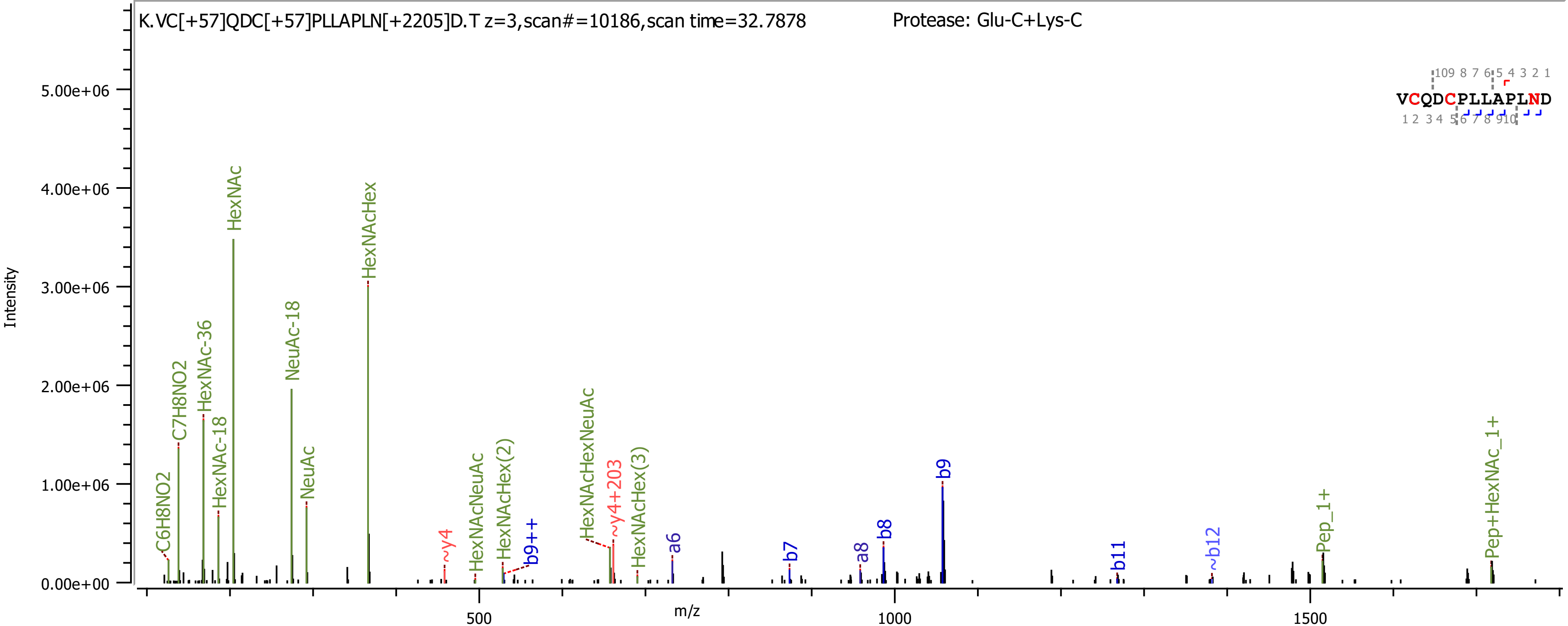
Human fetuin: MS/MS spectra of all PTM modified peptides

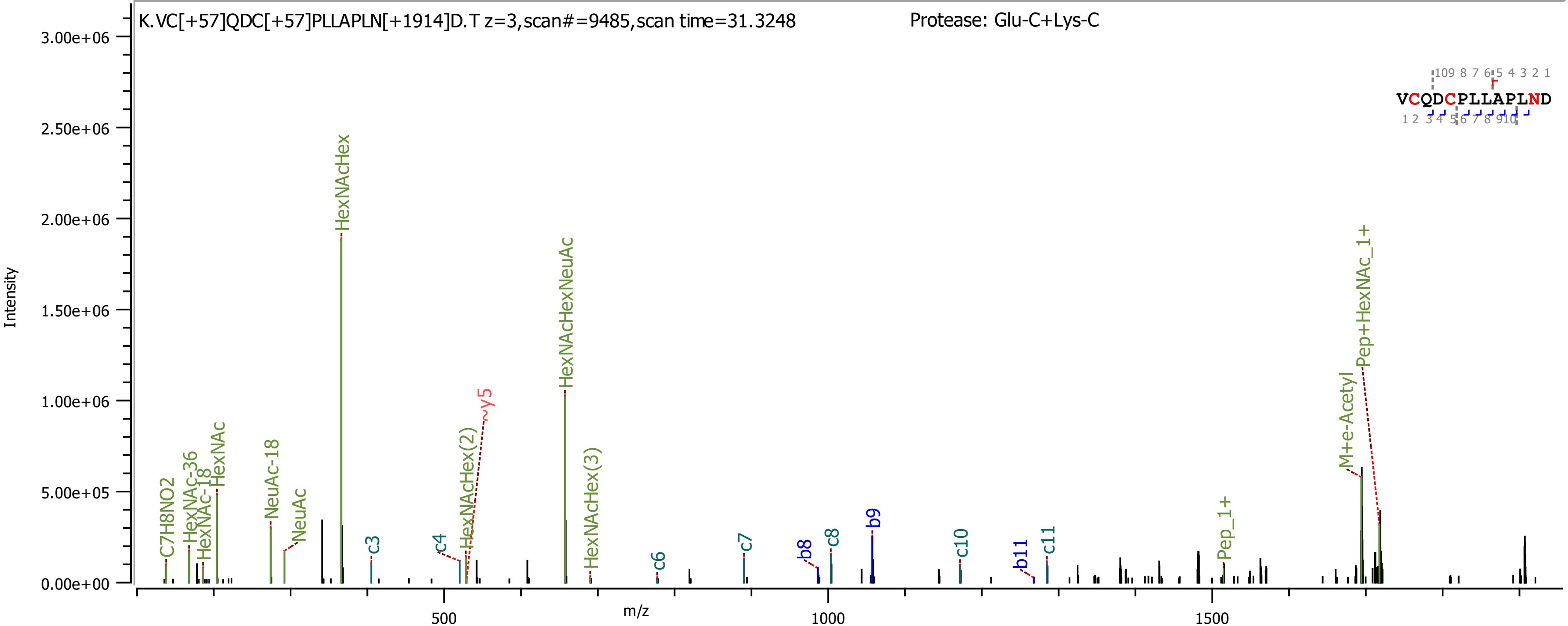
Glycosylation site

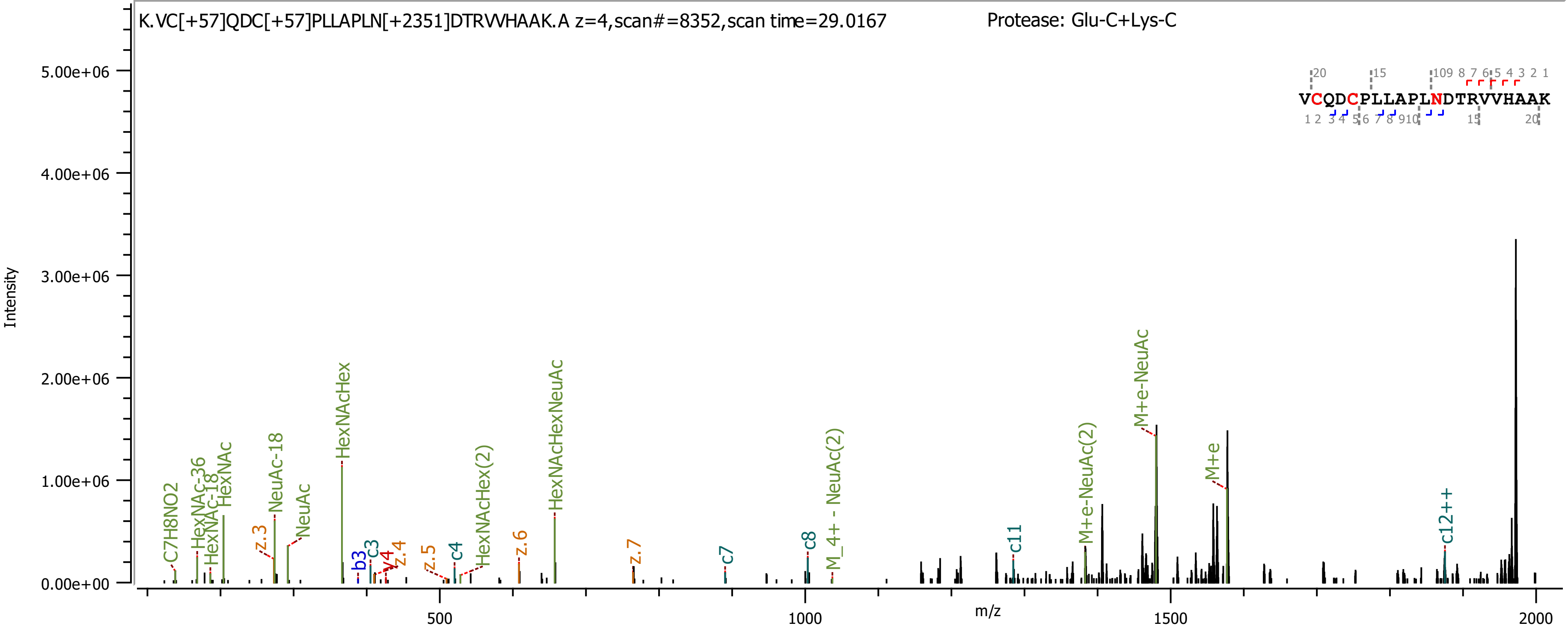
N156	VCQDCPLLAPLND VCQDCPLLAPLNDTRVVHAAK VCQDCPLLAPLNDTRVVHAAK
N176	AALAAFNAQNNGSNFQLEE
T256	VAVTCTVFQTQPVTSQPQPE
T270	GANEAVPTPVVDPDAPPSPPLGAPGLPPAGSPPDSHVLLAAPPGHQLHRAHYD
S346	TVVQPSVGAAAGPVVPPCPGRIRHFK

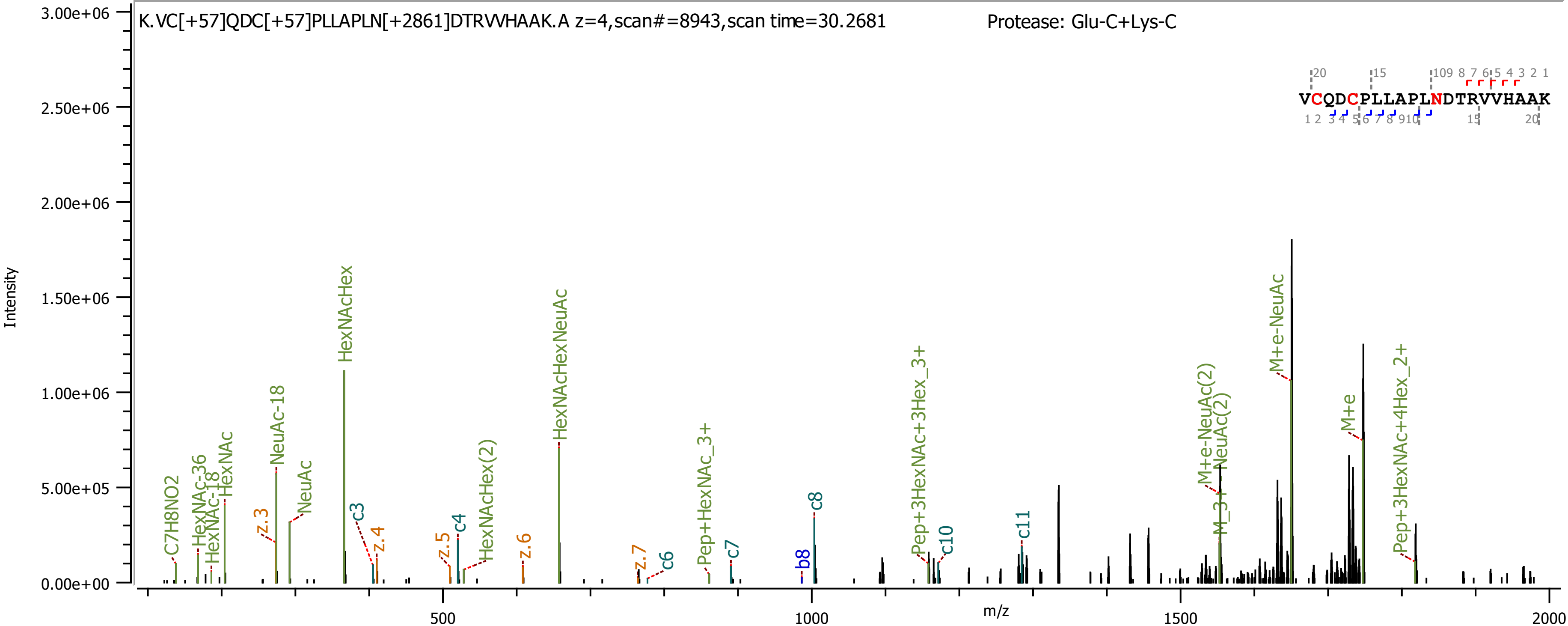
Phosphorylation site

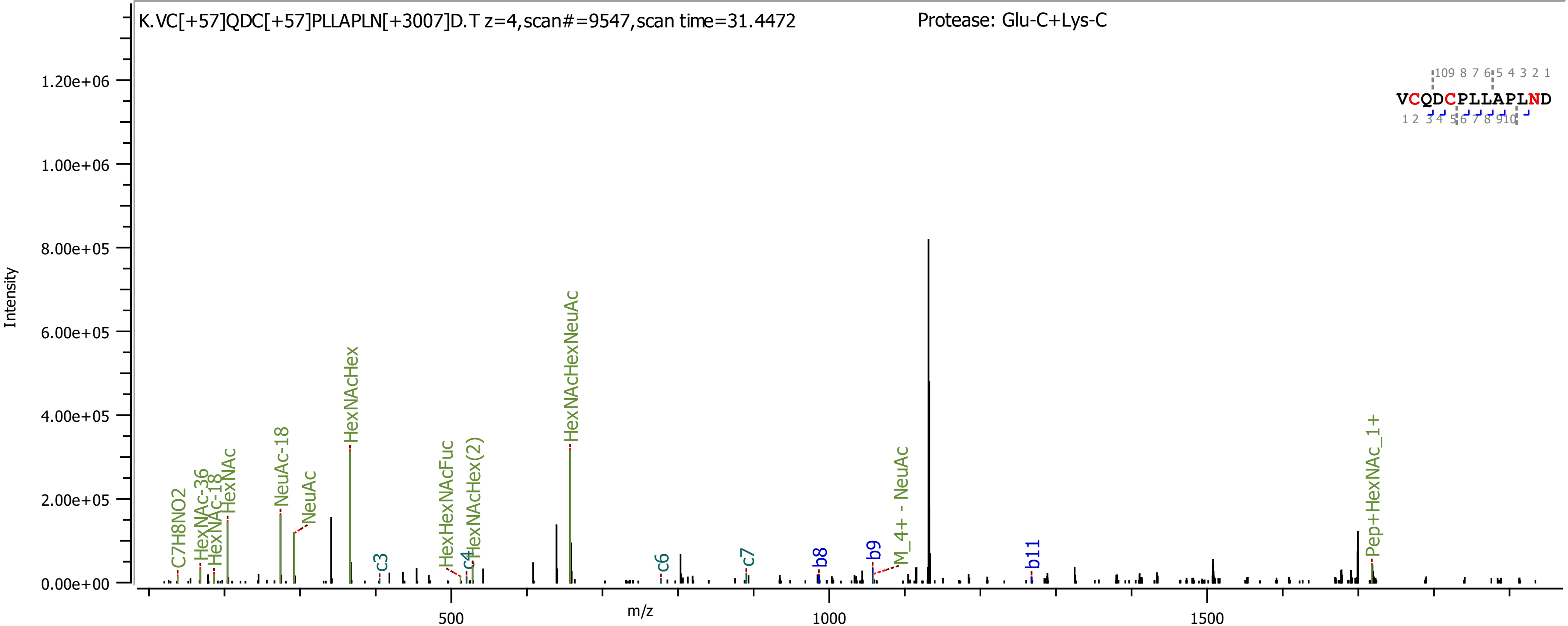
S138	SSPDSAEDVRK
S330	LRHTFMGVVSLGSPSGE

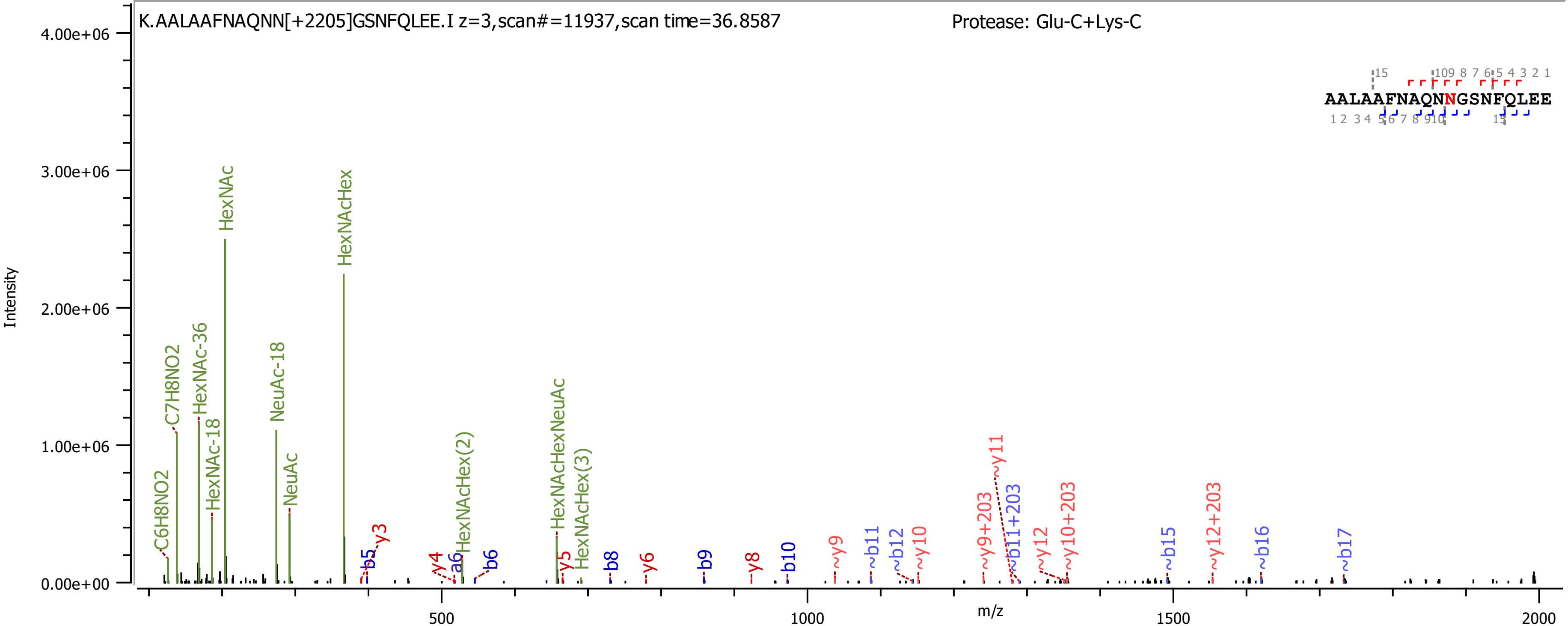

K.VC[+57]QDC[+57]PLLAPLN[+2205]D.T z=3,scan#=10186,scan time=32.7878
Protease: Glu-C+Lys-C
109 8 7 6 5 4 3 2 1
VCQDCPLLAPLND
1 2 3 4 5 6 7 8 9 10
Intensity
5.00e+06
4.00e+06
3.00e+06
2.00e+06
1.00e+06
0.00e+00
C6H8NO2
C7H8NO2
HexNAc-36
HexNAc-18
HexNAc
NeuAc-18
NeuAc
HexNAcHex
~y4
HexNAcNeuAc
HexNAcHex(2)
b9++
HexNAcHexNeuAc
~y4+203
HexNAcHex(3)
a6
b7
a8
b8
b9
b11
~b12
Pep_1+
Pep+HexNAc_1+
500
m/z
1000
1500

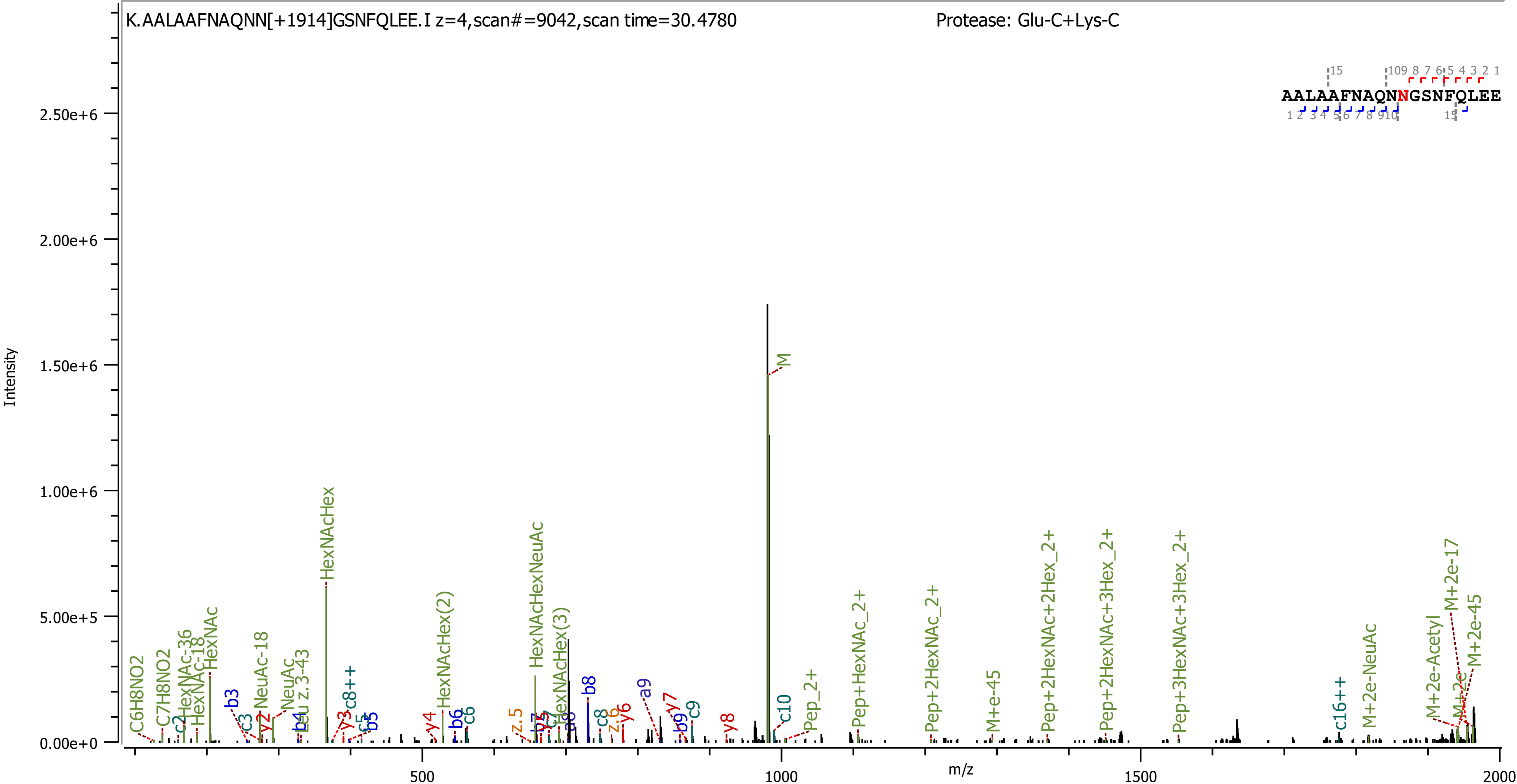

K.VC[+57]QDC[+57]PLLAPLN[+1914]D.T z=3,scan#=9485,scan time=31.3248
Protease: Glu-C+Lys-C
10 9 8 7 6 5 4 3 2 1
VCQDCPLLAPLND
1 2 3 4 5 6 7 8 9 10
Intensity
3.00e+06
2.50e+06
2.00e+06
1.50e+06
1.00e+06
5.00e+05
0.00e+00
m/z
500
1000
1500
C7H8NO2
HexNAc-36
HexNAc-18
HexNAc
NeuAc-18
NeuAc
HexNAcHex
c3
c4
HexNAcHex(2)
y5
HexNAcHexNeuAc
HexNAcHex(3)
c6
c7
b8
c8
b9
c10
b11
c11
Pep_1+
M+e-Acetyl
Pep+HexNAc_1+

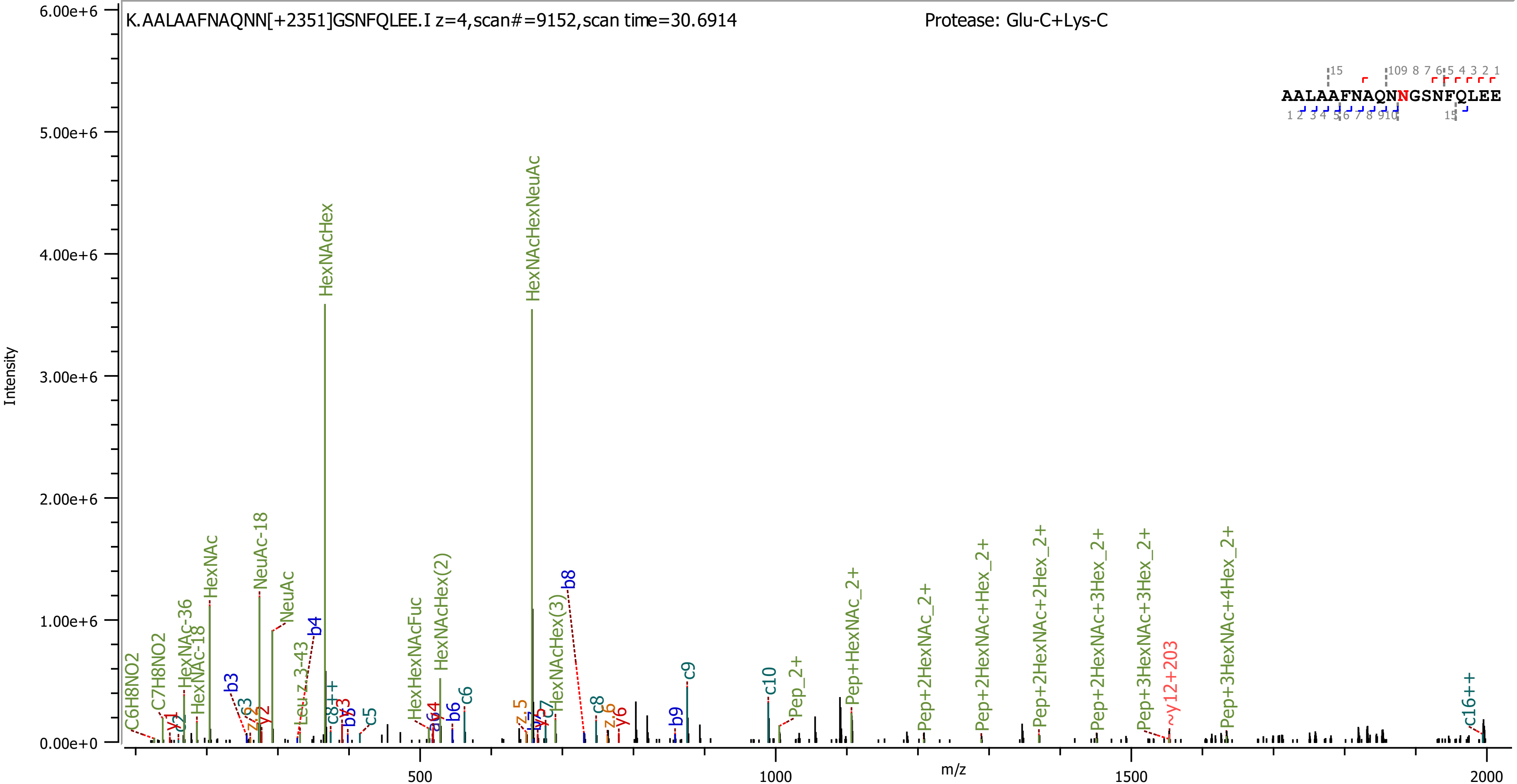

K.VC[+57]QDC[+57]PLLAPLN[+2351]DTRVVHAAK.A z=4,scan#=8352,scan time=29.0167
Protease: Glu-C+Lys-C
VCQDCPLLAPLNDTRVVHAAK
20
15
109 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 910
15
20
Intensity
5.00e+06
4.00e+06
3.00e+06
2.00e+06
1.00e+06
0.00e+00
m/z
500
1000
1500
2000
C7H8NO2
HexNAc-36
HexNAc-18
HexNAc
z.3
NeuAc-18
NeuAc
HexNAcHex
b3
c3
y4
z.4
z.5
c4
HexNAcHex(2)
z.6
HexNAcHexNeuAc
z.7
c7
c8
M_4+ - NeuAc(2)
c11
M+e-NeuAc(2)
M+e-NeuAc
M+e
c12++

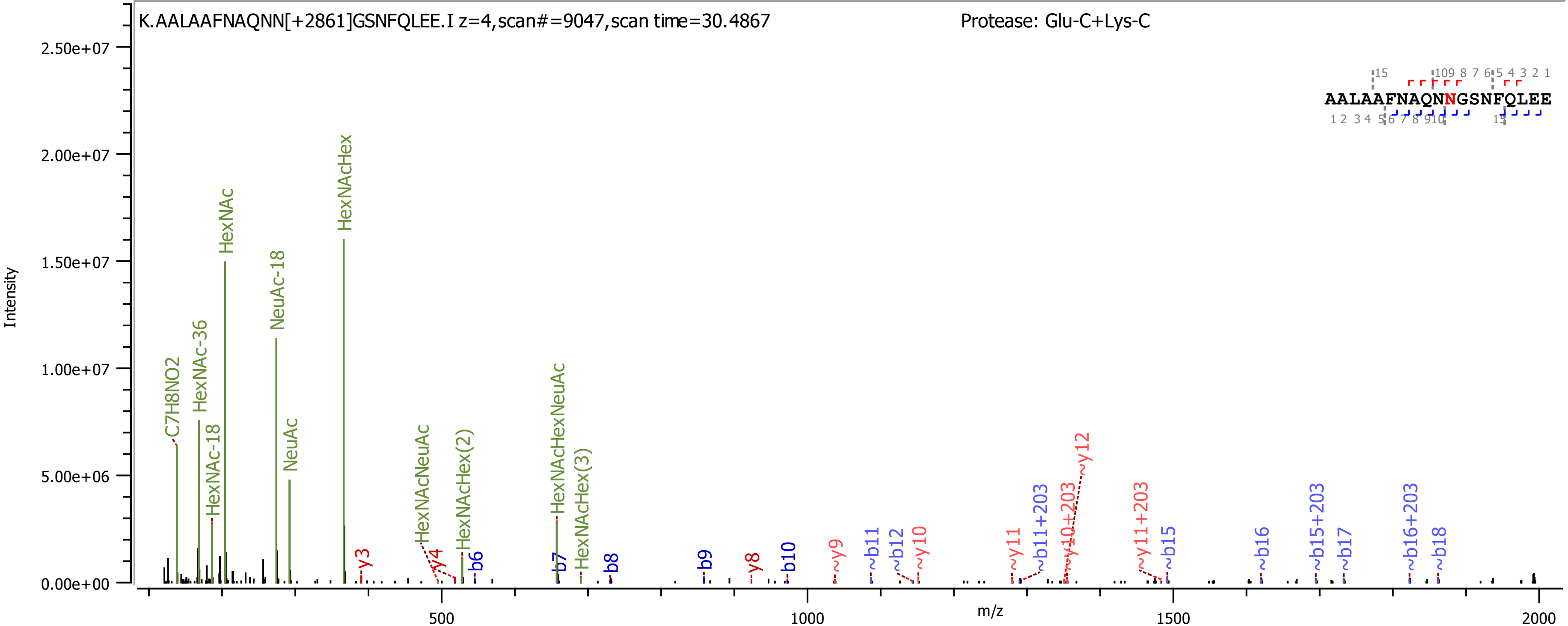

K.VC[+57]QDC[+57]PLLAPLN[+2861]DTRVVHAAK.A z=4,scan#=8943,scan time=30.2681
Protease: Glu-C+Lys-C
VCQDCPLLAPLNDTRVVHAAK
20
15
109 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 910
15
20
Intensity
3.00e+06
2.50e+06
2.00e+06
1.50e+06
1.00e+06
5.00e+05
0.00e+00
m/z
500
1000
1500
2000
C7H8NO2
HexNAc-36
HexNAc-18
HexNAc
z.3
NeuAc-18
NeuAc
HexNAcHex
c3
z.4
z.5
c4
HexNAcHex(2)
z.6
HexNAcHexNeuAc
z.7
c6
Pep+HexNAc_3+
c7
b8
c8
Pep+3HexNAc+3Hex_3+
c10
c11
M+e-NeuAc(2)
M_3+
NeuAc(2)
M+e-NeuAc
M+e
Pep+3HexNAc+4Hex_2+

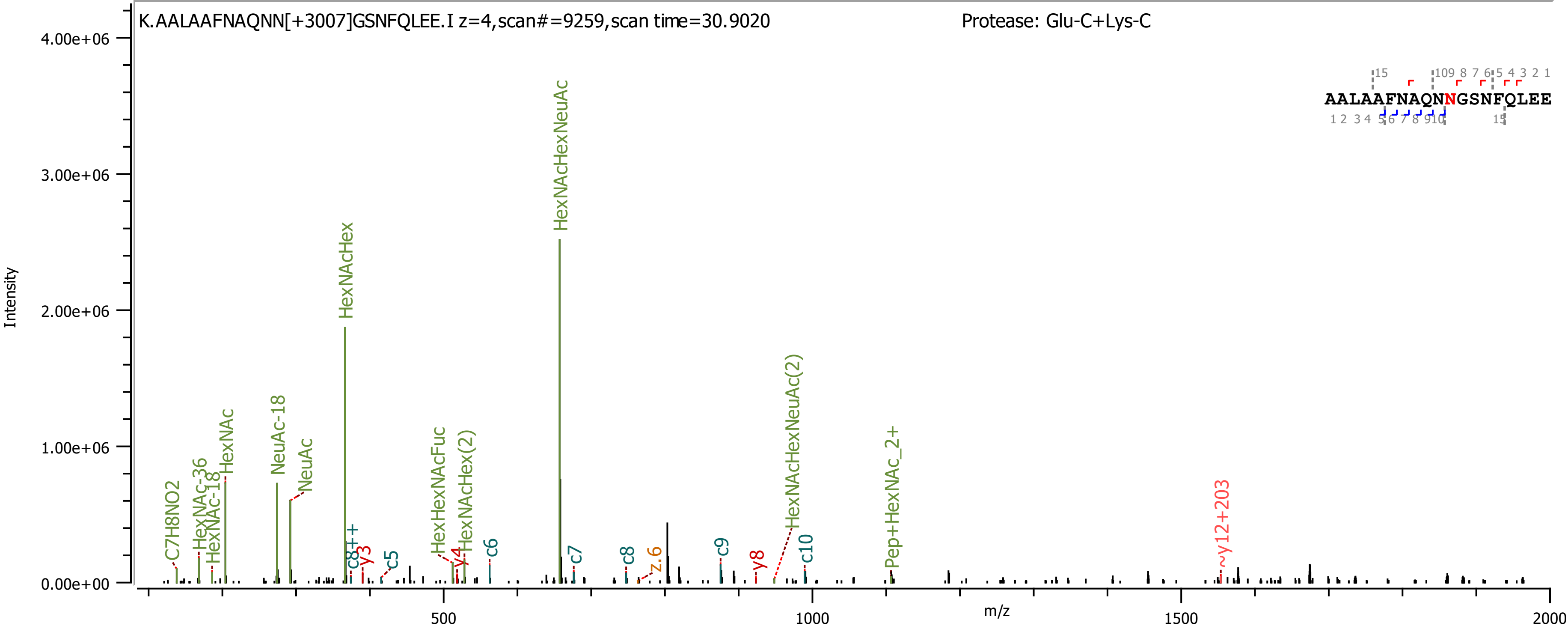

K.VC[+57]QDC[+57]PLLAPLN[+3007]D.T z=4,scan#=9547,scan time=31.4472
Protease: Glu-C+Lys-C
109 8 7 6 5 4 3 2 1
VCQDCPLLAPLND
1 2 3 4 5 6 7 8 910
Intensity
1.20e+06
1.00e+06
8.00e+05
6.00e+05
4.00e+05
2.00e+05
0.00e+00
C7H8NO2
HexNAc-36
HexNAc-18
HexNAc
NeuAc-18
NeuAc
HexNAcHex
c3
HexHexNAcFuc
c4
HexNAcHex(2)
HexNAcHexNeuAc
c6
c7
b8
b9
M_4++ - NeuAc
b11
Pep+HexNAc_1+
500
m/z
1000
1500

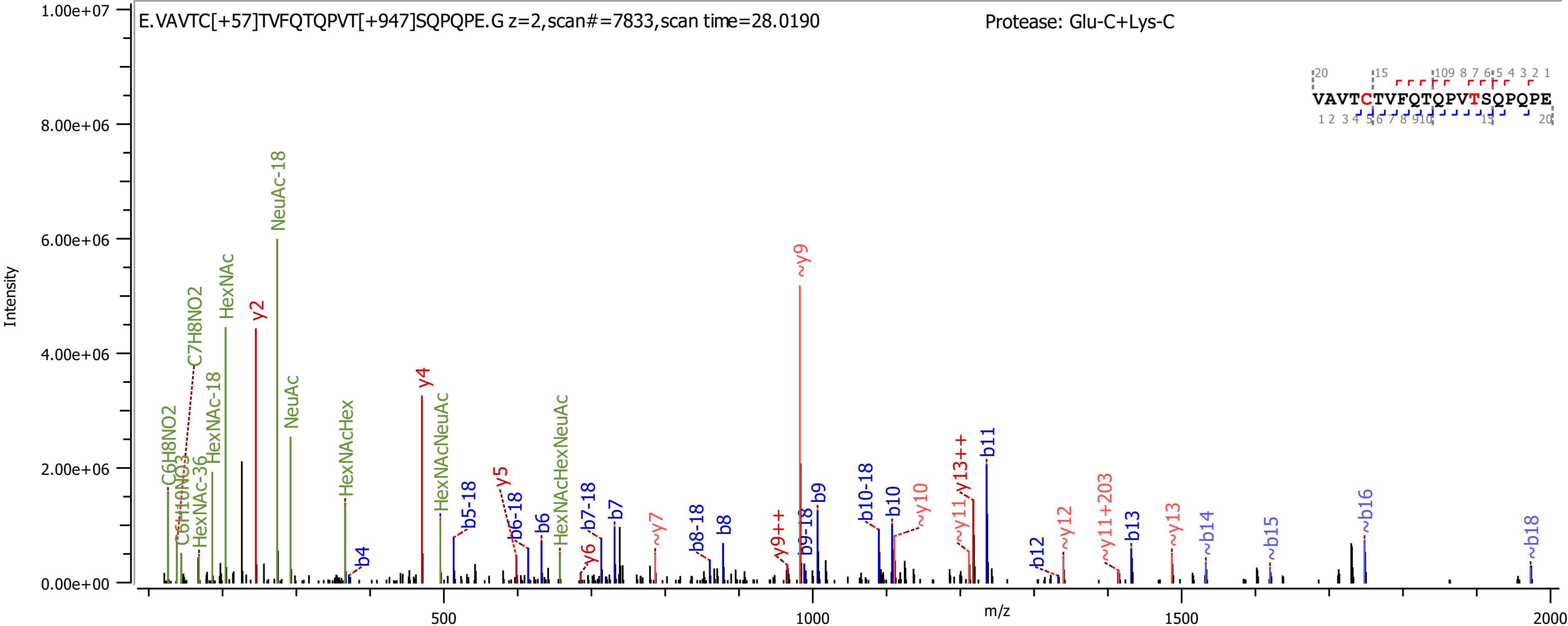

K.AALAAFNAQNN[+2205]GSNFQLEE.I z=3,scan#=11937,scan time=36.8587
Protease: Glu-C+Lys-C
AALAAFNAQNNGSNFQLEE
15
10 9 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 9 10
15
Intensity
4.00e+06
3.00e+06
2.00e+06
1.00e+06
0.00e+00
m/z
500
1000
1500
2000
C6H8NO2
C7H8NO2
HexNAc-36
HexNAc-18
HexNAc
NeuAc-18
NeuAc
HexNAcHex
b5
y3
y4
a6
HexNAcHex(2)
b6
HexNAcHexNeuAc
y5
HexNAcHex(3)
b8
y6
b9
y8
b10
~y9
~b11
~b12
~y10
~y9+203
~y11
~b11+203
~y12
~y10+203
~b15
~y12+203
~b16
~b17

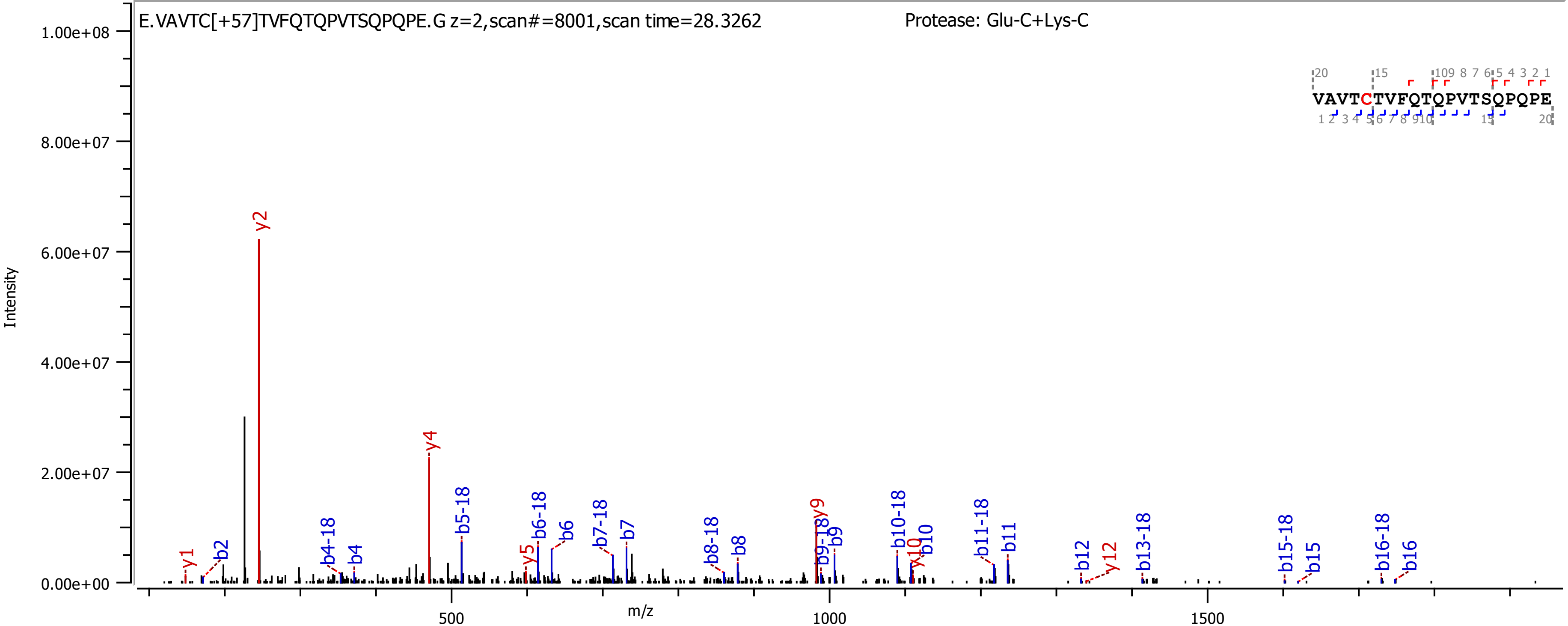

K.AALAAFNAQNN[+1914]GSNFQLEE.I z=4,scan#=9042,scan time=30.4780
Protease: Glu-C+Lys-C
AALAAFNAQNNGSNFQLEE
15
10 9 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 9 10
15
Intensity
0.00e+0
5.00e+5
1.00e+6
1.50e+6
2.00e+6
2.50e+6
m/z
500
1000
1500
2000
C6H8NO2
C7H8NO2
c2
HexNAc-36
HexNAc-18
HexNAc
b3
c3
y2
NeuAc-18
NeuAc
b4
Leu z.3-43
HexNAcHex
y3
c5
b5
c8++
y4
HexNAcHex(2)
b6
c6
z.5
b7
y5
HexNAcHexNeuAc
c7
HexNAcHex(3)
a8
b8
c8
z.6
y6
a9
y7
b9
c9
y8
M
c10
Pep_2+
Pep+HexNAc_2+
Pep+2HexNAc_2+
M+e-45
Pep+2HexNAc+2Hex_2+
Pep+2HexNAc+3Hex_2+
Pep+3HexNAc+3Hex_2+
c16++
M+2e-NeuAc
M+2e-Acetyl
M+2e
M+2e-17
M+2e-45

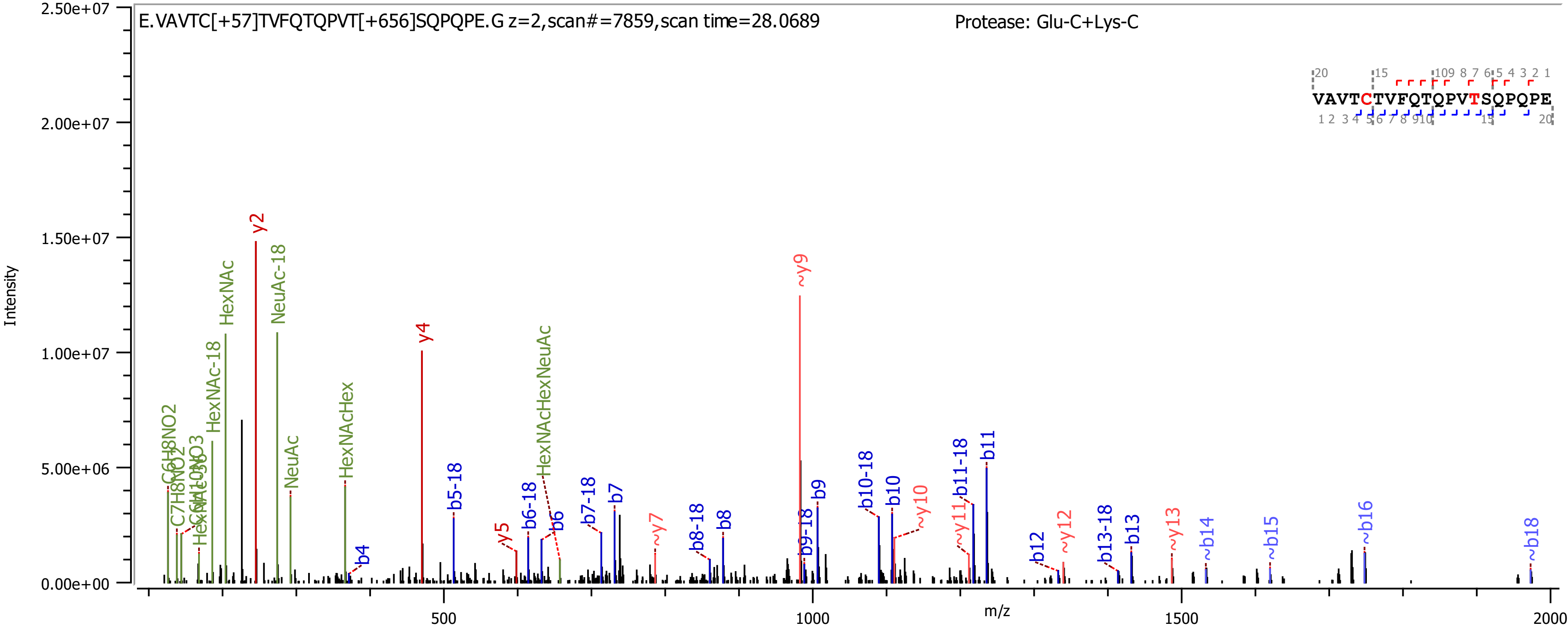

K.AALAAFNAQNN[+2351]GSNFQLEE.I z=4,scan#=9152,scan time=30.6914
Protease: Glu-C+Lys-C
AALAAFNAQNNGSNFQLEE
Intensity
m/z
6.00e+6
5.00e+6
4.00e+6
3.00e+6
2.00e+6
1.00e+6
0.00e+0
500
1000
1500
2000
C6H8NO2
C7H8NO2
y1
c2
HexNAc-36
HexNAc-18
HexNAc
b3
c3
z.2
y2
NeuAc-18
NeuAc
Leu z 3-43
b4
HexNAcHex
c8++
y3
b5
c5
HexHexNAcFuc
a6
y4
HexNAcHex(2)
b6
c6
z.5
b7
y5
c7
HexNAcHexNeuAc
HexNAcHex(3)
b8
c8
z.6
y6
b9
c9
c10
Pep_2+
Pep+HexNAc_2+
Pep+2HexNAc_2+
Pep+2HexNAc+Hex_2+
Pep+2HexNAc+2Hex_2+
Pep+2HexNAc+3Hex_2+
Pep+3HexNAc+3Hex_2+
~y12+203
Pep+3HexNAc+4Hex_2+
c16++

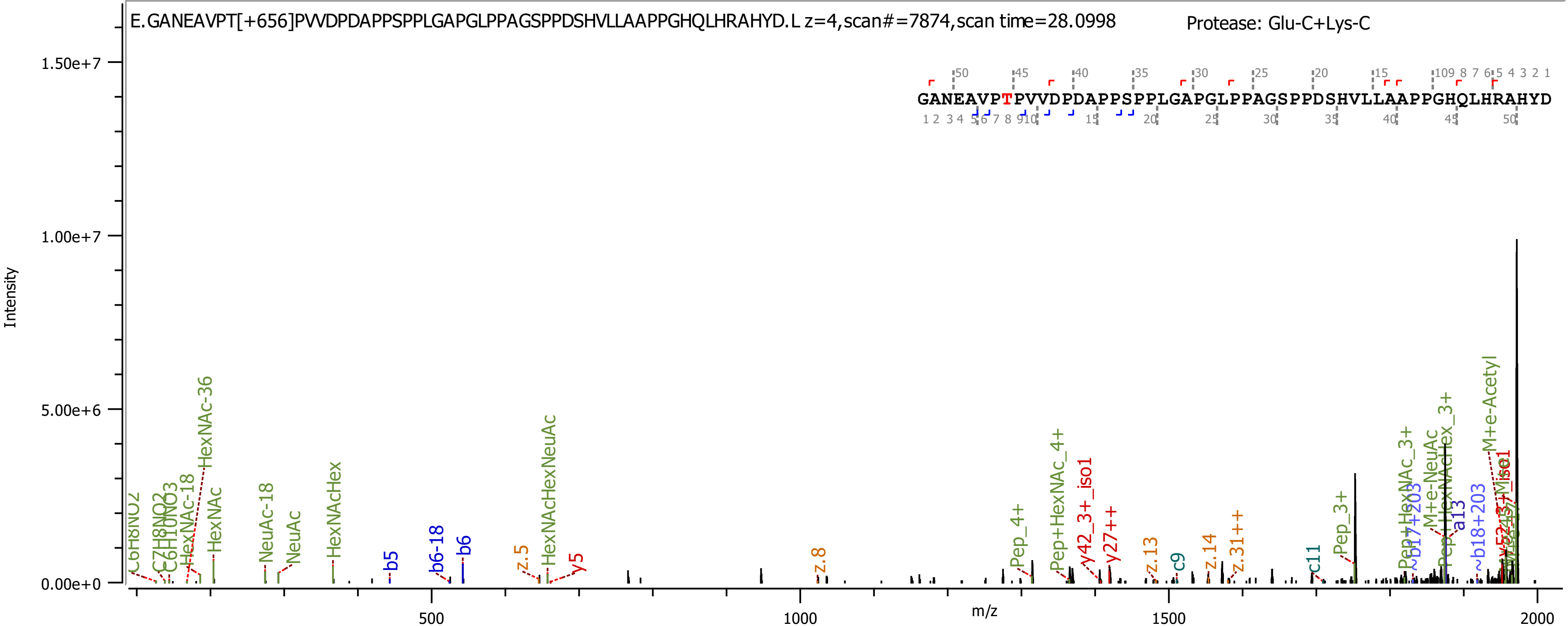

K.AALAAFNAQNN[+2861]GSNFQLEE.I z=4,scan#=9047,scan time=30.4867
Protease: Glu-C+Lys-C
AALAAFNAQNNGSNFQLEE
15 10 9 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 9 10 15
Intensity
2.50e+07
2.00e+07
1.50e+07
1.00e+07
5.00e+06
0.00e+00
m/z
500
1000
1500
2000
C7H8NO2
HexNAc-36
HexNAc-18
HexNAc
NeuAc-18
NeuAc
HexNAcHex
y3
HexNAcNeuAc
y4
HexNAcHex(2)
b6
HexNAcHexNeuAc
b7
HexNAcHex(3)
b8
b9
y8
b10
~y9
~b11
~b12
~y10
~y11
~b11+203
~y10+203
~y12
~y11+203
~b15
~b16
~b15+203
~b17
~b16+203
~b18

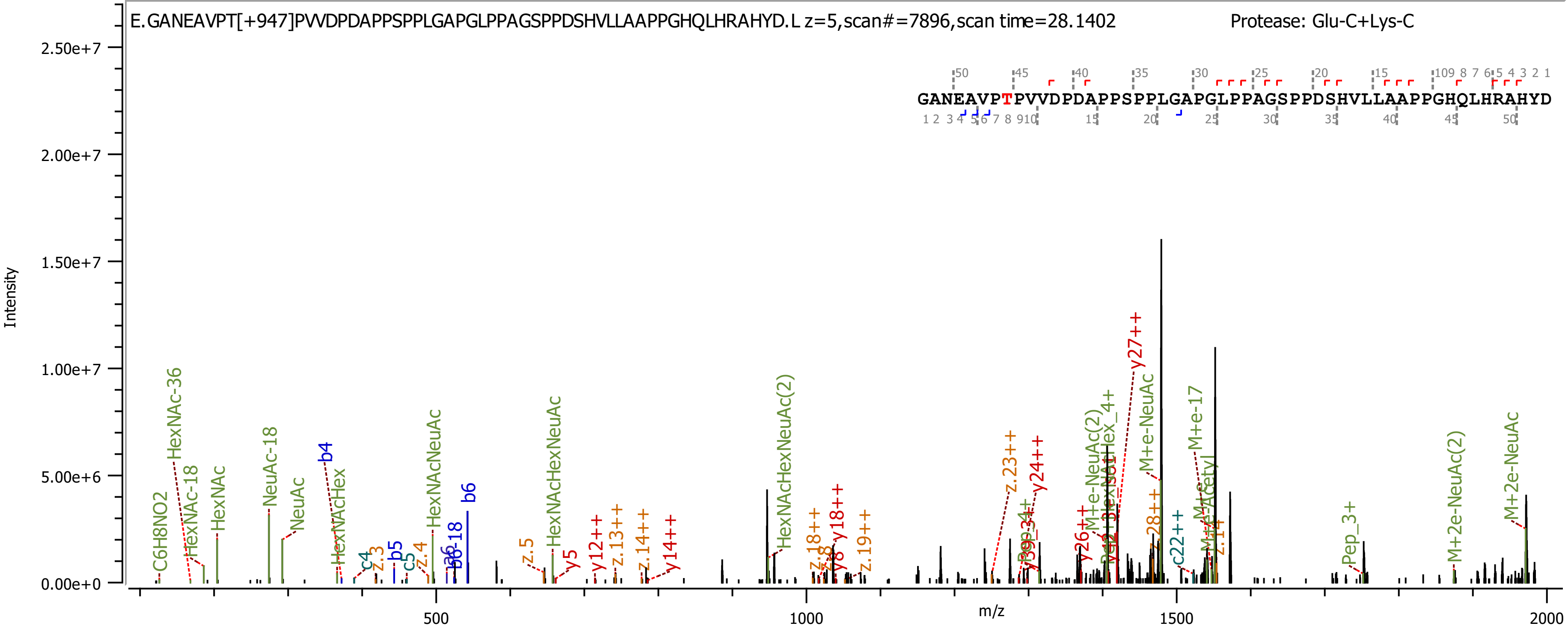

K.AALAAFNAQNN[+3007]GSNFQLEE.I z=4,scan#=9259,scan time=30.9020
Protease: Glu-C+Lys-C
15
109 8 7 6 5 4 3 2 1
AALAAFNAQNNGSNFQLEE
1 2 3 4 5 6 7 8 9 10
15
Intensity
4.00e+06
3.00e+06
2.00e+06
1.00e+06
0.00e+00
C7H8NO2
HexNAc-36
HexNAc-18
HexNAc
NeuAc-18
NeuAc
HexNAcHex
c8++
y3
c5
HexHexNAcFuc
y4
HexNAcHex(2)
c6
HexNAcHexNeuAc
c7
c8
z.6
c9
y8
HexNAcHexNeuAc(2)
c10
Pep+HexNAc_2+
~y12+203
500
1000
1500
2000
m/z

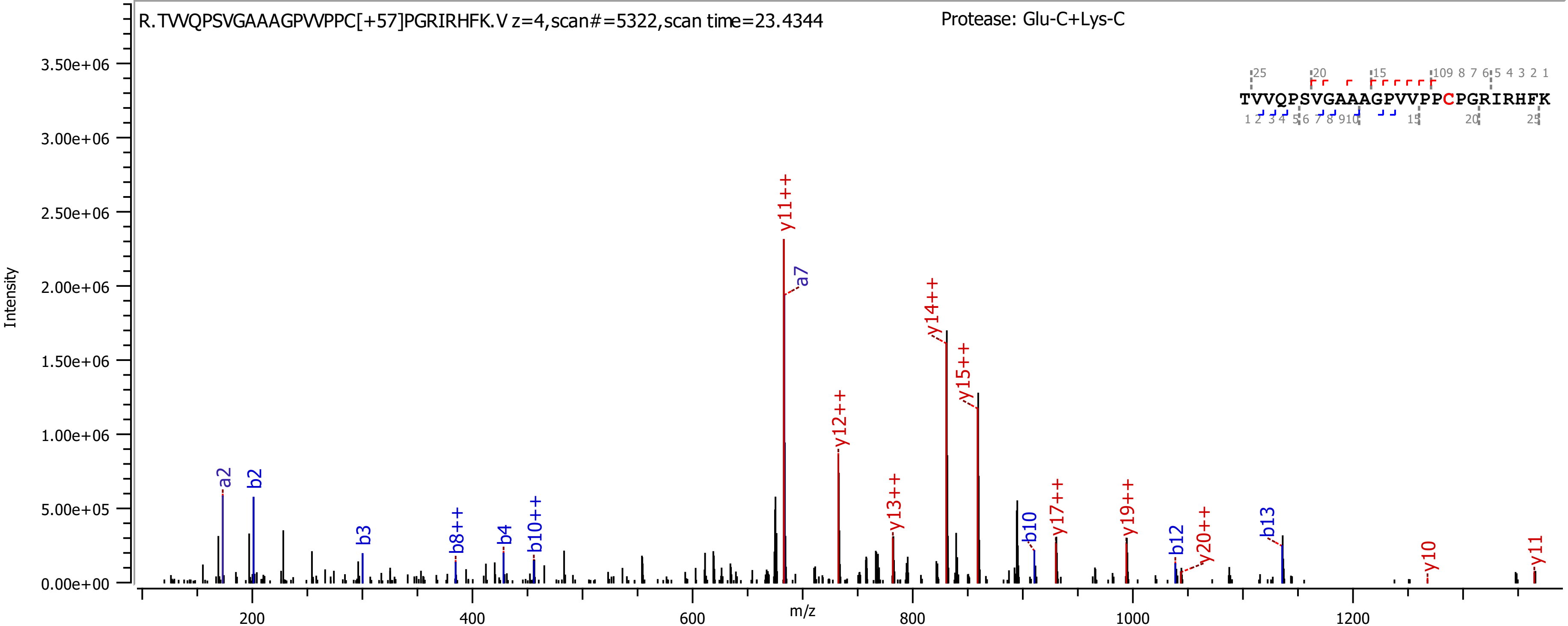

E.VAVTC[+57]TVFQTQPVT[+947]SQPQPE.G z=2,scan#=7833,scan time=28.0190
Protease: Glu-C+Lys-C
VAVTCTVFQTQPVTSQPQPE
20 15 109 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 910 15 20
Intensity
1.00e+07
8.00e+06
6.00e+06
4.00e+06
2.00e+06
0.00e+00
m/z
500
1000
1500
2000
C6H8NO2
C6H10NO3
C7H8NO2
HexNAc-36
HexNAc-18
HexNAc
y2
NeuAc-18
NeuAc
HexNAcHex
b4
y4
HexNAcNeuAc
b5-18
y5
b6-18
b6
HexNAcHexNeuAc
y6
b7-18
b7
~y7
b8-18
b8
y9++
~y9
b9-18
b9
b10-18
b10
~y10
~y11
y13++
b11
b12
~y12
~y11+203
b13
~y13
~b14
~b15
~b16
~b18

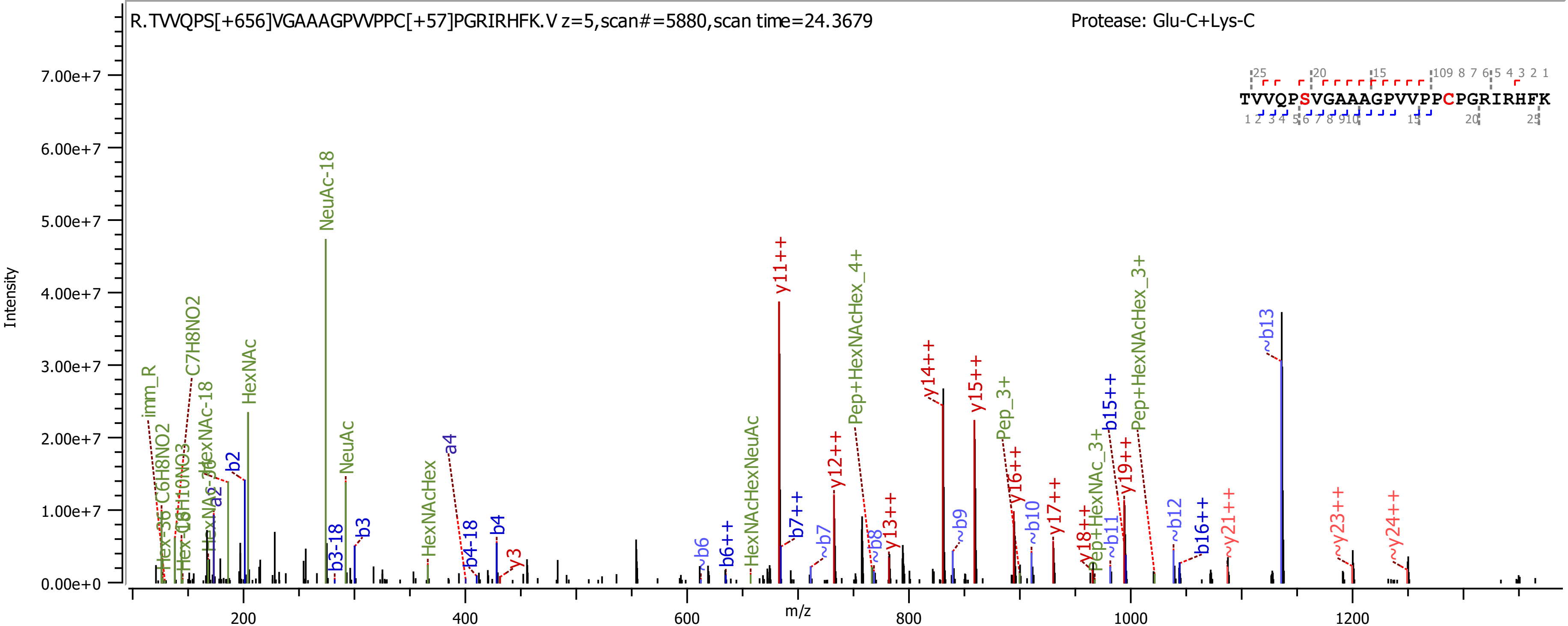

E.VAVTC[+57]TVFQTQPVTSQPQPE.G z=2,scan#=8001,scan time=28.3262
Protease: Glu-C+Lys-C
VAVTCTVFQTQPVTSQPQPE
20 15 10 9 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 9 10 15 20
Intensity
1.00e+08
8.00e+07
6.00e+07
4.00e+07
2.00e+07
0.00e+00
m/z
500
1000
1500
y1
b2
y2
b4-18
b4
y4
b5-18
y5
b6-18
b6
b7-18
b7
b8-18
b8
y9
b9-18
b9
b10-18
y10
b10
b11-18
b11
b12
y12
b13-18
b15-18
b15
b16-18
b16

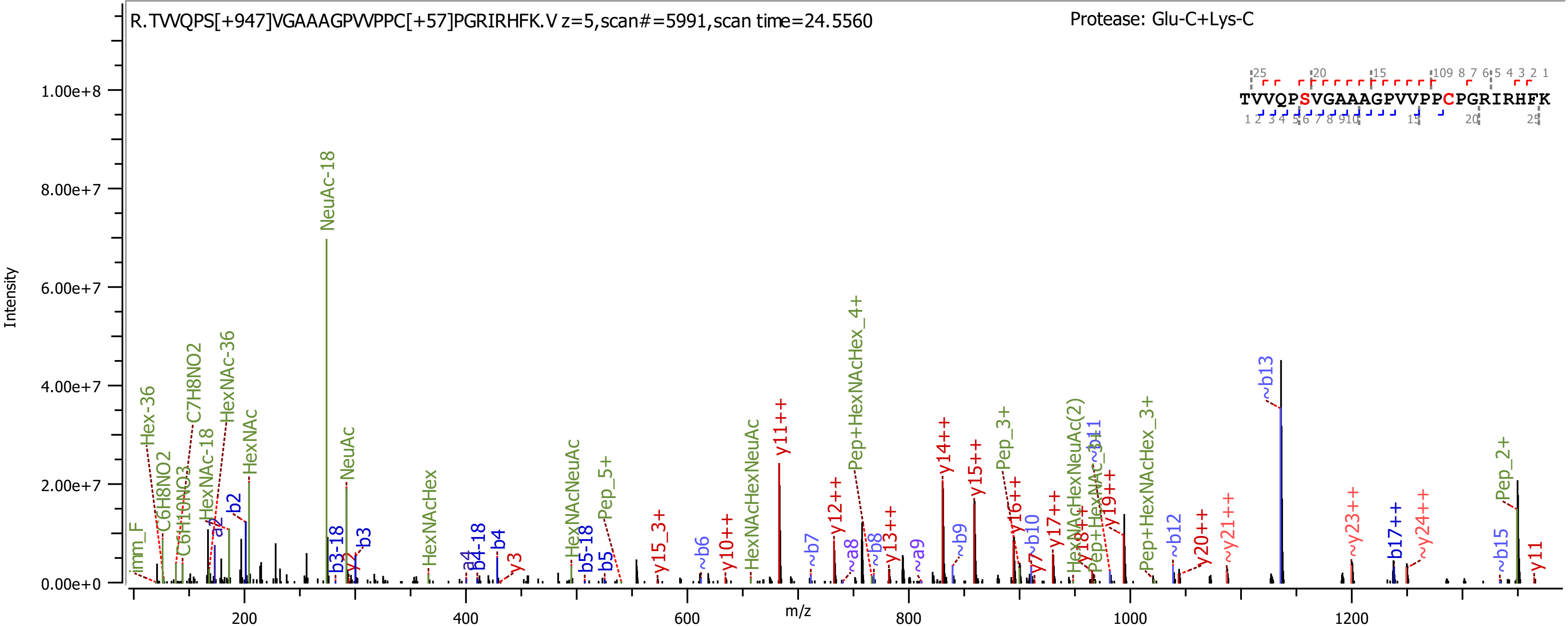

E.VAVTC[+57]TVFQTQPVT[+656]SQPQPE.G z=2,scan#=7859,scan time=28.0689
Protease: Glu-C+Lys-C
VAVTCTVFQTQPVTSQPQPE
20 15 10 9 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 9 10 15 20
Intensity
2.50e+07
2.00e+07
1.50e+07
1.00e+07
5.00e+06
0.00e+00
m/z
500
1000
1500
2000
C6H8NO2
C7H8NO2
C6H10NO3
HexNAc-96
HexNAc-18
HexNAc
y2
NeuAc-18
NeuAc
HexNAcHex
b4
y4
b5-18
y5
b6-18
HexNAcHexNeuAc
b6
b7-18
b7
~y7
b8-18
b8
~y9
b9-18
b9
b10-18
b10
~y10
~y11
b11-18
b11
b12
~y12
b13-18
b13
~y13
~b14
~b15
~b16
~b18


E.GANEAVPT[+656]PVVDPDAPPSPPLGAPGLPPAGSPPDSHVLLAAPPGHQLHRAHYD.L z=4,scan#=7874,scan time=28.0998
Protease: Glu-C+Lys-C
GANEAVPTPVVDPDAPPSPPLGAPGLPPAGSPPDSHVLLAAPPGHQLHRAHYD
50 45 40 35 30 25 20 15 10 9 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 9 10 15 20 25 30 35 40 45 50
Intensity
1.50e+7
1.00e+7
5.00e+6
0.00e+0
m/z
500
1000
1500
2000
C6H8NO2
C7H8NO2
C6H10NO3
HexNAc-18
HexNAc-36
HexNAc
NeuAc-18
NeuAc
HexNAcHex
b5
b6-18
b6
z.5
HexNAcHexNeuAc
y5
z.8
Pep_4+
Pep+HexNAc_4+
y42_3+_iso1
y27++
z.13
c9
z.14
z.31++
c11
Pep_3+
Pep+HexNAc_3+
~b17+203
M+e-NeuAc
Pep+HexNAcHex_3+
a13
~b18+203
M+e-Acetyl
y52_3+_iso1
M+e-57
M+e-45
M+e-


E.GANEAVPT[+947]PVVDPDAPPSPPLGAPGLPPAGSPPDSHVLLAAPPGHQLHRAHYD.L z=5,scan#=7896,scan time=28.1402
Protease: Glu-C+Lys-C
GANEAVPTPVVDPDAPPSPPLGAPGLPPAGSPPDSHVLLAAPPGHQLHRAHYD
50
45
40
35
30
25
20
15
109 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 910
15
20
25
30
35
40
45
50
Intensity
2.50e+7
2.00e+7
1.50e+7
1.00e+7
5.00e+6
0.00e+0
m/z
500
1000
1500
2000
C6H8NO2
HexNAc-36
HexNAc-18
HexNAc
NeuAc-18
NeuAc
b4
HexNAcHex
c4
z.3
b5
c5
z.4
HexNAcNeuAc
a6
b6-18
b6
z.5
HexNAcHexNeuAc
y5
y12++
z.13++
z.14++
y14++
HexNAcHexNeuAc(2)
z.18++
z.8
y8
y18++
z.19++
z.23++
Pep_3+
y39
y24++
y26++
M+e-NeuAc(2)
Hex_4+
y27++
M+e-NeuAc
z.28++
c22++
M+e-17
M+e-Acetyl
z.14
Pep_3+
M+2e-NeuAc(2)
M+2e-NeuAc

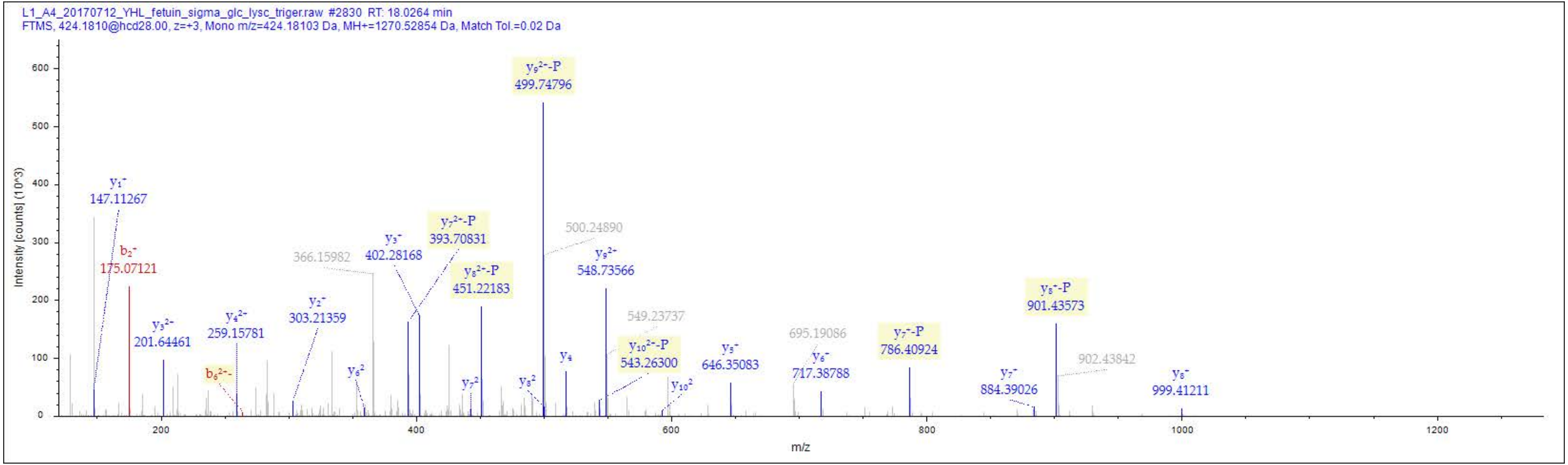

R.TVVQPSVGAAAGPVVPPC[+57]PGRIRHFK.V z=4,scan#=5322,scan time=23.4344
Protease: Glu-C+Lys-C
TVVQPSVGAAAGPVVPPCPGRIRHFK
25 20 15 10 9 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 9 10 15 20 25
Intensity
3.50e+06
3.00e+06
2.50e+06
2.00e+06
1.50e+06
1.00e+06
5.00e+05
0.00e+00
a2
b2
b3
b8++
b4
b10++
y11++
a7
y12++
y13++
y14++
y15++
b10
y17++
y19++
b12
y20++
b13
y10
y11
200
400
600
800
1000
1200
m/z


R.TVVQPS[+656]VGAAAGPVVPPC[+57]PGRIRHFK.V z=5,scan#=5880,scan time=24.3679
Protease: Glu-C+Lys-C
TVVQPSVGAAAGPVVPPCPGRIRHFK
25 20 15 10 9 8 7 6 5 4 3 2 1
1 2 3 4 5 6 7 8 9 10 15 20 25
Intensity
7.00e+7
6.00e+7
5.00e+7
4.00e+7
3.00e+7
2.00e+7
1.00e+7
0.00e+0
m/z
200
400
600
800
1000
1200
imm_R
Hex-36
C6H8NO2
Hex-18
C6H10NO3
C7H8NO2
HexNAc-36
HexNAc-18
a2
b2
HexNAc
NeuAc-18
b3-18
NeuAc
b3
HexNAcHex
a4
b4-18
b4
y3
~b6
b6++
HexNAcHexNeuAc
y11++
b7++
~b7
y12++
Pep+HexNAcHex_4+
~b8
y13++
y14++
~b9
y15++
Pep_3+
y16++
~b10
y17++
y18++
Pep+HexNAc_3+
~b11
b15++
y19++
Pep+HexNAcHex_3+
~b12
b16++
~y21++
~b13
~y23++
~y24++


R.TVVQPS[+947]VGAAAGPVVPPC[+57]PGRIRHFK.V z=5,scan#=5991,scan time=24.5560
Protease: Glu-C+Lys-C
TVVQPSVGAAAGPVVPPCPGRIRHFK
Intensity
m/z
0.00e+0
2.00e+7
4.00e+7
6.00e+7
8.00e+7
1.00e+8
200
400
600
800
1000
1200
imm_F
Hex-36
C6H8NO2
C6H10NO3
C7H8NO2
HexNAc-18
a2
HexNAc-36
b2
HexNAc
NeuAc-18
b3-18
y2
NeuAc
b3
HexNAcHex
a4
b4-18
b4
y3
HexNAcNeuAc
b5-18
b5
Pep_5+
y15_3+
~b6
y10++
HexNAcHexNeuAc
y11++
~b7
y12++
~a8
Pep+HexNAcHex_4+
~b8
y13++
~a9
~b9
y14++
y15++
Pep_3+
y16++
~b10
y7
y17++
HexNAcHexNeuAc(2)
y18++
Pep+HexNAc_3+
~b11
y19++
Pep+HexNAcHex_3+
~b12
y20++
~y21++
~b13
~y23++
b17++
~y24++
~b15
Pep_2+
y11

Sequence: SSPDS[+79.9]AEDVRK *z*=3, scan=2830, scan time=18.0264

Protease: Glu-C+Lys-C



Sequence: LRHTFMGVVSLGSPS[79.9]GE z=3, scan=10547, scan time=33.5

Protease: Glu-C+Lys-C