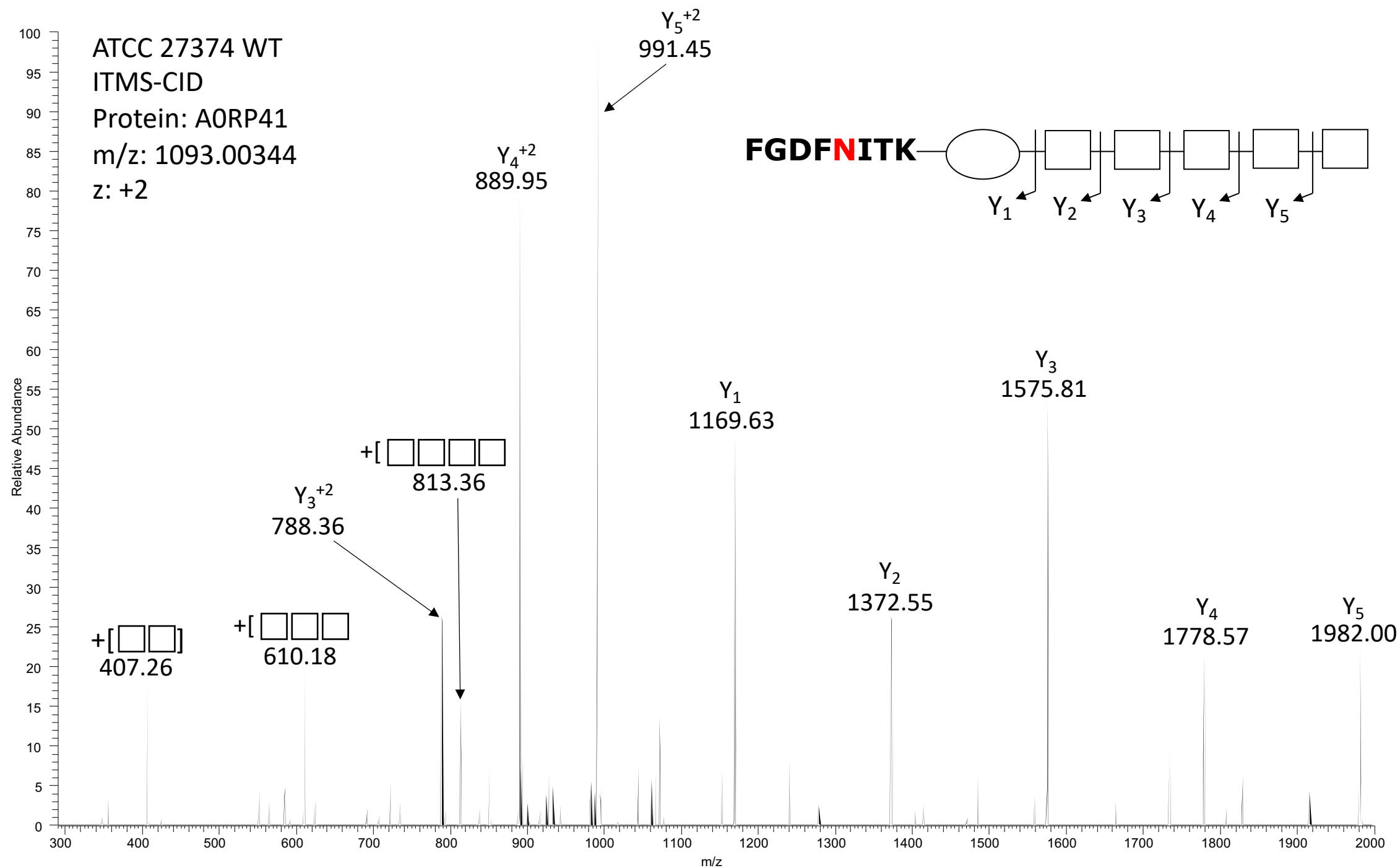


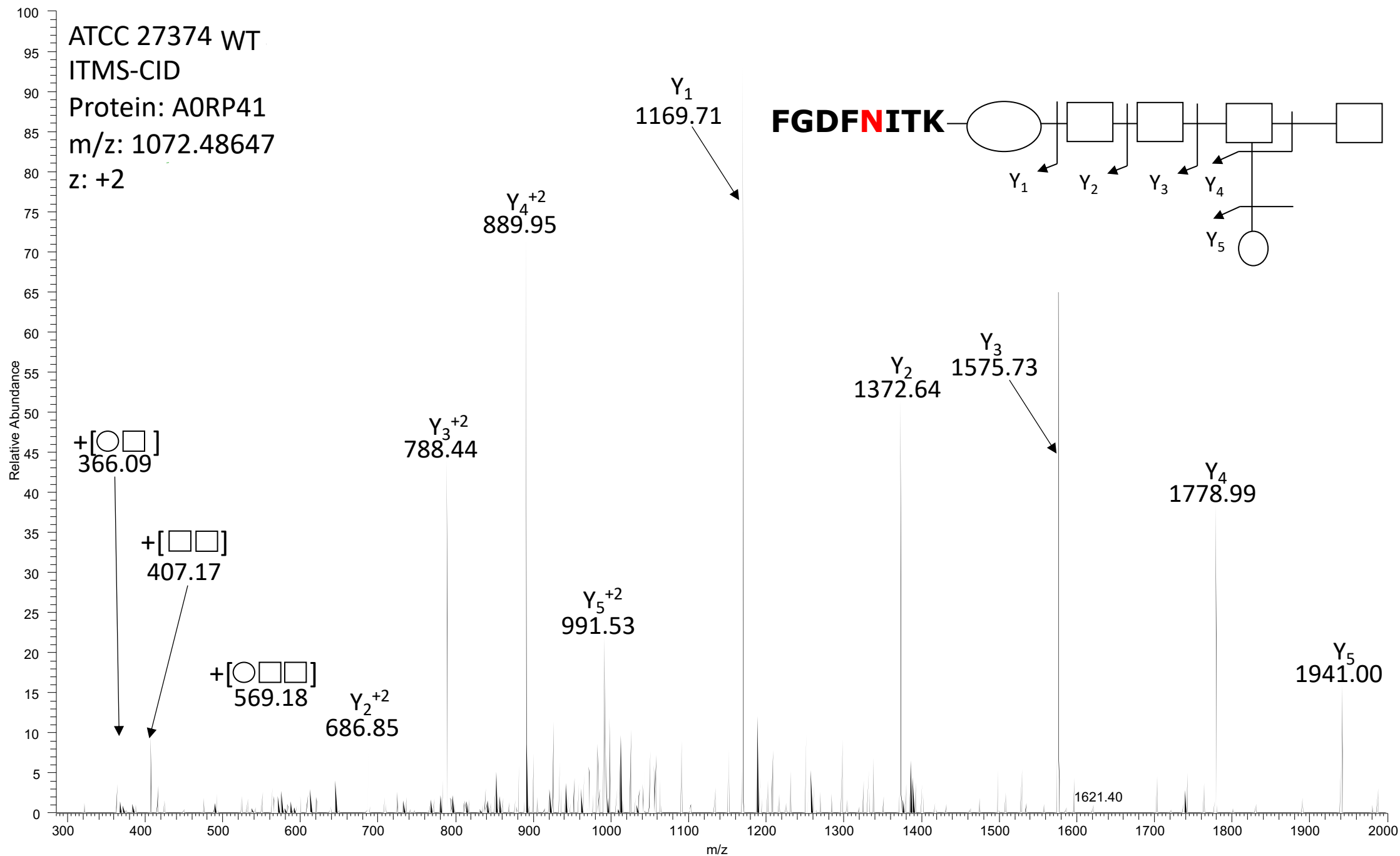
## Supplementary MS data 1

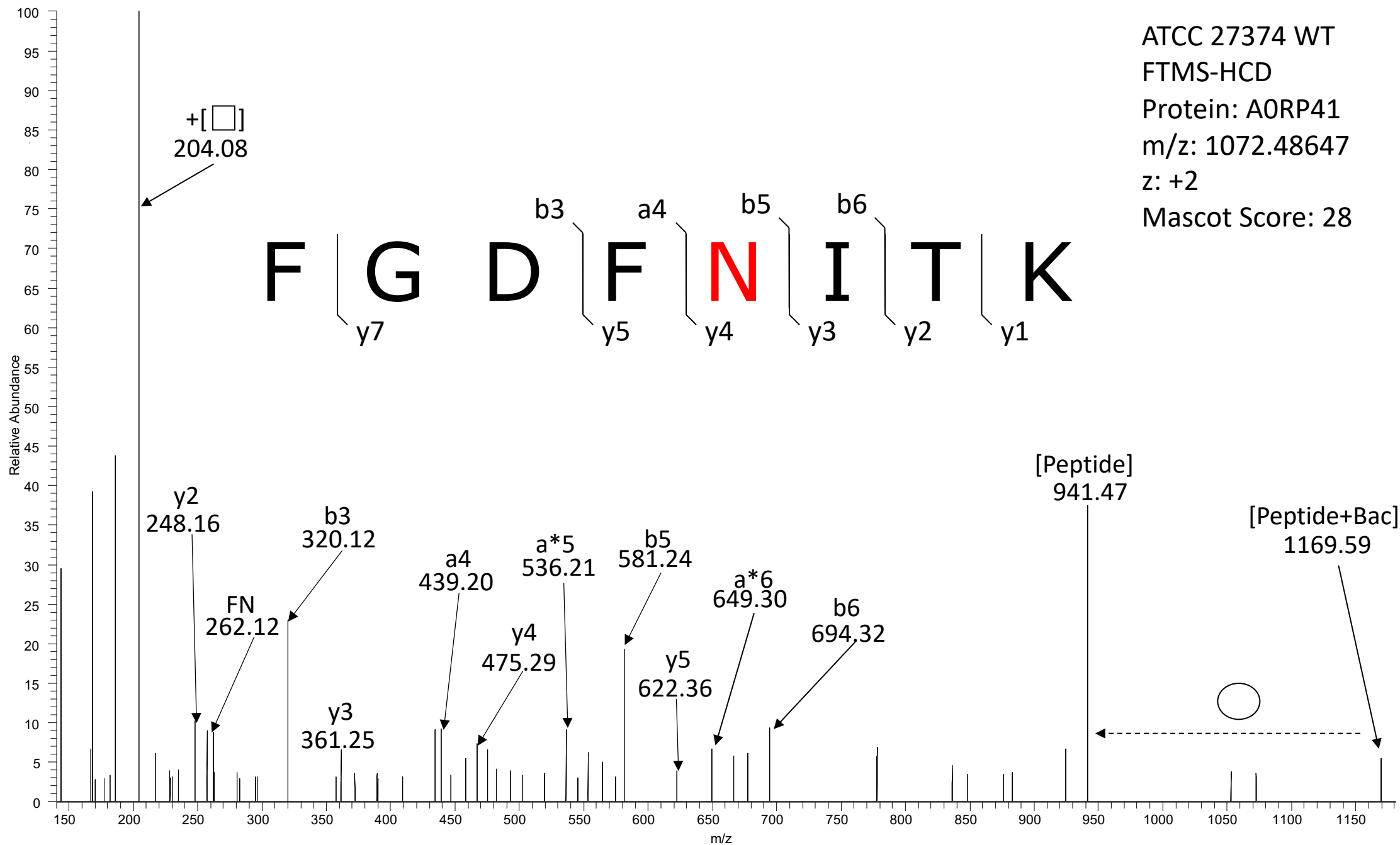
### Glycopeptides identified from *C. fetus* subsp. *fetus* ATCC 27374

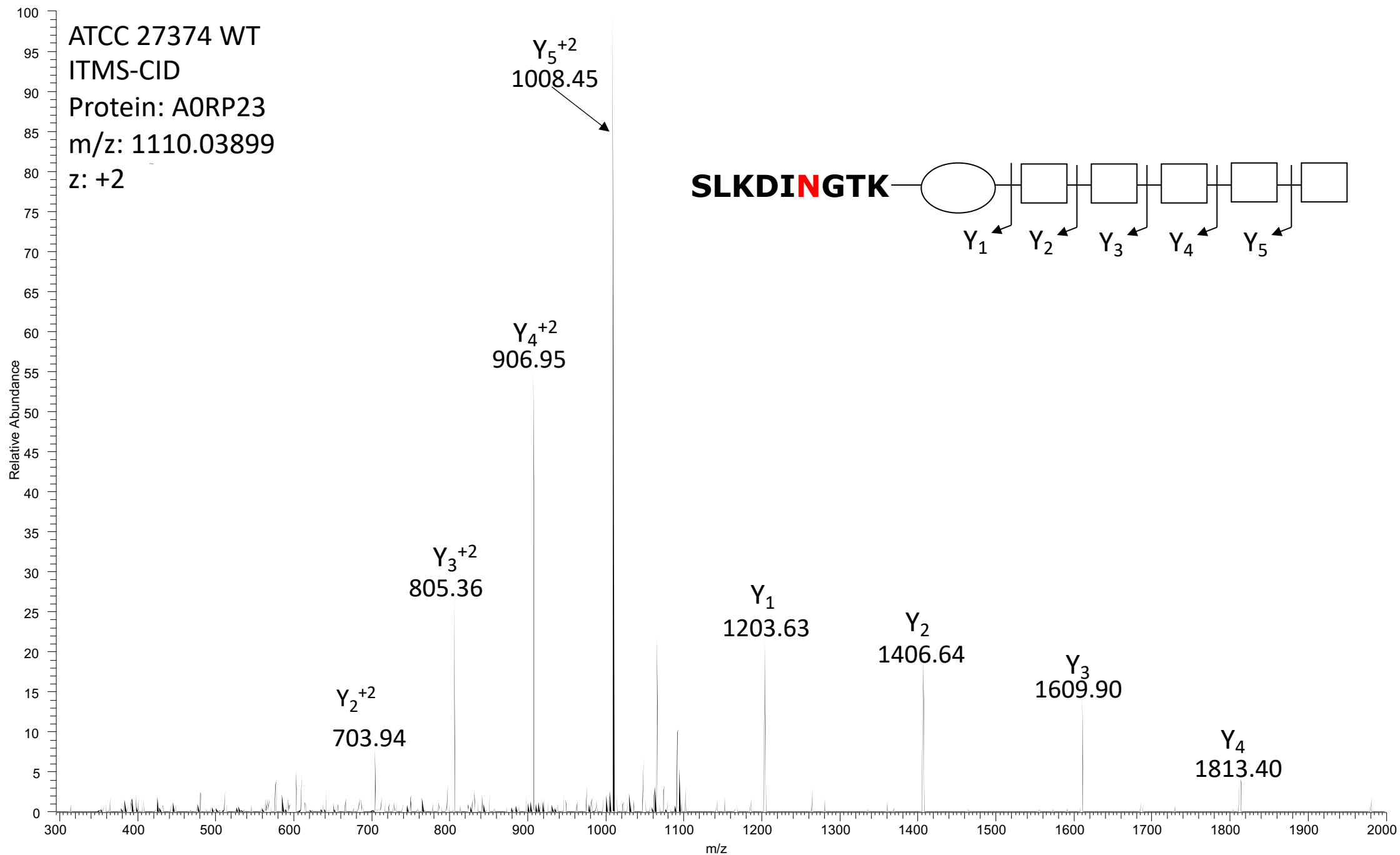
| Sample                   | Protein | m/z       | z | Glycan mass | Glycan composition    | Peptide mass | Peptide sequence | Mascot Score | Page      |
|--------------------------|---------|-----------|---|-------------|-----------------------|--------------|------------------|--------------|-----------|
| ATCC 27374 WT            | AORP41  | 1093.0034 | 2 | 1243.52624  | diNAcBac-HexNAc*5     | 941.4727     | FGDFNITK         | -            | 2         |
| ATCC 27374 WT            | AORP41  | 1072.4865 | 2 | 1202.4923   | diNAcBac-HexNAc*4-Hex | 941.4727     | FGDFNITK         | 28           | 3 and 4   |
| ATCC 27374 WT            | AORP23  | 1110.039  | 2 | 1243.52314  | diNAcBac-HexNAc*5     | 975.5469     | SLKDINGTK        | -            | 5         |
| ATCC 27374 WT            | AORP23  | 1089.525  | 2 | 1202.49512  | diNAcBac-HexNAc*4-Hex | 975.5469     | SLKDINGTK        | 27           | 6 and 7   |
| ATCC 27374 WT            | AORP23  | 992.4863  | 3 | 1243.51942  | diNAcBac-HexNAc*5     | 1731.9236    | ANNDTIKSLKDINGTK | -            | 8         |
| ATCC 27374 WT            | AORP23  | 978.81068 | 3 | 1202.49256  | diNAcBac-HexNAc*4-Hex | 1731.9236    | ANNDTIKSLKDINGTK | 22           | 9 and 10  |
| ATCC 27374 <i>pglX</i> - | AORN03  | 925.96518 | 2 | 634.28702   | diNAcBac-HexNAc*2     | 1216.6354    | ISDLNLTMPGR      | 24           | 11 and 12 |
| ATCC 27374 <i>pglX</i> - | AORP41  | 788.37733 | 2 | 634.27402   | diNAcBac-HexNAc*2     | 941.4727     | FGDFNITK         | 46           | 13 and 14 |
| ATCC 27374 <i>pglX</i> - | AORP23  | 789.40857 | 3 | 634.28623   | diNAcBac-HexNAc*2     | 1731.9236    | ANNDTIKSLKDINGTK | 56           | 15 and 16 |
| ATCC 27374 <i>pglX</i> - | AORP41  | 887.94371 | 2 | 634.27468   | diNAcBac-HexNAc*2     | 1140.6048    | AKFGDFNITK       | 32           | 17 and 18 |
| ATCC 27374 <i>pglX</i> - | AORP23  | 703.87244 | 2 | 431.19004   | diNAcBac-HexNAc       | 975.5469     | SLKDINGTK        | 38           | 19 and 20 |
| ATCC 27374 <i>pglX</i> - | AORP23  | 805.42076 | 2 | 634.28668   | diNAcBac-HexNAc*2     | 975.5469     | SLKDINGTK        | 46           | 21 and 22 |
| ATCC 27374 <i>pglJ</i> - | AORP23  | 805.4191  | 2 | 634.28623   | diNAcBac-HexNAc*2     | 975.5469     | SLKDINGTK        | -            | 23        |
| ATCC 27374 <i>pglJ</i> - | AORP23  | 703.87244 |   | 432.19004   | diNAcBac-HexNAc       | 975.5469     | SLKDINGTK        | -            | 24        |
| ATCC 27374 <i>pglJ</i> - | AORP23  | 602.33712 | 2 | 228.1194    | diNAcBac              | 975.5469     | SLKDINGTK        | 32           | 25        |
| ATCC 27374 <i>pglJ</i> - | AORP23  | 789.40857 | 3 | 634.28623   | diNAcBac-HexNAc*2     | 1731.9236    | ANNDTIKSLKDINGTK | -            | 26        |
| ATCC 27374 <i>pglJ</i> - | AORP23  | 722.04317 | 3 | 432.19004   | diNAcBac-HexNAc       | 1731.9236    | ANNDTIKSLKDINGTK | -            | 27        |
| ATCC 27374 <i>pglJ</i> - | AORP23  | 490.76609 | 4 | 228.11694   | diNAcBac              | 1731.9236    | ANNDTIKSLKDINGTK | 26           | 28        |

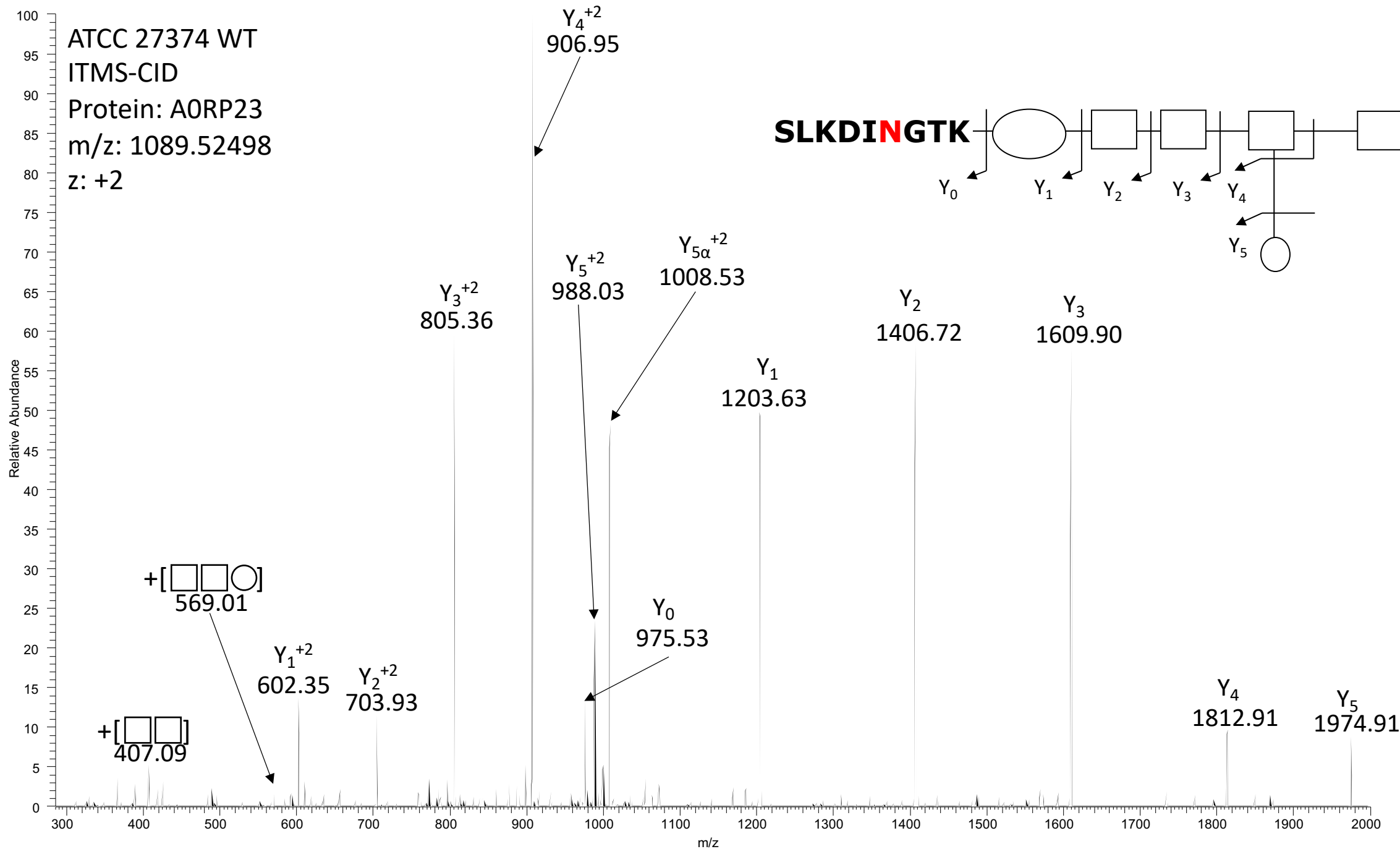
For each glycopeptide derived from either the *Cff* wild-type (WT), the *pglX* mutant (*pglX*-) or the *pglJ* mutant (*pglJ*-), the protein ID, parent mass, glycan mass, glycan composition, peptide mass sequence, and MASCOT score (if available) are shown. All annotated spectra (page numbers are indicated) are included below.

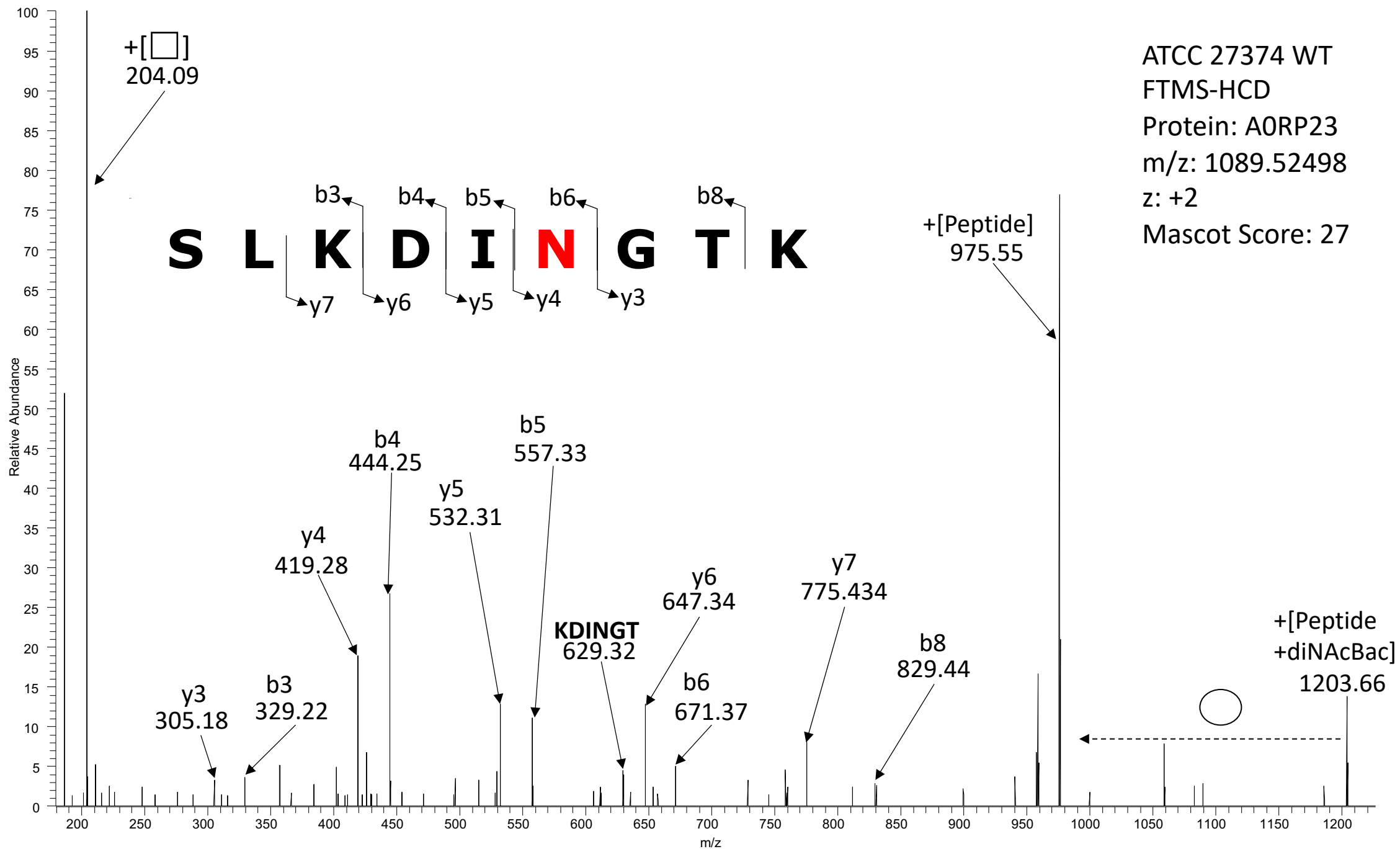


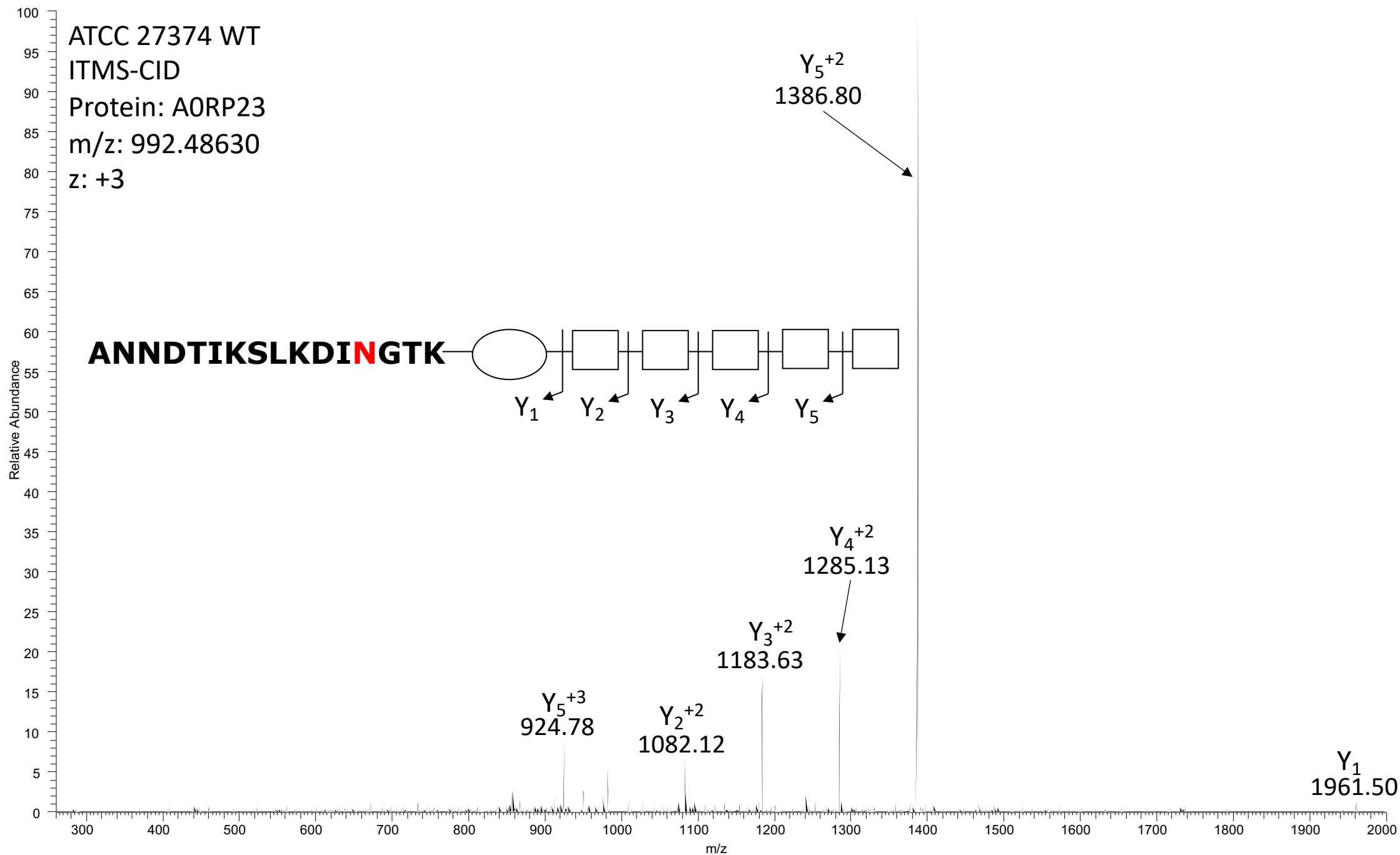




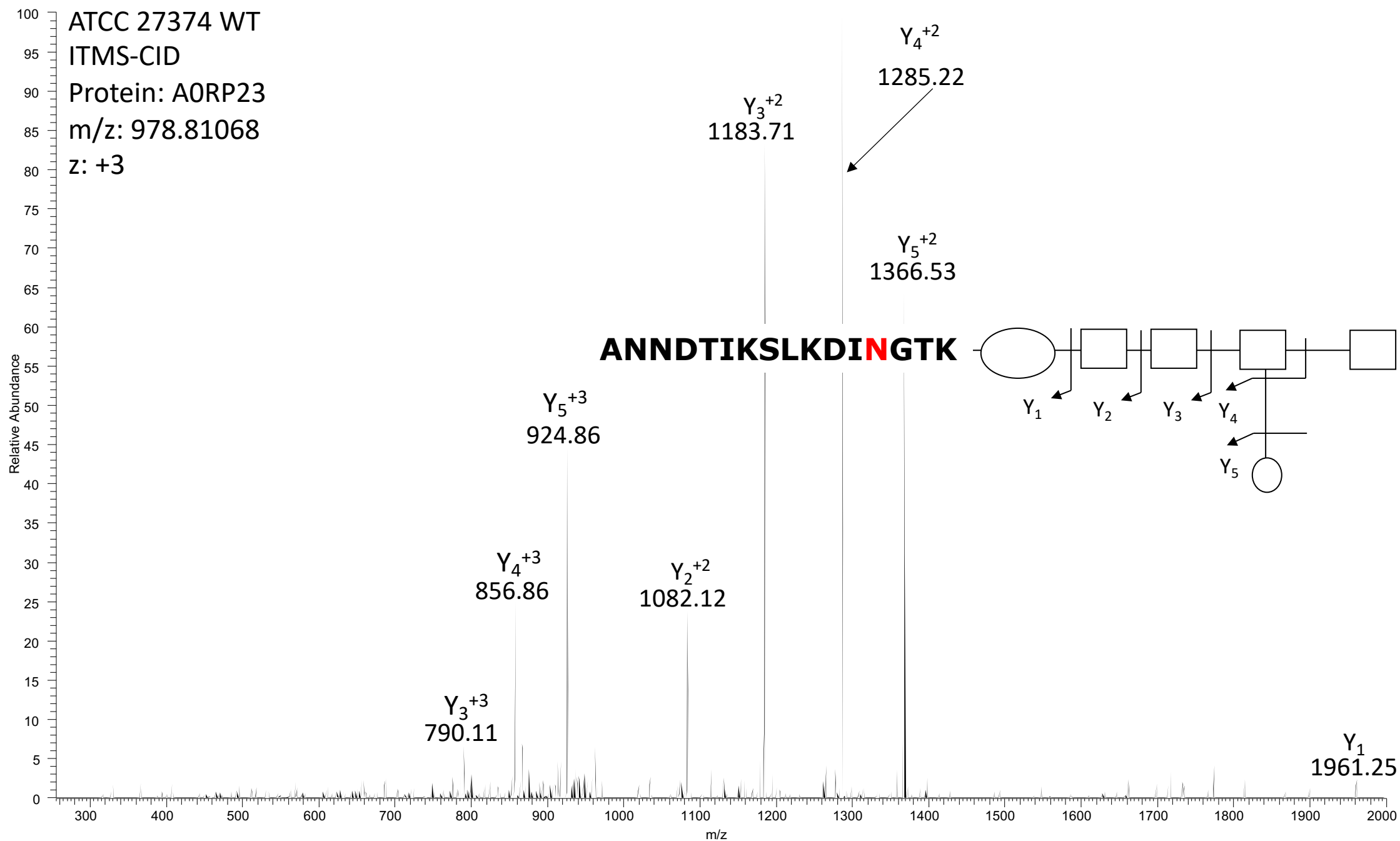


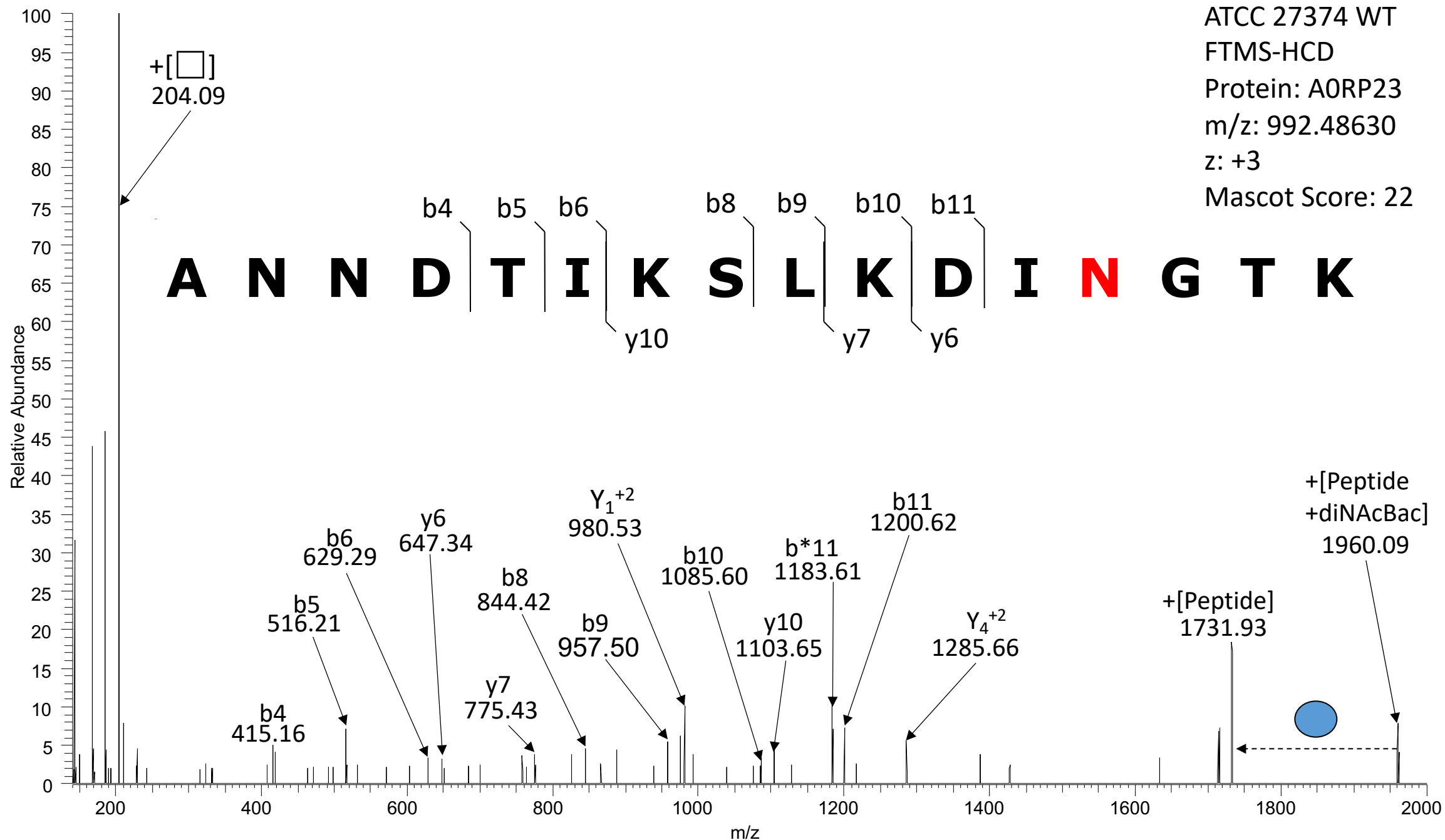


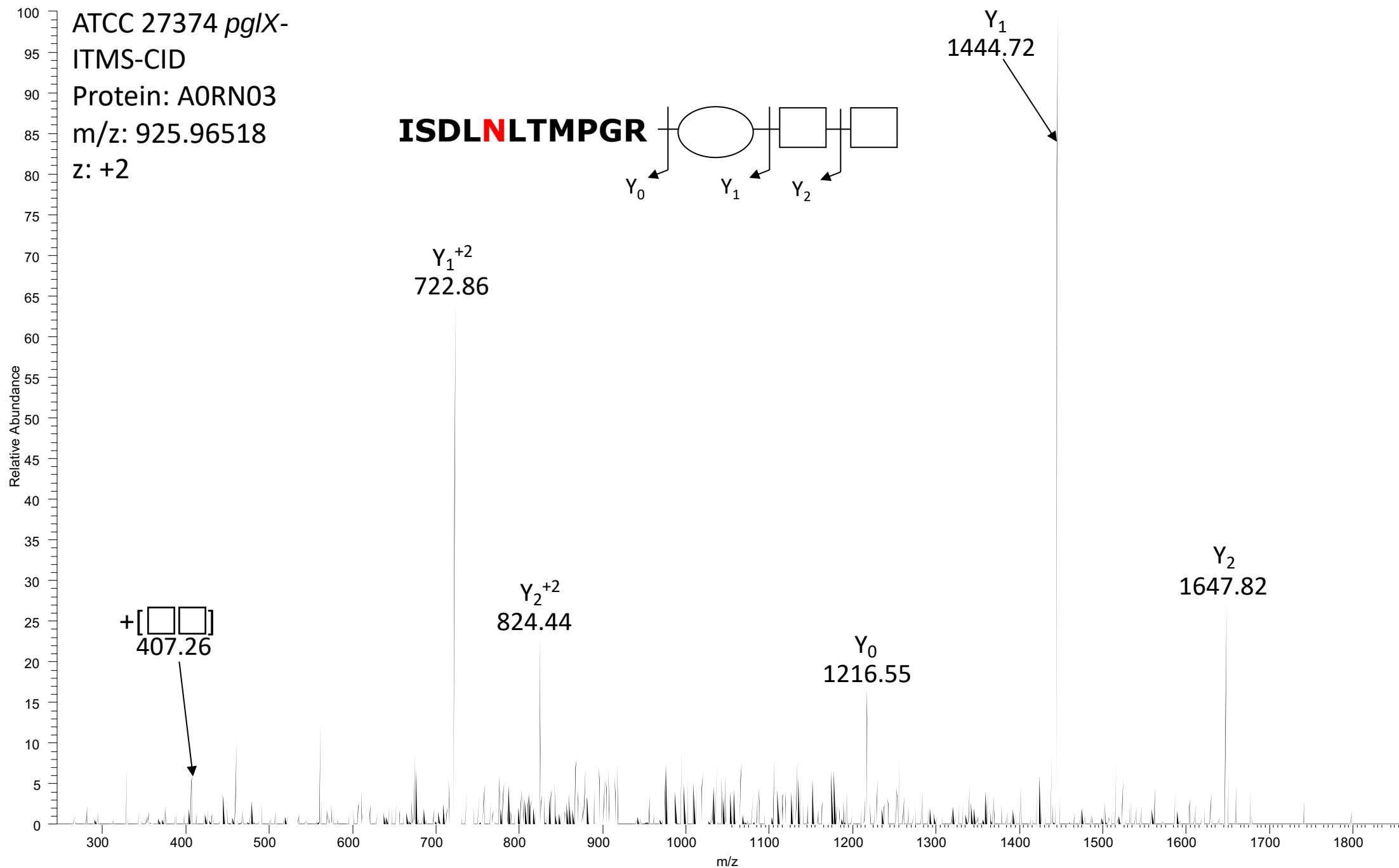


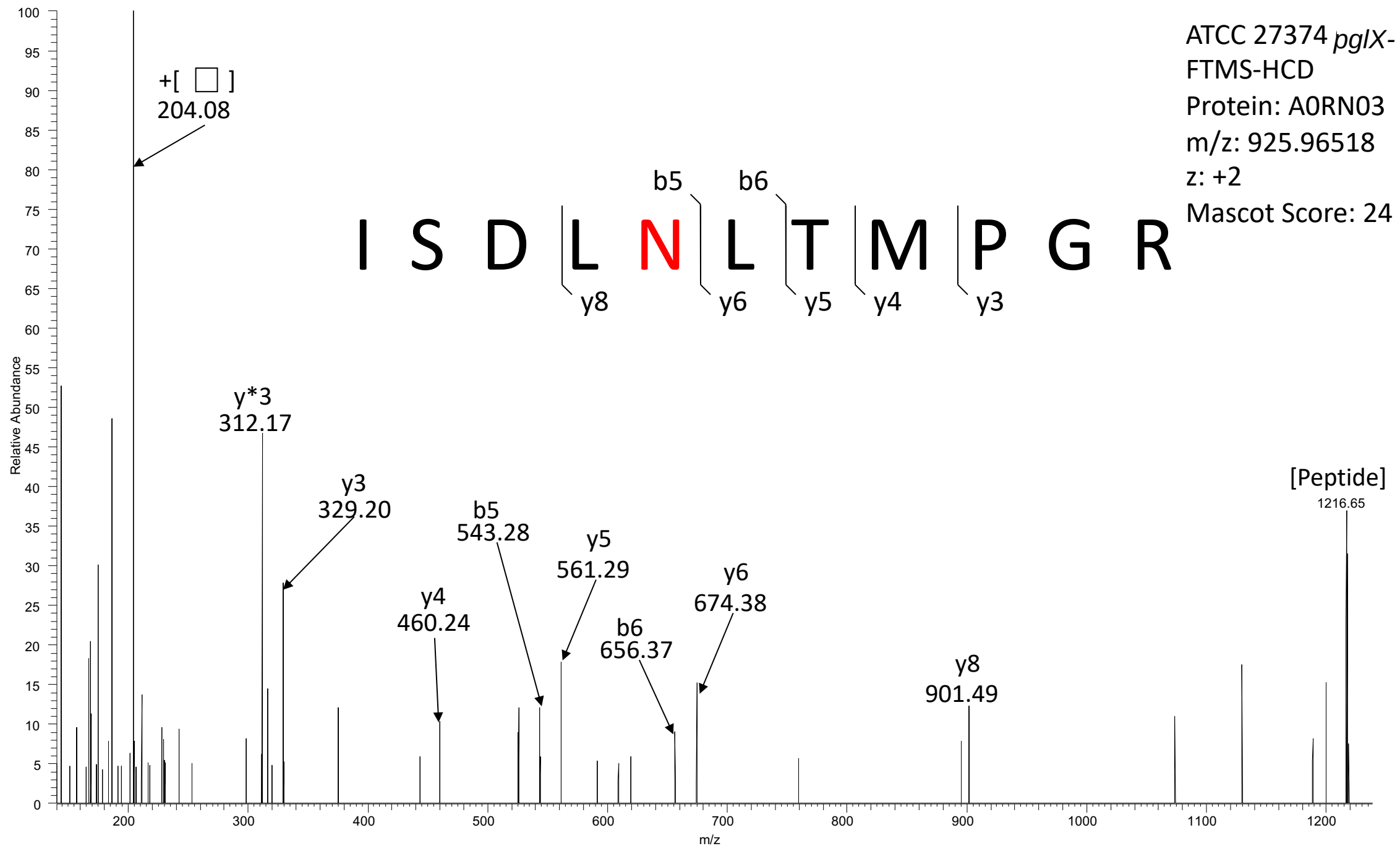


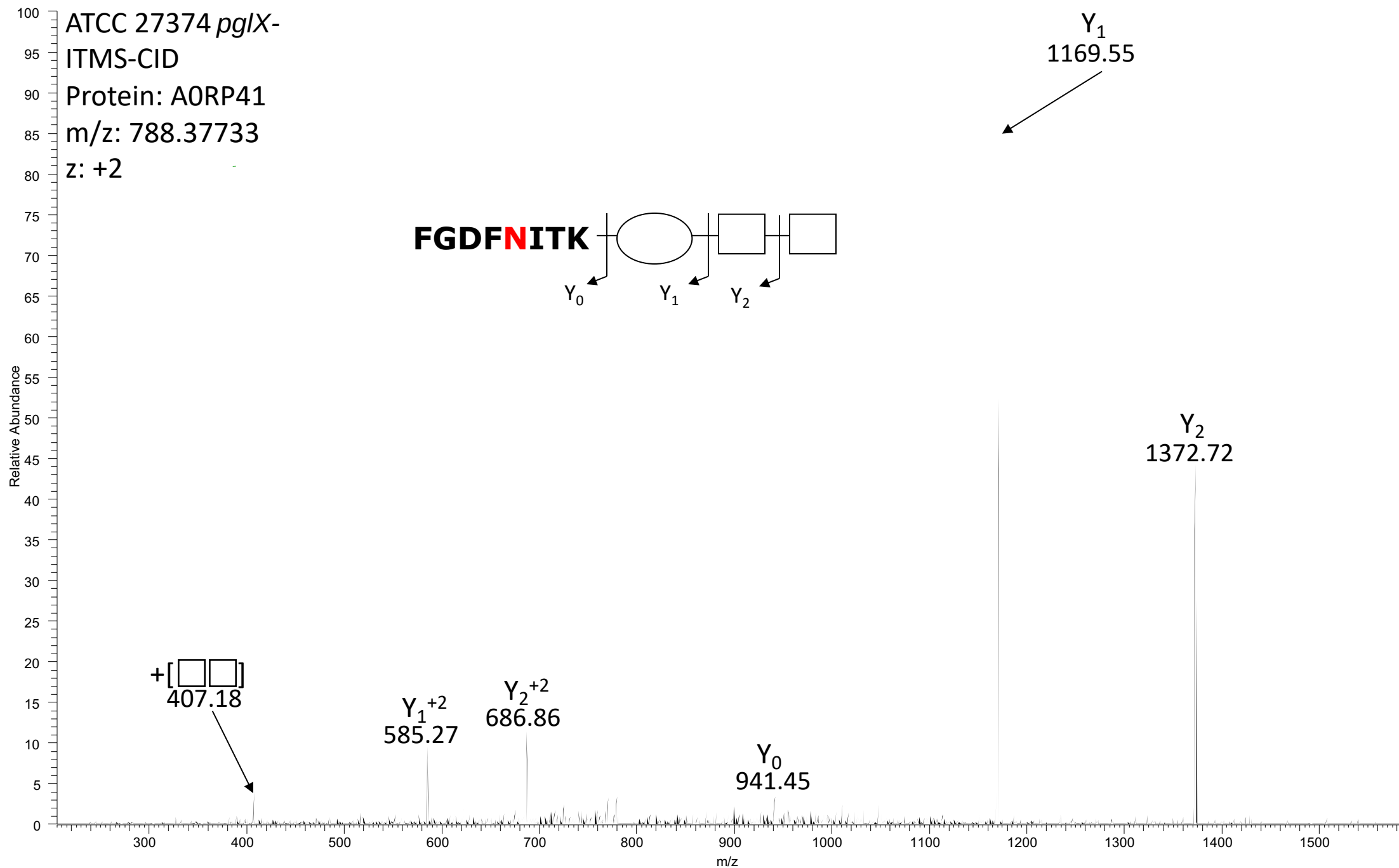




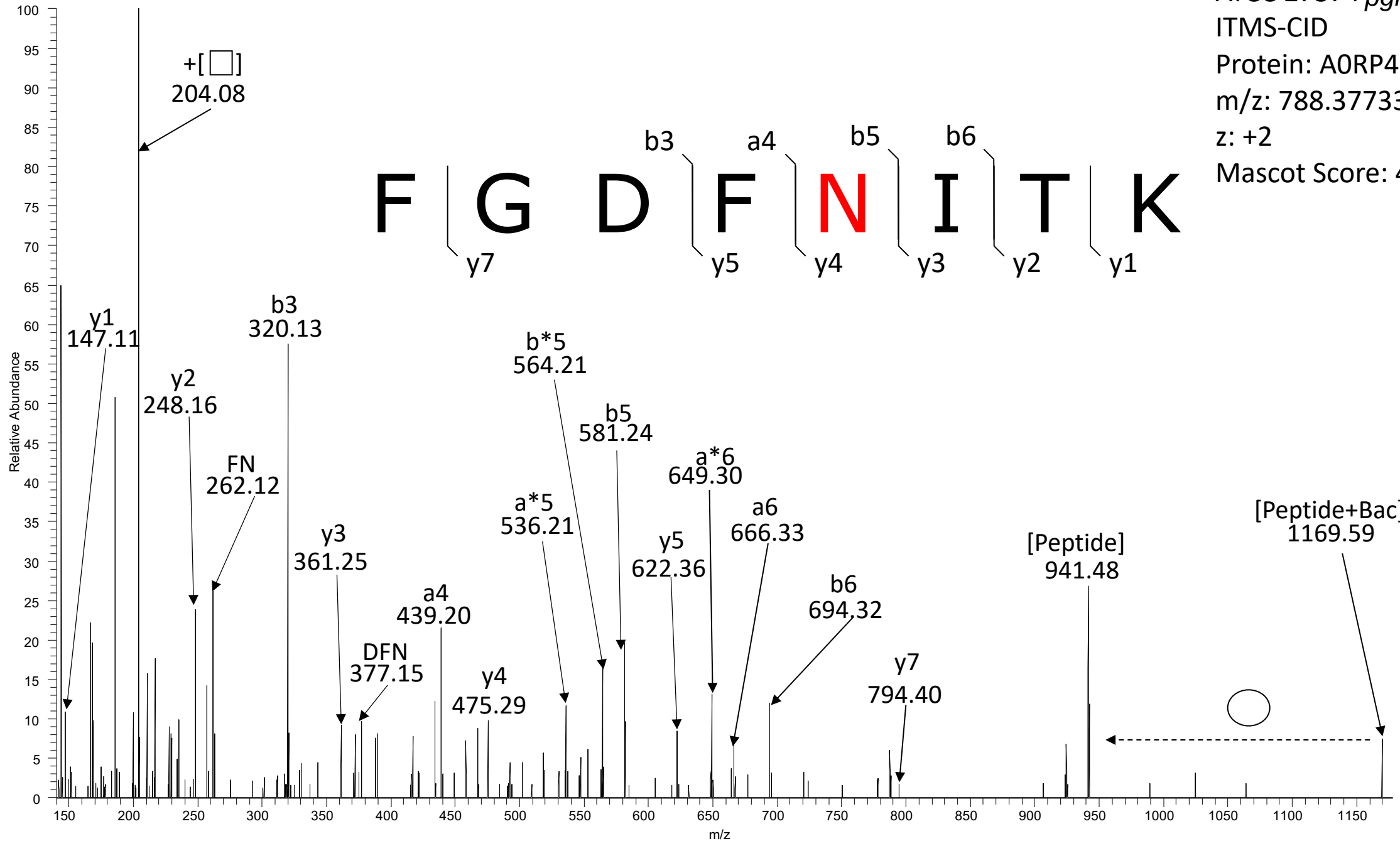


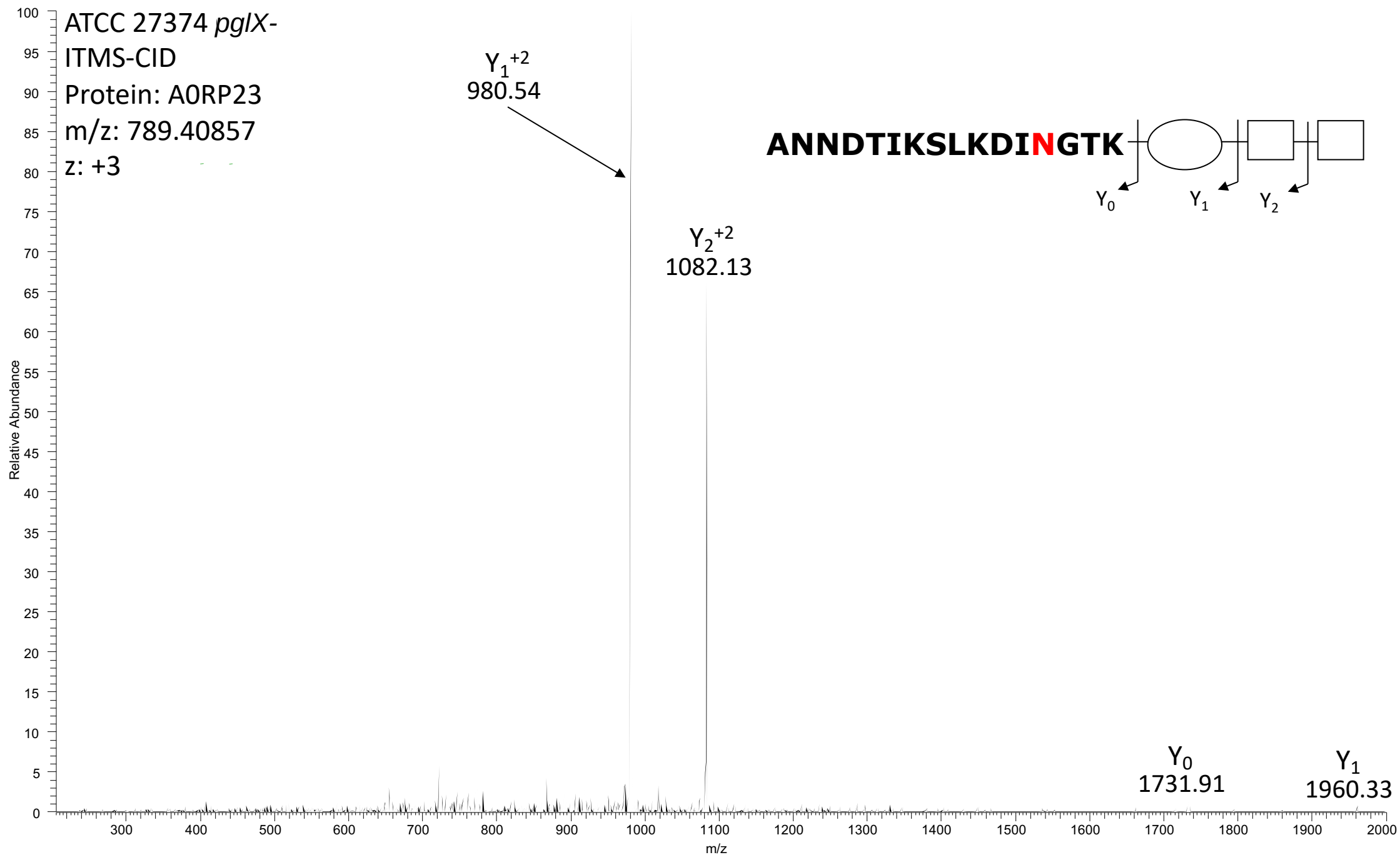


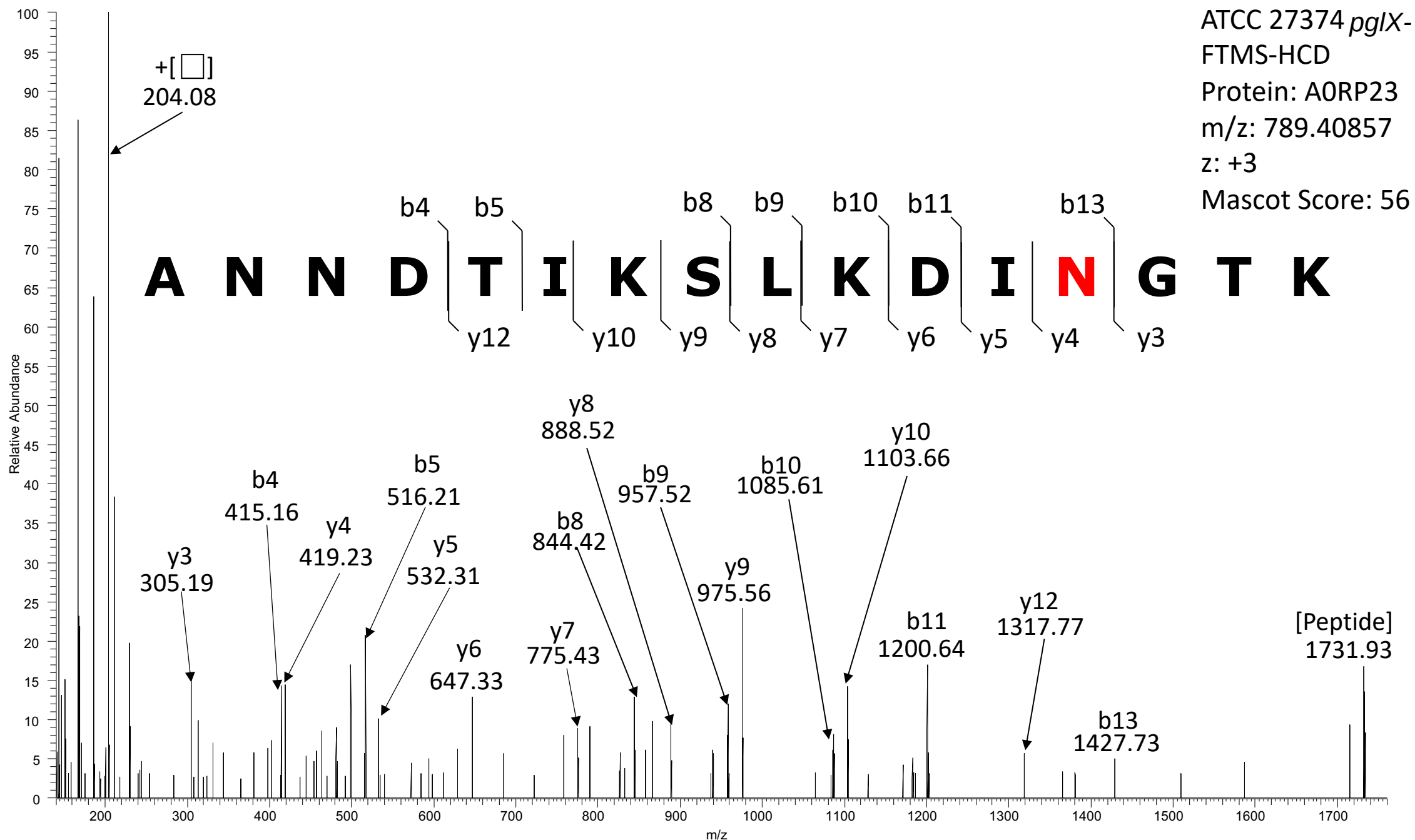




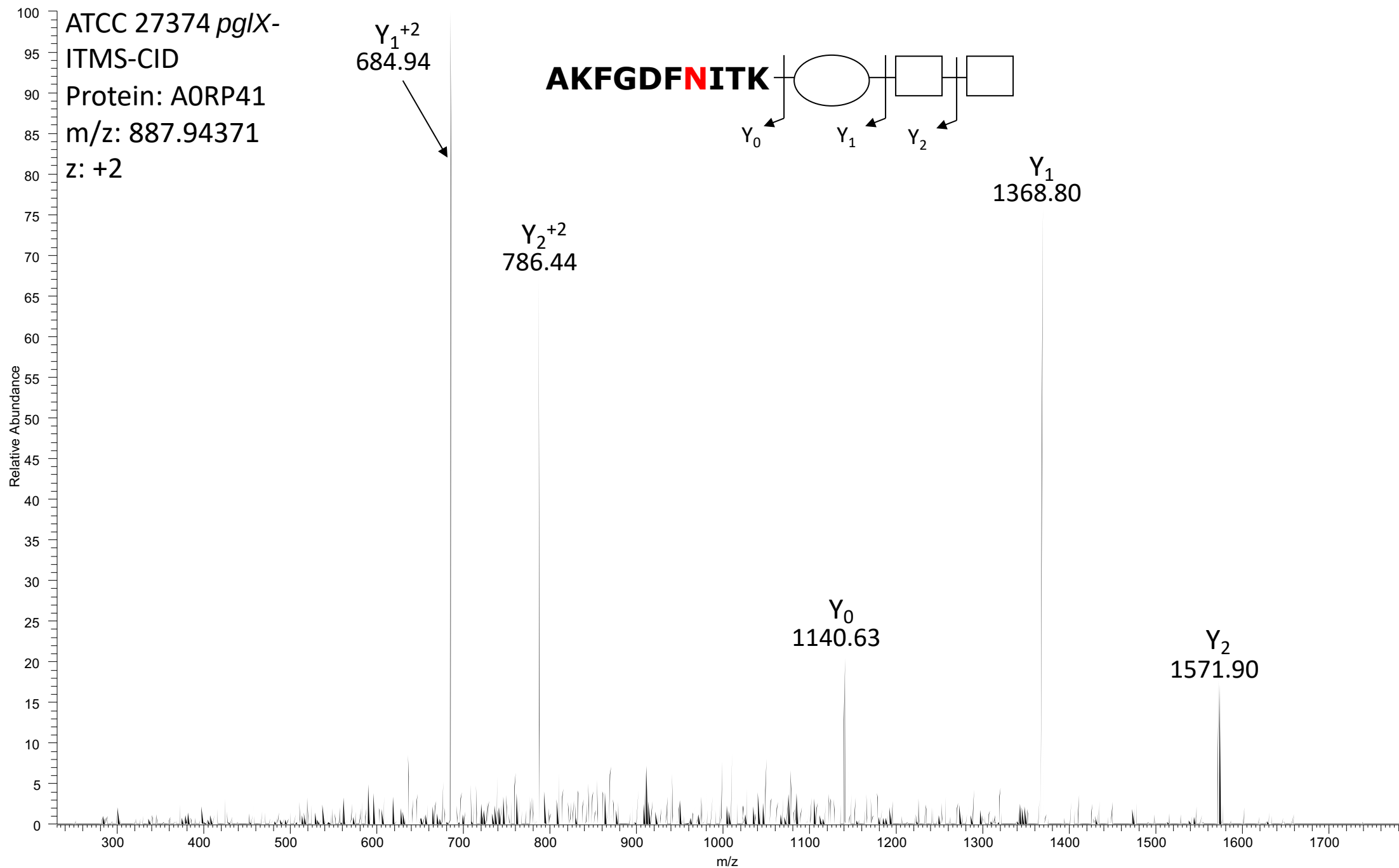
ATCC 27374 *pglX*- 14  
ITMS-CID  
Protein: AORP41  
m/z: 788.37733  
z: +2  
Mascot Score: 46











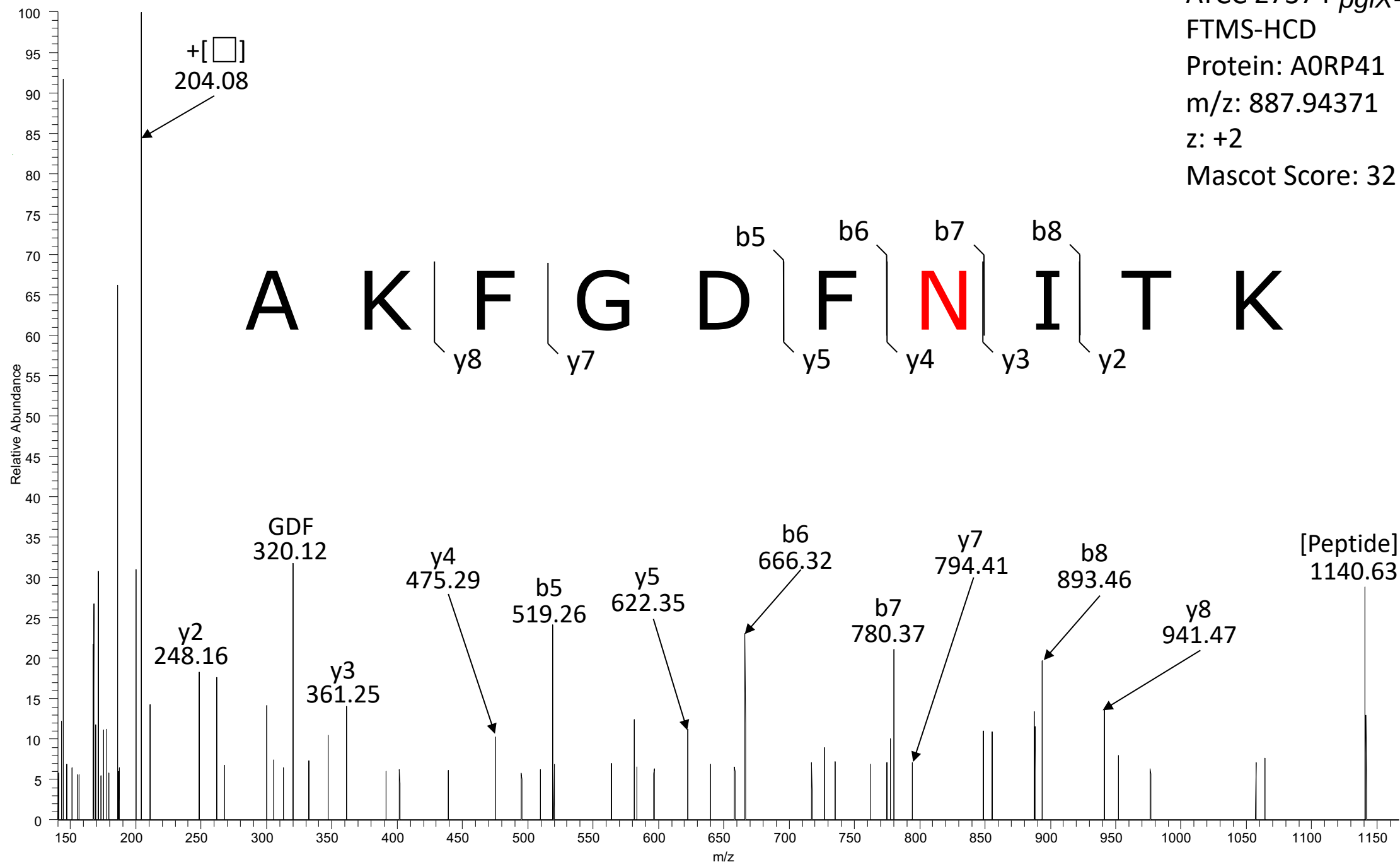
FTMS-HCD

Protein: A0RP41

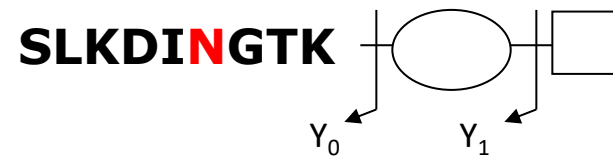
m/z: 887.94371

z: +2

Mascot Score: 32



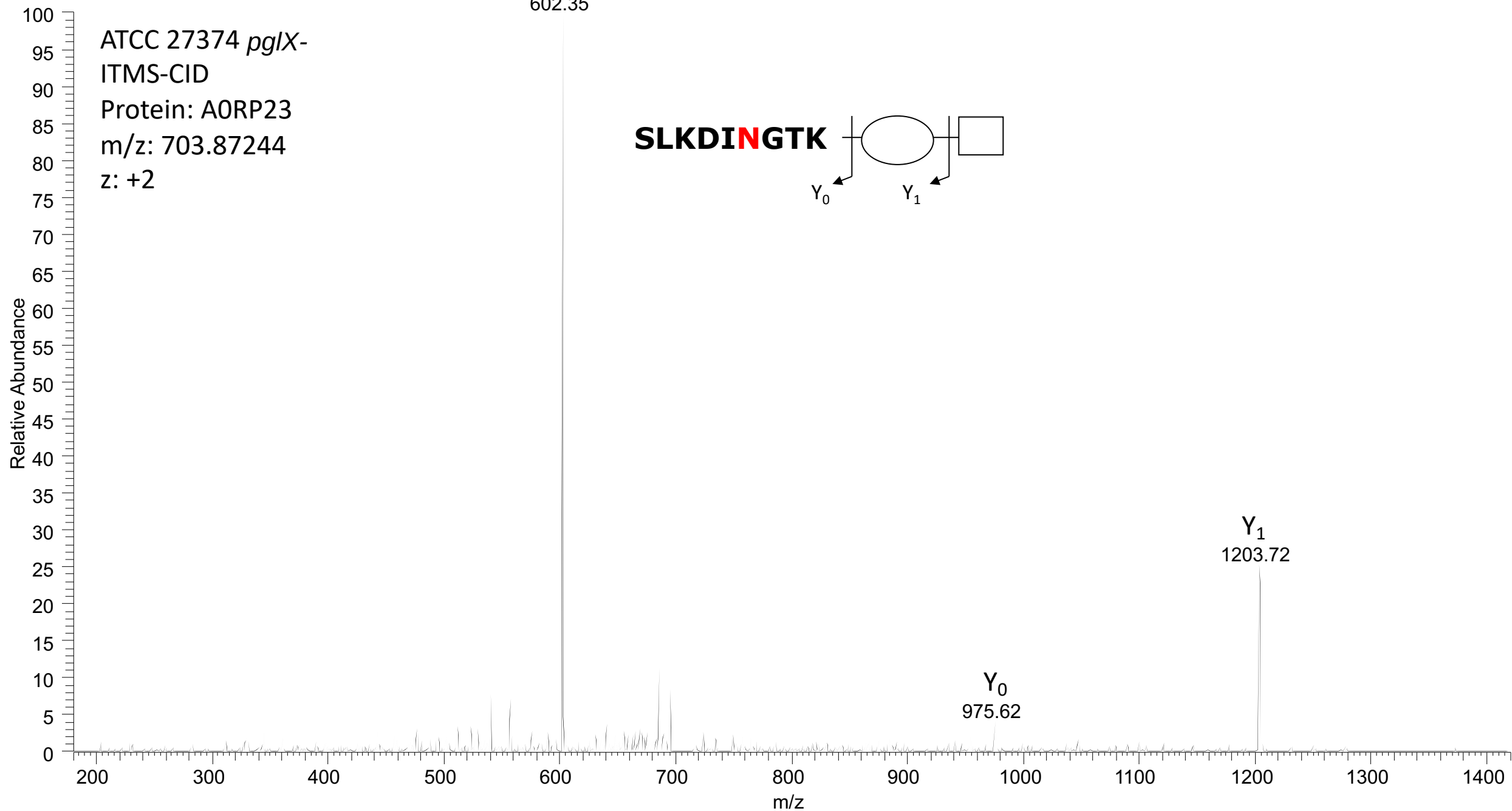
ATCC 27374 *pglX*-  
ITMS-CID  
Protein: A0RP23  
m/z: 703.87244  
z: +2



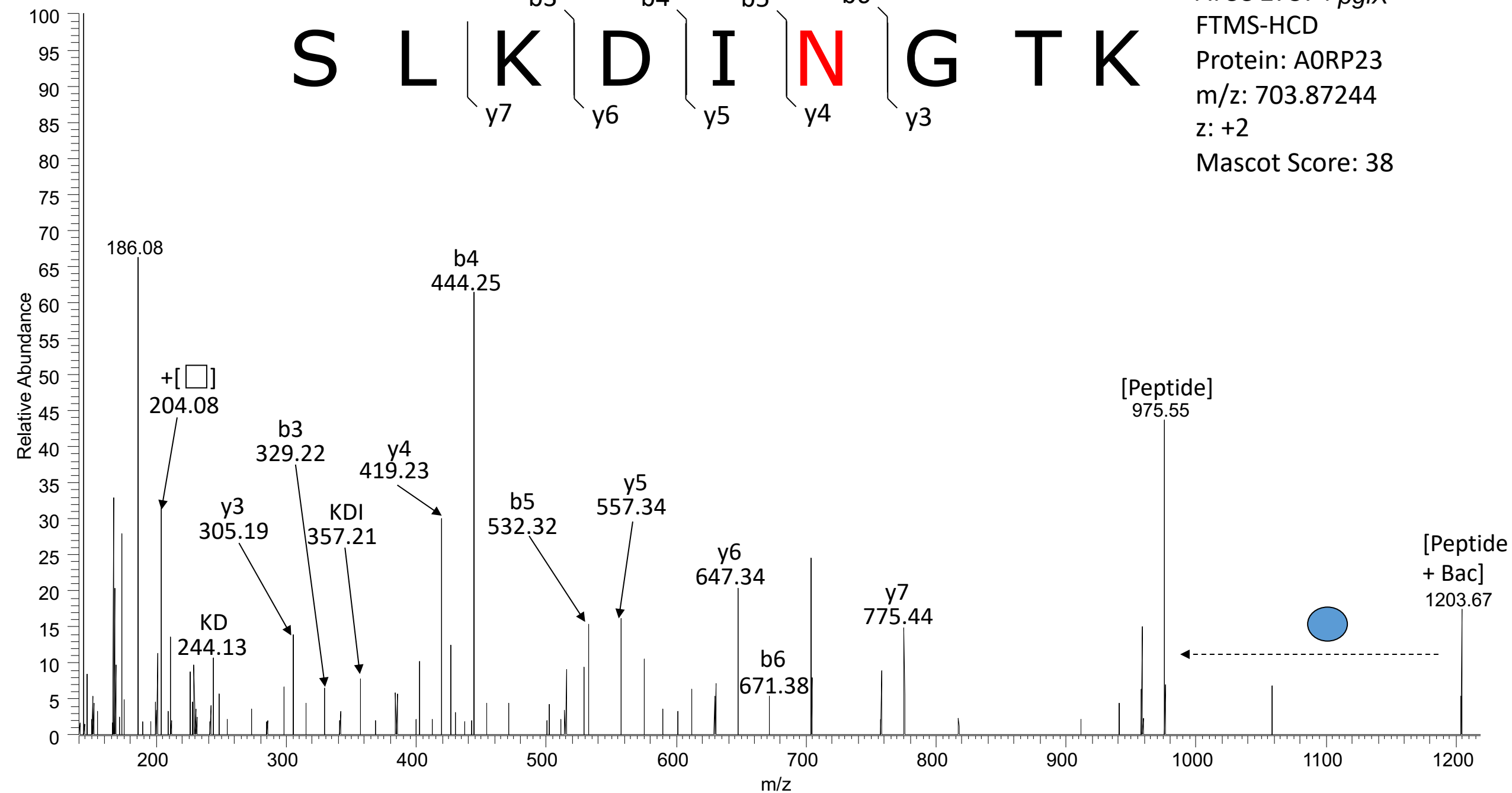
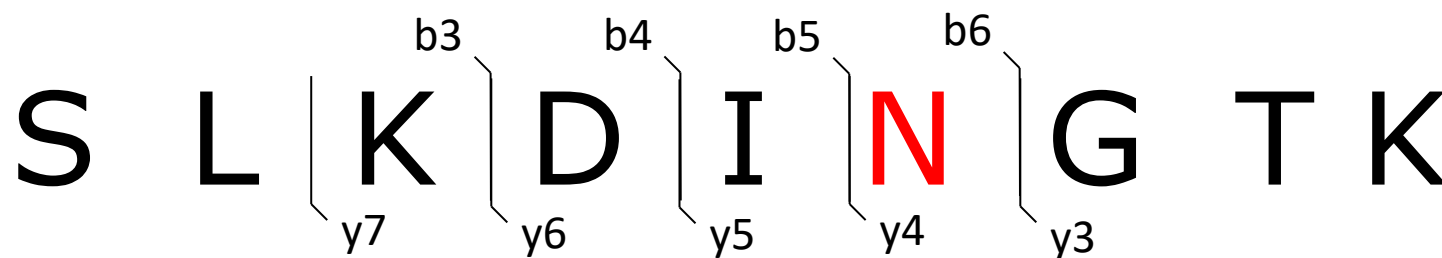
Y<sub>1</sub><sup>+2</sup>  
602.35

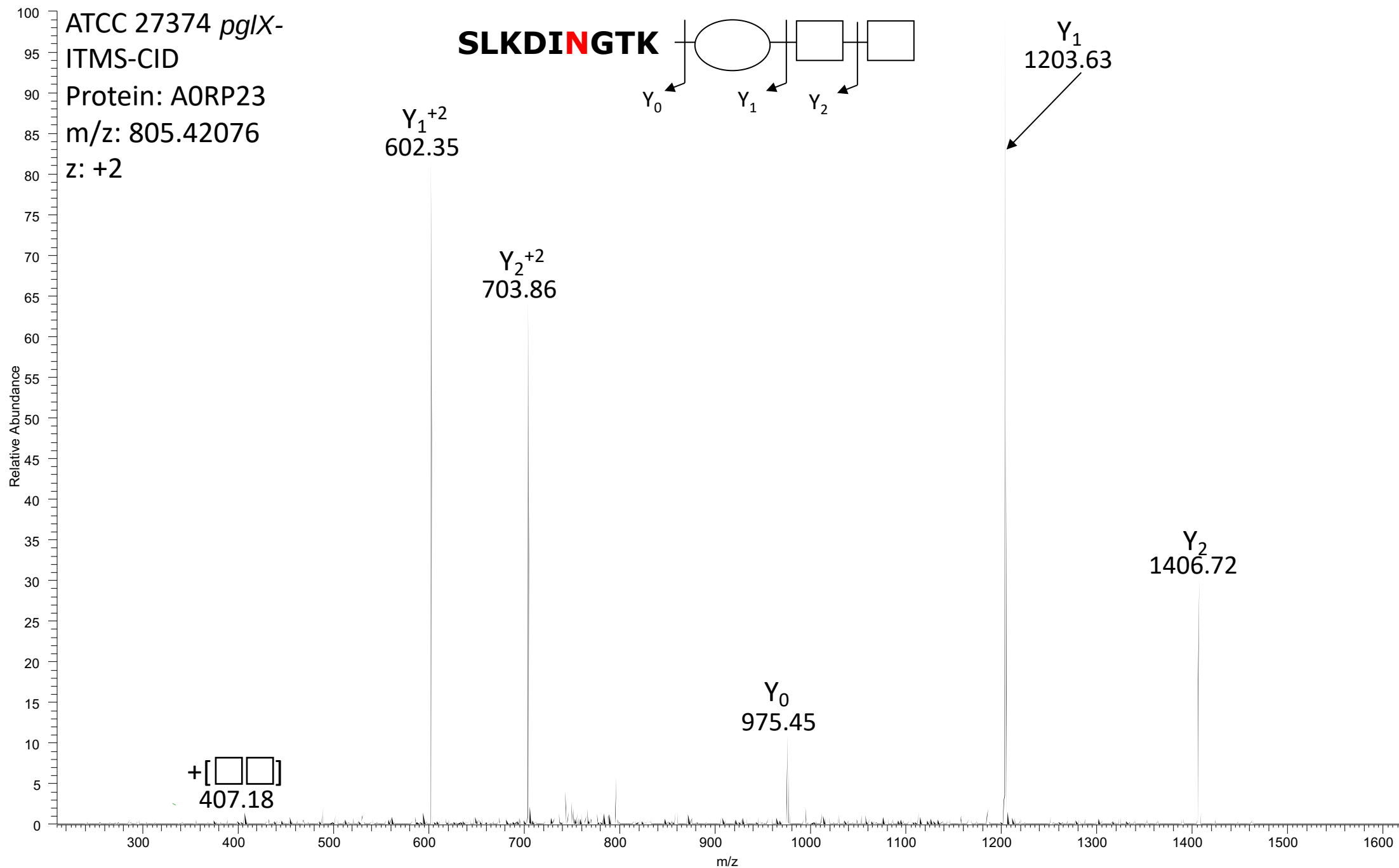
Y<sub>0</sub>  
975.62

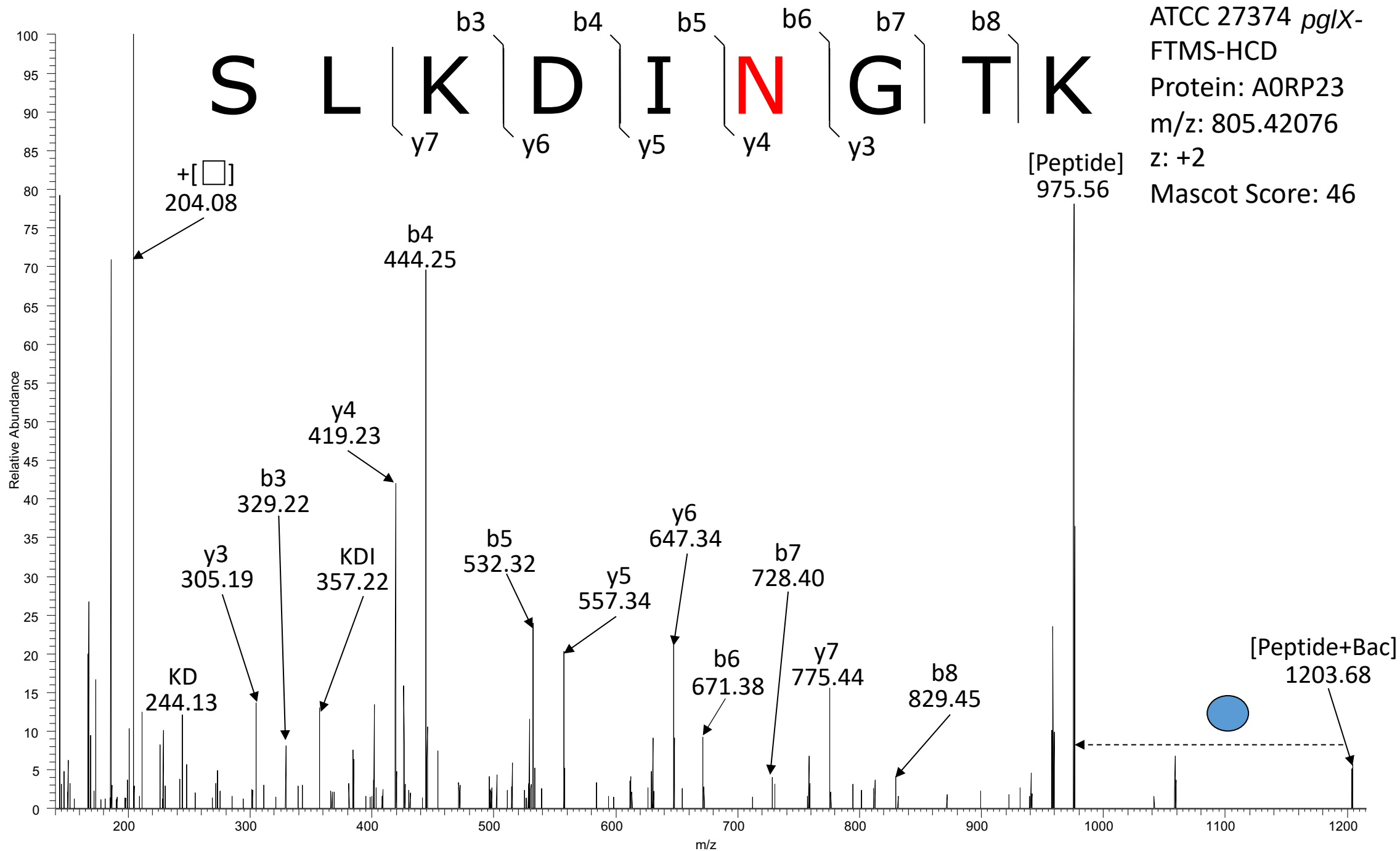
Y<sub>1</sub>  
1203.72



ATCC 27374 *pglX*-  
FTMS-HCD  
Protein: A0RP23  
m/z: 703.87244  
z: +2  
Mascot Score: 38







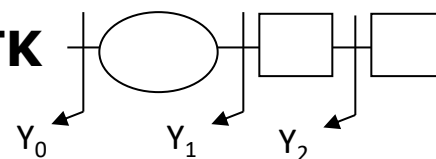
ATCC 27374 *pglY*-  
ITMS-CID  
Protein: A0RP23  
m/z: 805.41455  
z: +2

Relative Abundance

$Y_1^{+2}$   
602.27

$Y_2^{+2}$   
703.86

**SLKDINGTK**



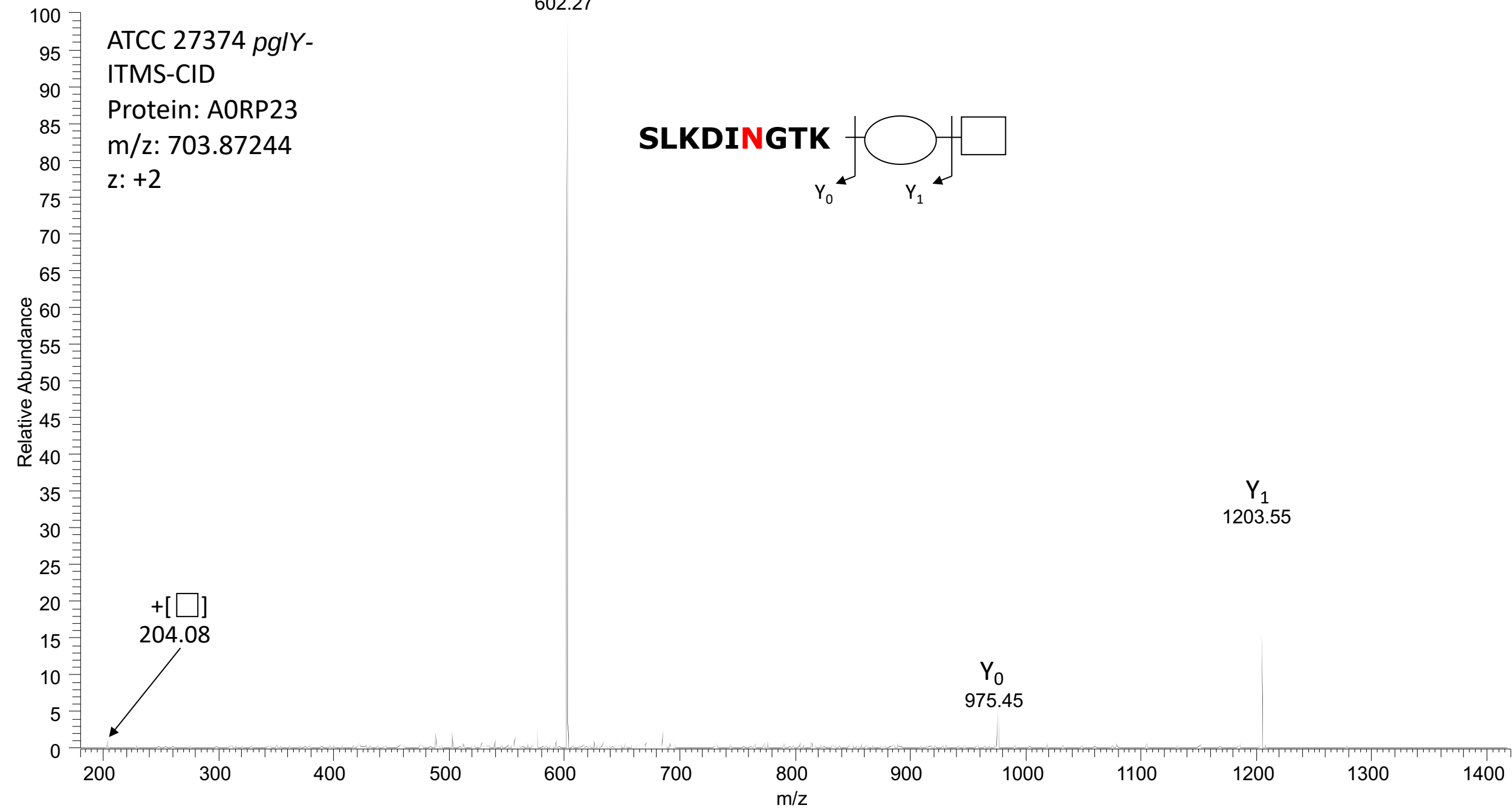
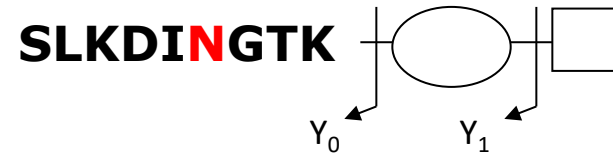
$Y_0$   
975.45

$Y_1$   
1203.63

$Y_2$   
1406.64

m/z

ATCC 27374 *pglY*-  
ITMS-CID  
Protein: A0RP23  
m/z: 703.87244  
z: +2





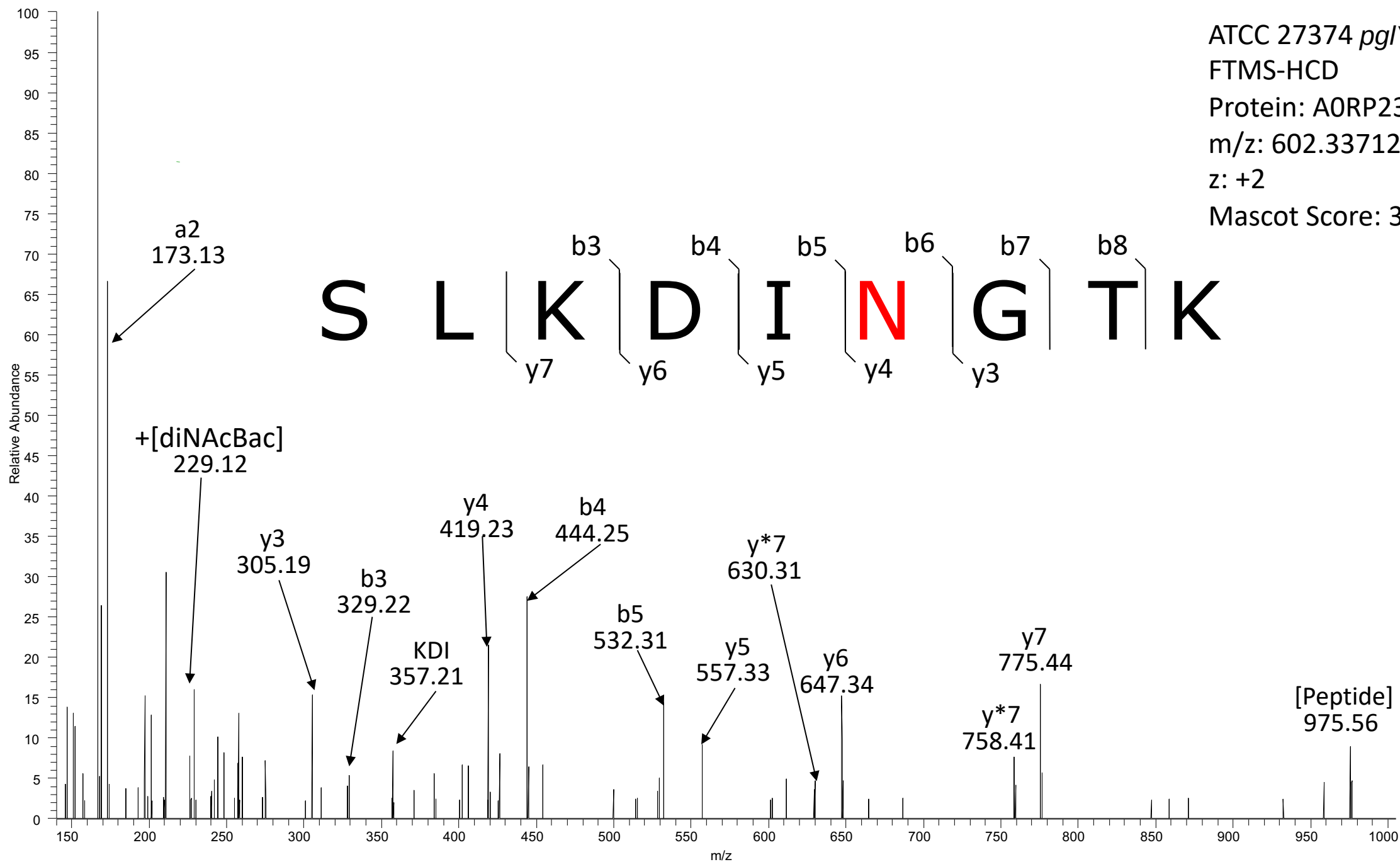
ATCC 27374 *pglY*-  
FTMS-HCD

Protein: AORP23

m/z: 602.33712

z: +2

Mascot Score: 32

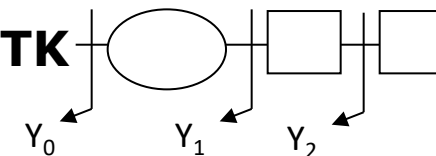


ATCC 27374 *pglY*-  
ITMS-CID  
Protein: A0RP23  
 $m/z$ : 789.40860  
 $z$ : +3

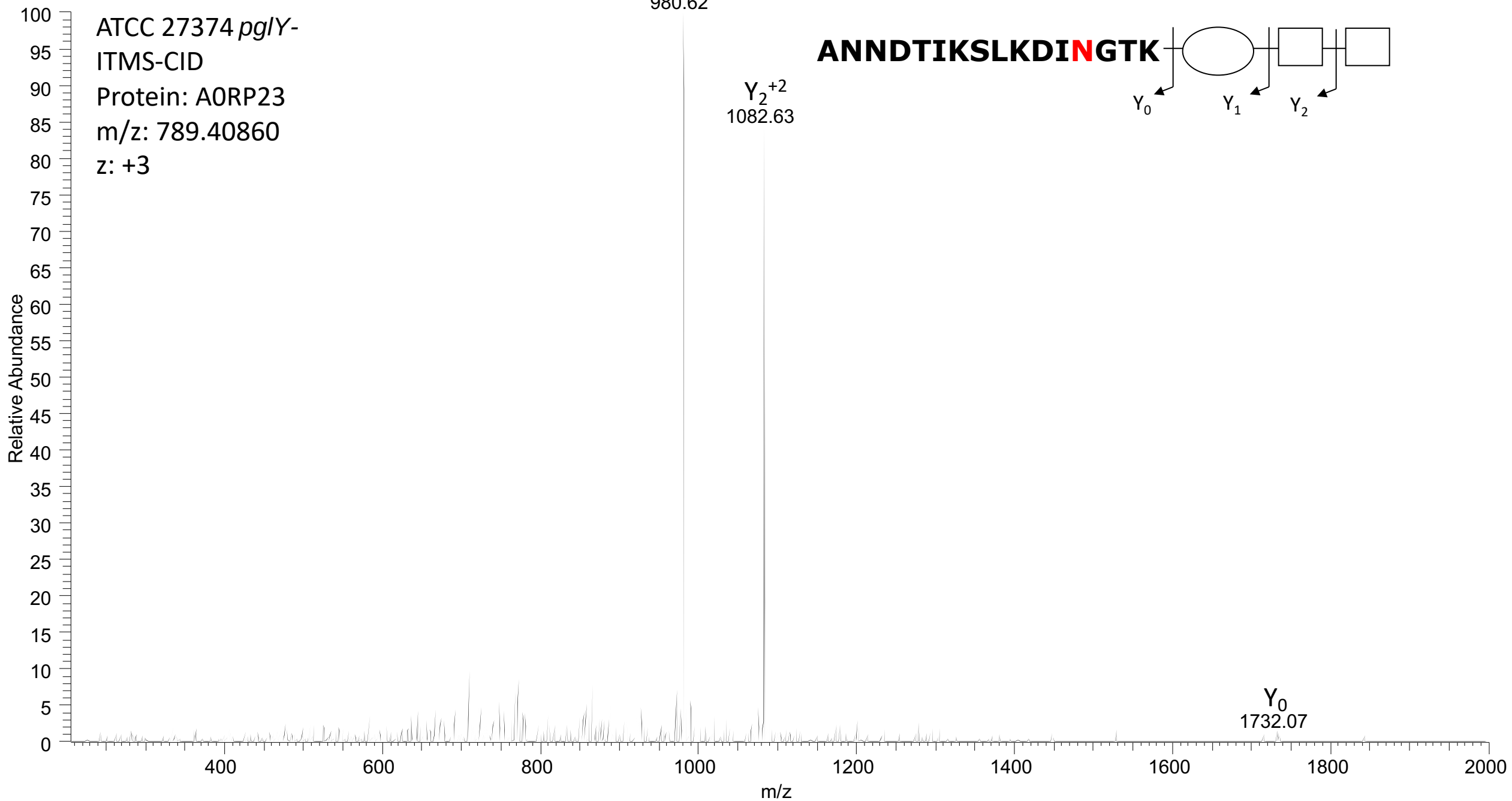
$Y_1^{+2}$   
980.62

$Y_2^{+2}$   
1082.63

**ANNDTIKSLKDI****NGTK**



$Y_0$   
1732.07



ATCC 27374 *pglY*-  
ITMS-CID  
Protein: A0RP23  
 $m/z$ : 722.04317  
 $z$ : +3

$Y_1^{+2}$   
980.54

$Y_1^{+3}$   
654.02

$Y_0$   
1731.91



ATCC 27374 *pglY*-  
FTMS-HCD

Protein: AORP23

m/z: 490.76609

z: +4

Mascot Score: 26

