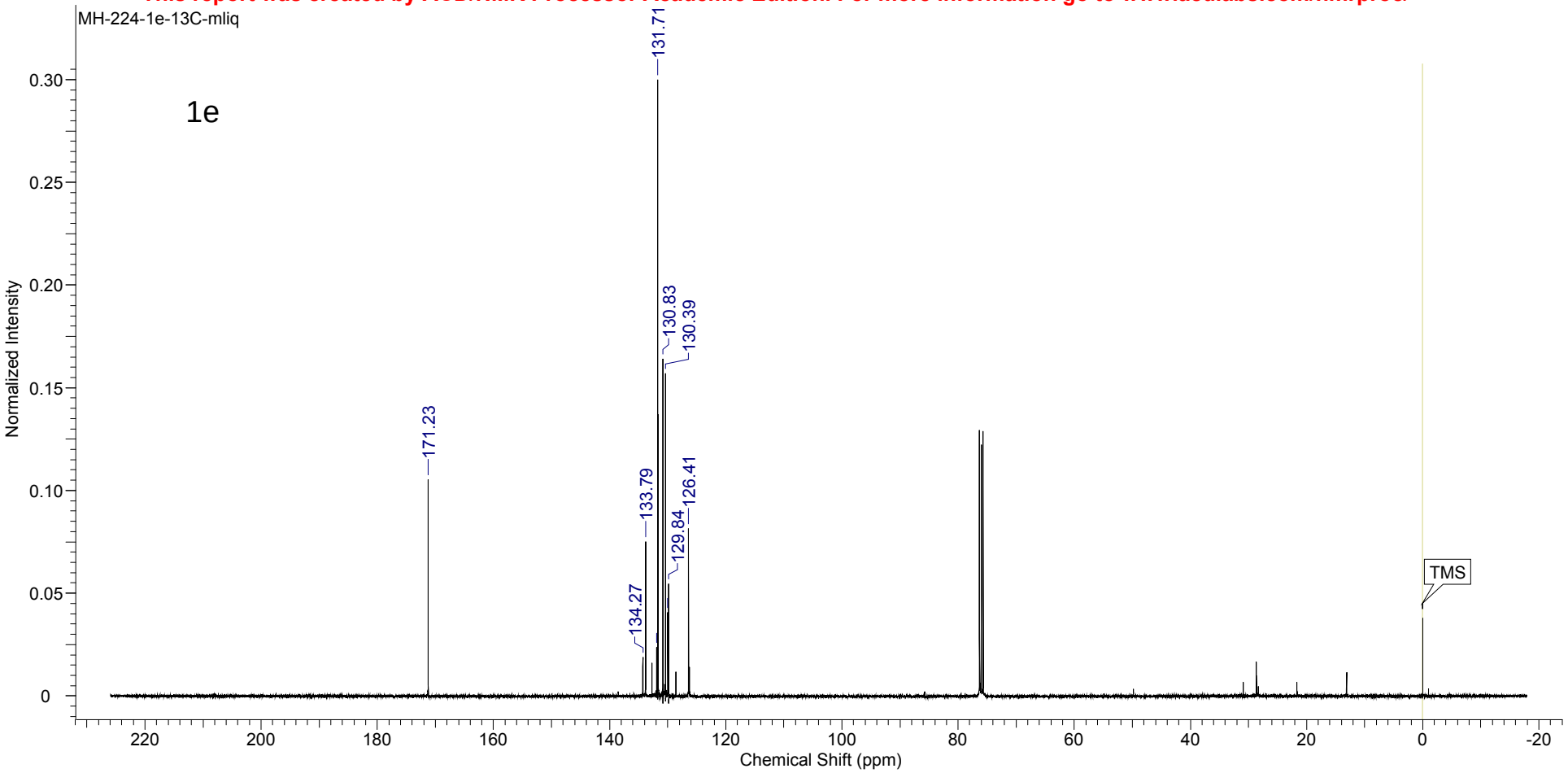












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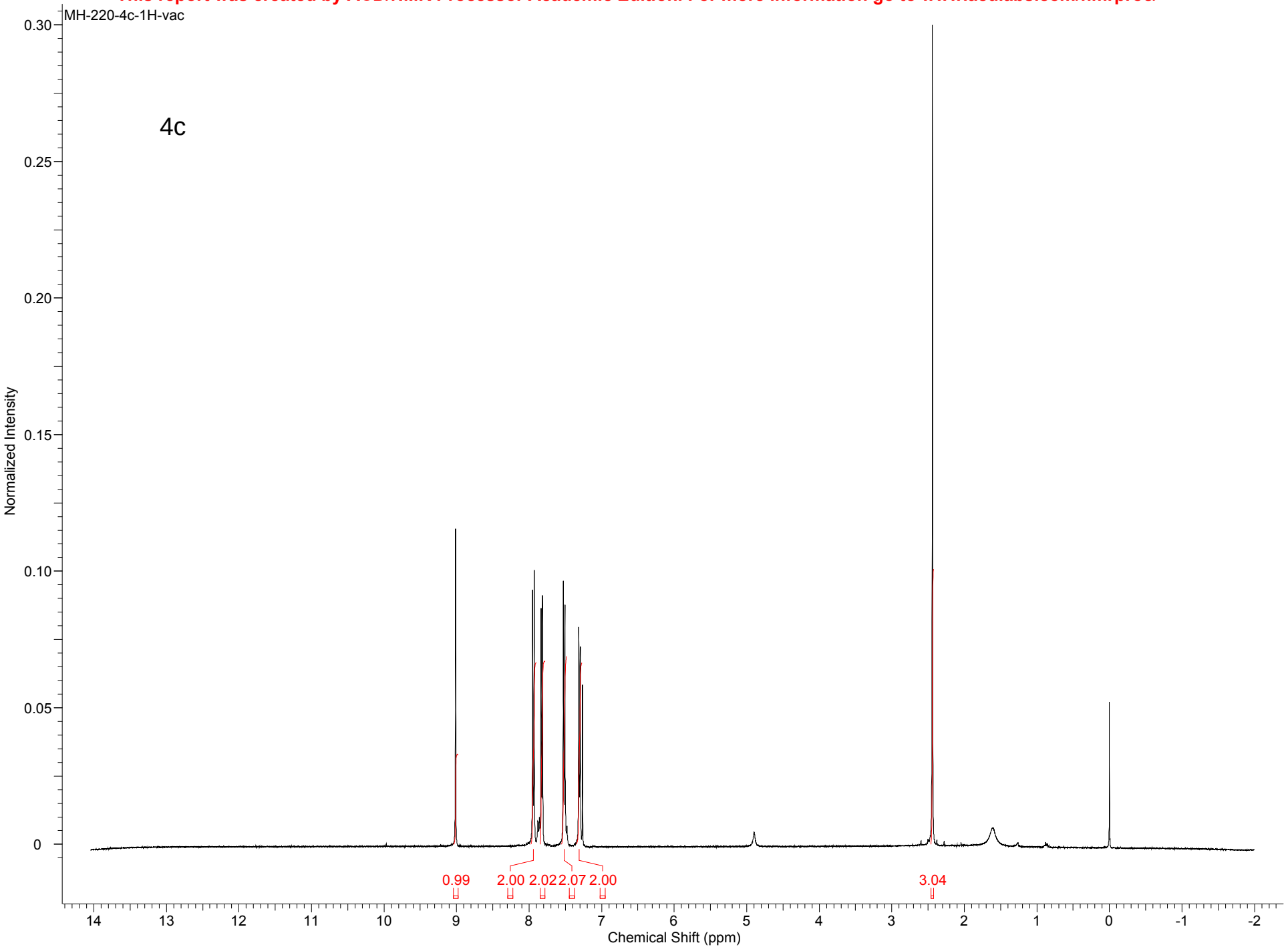

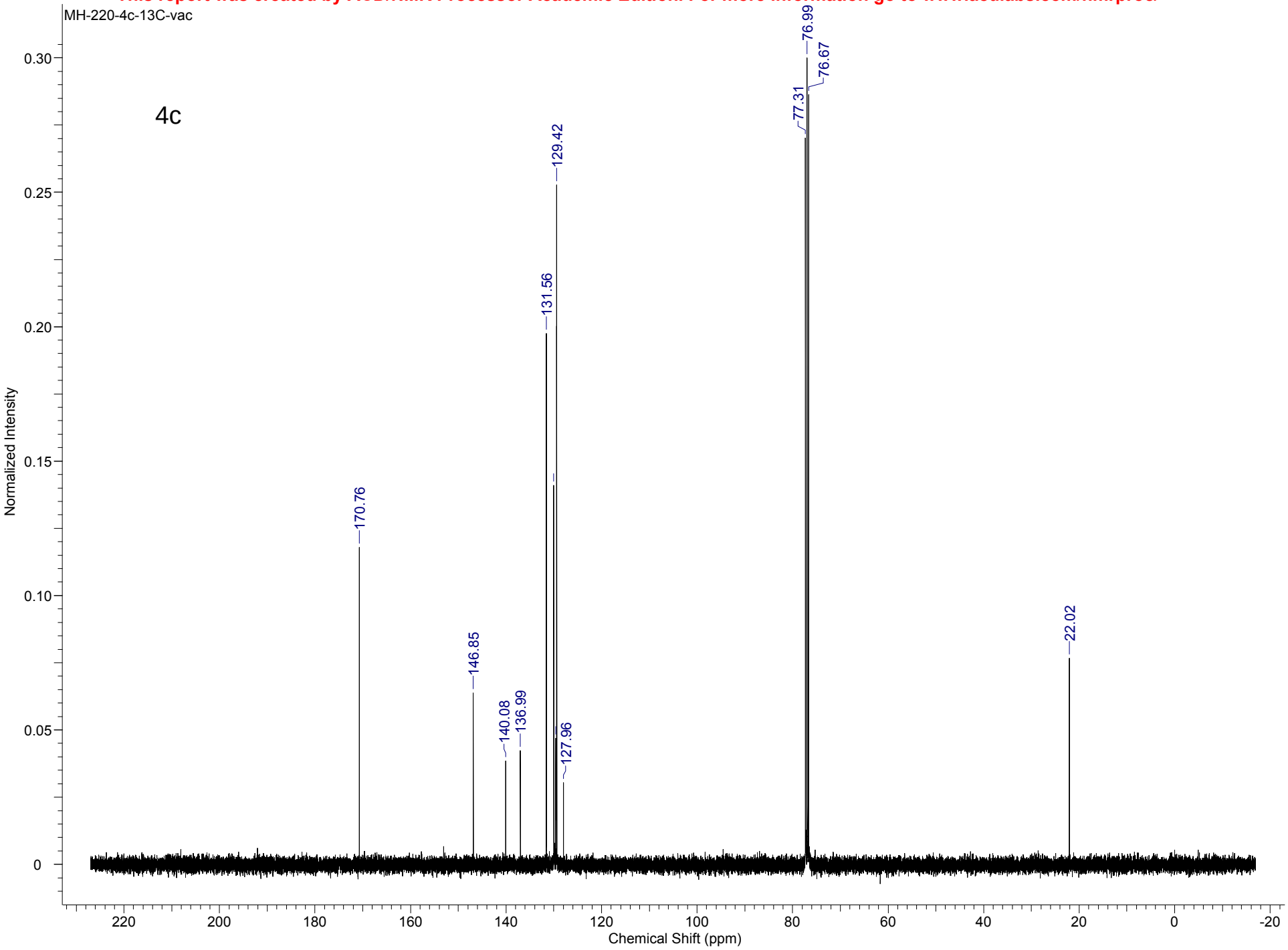

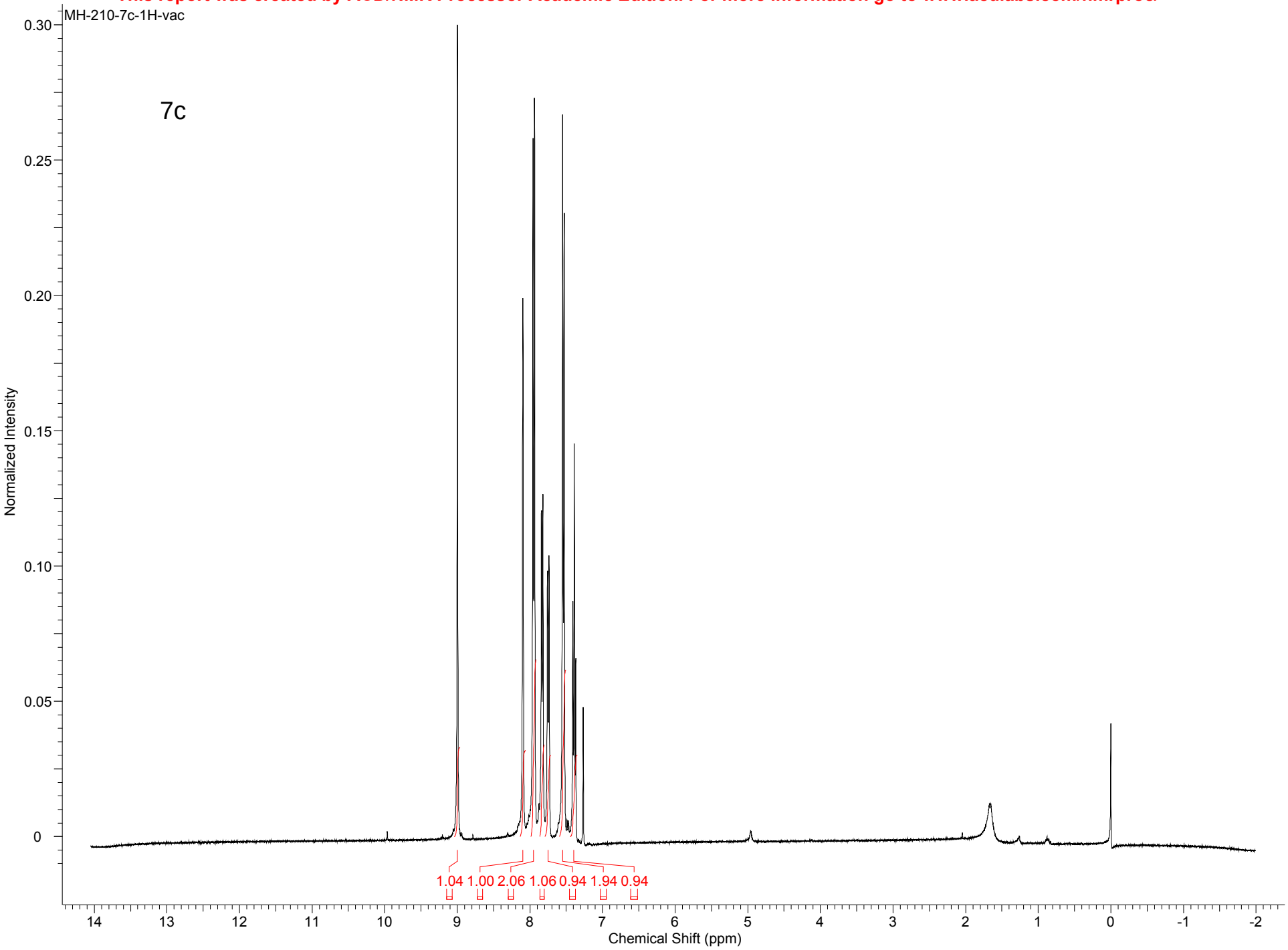

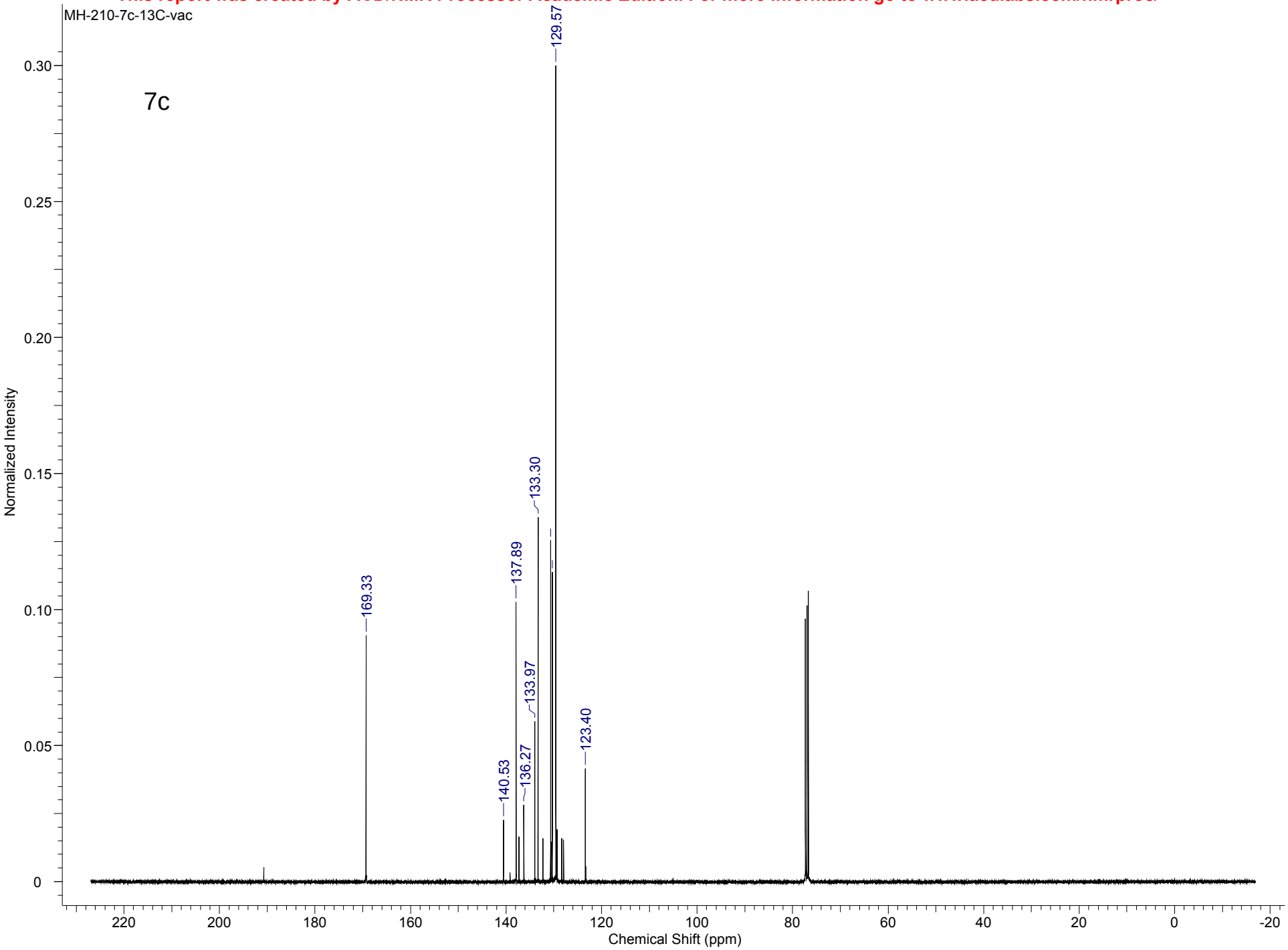

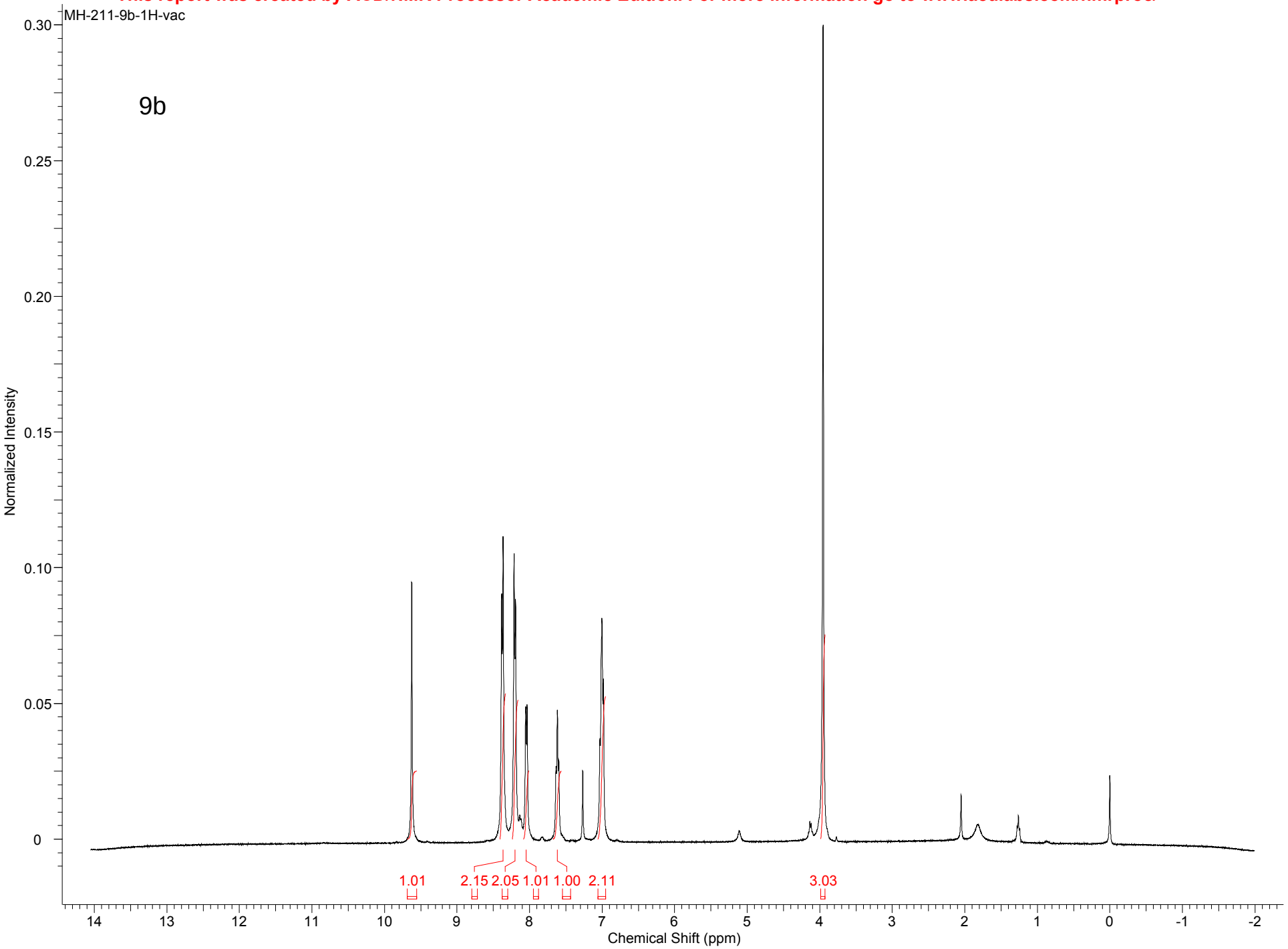

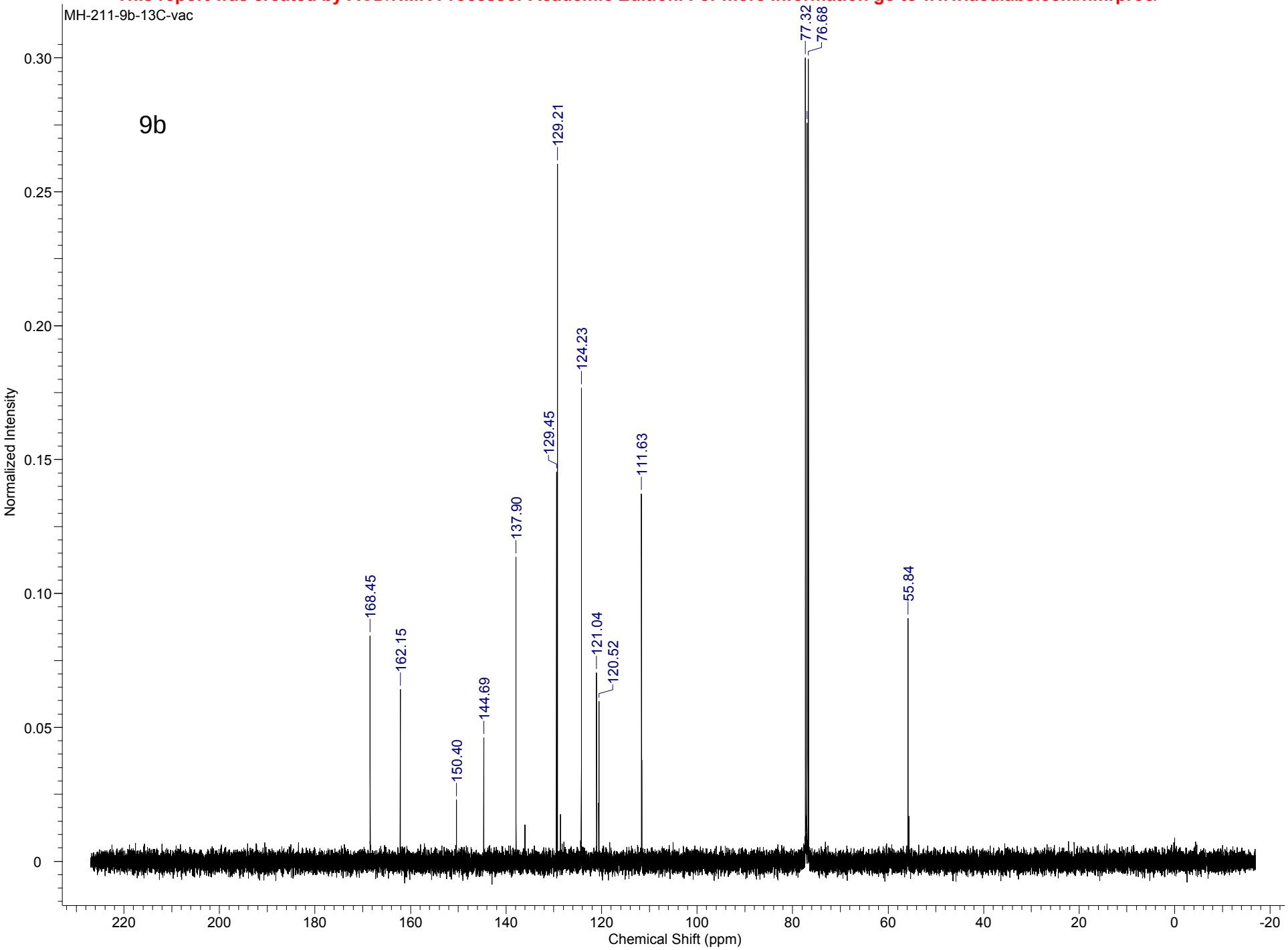

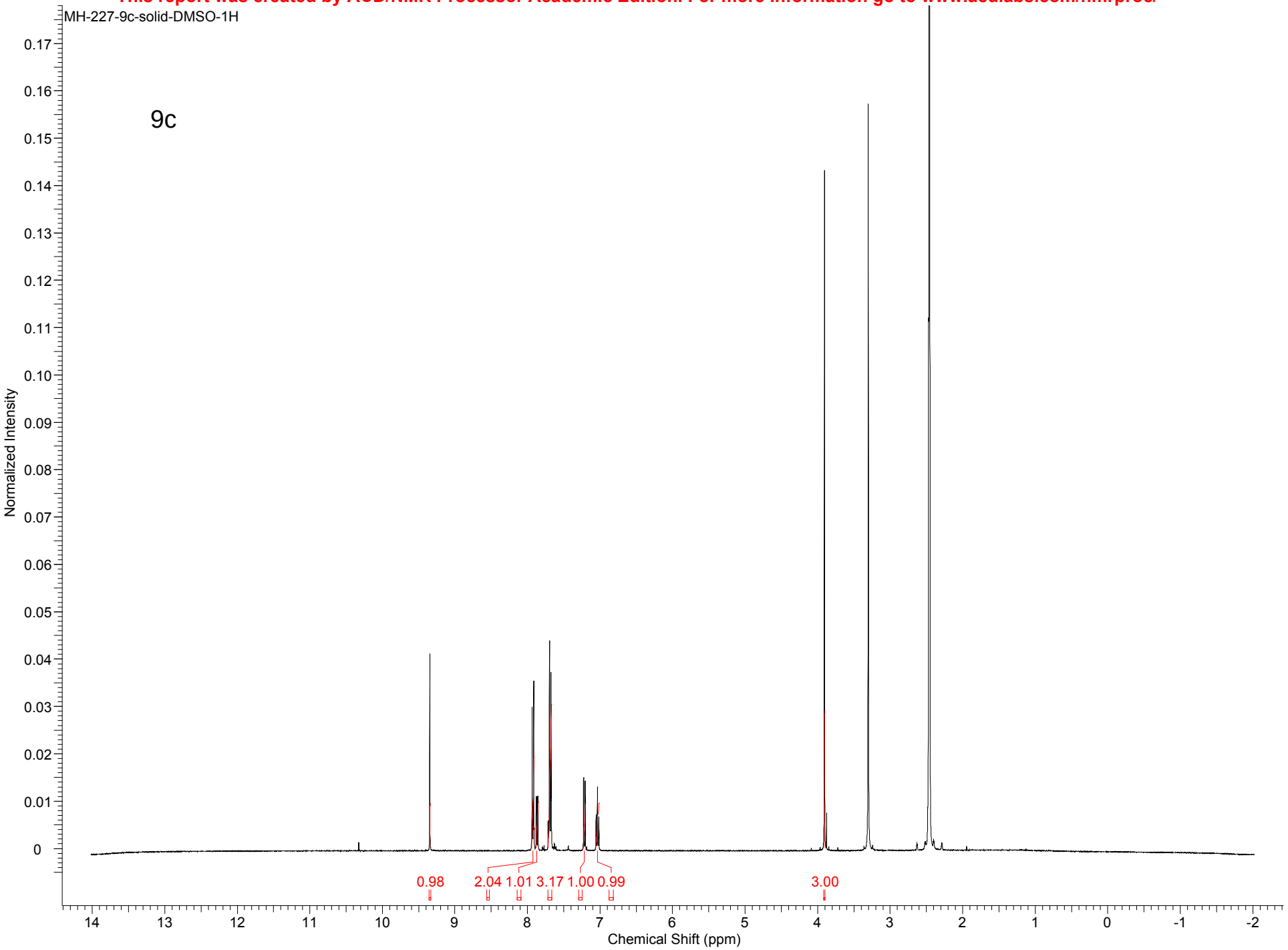

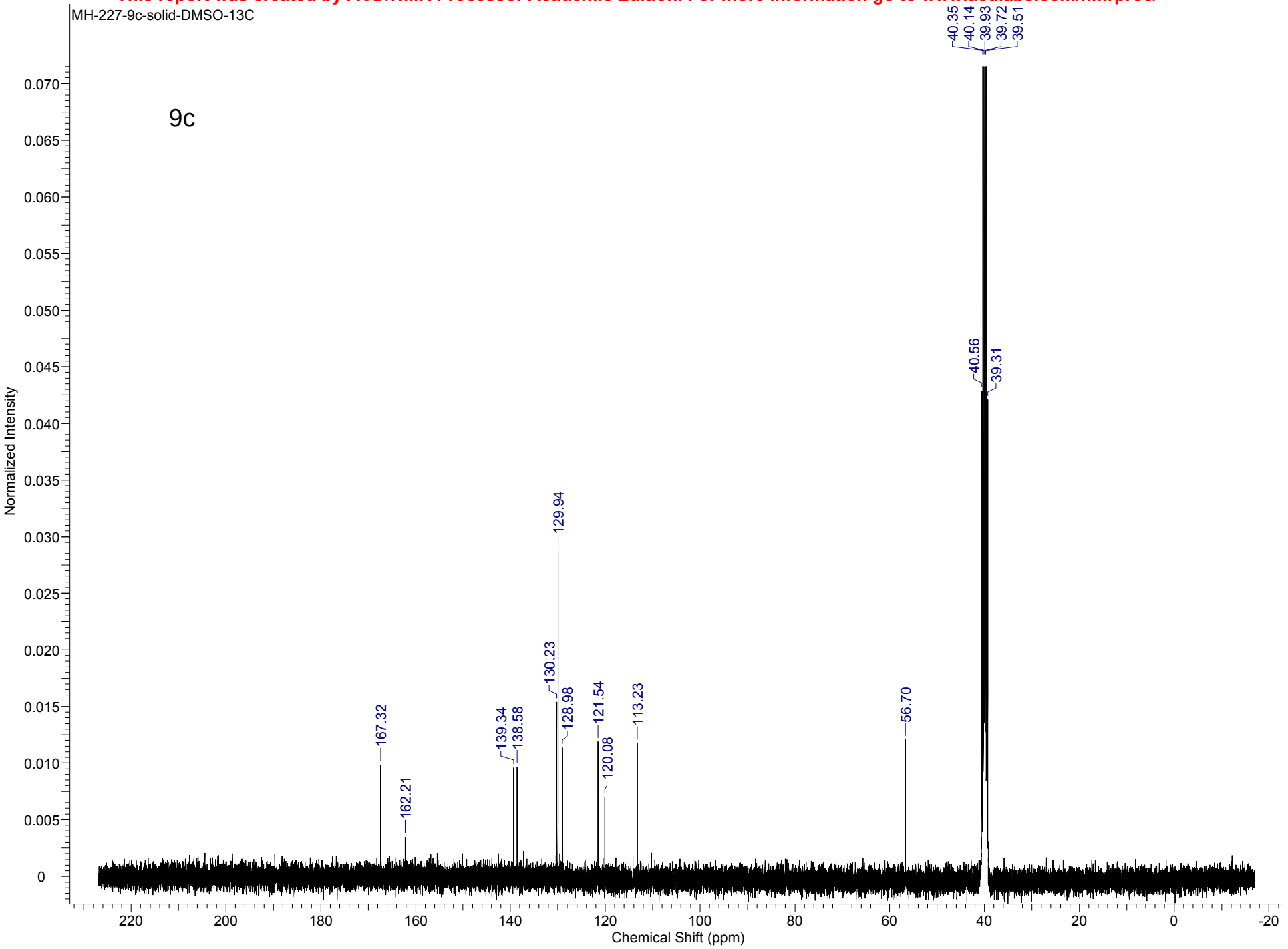

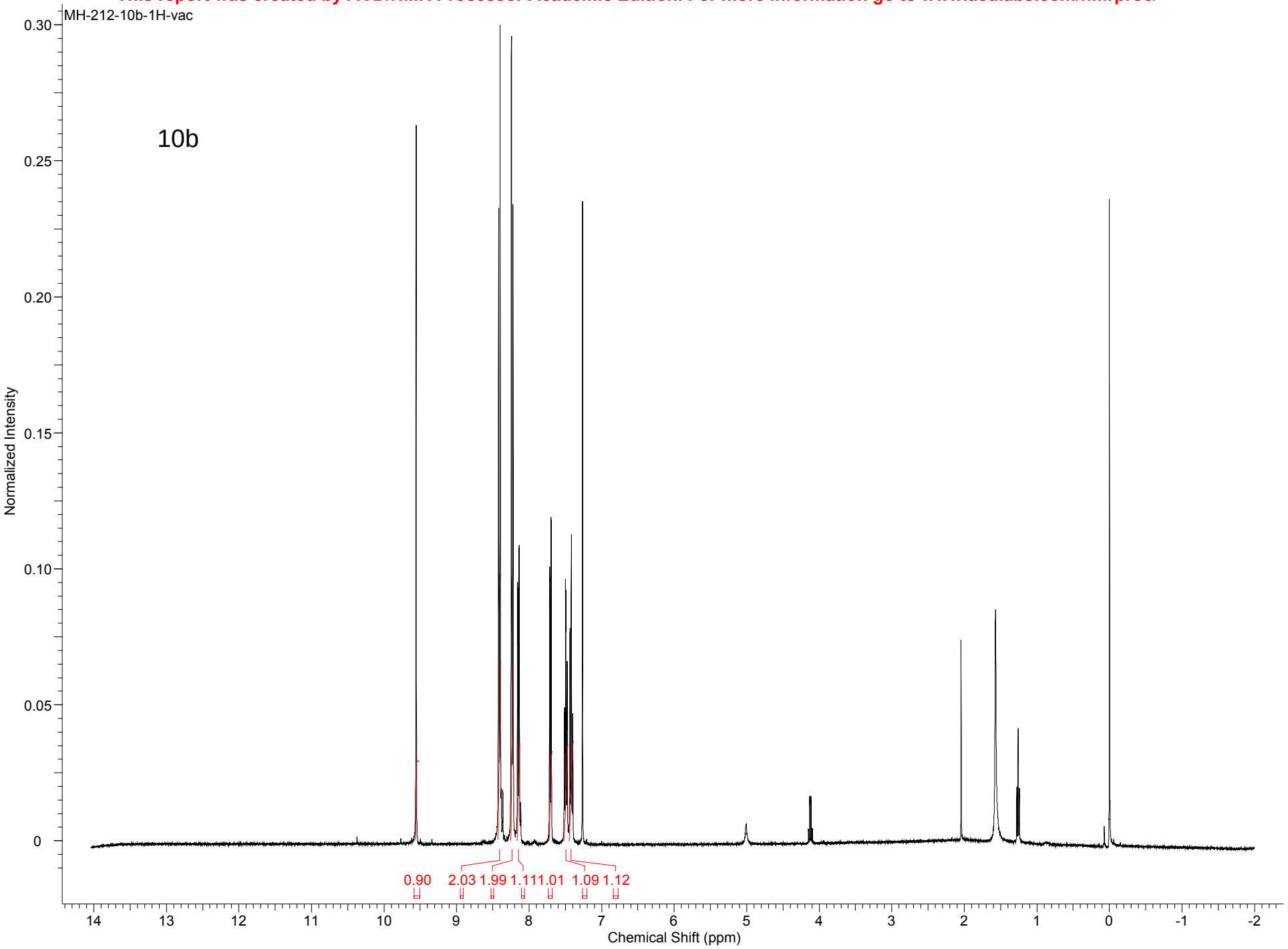

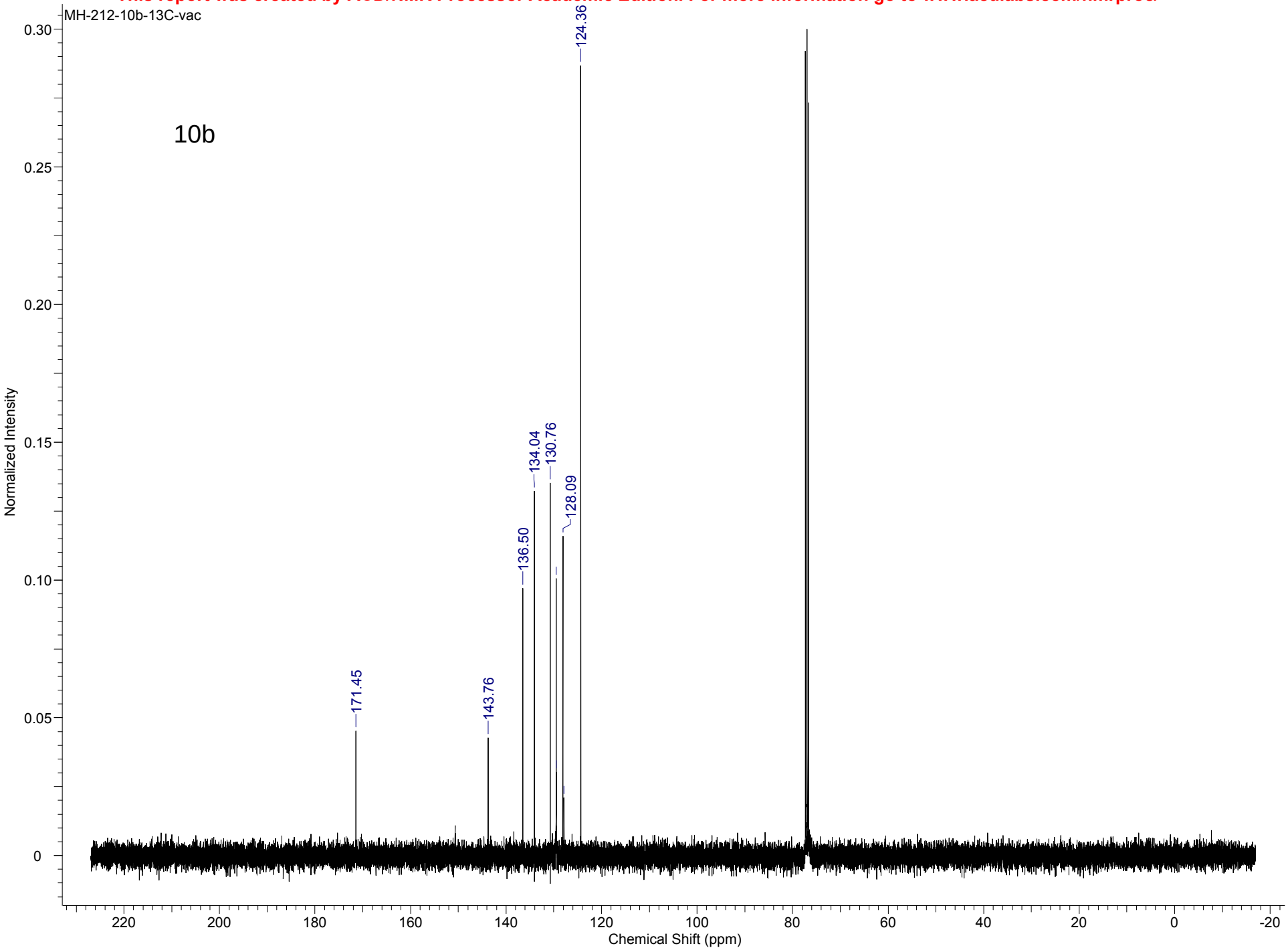

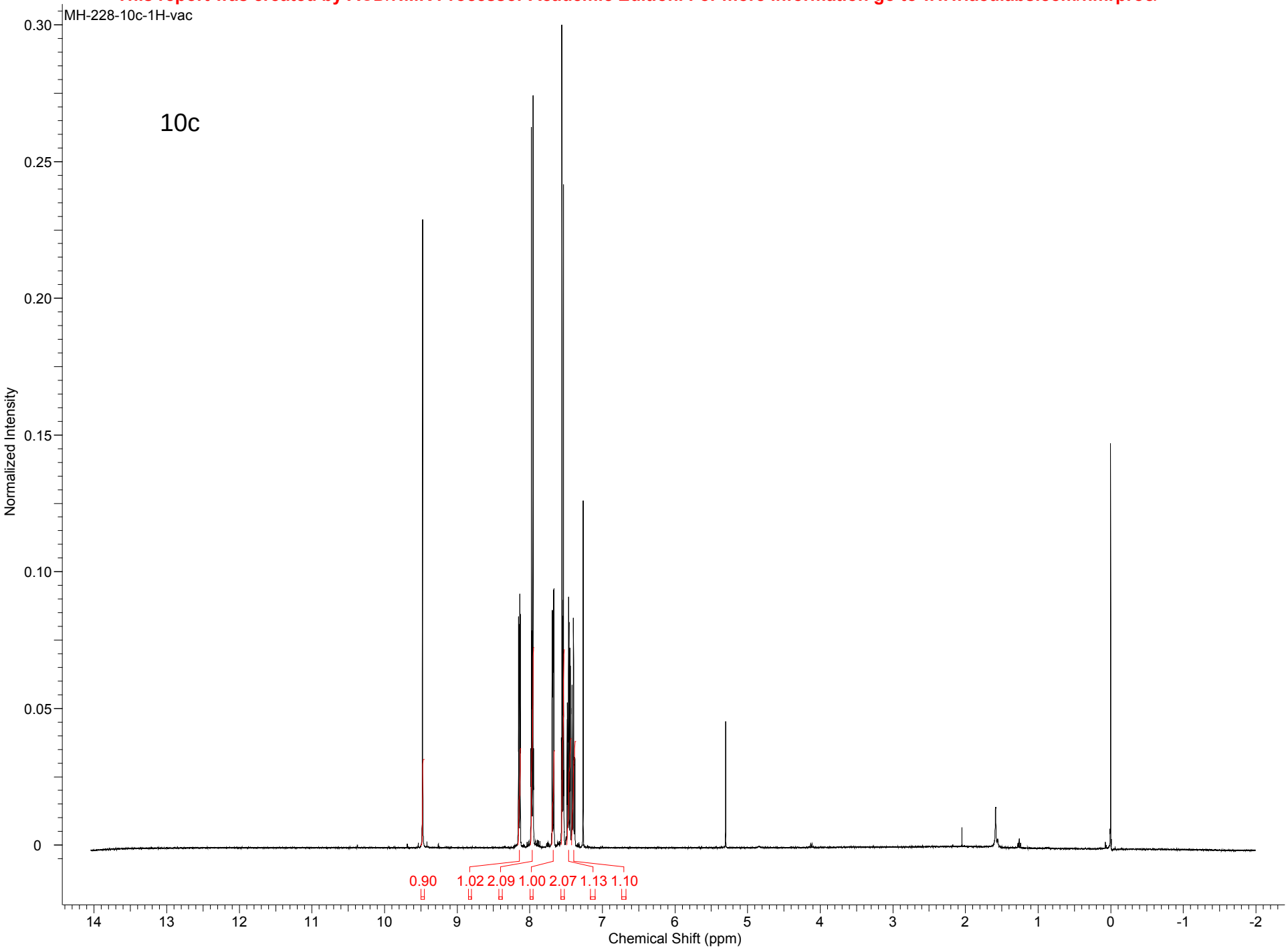

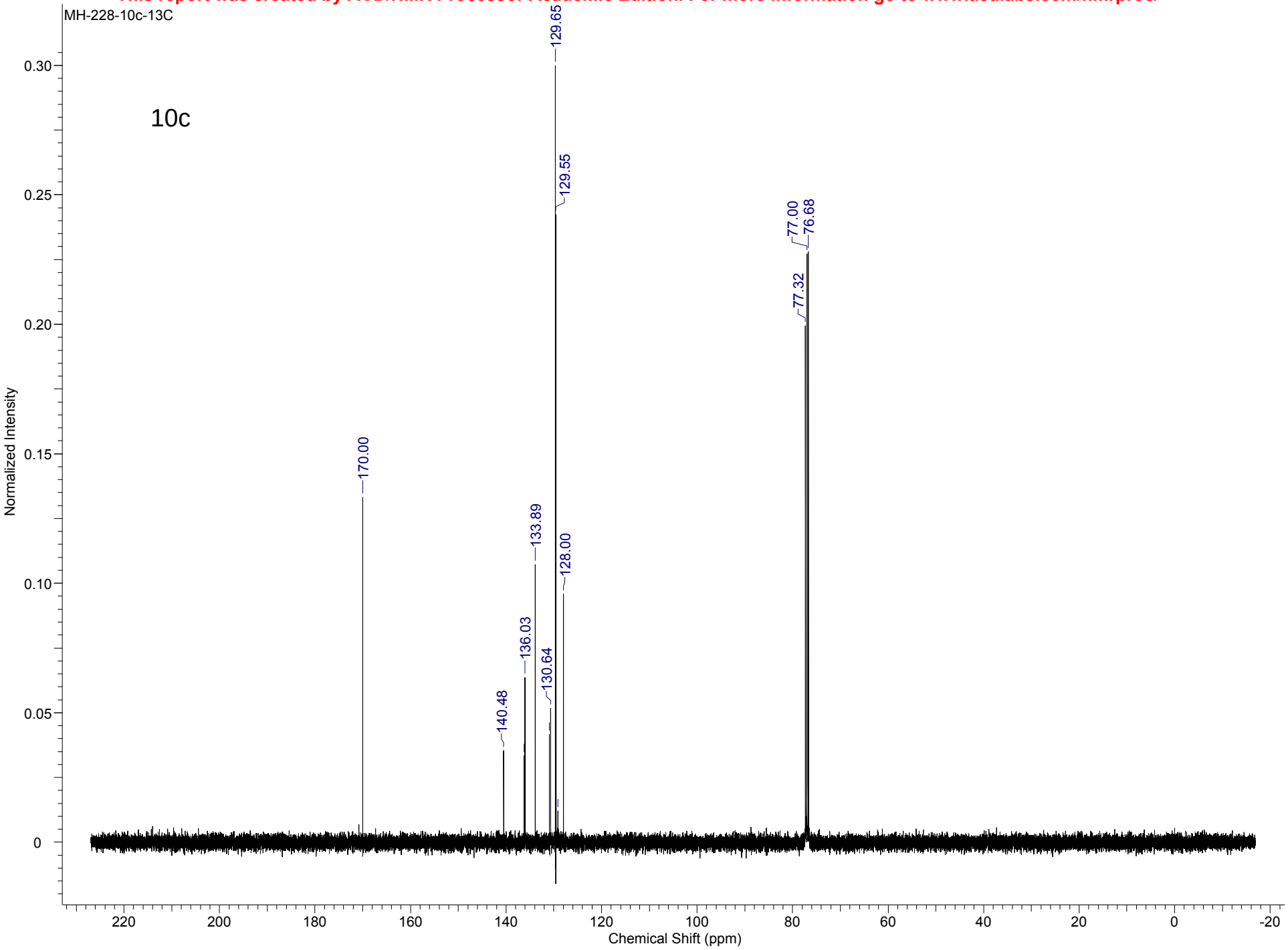

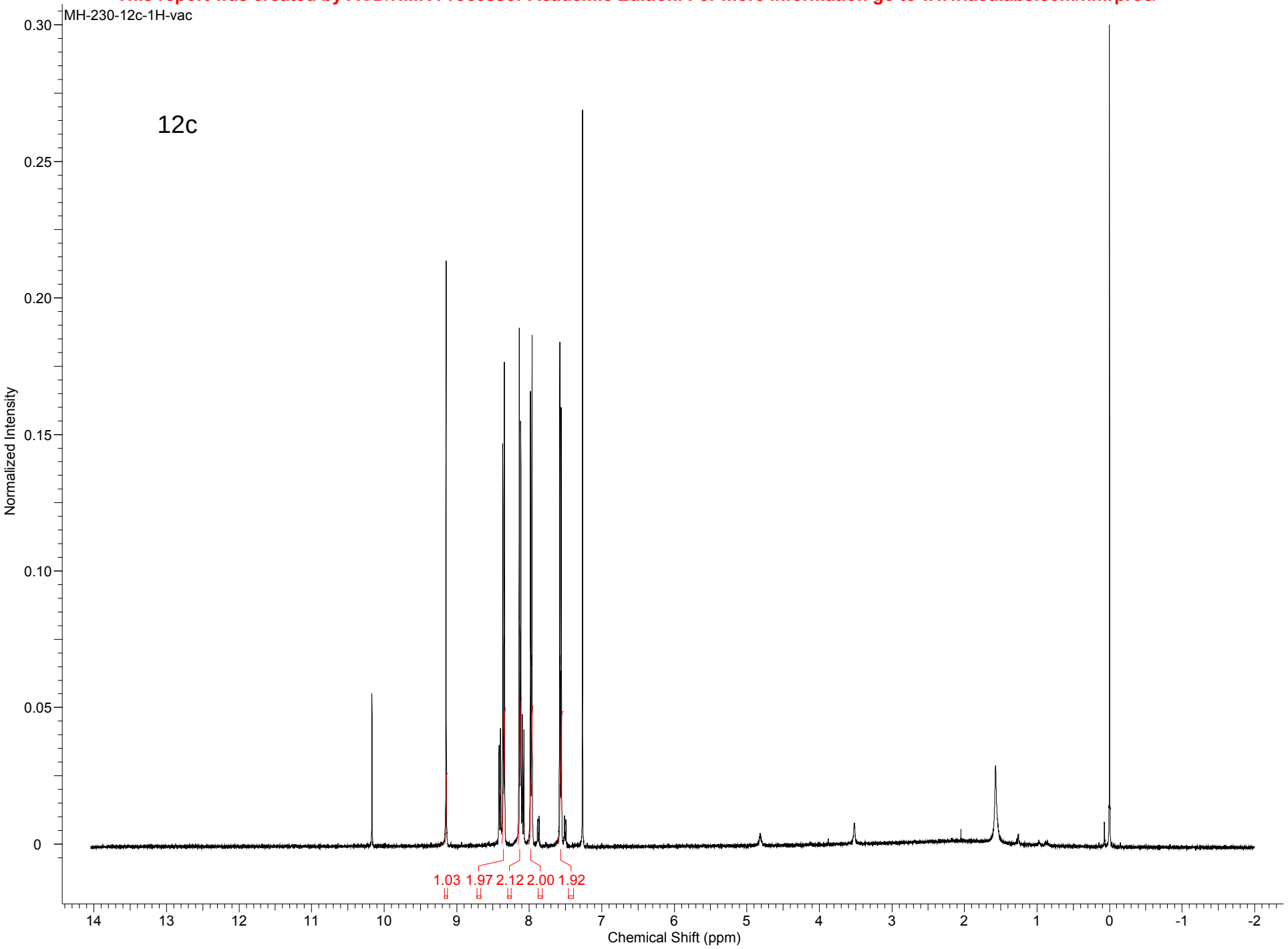

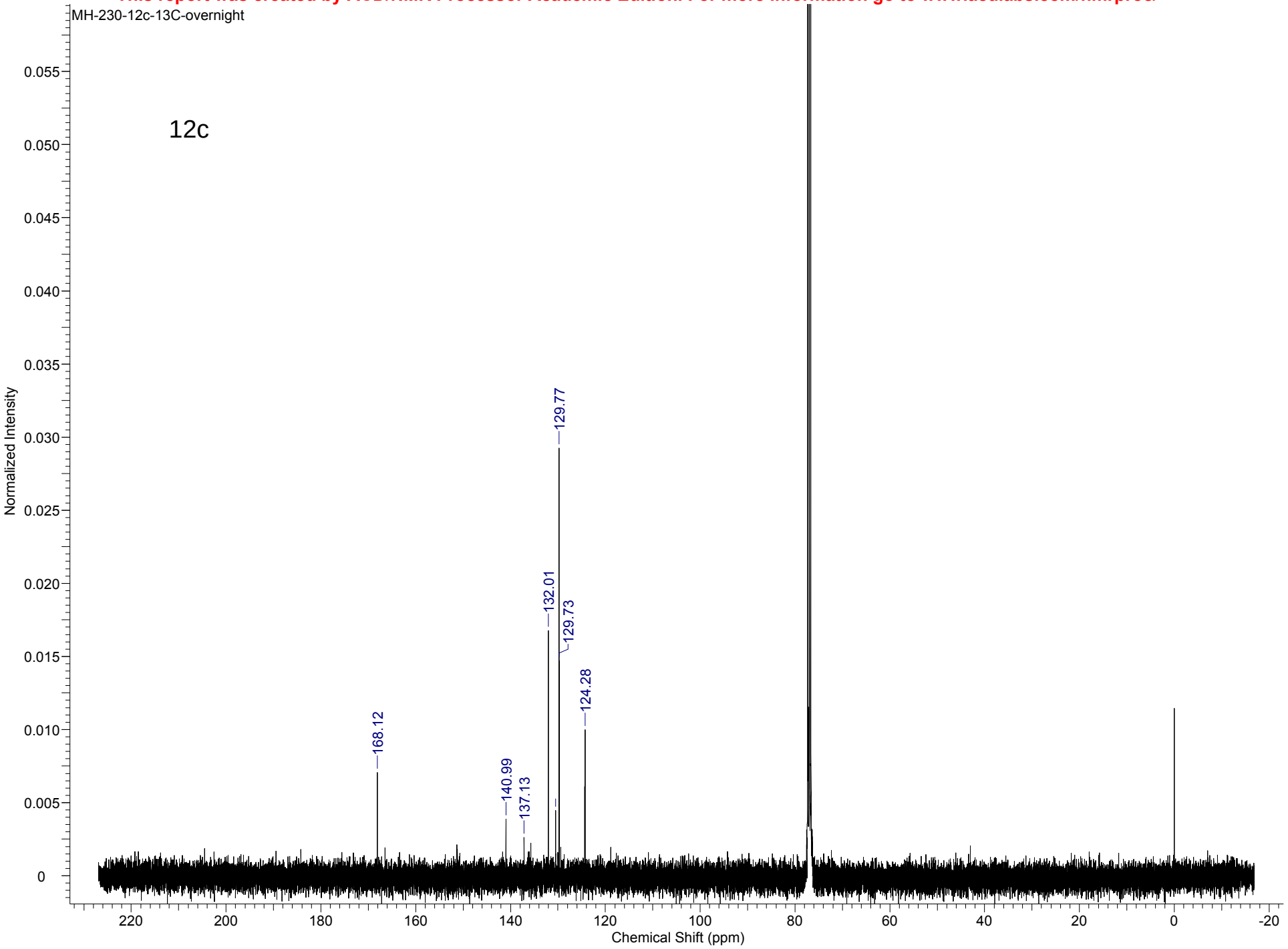

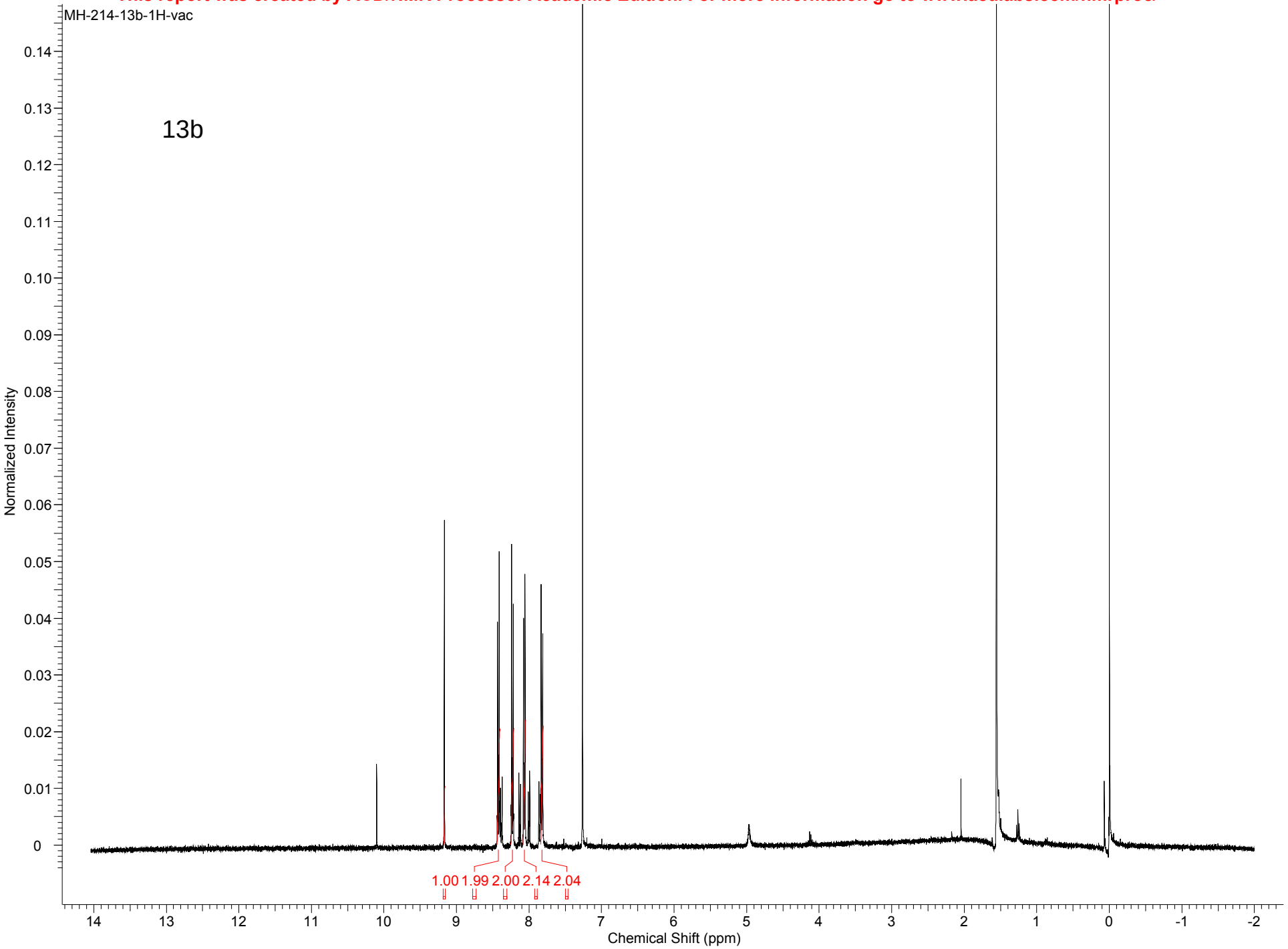

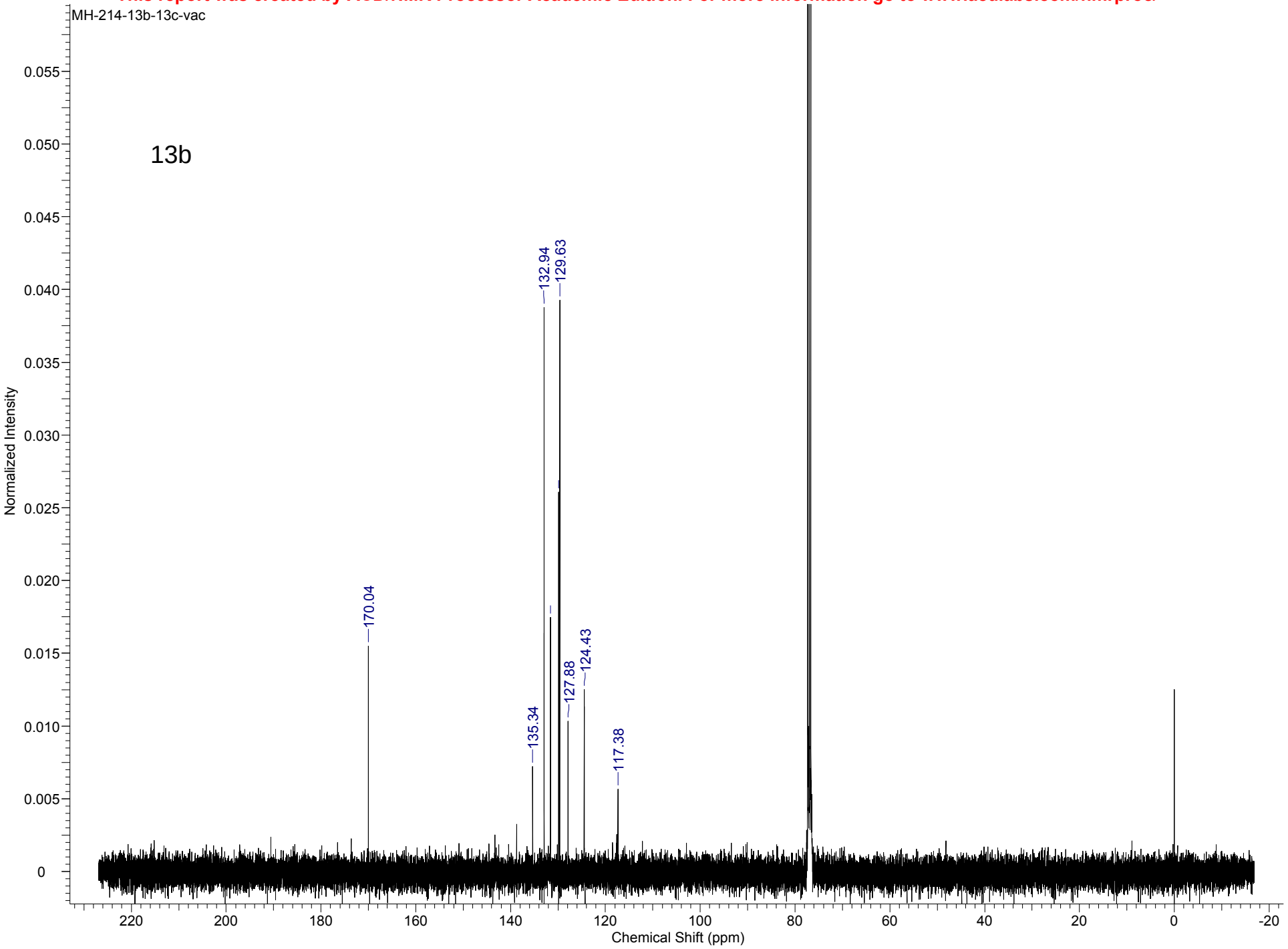

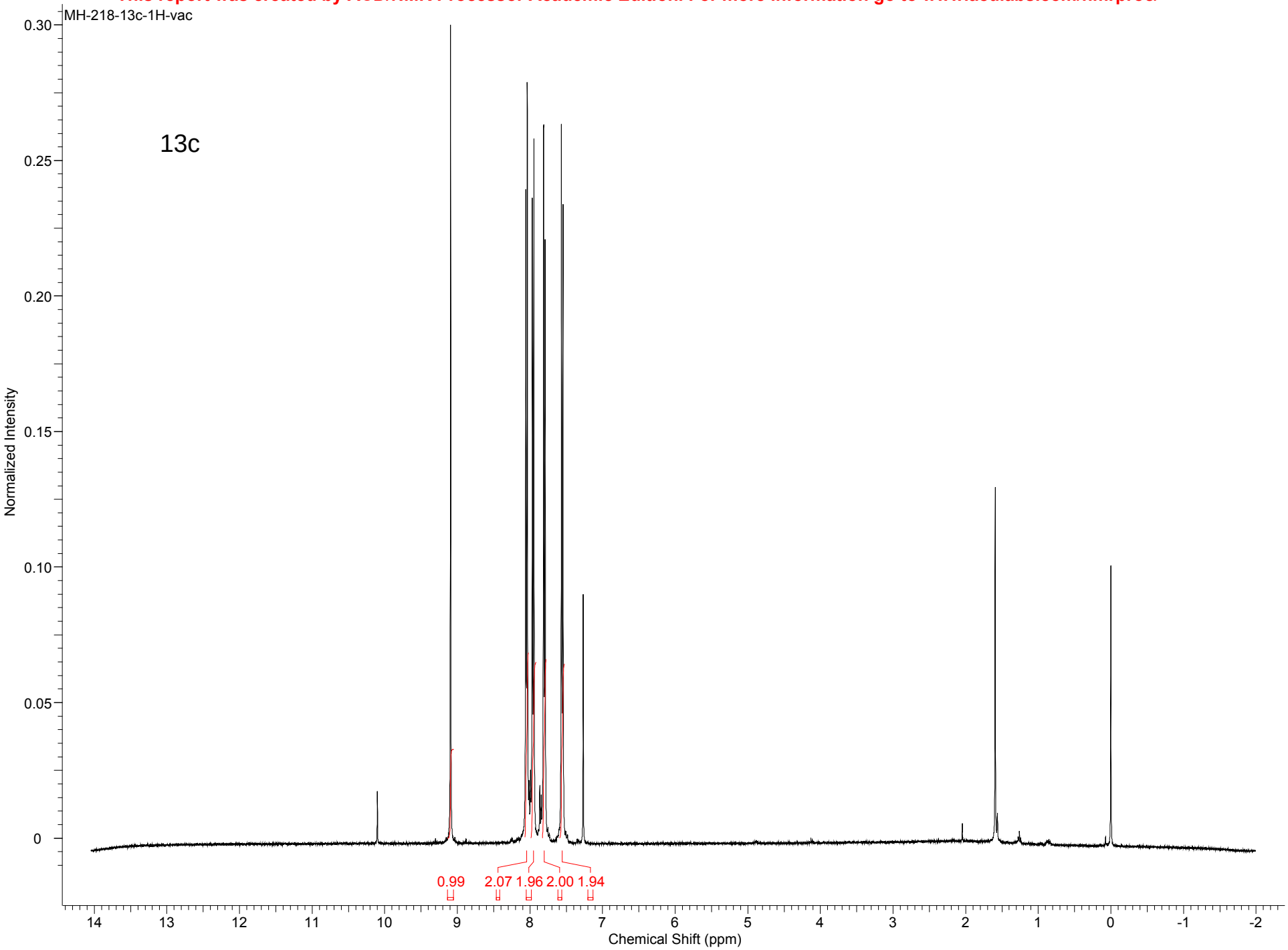

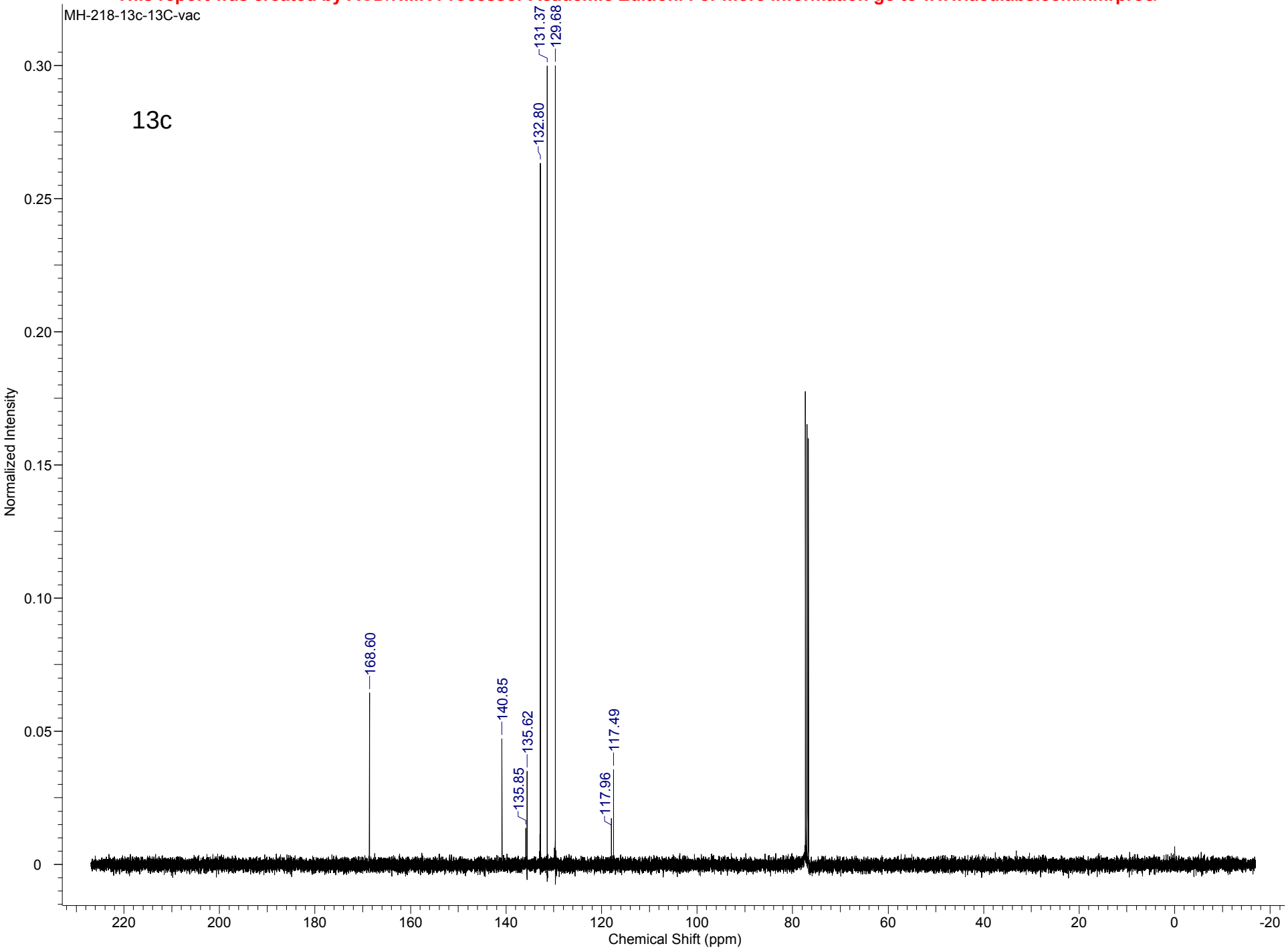

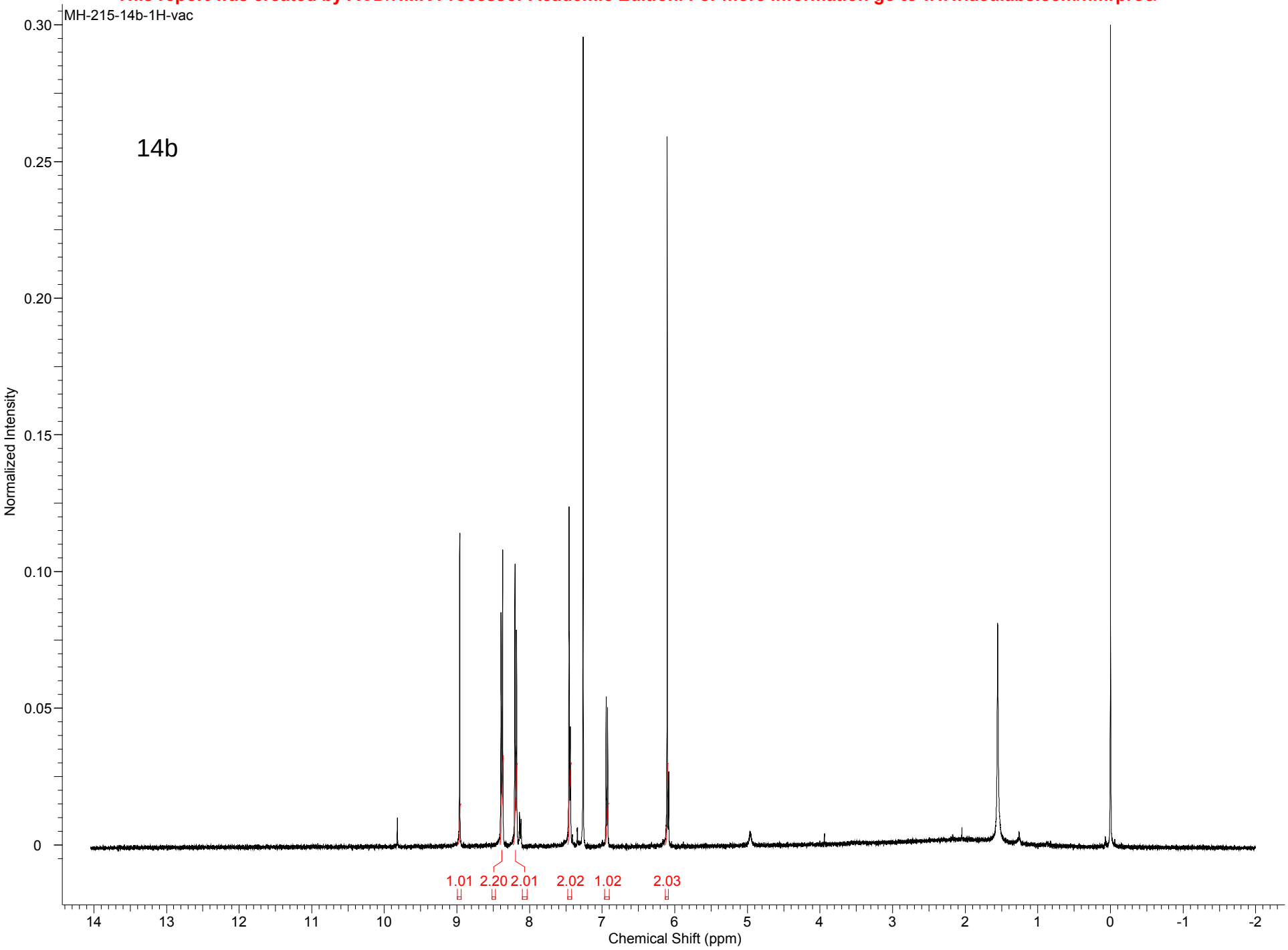

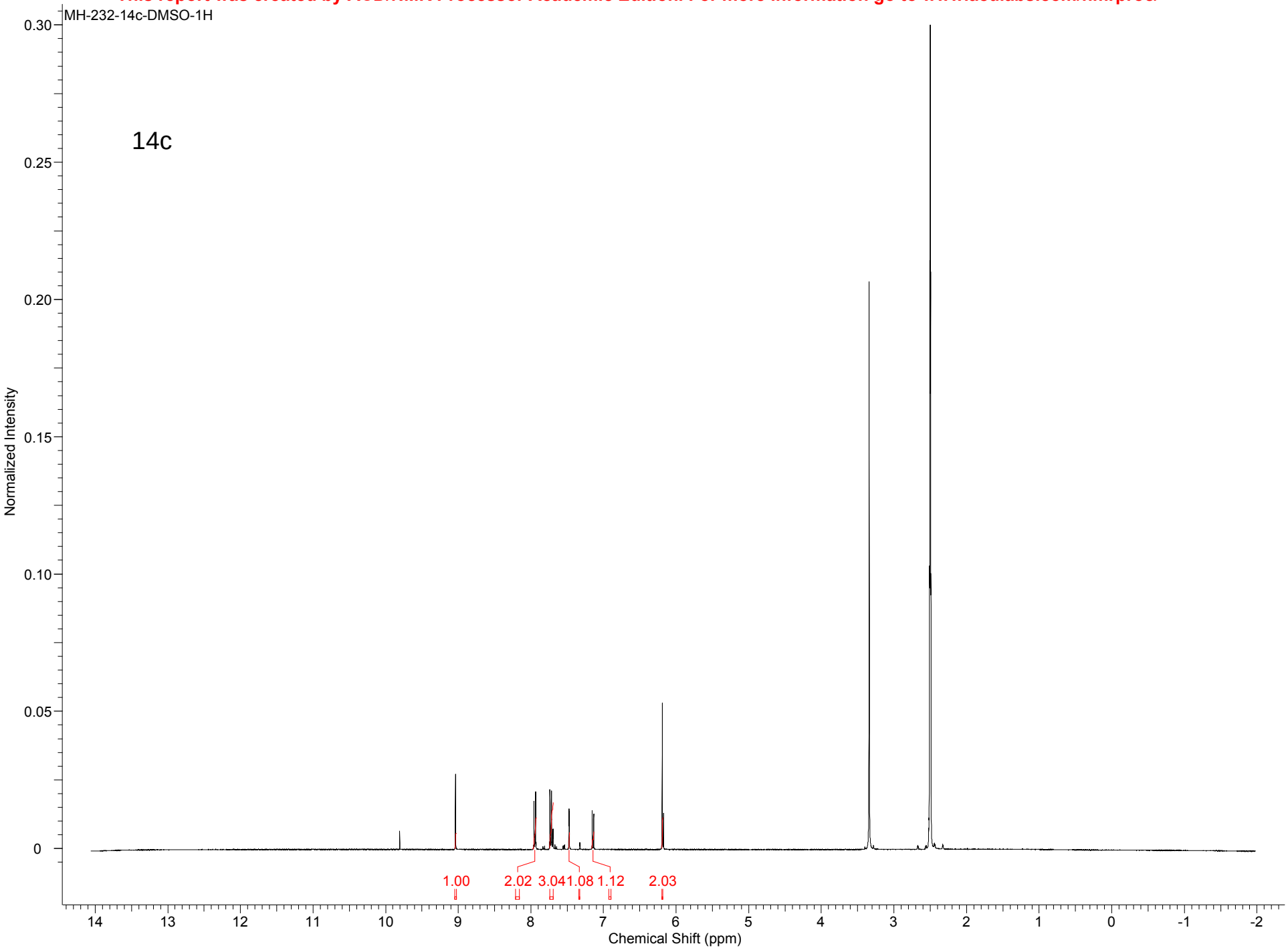

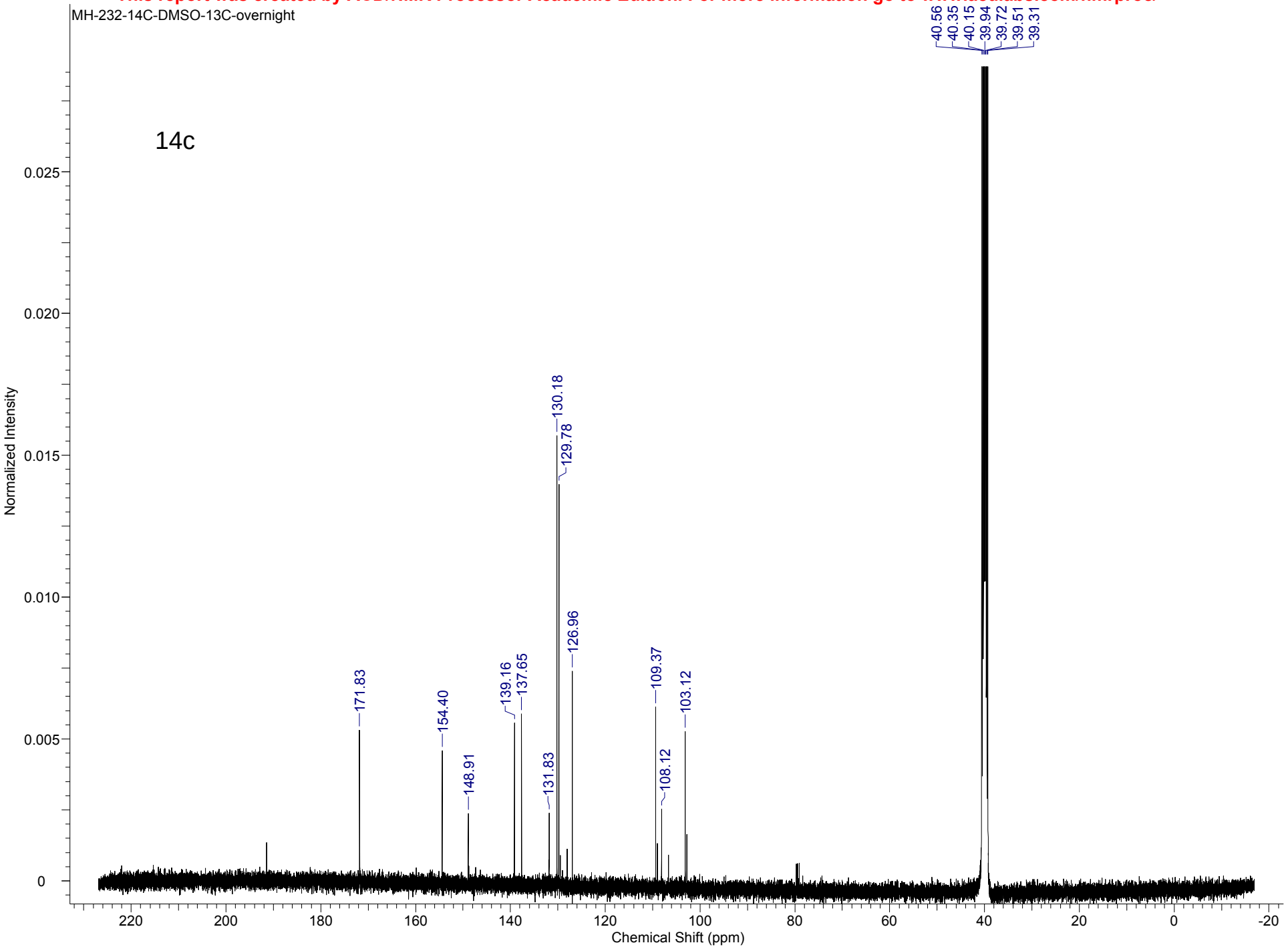

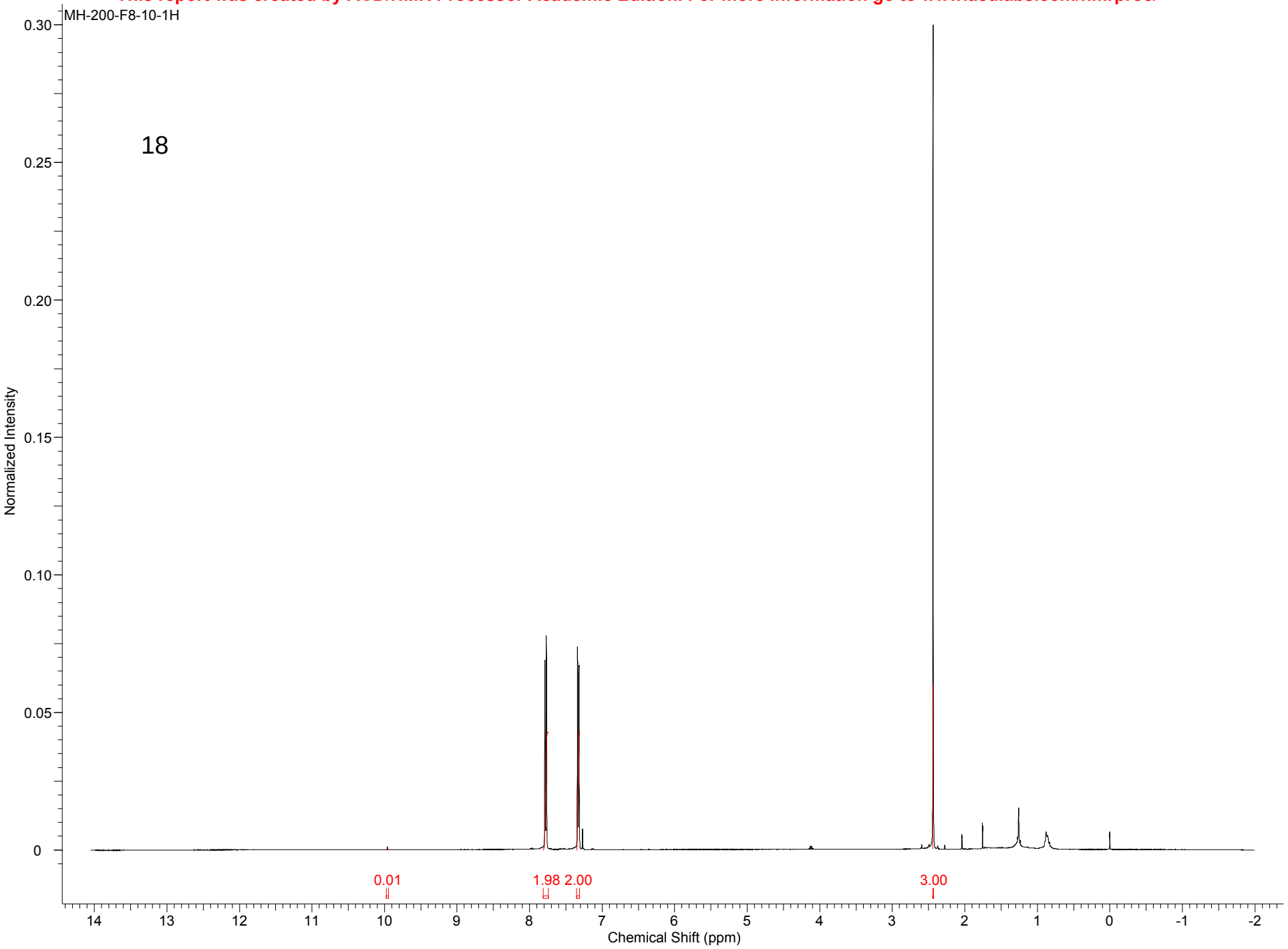

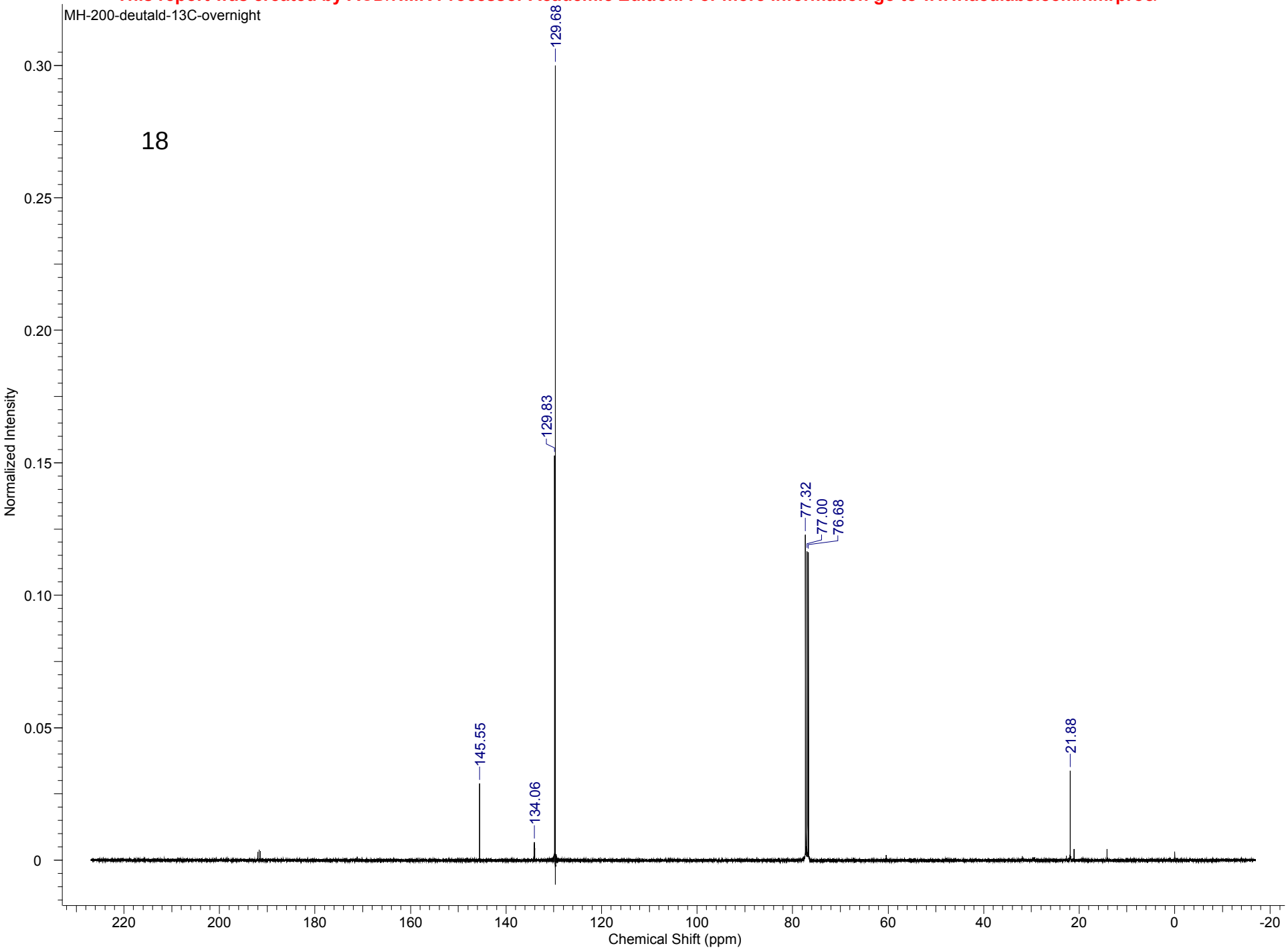

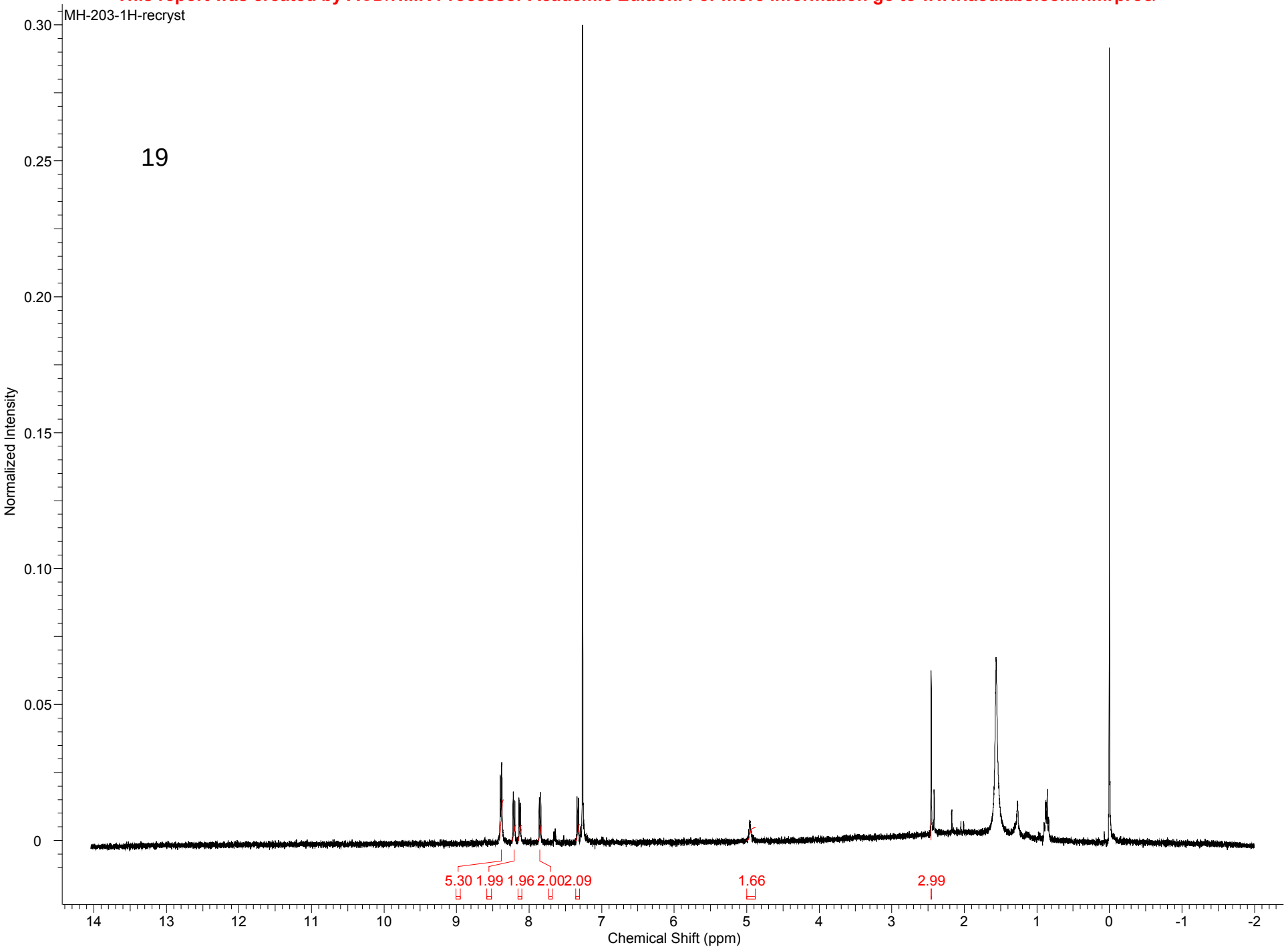

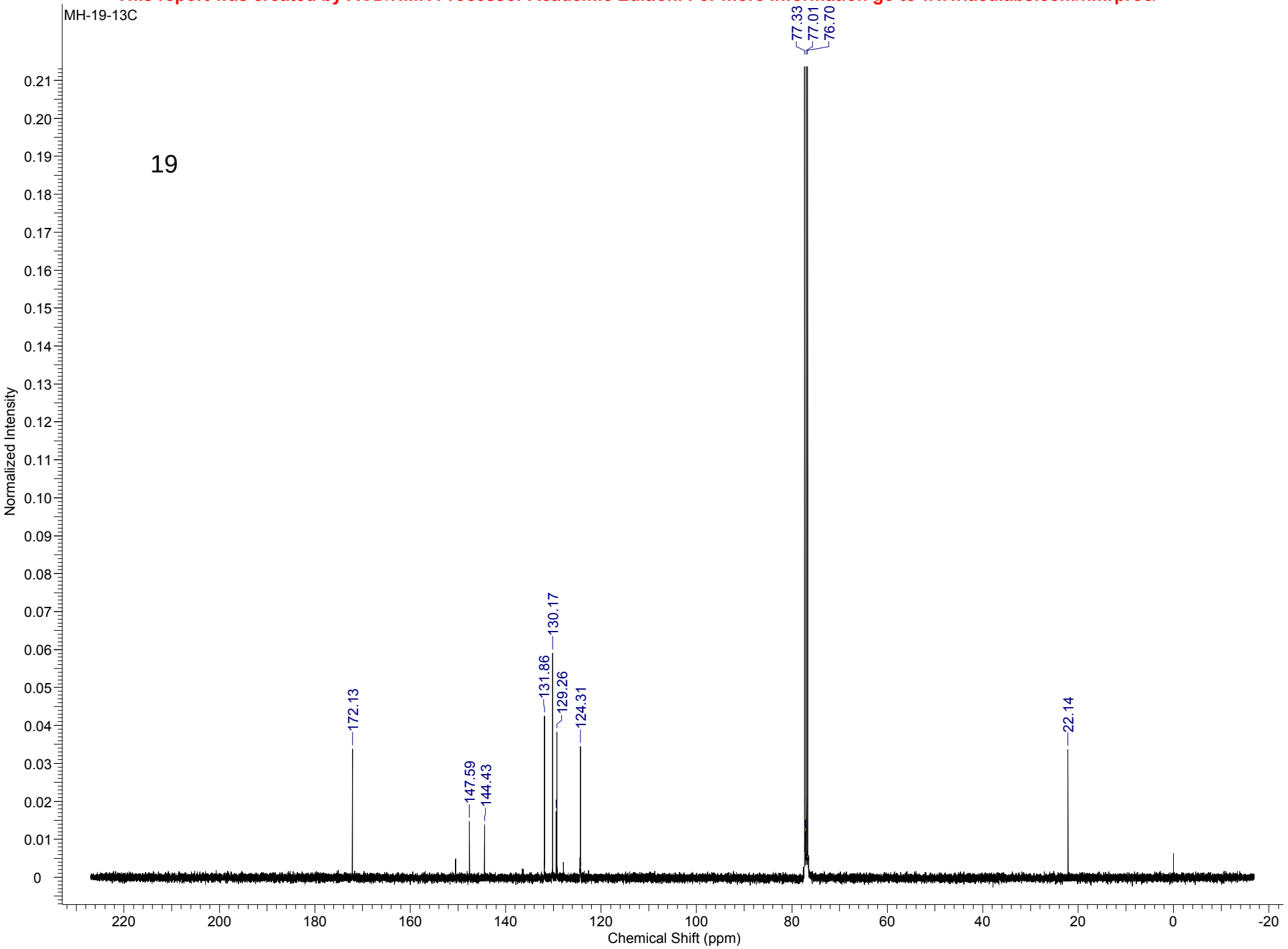

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