

Supplementary Material

AminoxyTMT: A novel multi-functional reagent for proteomic characterization of protein carbonylation

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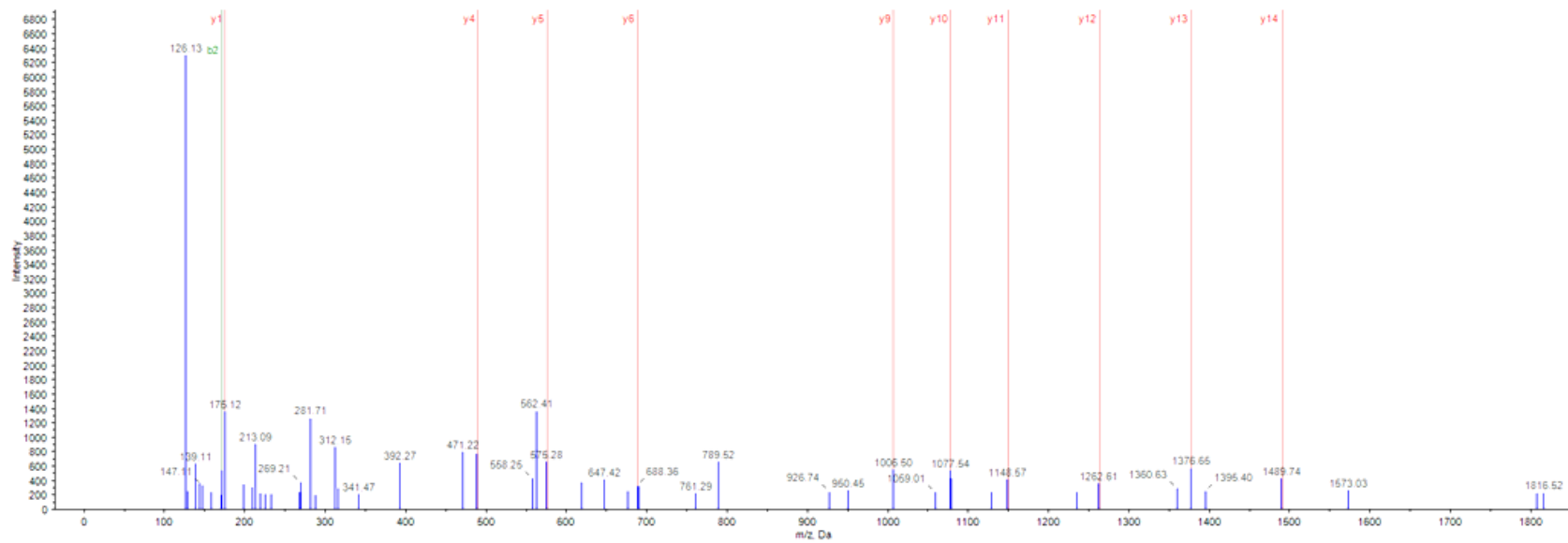
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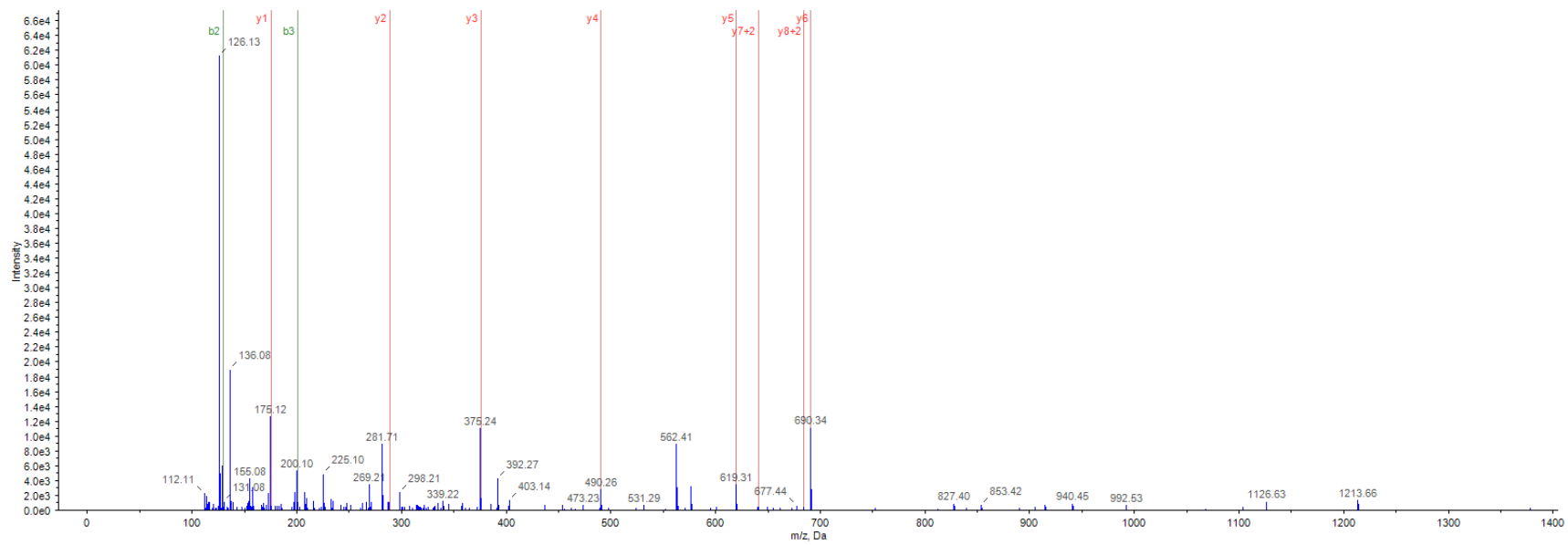
Table S-1. AminoxyTMT labeled, HNE-modified peptides in treated liver mitochondrial after enrichment with antiTMT resin

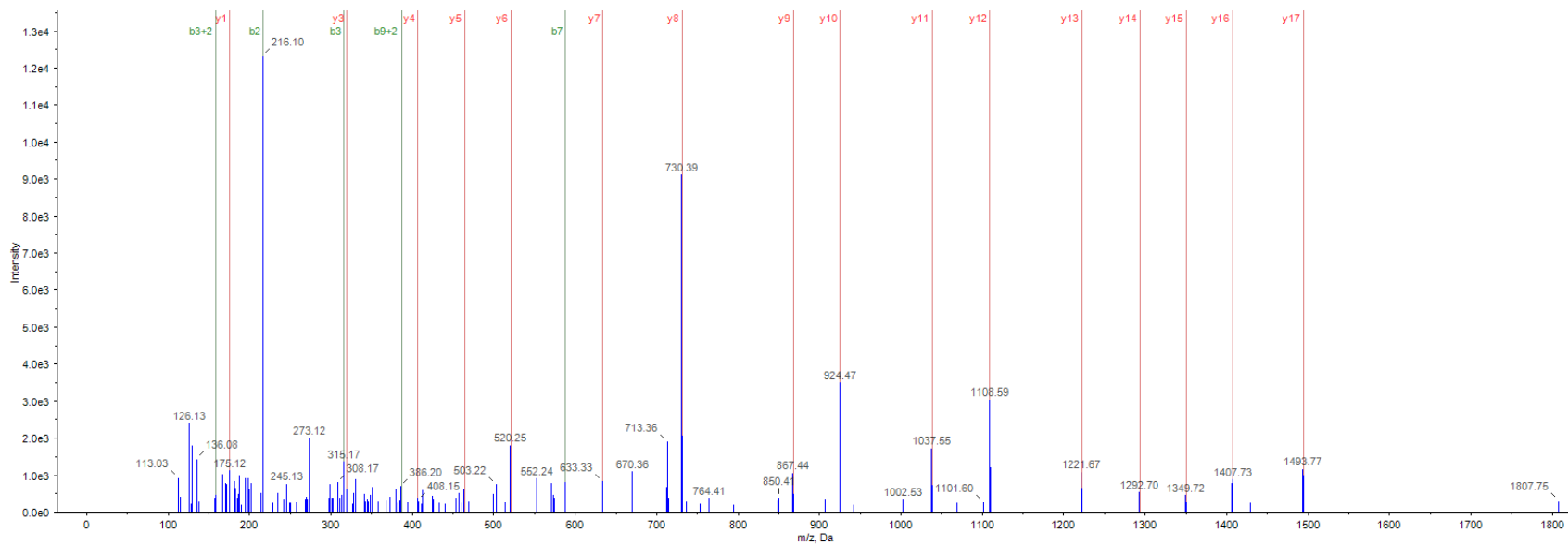
Peptide(s)*	Protein	Gene	Accession
VAGHPDVVINNAAGNFISPSER	2,4-dienoyl-CoA reductase, mitochondrial	Decr1	Q9CQ62
GAAYSHAE ^H EDSIR	2-hydroxyacyl-CoA lyase 1	Hacl1	D3Y254
TNVSGGAIALGHPLGGSGSR	3-ketoacyl-CoA thiolase, mitochondrial	Acaa2	Q8BWT1
DSHGVAQVR	40S ribosomal protein S13	Rps13	P62301
DHASIQMNVAEVDR	40S ribosomal protein S21	Rps21	Q9CQR2
TTHFVEGGDAGNR	60S ribosomal protein L7	Rpl7	P14148
VTHAVVTVPAYFNDAQR	78 kDa glucose-regulated protein	Hspa5	P20029
IVYGH ^L DDPANQEIER	Aconitate hydratase, mitochondrial	Aco2	Q99K10
AAH ^S SIDTLGSASAR	Acyl-CoA dehydrogenase family member 11	Acad11	Q80XL6
IGGHGAEYGAEALER	Alpha globin 1	Hba-a1	Q91VB8
DQSPASHEIATNLGDFALR	Alpha-1-antitrypsin 1-4	Serpina1	Q00897
VLAVNQENEHLMEDYER	Alpha-actinin-4 (Fragment)	Actn4	E9Q2W9
GEVITTYCPANNEPIAR	Alpha-aminoadipic semialdehyde dehydrogenase	Aldh7a1	G3UYR8
RDPSVGEHTVEVLR	Alpha-methylacyl-CoA racemase	Amacr	O09174
DCEDPNPLIR	AP-1 complex subunit beta-1	Ap1b1	Q55VG5
NEVHTMLGQSTEEIR	Apolipoprotein E	ApoE	P08226
AHGGYSV ^F AGVGER; IMDPNIVGNEHYDVAR;	ATP synthase subunit beta, mitochondrial	Atp5b	P56480
AGPWTPEAAVEHPEAVR; VNEAACDIAR	Betaine-homocysteine S-methyltransferase 1	Bhmt	Q35490
VALVCTGSESSITNSQLDAR; HPPETFVDALER	Bile acyl-CoA synthetase	Slc27a5	Q4LDG0
KELSEPSSTR; TAHIVLEDGTK	Carbamoyl-phosphate synthase [ammonia], mitochondrial	Cps1	Q8C196
DASINPPMCLQDVER; MEHLSQEDLLENSR	Carboxylesterase 3A	Ces3a	Q63880
GAGAFGYFEVTHDITR; NFTDVH ^P PDYGAR;	Catalase	Cat	P24270
EDAGEYQCEISNPVSVR	CEA-related cell adhesion molecule 1	Ceacam	Q925P3
DNHLAPGQQTTLR	Complement C3	C3	P01027
EQAGGDATENFEDVGHSTDAR; FLEEHPGGEEVLR	Cytochrome b-5, isoform CRA_a	Cyb5	G5E850
EVESIGAH ^L LNAYSTR; LCTSATESEVTR	Cytochrome b-c1 complex subunit 1, mitochondrial	Uqcrc1	Q9CZ13
IHEELDTVVGR	Cytochrome P450 1A2	Cyp1a2	P00186
VHEEIDR	Cytochrome P450 2A12	Cyp2a12	P56593
VQEEAQCLVEELR	Cytochrome P450 2C29	Cyp2c29	Q3UT49
EALVDHGDVFAGR	Cytochrome P450 2C54	Cyp2c54	Q6XVG2
EHQDSLDPNSPR	Cytochrome P450 2F2	Cyp2f2	P33267
EAFIDHGEFSGR	Cytochrome P450, family 2, subfamily c, polypeptide 67	Cyp2c67	Q569X9
ALSQHP ^T VNDDLPLNR	Dimethylaniline monooxygenase [N-oxide-forming] 5	Fmo5	P97872
LEEETGQVVGFHQPGSIR	Dimethylglycine dehydrogenase, mitochondrial	Dmgdh	Q9DBT9
YHVPVVVPEGSTSDTQEAILR	Dolichyl diphosphooligosaccharide- glycosyltransferase subunit 2	Rpn2	A2ACG7
HFD ^E TVNR, VTAEVVLVHPGGGSTS	Dolichyl-diphosphooligosaccharide- glycosyltransferase subunit 1	Rpn1	Q91YQ5
VNDEHPAYLASDEITTVR	Dynamin-like 120 kDa protein, mitochondrial	Opa1	H7BX01
GIHVEIPGAQAE ^L GLPQVAR	Electron transfer flavoprotein subunit beta	Etfb	Q9DCW4
SNPVHEIQSLDEVTLNDR; TPADCPVIAID ^S FR	Endoplasmic reticulum resident protein 44	Erp44	Q9D1Q6

EGYL <u>H</u> IGGTTQQAQR	Expressed sequence AU018778	Ces1f	Q91WU0
IADQC <u>P</u> SSLAIQENANALAR	Fructose-bisphosphate aldolase B	Aldob	Q91Y97
DSNYHLLMSVQESLER; <u>H</u> GGTIPVVPTAEFQDR	Glutamate dehydrogenase 1, mitochondrial	Glud1	P26443
TQVEQ <u>C</u> EPTNDAVR	Glycogen [starch] synthase, liver	Gys2	Q8VCB3
STAGDT <u>H</u> LGGEDFDNR	Heat shock cognate 71 kDa protein	Hspa8	P63017
NAN <u>C</u> SIEESFQR	Hydroxymethylglutaryl-CoA lyase, mitochondrial	Hmgcl	P38060
VIGHDEDASAPTGVVR	Immunity-related GTPase family M member 1 (Fragment)	Irgm1	Q5NCB5
TVEAEAA <u>H</u> GTVTR	Isocitrate dehydrogenase [NADP] cytoplasmic	Idh1	O88844
ADGTVLE <u>C</u> SESSNADVFQAAR; VVA <u>H</u> YPVEVR	L-gulonolactone oxidase	Gulo	P58710
VIGSG <u>C</u> NLDSAR	L-lactate dehydrogenase	Ldha	G5E8N5
NHNDLNSVPQEPYR	Lysosomal alpha-glucosidase (Fragment)	Gaa	F6R5R5
DEE <u>C</u> SELSMVADK; INGEW <u>H</u> TIILASDK	Major urinary protein 1	Mup7	Q58EV3
DFTP <u>V</u> CTTELGR	MCG48959; Peroxiredoxin 6	Prdx6b	Q8BG37
WIDI <u>H</u> NPATNEVVGR	Methylmalonate-semialdehyde dehydrogenase [acylating]	Aldh6a1	Q9EQ20
EIAGAT <u>P</u> HITAAEGR; GIEQAVQ <u>S</u> HAVAEEEAR	Mitochondrial inner membrane protein	Immt	E9Q800
NYPEG <u>H</u> QAAAVLPVLDLAQR	NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial	Ndufv2	Q9D6J6
EV <u>H</u> PDIDSER	Peroxisomal acyl-coenzyme A oxidase 2	Acox2	Q9QXD1
<u>H</u> VLQQFADNDVSR	Peroxisomal multifunctional enzyme type 2	Hsd17b4	P51660
ED <u>C</u> TQPDYEATSR	Probable proline dehydrogenase 2	Prodh2	Q8VCZ9
G <u>H</u> PDLQGPADDIFESIGDR;	Protein ERGIC-53	Lman1	Q9D0F3
NQQEGV <u>C</u> PEGSIDNSPVK	Protein Gm20425; Peroxiredoxin 6	Gm2042	E9Q035
ADFAQA <u>C</u> QDAGVR; DA <u>H</u> QSLLATR;	Pyruvate carboxylase	Pcx	G5E8R3
NIDE <u>H</u> ANEDVER	Ras-related protein Rab-10	Rab10	P61027
YLDEDTVY <u>H</u> LQPSGR	S-adenosylmethionine synthase isoform type-1	Mat1a	Q91X83
D <u>H</u> DASVYLR; NYSVVFP <u>H</u> DEPLAGR	Sarcosine dehydrogenase, mitochondrial	Sardh	Q99LB7
SGYQQAASE <u>H</u> GLVVIAPDTSPR	S-formylglutathione hydrolase	Esd	H3BLJ9
SGGGGSSGAGGG <u>P</u> SGTSSSR	Signal peptidase complex subunit 2	Spcc2	Q9CYN2
SA <u>H</u> AGTYEVR	Signal sequence receptor, delta	Ssr4	Q9D8L3
<u>H</u> VLGVPLDDR	Solute carrier family 2, facilitated glucose transporter member 2	Slc2a2	E9PXR7
NDISS <u>H</u> PPVEGSYAPR; SS <u>H</u> YDELLAAEAR	Staphylococcal nuclease domain-containing protein 1	Snd1	Q78PY7
GAA <u>A</u> HPDSEEQQQR	Talin-1	Tln1	P26039
D <u>H</u> DTFLAVR	Vesicular integral-membrane VIP36	Lman2	Q9DBH5

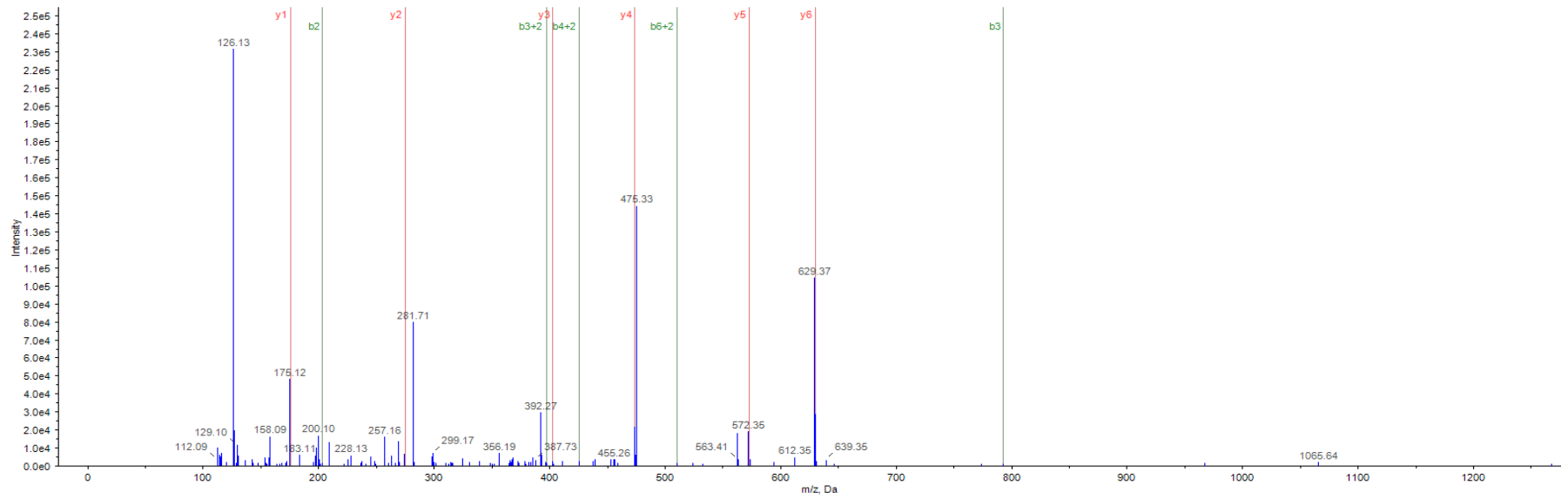
*Underlined amino acid in each peptide sequence are modified with HNE and labeled with aminoxyTMT. All peptides shown were identified at >90% Confidence using the ProteinPilot sequencing database searching program.

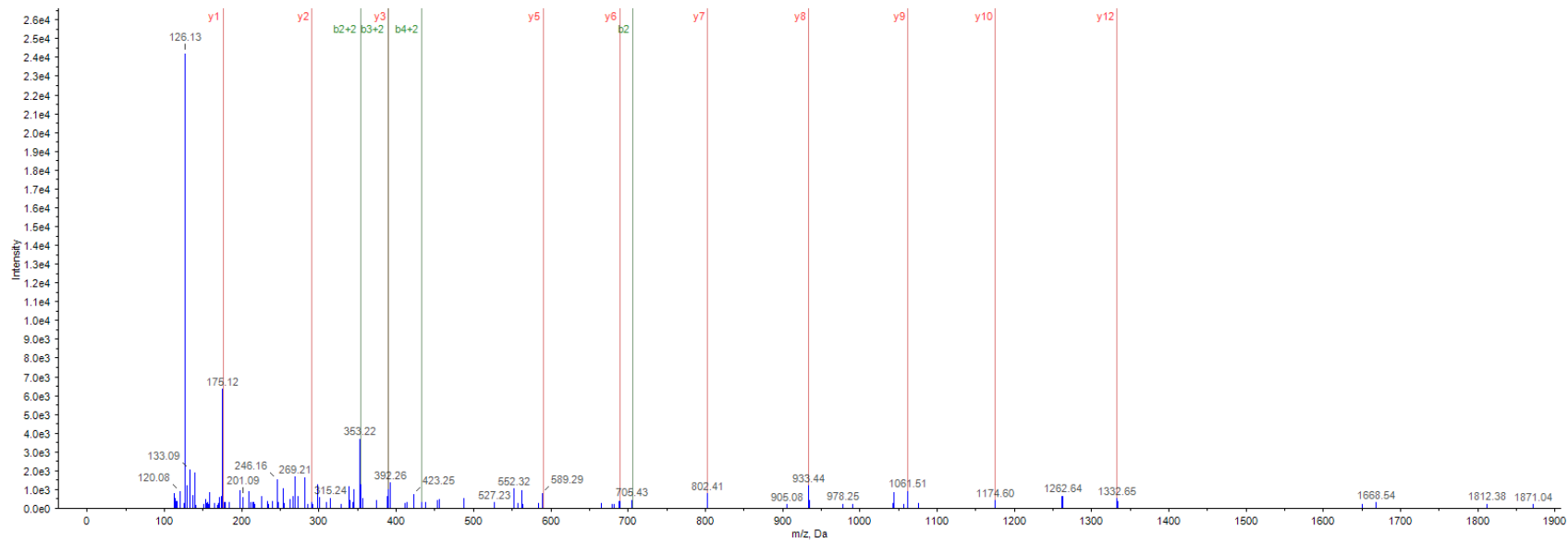


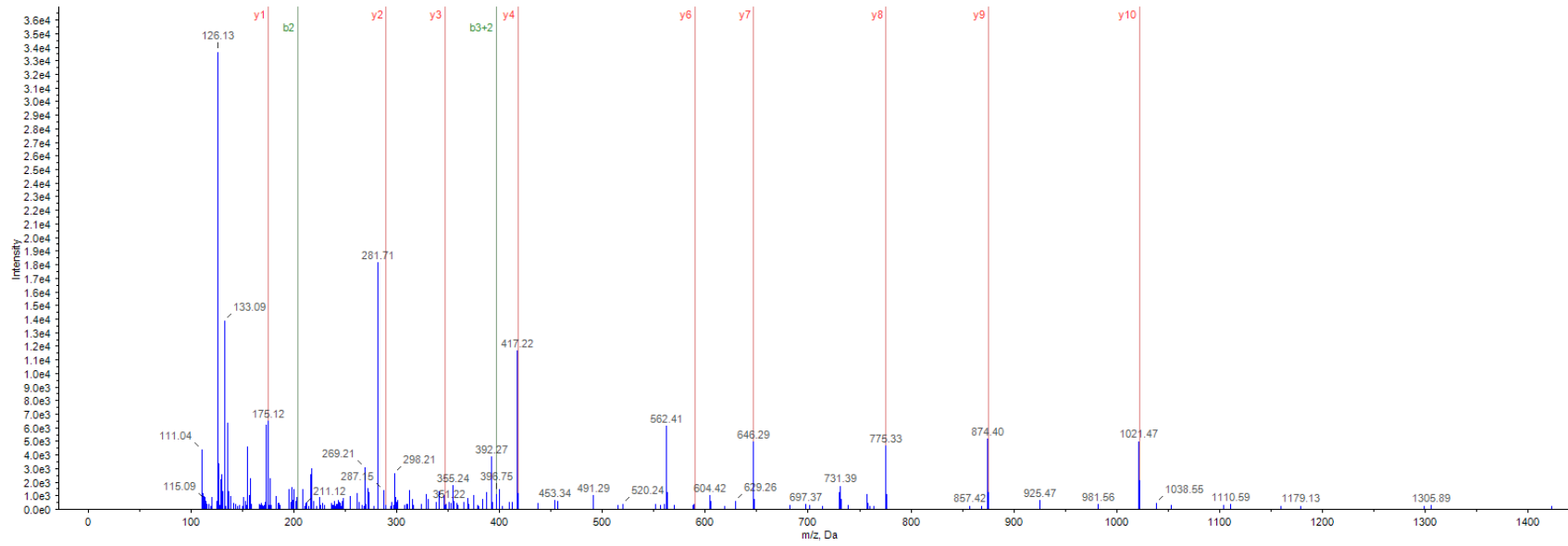




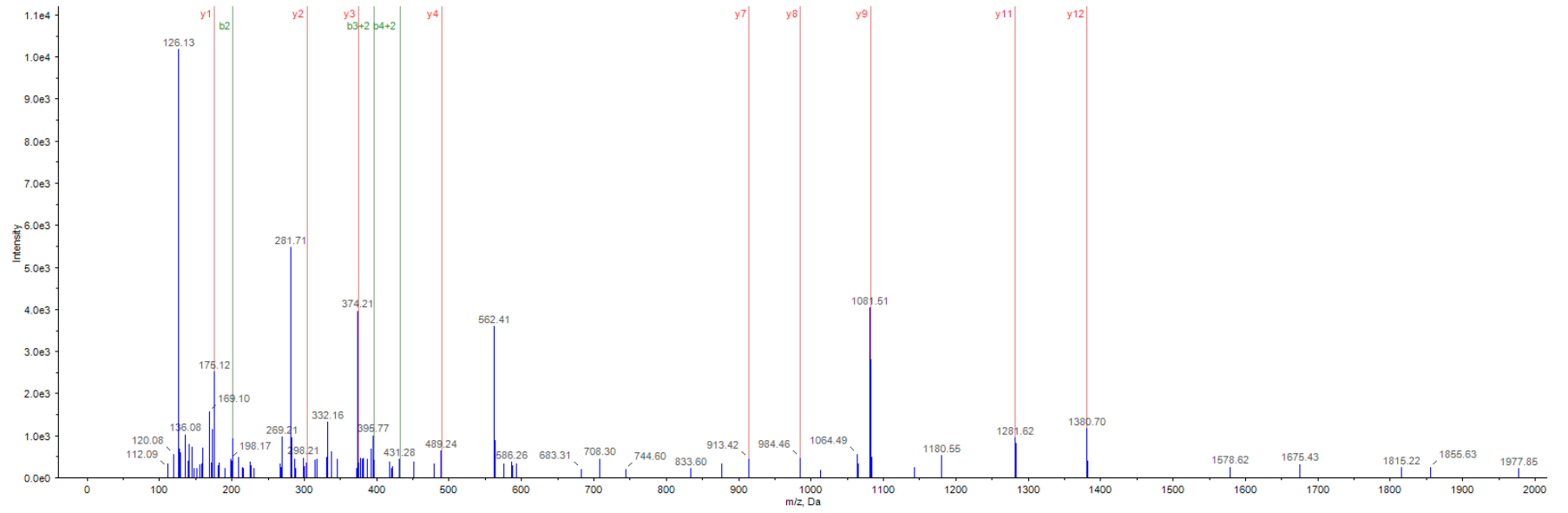
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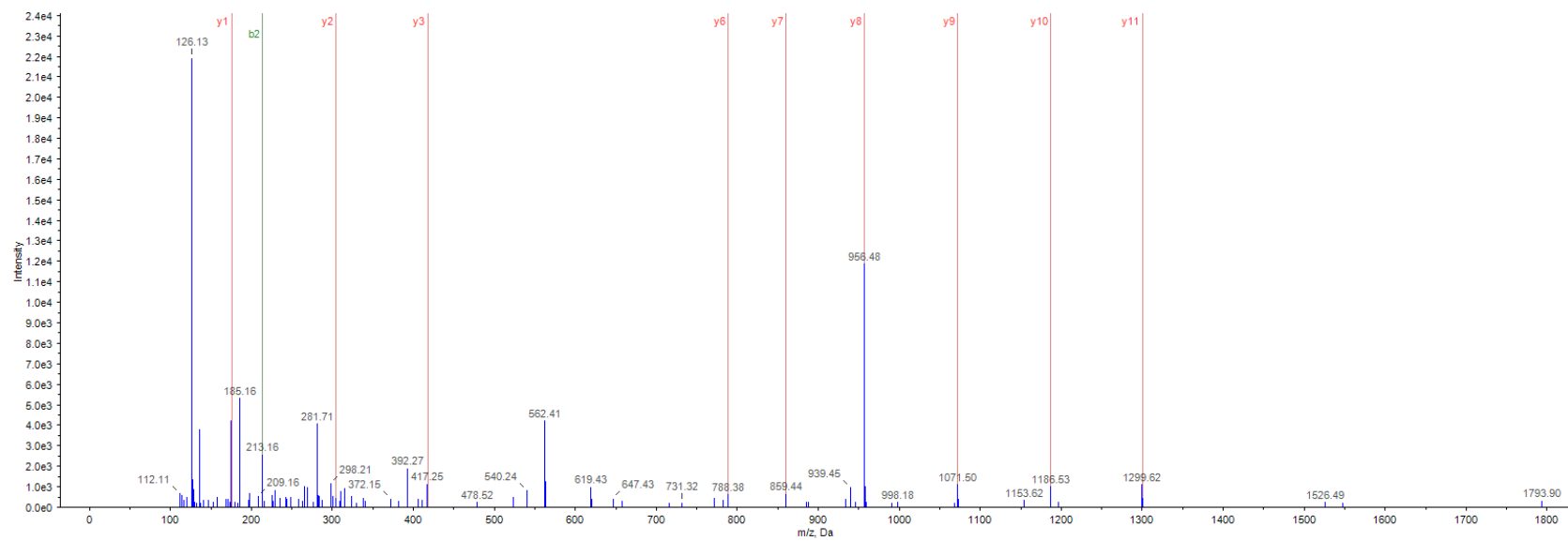


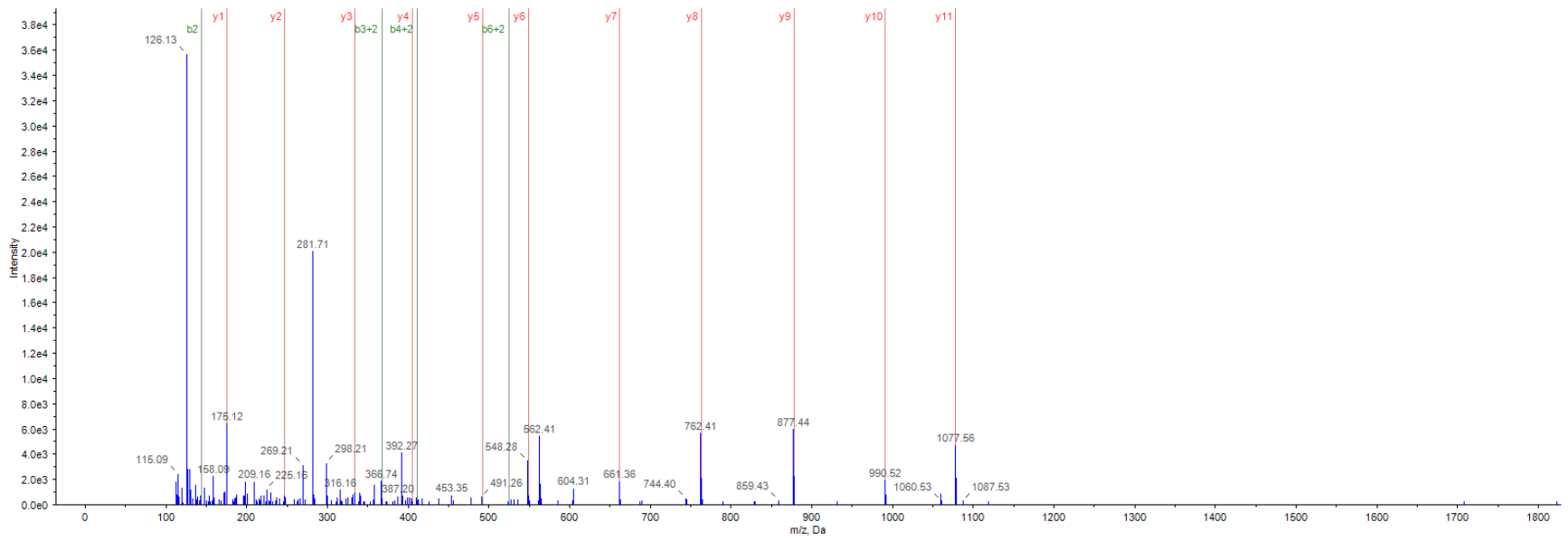


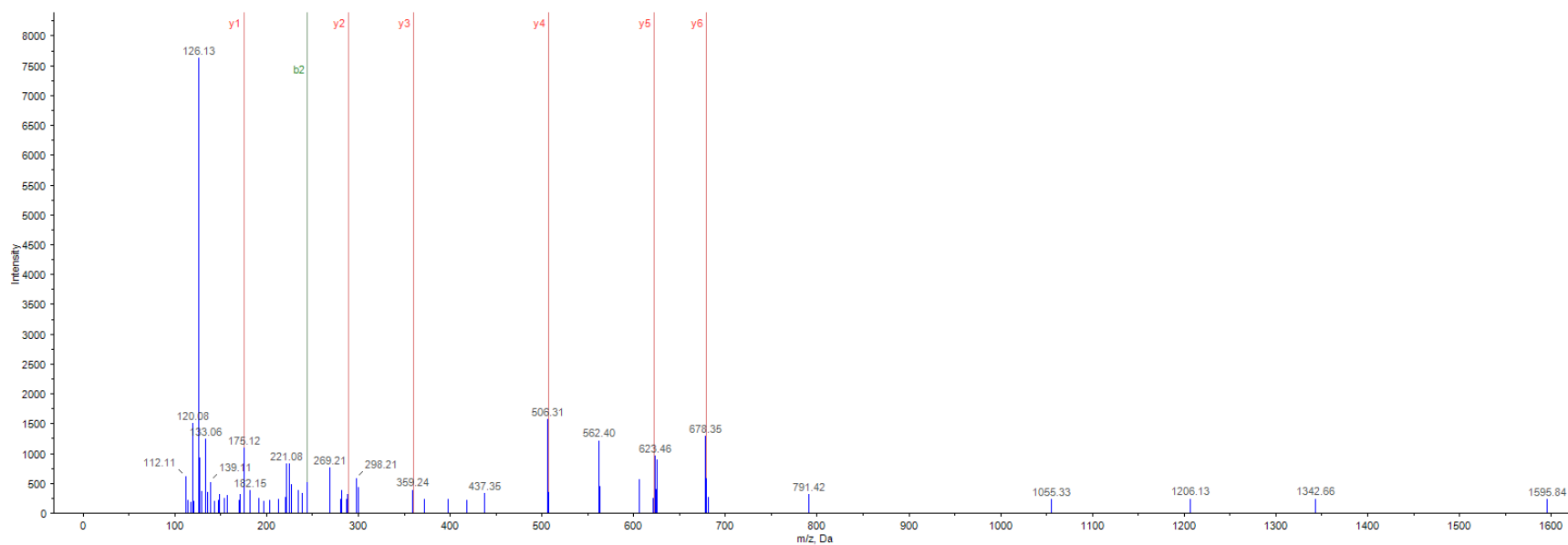


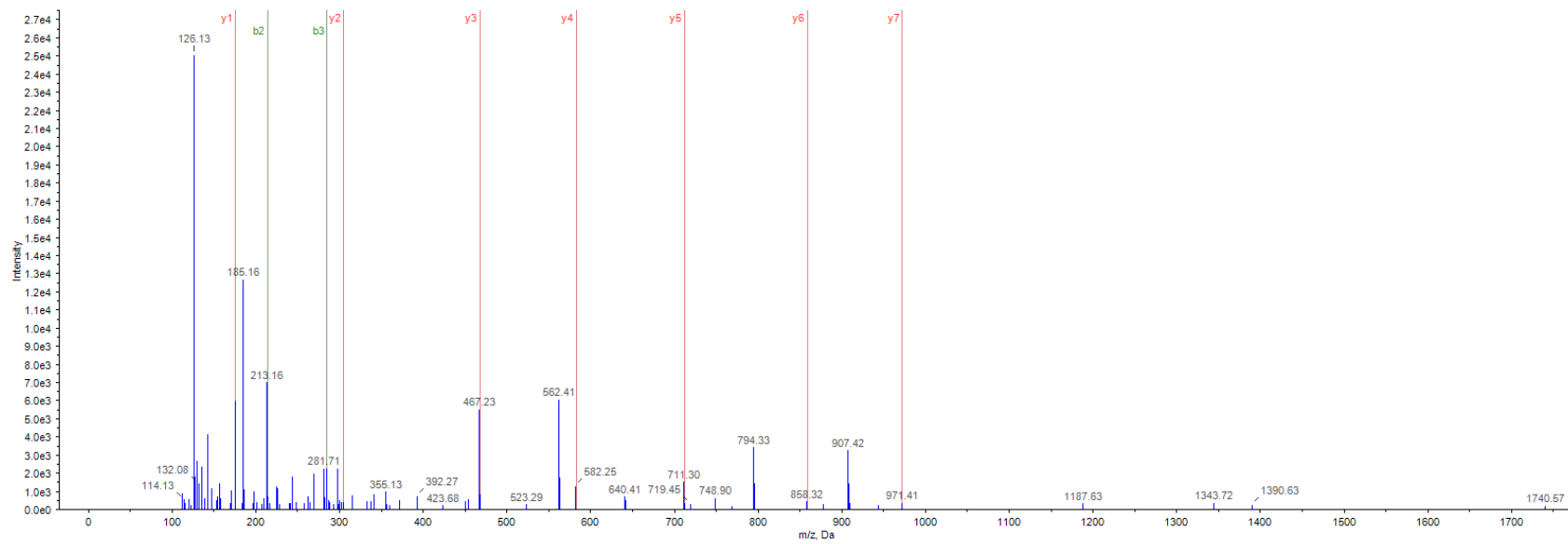
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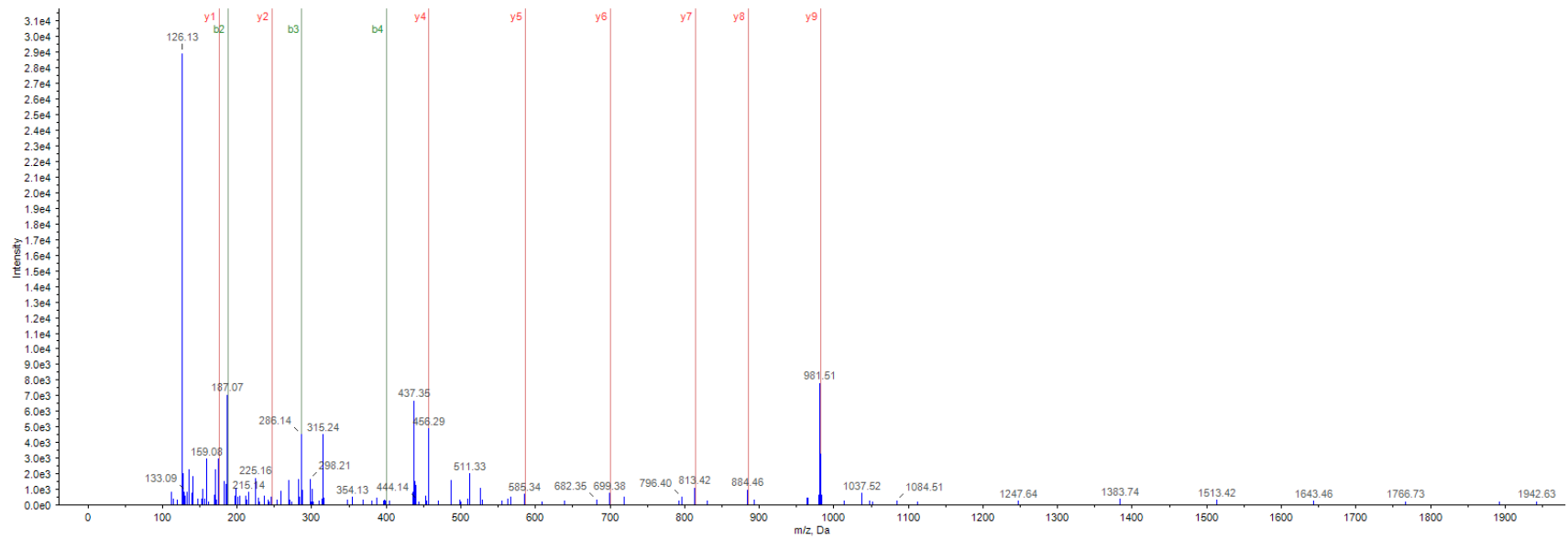




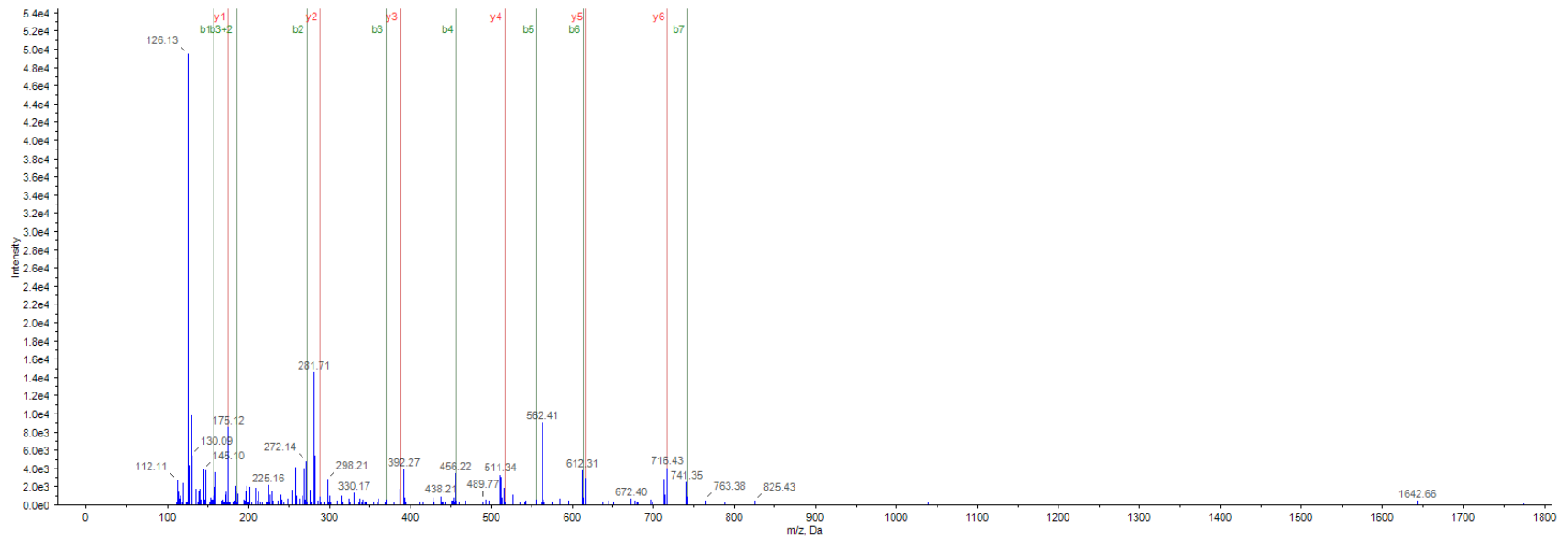


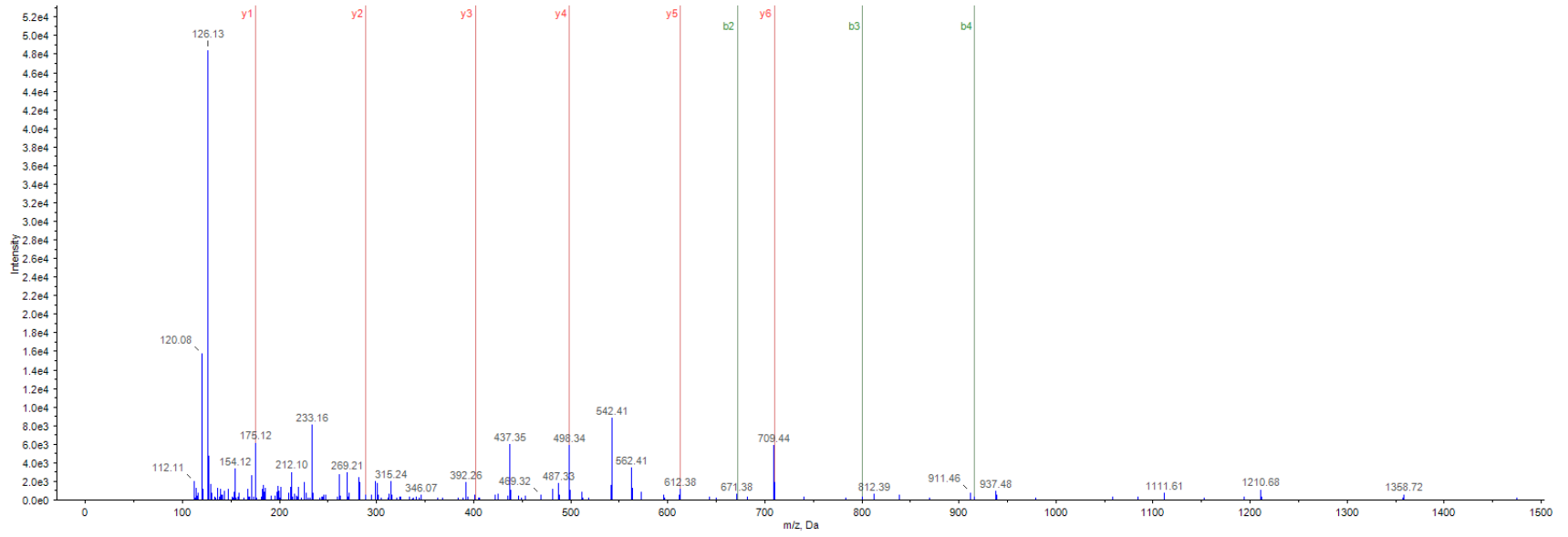


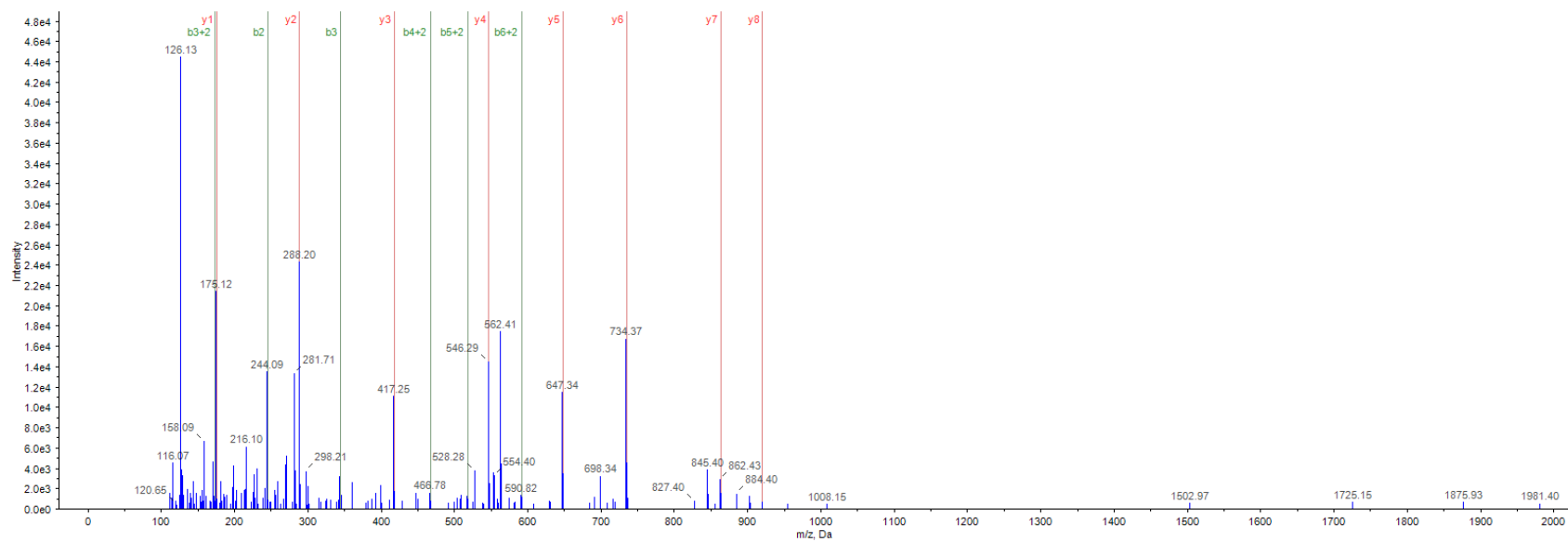


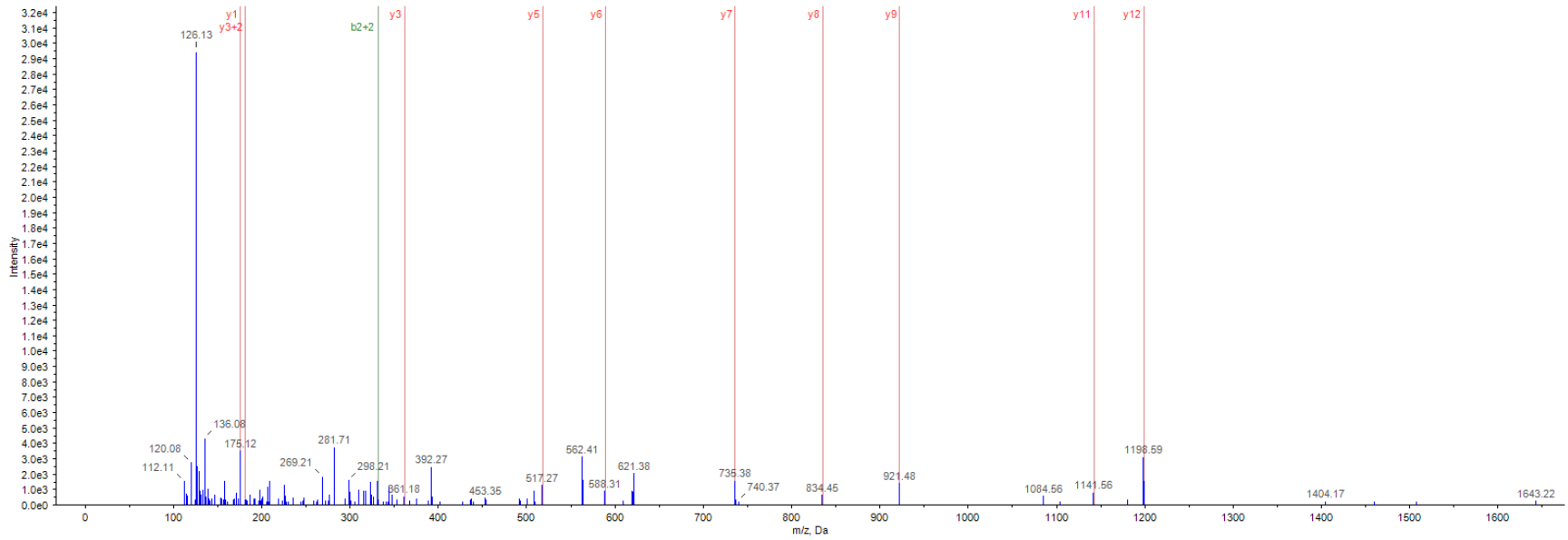


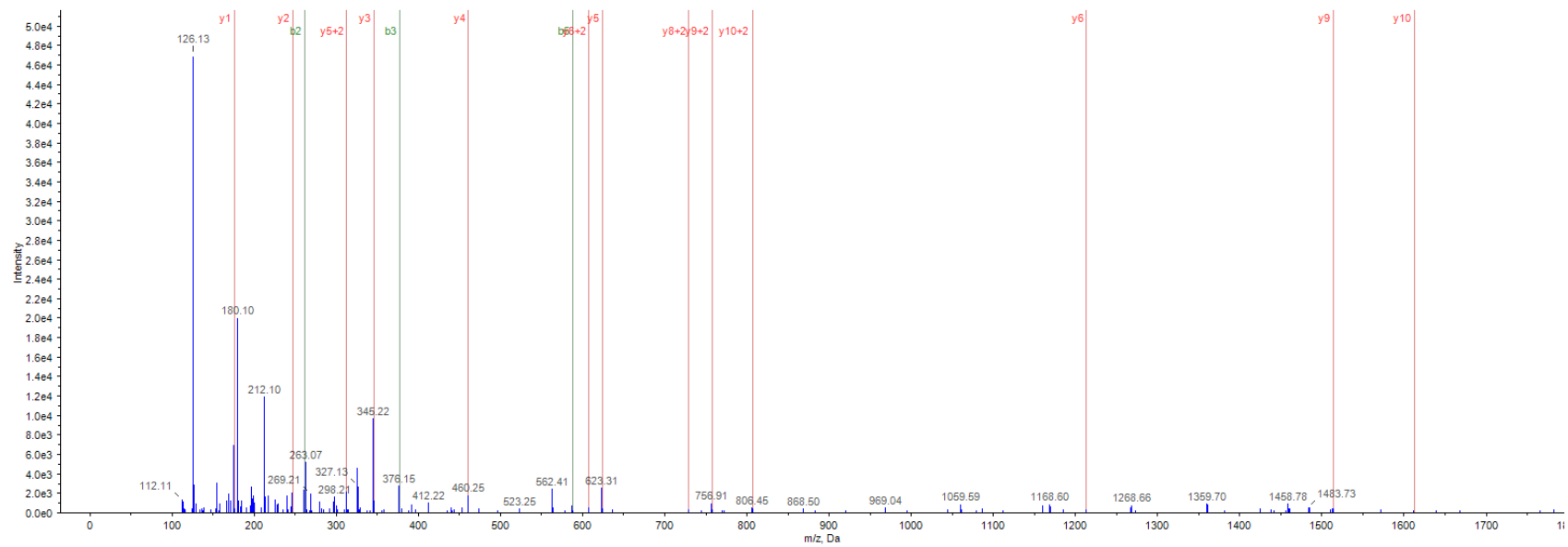
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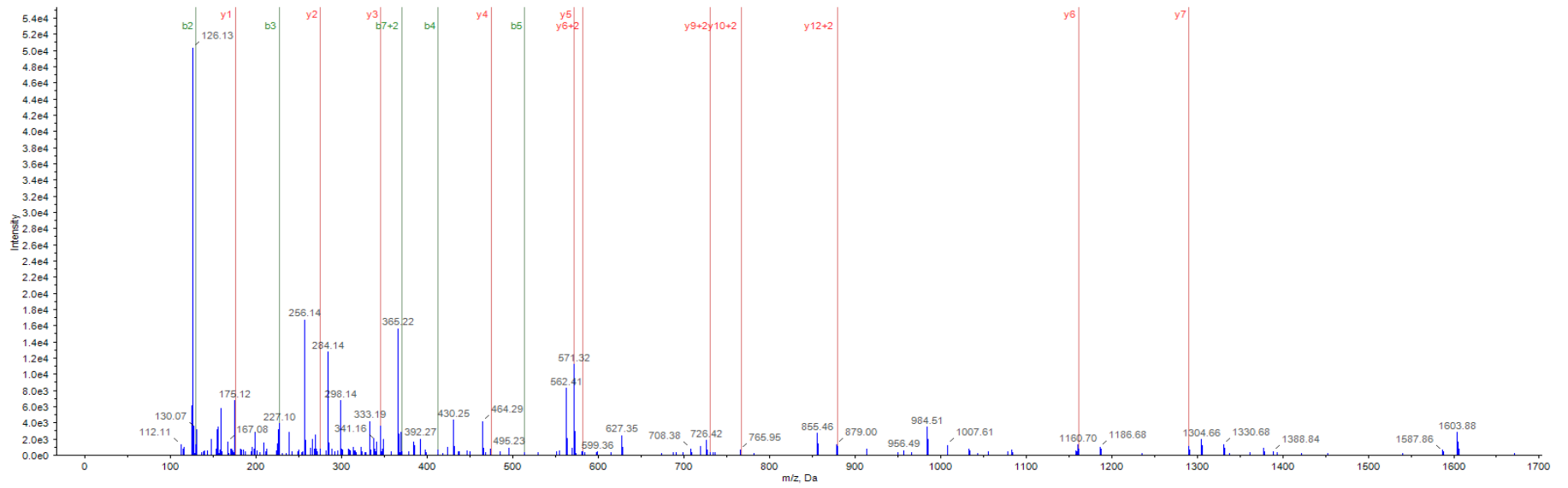


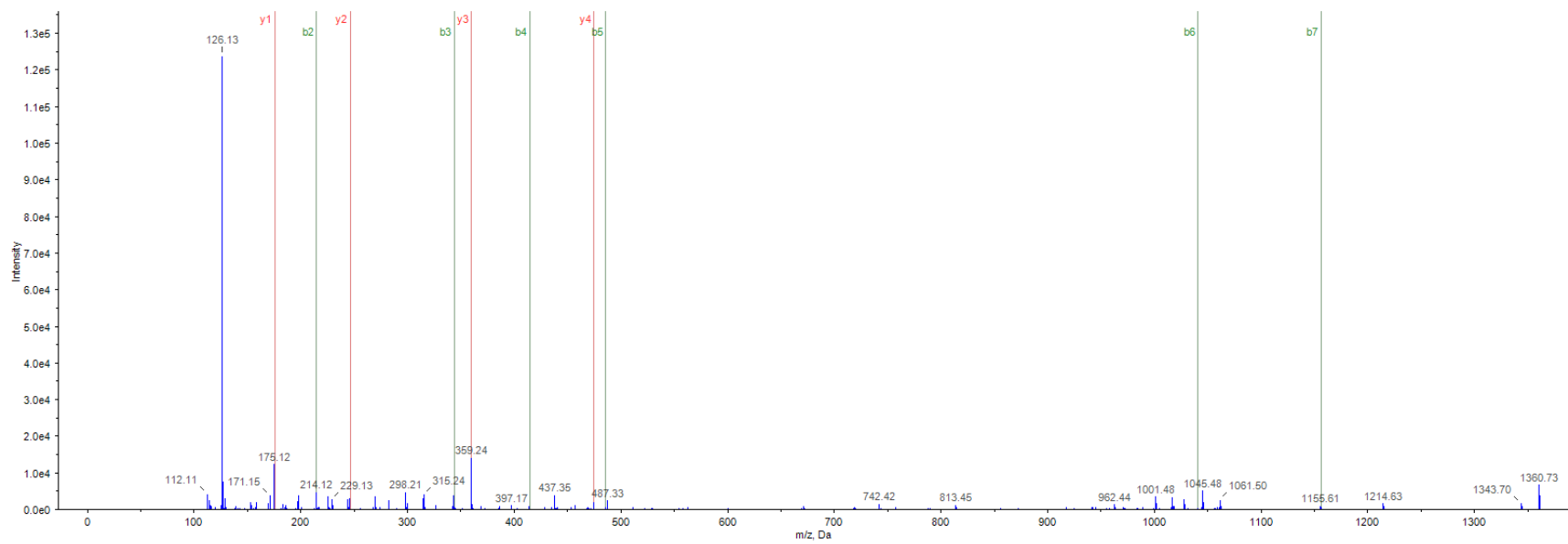


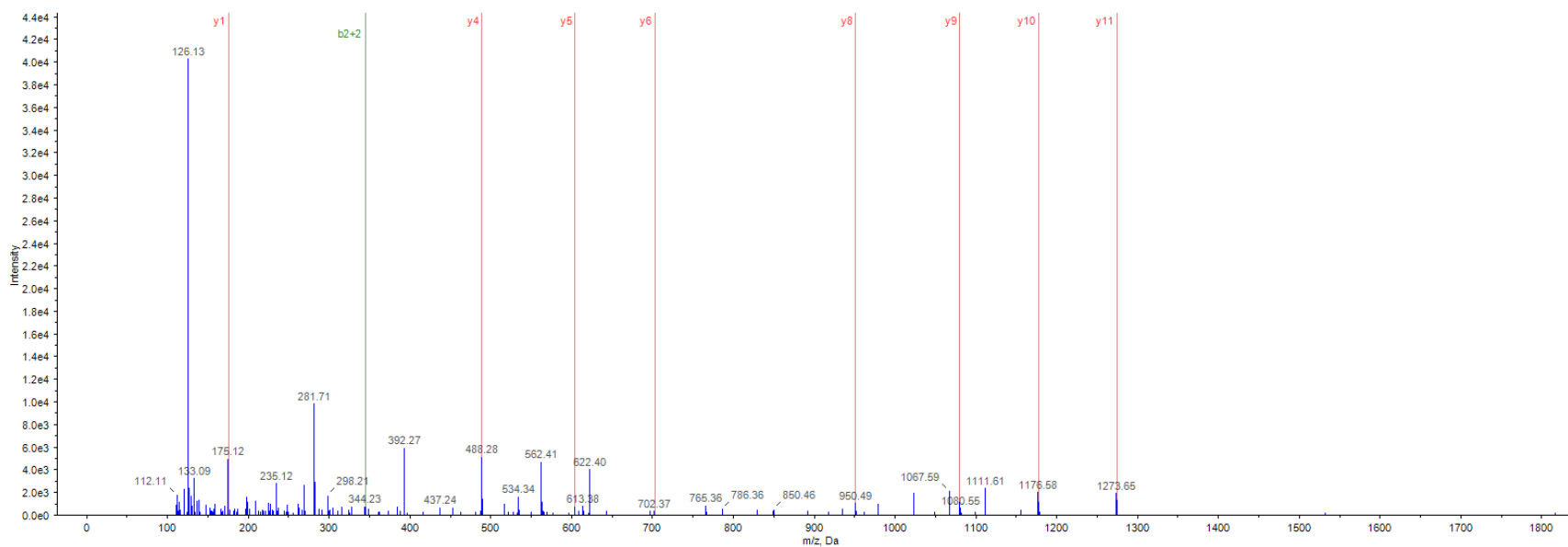


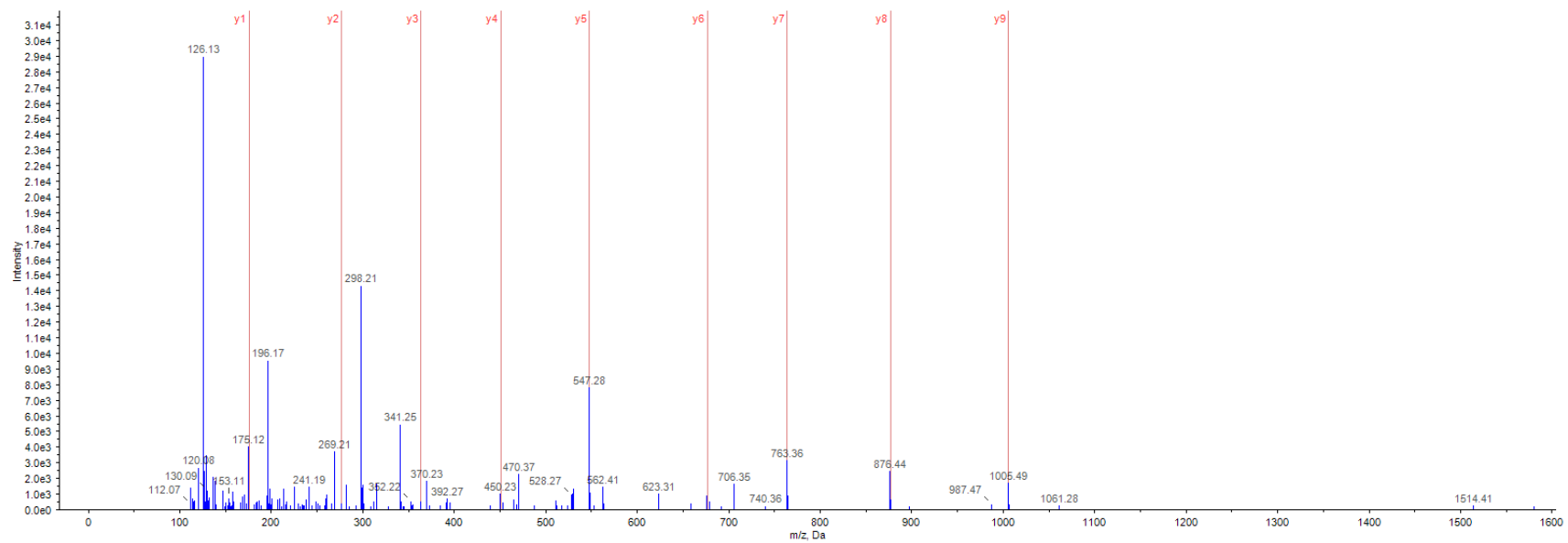


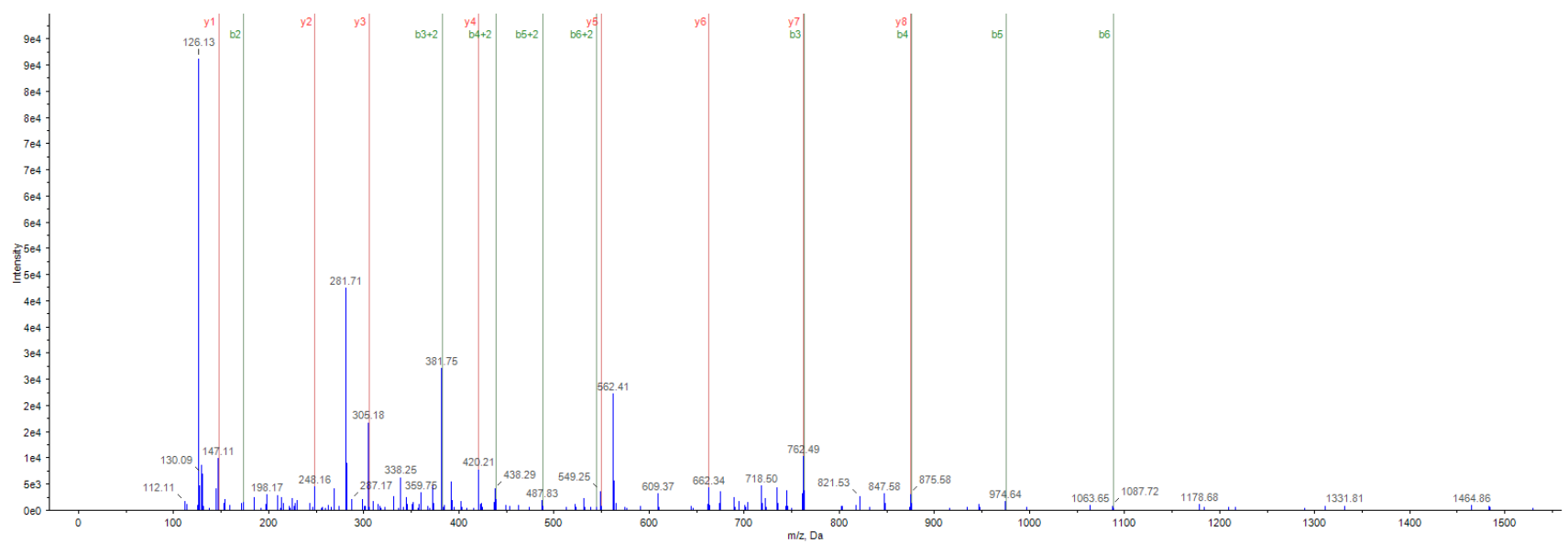


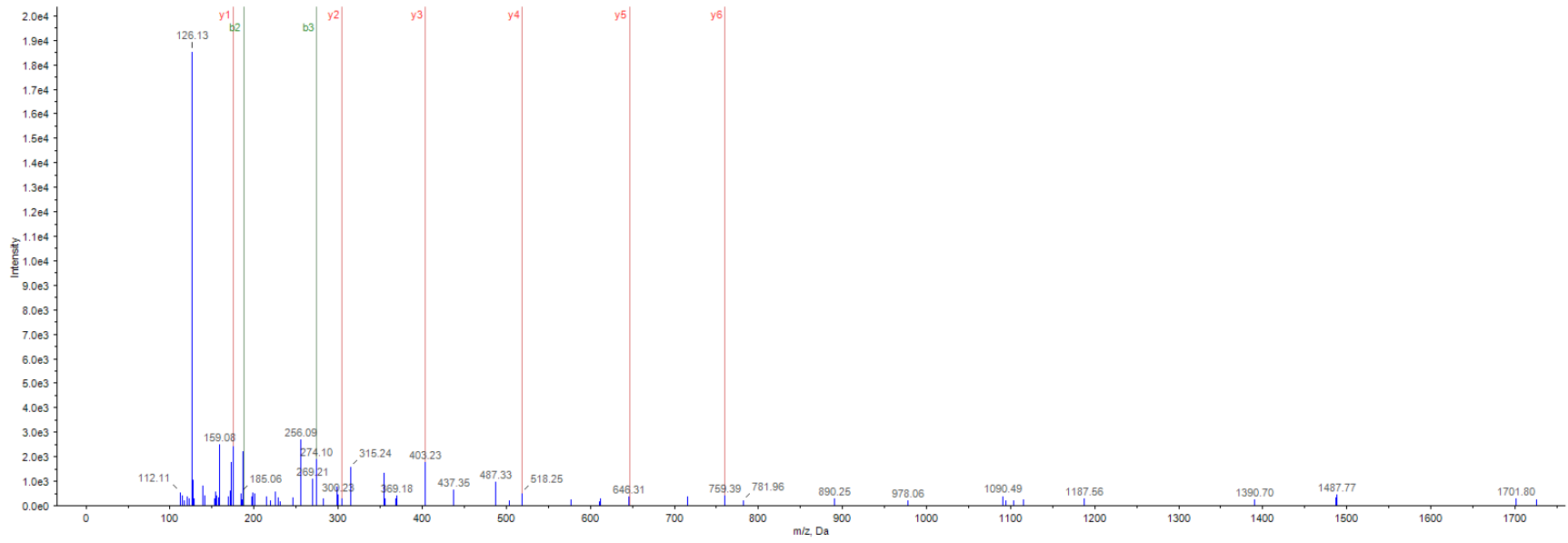


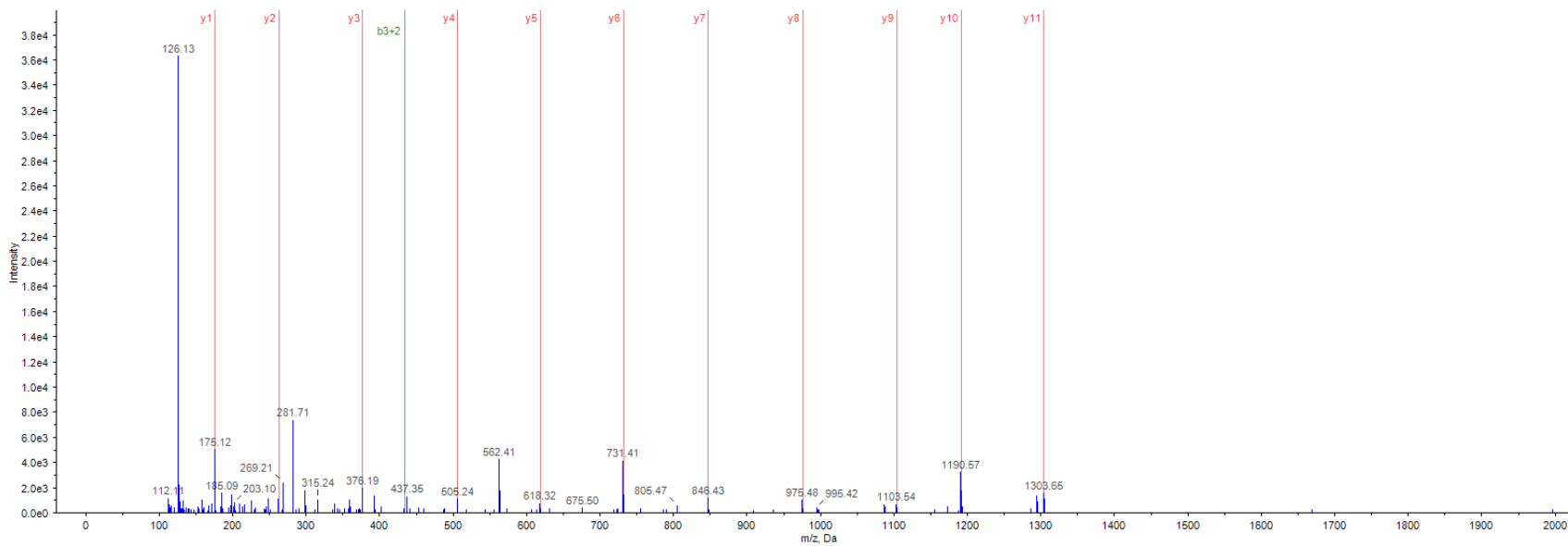


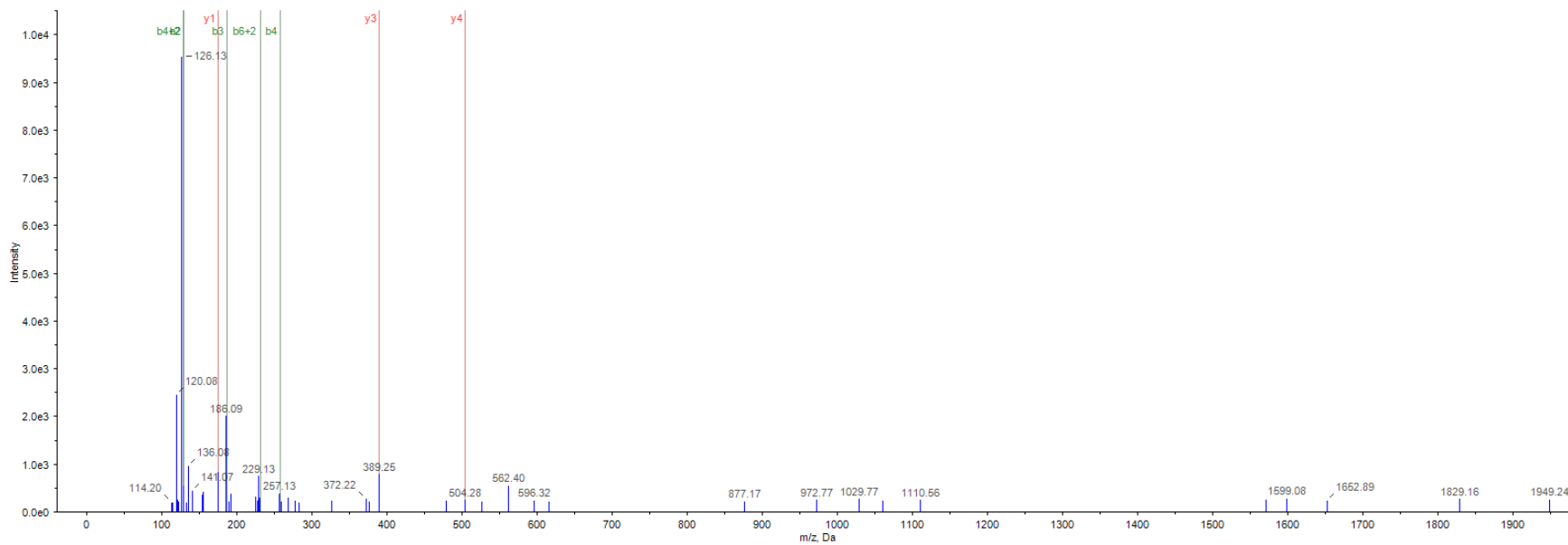


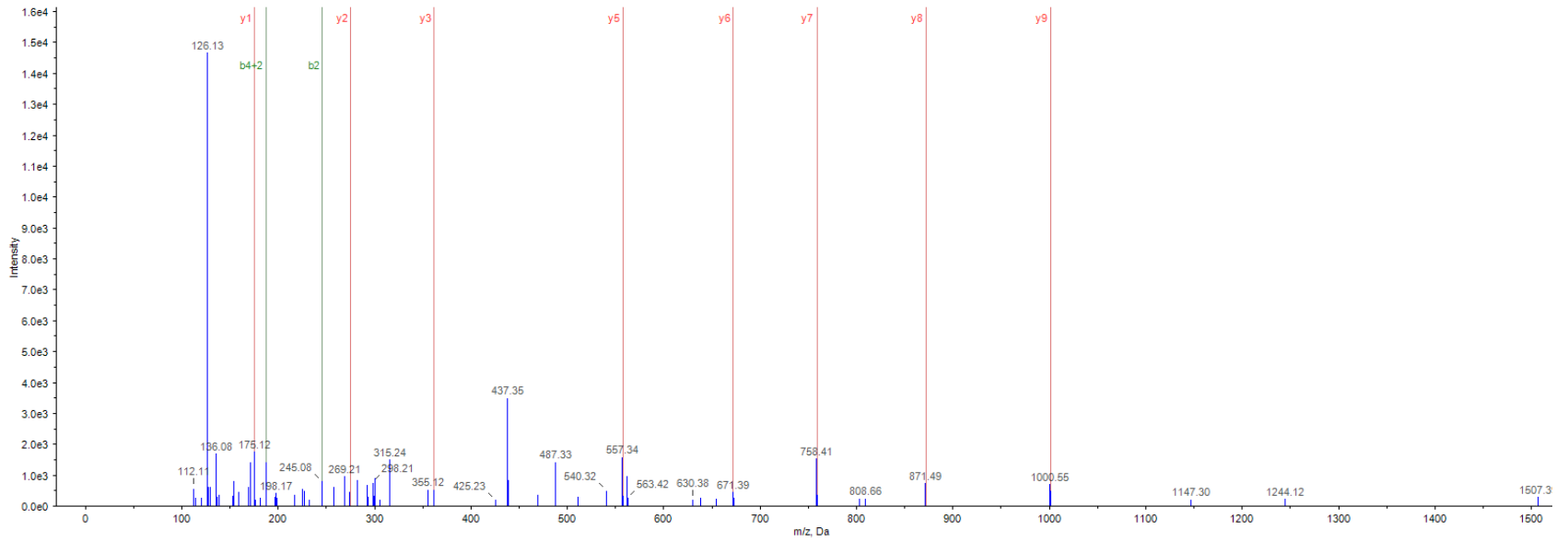


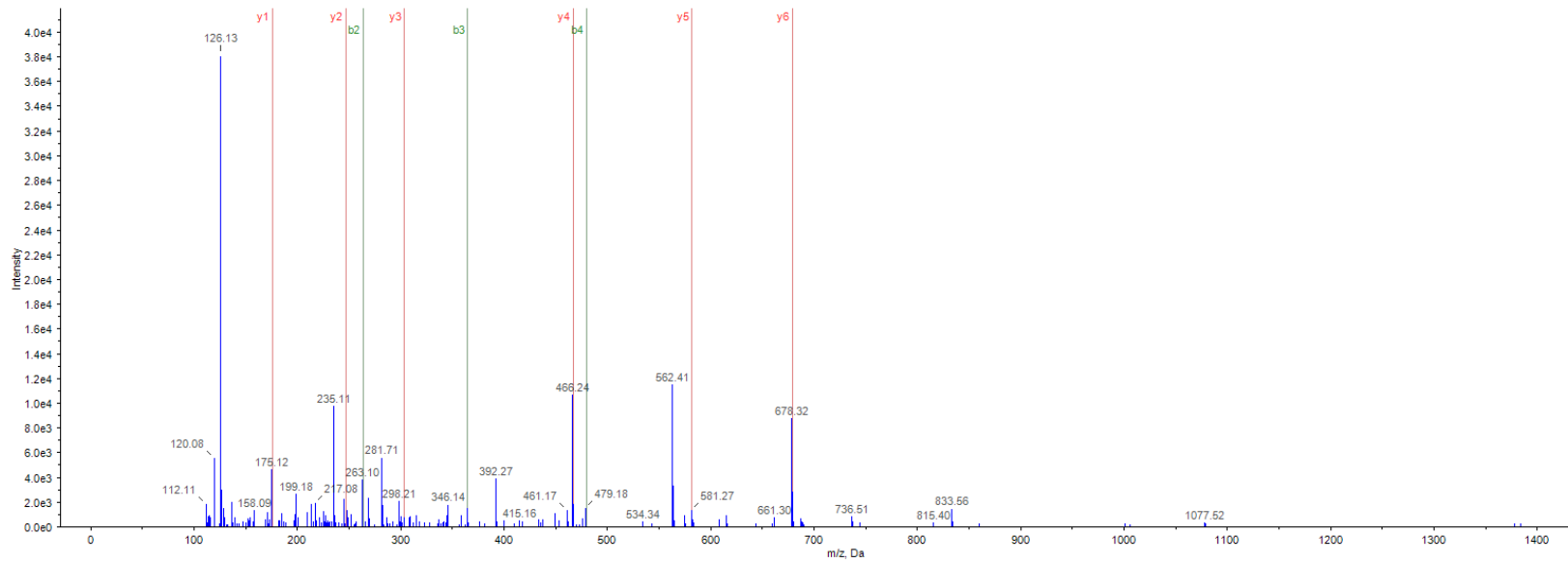


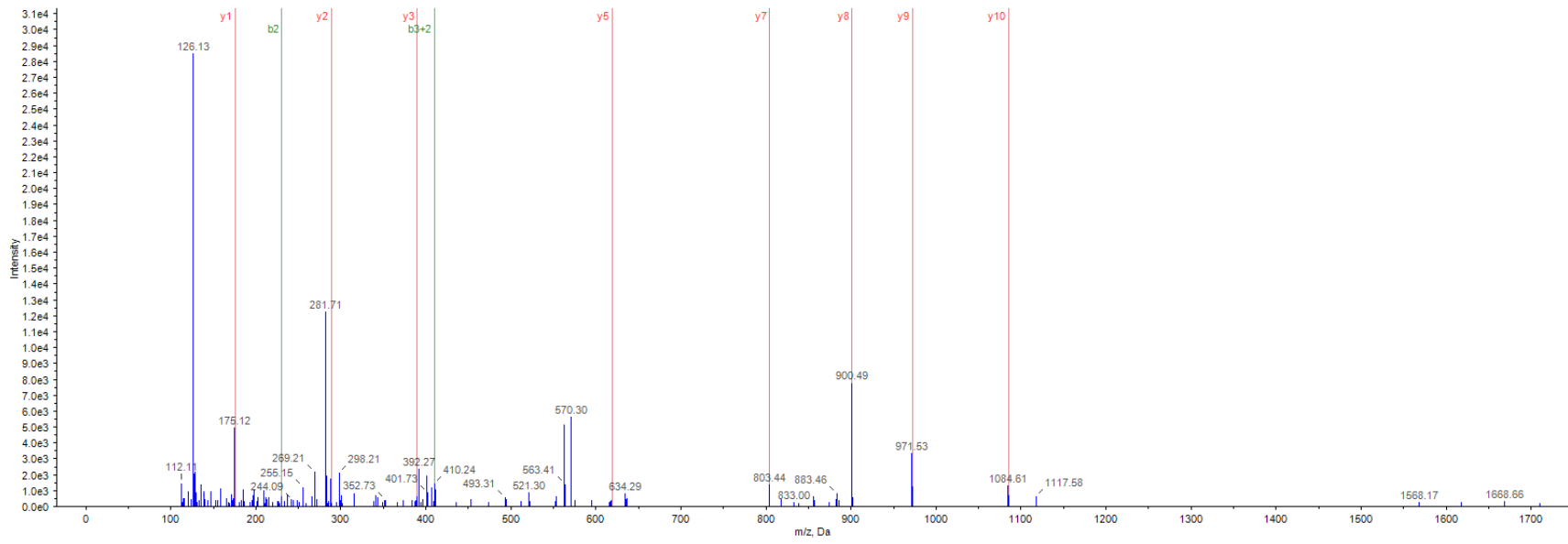


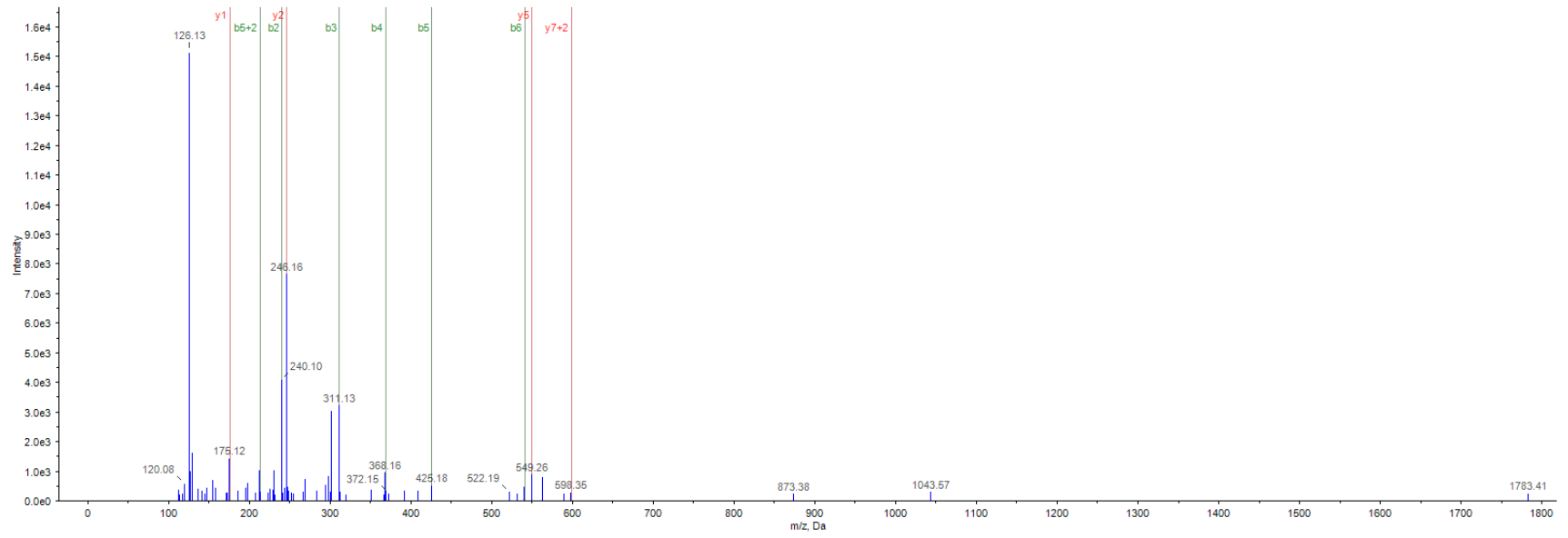


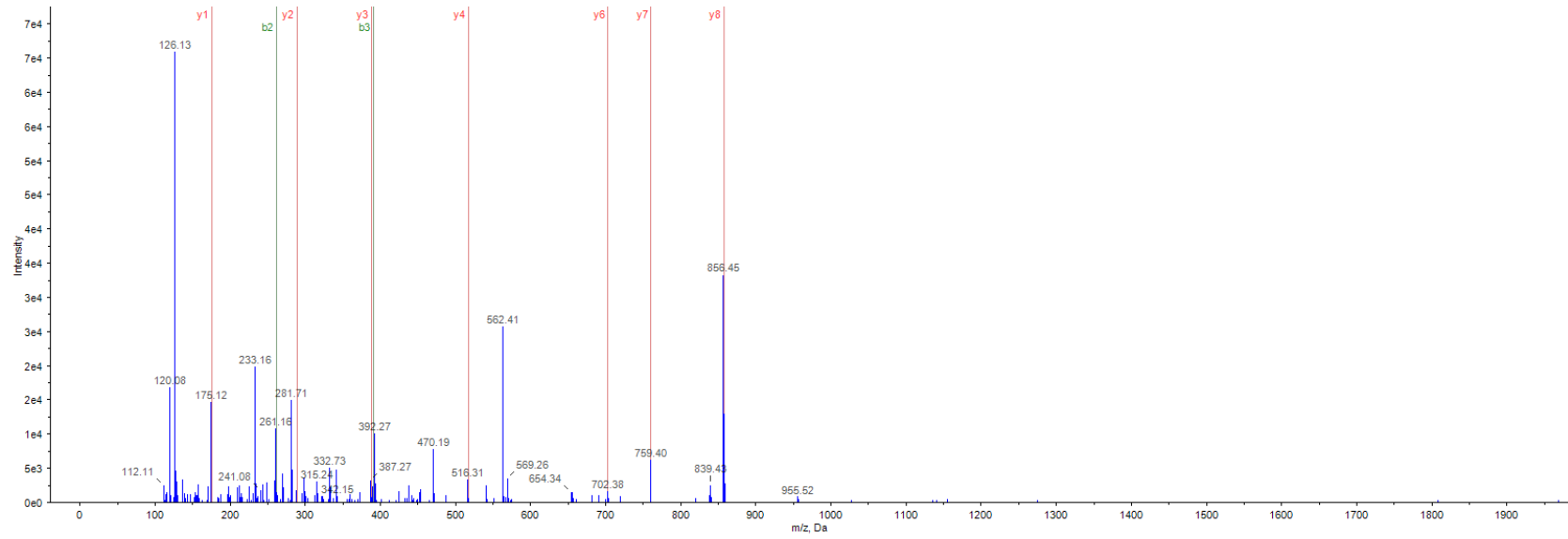


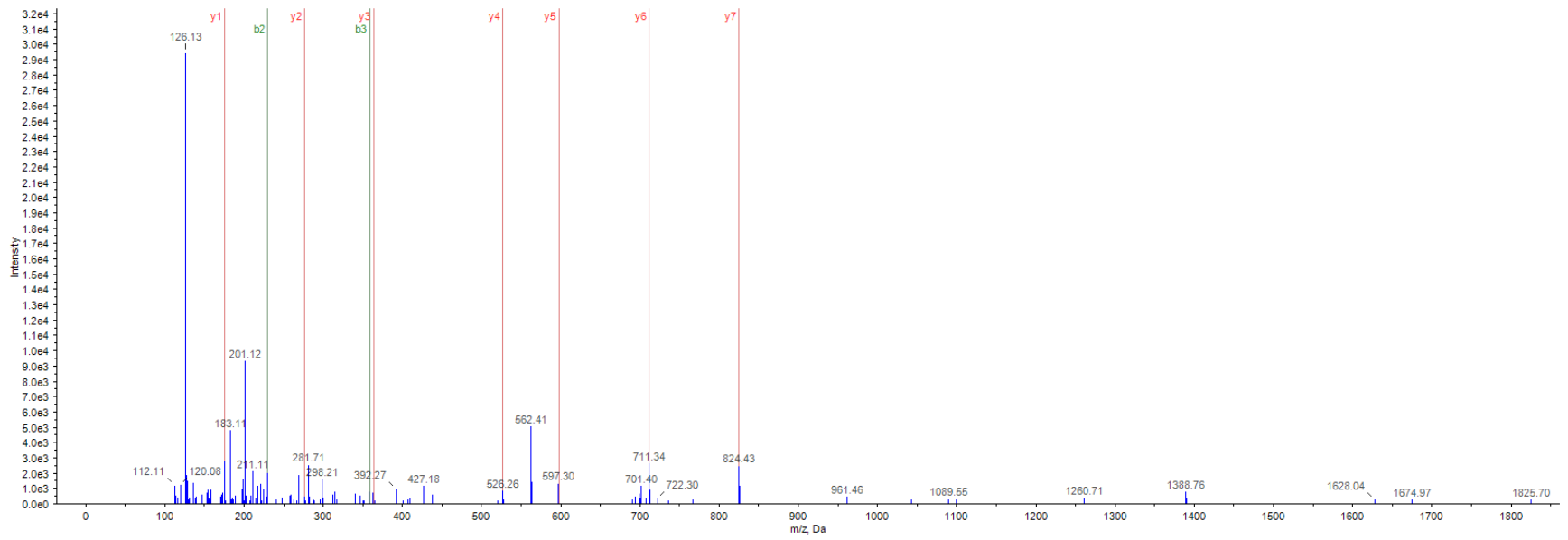


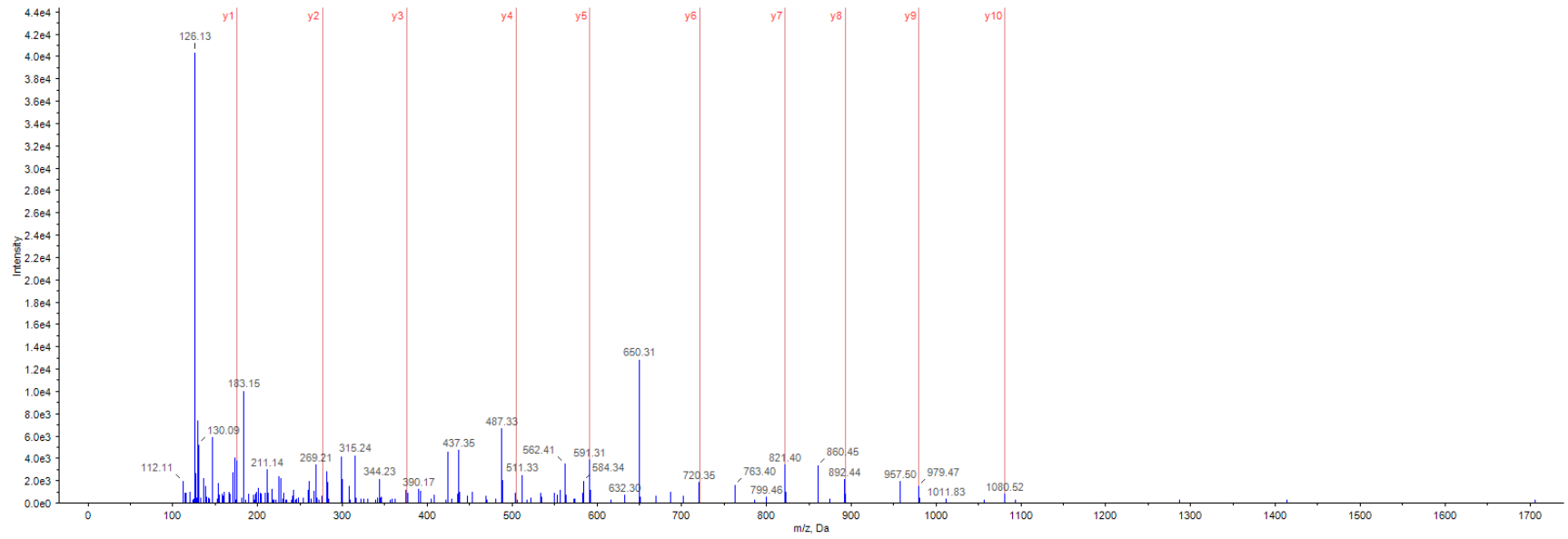


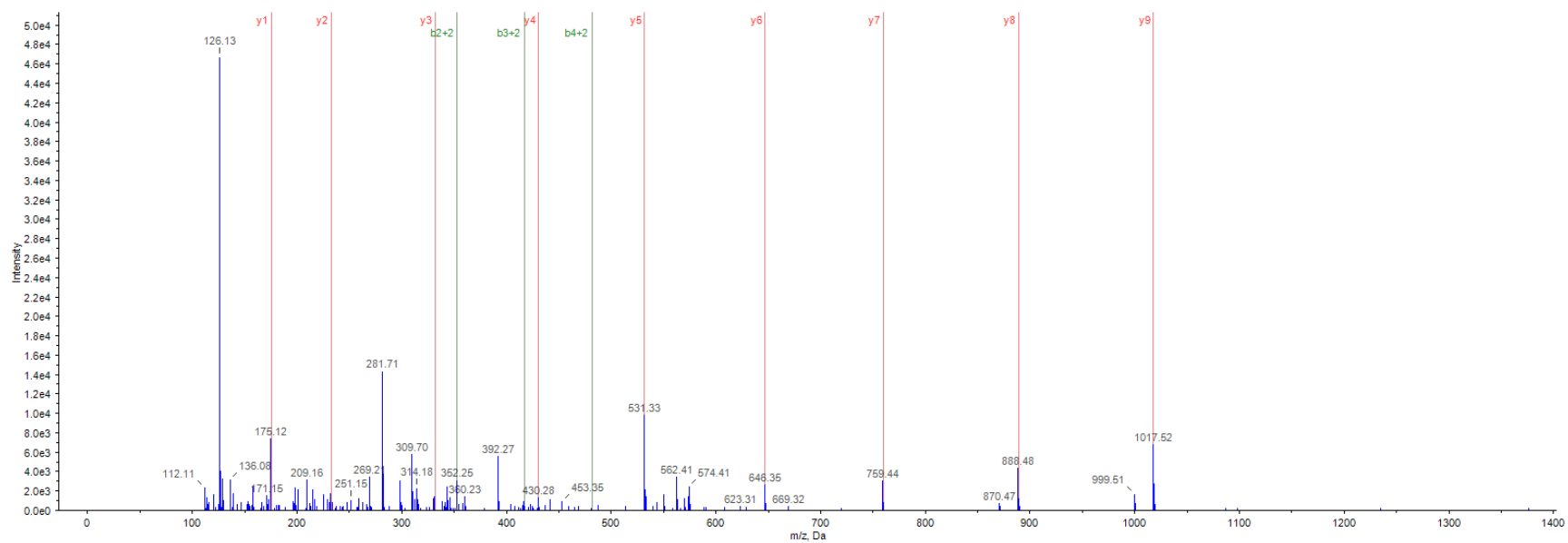


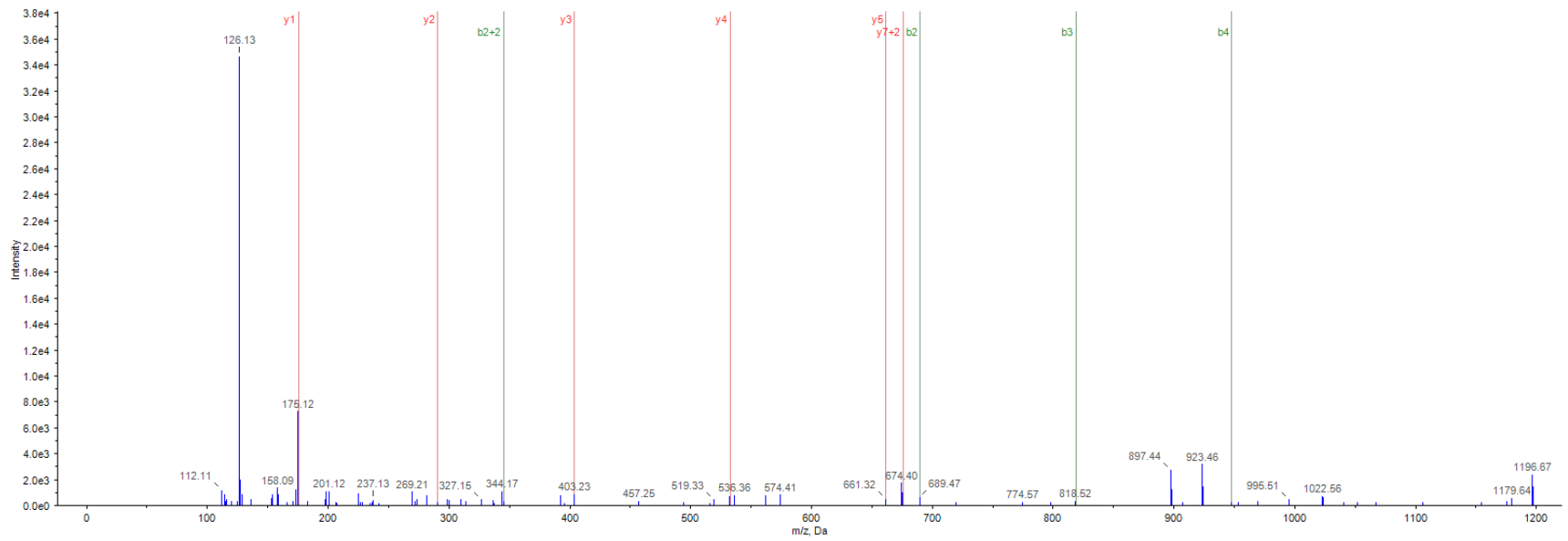


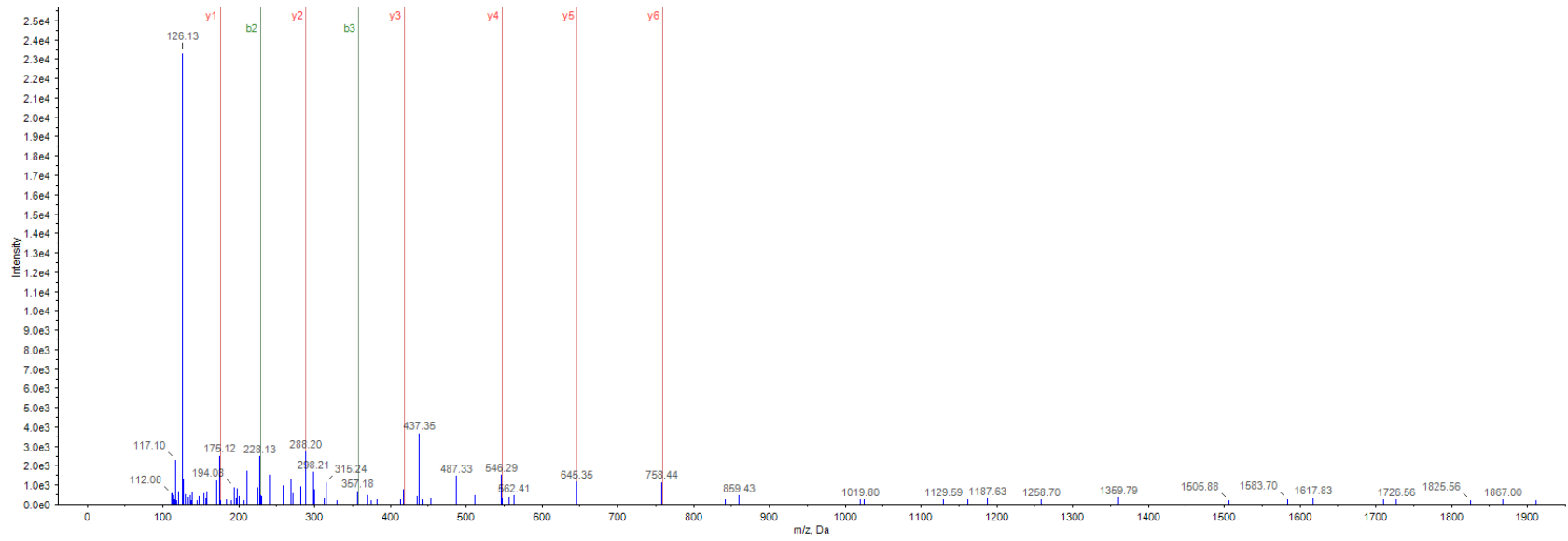


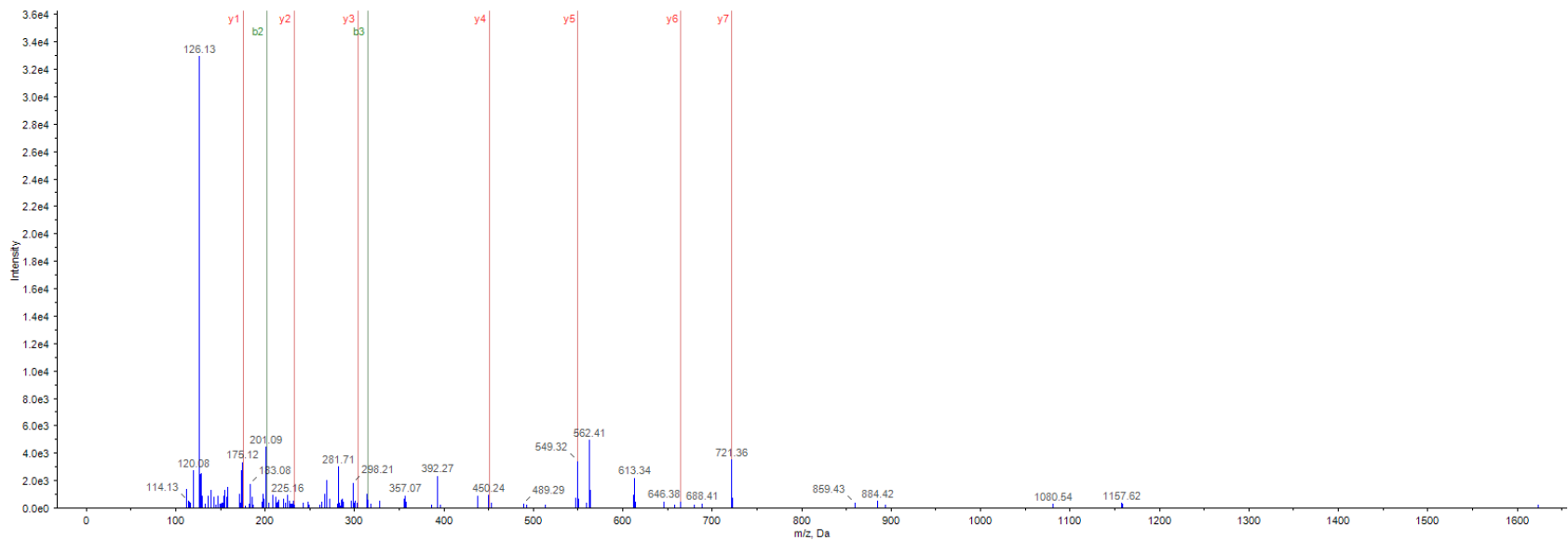


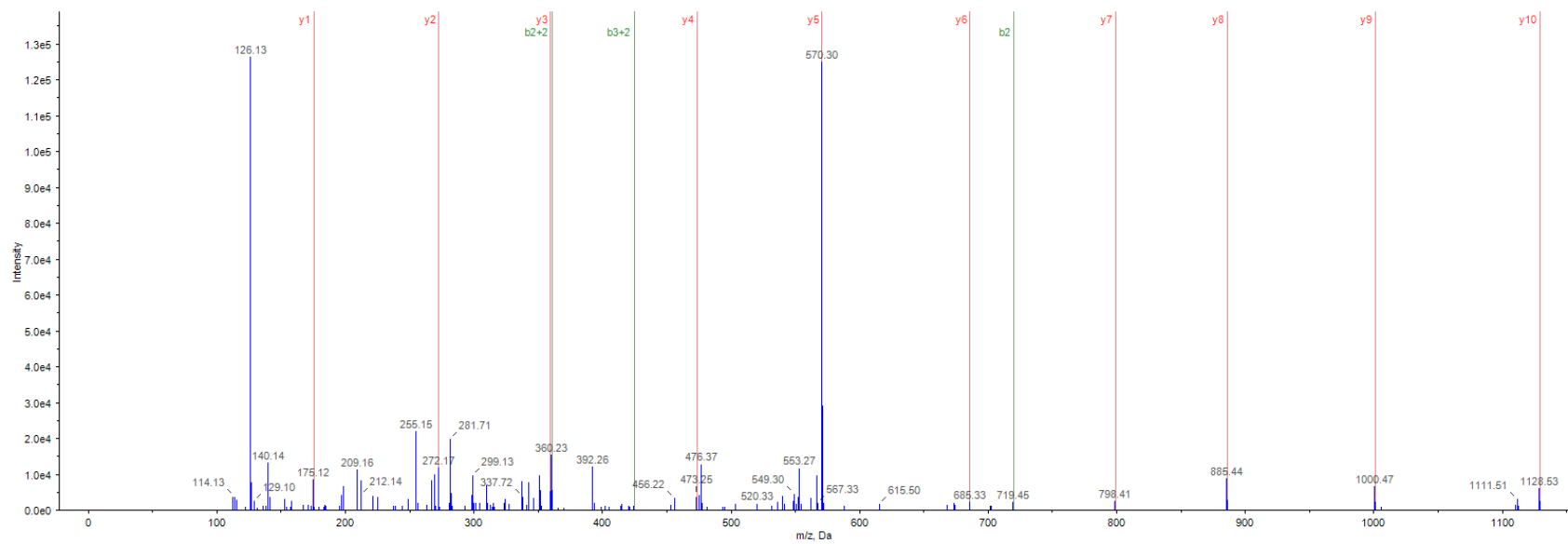


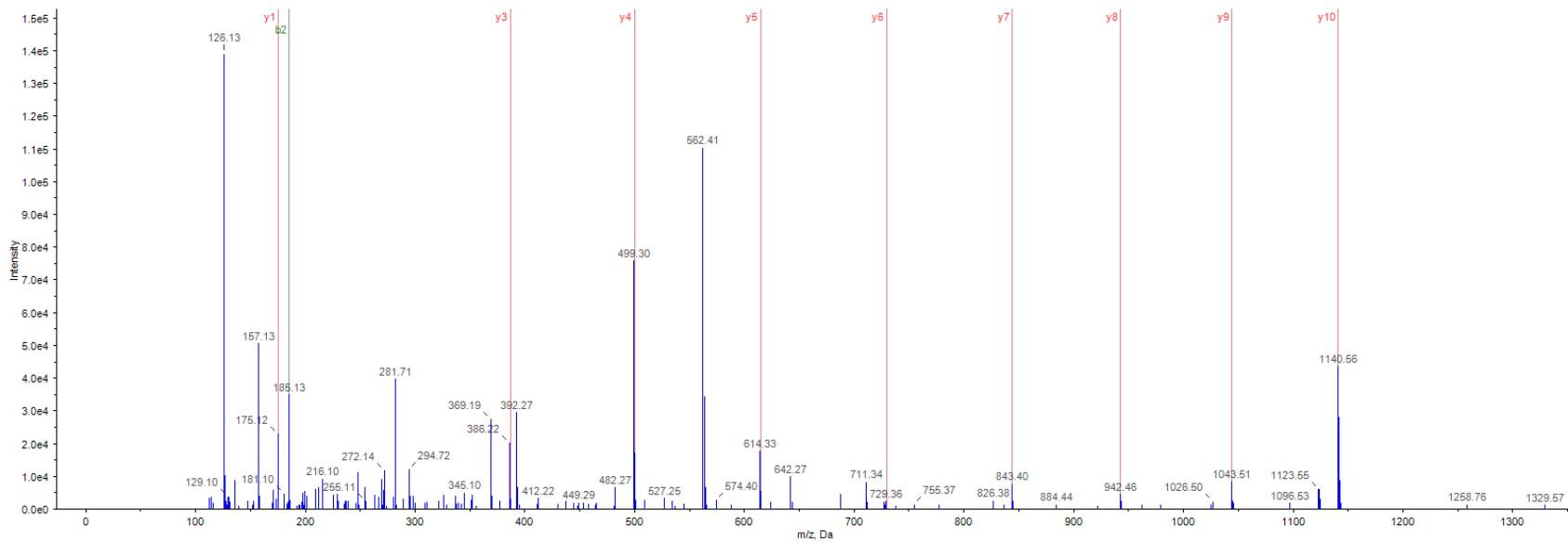


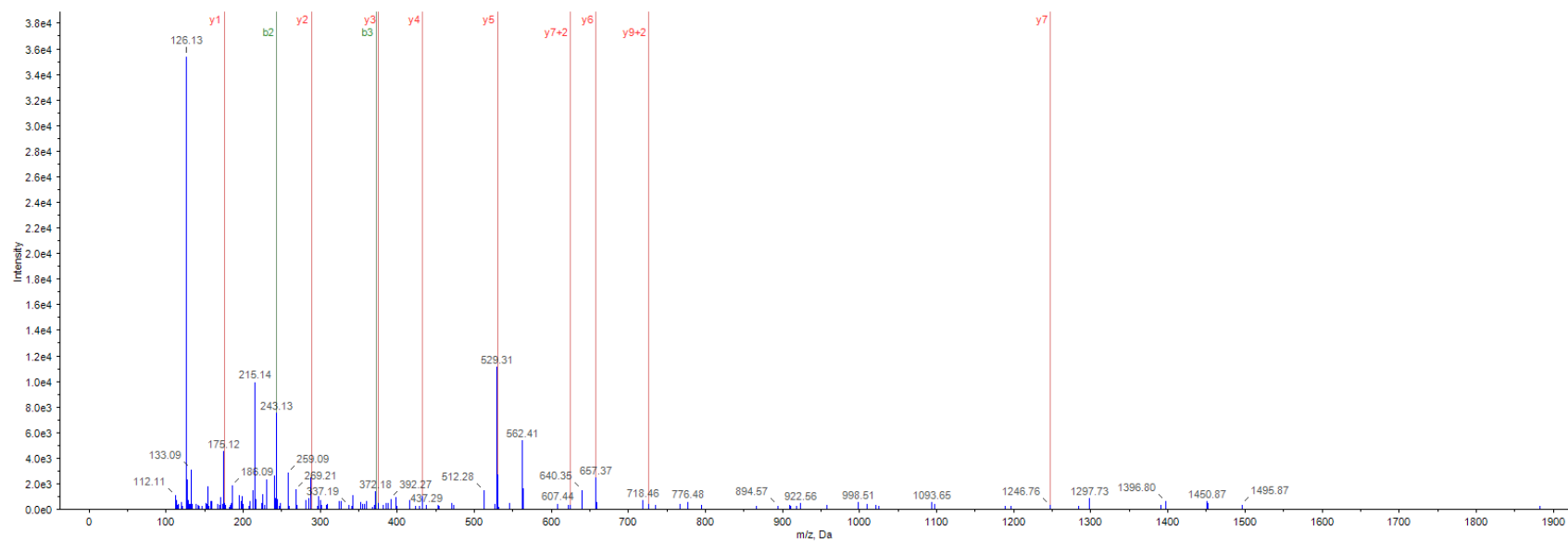




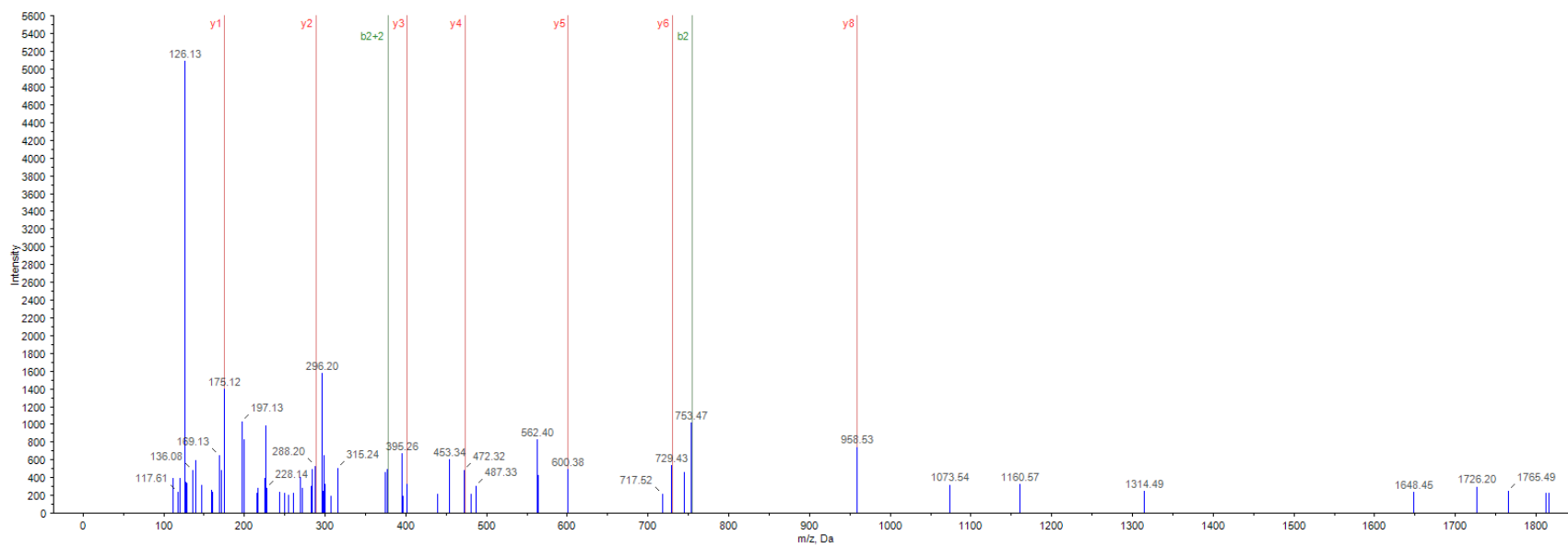


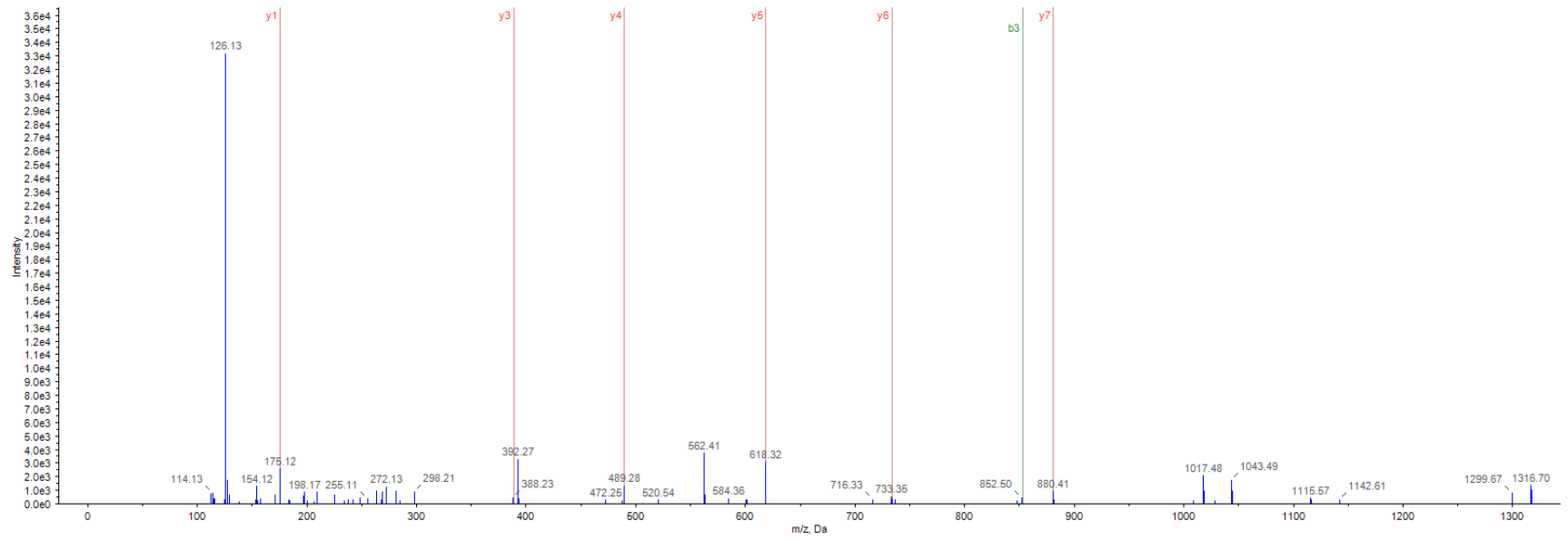




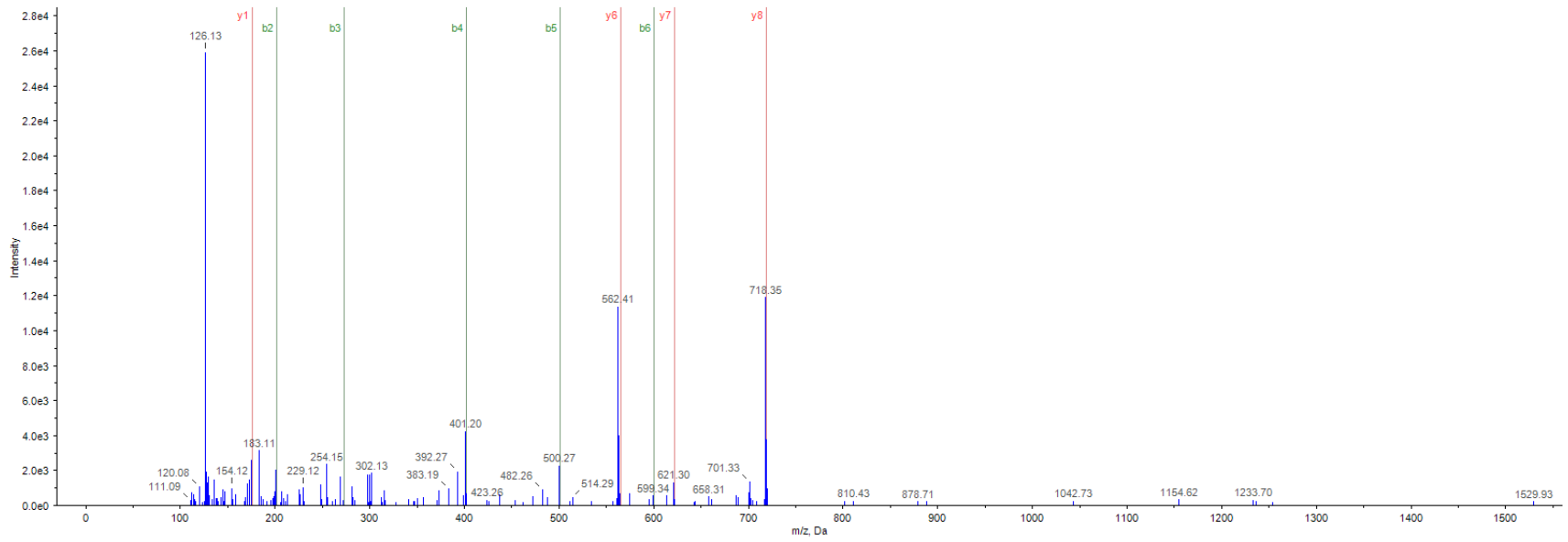


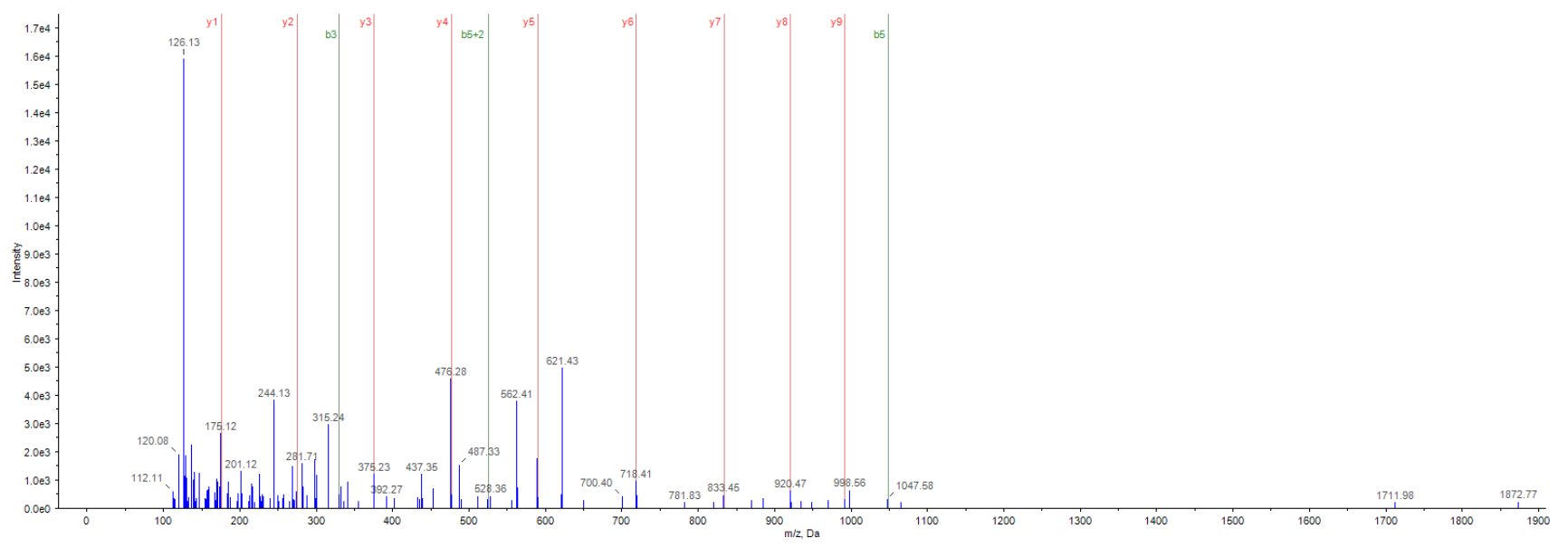
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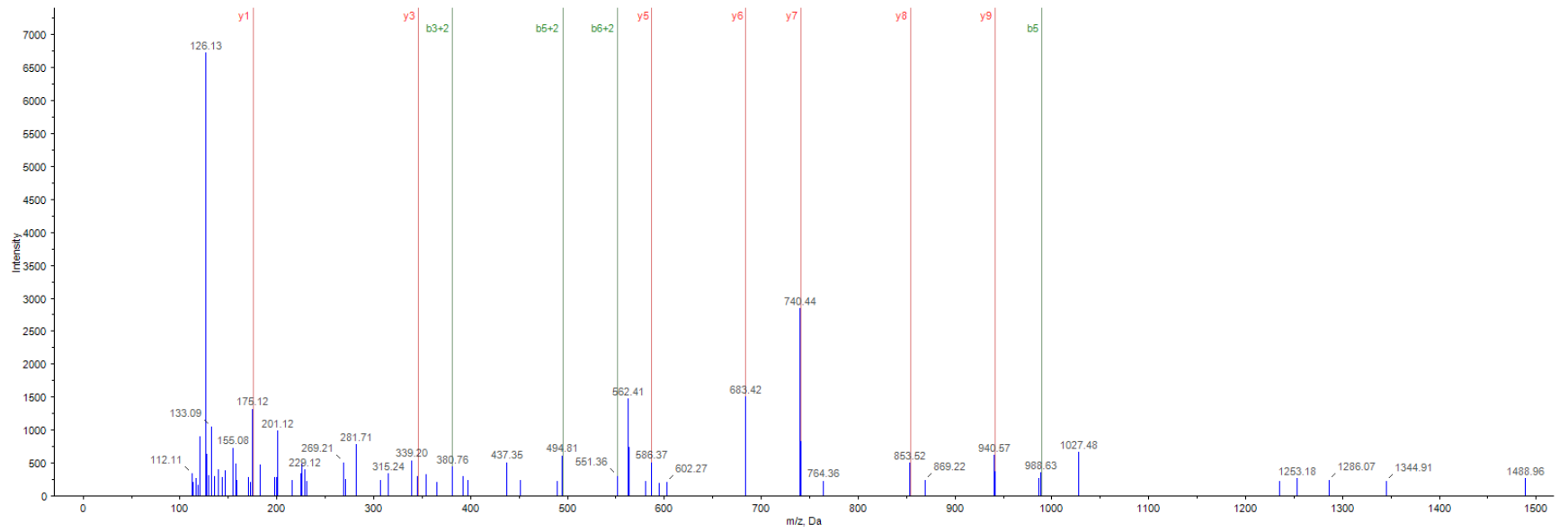


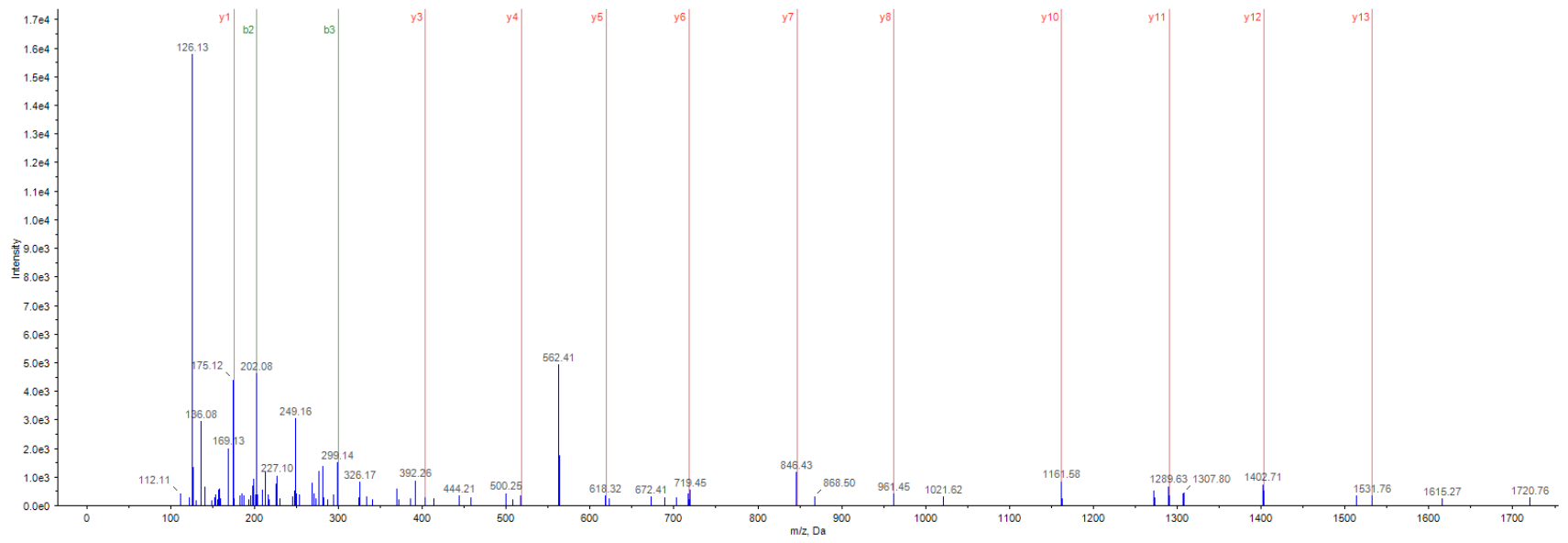


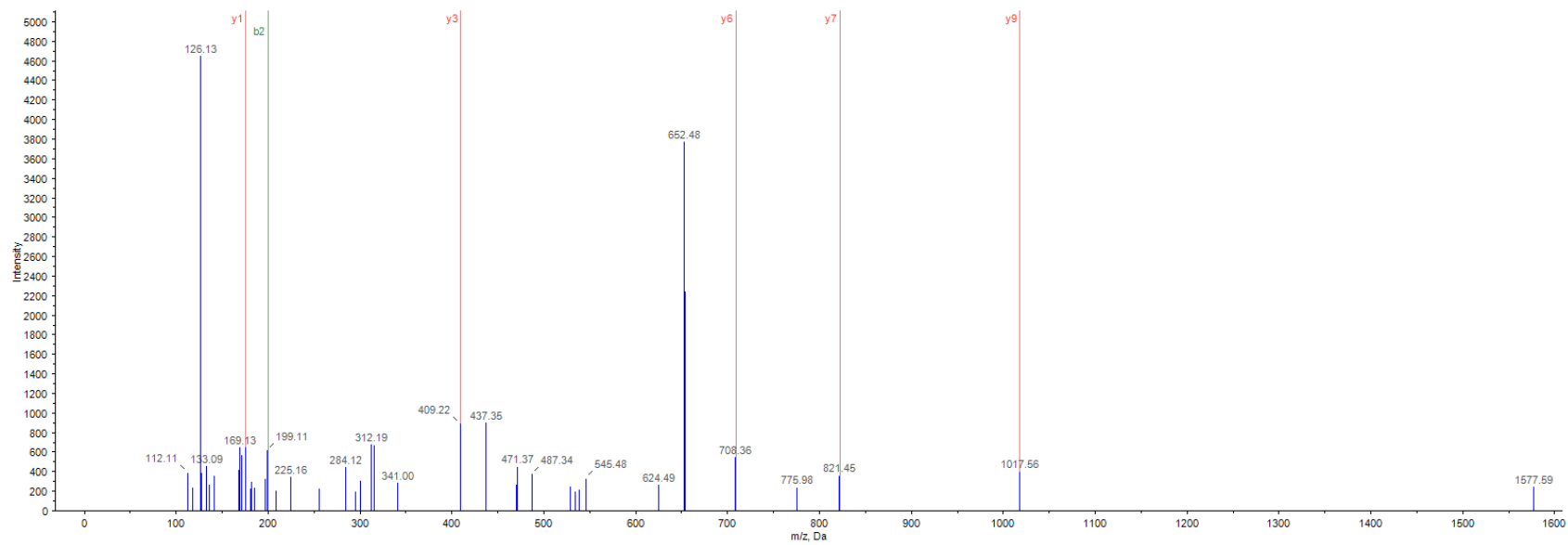
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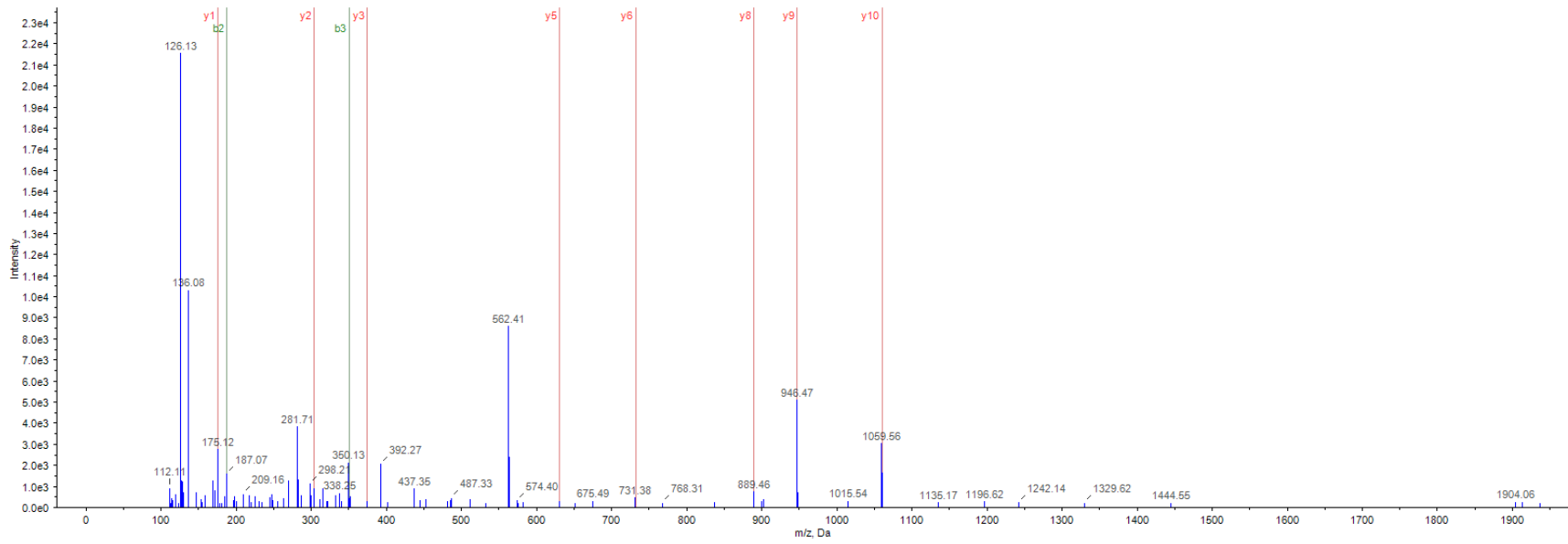


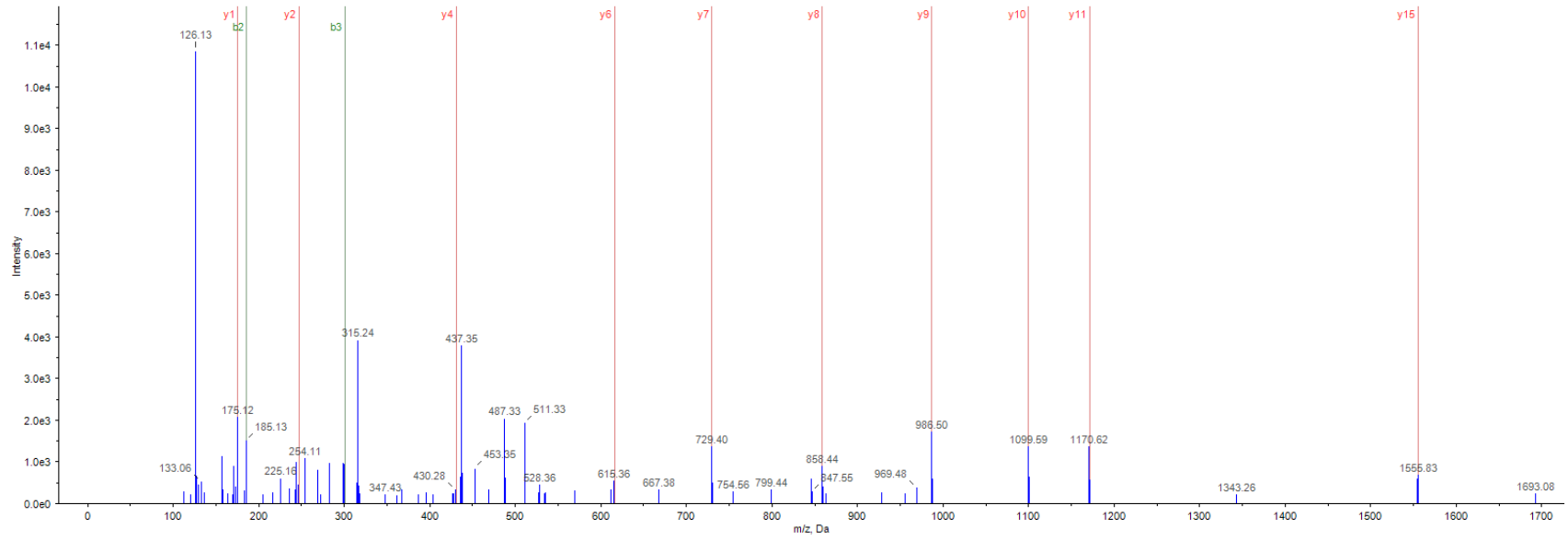


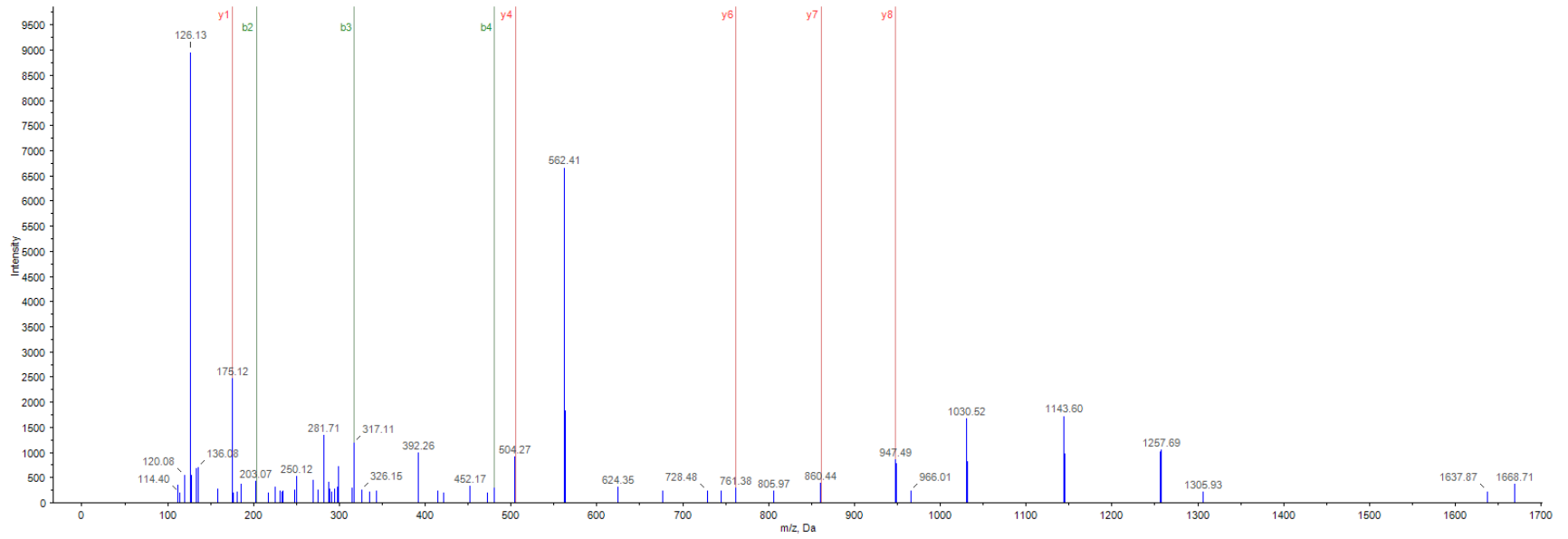


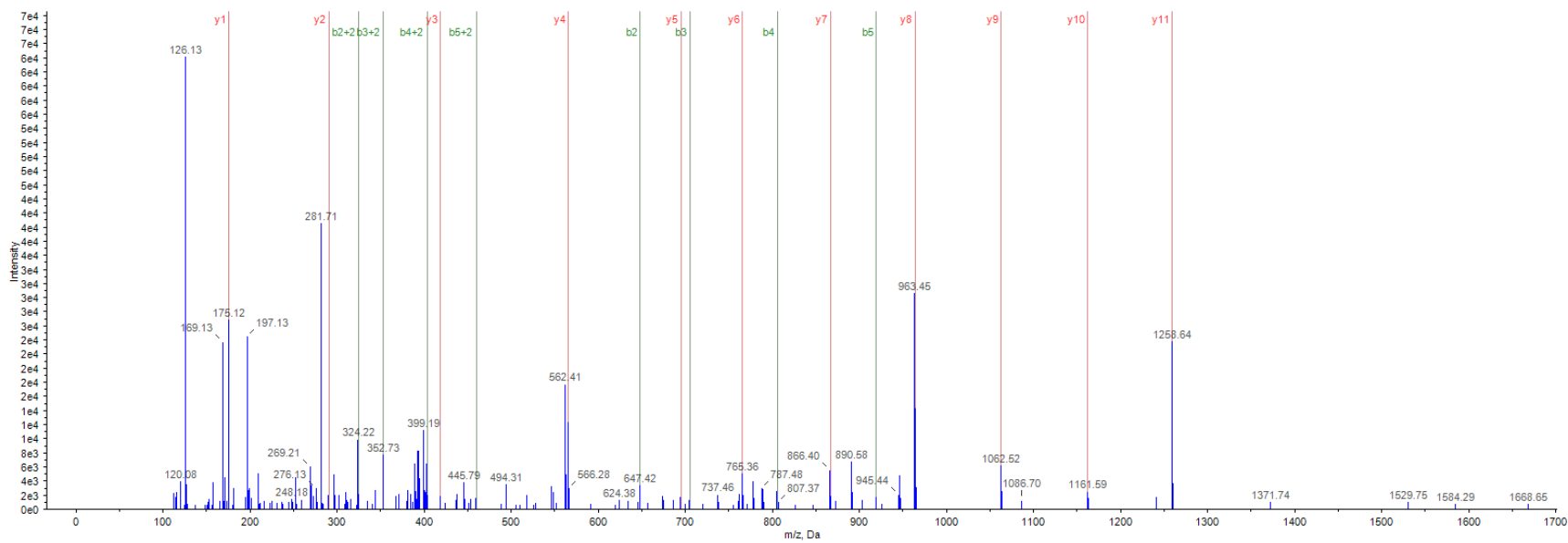


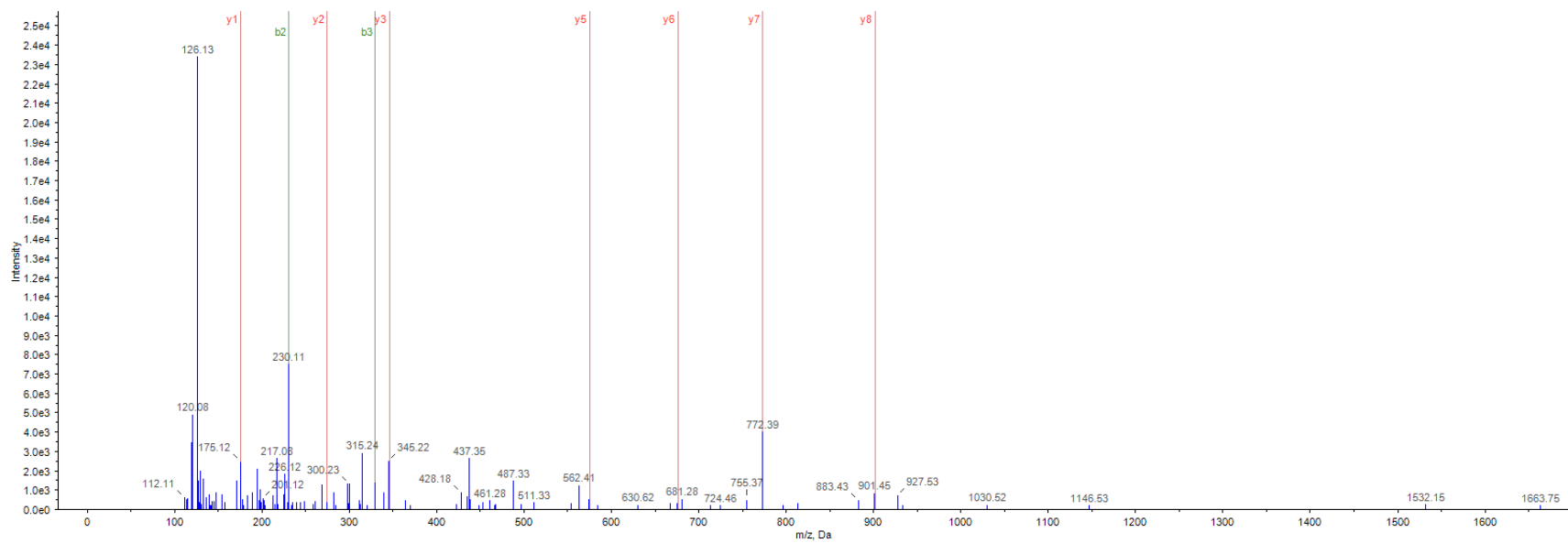


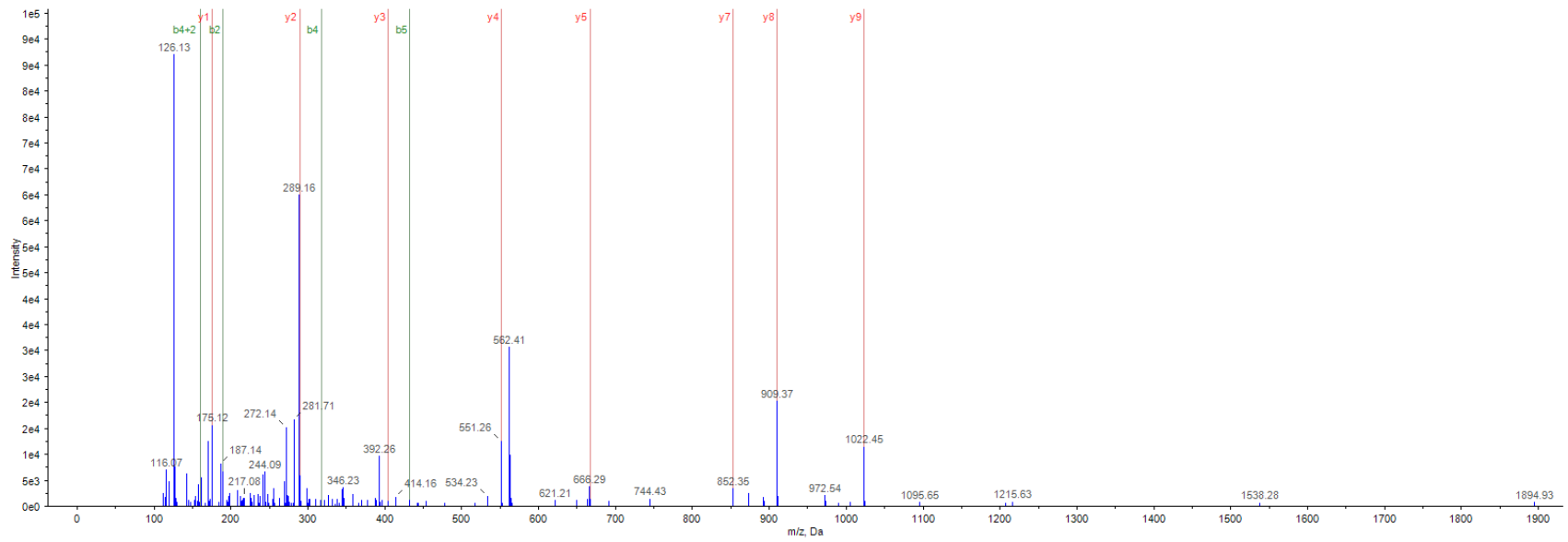


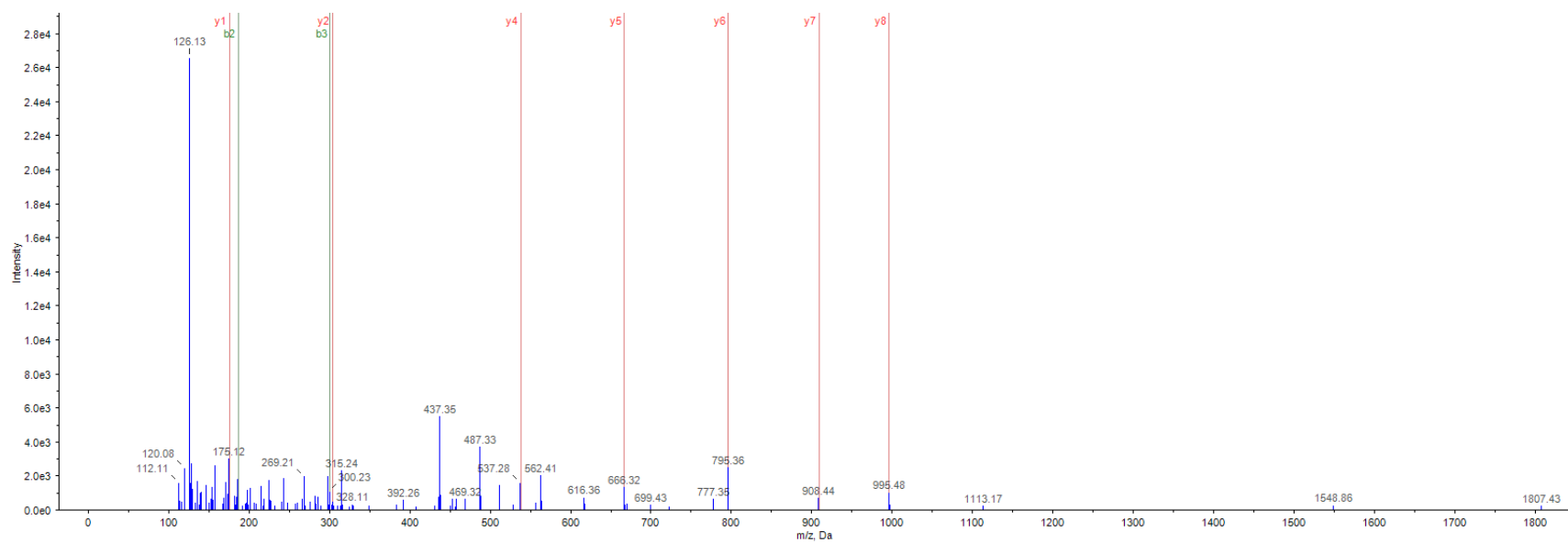


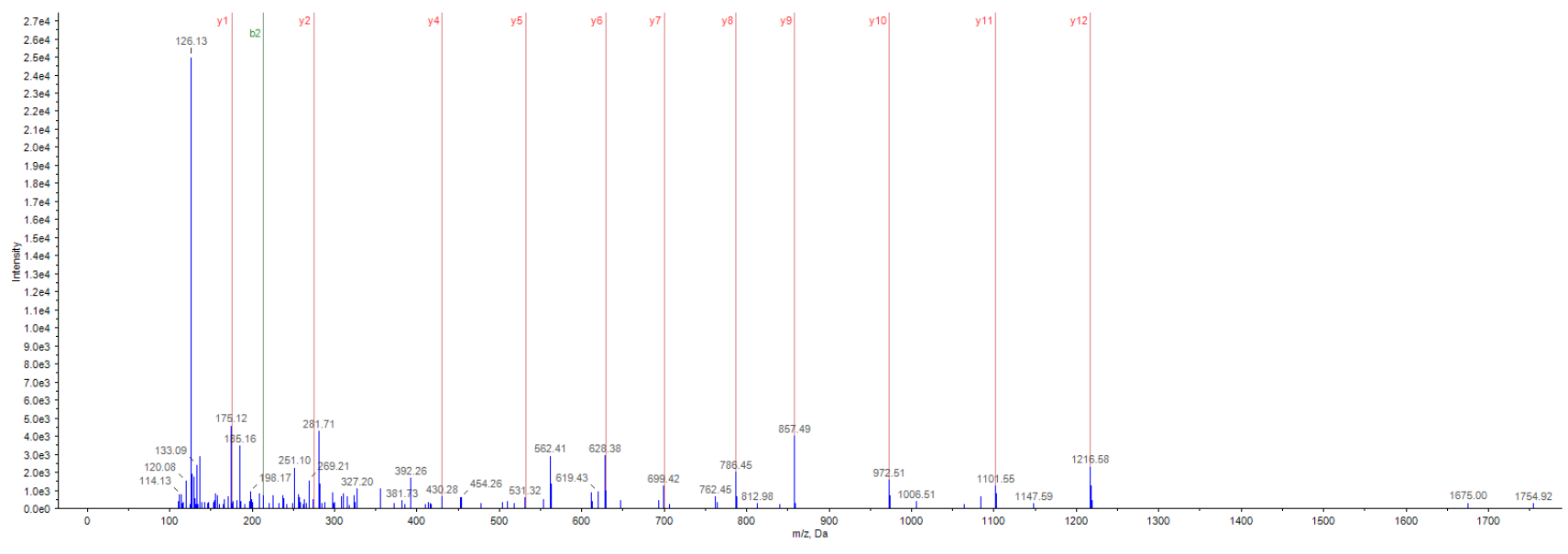


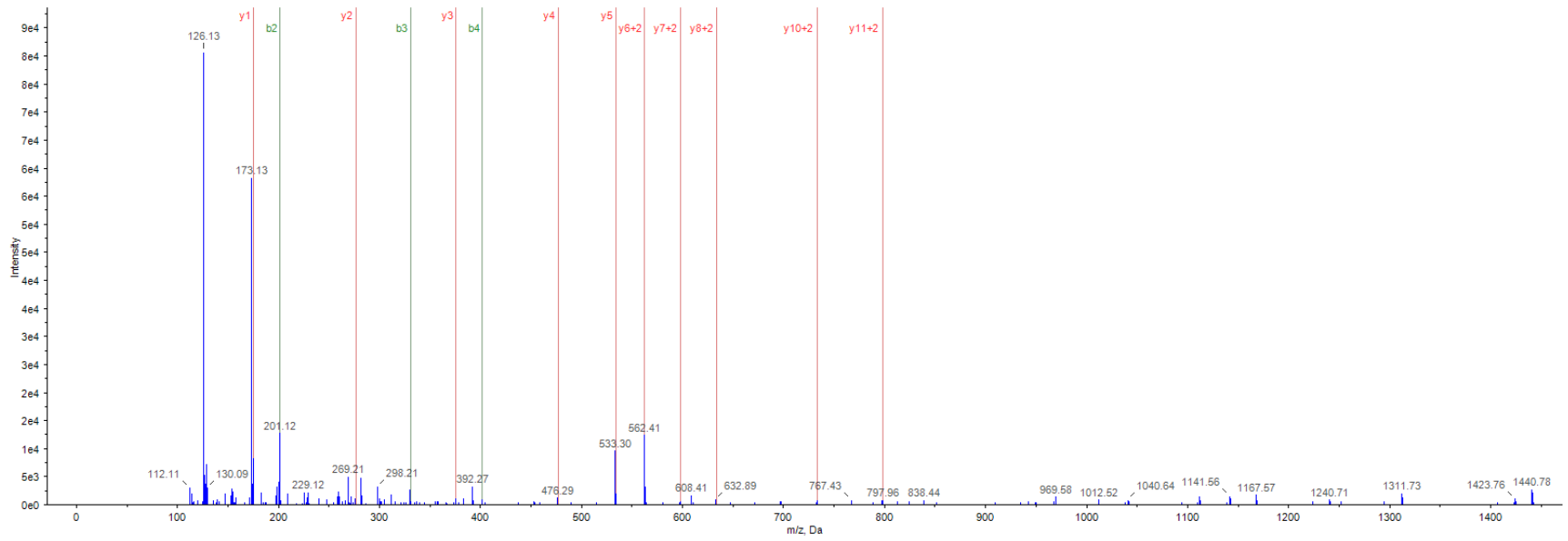


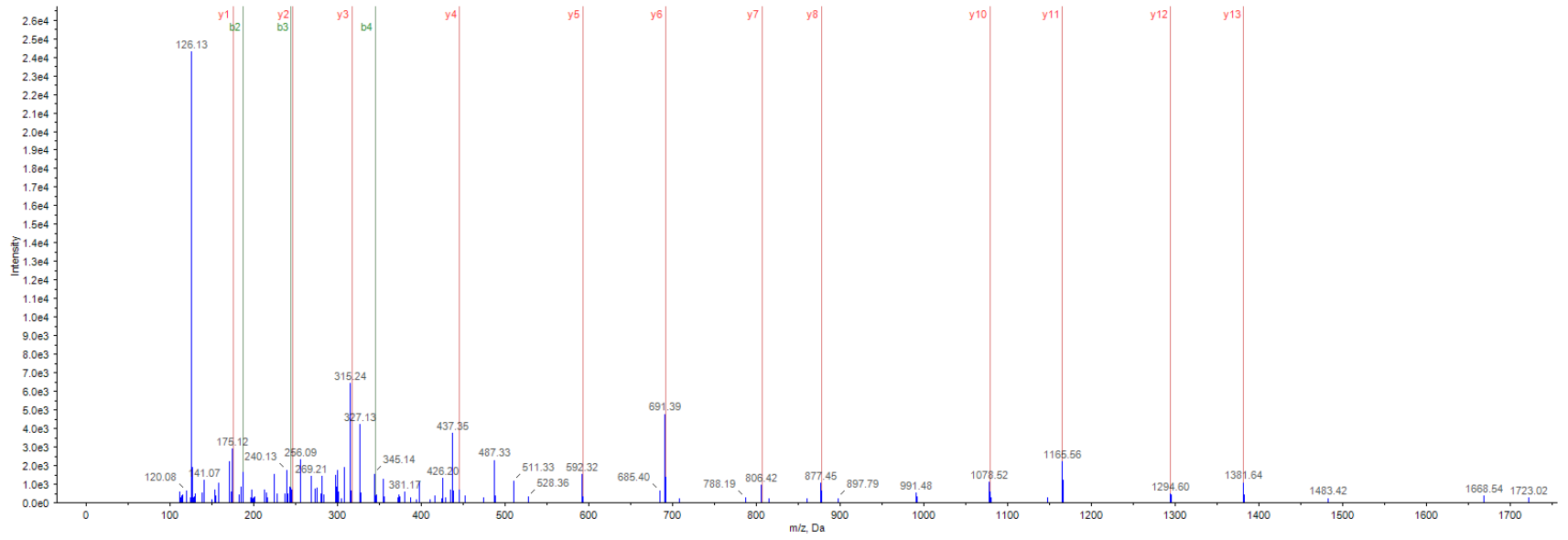


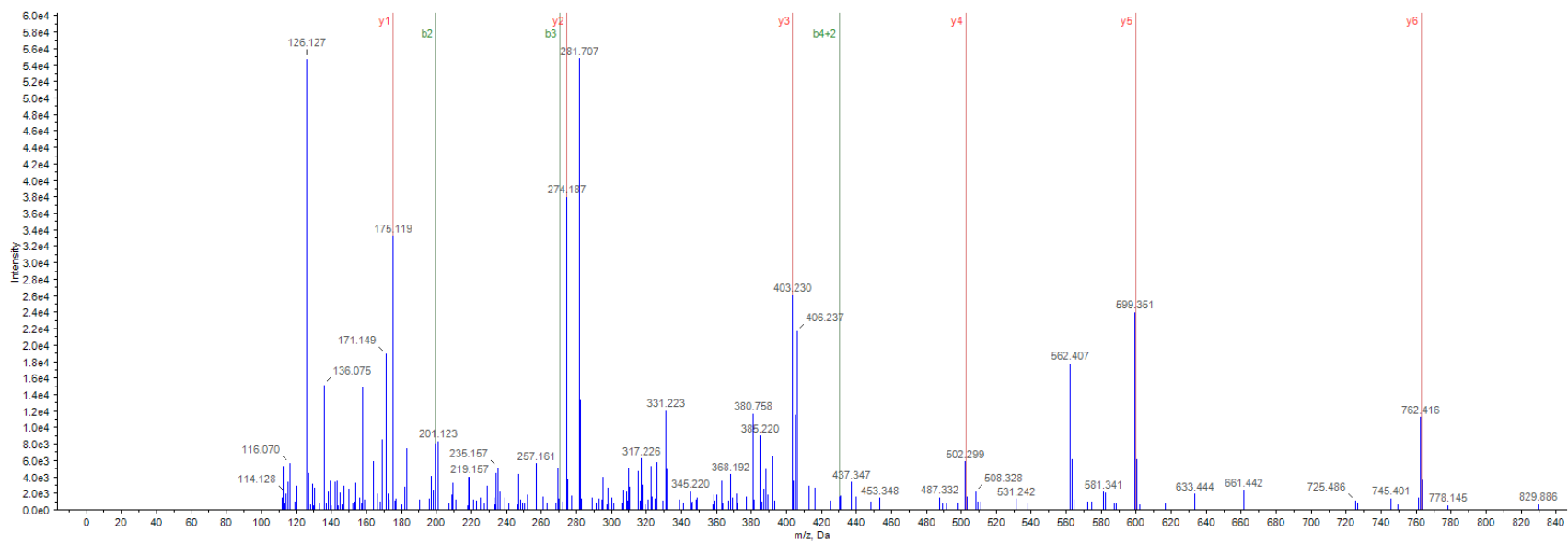


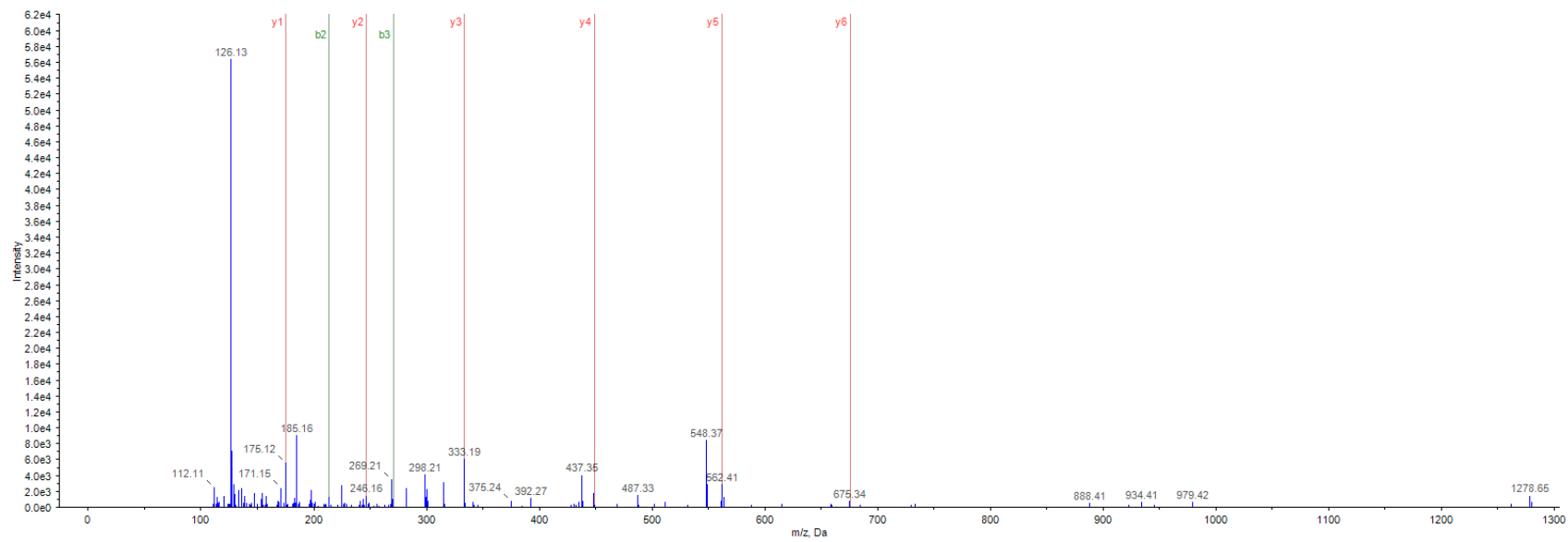


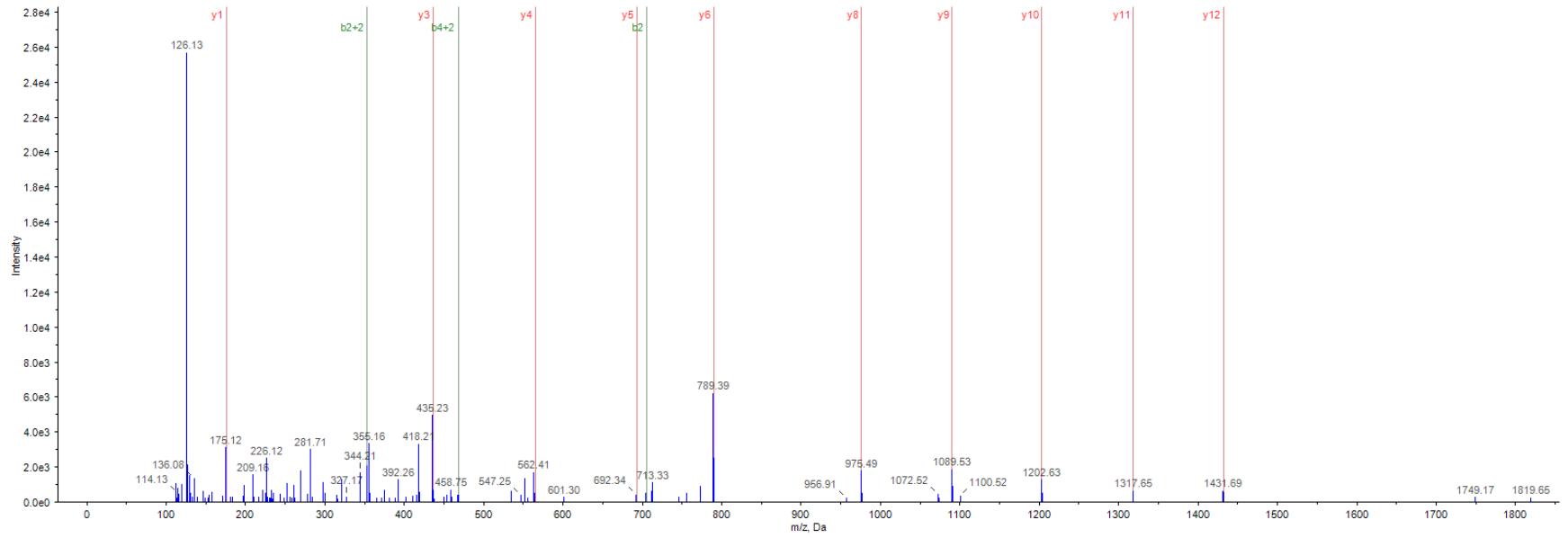


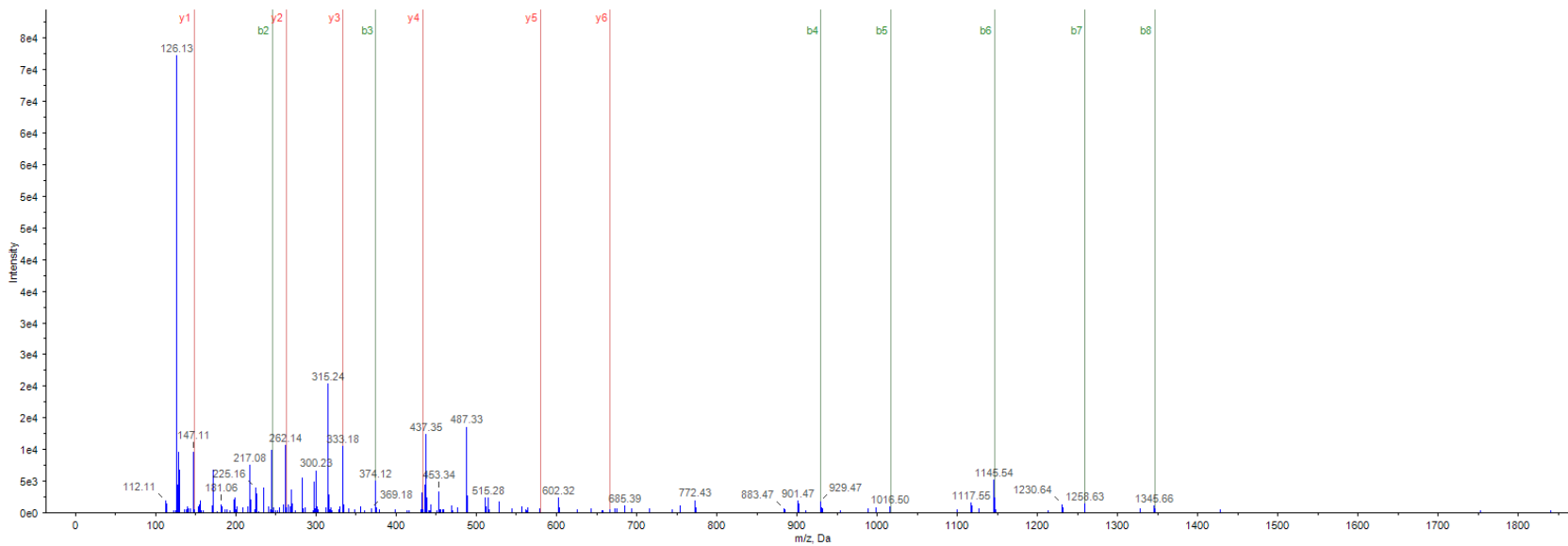


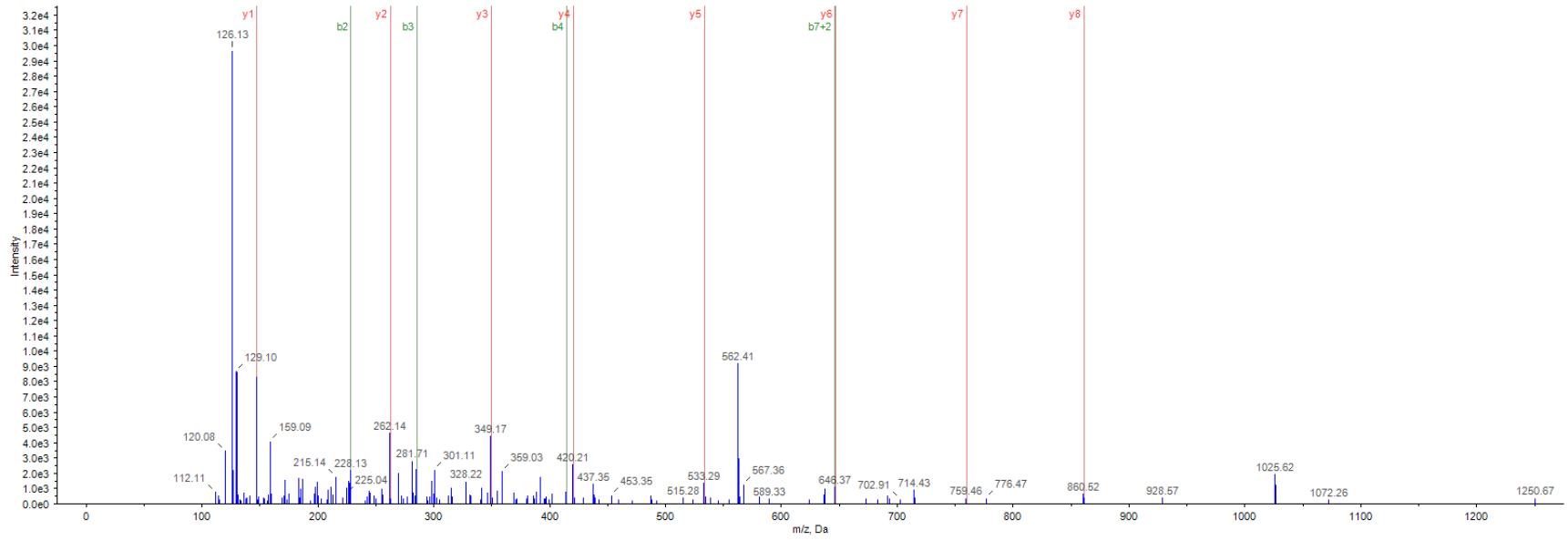


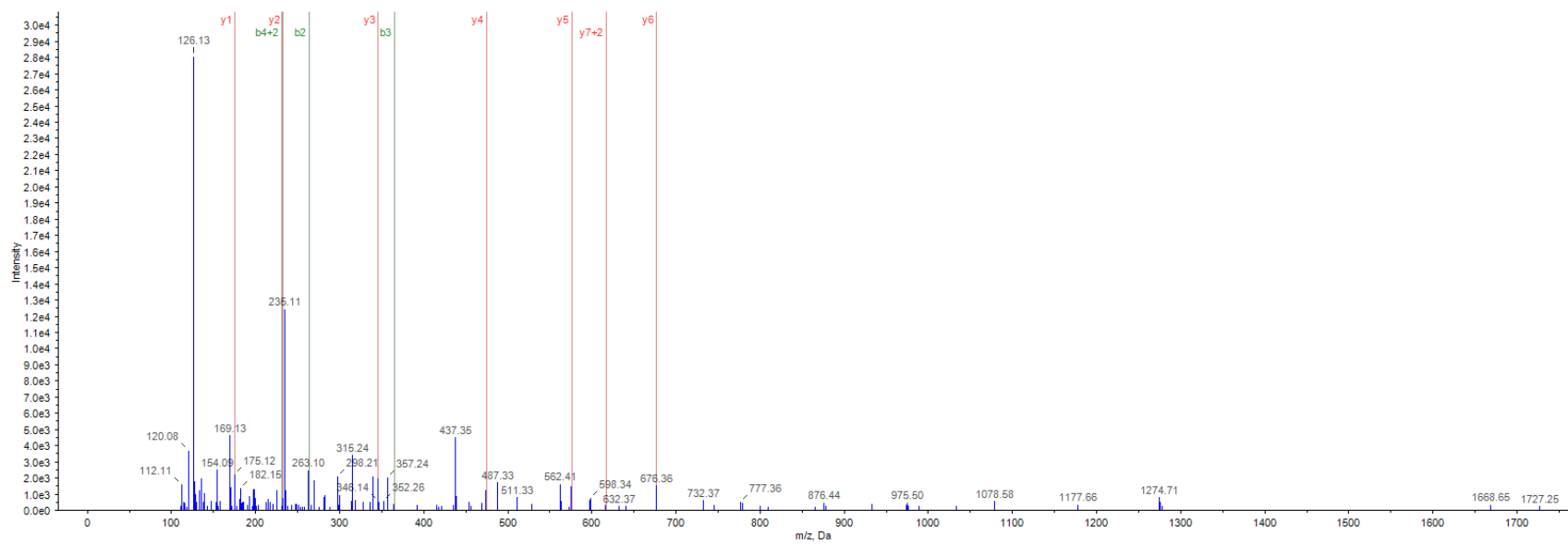


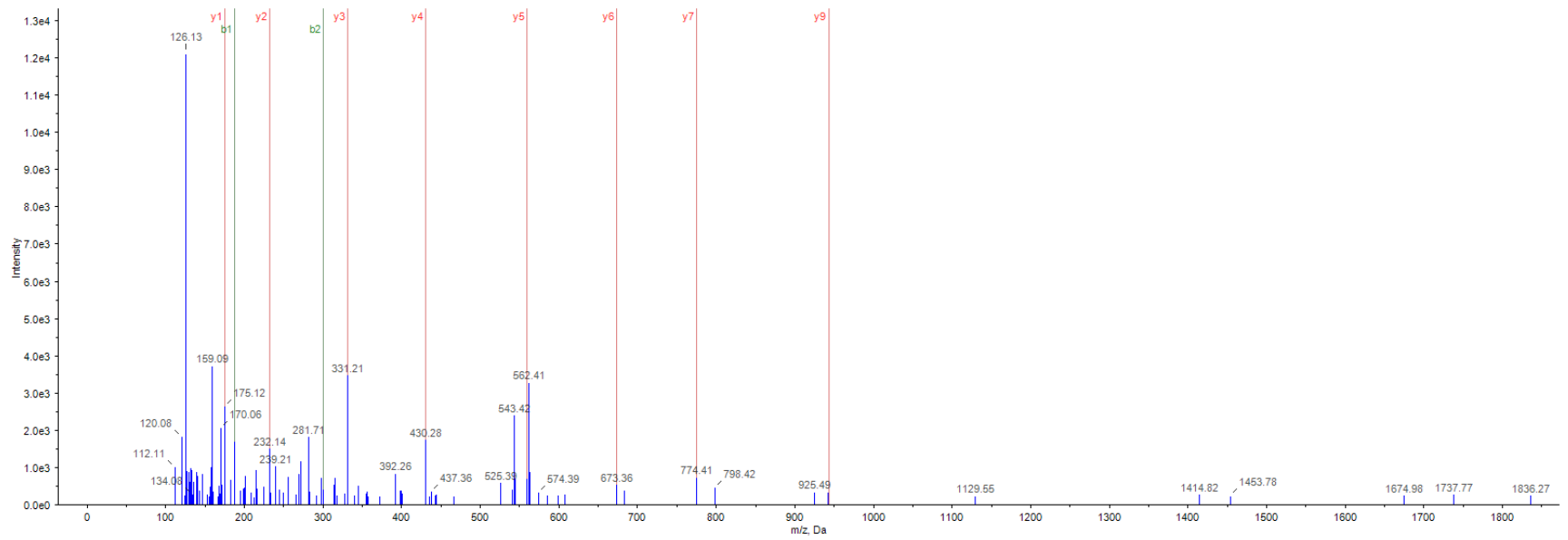


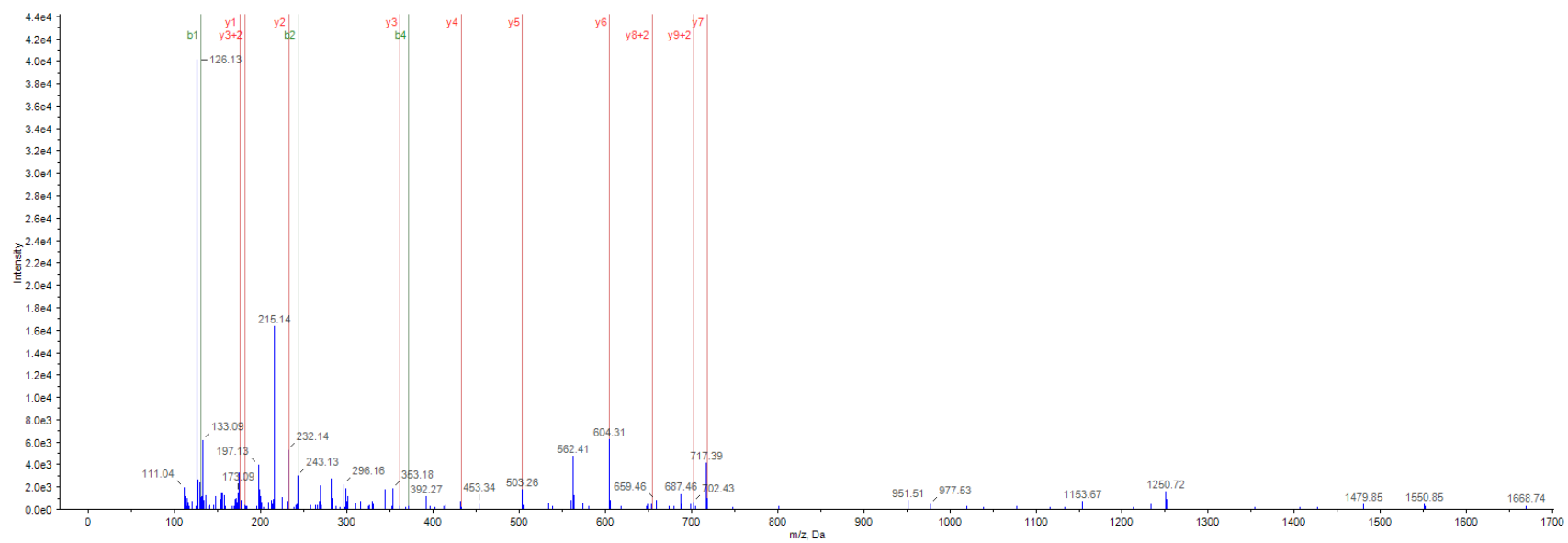


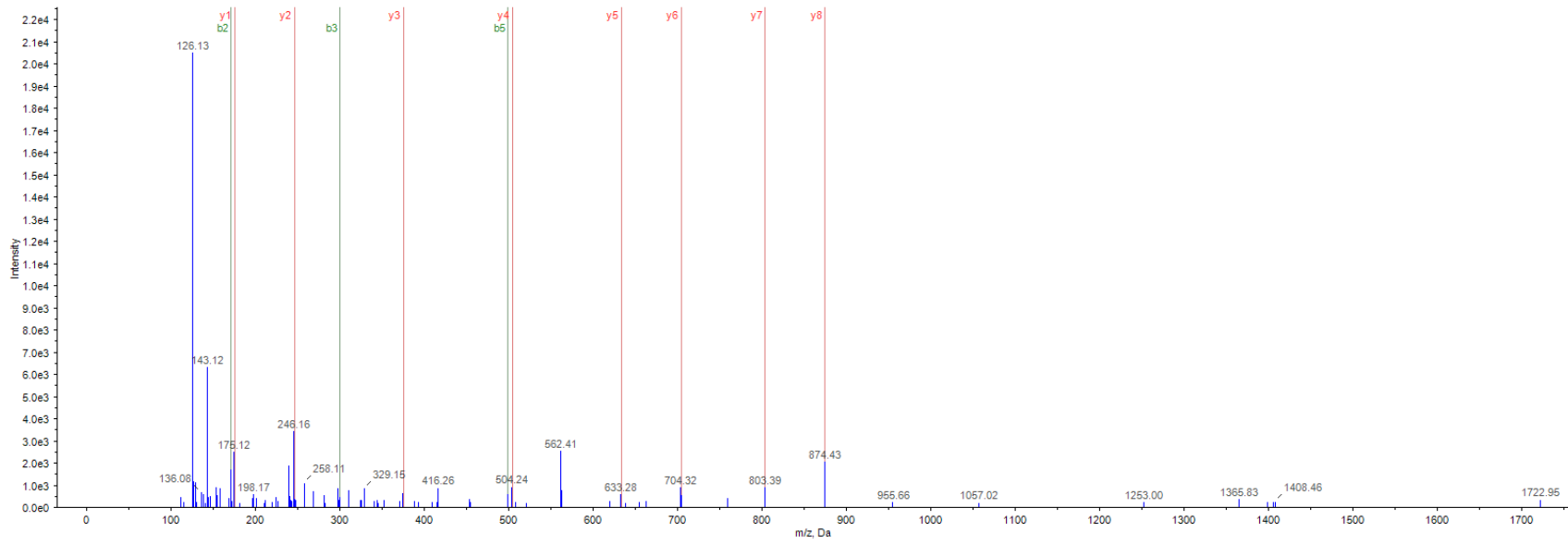




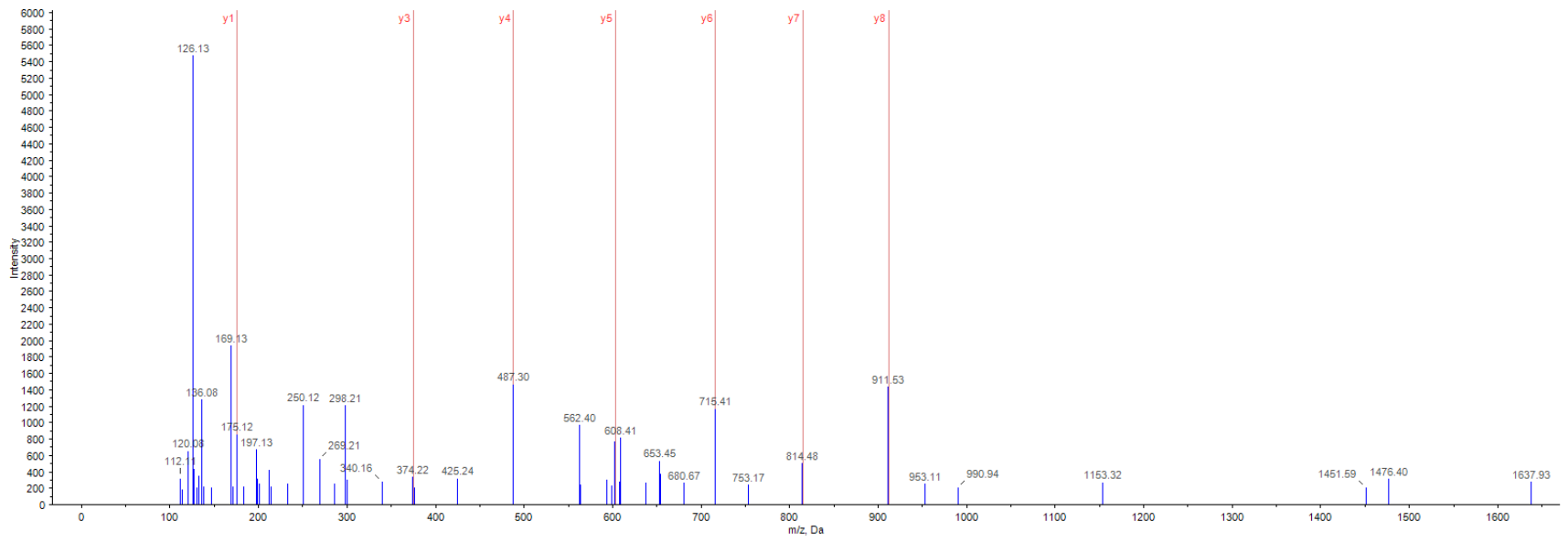


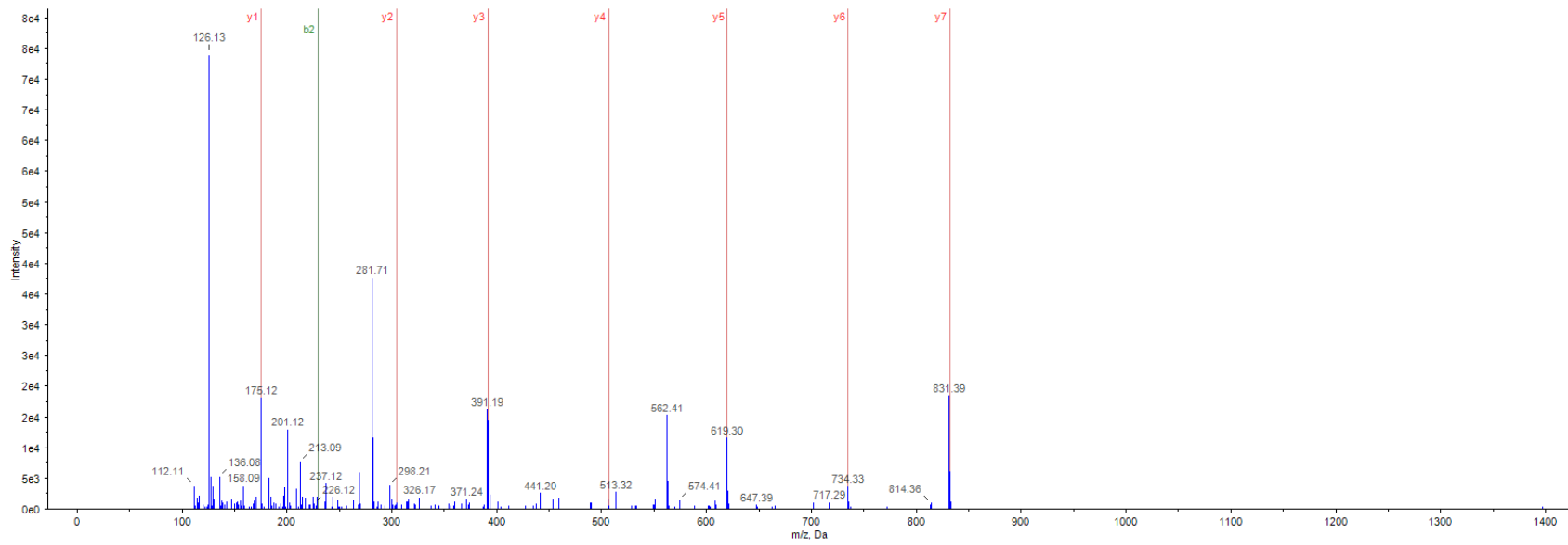




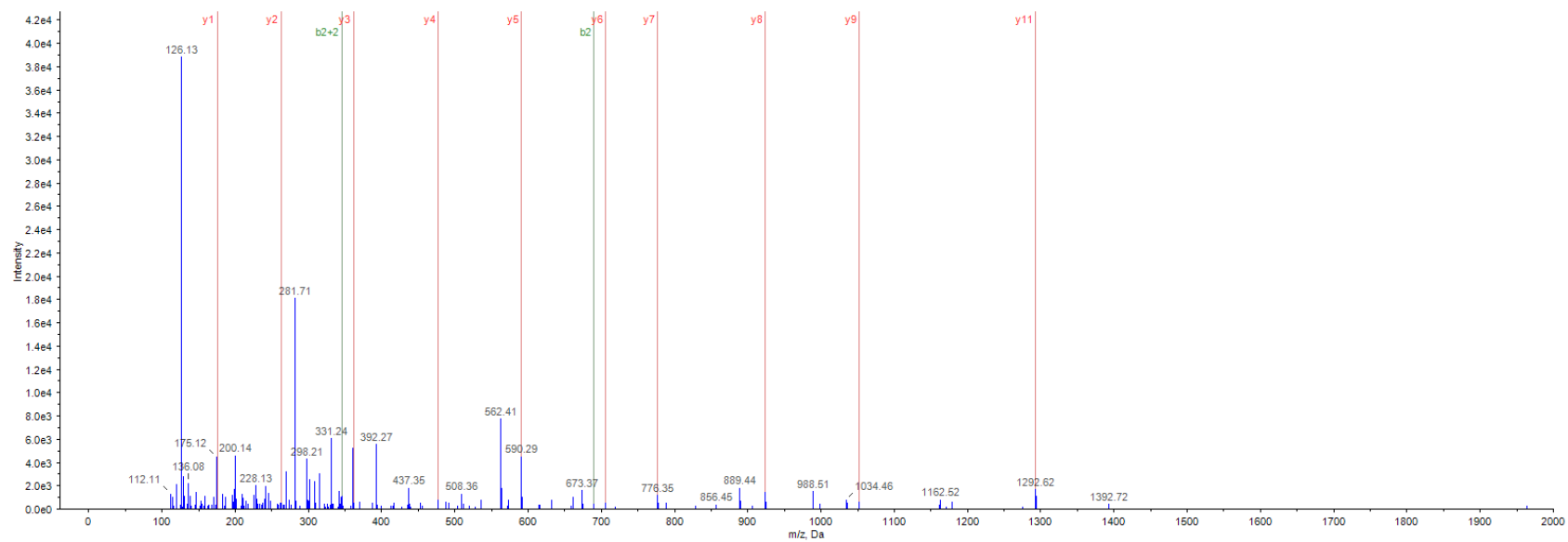


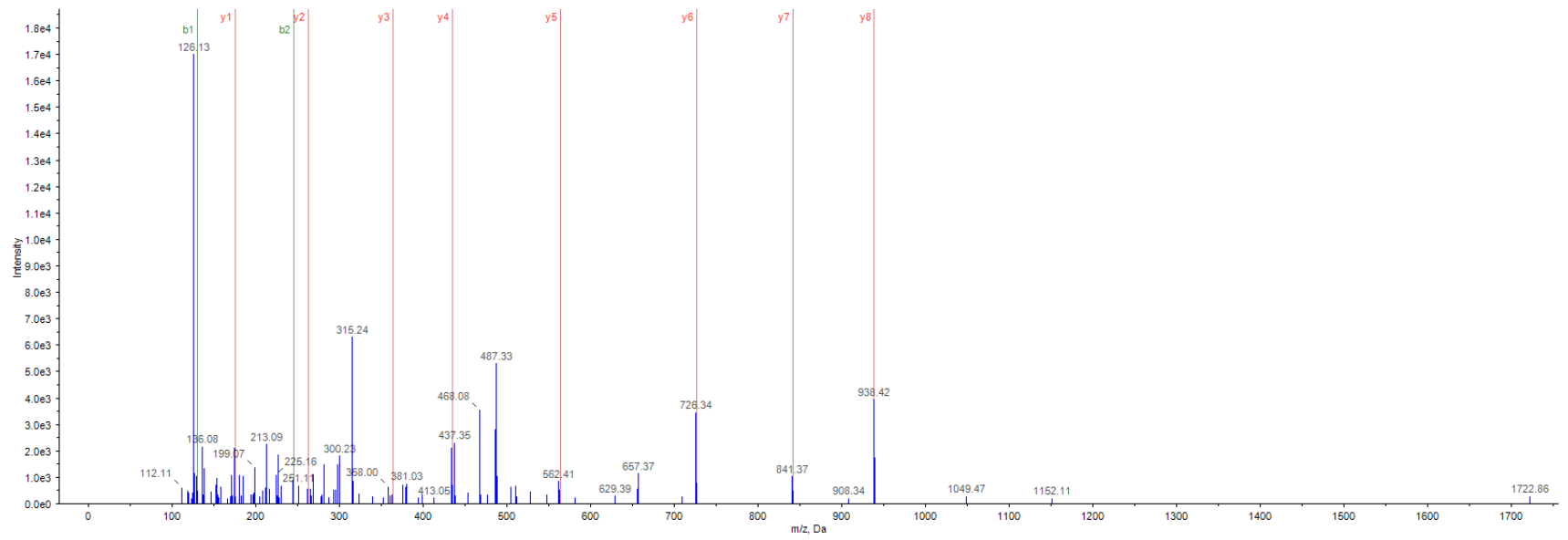
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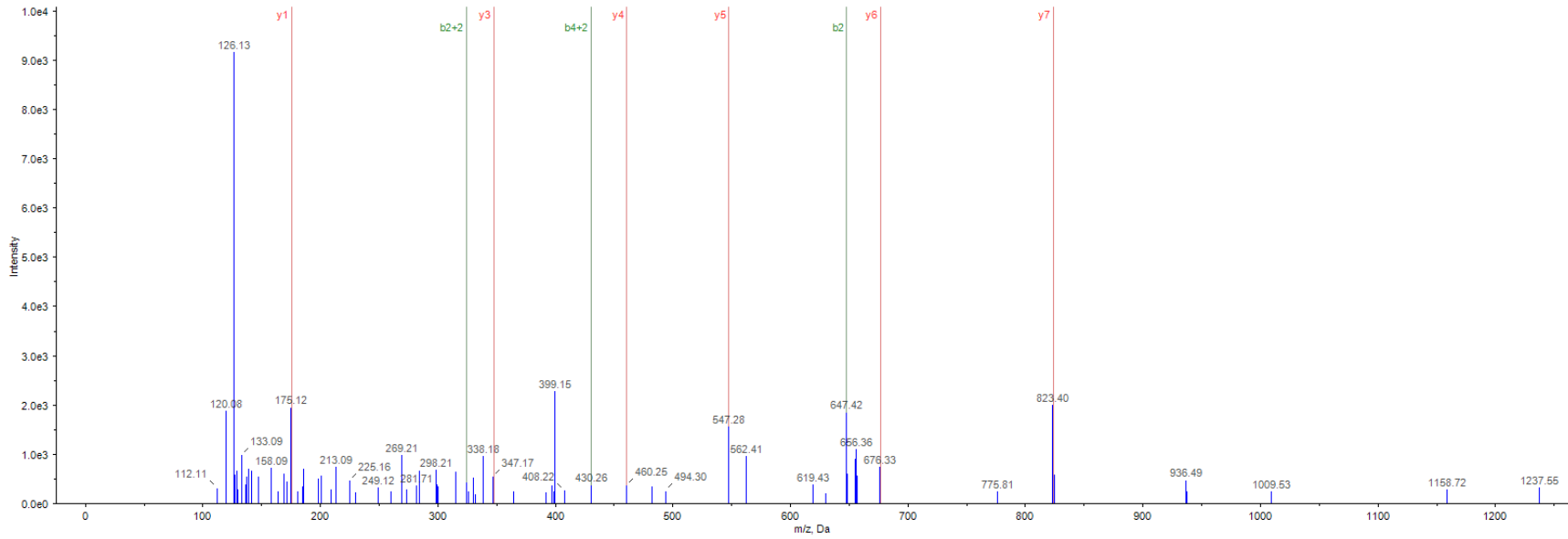




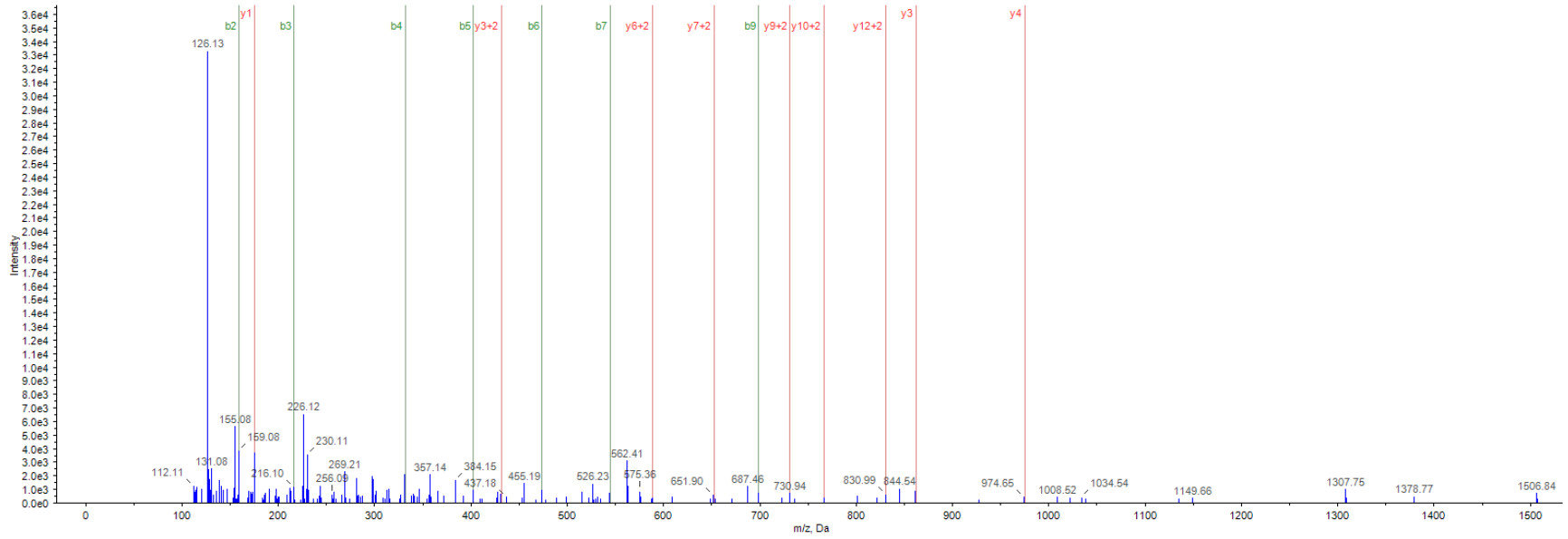
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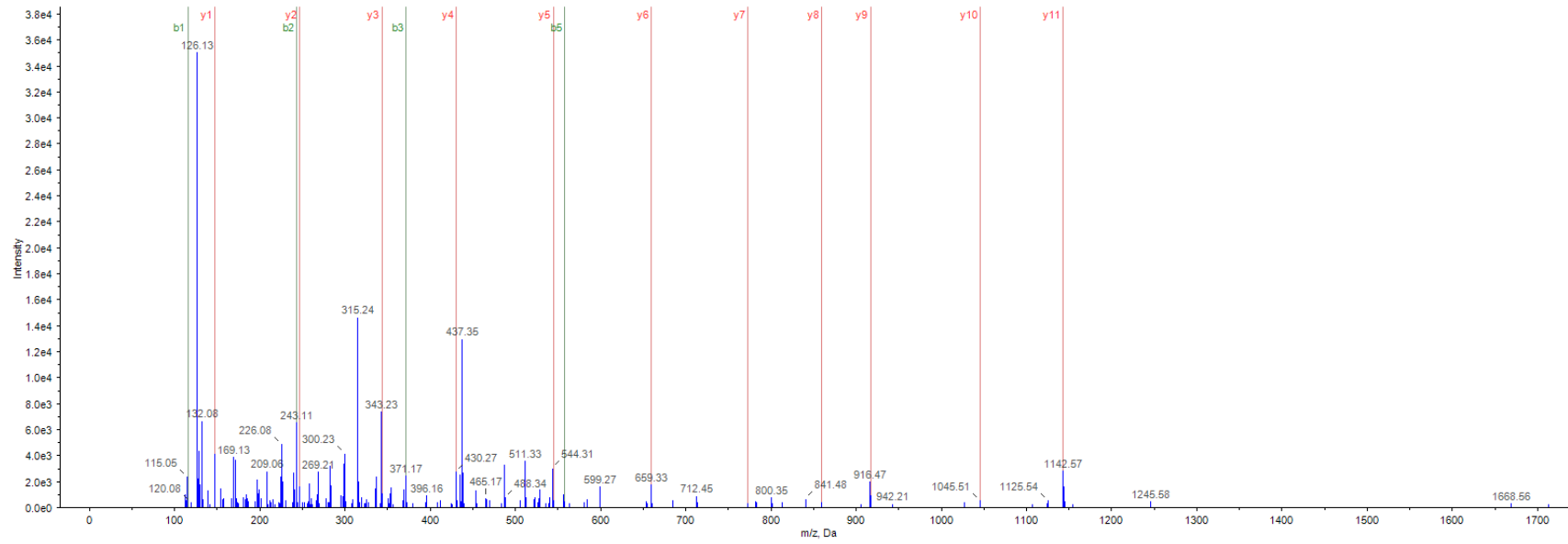


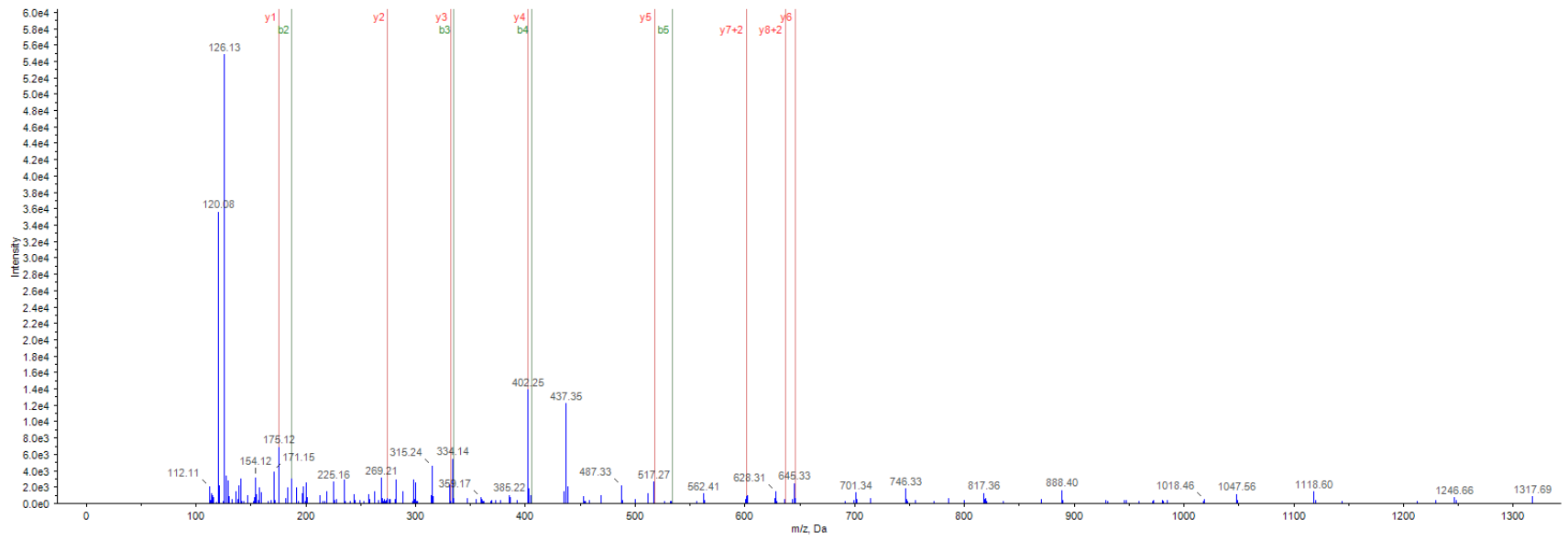


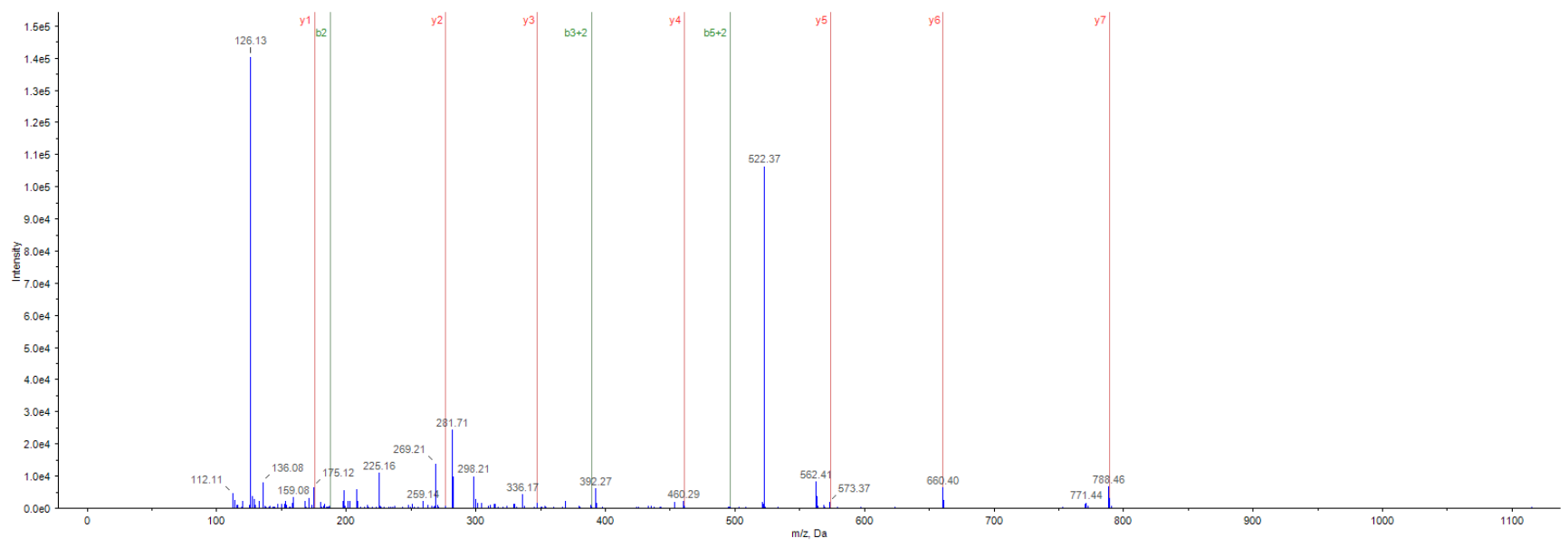
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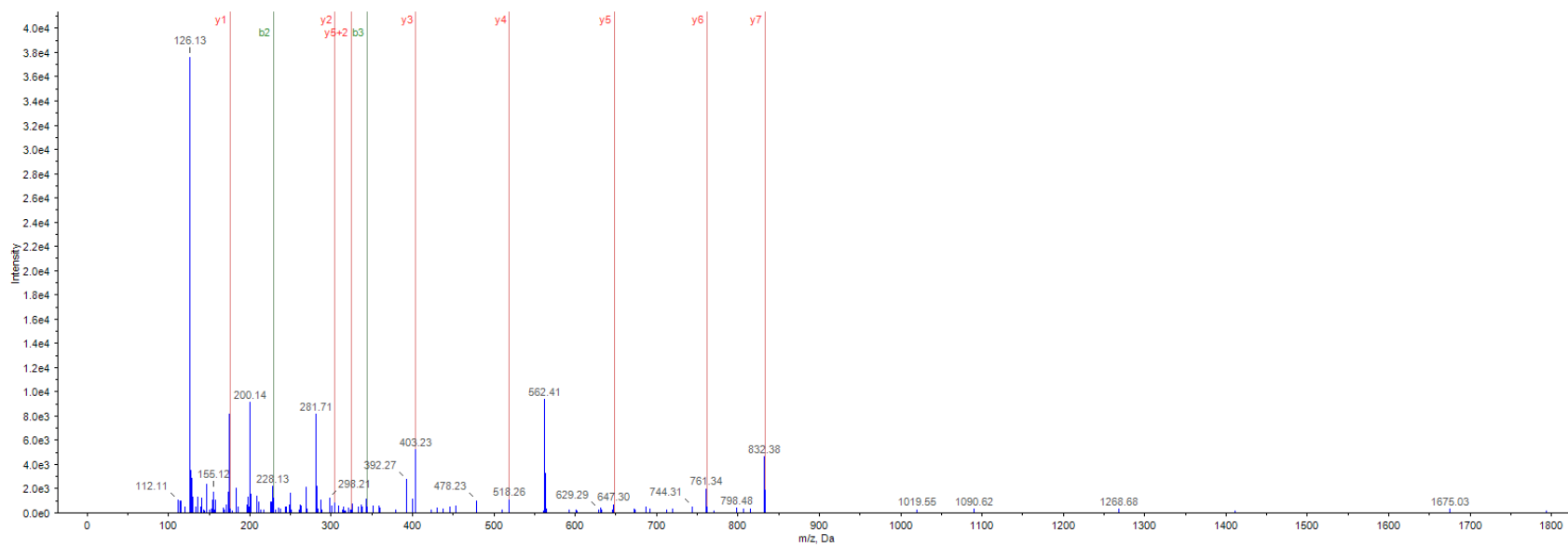


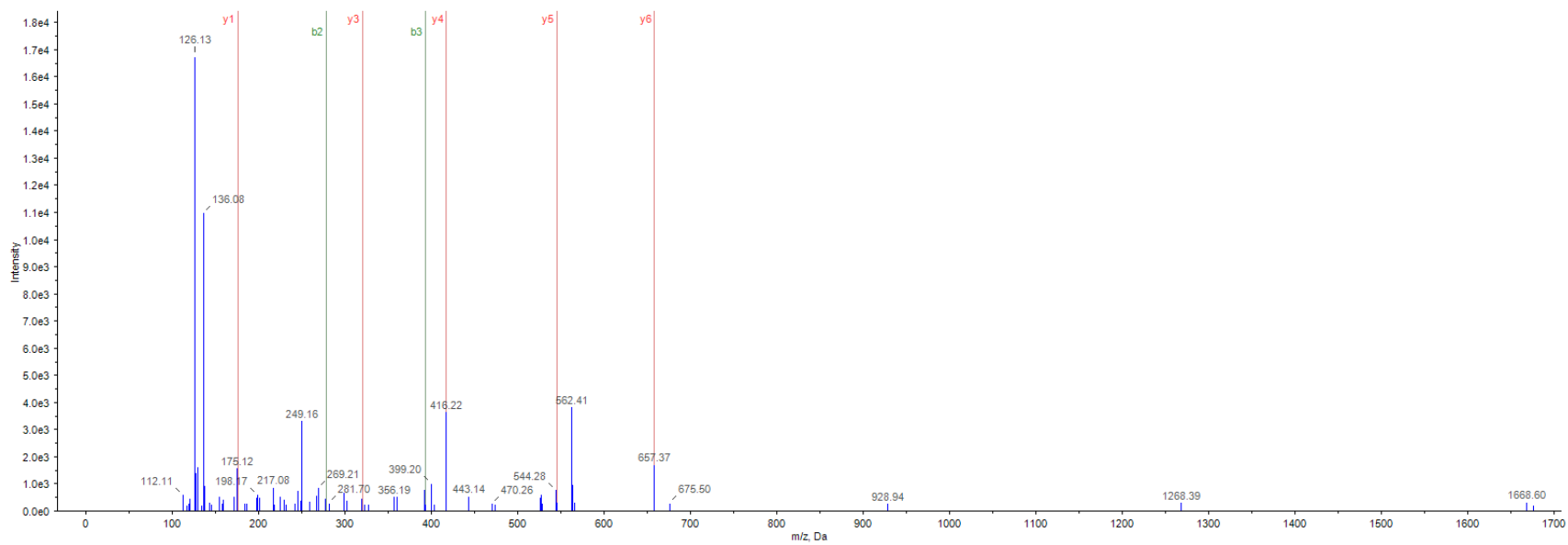
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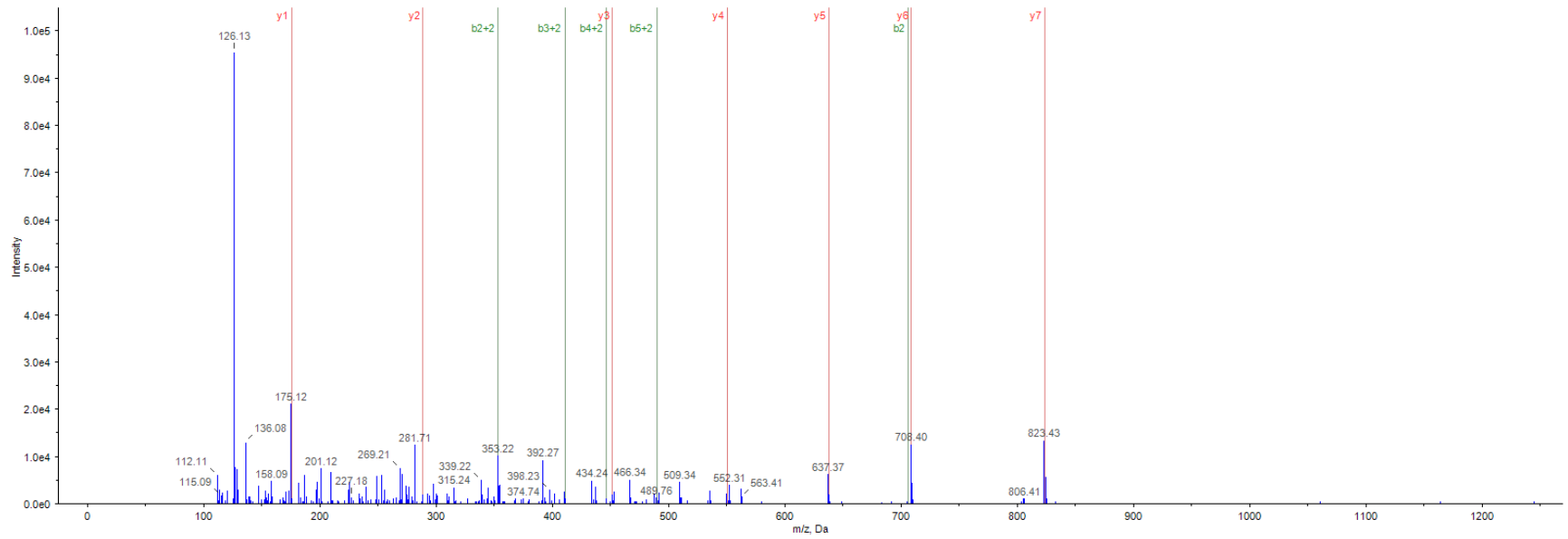


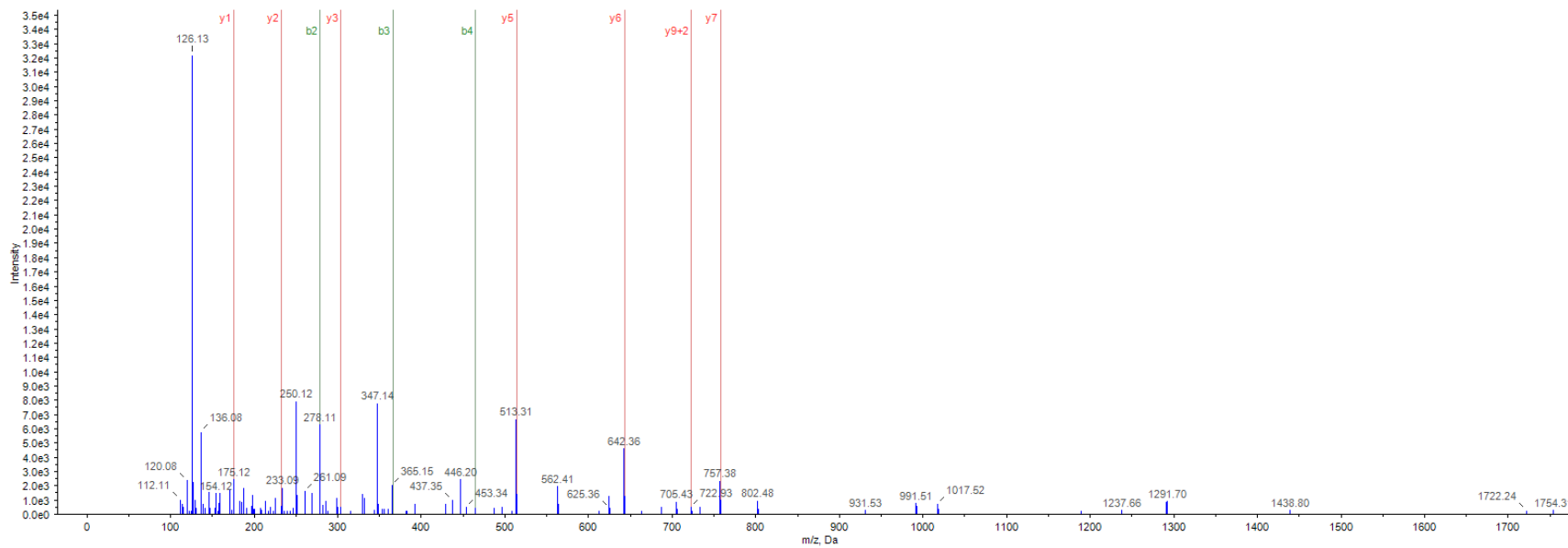


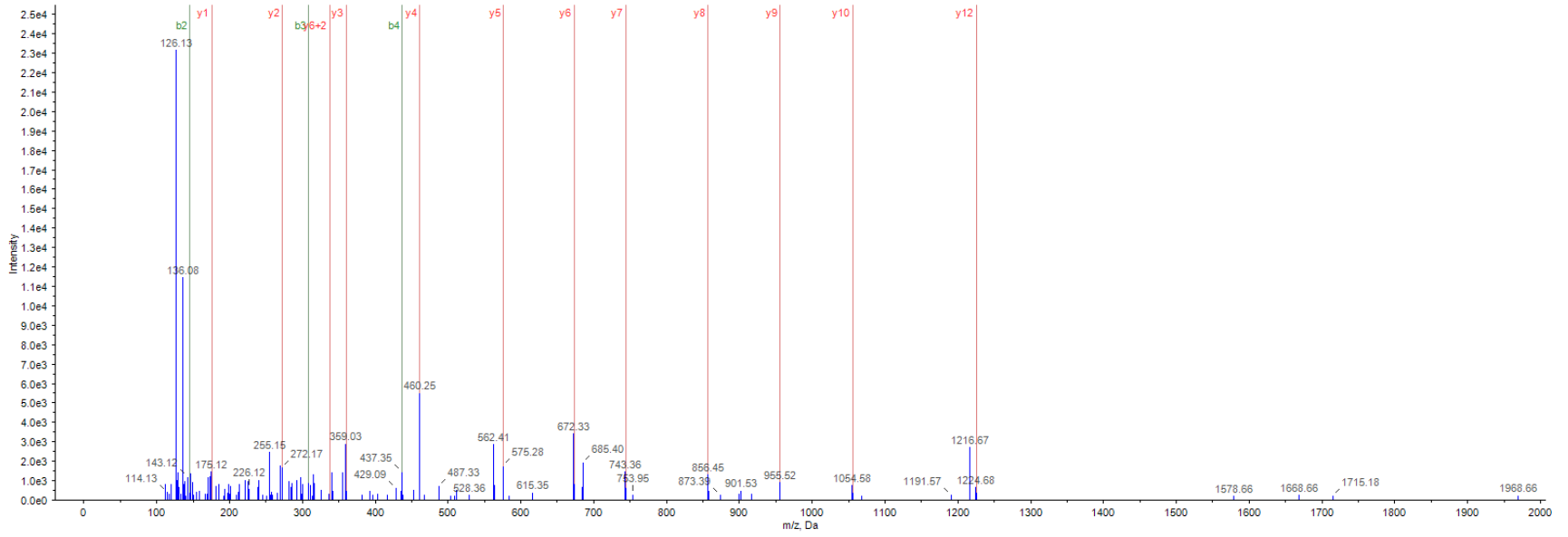


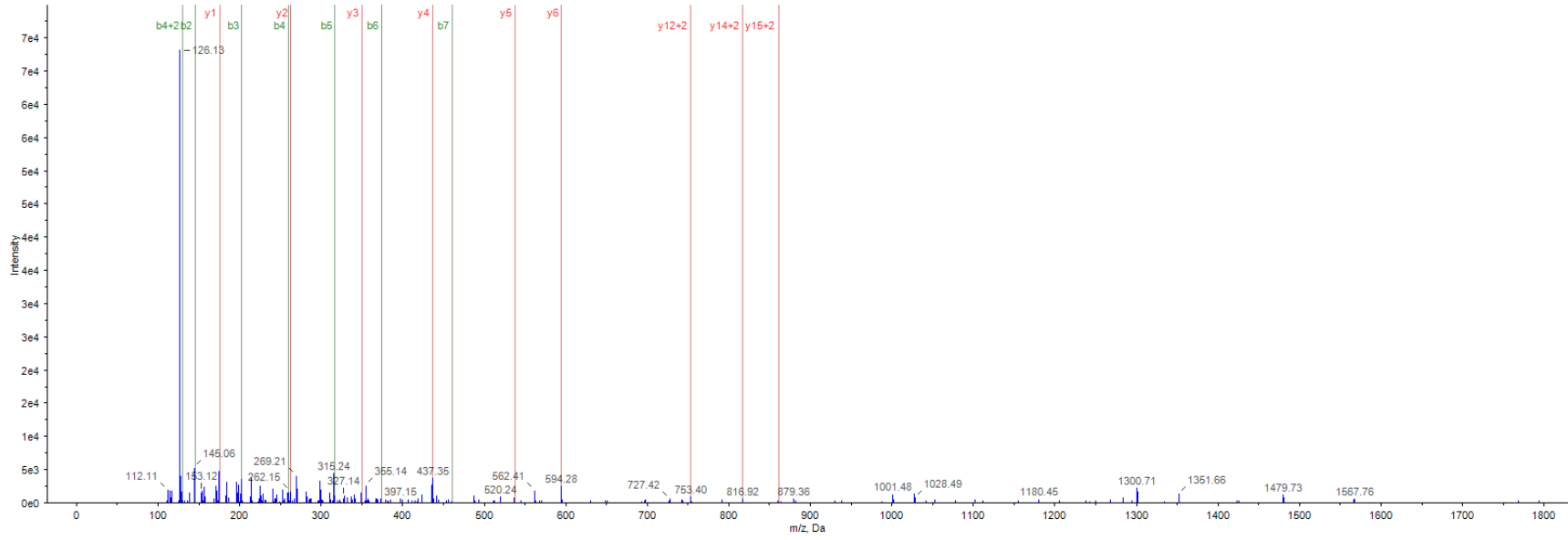


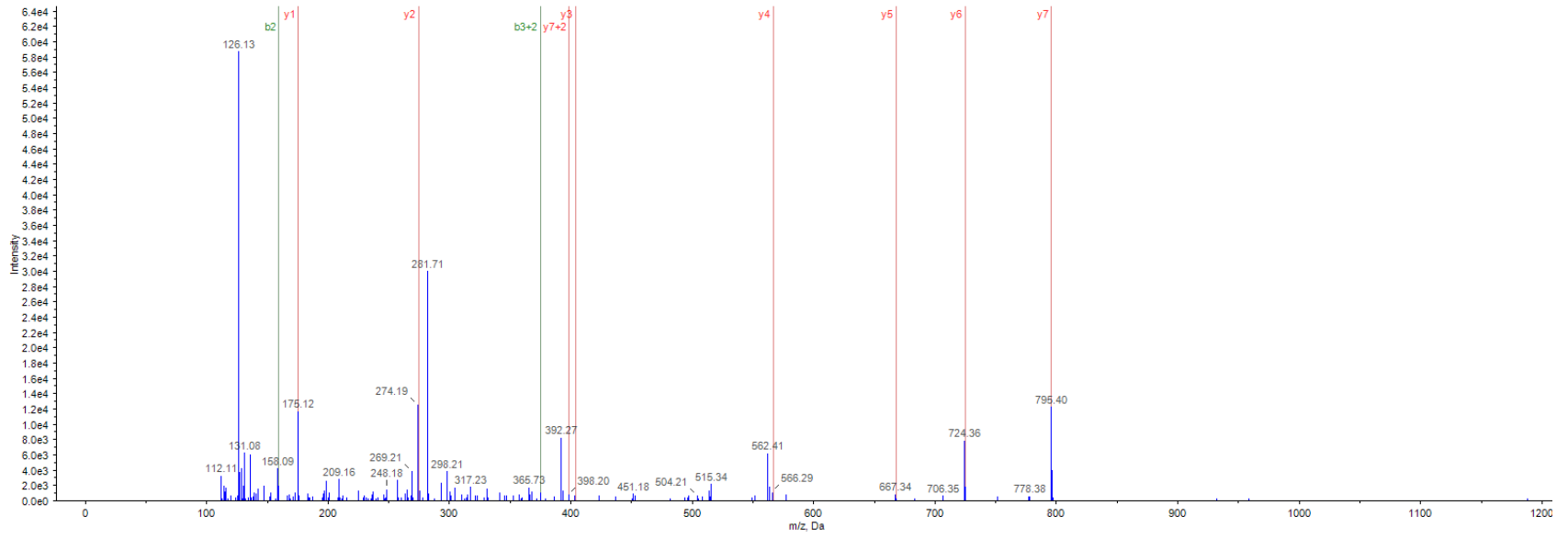


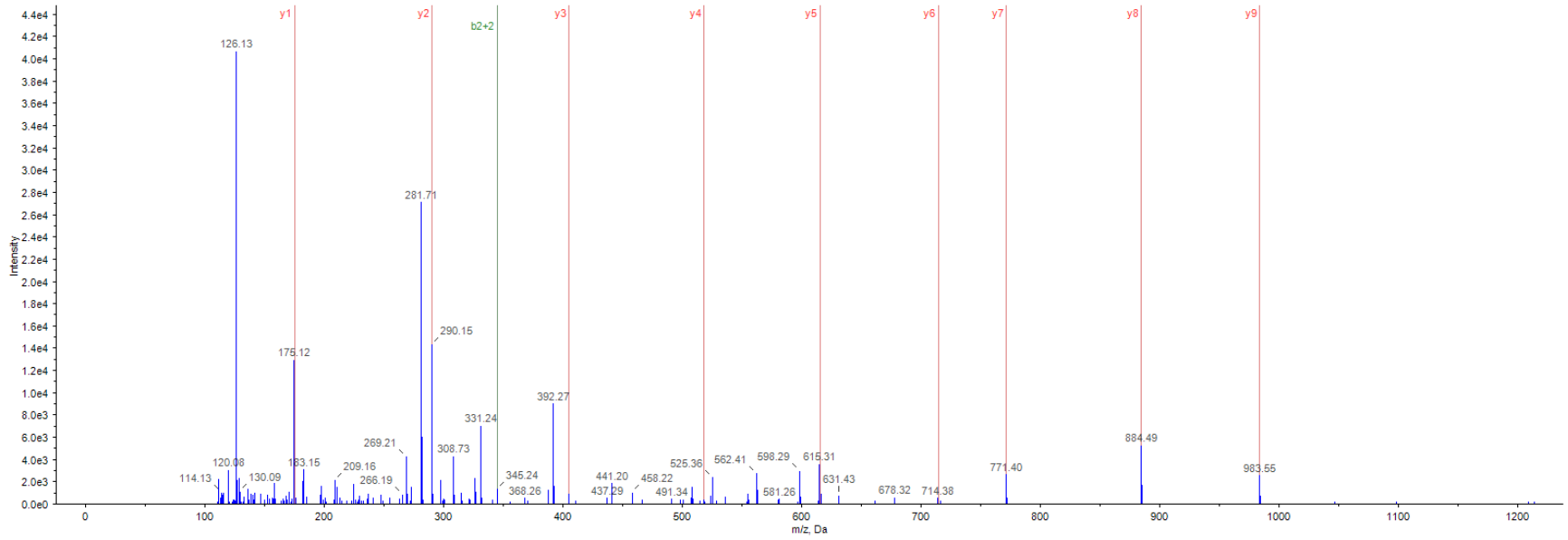


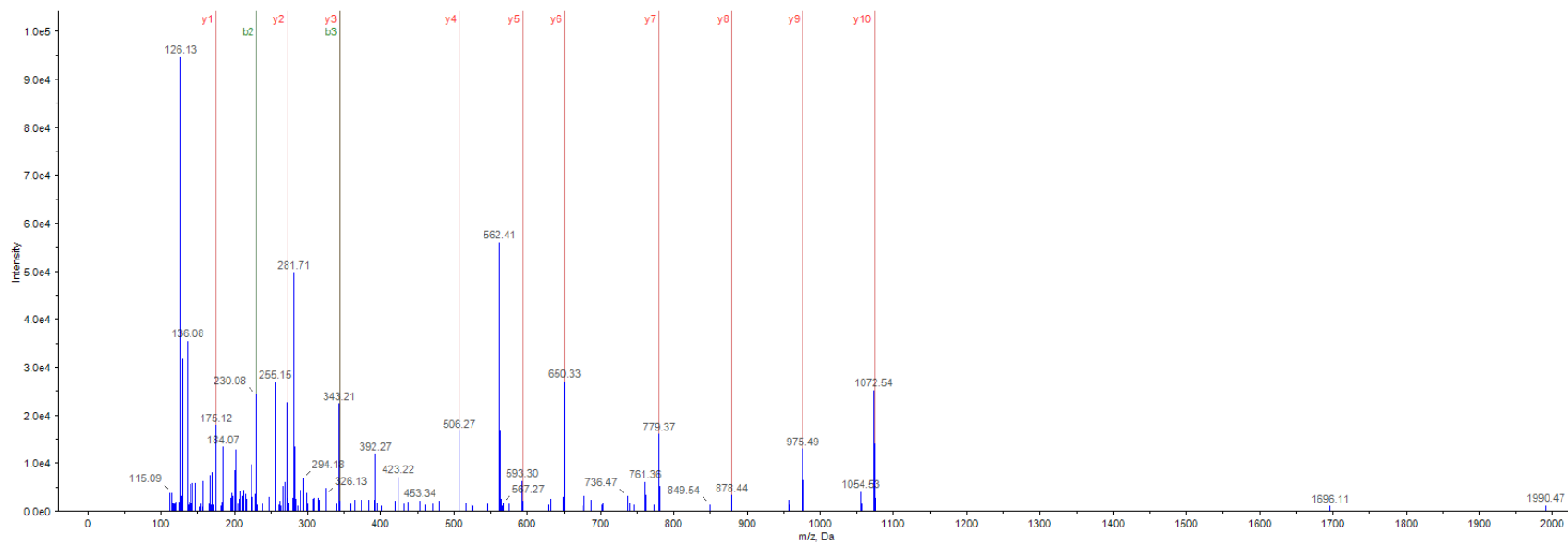


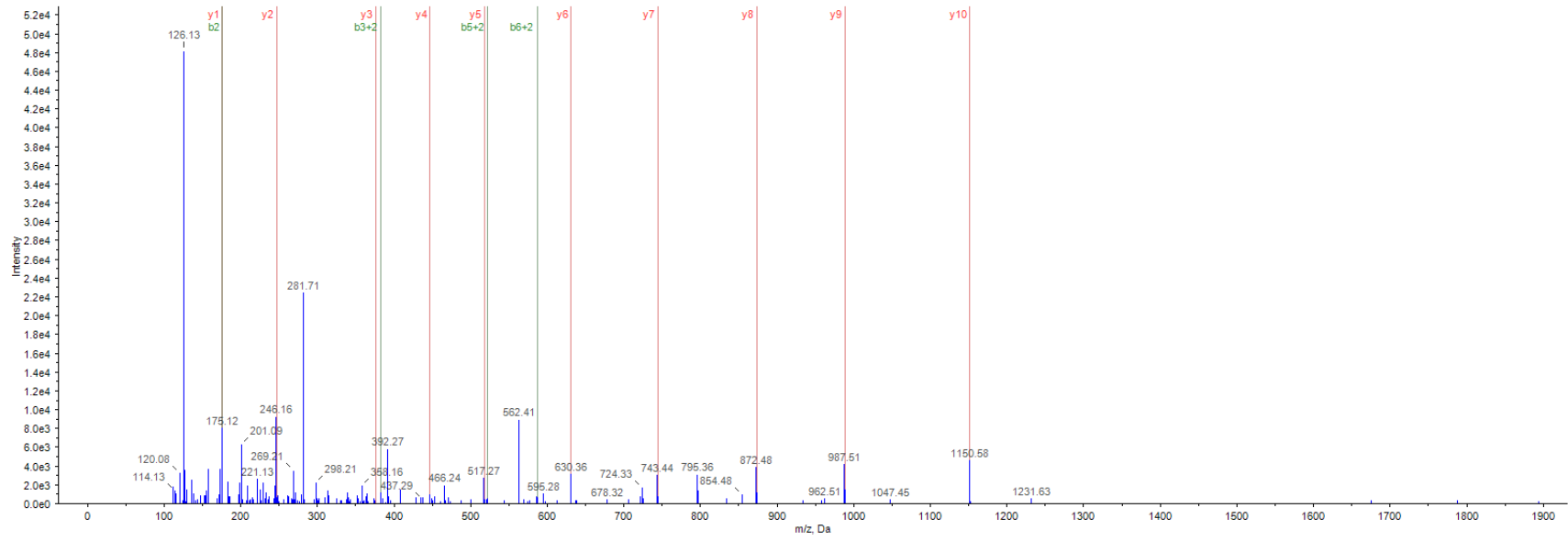




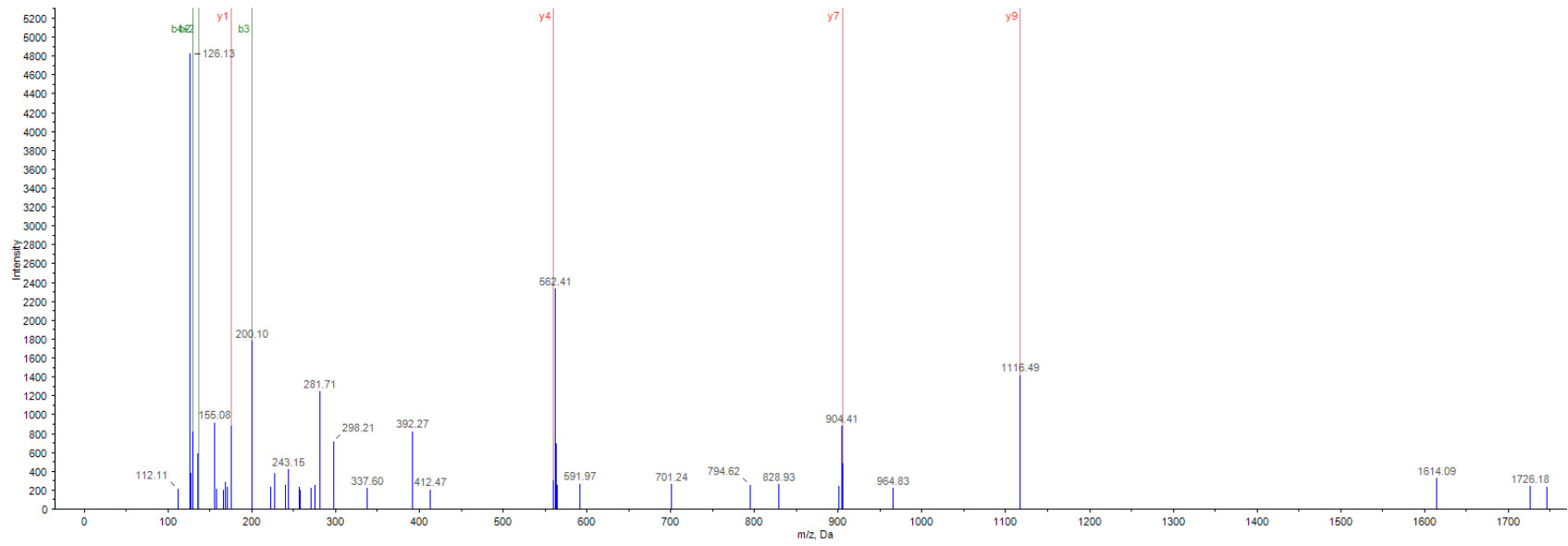








QAAAHHTPPDSEEQQR



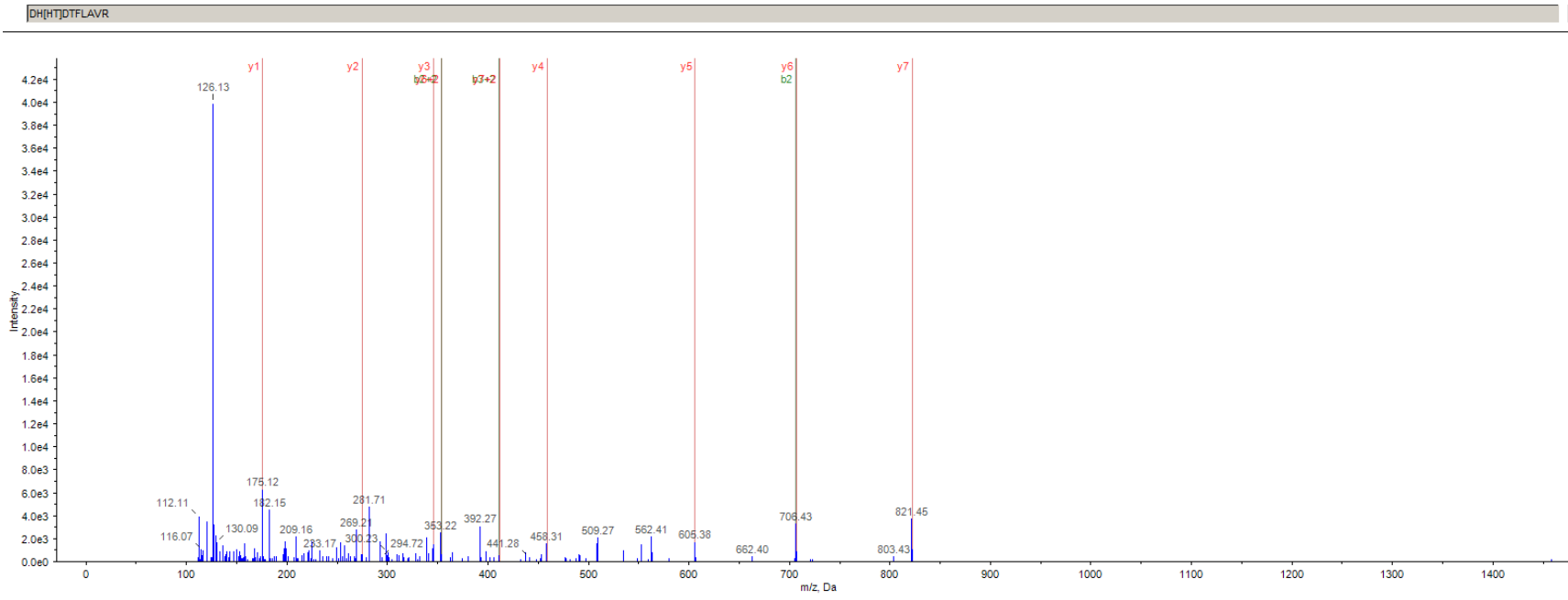


Figure S-1. Peptide sequence match spectra of aminoxyTMT labeled, HNE-modified peptides [HT] in HNE-treated liver mitochondria samples labeled with aminoxyTMT after enrichment with antiTMT resin