

Figure S1: (A) Total ion current chromatogram of isocratically eluted proteins. (B) Extracted ion chromatogram of the protamine RRRRRRRRRRRRRRRRRRRRGRK* (where * = di-aminopropylation). Proteins that did not retain on column were primarily detected from minutes 3-4. (C) Extracted ion chromatogram of the protamine RRRRRRKSRRRRRRRRRRRSKGSRSPRRR*. Proteins that were washed off the column started eluting at ~10 minutes.

Supplementary Fig 1. D'Ippolito et al. 2019

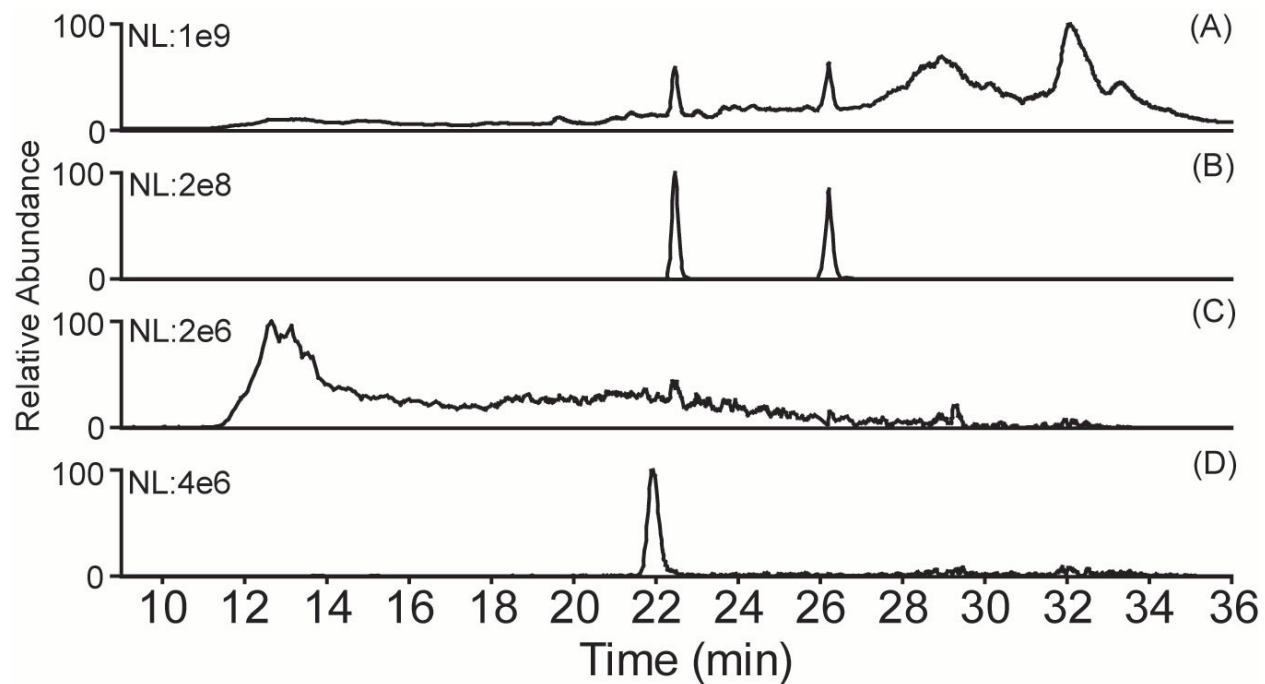


Figure S2: (A) Total ion chromatogram of the gradient elution of proteins. (B) The extracted ion chromatogram of 100 fmol of vasoactive intestinal peptide and angiotensin I. These peptides are used as internal standards. (C) The extracted ion chromatogram of the protamine RRRRRRRHGRKGKKPKRHHRRRRRRRRRGRKKAHRGRKKKRGGRKGGRRKGRKRRHHRRRR* (where * = diaminopropylation). The protamines detected eluted from the column from ~11 minutes to ~22 minutes with the maximum height at ~13 minutes. (D) The extracted ion chromatogram of Ribosomal Protein S30. Unlike the protamines, these proteins eluted as a defined peak shape.

Supplementary Fig 2. D'Ippolito et al. 2019

Supplemental Table 1: Additional Mass Spectrometry Information for Identified Protamines.
 The lower portion contain protamines identified in low abundance. Amino acid in brackets do not have a corresponding fragment ion to confirm sequence.

Protein Name	NCBI Accession Number	Sequence	Modifications	M+H	Observed m/z	Precursor Charge	HCD MS ³ Taken?	Notes
PL-1 (MpPRM)	BAU71552	RRRRRRKSRRRRRRRRRSKGSRSRRR*	Di-aminopropanelation (C-terminus)	3955.51	495.3208	8	No	
PL-1 (MpPRM)	BAU71552	RRRRRRKSRRRRRRRRRSKGSRSRRR*	Di-aminopropanelation (C-terminus)	3799.41	543.6367	7	No	
PL-1 (MpPRM)	BAU71552	RRRRRRHHKKGKKKGRRRRRKRRGRR*	Di-aminopropanelation (C-terminus)	3942.56	438.9591	9	Yes	
PL-1 (MpPRM)	BAU71552	RRRRRRRRRRRRRSRRRRGK*	Di-aminopropanelation (C-terminus)	3313.16	553.0345	6	No	
PL-3	PTQ32223	RRRRRRHGRKPKRHRRRRRRRRGRKKAHRGKKKGGRRKGRHRRRRR*	Di-aminopropanelation (C-terminus)	7466.75	575.2967	13	No	
PL-2	PTQ35141	RSTSRSRSGRRRRRRRRRGRRRRGRK*	Di-aminopropanelation (C-terminus)	4082.51	584.0801	7	No	
PL-1 (MpPRM)	BAU71552	RRRRRRKSRRRRRRRRR[SKGSH]SPRR*	Di-aminopropanelation (C-terminus)	3780.36	540.9152	7	No	Very poor C-terminal coverage limits the deduction of sequence. The residues within the brackets are unknown and may contain different amino acids
PL-1 (MpPRM)	BAU71552	RRRRRRKSRRRR[RRTVDRRRRRRRRR]		4139.33	690.7283	6		
PL-1 (MpPRM)	BAU71552	RRRRRRKSRRRRRRRRRSKGSRSRRRHSSR		4366.65	546.7151	8		
PL-3	PTQ32223	RRRRRRHGRKPKRHRRRRRRRRGRKKAHRGKKKGGRRKGRHRRRRR[SKGSH]		7819.01	602.4605	13		

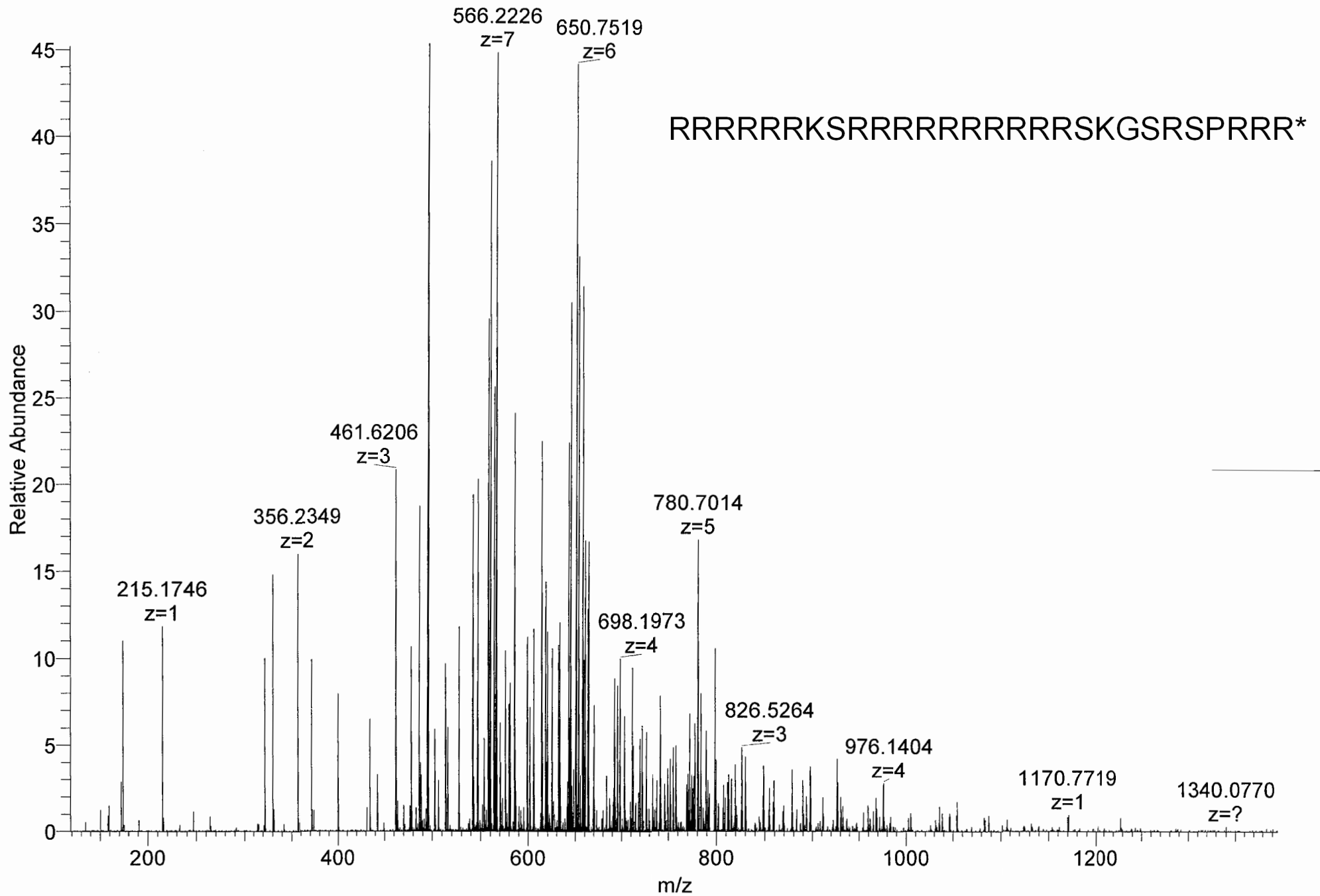
Annotated ETD MS² Spectra

This document contains the spectra obtained from the analysis of *Marchantia polymorpha* protamines. Each observed protamine in this document contains a page with the spectrum on a single axis, multiple pages for the manual annotation, and a page containing theoretical fragment masses.

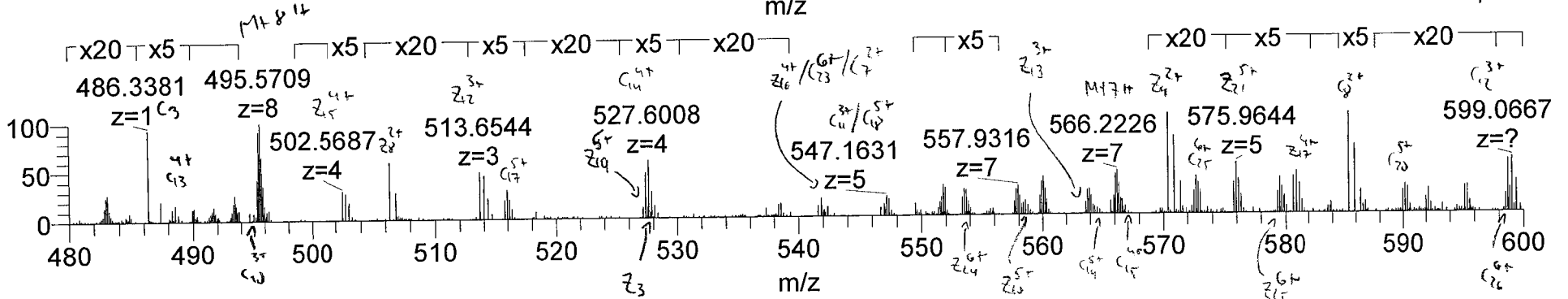
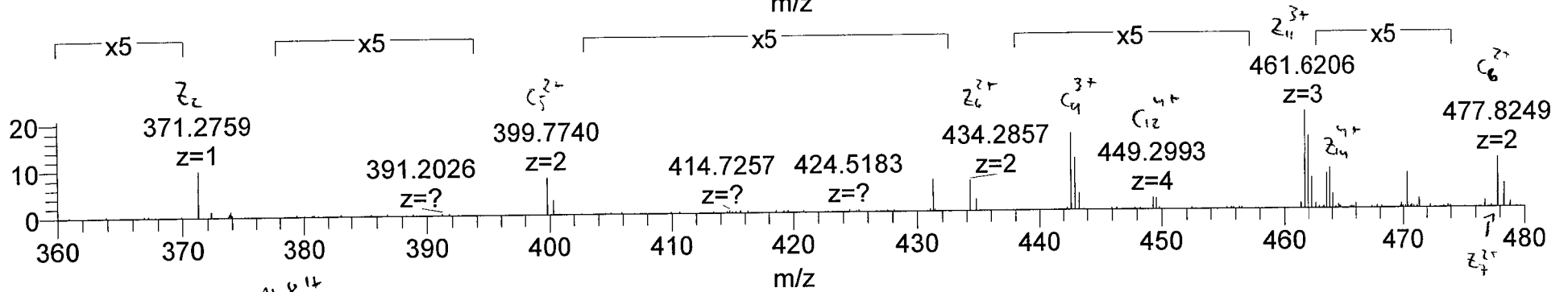
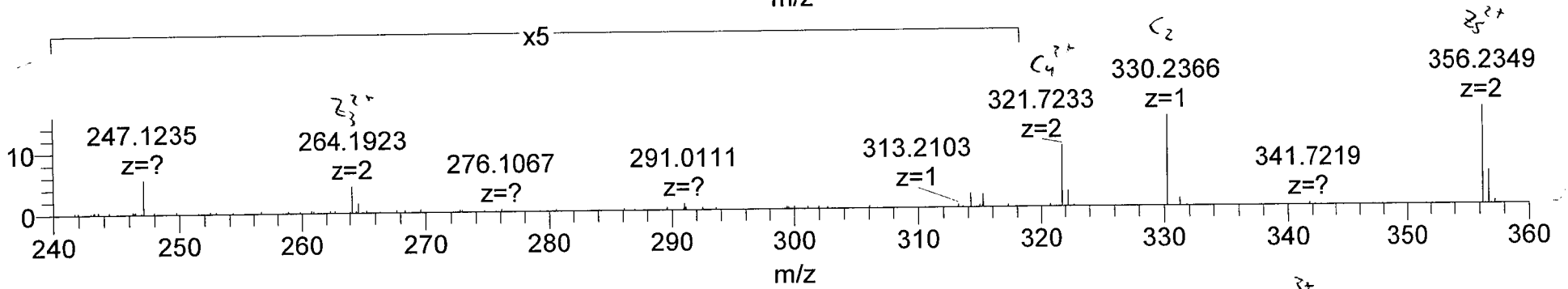
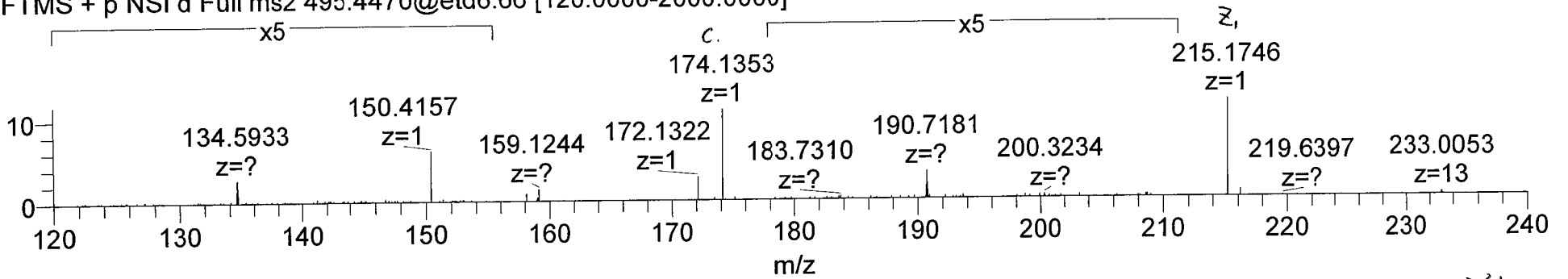
Table of Contents

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13-16	RRRRRRRHHKKGKKKGRRRRRRKRRRGRR*
17-22	RRRRRRRRRRRRRRRRRSRRRRGRK*
23-30	RRRRRRRHGRKGKKPKRHRRRRRRRRRRGRRKAHRGRKKKRGGRKGGRRKGRHRRRR*
31-35	RSTSRSRGRRRRRRRRHRRRRGRRRRGRK*
36-38	RRRRRRKSRRRRRRRRRR[SKGSH]SPRR*
39-41	RRRRRRKSRRRR[RRTVDRRRRRRRRRRR]
42-45	RRRRRRKSRRRRRRRRRRSKGSRSPPRRHSSR
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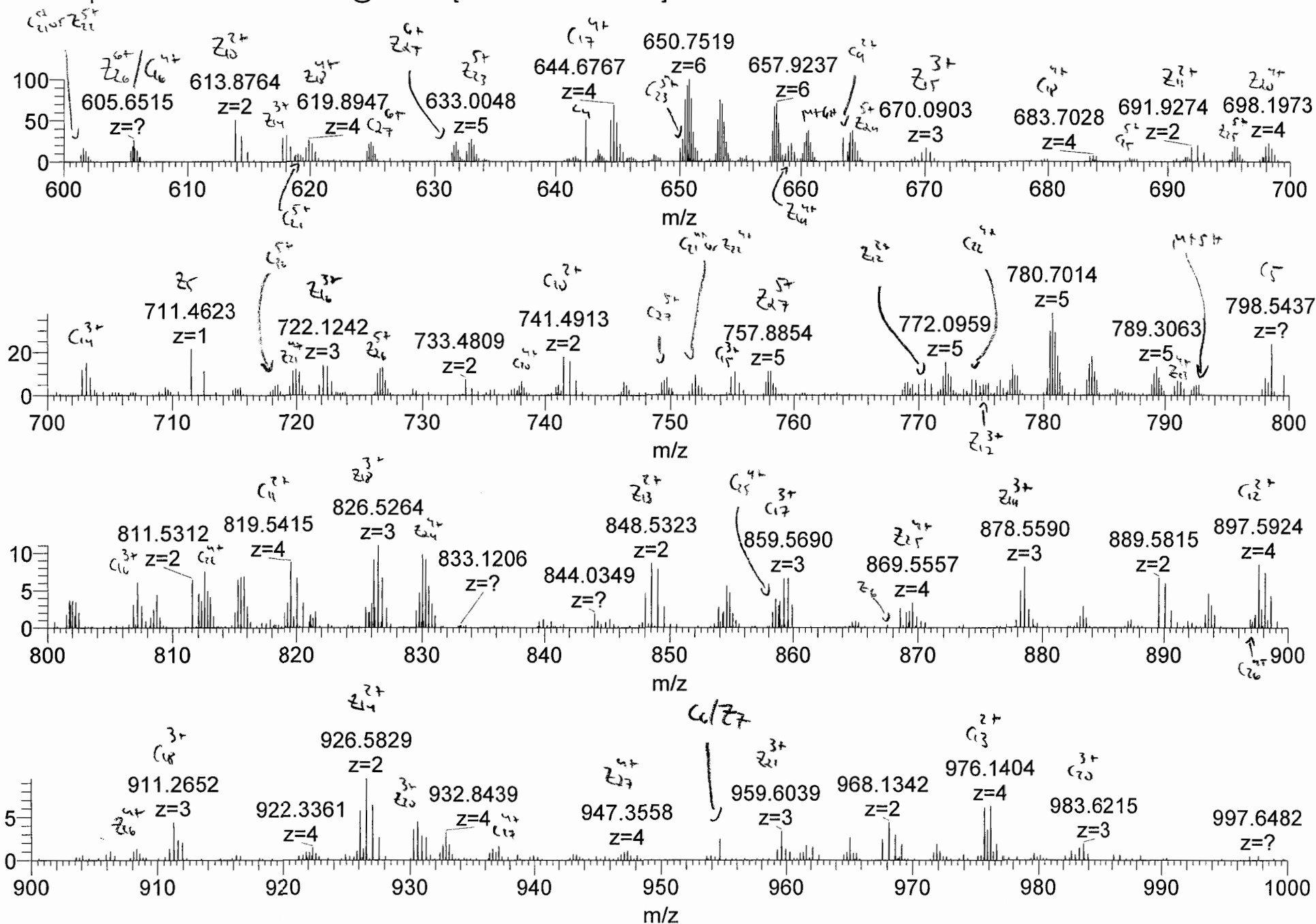


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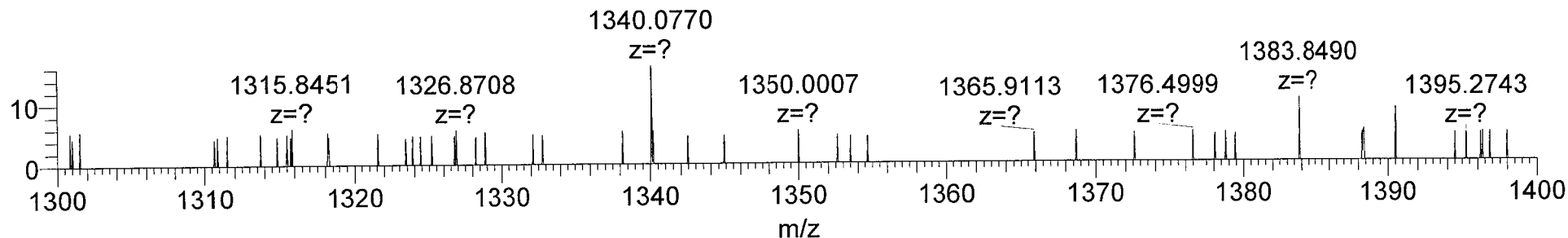
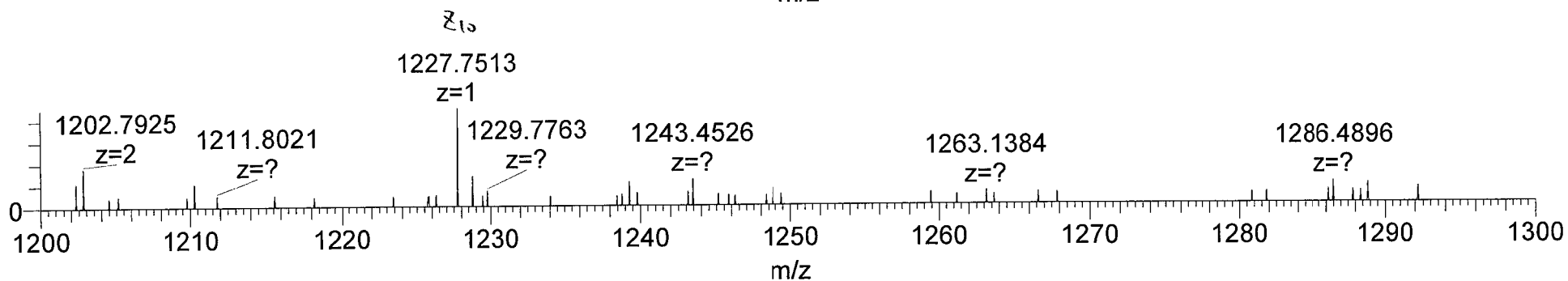
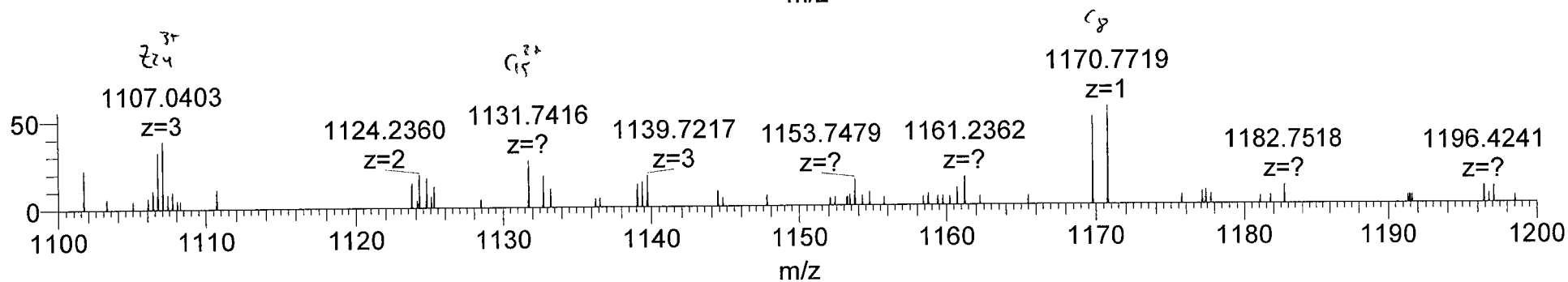
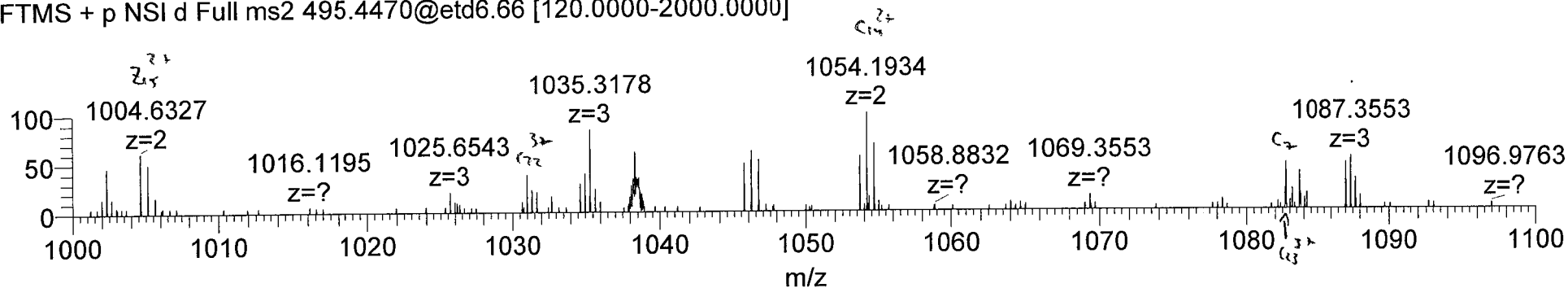


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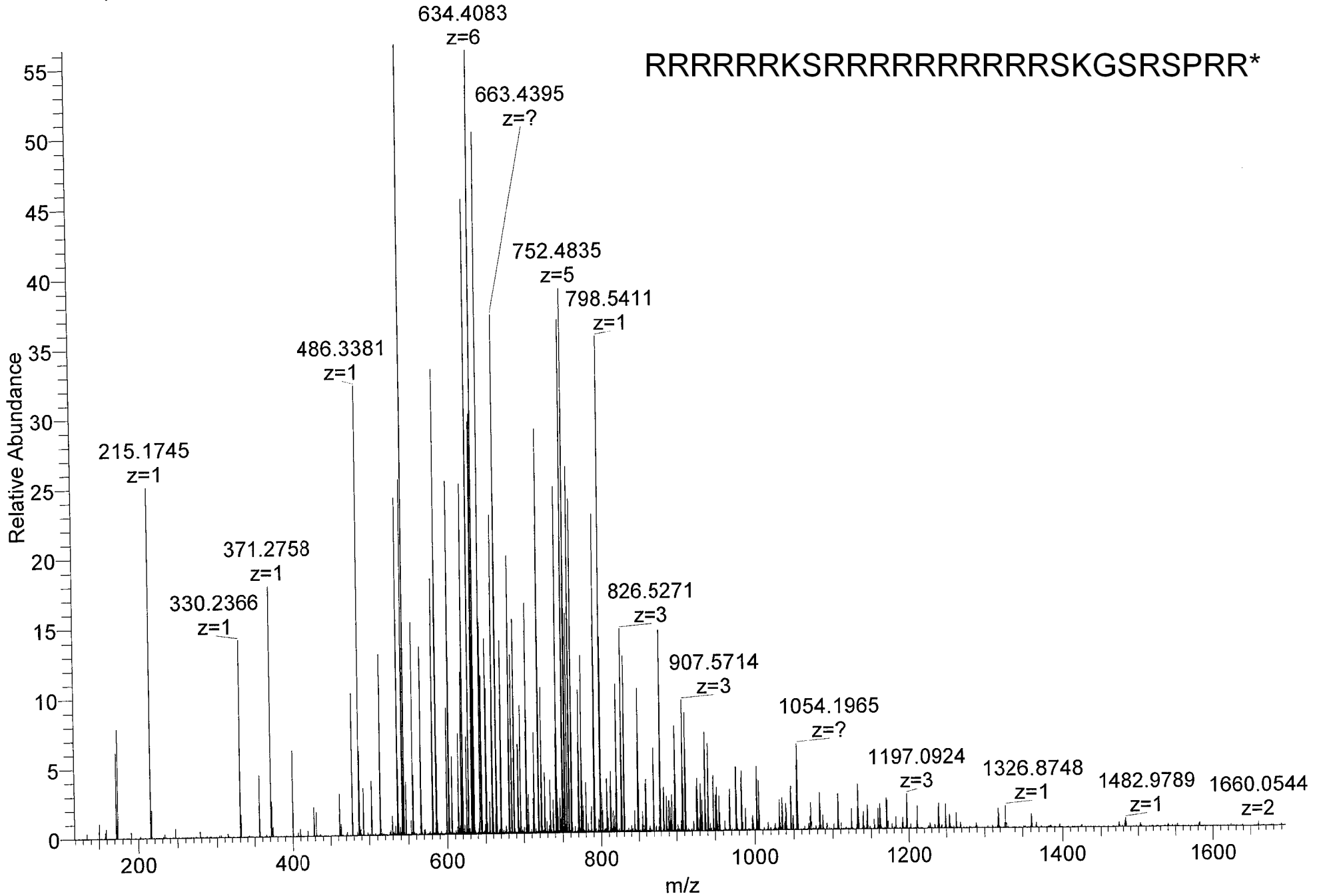
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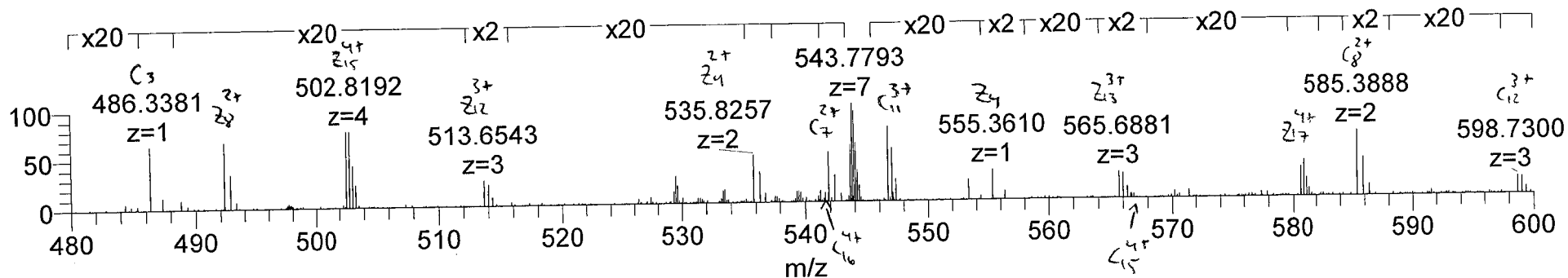
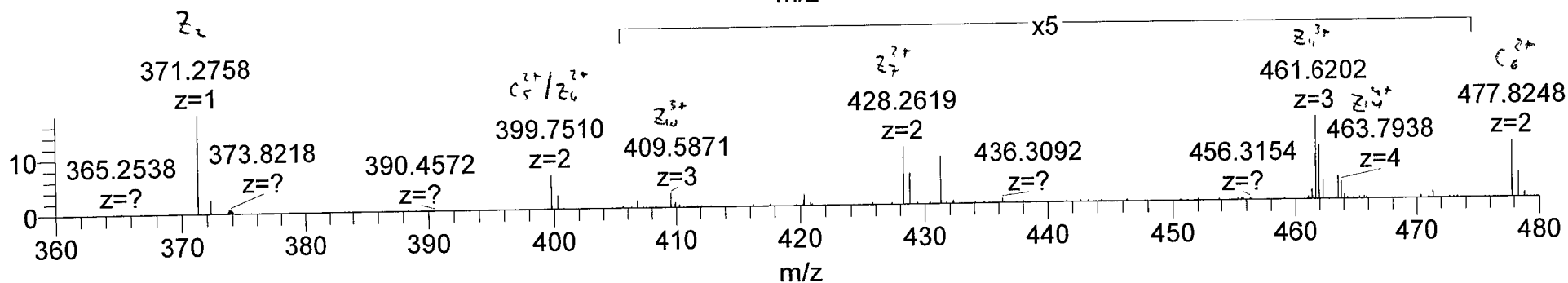
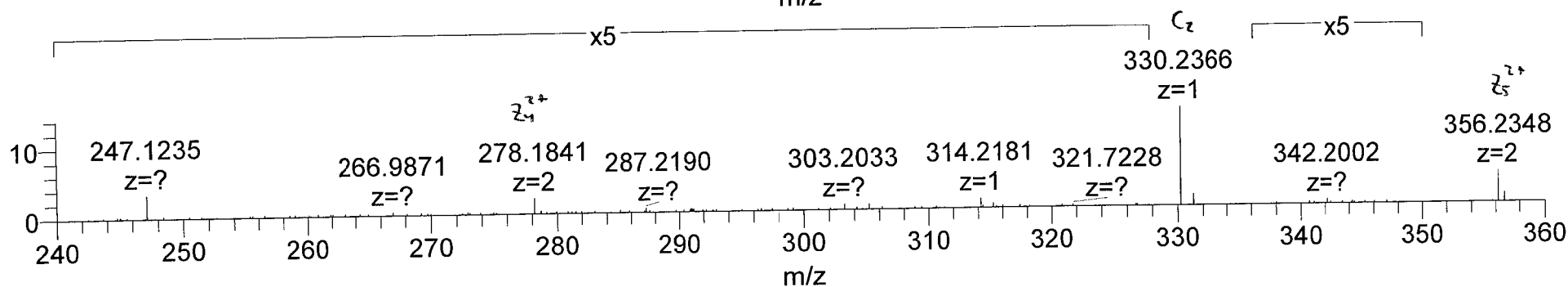
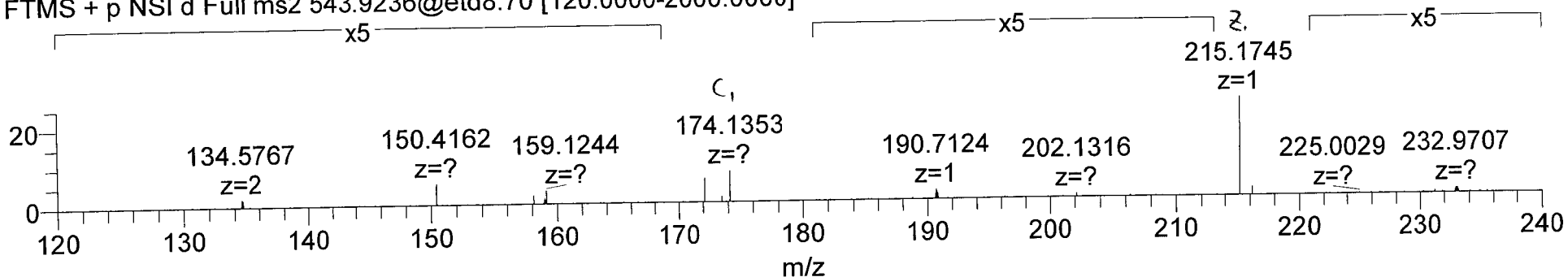
Fragment Masses

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624.5639	749.2753	936.3423	1248.1206	1871.6772	3742.3472	27 R	371.2753	186.1413	124.4300	93.5743	75.0609	62.7186
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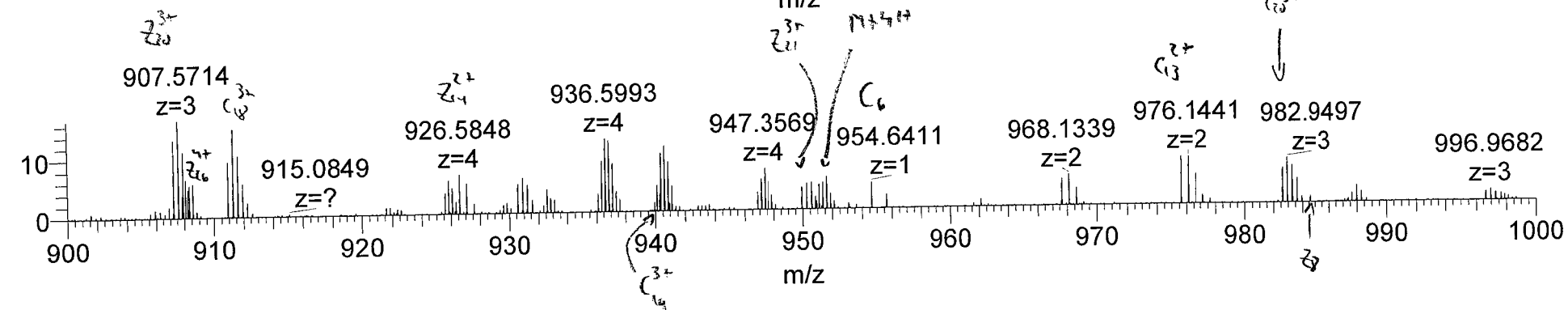
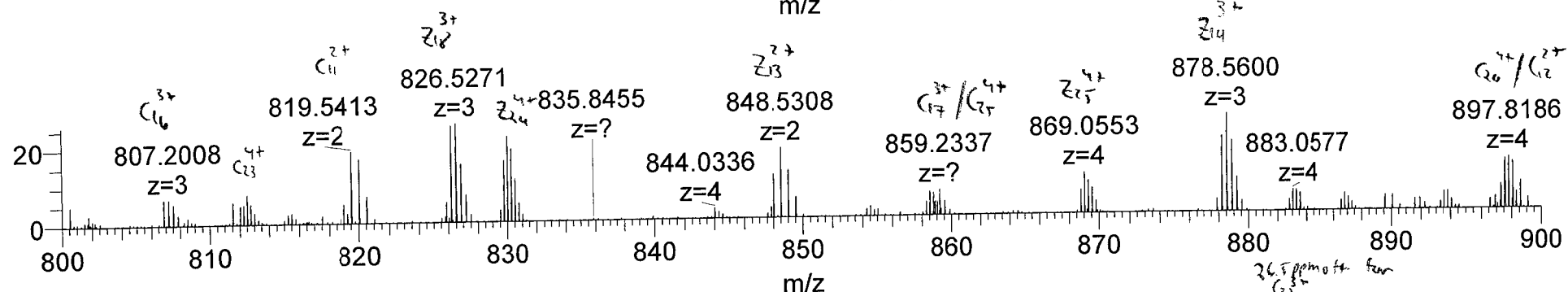
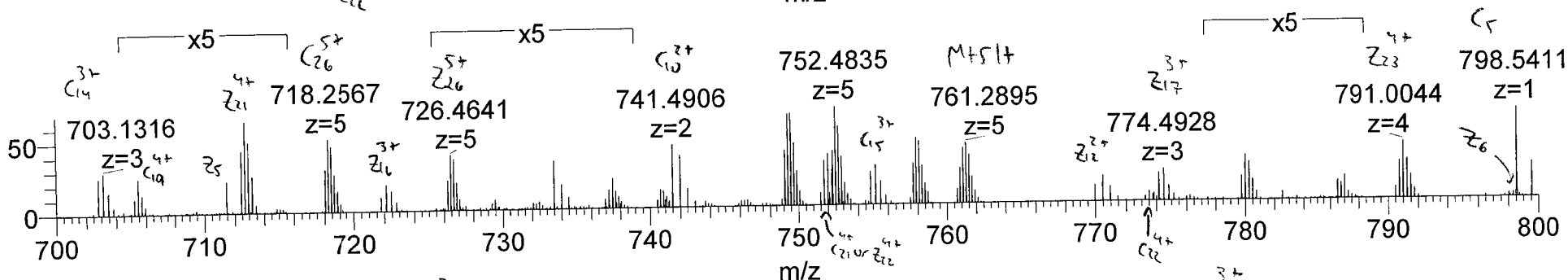
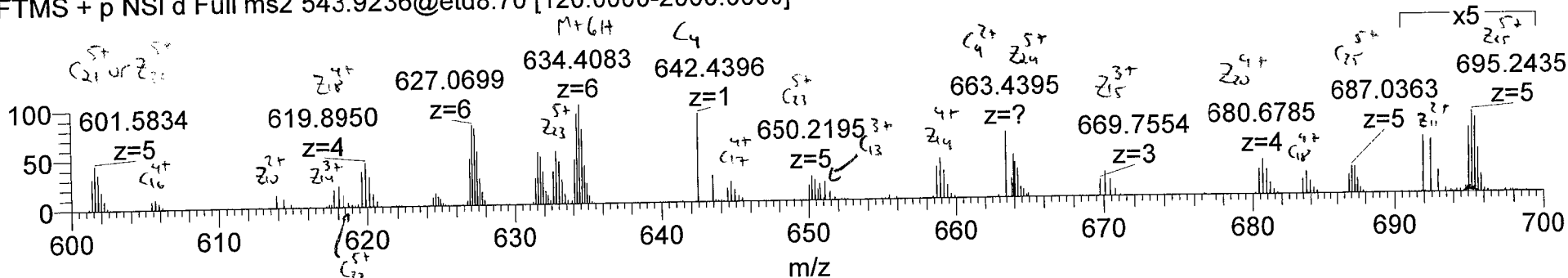
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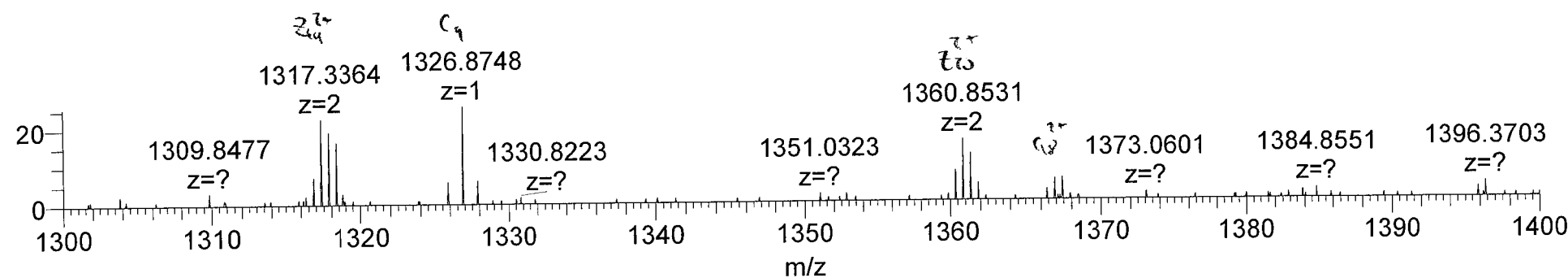
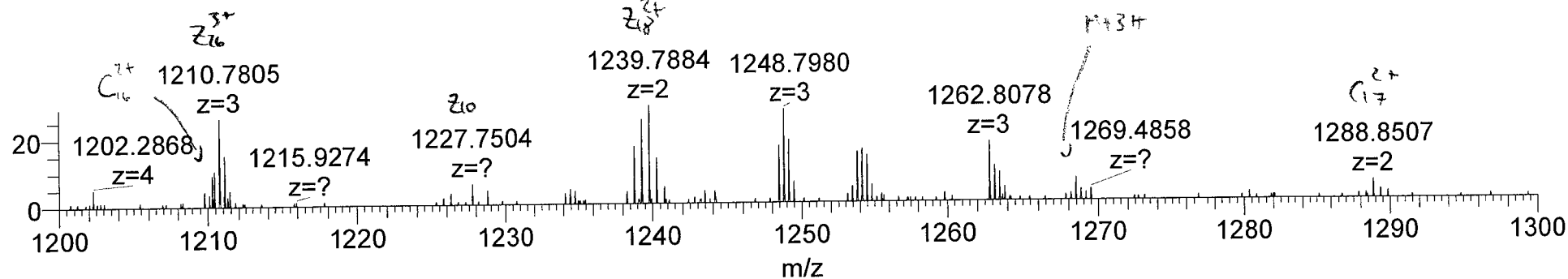
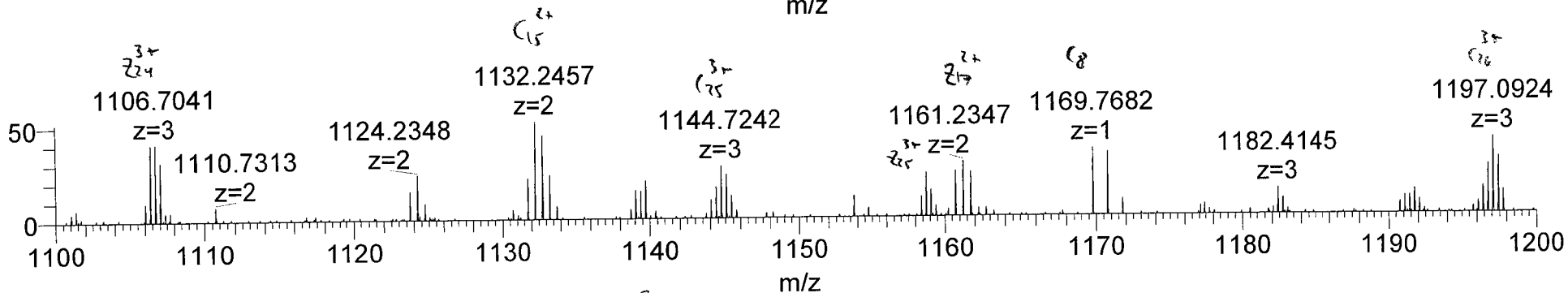
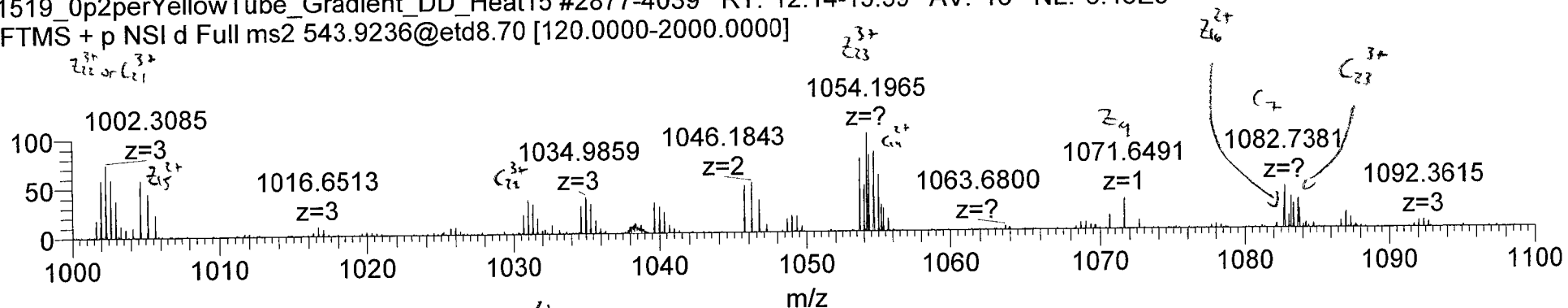
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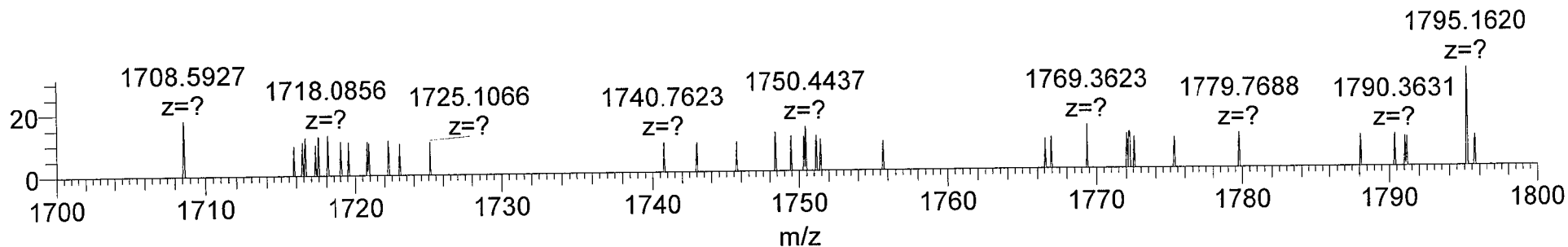
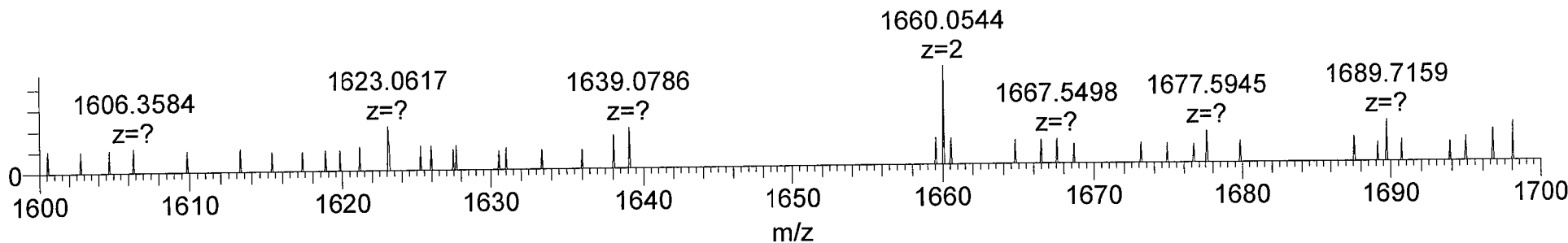
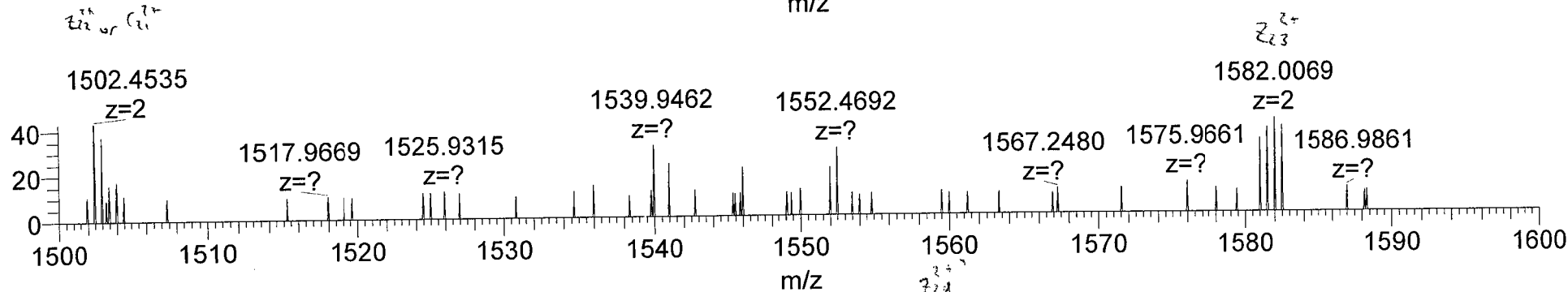
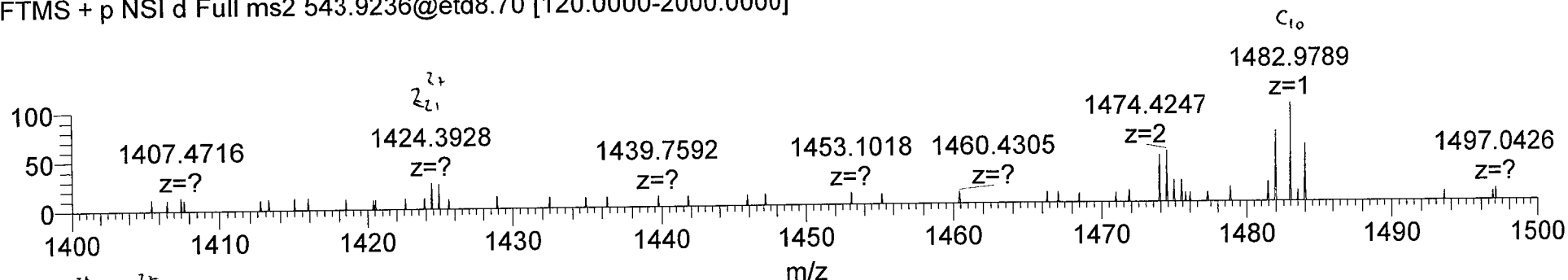
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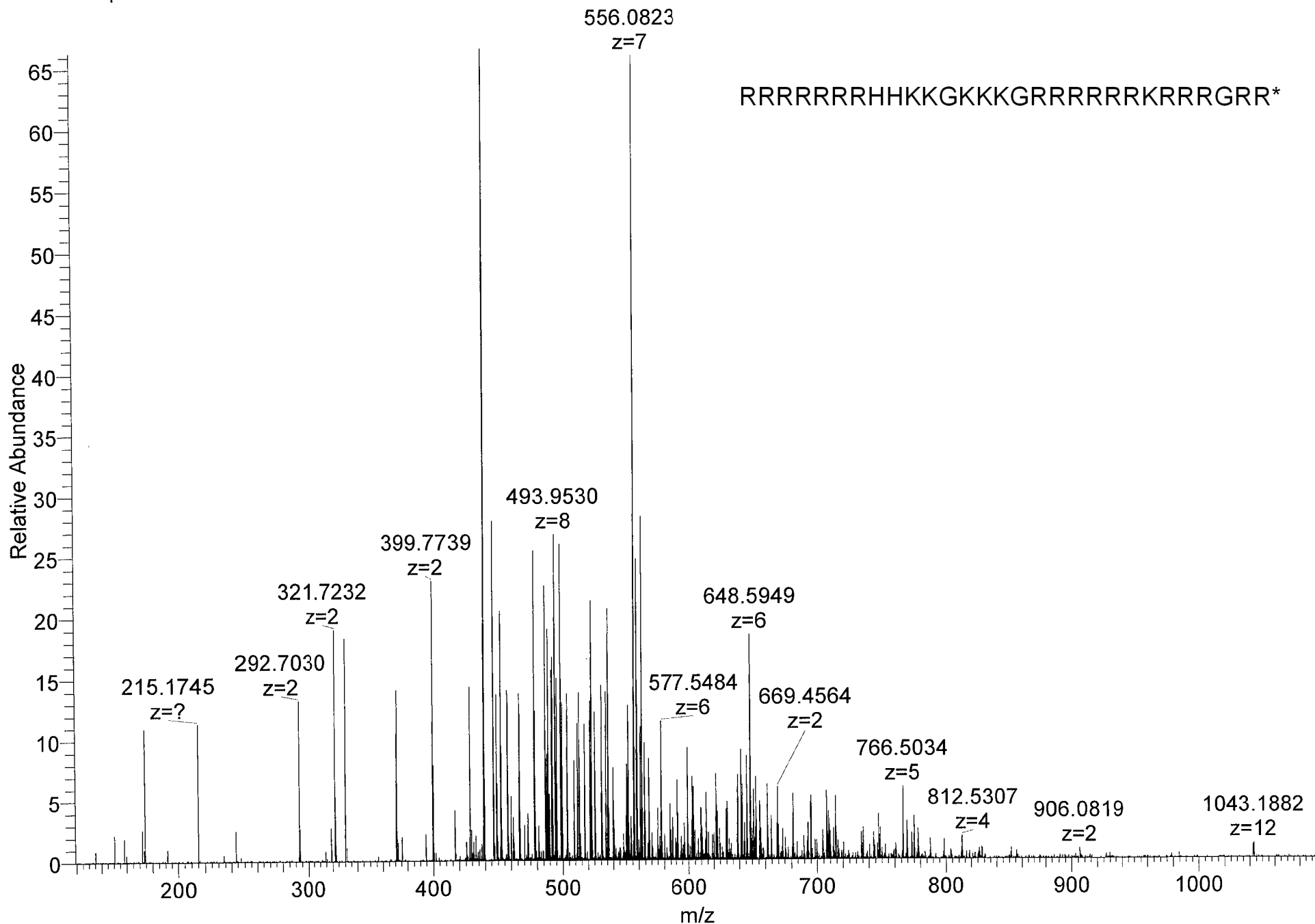


Fragment Masses

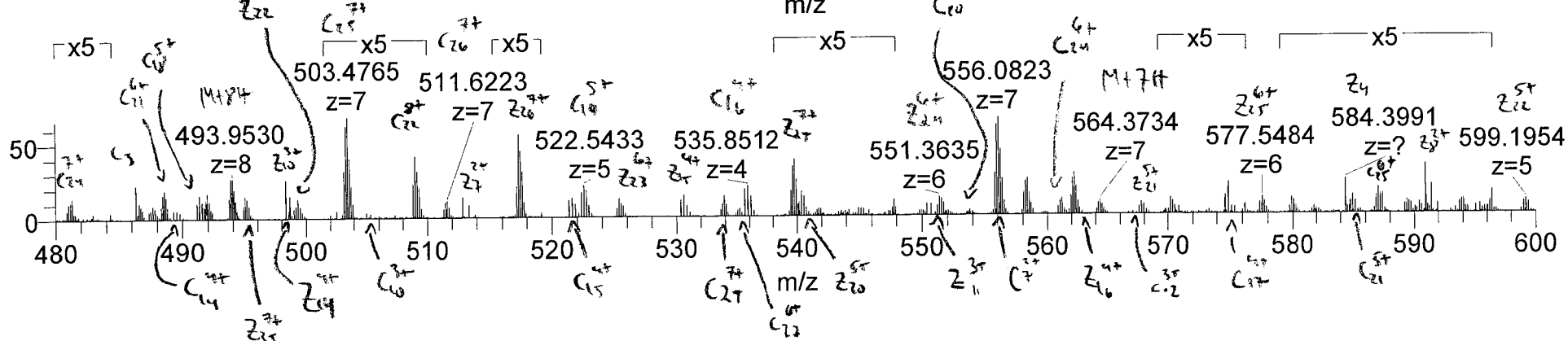
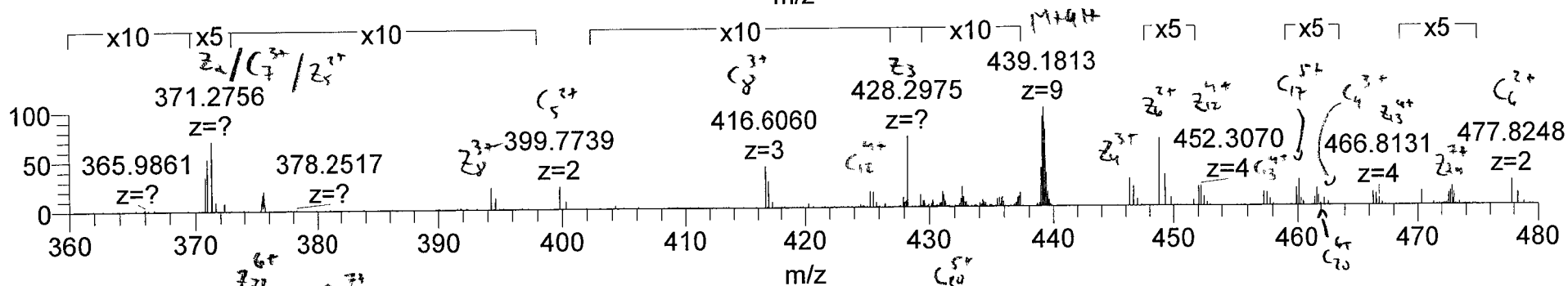
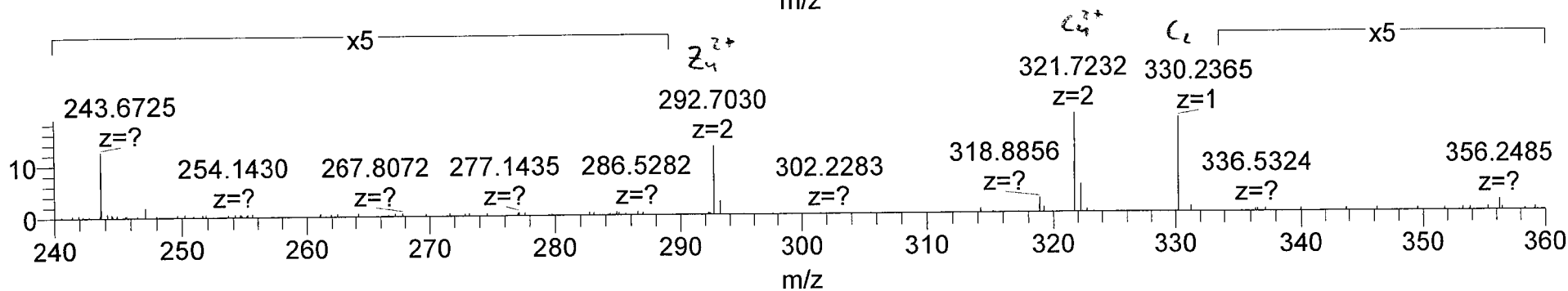
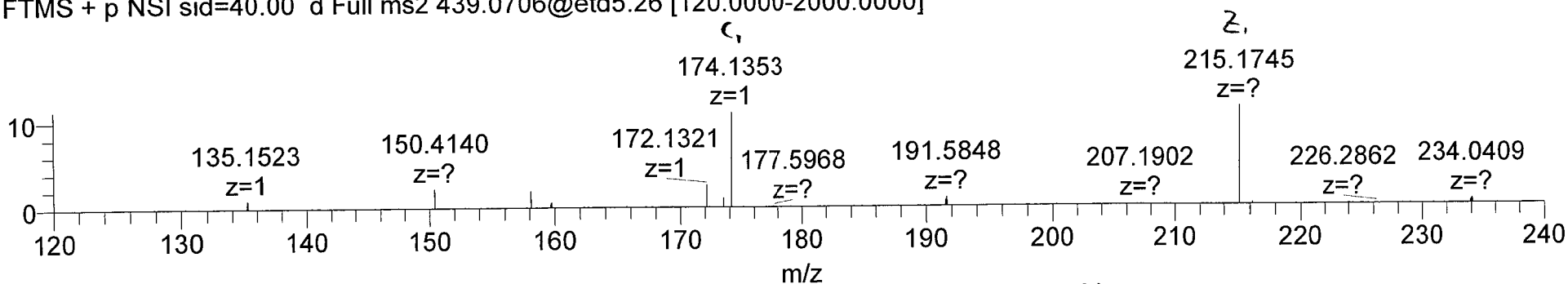
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81.8956	98.0733	122.3397	162.7839	243.6722	486.3372	3	3471.1843	1736.0958	1157.7329	868.5515	695.0427	579.3701
107.9124	129.2935	161.3650	214.8176	321.7228	642.4383	4	3315.0832	1658.0452	1105.6992	829.5262	663.8225	553.3533
133.9293	160.5137	200.3903	266.8513	399.7733	798.5394	5	3158.9821	1579.9947	1053.6655	790.5010	632.6022	527.3364
159.9461	191.7339	239.4156	318.8850	477.8239	954.8405	6	3002.8809	1501.9441	1001.6318	751.4757	601.3820	501.3196
181.2953	217.3529	271.4393	361.5833	541.8714	1082.7355	7	2846.7798	1423.8936	949.5981	712.4504	570.1618	475.3027
195.8006	234.7593	293.1973	390.5940	585.3874	1169.7675	8	2718.6849	1359.8461	906.8998	680.4267	544.5428	453.9535
221.8175	265.9795	332.2226	442.6277	663.4379	1325.8686	9	2631.6528	1316.3301	877.8891	658.6687	527.1364	439.4482
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273.8512	328.4200	410.2732	546.6951	819.5390	1638.0708	11	2319.4506	1160.2289	773.8217	580.6181	464.6959	387.4145
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351.9018	422.0807	527.3490	702.7962	1053.6907	2106.3741	14	1851.1473	926.0773	617.7206	463.5423	371.0353	309.3639
377.9186	453.3009	566.3743	754.8299	1131.7413	2262.4753	15	1695.0462	848.0267	565.6869	424.5170	339.8151	283.3471
403.9355	484.5211	605.3995	806.8636	1209.7918	2418.5764	16	1538.9451	769.9762	513.6532	385.4917	308.5948	257.3302
429.9523	515.7413	644.4248	858.8973	1287.8424	2574.6775	17	1382.8439	691.9256	461.6195	346.4664	277.3746	231.3134
455.9692	546.9615	683.4501	910.9310	1365.8929	2730.7786	18	1226.7428	613.8751	409.5858	307.4412	246.1544	205.2965
470.4745	564.3679	705.2081	939.9417	1409.4089	2817.8106	19	1070.6417	535.8245	357.5521	268.4159	214.9342	179.2797
491.8237	589.9869	737.2319	982.6400	1473.4564	2945.9056	20	983.6097	492.3085	328.5414	246.6579	197.5278	164.7743
501.3272	601.3912	751.4872	1001.6472	1501.9672	3002.9270	21	855.5147	428.2610	285.8431	214.6341	171.9088	143.4252
515.8326	618.7976	773.2452	1030.6579	1545.4832	3089.9591	22	788.4933	399.7503	266.8359	200.3788	160.5045	133.9216
541.8494	650.0179	812.2705	1082.6916	1623.5337	3248.0602	23	711.4612	356.2343	237.8253	178.6208	143.0981	119.4163
556.3548	667.4243	834.0285	1111.7023	1667.0497	3333.0922	24	555.3601	278.1837	185.7916	139.5955	111.8778	93.3994
572.5302	686.8348	858.2917	1144.0532	1715.5761	3430.1450	25	468.3281	234.6677	156.7800	117.8375	94.4714	78.8941
598.5471	718.0550	897.3170	1196.0869	1793.6267	3586.2461	26	371.2753	186.1413	124.4300	93.5743	75.0609	62.7186
634.0736	760.6869	950.6068	1267.1399	1900.2062	3799.4052	27	215.1742	108.0908	72.3963	54.5490	43.8407	36.7018

56.074

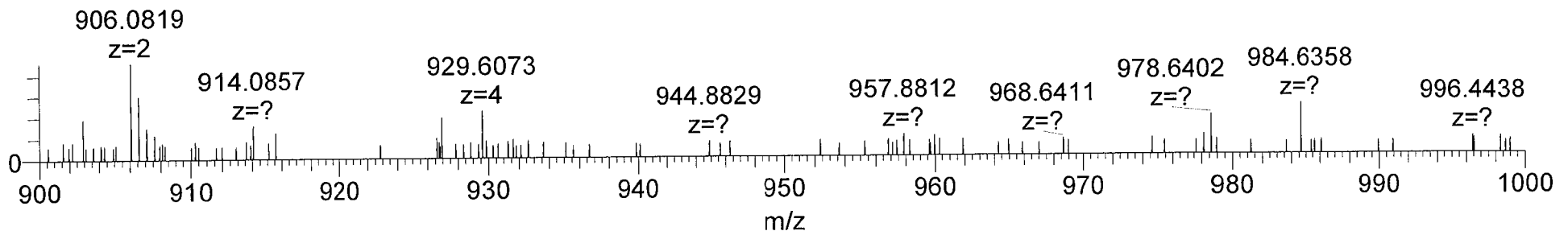
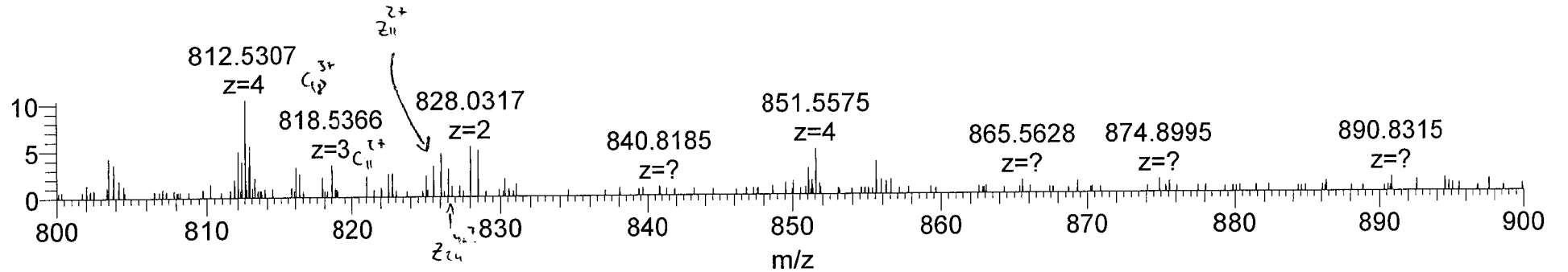
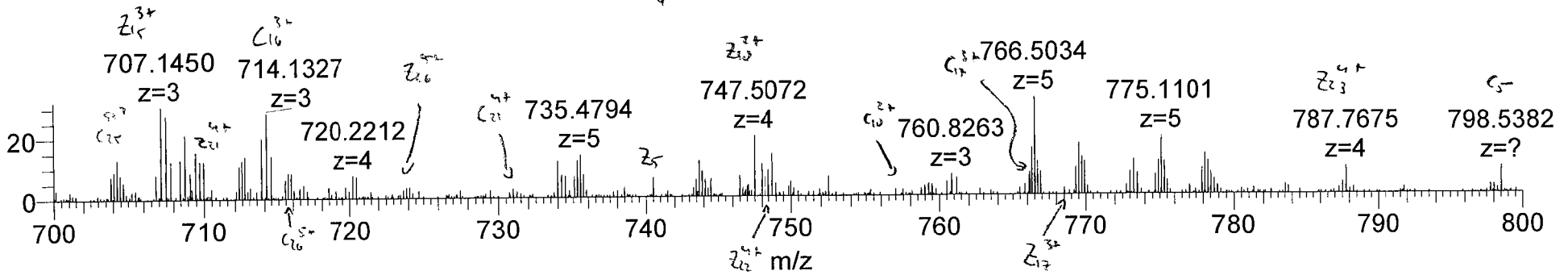
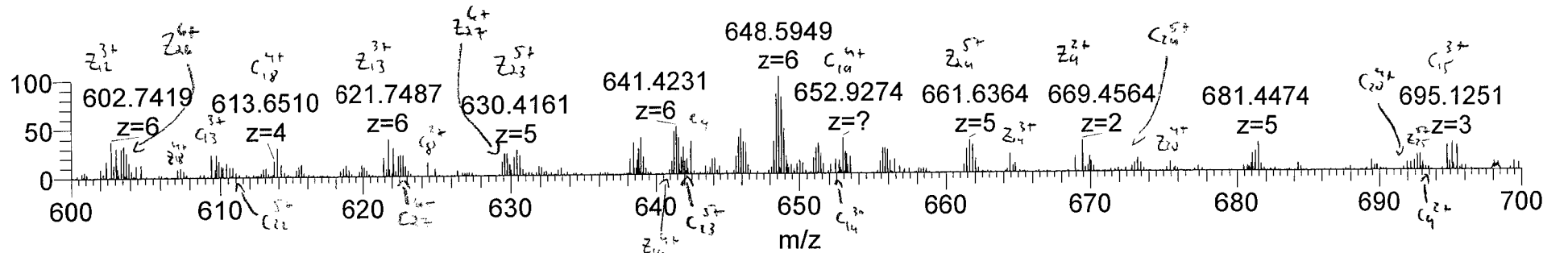
021519_0p2perYellowTube_Rinse_DD_Heat15 #1358-2260 RT: 5.66-8.00 AV: 13 NL: 6.98E4
T: FTMS + p NSI sid=40.00 d Full ms2 439.0706@etd5.26 [120.0000-2000.0000]



021519_0p2perYellowTube_Rinse_DD_Heat15 #1357-2260 RT: 5.66-8.00 AV: 13 NL: 6.98E4
T: FTMS + p NSI sid=40.00 d Full ms2 439.0706@etd5.26 [120.0000-2000.0000]

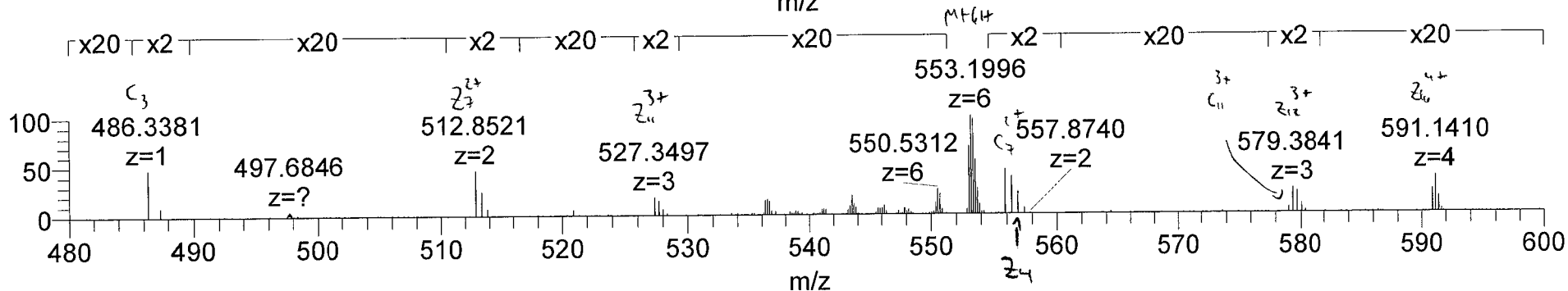
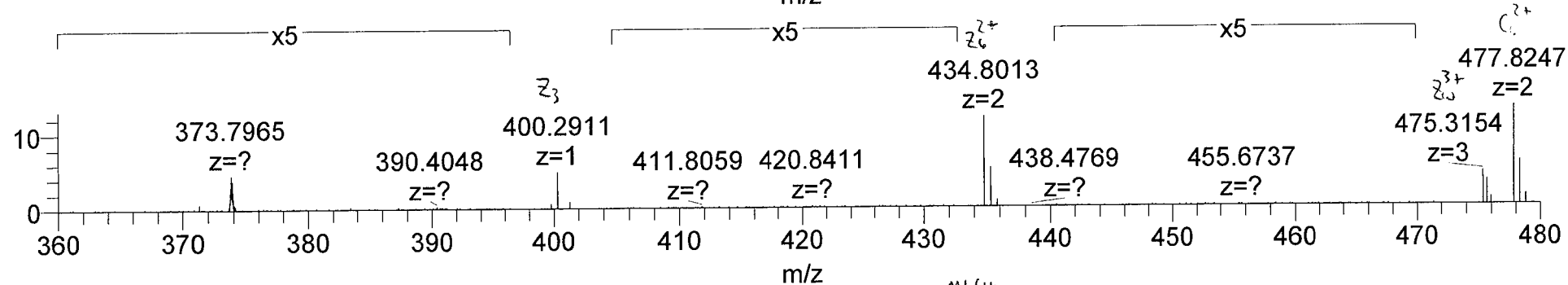
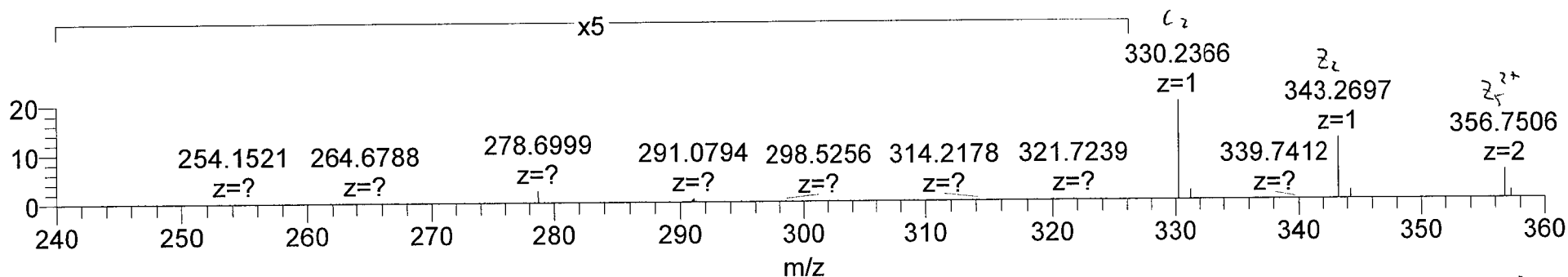
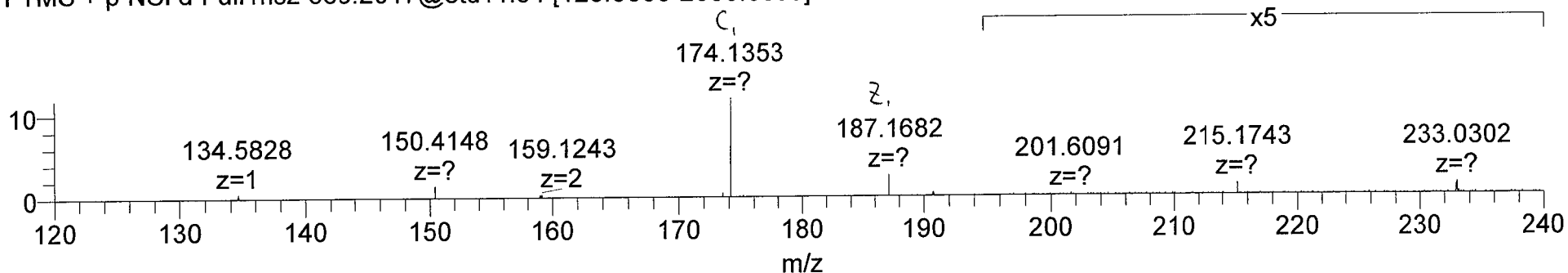


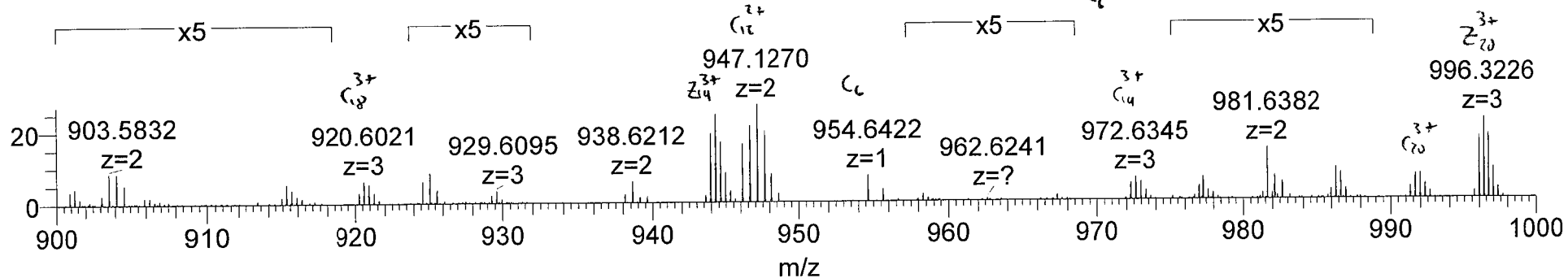
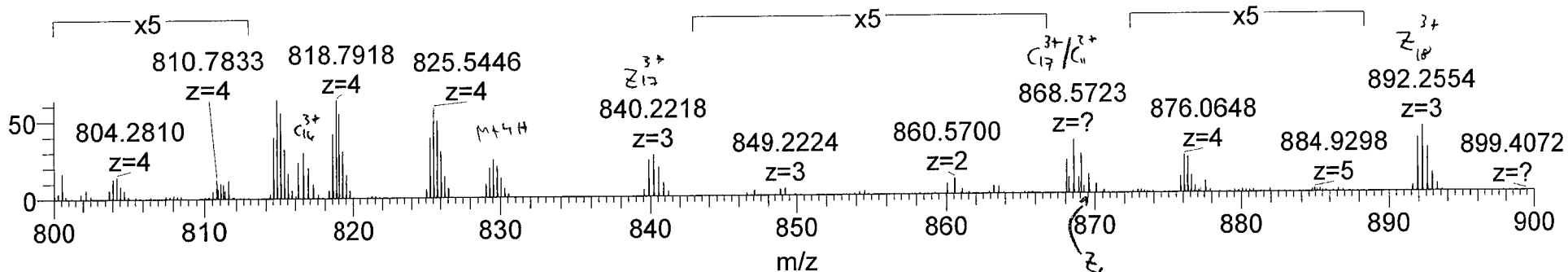
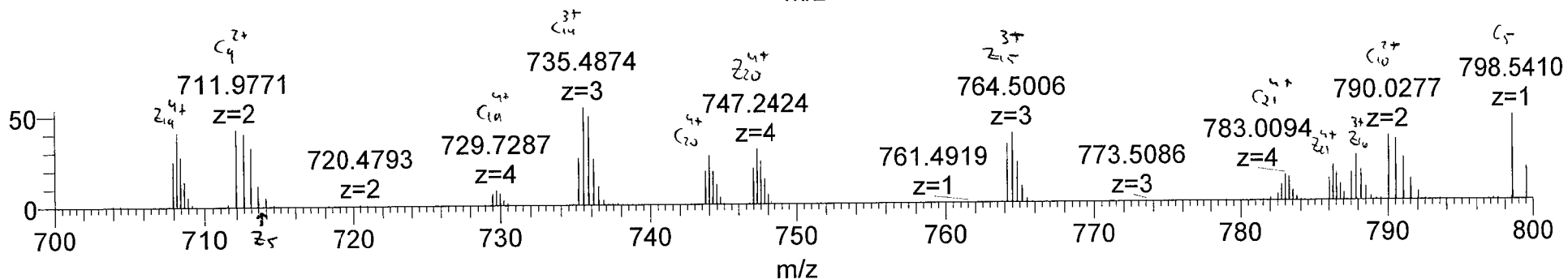
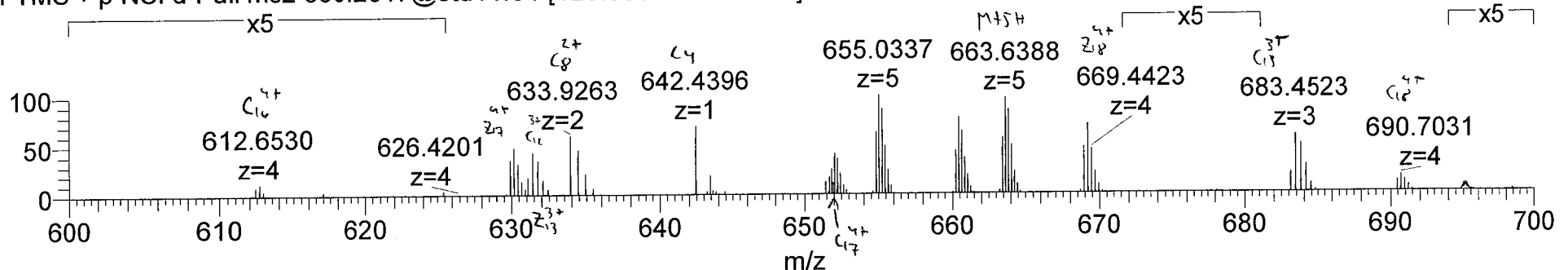
021519_0p2perYellowTube_Rinse_DD_Heat15 #1357-2260 RT: 5.66-8.00 AV: 13 NL: 1.29E4
T: FTMS + p NSI sid=40.00 d Full ms2 439.0706@etd5.26 [120.0000-2000.0000]



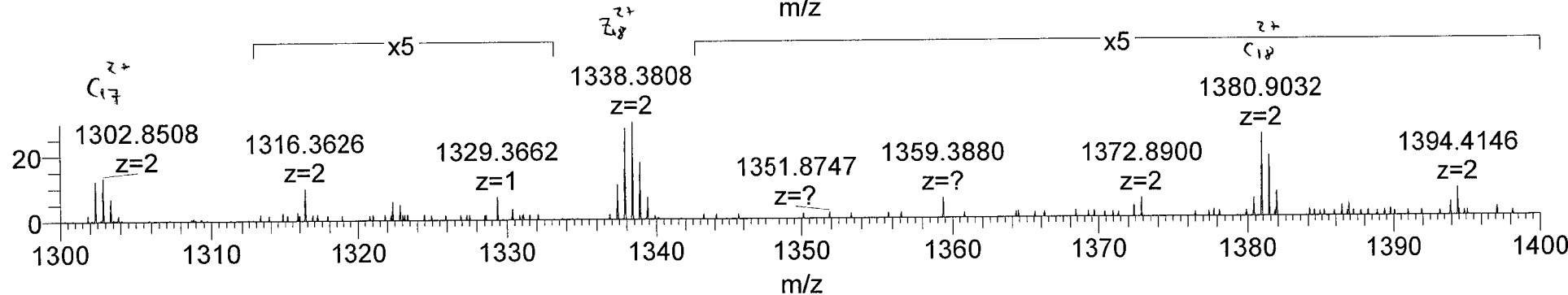
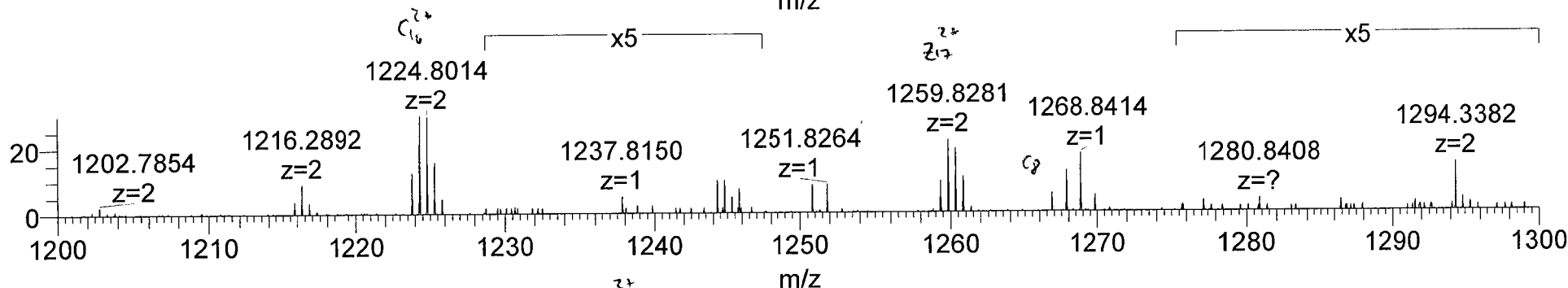
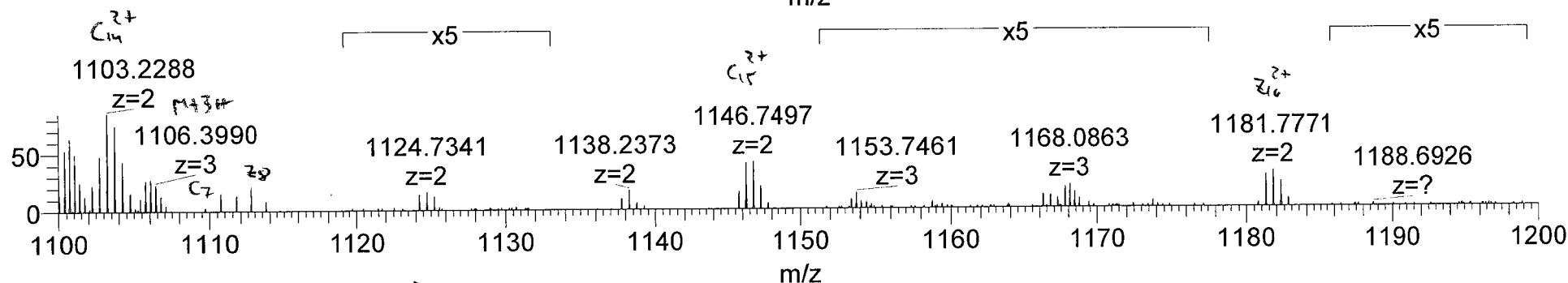
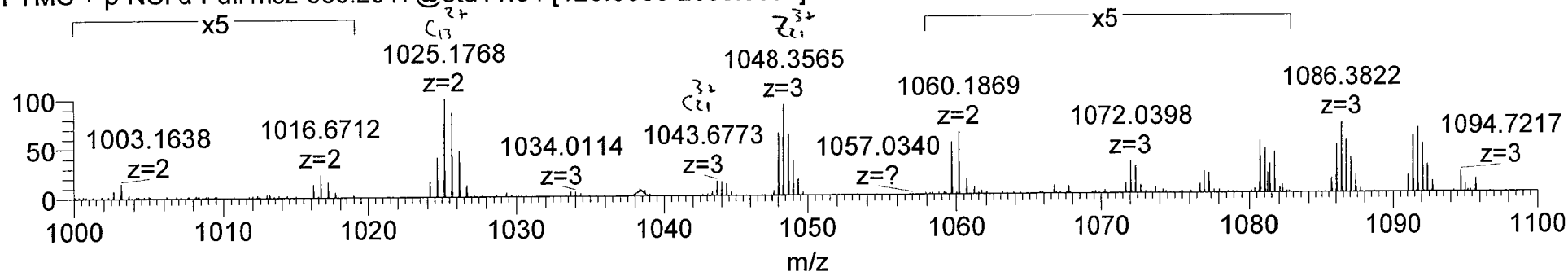
Fragment Masses

+7 c ions	+6 c ions	+5 c ions	+4 c ions	+3 c ions	+2 c ions	+1 c ions	Sequence	+1 z ions	+2 z ions	+3 z ions	+4 z ions	+5 z ions	+6 z ions	+7 z ions
25.7398	29.8619	35.6328	44.2892	58.7165	87.5711	174.1349	1	3942.5627	1971.7850	1314.8591	986.3961	789.3184	657.9332	564.0866
48.0400	55.8787	66.8530	83.3145	110.7502	165.6217	330.2360	2	3770.4429	1885.7251	1257.4858	943.3662	754.8944	629.2465	539.4981
70.3401	81.8956	98.0733	122.3397	162.7839	243.6722	486.3372	3	3614.3418	1807.6745	1205.4521	904.3409	723.6742	603.2297	517.1979
92.6403	107.9124	129.2935	161.3650	214.8176	321.7228	642.4383	4	3458.2407	1729.6240	1153.4184	865.3156	692.4540	577.2128	494.8978
114.9404	133.9293	160.5137	200.3903	266.8513	399.7733	798.5394	5	3302.1396	1651.5734	1101.3847	826.2803	661.2337	551.1960	472.5976
137.2406	159.9461	191.7339	239.4156	318.8850	477.8239	954.6405	6	3146.0384	1573.5229	1049.3510	787.2651	630.0135	525.1791	450.2974
159.5408	185.9630	222.9541	278.4409	370.9187	555.8744	1110.7416	7	2989.9373	1495.4723	997.3173	748.2398	598.7933	499.1623	427.9973
179.1206	208.8061	250.3659	312.7056	416.6050	624.4039	1247.8005	8	2833.8362	1417.4217	945.2836	709.2145	567.5731	473.1454	405.6971
198.7004	231.6493	277.7777	346.9703	462.2913	692.9334	1384.8594	9	2696.7773	1348.8923	899.5973	674.9498	540.1813	450.3023	386.1173
216.9987	252.9985	303.3967	378.9941	504.9896	756.9808	1512.9544	10	2559.7184	1280.3628	853.9110	640.6851	512.7495	427.4591	359.5374
235.2980	274.3476	329.0157	411.0178	547.6880	821.0283	1641.0494	11	2431.6234	1216.3154	811.2127	608.6613	487.1305	406.1100	348.2382
243.4449	283.8512	340.4200	425.2732	566.8951	849.5360	1698.0708	12	2303.5285	1152.2679	768.5143	576.6376	461.5115	384.7608	329.9389
261.7442	305.2004	366.0390	457.2959	609.3934	913.5865	1826.1658	13	2246.5070	1123.7571	749.6072	562.3822	450.1072	375.2572	321.7930
280.0435	328.5495	391.8580	489.3206	652.0918	977.6340	1954.2607	14	2118.4120	1058.7097	706.8088	530.3585	424.4882	353.9081	303.4937
298.3428	347.8987	417.2770	521.3444	694.7901	1041.6815	2082.3557	15	1990.3171	995.6622	664.1105	498.3347	398.8692	332.5589	285.1944
306.4887	357.4023	428.6813	535.5997	713.7972	1070.1922	2139.3772	16	1862.2221	931.6147	621.4122	466.3110	373.2502	311.2097	268.8951
328.7888	383.4191	459.9015	574.6250	765.8309	1148.2428	2295.4783	17	1805.2007	903.1040	602.4051	452.0556	361.8460	301.7062	258.7492
351.0890	409.4360	491.1217	613.6503	817.8646	1226.2933	2451.5794	18	1649.0995	825.0534	550.3714	413.0303	330.6257	275.6893	236.4490
373.3892	435.4528	522.3419	652.6756	869.8984	1304.3439	2607.6805	19	1492.9984	747.0028	498.3377	374.0051	299.4055	249.6725	214.1469
395.6893	461.4697	553.5621	691.7009	921.9321	1382.3944	2763.7816	20	1336.8973	668.9523	446.3040	334.8798	268.1853	223.6558	191.8467
417.9895	487.4865	584.7824	730.7261	973.9658	1460.4450	2919.8827	21	1180.7962	590.9017	364.2703	295.9545	236.9651	197.6388	169.5486
436.2888	508.8357	610.4014	762.7499	1016.6641	1524.4925	3047.9777	22	1024.6951	512.8512	342.2366	256.9292	205.7448	171.6219	147.2484
458.5889	534.8525	641.6216	801.7752	1068.6978	1602.5430	3204.0788	23	866.6001	448.8037	289.5382	224.9055	180.1258	150.2728	128.9491
480.8891	560.8694	672.8418	840.8004	1120.7315	1680.5936	3360.1799	24	740.4990	370.7532	247.5045	185.8802	148.9056	124.2559	106.6490
503.1892	586.8862	704.0620	879.8257	1172.7652	1758.6441	3516.2810	25	584.3979	292.7026	195.4708	146.8549	117.8654	98.2390	84.3488
511.3352	596.3898	715.4663	894.0811	1191.7723	1787.1549	3573.3025	26	428.2968	214.6520	124.4371	107.8297	86.4652	72.2222	62.0486
533.6353	622.4067	746.6865	933.1064	1243.8060	1865.2054	3729.4036	27	371.2753	186.1413	124.4300	93.5743	75.0609	62.7186	53.9027
564.0866	657.9332	789.3184	986.3961	1314.8591	1971.7850	3942.5627	28	215.1742	108.0908	72.3963	54.5490	43.8407	36.7018	31.6026

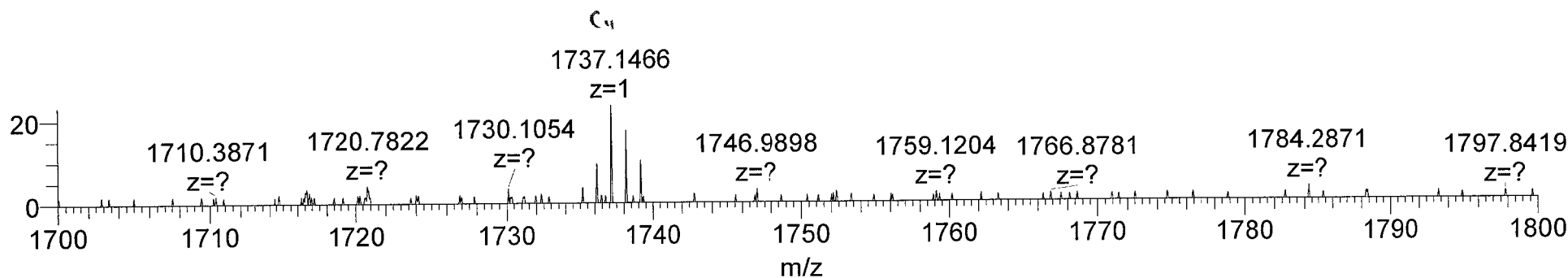
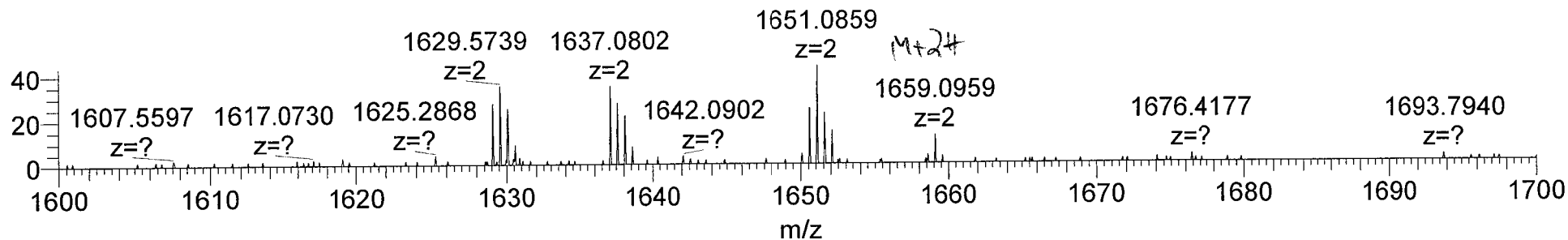
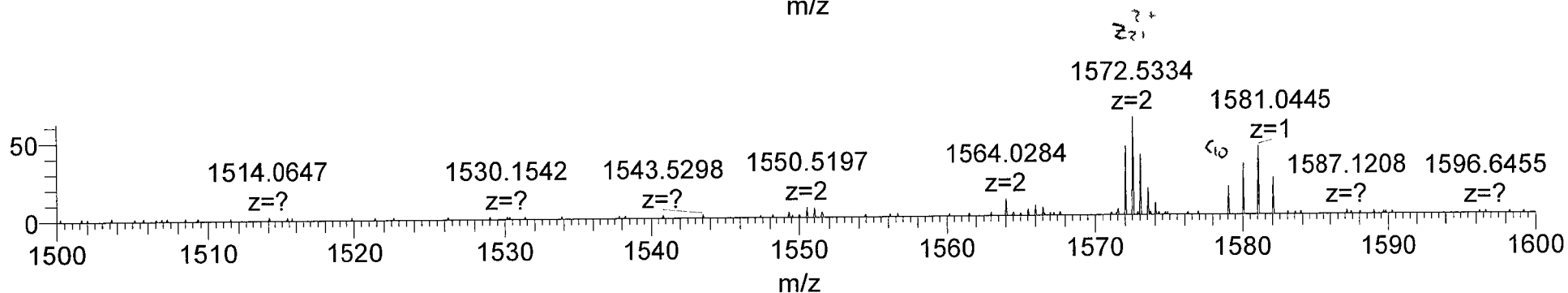
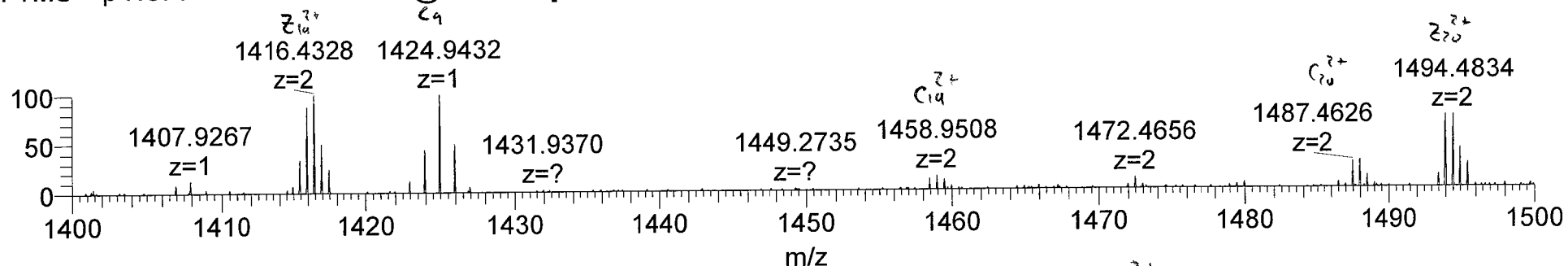




021519_0p2perYellowTube_Gradient_DD_Heat15 #2644-4489 RT: 11.35-16.61 AV: 28 NL: 1.15E4
T: FTMS + p NSI d Full ms2 553.2017@etd11.84 [120.0000-2000.0000]



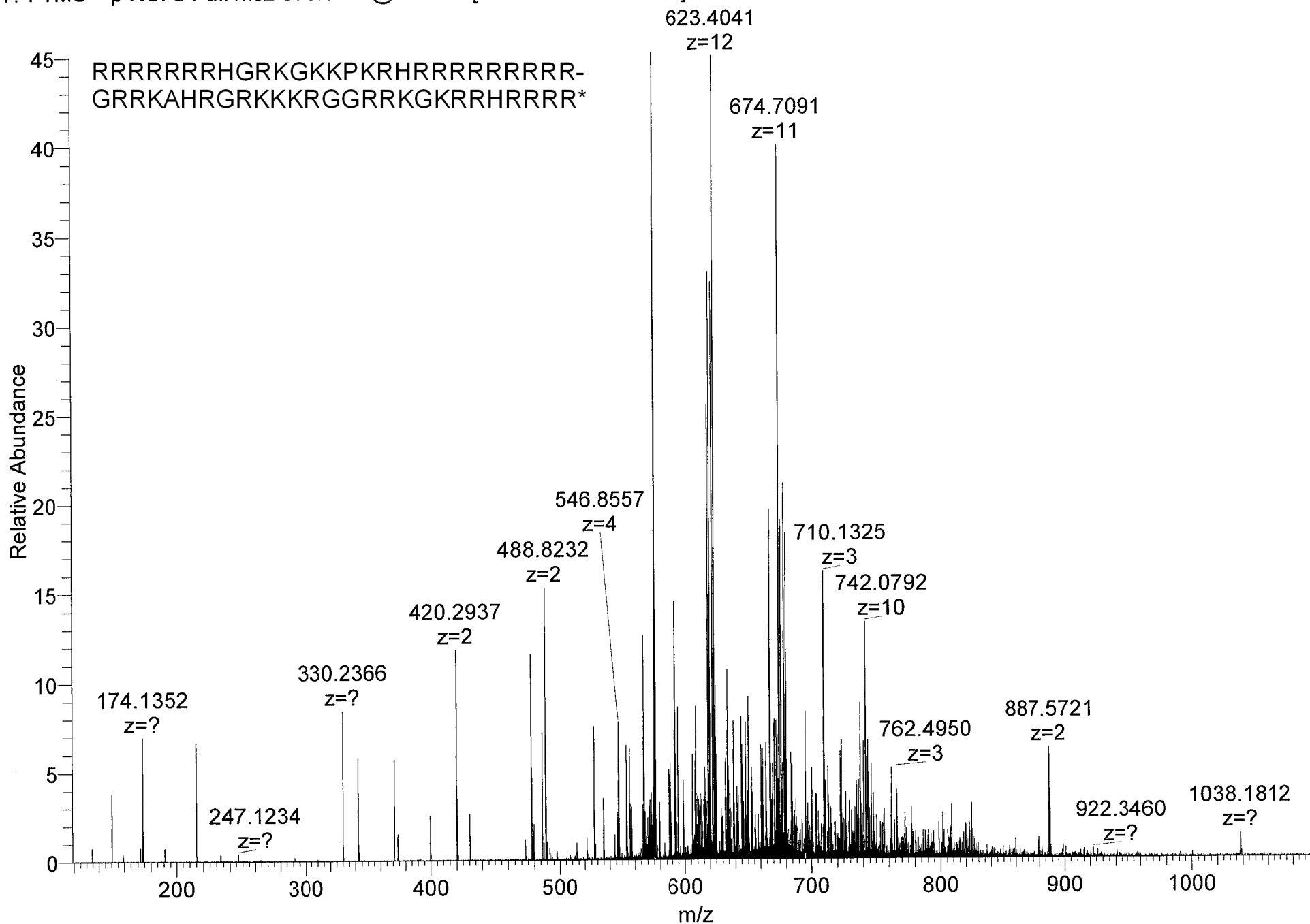
021519_0p2perYellowTube_Gradient_DD_Heat15 #2644-4489 RT: 11.35-16.61 AV: 28 NL: 2.21E3
T: FTMS + p NSI d Full ms2 553.2017@etd11.84 [120.0000-2000.0000]



Fragment Masses

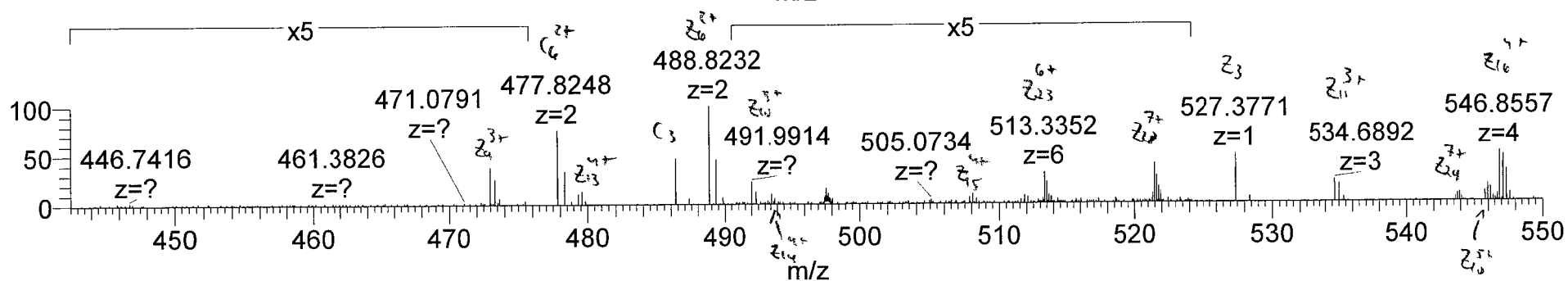
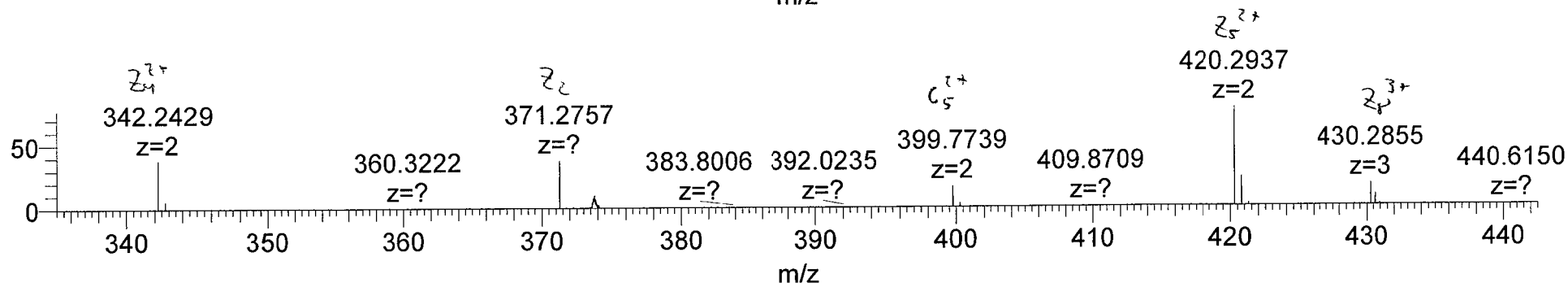
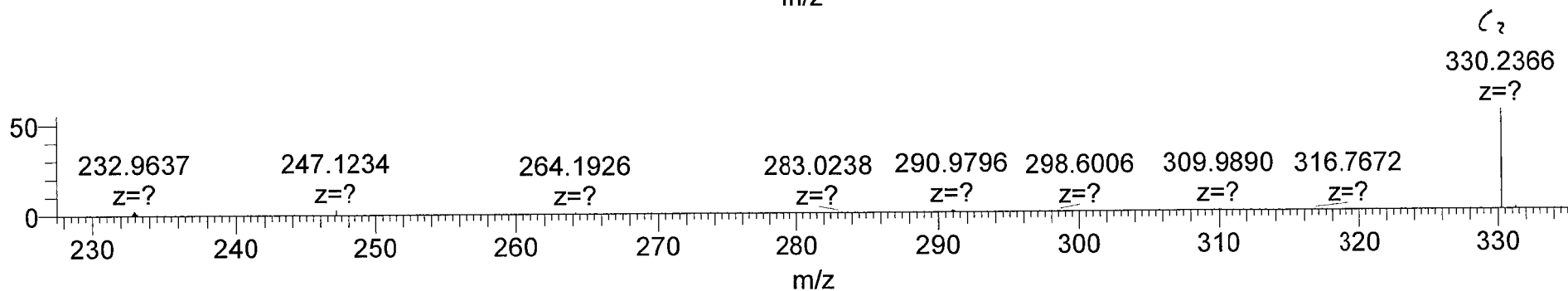
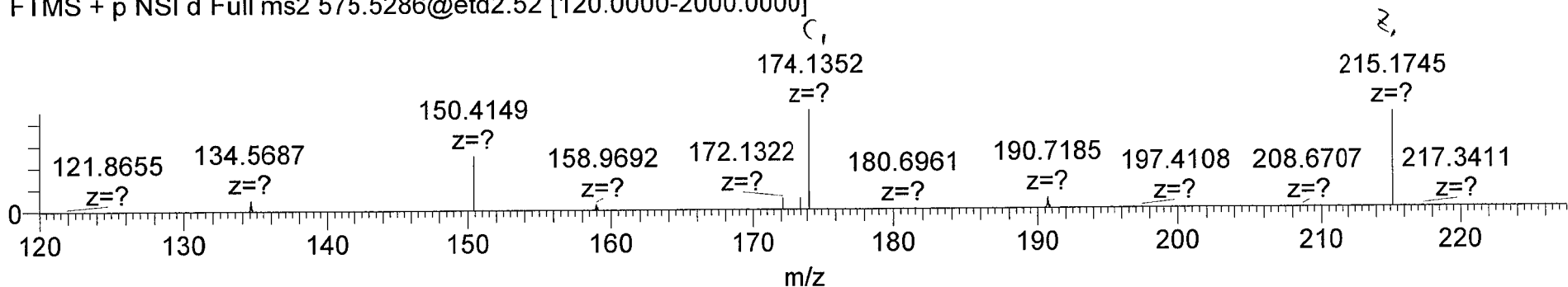
+5 c ions	+4 c ions	+3 c ions	+2 c ions	+1 c ions	Sequence	+1 z ions	+2 z ions	+3 z ions	+4 z ions	+5 z ions
35.6328	44.2892	58.7165	87.5711	174.1349 ✓	R	3313.1614	1657.0843	1105.0587	829.0458	663.4381
66.8530	83.3145	110.7502	165.6217	330.2360 ✓	R	3141.0416	1571.0244 ✓	1047.6854 ✓	786.0158 ✓	629.0141
98.0733	122.3397	162.7839	243.6722	486.3372 ✓	R	2984.9405	1492.9739 ✓	995.6517 ✓	746.9906 ✓	597.7939
129.2935	161.3650	214.8176	321.7228	642.4383 ✓	R	2828.8393	1414.9233 ✓	943.6180 ✓	707.9653 ✓	566.5737
160.5137	200.3903	266.8513	399.7733	798.5394 ✓	R	2672.7382	1336.8728 ✓	891.5843 ✓	668.9400 ✓	535.3535
191.7339	239.4156	318.8850	477.8239 ✓	954.6405 ✓	R	2516.6371	1258.8222 ✓	839.5506 ✓	629.9147 ✓	504.1332
222.9541	278.4409	370.9187	555.8744 ✓	1110.7416 ✓	R	2360.5360	1180.7716 ✓	787.5169 ✓	590.8895 ✓	472.9130
254.1744	317.4661	422.9524	633.9250 ✓	1266.8427 ✓	R	2204.4349	1102.7211 ✓	735.4832 ✓	551.8642	441.6928
285.3946	356.4914	474.9861	711.9756 ✓	1422.9438 ✓	R	2048.3338	1024.6705 ✓	683.4494 ✓	512.8389	410.4726
316.6148	395.5167	527.0198	790.0261 ✓	1579.0449 ✓	R	1892.2327	946.6200 ✓	631.4157 ✓	473.8136	379.2524
347.8350	434.5420	579.0535 ✓	868.0767 ✓	1735.1460 ✓	R	1736.1316 ✓	868.5694 ✓	579.3820 ✓	434.7884	348.0321
379.0553	473.5672	631.0872 ✓	946.1272 ✓	1891.2472	R	1580.0305 ✓	790.5189 ✓	527.3483 ✓	395.7631	316.8119
410.2755	512.5925	683.1209 ✓	1024.1778 ✓	2047.3483	R	1423.9293 ✓	712.4683 ✓	475.3146 ✓	356.7378	285.5917
441.4957	551.6178	735.1546 ✓	1102.2283 ✓	2203.4494	R	1267.8282 ✓	634.4178	423.2809	317.7125	254.3715
458.9021	573.3758	764.1653 ✓	1145.7443 ✓	2290.4814	S	1111.7271 ✓	556.3672 ✓	371.2472	278.6872	223.1512
490.1223	612.4011 ✓	816.1990 ✓	1223.7949 ✓	2446.5825	R	1024.6951	512.8512 ✓	342.2366	256.9292	205.7448
521.3425	651.4264 ✓	868.2327 ✓	1301.8455 ✓	2602.6836	R	868.5940 ✓	434.8006 ✓	290.2028	217.9040	174.5246
552.5628	690.4516 ✓	920.2664 ✓	1379.8960 ✓	2758.7847	R	712.4929 ✓	356.7501 ✓	238.1691	178.8787	143.3044
583.7830	729.4769 ✓	972.3001 ✓	1457.9466 ✓	2914.8859	R	556.3918 ✓	278.6995	186.1354	139.8534	112.0842
595.1873	743.7323 ✓	991.3073 ✓	1486.4573 ✓	2971.9073	G	400.2907 ✓	200.6490	134.1017	100.8281	80.8640
626.4075	782.7576 ✓	1043.3410 ✓	1564.5079	3128.0084	R	343.2692 ✓	172.1382	115.0946	86.5728	69.4597
663.4381	829.0458	1105.0587	1657.0843	3313.1614	K	187.1681 ✓	94.0877	63.0609	47.5475	38.2394
					(ctern + 56...					

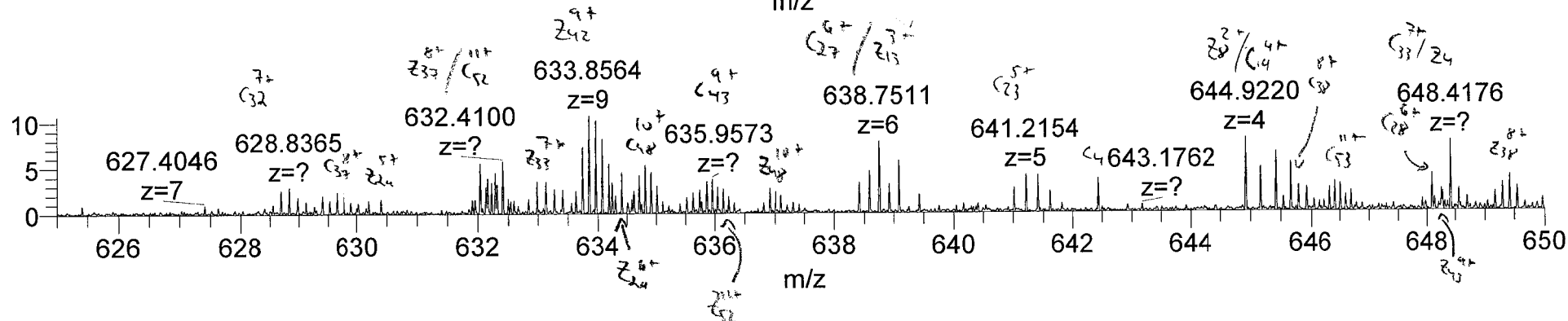
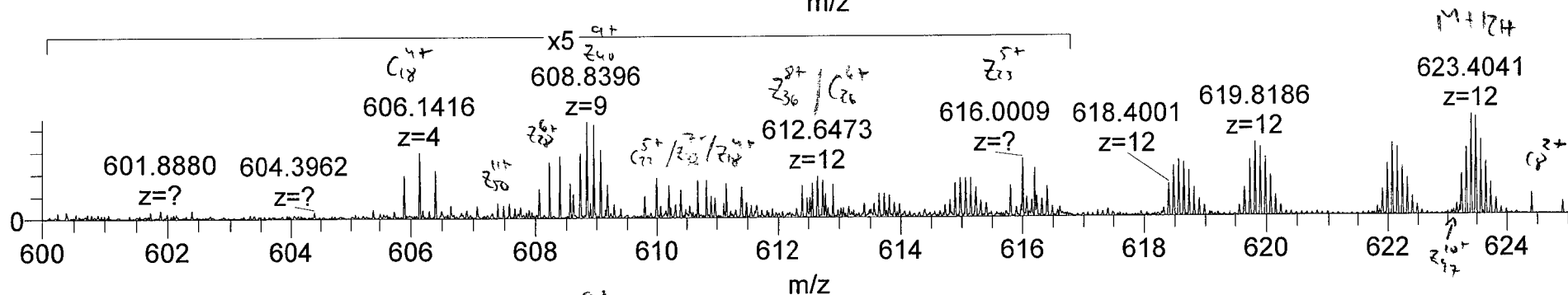
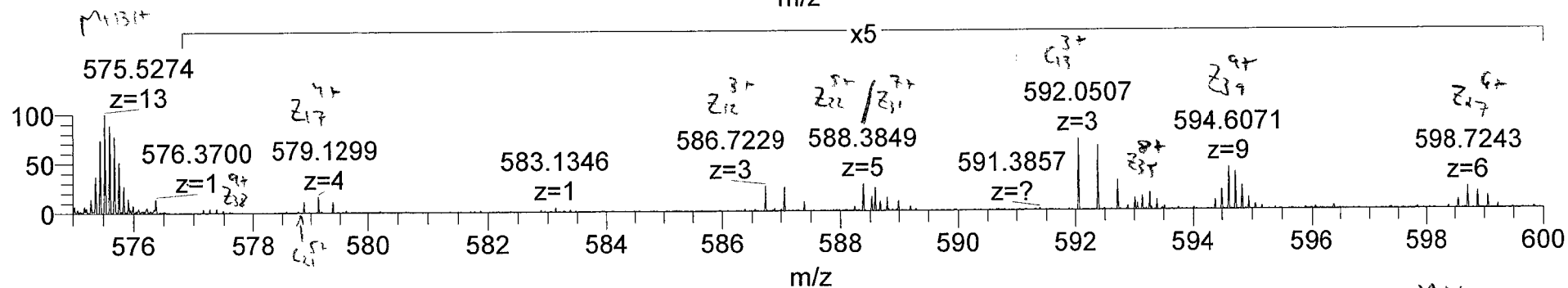
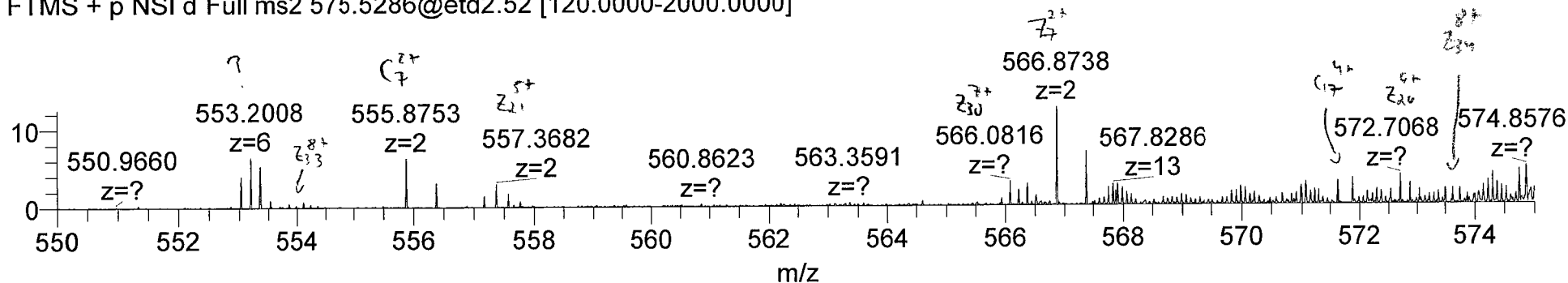
021519_Op2perYellowTube_Gradient_DD_Heat15 #2931-7238 RT: 12.04-24.54 AV: 46 NL: 4.36E4
T: FTMS + p NSI d Full ms2 575.5286@etd2.52 [120.0000-2000.0000]



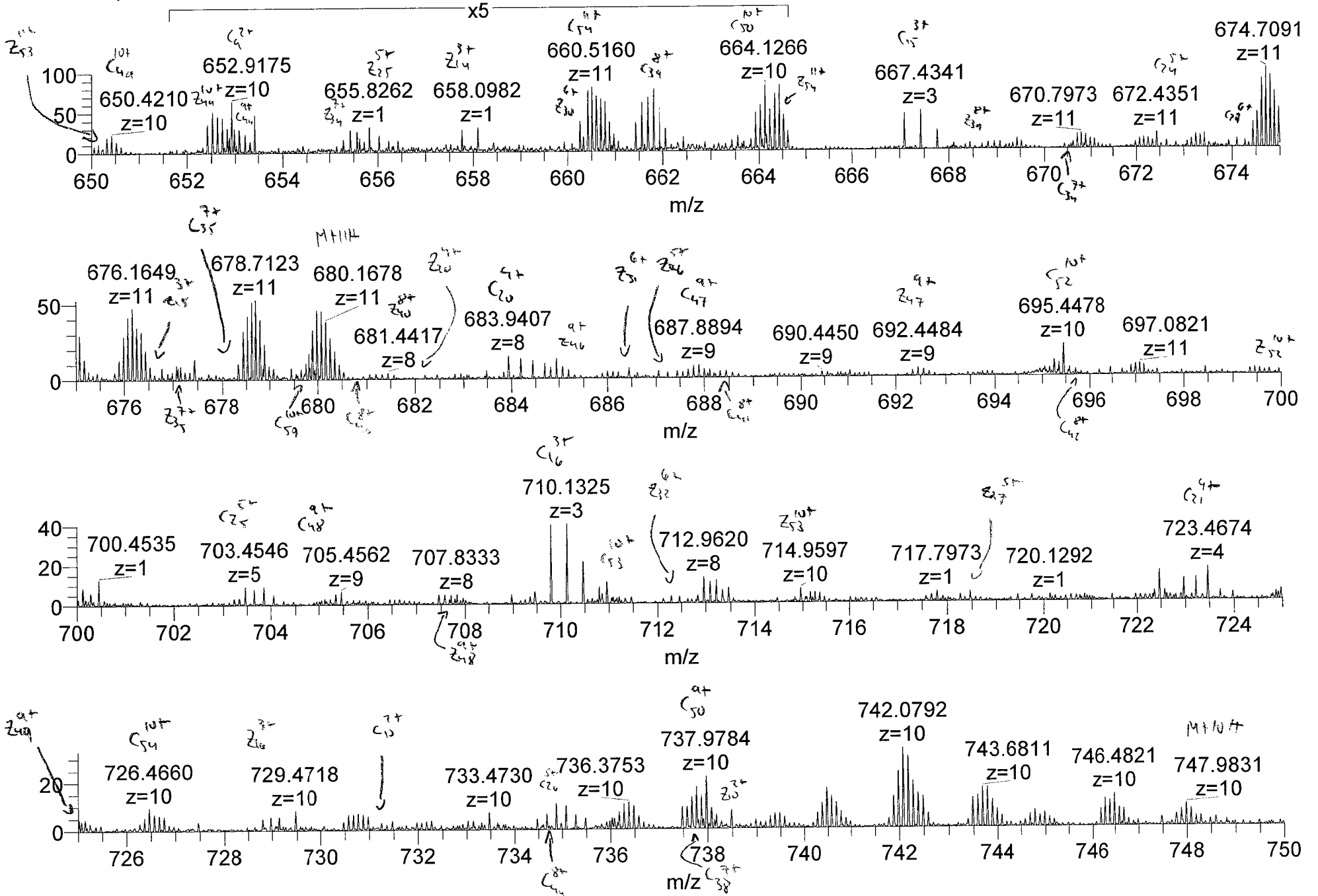
021519_0p2perYellowTube_Gradient_DD_Heat15 #2930-7239 RT: 12.04-24.54 AV: 46 NL: 6.65E3

T: FTMS + p NSI d Full ms2 575.5286@etd2.52 [120.0000-2000.0000]



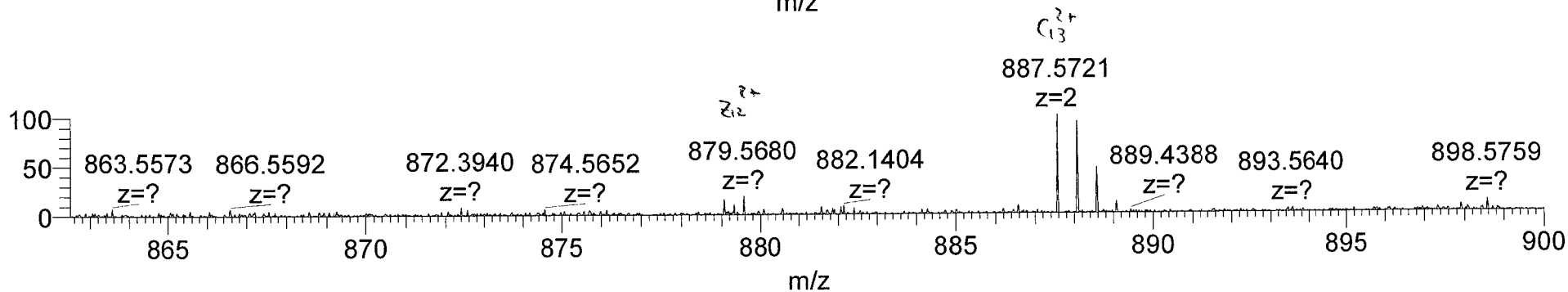
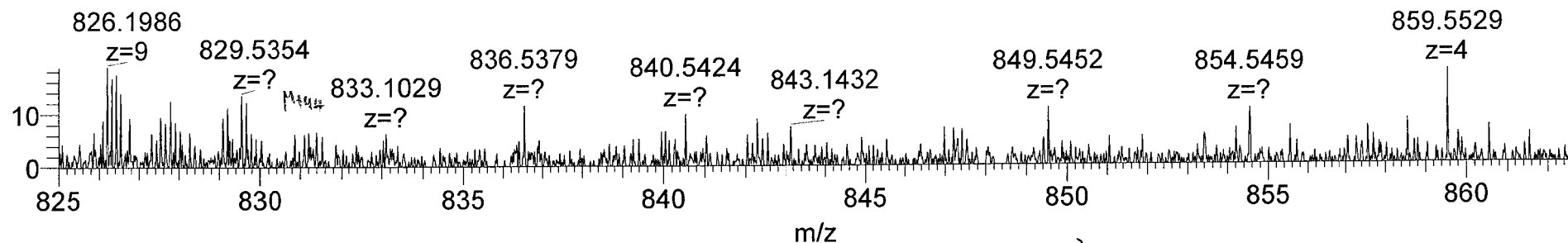
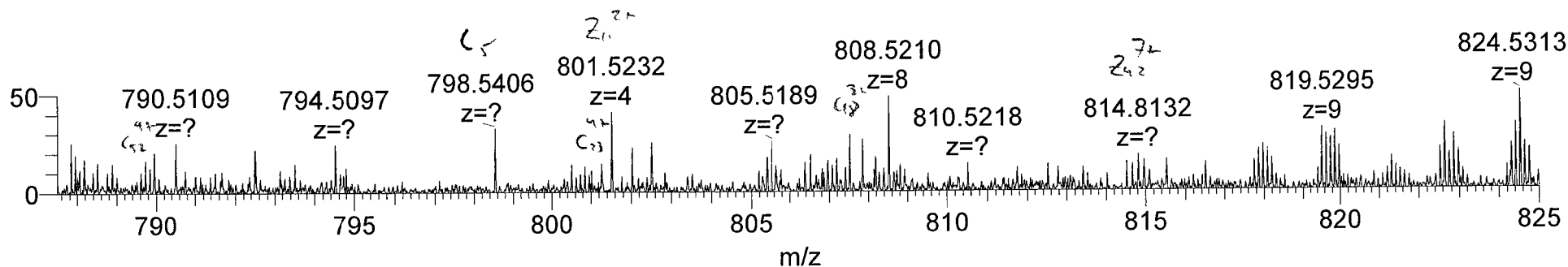
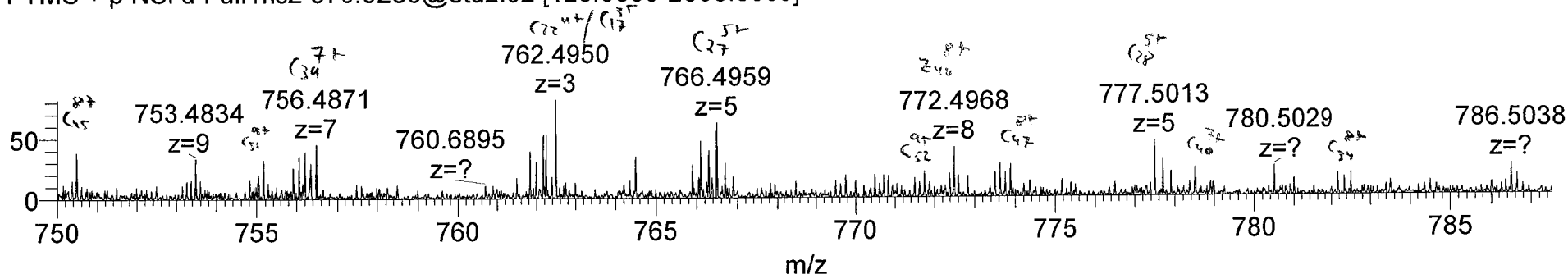


021519_0p2perYellowTube_Gradient_DD_Heat15 #2930-7239 RT: 12.04-24.54 AV: 46 NL: 1.74E4
T: FTMS + p NSI d Full ms2 575.5286@etd2.52 [120.0000-2000.0000]

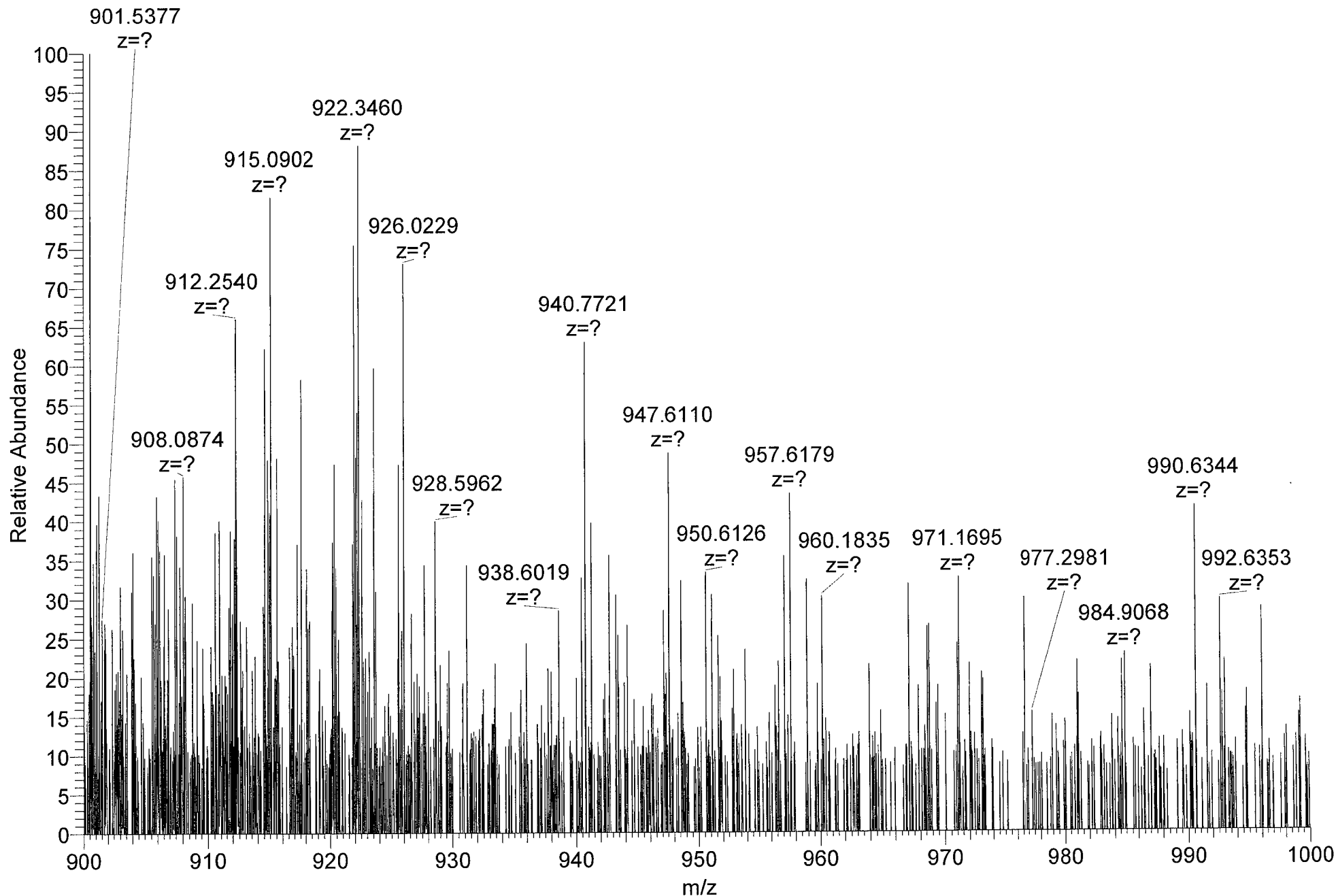


021519_Op2perYellowTube_Gradient_DD_Heat15 #2930-7239 RT: 12.04-24.54 AV: 46 NL: 2.71E3

T: FTMS + p NSI d Full ms2 575.5286@etd2.52 [120.0000-2000.0000]



021519_0p2perYellowTube_Gradient_DD_Heat15 #2930-7239 RT: 12.04-24.54 AV: 46 NL: 2.69E2
T: FTMS + p NSI d Full ms2 575.5286@etd2.52 [120.0000-2000.0000]



Fragment Masses

+11 c ions	+10 c ions	+9 c ions	+8 c ions	+7 c ions	+6 c ions	+5 c ions	+4 c ions	+3 c ions	+2 c ions	+1 c ions	Sequence
16.7462	18.3200	20.2437	22.6482	25.7398	29.8619	35.6328	44.2892	58.7165	87.5711	174.1349	R
30.9372	33.9302	37.5883	42.1609	48.0400	55.8787	66.8530	83.3145	110.7502	165.6217	330.2360	R
45.1282	49.5403	54.9328	61.6735	70.3401	81.8956	98.0733	122.3397	162.7839	243.6722	486.3372	R
59.3192	65.1504	72.2774	81.1862	92.6403	107.9124	129.2935	161.3650	214.8176	321.7228	642.4383	R
73.5102	80.7605	89.6220	100.6988	114.9404	133.9293	160.5137	200.3903	266.8513	399.7733	798.5394	R
87.7012	96.3706	106.9665	120.2114	137.2406	159.9461	191.7339	239.4156	318.8850	477.8239	954.6405	R
101.8922	111.9807	124.3111	139.7241	159.5408	185.9630	222.9541	278.4409	370.9187	555.8744	1110.7416	R
114.3521	125.6866	139.5399	156.8564	179.1206	208.8061	250.3659	312.7056	416.6050	624.4039	1247.8005	H
119.5359	131.3887	145.8756	163.9841	187.2665	218.3097	261.7702	326.9610	435.6122	652.9146	1304.8220	G
133.7269	146.9989	163.2201	183.4968	209.5667	244.3266	292.9904	365.9862	487.6459	730.9652	1460.9231	R
145.3719	159.8084	177.4529	199.5086	227.8660	265.6757	318.6094	398.0100	530.3442	795.0127	1589.0181	K
150.5557	165.5105	183.7886	206.6363	236.0119	275.1793	330.0137	412.2653	549.3514	823.5234	1646.0395	G
162.2007	178.3200	198.0214	222.6482	254.3112	296.5285	355.6327	444.2891	592.0497	887.5709	1774.1345	K
173.8457	191.1295	212.2542	238.6500	272.6104	317.8776	381.2517	476.3128	634.7480	951.6184	1902.2294	K
182.6686	200.8348	223.0378	250.7916	286.4751	334.0531	400.6623	500.5760	667.0989	1000.1447	1999.2822	P
194.3136	213.6443	237.2706	266.8035	304.7744	355.4023	426.2813	532.5997	709.7972	1084.1922	2127.3772	K
208.5046	229.2544	254.6152	286.3162	327.0746	381.4191	457.5015	571.6250	761.8309	1142.2428	2283.4783	R
220.9645	242.9603	269.8439	303.4485	346.6544	404.2623	484.9133	605.8898	807.5172	1210.7722	2420.5372	H
235.1556	258.5704	287.1885	322.9612	368.9546	430.2791	516.1335	644.9150	859.5510	1288.8228	2576.6383	R
249.3466	274.1805	304.5331	342.4738	391.2547	456.2960	547.3537	683.9403	911.5847	1366.8733	2732.7394	R
263.5376	289.7906	321.8776	361.9864	413.5549	482.3128	578.5739	722.9656	963.6184	1444.9239	2888.8405	R
277.7286	305.4007	339.2222	381.4991	435.8550	508.3297	609.7941	761.9909	1015.6521	1522.9745	3044.9416	R
291.9196	321.0108	356.5668	401.0117	458.1552	534.3465	641.0144	801.0161	1067.6858	1601.0250	3201.0427	R
306.1106	336.6209	373.9113	420.5243	480.4554	560.3634	672.2346	840.0414	1119.7195	1679.0756	3357.1439	R
320.3016	352.2310	391.2559	440.0370	502.7555	586.3802	703.4548	879.0667	1171.7532	1757.1261	3513.2450	R
334.4926	367.8412	408.6005	459.5496	525.0557	612.3971	734.6750	918.0920	1223.7869	1835.1767	3669.3461	R
348.6836	383.4513	425.9450	479.0623	547.3558	638.4139	765.8953	957.1173	1275.8206	1913.2272	3825.4472	R
353.8674	389.1534	432.2808	486.1899	555.5018	647.9175	777.2996	971.3726	1294.8277	1941.7380	3882.4687	G
368.0584	404.7635	449.6253	505.7026	577.8019	673.9344	808.5198	1010.3979	1346.8614	2019.7885	4038.5698	R
382.2494	420.3736	466.9699	525.2152	600.1021	699.9512	839.7400	1049.4232	1398.8951	2097.8391	4194.6709	R
393.8944	433.1831	481.2027	541.2271	618.4014	721.3004	865.3590	1081.4469	1441.5935	2161.8866	4322.7658	K
400.3523	440.2868	489.0957	550.1067	628.5495	733.1399	879.5664	1099.2062	1465.2725	2197.4051	4393.8030	A
412.8122	453.9927	504.3245	567.2391	648.1294	755.9830	906.9782	1133.4709	1510.9588	2265.9346	4530.8619	H
427.0032	469.6028	521.6690	586.7517	670.4295	781.9999	938.1984	1172.4962	1562.9925	2343.9851	4686.9630	R
432.1870	475.3050	528.0047	593.8794	678.5754	791.5035	949.6027	1186.7516	1581.9997	2372.4959	4743.9844	G
446.3780	490.9151	545.3493	613.3921	700.8756	817.5203	980.8229	1225.7768	1634.0334	2450.5464	4900.0856	R
458.0230	503.7246	559.5821	629.4039	719.1749	838.8695	1006.4419	1257.8006	1676.7317	2514.5939	5028.1805	K
469.6680	516.5341	573.8149	645.4158	737.4742	860.2186	1032.0609	1289.8243	1719.4300	2578.6414	5156.2755	K
481.3130	529.3436	588.0476	661.4277	755.7734	881.5678	1057.6799	1321.8481	1762.1283	2642.6889	5284.3704	K
495.5040	544.9537	605.3922	680.9403	778.0736	907.5847	1088.9001	1360.8733	1814.1620	2720.7394	5440.4716	R
500.6878	550.6559	611.7279	688.0680	786.2195	917.0882	1100.3044	1375.1287	1833.1692	2749.2501	5497.4930	G
505.8716	556.3580	618.0636	695.1957	794.3654	926.5918	1111.7087	1389.3841	1852.1763	2777.7609	5554.5145	G
520.0626	571.9681	635.4082	714.7083	816.6656	952.6087	1142.9289	1428.4094	1904.2100	2855.8114	5710.6156	R
534.2536	587.5782	652.7528	734.2210	838.9658	978.6255	1174.1492	1467.4346	1956.2438	2933.8620	5866.7167	R
545.8986	600.3877	666.9855	750.2328	857.2650	999.9747	1199.7682	1499.4584	1998.9421	2997.9095	5994.8117	K
551.0824	606.0899	673.3213	757.3605	865.4110	1009.4783	1211.1724	1513.7137	2017.9492	3026.4202	6051.8331	G
562.7274	618.8994	687.5540	773.3724	883.7102	1030.8274	1236.7914	1545.7375	2060.6475	3090.4677	6179.9281	K
578.9184	634.5095	704.8986	792.8850	906.0104	1056.8443	1268.0117	1584.7628	2112.6813	3168.5182	6336.0292	R
591.1094	650.1196	722.2432	812.3977	928.3106	1082.8611	1299.2319	1623.7880	2164.7150	3246.5688	6492.1303	R
603.5693	663.8255	737.4719	829.5300	947.8904	1105.7043	1326.6437	1658.0528	2210.4013	3315.0983	6629.1892	H
617.7603	679.4356	754.8165	849.0427	970.1906	1131.7211	1357.8639	1697.0780	2262.4350	3393.1488	6785.2903	R
631.9513	695.0457	772.1611	868.5553	992.4907	1157.7380	1389.0841	1736.1033	2314.4687	3471.1994	6941.3914	R
646.1423	710.6558	789.5056	888.0679	1014.7909	1183.7548	1420.3043	1775.1286	2366.5024	3549.2499	7097.4925	R
660.3333	726.2659	806.8502	907.5806	1037.0910	1209.7717	1451.5246	1814.1539	2418.5361	3627.3005	7253.5937	R
679.7114	747.5818	830.5346	934.2255	1067.5424	1245.2982	1494.1564	1867.4437	2489.5891	3733.8800	7466.7528	R

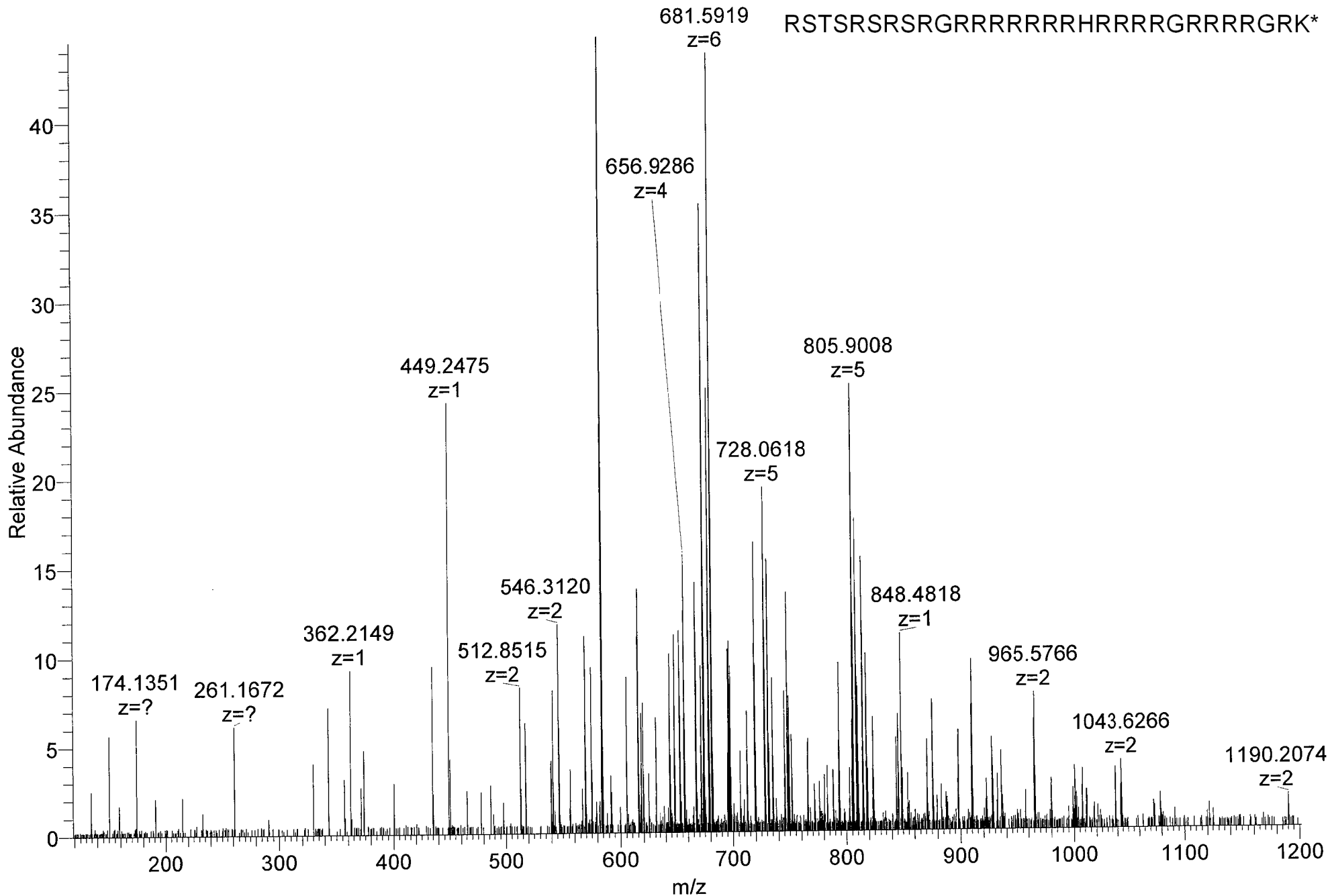
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Fragment Masses

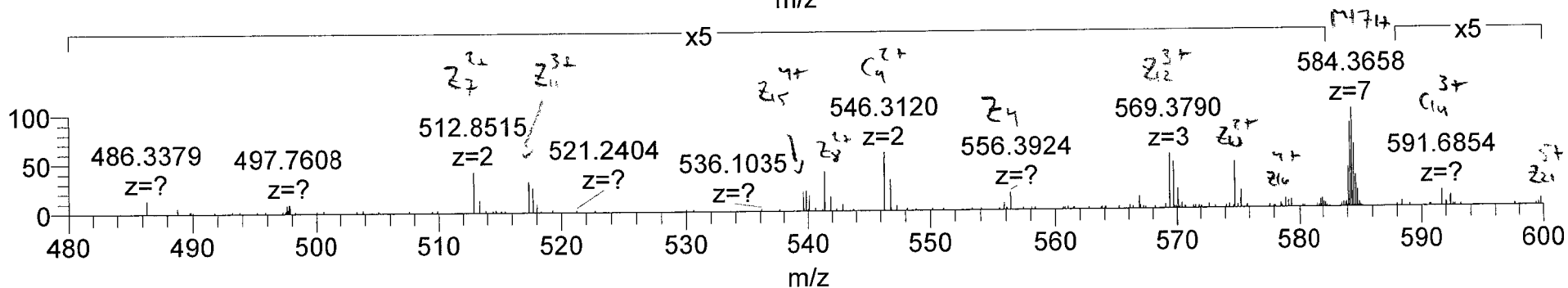
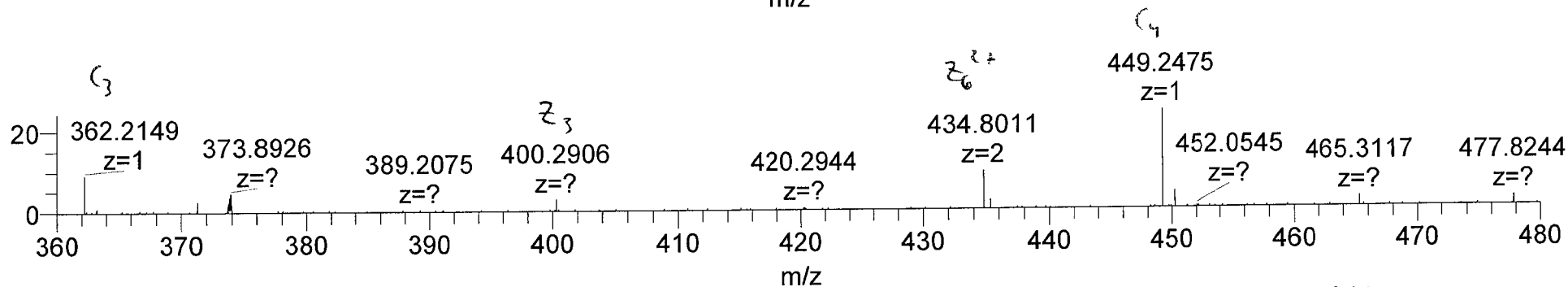
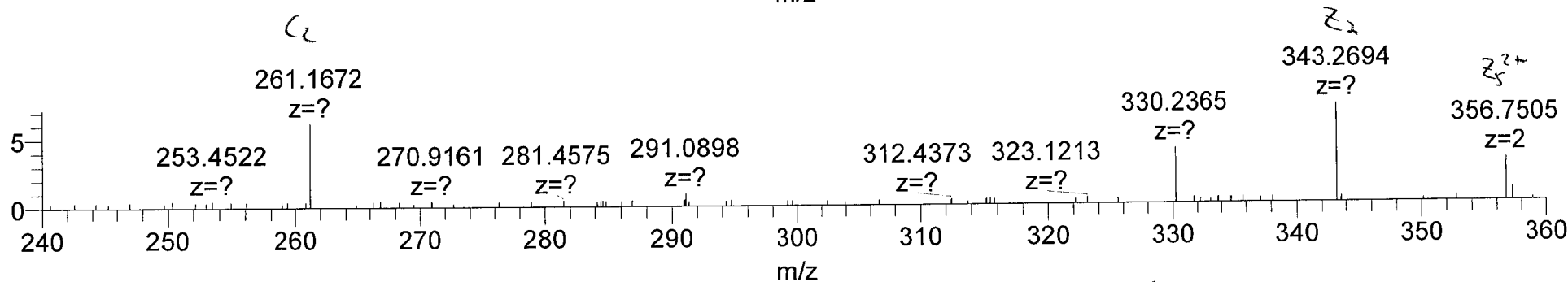
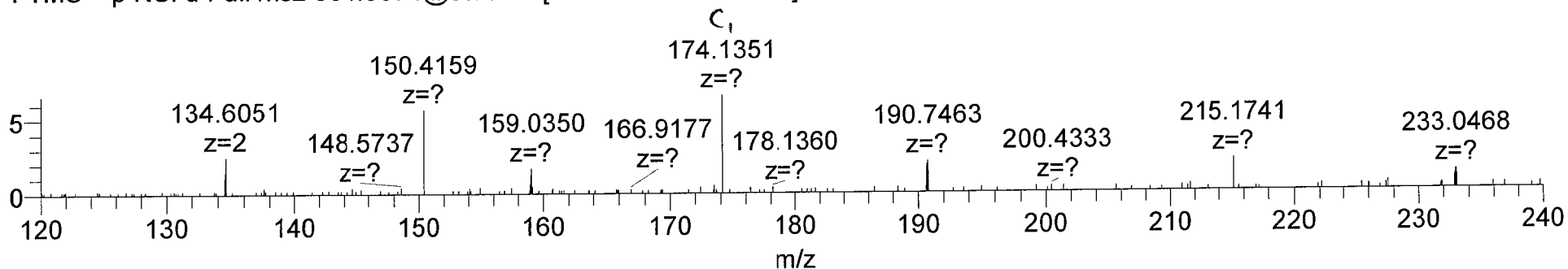
Sequence		+1 z ions	+2 z ions	+3 z ions	+4 z ions	+5 z ions	+6 z ions	+7 z ions	+8 z ions	+9 z ions	+10 z ions	+11 z ions
R	55	7466.7528	3733.8800	2489.5891	1867.4437	1494.1564	1245.2982	1067.5424	934.2255	830.5346	747.5818	679.7114
R	54	7294.6330	3647.8201	2432.2158	1824.4137	1459.7324	1216.6116	1042.9538	912.7105	811.4101	730.3698	664.0642
R	53	7138.5319	3569.7696	2380.1821	1785.3884	1428.5122	1190.5947	1020.6536	893.1978	794.0656	714.7697	649.8731
R	52	6982.4307	3491.7190	2328.1484	1746.3631	1397.2920	1164.5779	998.3535	873.6852	776.7210	699.1496	635.6821
R	51	6826.3296	3413.6685	2276.1147	1707.3379	1366.0717	1138.5610	976.0533	854.1726	759.3764	683.5395	621.4911
R	50	6670.2285	3335.6179	2224.0810	1668.3126	1334.8515	1112.5441	953.7532	834.6599	742.0319	667.9294	607.3001
R	49	6514.1274	3257.5673	2172.0473	1629.2873	1303.6313	1086.5273	931.4530	815.1473	724.6873	652.3193	593.1091
H	48	6358.0263	3179.5168	2120.0136	1590.2620	1272.4111	1060.5104	909.1529	795.6347	707.3427	636.7092	578.9181
G	47	6220.9674	3110.9873	2074.3273	1555.9973	1244.9993	1037.6673	889.5730	778.5023	692.1140	623.0033	566.4582
R	46	6163.9459	3082.4766	2055.3202	1541.7419	1233.5950	1028.1637	881.4271	771.3746	685.7782	617.3011	561.2744
K	45	6007.8448	3004.4260	2003.2865	1502.7167	1202.3748	1002.1469	859.1269	751.8620	666.4337	601.6910	547.0834
G	44	5879.7498	2940.3786	1960.5881	1470.6929	1176.7558	980.7977	840.8276	735.8501	654.2009	588.8815	535.4384
K	43	5822.7284	2911.8678	1941.5810	1456.4376	1165.3515	971.2941	832.6817	728.7224	647.8652	583.1794	530.2546
K	42	5684.6334	2847.8203	1898.8827	1424.4138	1139.7325	949.9450	814.3824	712.7105	633.6324	570.3699	518.6097
P	41	5566.5385	2783.7729	1856.1843	1392.3904	1114.1135	928.5958	796.0832	696.6987	619.3996	557.5604	506.9647
K	40	5469.4857	2735.2465	1823.8334	1368.1269	1094.7030	912.4203	782.2185	684.5671	608.6160	547.8551	498.1417
R	39	5341.3907	2671.1990	1781.1351	1336.1031	1069.0840	891.0712	763.9192	668.5552	594.3832	535.0456	486.4967
H	38	5185.2896	2593.1484	1729.1014	1297.0779	1037.8637	865.0543	741.6190	649.0426	577.0386	519.4355	472.3057
R	37	5048.2307	2524.6190	1683.4151	1262.8131	1010.4520	842.2112	722.0392	631.9102	561.8099	505.7296	459.8458
R	36	4892.1296	2446.5684	1631.3814	1223.7879	979.2317	816.1943	699.7390	612.3976	544.4653	490.1195	445.6548
R	35	4736.0286	2368.5179	1579.3477	1184.7626	948.0115	790.1775	677.4389	592.8849	527.1207	474.5094	431.4637
R	34	4579.9274	2290.4673	1527.3140	1145.7373	916.7913	764.1606	655.1387	573.3723	509.7762	458.8993	417.2727
R	33	4423.8263	2212.4168	1475.2803	1106.7120	885.5711	738.1438	632.8386	553.8596	492.4316	443.2892	403.0817
R	32	4267.7252	2134.3662	1423.2466	1067.6867	854.3509	712.1269	610.5384	534.3470	475.0870	427.6791	388.8907
R	31	4111.6240	2056.3157	1371.2129	1028.6615	823.1306	686.1101	588.2382	514.8344	457.7425	412.0690	374.6997
R	30	3955.5229	1978.2651	1319.1792	989.6362	791.9104	660.0932	565.9381	495.3217	440.3979	396.4588	360.5087
R	29	3799.4218	1900.2145	1267.1455	950.6109	760.6902	634.0764	543.6379	475.8091	423.0533	380.8487	346.3177
G	28	3643.3207	1822.1640	1215.1118	911.5856	729.4700	608.0595	521.3378	456.2965	405.7088	365.2386	332.1267
R	27	3586.2992	1793.6533	1196.1046	897.3303	718.0657	598.5559	513.1918	449.1688	399.3731	359.5365	326.9429
R	26	3430.1981	1715.6027	1144.0709	858.3050	686.8454	572.5391	490.8917	429.6561	382.0285	343.9264	312.7519
K	25	3274.0970	1637.5521	1092.0372	819.2797	655.6252	546.5222	468.5915	410.1435	364.6839	328.3163	298.5609
A	24	3146.0021	1573.5047	1049.3389	787.2560	630.0062	525.1731	450.2922	394.1316	350.4511	315.5068	286.9159
H	23	3074.9649	1537.9861	1025.6598	769.4967	615.7988	513.3336	440.1441	385.2520	342.5581	308.4030	280.4580
R	22	2937.9060	1469.4567	979.9735	735.2320	588.3870	490.4904	420.5642	368.1196	327.3294	294.6972	267.9981
G	21	2781.8049	1391.4061	927.9398	696.2067	557.1668	464.4736	398.2641	348.6070	309.9848	279.0870	253.8071
R	20	2724.7835	1362.8954	908.9327	681.9513	545.7625	454.9700	390.1182	341.4793	303.6491	273.3849	248.6233
K	19	2568.6823	1284.8448	856.8990	642.9260	514.5423	428.9531	367.8180	321.9667	286.3045	257.7748	234.4323
K	18	2440.5874	1220.7973	814.2006	610.9023	488.9233	407.6040	349.5187	305.9548	272.0717	244.9653	222.7873
K	17	2312.4924	1156.7498	771.5023	578.8786	463.3043	386.2548	331.2194	289.9429	257.8390	232.1558	211.1423
R	16	2184.3975	1092.7024	728.8040	546.8548	437.6853	364.9056	312.9202	273.9310	243.6062	219.3463	199.4973
G	15	2028.2963	1014.6518	676.7703	507.8295	406.4651	338.8888	290.6200	254.4184	226.2616	203.7362	185.3063
G	14	1971.2749	986.1411	657.7631	493.5742	395.0608	329.3852	282.4741	247.2907	219.9259	198.0340	180.1225
R	13	1914.2534	957.6303	638.7560	479.3188	383.6565	319.8816	274.3282	240.1630	213.5902	192.3319	174.9387
R	12	1758.1523	879.5798	586.7223	440.2935	352.4363	293.8648	252.0280	220.6504	196.2456	176.7218	160.7477
K	11	1602.0512	801.5292	534.6886	401.2683	321.2161	267.8479	229.7278	201.1378	178.9010	161.1117	146.5567
G	10	1473.9562	737.4818	491.9903	369.2445	295.5971	246.4988	211.4286	185.1259	164.6683	148.3022	134.9117
K	9	1416.9348	708.9710	472.9831	354.9891	284.1928	236.9952	203.2826	177.9982	158.3326	142.6000	129.7280
R	8	1288.8398	644.9235	430.2848	322.9654	258.5738	215.6460	184.9834	161.9863	144.0998	129.7905	118.0830
R	7	1132.7387	566.8730	378.2511	283.9401	227.3536	189.6292	162.6832	142.4737	126.7552	114.1804	103.8920
H	6	976.6376	488.8224	326.2174	244.9149	196.1333	163.6123	140.3830	122.9611	109.4106	98.5703	89.7009
R	5	839.5787	420.2930	280.5311	210.6501	168.7216	140.7692	120.8032	105.8287	94.1819	84.8644	77.2410
R	4	683.4776	342.2424	228.4974	171.6248	137.5013	114.7523	98.5030	86.3161	76.8373	69.2543	63.0500
R	3	527.3764	264.1919	176.4637	132.5996	106.2811	88.7355	76.2029	66.8034	59.4927	53.6442	48.8590
R	2	371.2753	186.1413	124.4300	93.5743	75.0609	62.7186	53.9027	47.2908	42.1482	38.0341	34.6680
R	1	215.1742	108.0908	72.3963	54.5490	43.8407	36.7018	31.6026	27.7781	24.8036	22.4240	20.4770

(term + 56...)

021519_0p2perYellowTube_Gradient_DD_Heat15 #2623-3827 RT: 11.17-14.25 AV: 8 NL: 2.93E4
T: FTMS + p NSI d Full ms2 584.3674@etd8.70 [120.0000-2000.0000]

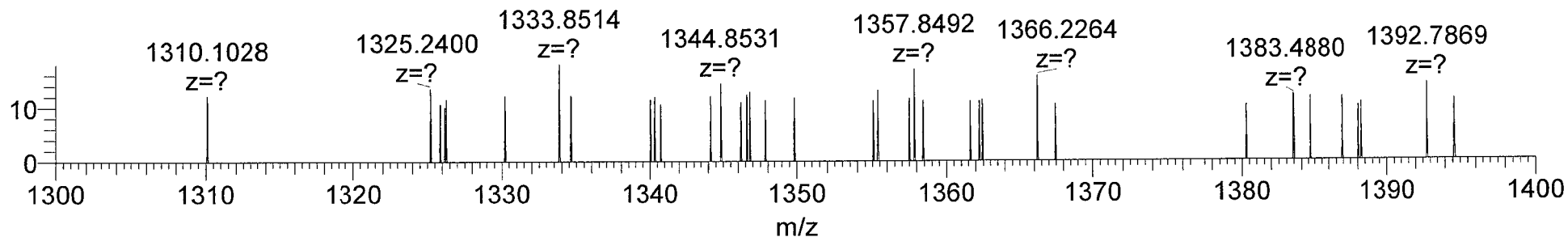
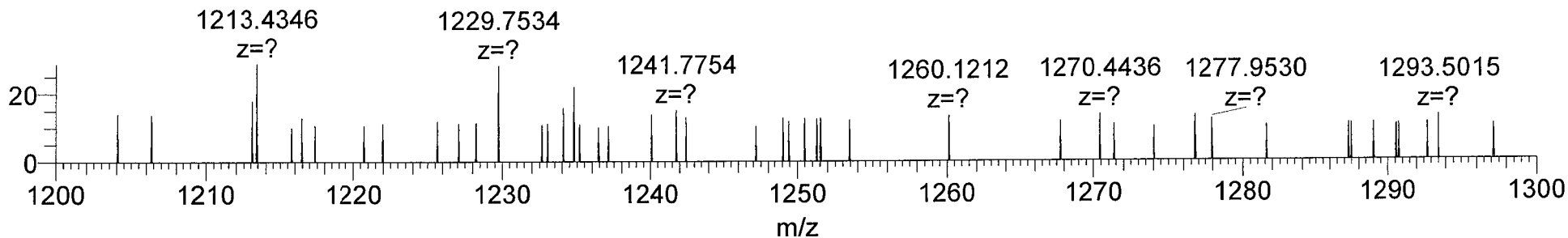
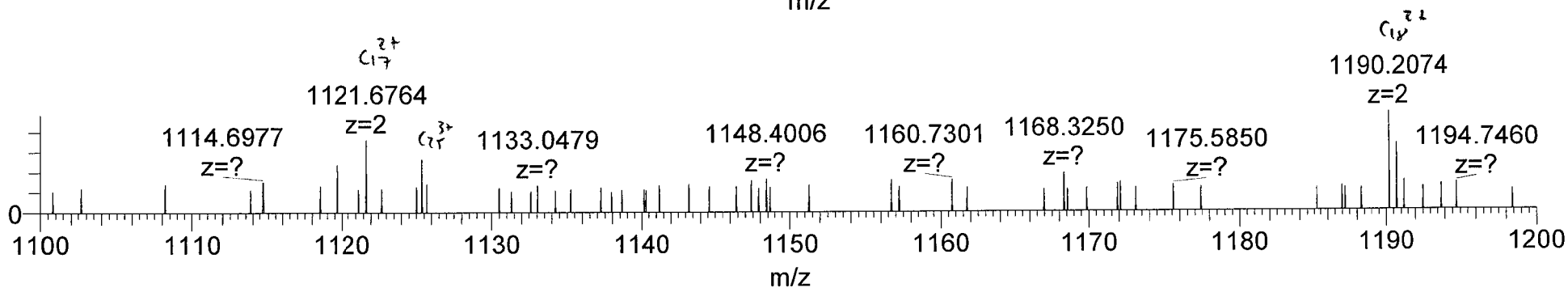
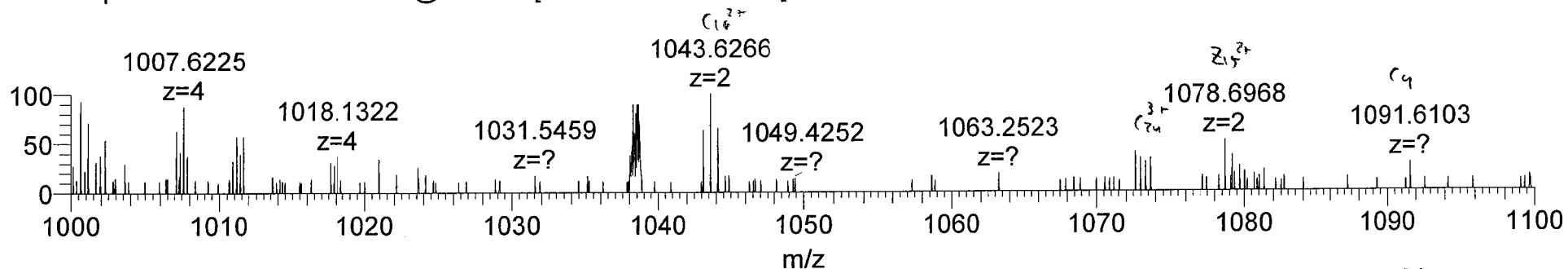


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T: FTMS + p NSI d Full ms2 584.3674@etd8.70 [120.0000-2000.0000]



021519_0p2perYellowTube_Gradient_DD_Heat15 #2623-3827 RT: 11.17-14.25 AV: 8 NL: 1.13E3

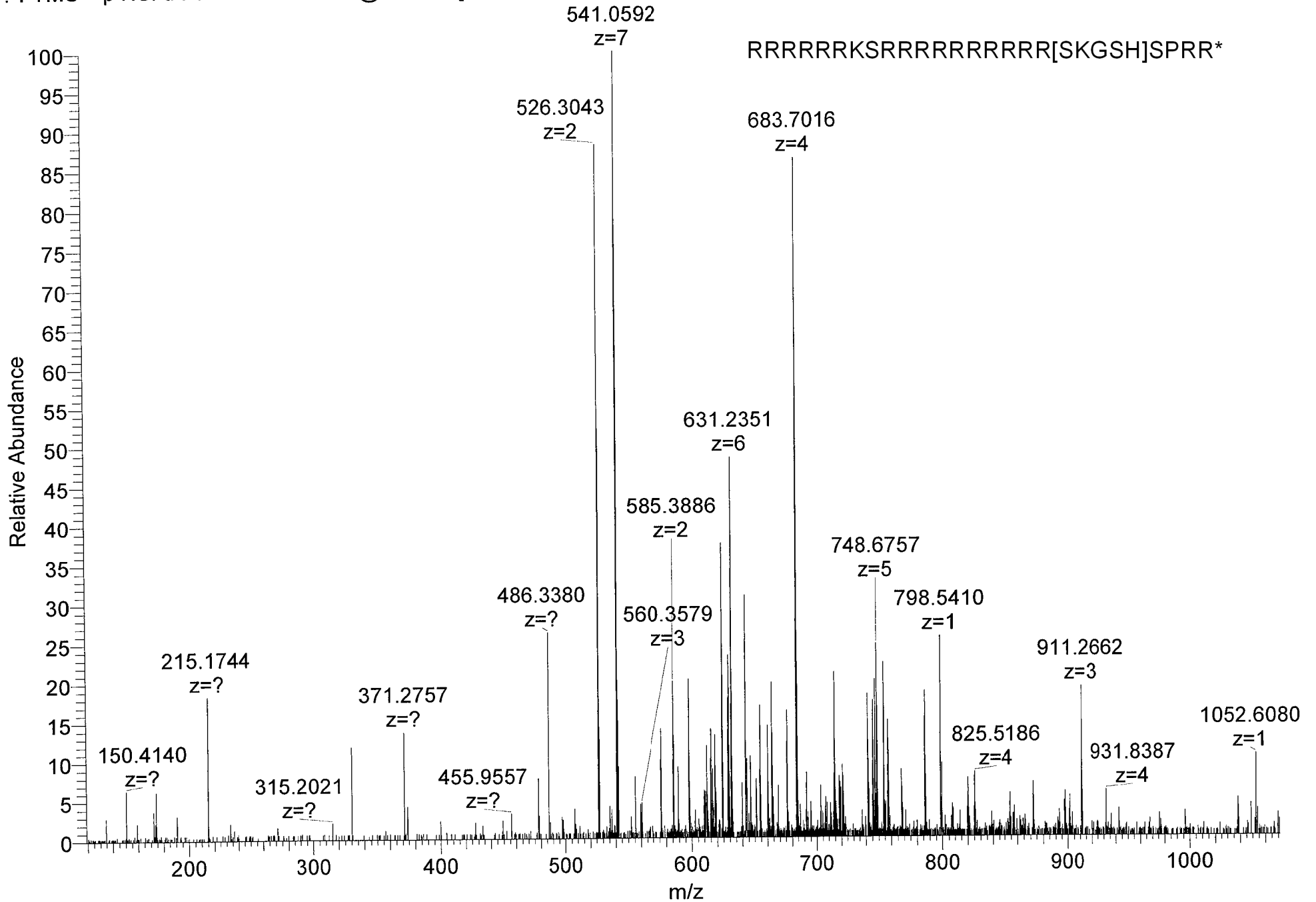
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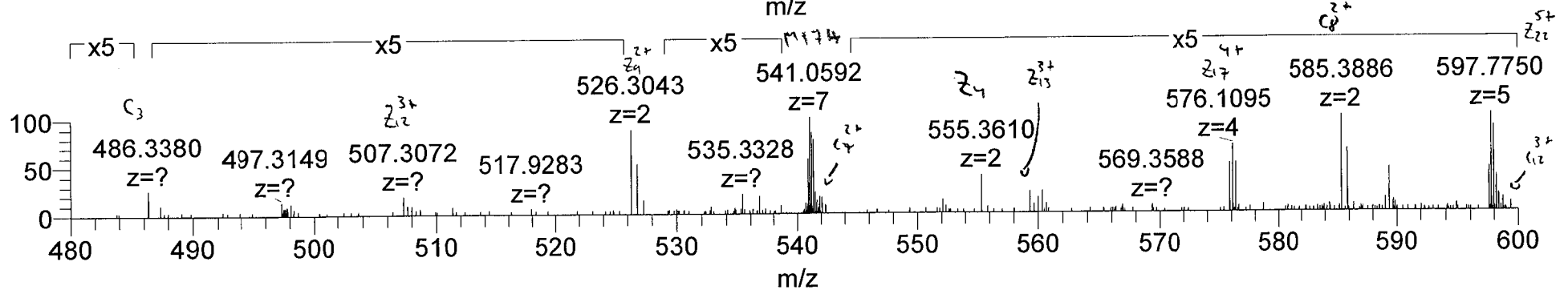
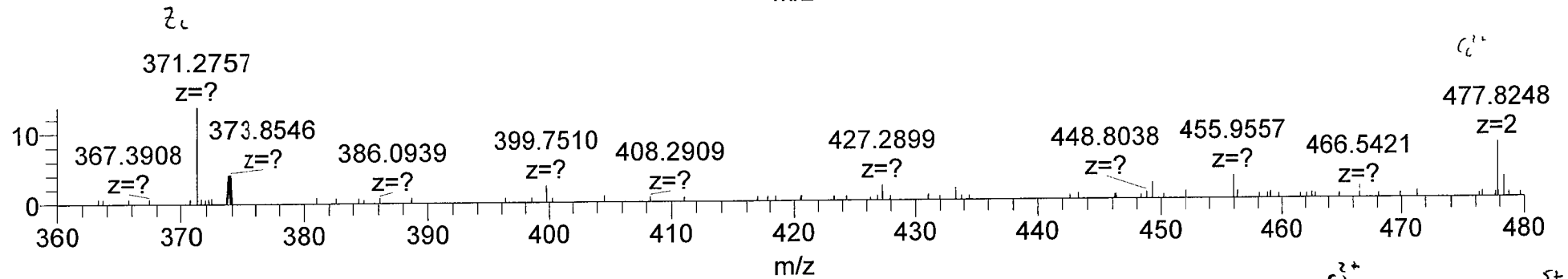
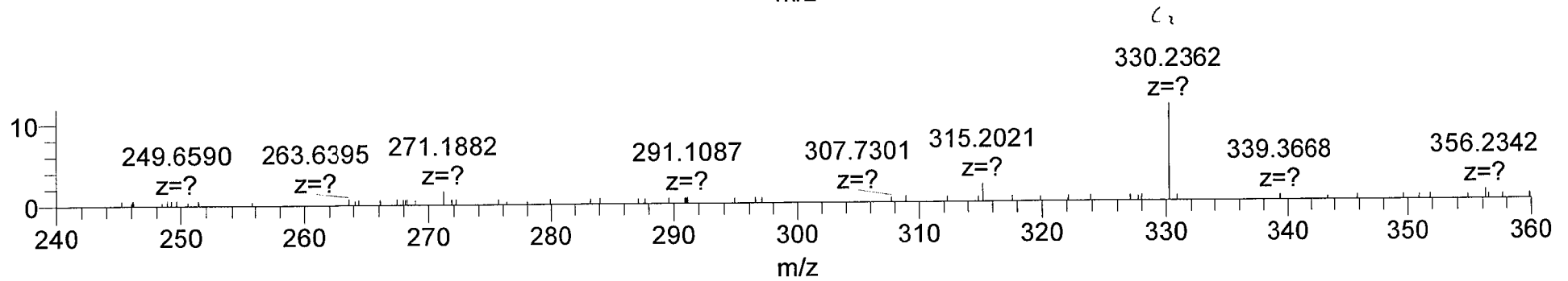
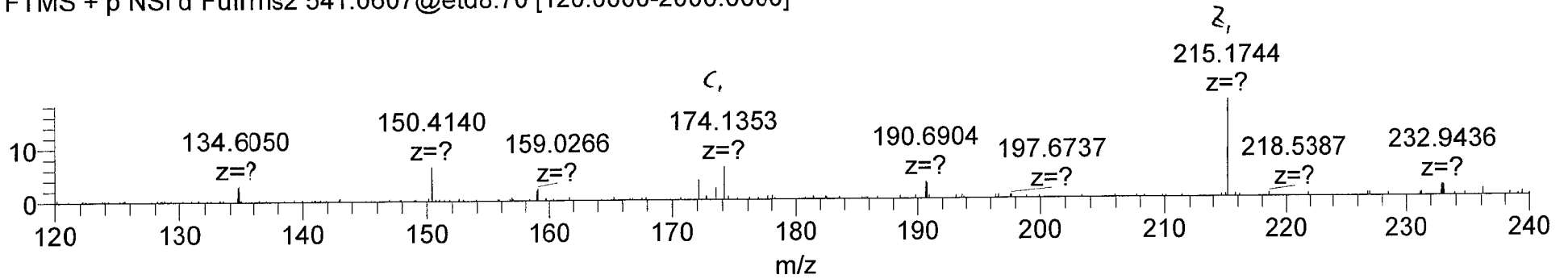
Fragment Masses

+5 c ions	+4 c ions	+3 c ions	+2 c ions	+1 c ions		Sequence		+1 z ions	+2 z ions	+3 z ions	+4 z ions	+5 z ions		
35.6328	44.2892	58.7165	87.5711	174.1349	✓	1	✓	R	30	4082.5081	2041.7577	1361.5076	1021.3825	817.3074
53.0392	66.0472	87.7272	131.0871	261.1670	✓	2	✓	S	29	3910.3883	1955.6978	1304.1343	978.3525	782.8835
73.2487	91.3091	121.4097	181.6110	362.2146	✓	3	✓	T	28	3823.3563	1912.1818	1275.1236	956.5945	765.4771
90.6552	113.0671	150.4204	225.1270	449.2467	✓	4	✓	S	27	3722.3086	1861.6579	1241.4410	931.3326	745.2675
121.8754	152.0924	202.4541	303.1775	605.3478	✓	5	✓	R	26	3635.2766	1818.1419	1212.4304	909.5746	727.8611
139.2818	173.8504	231.4648	346.6935	692.3798	✓	6	✓	S	25	3479.1754	1740.0914	1160.3967	870.5493	696.6409
170.5020	212.8757	283.4985	424.7441	848.4809	✓	7	✓	R	24	3392.1434	1696.5753	1131.3860	848.7913	679.2345
187.9084	234.6337	312.5092	468.2601	935.5130	✓	8	✓	S	23	3236.0423	1618.5248	1079.3523	809.7660	648.0143
219.1286	273.6590	364.5429	546.3107	1091.6141	✓	9	✓	R	22	3149.0103	1575.0088	1050.3416	788.0080	630.6079
230.5329	287.9143	383.5500	574.8214	1148.6355	✓	10	✓	G	21	2992.9092	1496.9582	998.3079	748.9827	599.3877
261.7531	326.9396	435.5837	652.8720	1304.7366	✓	11	✓	R	20	2935.8877	1466.4475	979.3007	734.7274	587.9834
292.9734	365.9649	487.6174	730.9225	1460.8378	✓	12	✓	R	19	2779.7866	1390.3969	927.2670	695.7021	556.7631
324.1936	404.9902	539.6511	808.9731	1616.9389	✓	13	✓	R	18	2623.6855	1312.3464	875.2333	656.6768	525.5429
355.4138	444.0155	591.6848	887.0236	1773.0400	✓	14	✓	R	17	2467.5844	1234.2958	823.1996	617.6515	494.3227
386.6340	483.0407	643.7185	965.0742	1929.1411	✓	15	✓	R	16	2311.4833	1156.2453	771.1659	578.6263	463.1025
417.8543	522.0660	695.7522	1043.1247	2085.2422	✓	16	✓	R	15	2155.3821	1078.1947	719.1322	539.6010	431.8822
449.0745	561.0913	747.7860	1121.1753	2241.3433	✓	17	✓	R	14	1999.2810	1000.1442	667.0985	500.5757	400.6620
476.4863	595.3560	793.4723	1189.7047	2378.4022	✓	18	✓	H	13	1843.1799	922.0936	615.0648	461.5504	369.4418
507.7065	634.3813	845.5060	1267.7553	2534.5033	✓	19	✓	R	12	1706.1210	853.5641	569.3785	427.2857	342.0300
538.9267	673.4066	897.5397	1345.8059	2690.6044	✓	20	✓	R	11	1550.0199	775.5136	517.3448	388.2604	310.8098
570.1469	712.4318	949.5734	1423.8564	2846.7056	✓	21	✓	R	10	1393.9188	697.4630	465.3111	349.2352	279.5896
601.3672	751.4571	1001.6071	1501.9070	3002.8067	✓	22	✓	R	9	1237.8177	619.4125	413.2774	310.2099	248.3694
612.7714	765.7125	1020.6142	1530.4177	3059.8281	✓	23	✓	G	8	1081.7166	541.3619	361.2437	271.1846	217.1491
643.9917	804.7378	1072.6479	1608.4683	3215.9292	✓	24	✓	R	7	1024.6951	512.8512	342.2366	256.9292	205.7448
675.2119	843.7630	1124.6816	1686.5188	3372.0303	✓	25	✓	R	6	868.5940	434.8006	290.2028	217.9040	174.5246
706.4321	882.7883	1176.7153	1764.5694	3528.1315	✓	26	✓	R	5	712.4929	356.7501	238.1691	178.8787	143.3044
737.6523	921.8136	1228.7490	1842.6199	3684.2326	✓	27	✓	R	4	556.3918	278.6995	186.1354	139.8534	112.0842
749.0566	936.0690	1247.7562	1871.1307	3741.2540	✓	28	✓	G	3	400.2907	200.6490	134.1017	100.8281	80.8640
780.2768	975.0942	1299.7899	1949.1812	3897.3551	✓	29	✓	R	2	343.2692	172.1382	115.0946	86.5728	69.4597
817.3074	1021.3825	1361.5076	2041.7577	4082.5081	✓	30	✓	K	1	187.1681	94.0877	63.0609	47.5475	38.2394
								(cterm + 56...						

021519_0p2perYellowTube_Gradient_DD_Heat15 #2613-3882 RT: 12.64-14.83 AV: 7 NL: 2.12E4
T: FTMS + p NSI d Full ms2 541.0607@etd8.70 [120.0000-2000.0000]



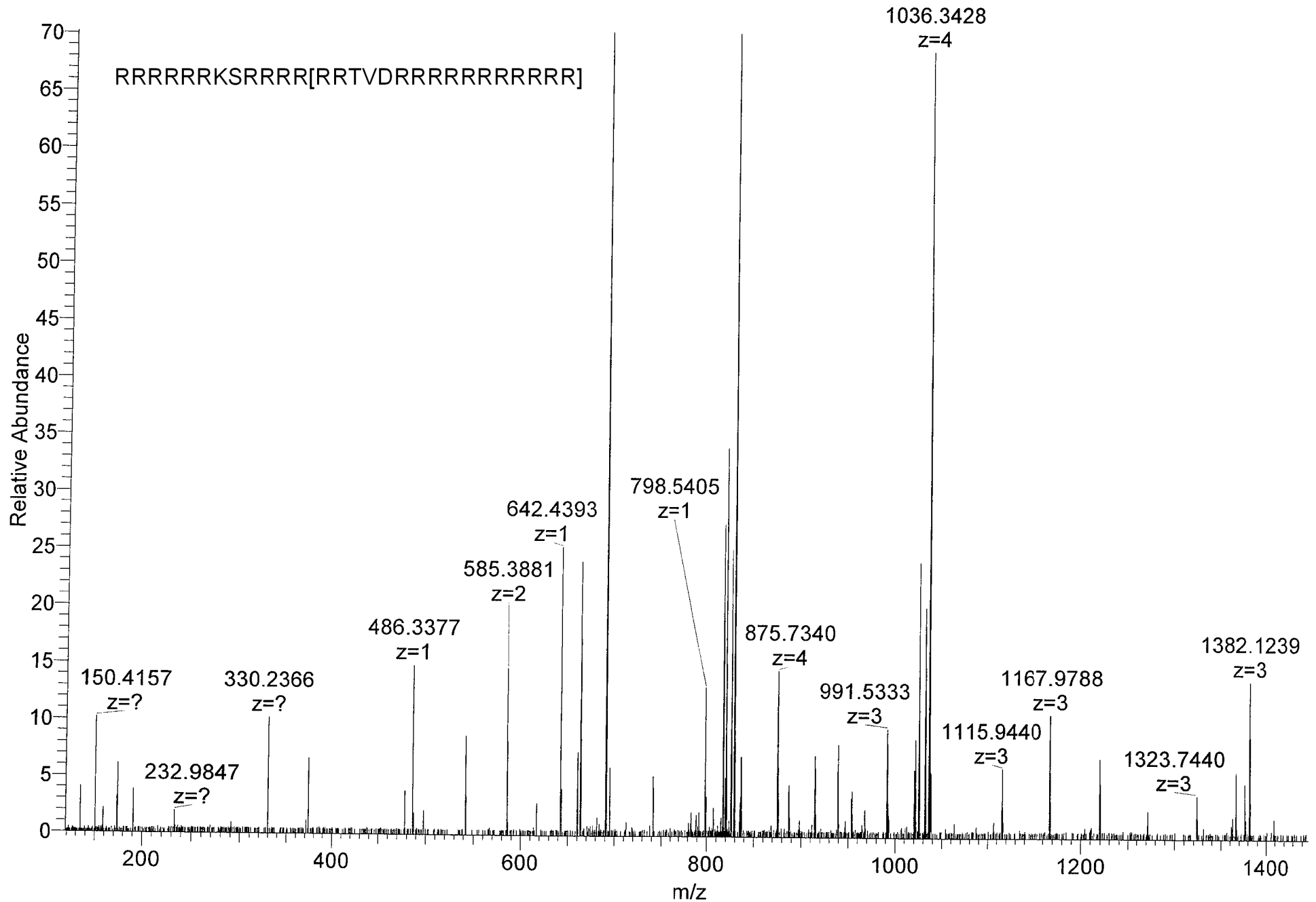
021519_Op2perYellowTube_Gradient_DD_Heat15 #2613-3881 RT: 12.64-14.83 AV: 7 NL: 2.12E4
T: FTMS + p NSI d Fullms2 541.0607@etd8.70 [120.0000-2000.0000]

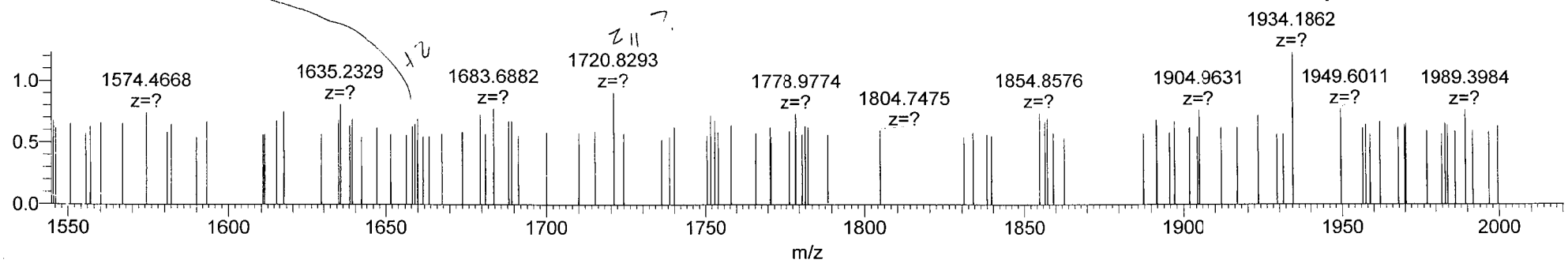
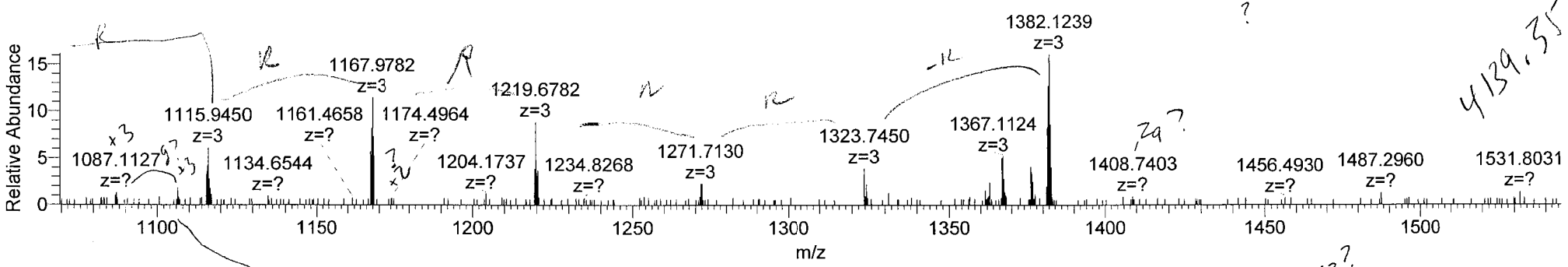
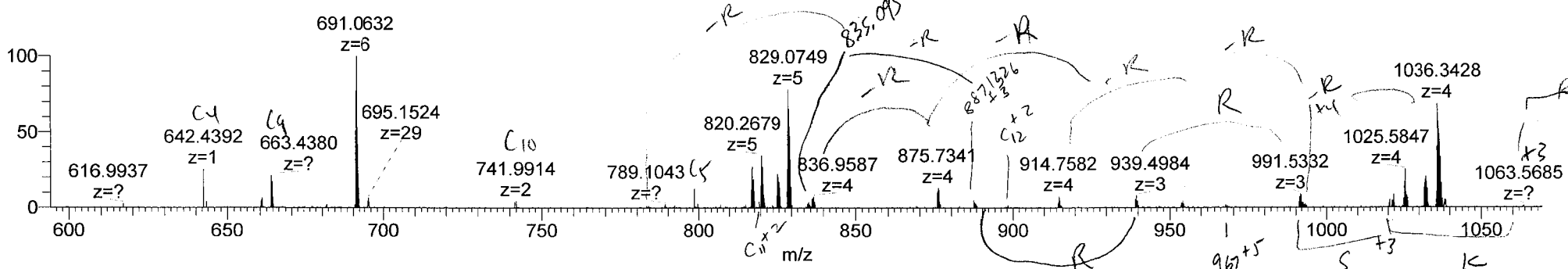
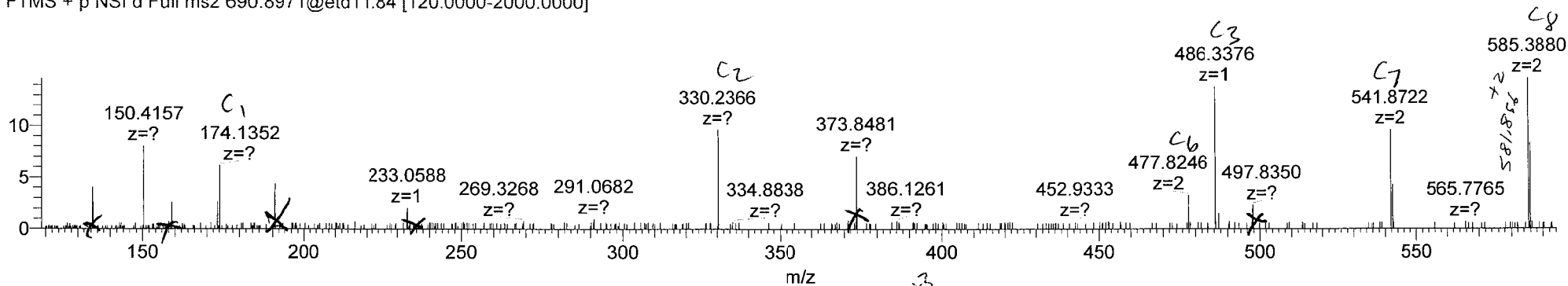


Fragment Masses

+6 c ions	+5 c ions	+4 c ions	+3 c ions	+2 c ions	+1 c ions	Sequence	+1 z ions	+2 z ions	+3 z ions	+4 z ions	+5 z ions	+6 z ions		
29.8619	35.6328	44.2892	58.7165	87.5711	174.1349	1	R	27	3780.3630	1890.6851	1260.7925	945.8462	756.8784	630.8999
55.8787	66.8530	83.3145	110.7502	165.6217	330.2360	2	R	26	3608.2432	1804.6252	1203.4192	902.8163	722.4545	602.2133
81.8956	98.0733	122.3397	162.7839	243.6722	486.3372	3	R	25	3452.1421	1726.5747	1151.3855	863.7910	691.2342	576.1964
107.9124	129.2935	161.3650	214.8176	321.7228	642.4383	4	R	24	3295.0410	1648.5241	1099.3518	824.7657	660.0140	550.1796
133.9293	160.5137	200.3903	266.8513	399.7733	798.5394	5	R	23	3139.9399	1570.4736	1047.3181	785.7404	628.7938	524.1627
159.9461	191.7339	239.4156	318.8850	477.8239	954.6405	6	R	22	2983.8387	1492.4230	995.2844	746.7151	597.5736	498.1459
181.2953	217.3529	271.4393	361.5833	541.8714	1082.7355	7	K	21	2827.7376	1414.3725	943.2507	707.6899	566.3533	472.1290
195.8006	234.7593	293.1973	390.5940	585.3874	1169.7675	8	S	20	2699.6427	1350.3250	900.5524	675.6661	540.7344	450.7798
221.8175	265.9795	332.2226	442.6277	663.4379	1325.8686	9	R	19	2612.6106	1306.8090	871.5417	653.9081	523.3279	436.2745
247.8343	297.1998	371.2479	494.6614	741.4885	1481.9697	10	R	18	2456.5095	1228.7584	819.5080	614.8828	492.1077	410.2577
273.8512	328.4200	410.2732	546.8951	819.5390	1638.0708	11	R	17	2300.4084	1150.7078	767.4743	575.8576	460.8875	384.2408
299.8681	359.6402	449.2984	598.7288	897.5896	1794.1719	12	R	16	2144.3073	1072.6573	715.4406	536.8323	429.6873	358.2239
325.8849	390.8604	488.3237	650.7625	975.6402	1950.2730	13	R	15	1988.2062	994.6067	663.4069	497.8070	398.4471	332.2071
351.9018	422.0807	527.3490	702.7962	1053.6907	2106.3741	14	R	14	1832.1051	916.5562	611.3732	458.7817	367.2268	306.1902
377.9186	453.3009	566.3743	754.8299	1131.7413	2262.4753	15	R	13	1676.0040	838.5056	559.3395	419.7565	336.0066	280.1734
403.9355	484.5211	605.3995	806.8636	1209.7918	2418.5764	16	R	12	1519.9029	760.4551	507.3058	380.7312	304.7864	254.1565
429.9523	515.7413	644.4248	858.8973	1287.8424	2574.6775	17	R	11	1363.8018	682.4045	455.2721	341.7059	273.5662	228.1397
455.9692	546.9615	683.4501	910.9310	1365.8929	2730.7786	18	R	10	1207.7006	604.3540	403.2384	302.6806	242.3459	202.1228
470.4745	564.3679	705.2081	939.9417	1409.4089	2817.8106	19	S	9	1051.5995	526.3034	351.2047	263.6553	211.1257	176.1060
491.8237	589.9889	737.2319	982.6400	1473.4564	2945.9056	20	K	8	964.5675	482.7874	322.1940	241.8973	193.7193	161.6006
501.3272	601.3912	751.4872	1001.6472	1501.9672	3002.9270	21	G	7	836.4725	418.7399	279.4957	209.8736	168.1003	140.2515
515.8326	618.7976	773.2452	1030.6579	1545.4832	3089.9591	22	S	6	779.4511	390.2292	260.4885	195.6182	156.6860	130.7479
538.6757	646.2084	807.5100	1076.3442	1614.0126	3227.0180	23	H	5	692.4190	346.7132	231.4779	173.8602	139.2896	116.2426
553.1811	663.6158	829.2680	1105.3549	1657.5288	3314.0580	24	S	4	555.3601	278.1837	185.7916	139.5955	111.8778	93.3994
569.3565	683.0264	853.5312	1137.7058	1706.0550	3411.1028	25	P	3	468.3281	234.6677	136.7869	117.8675	94.4744	78.8941
595.3734	714.2466	892.5584	1189.7395	1784.1056	3567.2039	26	R	2	371.2753	186.1413	124.4300	93.5743	75.0609	62.7186
630.9999	756.8784	945.8462	1260.7925	1890.6851	3780.3630	27	R	1	215.1742	108.0908	72.3963	54.5490	43.8407	36.7018
						(clerm + 56.								

021519_0p2perYellowTube_Gradient_DD_Heat15 #2887-3608 RT: 11.77-13.95 AV: 13 NL: 1.61E4
T: FTMS + p NSI d Full ms2 691.2317@etd11.84 [120.0000-2000.0000]

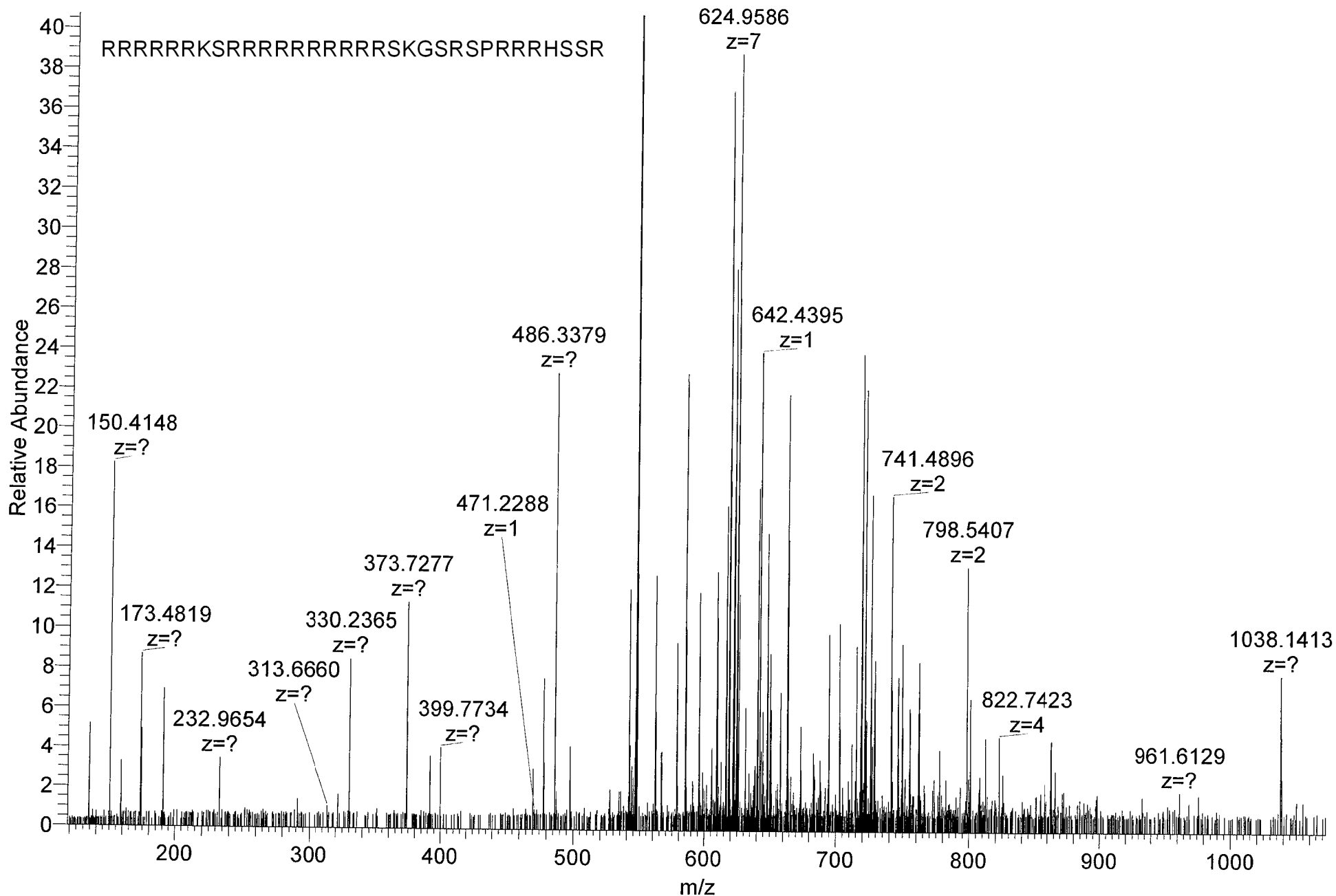




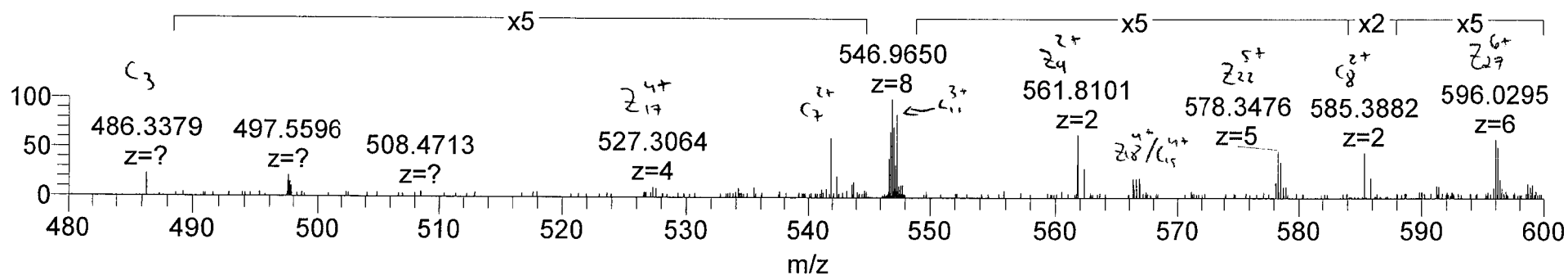
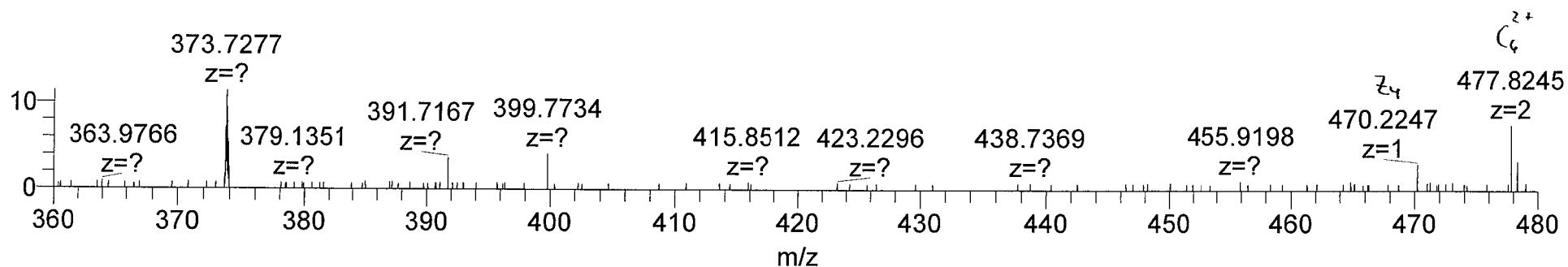
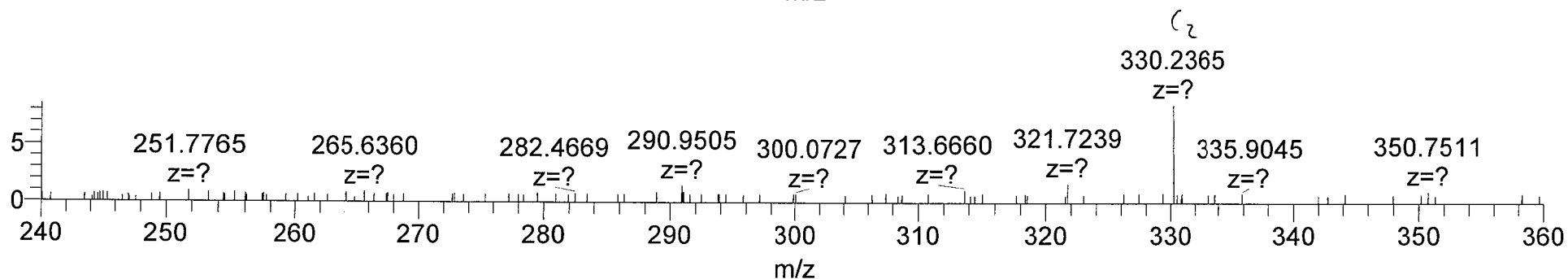
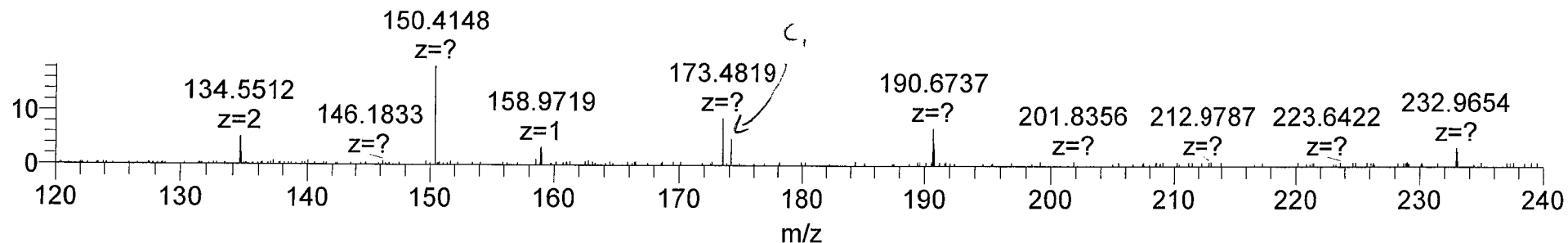
Fragment Masses

+4 c ions	+3 c ions	+2 c ions	+1 c ions		Sequence		+1 z ions	+2 z ions	+3 z ions	+4 z ions
44.2892	58.7165	87.5711	174.1349 ✓	1	R	28	4139.6134	2070.3103	1380.5427	1035.6588
83.3145	110.7502	165.6217	330.2360 ✓	2	R	27	3967.4936	1984.2504	1323.1694 ✓	992.6289 ✓
122.3397	162.7839	243.6722	486.3372 ✓	3	R	26	3811.3925	1906.1999	1271.1357 ✓	953.6036 ✓
161.3650	214.8176	321.7228	642.4383 ✓	4	R	25	3655.2914	1828.1493	1219.1020 ✓	914.5783 ✓
200.3903	266.8513	399.7733	798.5394 ✓	5	R	24	3499.1903	1750.0988	1167.0683 ✓	875.5530 ✓
239.4156	318.8850	477.8239	954.6405 ✓	6	R	23	3343.0891	1672.0482	1115.0346 ✓	836.5277 ✓
271.4393	361.5833	541.8714 ✓	1082.7355	7	K	22	3186.9880	1593.9977	1063.0009 ✓	797.5025
293.1973	390.5940	585.3874 ✓	1169.7675	8	S	21	3058.8931	1529.9502	1020.3025 ✓	765.4787
332.2226	442.6277	663.4379 ✓	1325.8686	9	R	20	2971.8610	1486.4342	991.2919 ✓	743.7207
371.2479	494.6614	741.4885 ✓	1481.9697	10	R	19	2815.7599	1408.3836	939.2582 ✓	704.6954
410.2732	546.6951	819.5390 ✓	1638.0708	11	R	18	2659.6588	1330.3330	887.2245 ✓	665.6702
449.2984	598.7288	897.5896 ✓	1794.1719	12	R	17	2503.5577	1252.2825	835.1908 ✓	626.6449
488.3237	650.7625	975.6402	1950.2730	13	R	16	2347.4566	1174.2319 ✓	783.1570 ✓	587.6196
527.3490	702.7962	1053.6907	2106.3741	14	R	15	2191.3555	1096.1814	731.1233	548.5943
552.6109	736.4788	1104.2146	2207.4218	15	T	14	2035.2544	1018.1308	679.0896	509.5691
577.3780	769.5016	1153.7488	2306.4902	16	V	13	1934.2067	967.6070	645.4071	484.3071
606.1348	807.8439	1211.2622	2421.5172	17	D	12	1835.1383	918.0728	612.3843	459.5400
645.1600	859.8776	1289.3128	2577.6183	18	R	11	1720.1113	860.5593	574.0420	430.7833
684.1853	911.9113	1367.3633	2733.7194	19	R	10	1564.0102	782.5088	522.0083	391.7580
723.2106	963.9450	1445.4139	2889.8205	20	R	9	1407.9091	704.4582	469.9746	352.7327
762.2359	1015.9787	1523.4645	3045.9216	21	R	8	1251.8080	626.4076	417.9409	313.7075
801.2611	1068.0124	1601.5150	3202.0227	22	R	7	1095.7069	548.3571	365.9071	274.6822
840.2864	1120.0461	1679.5656	3358.1239	23	R	6	939.6058	470.3065	313.8734	235.6569
879.3117	1172.0798	1757.6161	3514.2250	24	R	5	783.5047	392.2560	261.8397	196.6316
918.3370	1224.1135	1835.6667	3670.3261	25	R	4	627.4036	314.2054	209.8060	157.6063
957.3623	1276.1472	1913.7172	3826.4272	26	R	3	471.3024	236.1549	157.7723	118.5811
996.3875	1328.1809	1991.7678	3982.5283	27	R	2	315.2013	158.1043	105.7386	79.5558
1035.6588	1380.5427	2070.3103	4139.6134	28	R	1	159.1002	80.0538	53.7049	40.5305

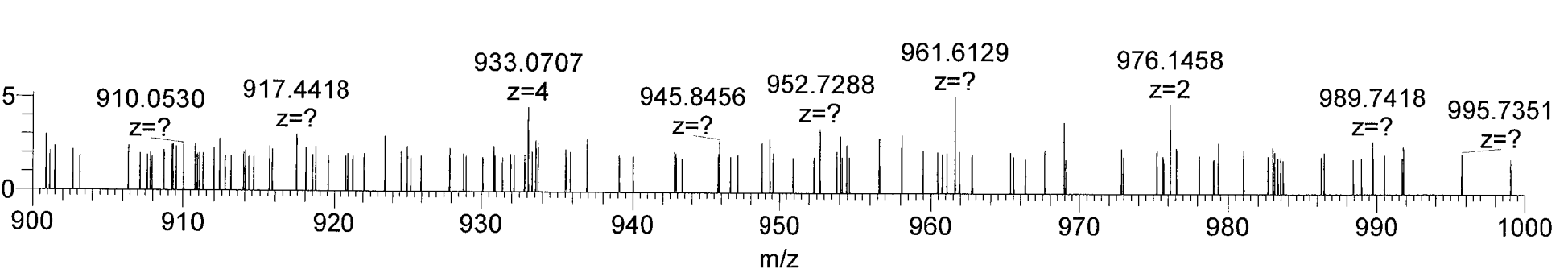
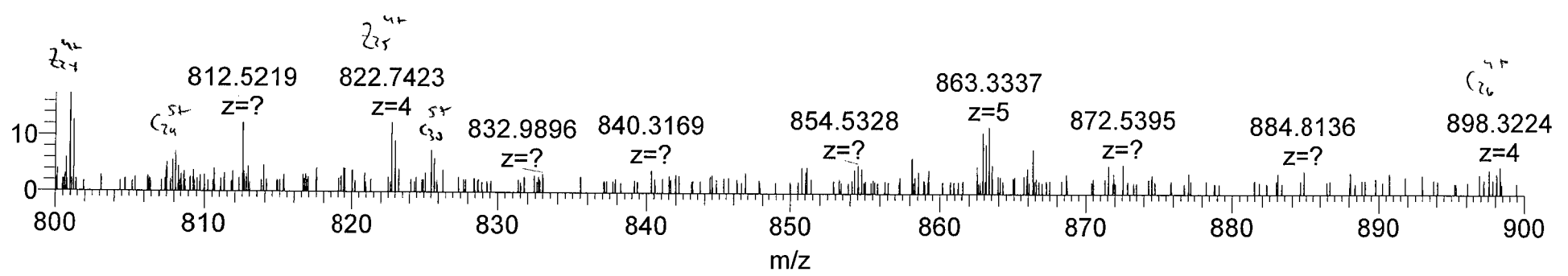
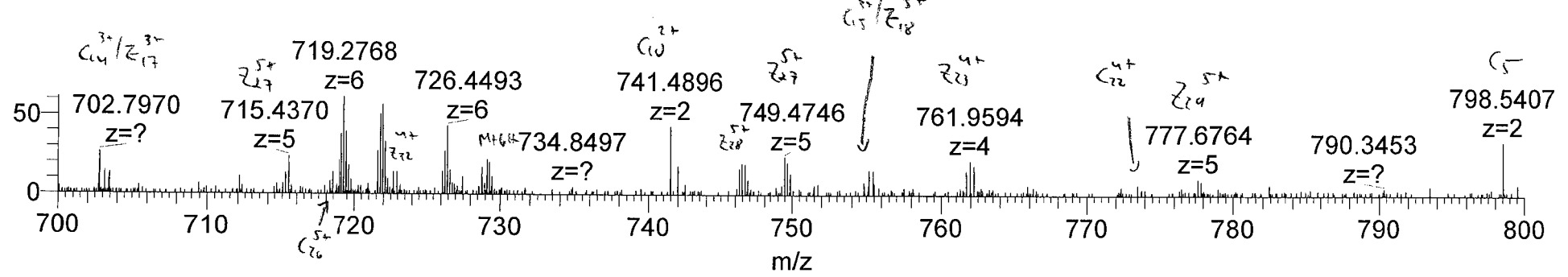
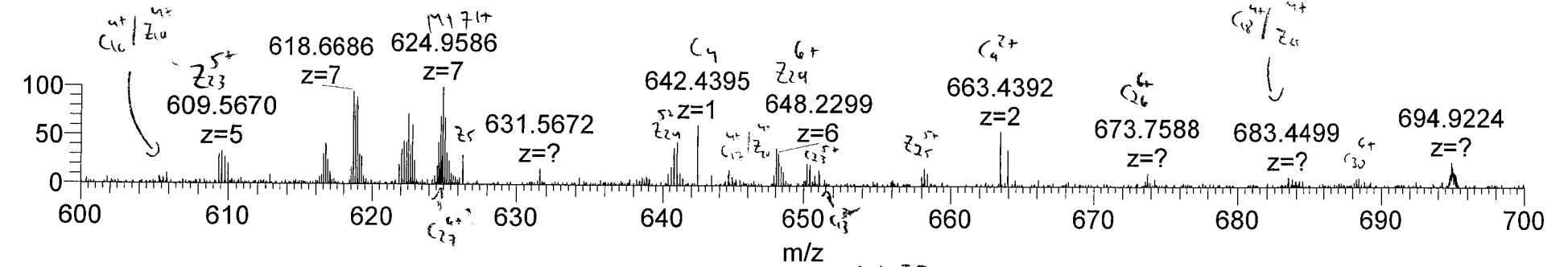
021519_0p2perYellowTube_Gradient_DD_Heat15 #2617-4457 RT: 11.06-15.59 AV: 11 NL: 1.22E4
T: FTMS + p NSI d Full ms2 547.0918@etd6.66 [120.0000-2000.0000]



021519_0p2perYellowTube_Gradient_DD_Heat15 #2617-4458 RT: 11.06-15.59 AV: 11 NL: 1.22E4
T: FTMS + p NSI d Full ms2 547.0918@etd6.66 [120.0000-2000.0000]



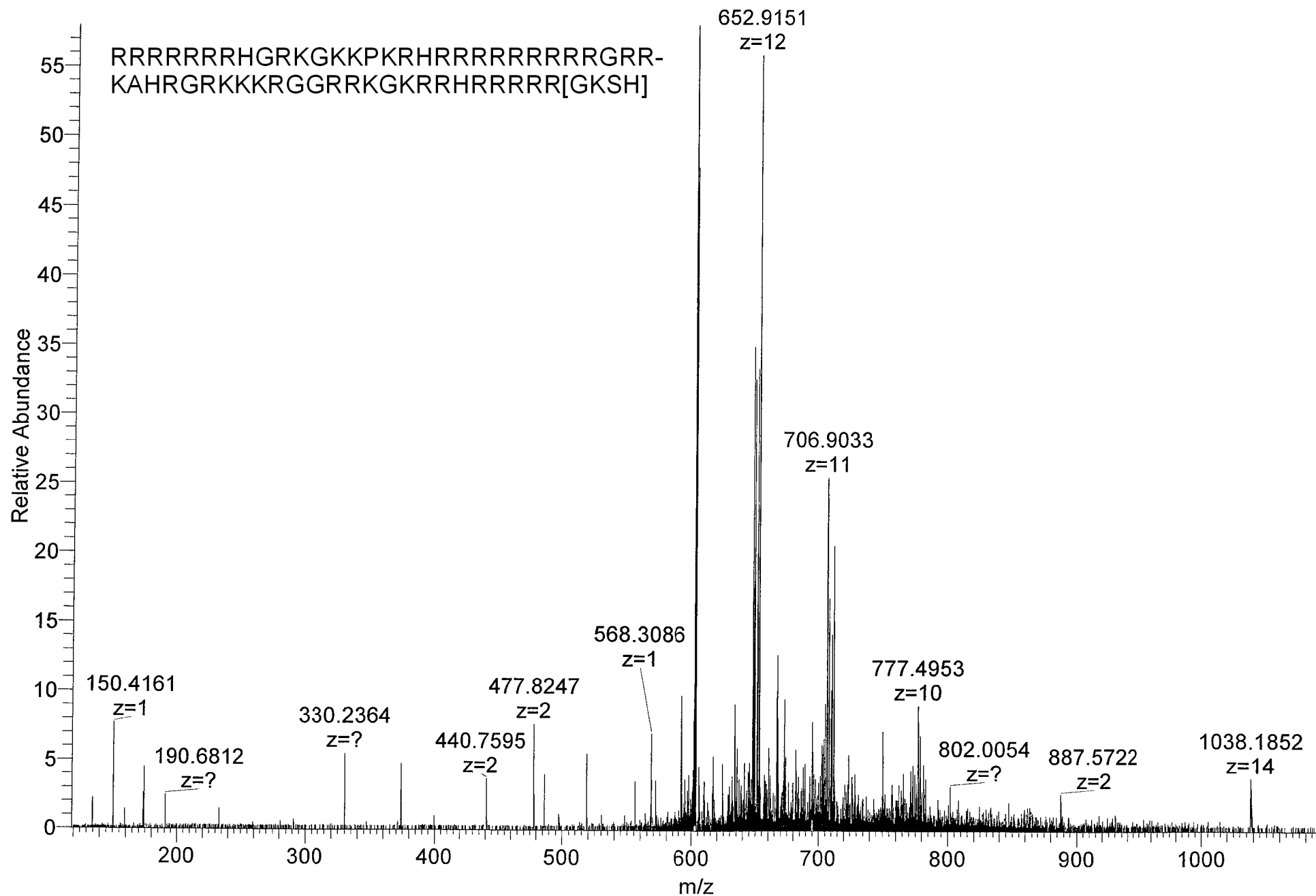
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T: FTMS + p NSI d Full ms2 547.0918@etd6.66 [120.0000-2000.0000]



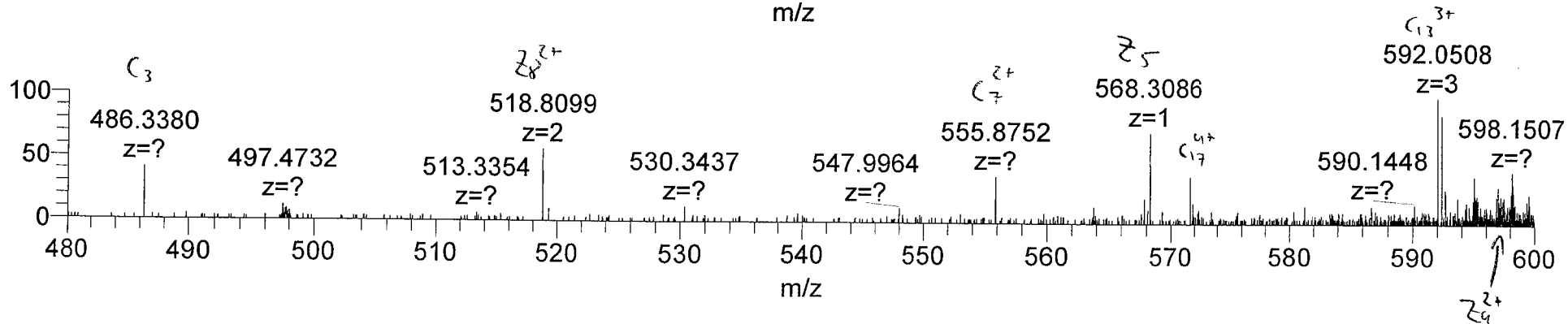
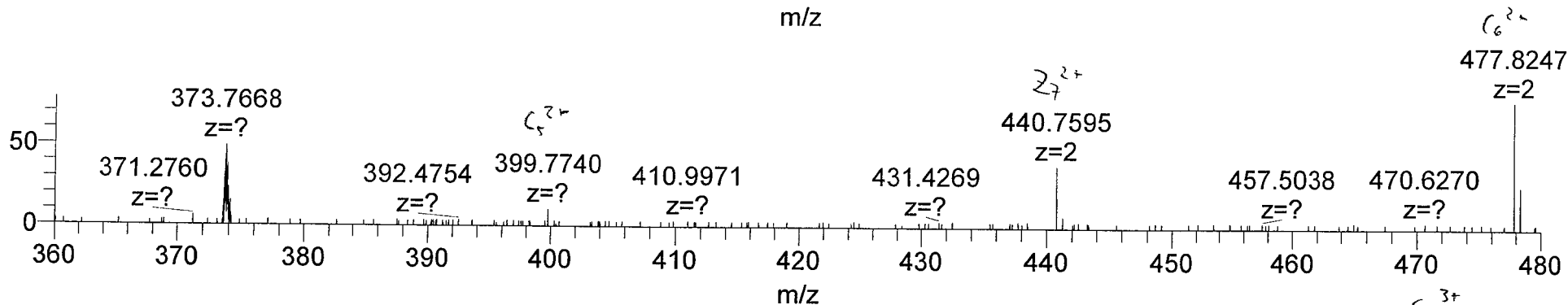
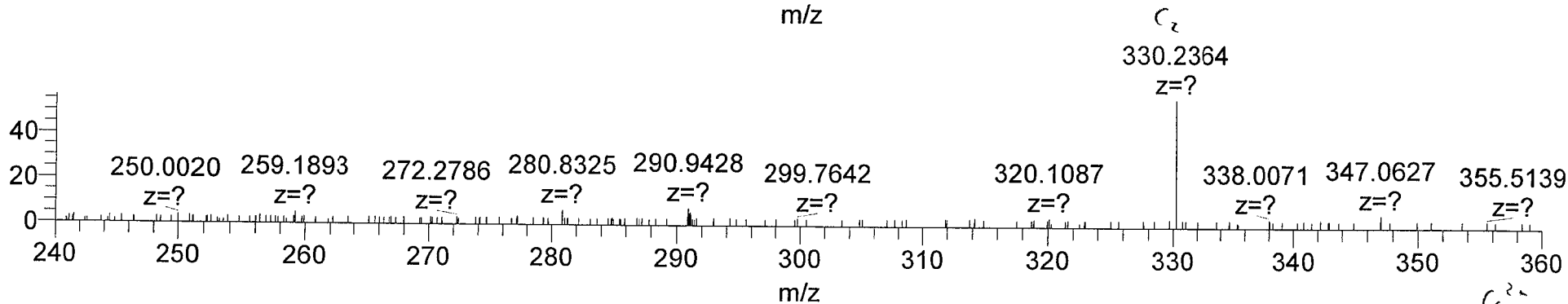
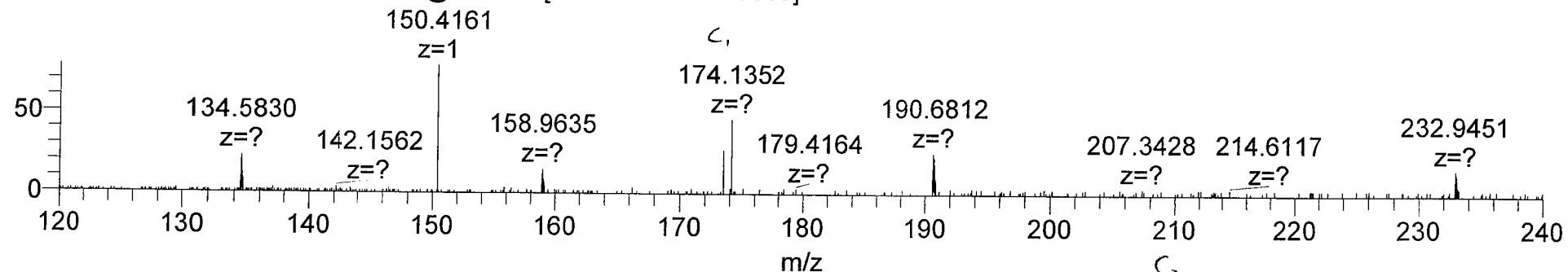
Fragment Masses

+7 c ions	+6 c ions	+5 c ions	+4 c ions	+3 c ions	+2 c ions	+1 c ions	Sequence	+1 z ions	+2 z ions	+3 z ions	+4 z ions	+5 z ions	+6 z ions	+7 z ions		
25.7398	29.8619	35.6328	44.2892	58.7165	87.5711	174.1349	1	R	32	4366.6564	2183.8318	1456.2237	1092.4196	874.1371	728.6155	624.6714
48.0400	55.8787	66.8530	83.3145	110.7502	165.6217	330.2360	2	R	31	4194.5366	2097.7719	1398.8504	1049.3896	839.7131	699.9288	600.0829
70.3401	81.8956	98.0733	122.3397	162.7839	243.6722	486.3372	3	R	30	4038.4355	2019.7214	1346.8167	1010.3643	808.4929	673.9120	577.7827
92.6403	107.9124	129.2935	161.3650	214.8176	321.7228	642.4383	4	R	29	3882.3344	1941.6708	1294.7830	971.3390	777.2727	647.8951	555.4826
114.9404	133.8293	160.5137	200.3903	268.8513	399.7733	798.5394	5	R	28	3726.2332	1863.6203	1242.7493	932.3138	746.0525	621.8783	533.1824
137.2406	159.9461	191.7339	239.4156	318.8850	477.8239	954.6405	6	R	27	3570.1321	1785.5697	1190.7156	893.2885	714.8322	595.8614	510.8823
155.5399	181.2953	217.9529	271.4393	361.5833	541.8714	1082.7355	7	K	26	3414.0310	1707.5191	1138.6819	854.2632	683.6120	569.8446	488.5821
167.9730	195.8006	234.7593	293.1973	390.5940	585.3874	1169.7675	8	S	25	3285.9361	1643.4717	1095.9835	822.2395	657.9930	548.4954	470.2828
190.2732	221.8175	263.9795	332.2226	442.5277	663.4379	1325.8688	9	R	24	3198.9040	1599.9557	1066.9729	800.4815	640.5868	533.9801	457.8487
212.5733	247.8343	297.1898	371.2479	494.6614	741.4885	1481.9697	10	R	23	3042.8029	1521.9051	1014.9392	761.4562	609.3664	507.9732	435.5495
234.8735	273.8512	328.4200	410.2732	546.6851	819.5390	1638.0708	11	R	22	2886.7018	1443.8545	962.9055	722.4309	578.1462	481.9564	413.2494
257.1737	299.8681	359.6402	449.2984	598.7288	897.5896	1794.1719	12	R	21	2730.6007	1365.8040	910.8717	683.4056	546.9260	458.9395	390.9492
279.4738	325.8849	390.8804	488.3237	650.7825	975.8402	1950.2730	13	R	20	2574.4996	1287.7534	858.8380	644.3804	515.7057	429.9227	368.6490
301.7740	351.9018	422.0807	527.3490	702.7969	1053.6907	2106.3741	14	R	19	2418.3985	1209.7029	806.8043	606.3651	484.4866	403.9058	346.3489
324.0741	377.9186	453.3009	566.3743	754.8298	1131.7413	2262.4753	15	R	18	2262.2874	1131.6523	754.7708	566.3298	453.2653	377.8890	324.0487
346.3743	403.9355	484.5211	605.3995	806.8636	1209.7918	2418.5764	16	R	17	2106.1863	1059.6018	702.7369	527.3045	422.0451	351.8721	301.7486
368.6744	429.9523	515.7413	644.4248	858.8973	1287.8424	2574.6775	17	R	16	1950.0951	975.5512	650.7032	488.2792	390.8248	325.8553	279.4484
390.9746	455.9692	546.9615	683.4501	910.9310	1365.8929	2730.7786	18	R	15	1793.9940	897.5007	598.6895	449.2540	359.8046	299.8384	257.1482
403.4078	470.4745	564.3679	705.2081	939.9417	1409.4089	2817.8106	19	S	14	1637.8929	819.4501	546.6358	410.2287	328.3844	273.8216	234.8481
421.7070	491.8237	589.9869	737.2319	982.6400	1473.4564	2945.9056	20	K	13	1550.8609	775.9341	517.6251	388.4707	310.9780	259.3162	222.4149
429.8530	501.3272	601.3912	751.4872	1001.6472	1501.9672	3002.9270	21	G	12	1422.7659	711.8866	474.9268	358.4469	285.3590	237.9671	204.1157
442.2861	515.8326	618.7976	773.2452	1030.6579	1545.4832	3089.9591	22	S	11	1365.7445	683.3759	455.9197	342.1916	273.8547	228.4635	195.9697
464.5863	541.8494	650.0179	812.2705	1082.6916	1623.5337	3246.0602	23	R	10	1278.7124	639.8599	428.9090	320.4336	258.5483	213.9581	183.5366
477.0194	556.3548	687.4243	834.0285	1111.7023	1687.0497	3333.0922	24	S	9	1122.6113	561.8093	374.8753	281.4083	225.3281	187.9413	161.2364
490.8841	572.5302	686.8348	858.2917	1144.0532	1715.5761	3430.1450	25	P	8	1035.5793	518.2933	345.8846	259.6503	207.6247	173.4369	148.6032
513.1843	598.5471	718.0550	897.3170	1196.0869	1793.6267	3586.2461	26	R	7	938.5265	469.7669	313.5137	235.3871	188.5111	157.2605	134.6386
535.4844	624.5639	749.2753	936.3423	1248.1206	1871.6772	3742.3472	27	R	6	782.4254	391.7163	261.4800	196.3618	157.2909	131.2426	112.6384
557.7846	650.5808	780.4955	975.3675	1300.1543	1949.7278	3898.4483	28	R	5	626.3243	313.6658	209.4463	157.3365	126.0707	105.2268	90.3383
577.3644	673.4239	807.9073	1009.6323	1345.8406	2018.2573	4035.5072	29	H	4	470.2232	235.6152	157.4126	118.3113	94.8505	79.2099	68.0381
589.7976	687.9293	825.3137	1031.3903	1374.8513	2061.7733	4122.5393	30	S	3	333.1643	167.0858	111.7263	84.0465	67.4387	56.3668	48.4583
602.2307	702.4346	842.7201	1053.1483	1403.8619	2105.2893	4209.5713	31	S	2	246.1323	123.5698	82.7156	62.2885	50.0323	41.8614	36.0251
624.6714	728.6155	874.1371	1092.4196	1456.2237	2183.8318	4366.6564	32	R	1	159.1002	80.0538	53.7049	40.5305	32.6259	27.3561	23.5920

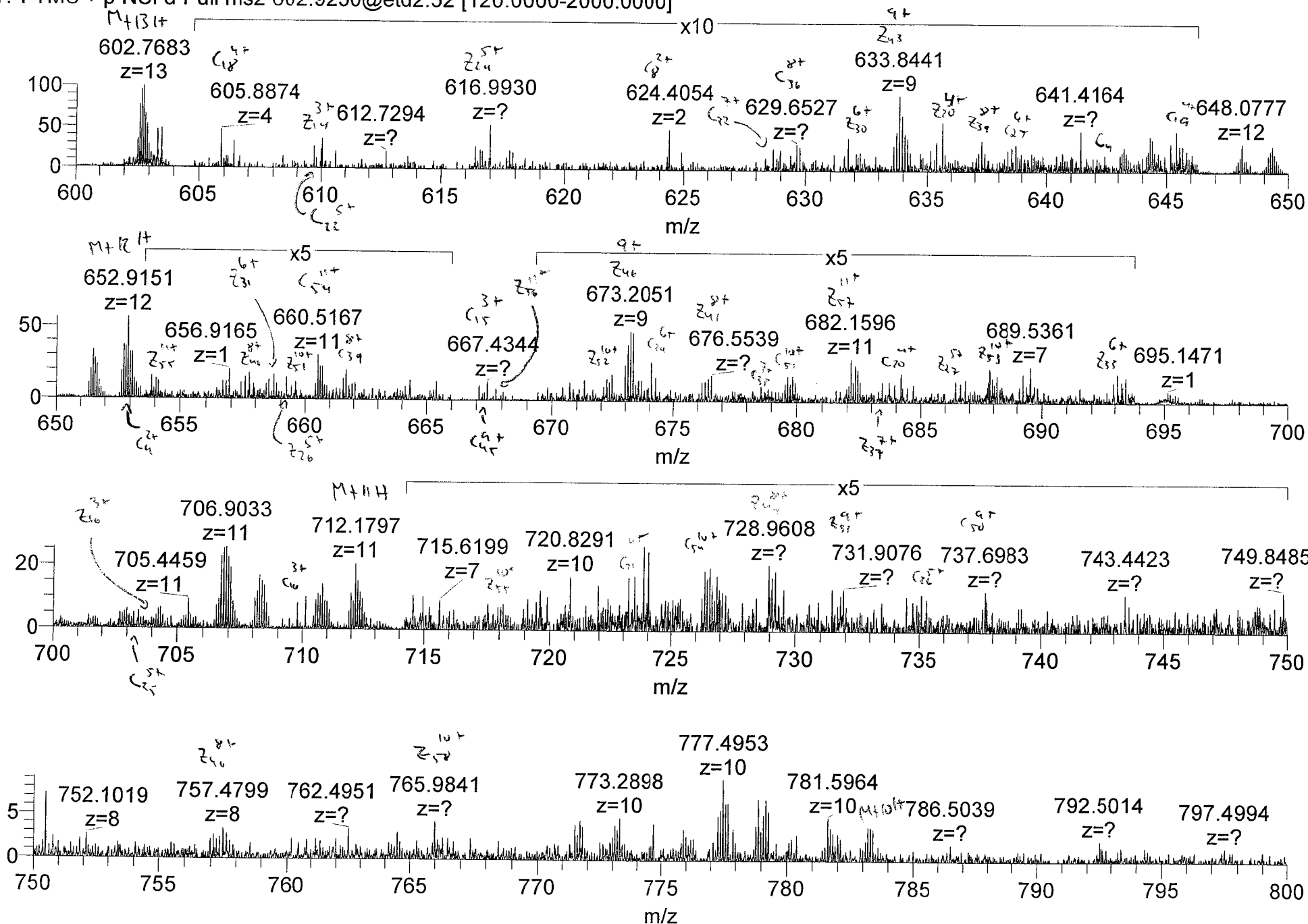
021519_0p2perYellowTube_Gradient_DD_Heat15 #2864-5591 RT: 11.80-20.45 AV: 21 NL: 1.55E4
T: FTMS + p NSI d Full ms2 602.9250@etd2.52 [120.0000-2000.0000]



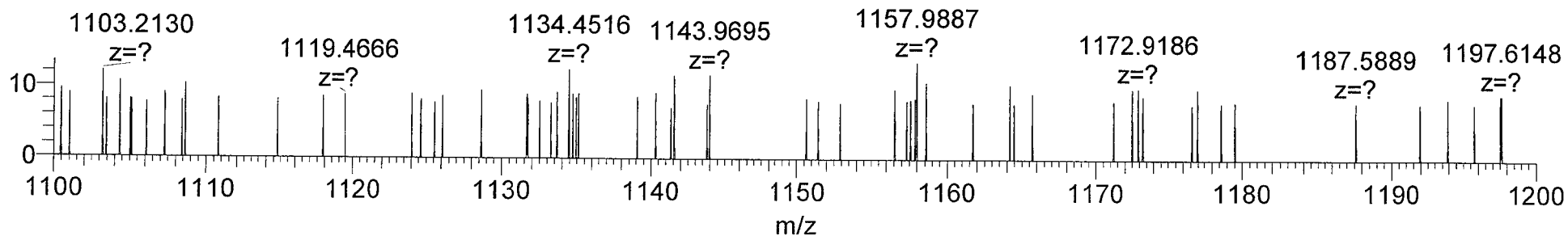
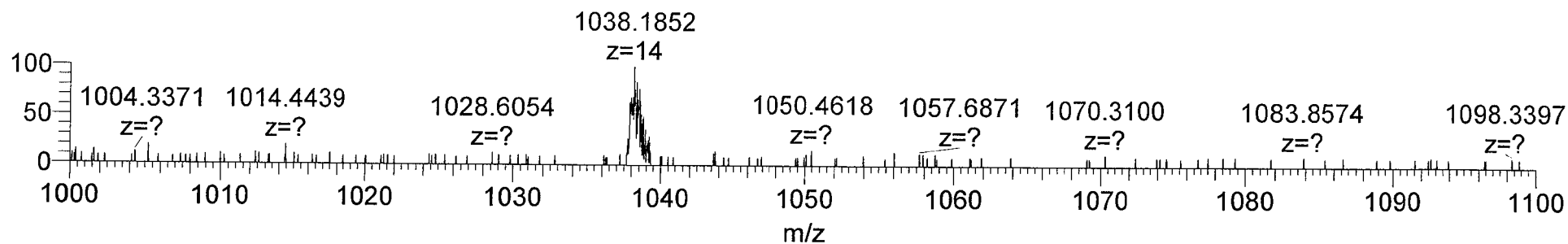
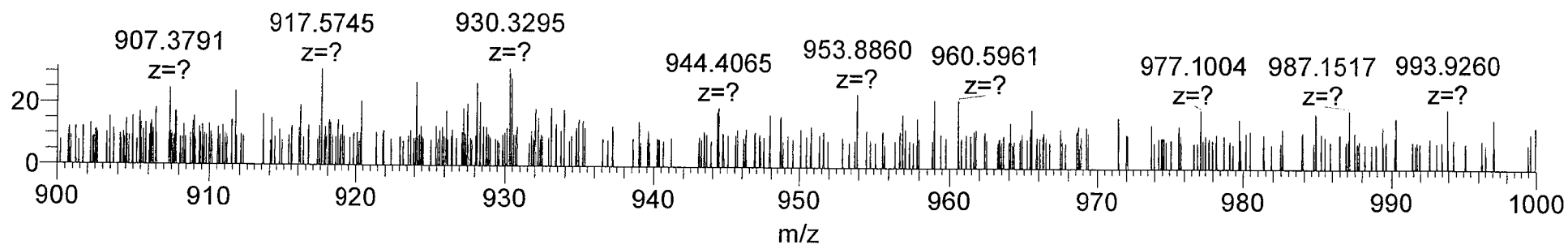
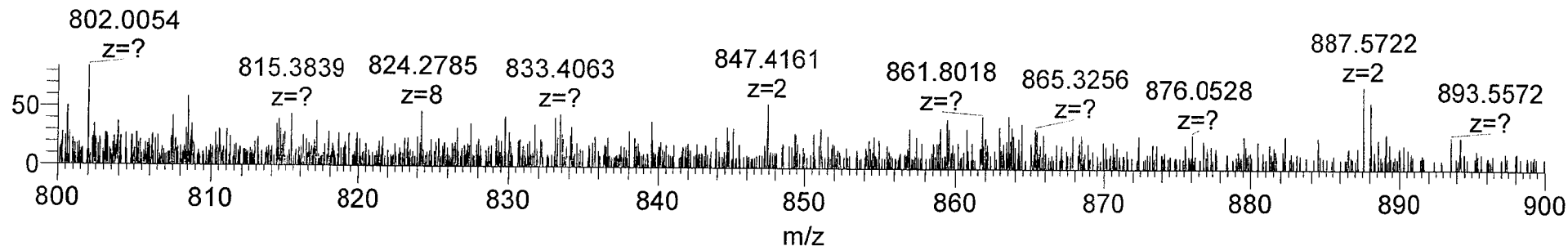
021519_0p2perYellowTube_Gradient_DD_Heat15 #2865-5592 RT: 11.80-20.45 AV: 21 NL: 1.53E3
T: FTMS + p NSI d Full ms2 602.9250@etd2.52 [120.0000-2000.0000]



021519_0p2perYellowTube_Gradient_DD_Heat15 #2865-5592 RT: 11.80-20.45 AV: 21 NL: 1.55E4
T: FTMS + p NSI d Full ms2 602.9250@etd2.52 [120.0000-2000.0000]



021519_0p2perYellowTube_Gradient_DD_Heat15 #2865-5592 RT: 11.80-20.45 AV: 21 NL: 5.99E2
T: FTMS + p NSI d Full ms2 602.9250@etd2.52 [120.0000-2000.0000]



Fragment Masses

+11 c ions	+10 c ions	+9 c ions	+8 c ions	+7 c ions	+6 c ions	+5 c ions	+4 c ions	+3 c ions	+2 c ions	+1 c ions		Sequence
16.7462	18.3200	20.2437	22.6482	25.7398	29.8619	35.6328	44.2892	58.7165	87.5711	174.1349	✓	R
30.9372	33.9302	37.5883	42.1609	48.0400	55.8787	66.8530	83.3145	110.7502	165.6217	330.2360	✓	R
45.1282	49.5403	54.9328	61.6735	70.3401	81.8956	98.0733	122.3397	162.7839	243.6722	486.3372	✓	R
59.3192	65.1504	72.2774	81.1862	92.6403	107.9124	129.2935	161.3650	214.8176	321.7228	642.4383	✓	R
73.5102	80.7605	89.6220	100.6988	114.9404	133.9293	160.5137	200.3903	266.8513	399.7733	798.5394	✓	R
87.7012	96.3706	106.9665	120.2114	137.2406	159.9461	191.7339	239.4156	318.8850	477.8239	954.6405	✓	R
101.8922	111.9807	124.3111	139.7241	159.5408	185.9630	222.9541	278.4409	370.9187	555.8744	1110.7416	✓	R
114.3521	125.6866	139.5399	156.8564	179.1206	208.8061	250.3659	312.7056	416.6050	624.4039	1247.8005	✓	H
119.5359	131.3887	145.8756	163.9841	187.2665	218.3097	261.7702	326.9610	435.6122	652.9146	1304.8220	✓	G
133.7269	146.9989	163.2201	183.4968	209.5667	244.3266	292.9804	365.9862	487.6459	730.9652	1460.9231	✓	R
145.3719	159.8004	177.4529	199.5086	227.8660	265.6757	318.6094	398.0100	530.3442	795.0127	1589.0181	✓	K
150.5557	165.5105	183.7886	206.6363	236.0119	275.1793	330.0137	412.2653	549.3514	823.5234	1646.0395	✓	G
162.2007	178.3200	198.0214	222.6482	254.3112	296.5285	355.6327	444.2891	592.0497	887.5709	1774.1345	✓	K
173.8457	191.1295	212.2542	238.6600	272.6104	317.8776	381.2517	476.3128	634.7480	951.6184	1902.2294	✓	K
182.6686	200.8348	223.0378	250.7916	286.4751	334.0531	400.6623	500.5760	667.0989	1000.1447	1999.2822	✓	P
194.3136	213.6443	237.2706	266.8035	304.7744	355.4023	426.2813	532.5997	709.7972	1064.1922	2127.3772	✓	K
208.5046	229.2544	254.6152	286.3162	327.0746	381.4191	457.5015	571.6250	761.8309	1142.2428	2283.4783	✓	R
220.9645	242.9603	269.8439	303.4485	346.6544	404.2623	484.9133	605.8898	807.5172	1210.7722	2420.5372	✓	H
235.1556	258.5704	287.1885	322.9612	368.9546	430.2791	516.1335	644.9150	859.5510	1288.8228	2576.6383	✓	R
249.3466	274.1805	304.5331	342.4738	391.2547	456.2960	547.3537	683.9403	911.5847	1366.8733	2732.7394	✓	R
263.5376	289.7906	321.8776	361.9864	413.5549	482.3128	578.5739	722.9656	963.6184	1444.9239	2888.8405	✓	R
277.7286	305.4007	339.2222	381.4991	435.8550	508.3297	609.7941	761.9909	1015.6521	1522.9745	3044.9416	✓	R
291.9196	321.0108	356.6668	401.0117	458.1552	534.3465	641.0144	801.0181	1067.6858	1601.0250	3201.0427	✓	R
306.1106	336.6209	373.9113	420.5243	480.4554	560.3634	672.2346	840.0414	1119.7195	1679.0756	3357.1439	✓	R
320.3016	352.2310	391.2559	440.0370	502.7555	586.3802	703.4548	879.0667	1171.7532	1757.1261	3513.2450	✓	R
334.4926	367.8412	408.6005	459.5496	525.0557	612.3971	734.6750	918.0920	1223.7869	1835.1767	3669.3461	✓	R
348.6836	383.4513	425.9450	479.0623	547.3558	638.4139	765.8953	957.1173	1275.8206	1913.2272	3825.4472	✓	R
353.8674	389.1534	432.2808	486.1899	555.5018	647.9175	777.2996	971.3726	1294.8277	1941.7380	3882.4687	✓	G
368.0584	404.7635	449.6253	505.7026	577.8019	673.9344	808.5198	1010.3979	1346.8614	2019.7885	4038.5698	✓	R
382.2494	420.3736	466.9699	525.2152	600.1021	699.9512	839.7400	1049.4232	1398.8951	2097.8391	4194.6709	✓	R
393.8944	433.1831	481.2027	541.2271	618.4014	721.3004	865.3590	1081.4469	1441.5935	2161.8866	4322.7658	✓	K
400.3523	440.2868	489.0957	550.1067	628.5495	733.1399	879.5664	1099.2062	1465.2725	2197.4051	4393.8030	✓	A
412.8122	453.9927	504.3245	567.2391	648.1294	755.9830	906.9782	1133.4709	1510.9588	2265.9346	4530.8619	✓	H
427.0032	469.6028	521.6690	586.7517	670.4295	781.9999	938.1984	1172.4962	1562.9925	2343.9851	4686.9630	✓	R
432.1870	475.3050	528.0047	593.8794	678.5754	791.5035	949.6027	1186.7516	1581.9997	2372.4959	4743.9844	✓	G
446.3780	490.9151	545.3493	613.3921	700.8756	817.5203	980.8229	1225.7768	1634.0334	2450.5464	4900.0856	✓	R
458.0230	503.7246	559.5821	629.4039	719.1749	838.8695	1006.4419	1257.8006	1676.7317	2514.5939	5028.1805	✓	K
469.6680	516.5341	573.8149	645.4158	737.4742	860.2186	1032.0609	1289.8243	1719.4300	2578.6414	5156.2755	✓	K
481.3130	529.3436	588.0476	661.4277	755.7734	881.5678	1057.6799	1321.8481	1762.1283	2642.6889	5284.3704	✓	K
495.5040	544.9537	605.3922	680.9403	778.0736	907.5847	1088.9001	1360.8733	1814.1620	2720.7394	5440.4716	✓	R
500.6878	550.6559	611.7279	688.0680	786.2195	917.0882	1100.3044	1375.1287	1833.1692	2749.2501	5497.4930	✓	G
505.8716	556.3580	618.0636	695.1957	794.3654	926.5918	1111.7087	1389.3841	1852.1763	2777.7609	5554.5145	✓	G
520.0626	571.9681	635.4082	714.7083	816.6656	952.6087	1142.9289	1428.4094	1904.2100	2855.8114	5710.6156	✓	R
534.2536	587.5782	652.7528	734.2210	838.9658	978.6255	1174.1492	1467.4346	1956.2438	2933.8620	5866.7167	✓	R
545.8986	600.3877	666.9855	750.2328	857.2650	999.9747	1199.7682	1499.4584	1998.9421	2997.9095	5994.8117	✓	K
551.0824	606.0899	673.3213	757.3605	865.4110	1009.4783	1211.1724	1513.7137	2017.9492	3026.4202	6051.8331	✓	G
562.7274	618.8994	687.5540	773.3724	883.7102	1030.8274	1236.7914	1545.7375	2060.6475	3090.4677	6179.9281	✓	K
576.9184	634.5095	704.8986	792.8850	906.0104	1056.8443	1268.0117	1584.7628	2112.6813	3168.5182	6336.0292	✓	R
591.1094	650.1196	722.2432	812.3977	928.3106	1082.8611	1299.2319	1623.7880	2164.7150	3246.5688	6492.1303	✓	R
603.5693	663.8255	737.4719	829.5300	947.8904	1105.7043	1326.6437	1658.0528	2210.4013	3315.0983	6629.1892	✓	H
617.7603	679.4356	754.8165	849.0427	970.1906	1131.7211	1357.8639	1697.0780	2262.4350	3393.1488	6785.2903	✓	R
631.9513	695.0457	772.1611	868.5553	992.4907	1157.7380	1389.0841	1736.1033	2314.4687	3471.1994	6941.3914	✓	R
646.1423	710.6558	789.5056	888.0679	1014.7909	1183.7548	1420.3043	1775.1286	2366.5024	3549.2499	7097.4926	✓	R
660.3333	726.2659	806.8502	907.5806	1037.0910	1209.7717	1451.5246	1814.1539	2418.5361	3627.3005	7253.5937	✓	R
674.5243	741.8760	824.1948	927.0932	1059.3912	1235.7885	1482.7448	1853.1792	2470.5698	3705.3510	7409.6948	✓	R
679.7081	747.5782	830.5305	934.2209	1067.5371	1245.2921	1494.1491	1867.4345	2489.5769	3733.8618	7486.7162	✓	G
691.3531	760.3877	844.7633	950.2328	1085.8364	1266.6413	1519.7681	1899.4583	2532.2753	3797.9092	7594.8112	✓	K
699.2651	769.0909	854.4335	961.1118	1098.2696	1281.1466	1537.1745	1921.2163	2561.2859	3841.4253	7681.8432	✓	S
711.8144	782.8952	869.7716	978.3671	1117.9900	1304.1538	1564.7831	1955.2720	2607.3002	3910.4467	7819.8862	✓	H

Fragment Masses

Sequence	+1 z ions	+2 z ions	+3 z ions	+4 z ions	+5 z ions	+6 z ions	+7 z ions	+8 z ions	+9 z ions	+10 z ions	+11 z ions
R 59	7819.8862	3910.4467	2607.3002	1956.7270	1564.7831	1304.1538	1117.9900	978.3671	869.7716	782.8952	711.8144
R 58	7647.7663	3824.3868	2549.9270	1912.6970	1530.3591	1275.4671	1093.4014	956.8522	850.6472	765.6832	696.1672
R 57	7491.6652	3746.3362	2497.8933	1873.6718	1499.1389	1249.4503	1071.1013	937.3395	833.3026	750.0731	681.9762
R 56	7335.5641	3668.2857	2445.8596	1834.6465	1467.9186	1223.4334	1048.8011	917.8269	815.9580	734.4630	667.7852
R 55	7179.4630	3590.2351	2393.8258	1795.6212	1436.6984	1197.4166	1026.5010	898.3142	798.6135	718.8528	653.5942
R 54	7023.3619	3512.1846	2341.7921	1756.5959	1405.4782	1171.3997	1004.2008	878.8016	781.2689	703.2427	639.4031
R 53	6867.2608	3434.1340	2289.7584	1717.5707	1374.2580	1145.3829	981.9006	859.2890	763.9243	683.6236	625.2121
H 52	6711.1597	3356.0835	2237.7247	1678.5454	1343.0378	1119.3660	959.6005	839.7763	746.5798	672.0225	611.0211
G 51	6574.1008	3287.5540	2192.0384	1644.2806	1315.6260	1096.5229	940.0206	822.6440	731.3510	658.3166	598.5612
R 50	6517.0793	3259.0433	2173.0313	1630.0253	1304.2217	1087.0193	931.8747	815.5163	725.0153	652.6145	593.3775
K 49	6380.9782	3180.8927	2120.9976	1591.0000	1273.0015	1061.0024	909.5745	796.0036	707.6707	637.0044	579.1864
G 48	6232.8832	3116.9452	2078.2993	1558.9763	1247.3825	1039.6533	891.2753	779.9918	693.4379	624.1949	567.5415
K 47	6175.8617	3088.4345	2059.2921	1544.7209	1235.9782	1030.1497	883.1293	772.8641	687.1022	618.4927	562.3577
K 46	6047.7668	3024.3870	2016.5938	1512.6972	1210.3592	1008.8005	864.8301	756.8522	672.8694	605.6832	550.7127
P 45	6918.6718	2960.3386	1973.8955	1480.6734	1184.7402	987.4514	846.5308	740.8403	658.6367	582.8737	539.0677
K 44	5822.6191	2911.8132	1941.5445	1456.4102	1165.3296	971.2759	832.6661	728.7087	647.8530	583.1685	530.2447
R 43	5694.5241	2847.7657	1898.8462	1424.3865	1139.7106	949.9267	814.3668	712.6969	633.6203	570.3590	518.5997
H 42	5538.4230	2769.7151	1846.8125	1385.3612	1108.4904	923.9099	792.0667	693.1842	616.2757	554.7488	504.4087
R 41	5401.3641	2701.1857	1801.1262	1351.0965	1081.0786	901.0667	772.4868	676.0519	601.0469	541.0430	491.9488
R 40	5245.2630	2623.1351	1749.0925	1312.0712	1049.8584	875.0499	750.1867	656.5392	583.7024	525.4328	477.7578
R 39	5089.1619	2545.0846	1697.0588	1273.0459	1018.6382	849.0330	727.8865	637.0266	566.3578	509.8227	463.5668
R 38	4933.0607	2467.0340	1645.0251	1234.0206	987.4180	823.0162	705.5863	617.5140	549.0132	494.2126	449.3758
R 37	4776.9596	2388.9835	1592.9914	1194.9954	956.1977	796.9993	683.2862	598.0013	531.6666	478.6025	435.1848
R 36	4620.8585	2310.9329	1540.9577	1155.9701	924.9775	770.9825	660.9860	578.4887	514.3241	462.9924	420.9938
R 35	4464.7574	2232.8823	1488.9240	1116.9448	893.7573	744.9656	638.6859	558.9760	496.9795	447.3823	406.8027
R 34	4308.6563	2154.8318	1436.8903	1077.9195	862.5371	718.9488	616.3857	539.4634	479.6349	431.7722	392.6117
R 33	4152.5552	2076.7812	1384.8566	1038.8943	831.3169	692.9319	594.0855	519.9508	462.2904	416.1621	378.4207
R 32	3996.4541	1998.7307	1332.8229	999.8690	800.0966	666.9151	571.7854	500.4381	444.9458	400.5520	364.2297
R 31	3939.4326	1970.2199	1313.8157	985.6136	788.6923	657.4115	563.6395	493.3104	438.6101	394.8498	359.0459
R 30	3783.3315	1892.1694	1261.7820	946.5883	757.4721	631.3946	541.3393	473.7978	421.2655	379.2397	344.8549
K 29	3627.2304	1814.1188	1209.7483	907.5631	726.2519	605.3778	519.0391	454.2852	403.9210	363.6296	330.6639
A 28	3499.1354	1750.0714	1167.0500	875.5393	700.6329	584.0286	500.7399	438.2733	389.6882	350.8201	319.0189
H 27	3428.0983	1714.5528	1143.3710	857.7800	686.4255	572.1891	490.5917	429.3937	381.7952	343.7164	312.5610
R 26	3291.0394	1646.0233	1097.6847	823.5153	659.0137	549.3460	471.0119	412.2613	366.5684	330.0105	300.1011
G 25	3134.9383	1567.9728	1045.6509	784.4900	627.7935	523.3291	448.7117	392.7487	349.2218	314.4004	285.9101
R 24	3077.9168	1539.4621	1026.6438	770.2347	616.3892	513.8255	440.5658	385.6210	342.8861	308.6982	280.7263
K 23	2921.8157	1461.4115	974.6101	731.2094	585.1690	487.8087	418.2656	366.1083	325.5415	293.0881	266.5353
K 22	2793.7208	1397.3640	931.9118	699.1856	559.5500	466.4595	399.9663	350.0965	311.3088	280.2786	254.8903
K 21	2665.6258	1333.3165	889.2134	667.1619	533.9310	445.1104	381.6671	334.0846	297.0760	267.4691	243.2453
R 20	2537.5308	1269.2691	846.5151	635.1382	508.3120	423.7612	363.3678	318.0727	282.8432	254.6596	231.6003
G 19	2381.4297	1191.2185	794.4814	596.1129	477.0918	397.7443	341.0676	298.5601	265.4987	239.0495	217.4093
G 18	2324.4082	1162.7078	775.4743	581.8575	465.6875	388.2408	332.9217	291.4324	259.1629	233.3474	212.2255
R 17	2267.3868	1134.1970	756.4671	567.6022	454.2832	378.7372	324.7758	284.3047	252.8272	227.6452	207.0418
R 16	2111.2857	1056.1465	704.4334	528.5769	423.0630	352.7203	302.4756	264.7921	235.4827	212.0351	192.8508
K 15	1955.1846	978.0959	652.3997	489.5516	391.8427	326.7035	280.1755	245.2794	218.1381	196.4250	178.6598
G 14	1827.0896	914.0484	609.7014	457.5279	366.2237	305.3543	261.8762	229.2676	203.9053	183.6155	167.0148
K 13	1770.0681	885.5377	590.6942	443.2725	354.8194	295.8508	253.7303	222.1399	197.5696	177.9134	161.8310
R 12	1641.9732	821.4902	547.9959	411.2488	329.2005	274.6016	235.4310	206.1280	183.3368	165.1039	150.1860
R 11	1485.8721	743.4397	495.9622	372.2235	297.9802	248.4847	213.1308	186.6154	165.9923	149.4938	135.9950
H 10	1329.7710	665.3891	443.9285	333.1982	266.7600	222.4679	190.8307	167.1027	148.6477	133.8836	121.8040
R 9	1192.7120	596.8597	398.2422	298.9335	239.3482	199.6247	171.2508	149.9704	133.4189	120.1778	109.3441
R 8	1036.6109	518.8091	346.2085	259.9082	208.1280	173.6079	148.9507	130.4577	116.0743	104.5676	95.1531
R 7	880.5098	440.7585	294.1748	220.8829	178.9078	147.5910	126.6505	110.9451	98.7298	88.9575	80.9621
R 6	724.4087	362.7080	242.1411	181.8576	145.6876	121.5742	104.3503	91.4325	81.3852	73.3474	66.7710
R 5	568.3076	284.6574	190.1074	142.8324	114.4673	95.5573	82.0502	71.9198	64.0406	57.3733	52.5800
G 4	412.2065	206.6069	138.0737	103.8071	83.2471	69.5405	59.7500	52.4072	46.6961	42.1272	38.3890
K 3	355.1850	178.0961	119.0665	89.5517	71.8428	60.0369	51.6041	45.2795	40.3604	36.4251	33.2053
S 2	227.0901	114.0487	76.3682	57.5280	46.2238	38.6877	33.3048	29.2676	26.1276	23.6156	21.5603
H 1	140.0580	70.5327	47.3575	35.7700	28.8174	24.1824	20.8717	18.3886	16.4574	14.9124	13.6483