SUPPLEMENTAL DATA

Supplemental Table I. Sequence and annealing temperatures of the primers used in this work.

Supplemental Figure 1. Sequence of *φAtxyl2* in ecotypes Wassilewskija and Columbia. Translations in the three reading frames of potential Wassilewskija coding regions are shown between the aligned sequences. The conserved frame is highlighted in grey. Inactivating mutations or insertions in both ecotypes are shown in red, while differences between ecotypes are highlighted in black. Reading frames created by insertions and leading to premature stop codons are also highlighted in black.

Supplemental Figure 2. MALDI-TOF/TOF spectra of oligosaccharides accumulated in *Atxyl1-2* growth medium and reference samples. A. MALDI-TOF/TOF spectrum of commercial XXXG. Structure is shown in upper left corner. Only fragments resulting from breaks of glycosidic bonds have been labeled with their size and losses (Pent for pentose and Hex for hexose). Fragmentation of glycosidic bonds results in Y or B ions, depending if the charge is retained at the reducing or nonreducing end (Domon and Costello, 1988). The expected sizes of these fragments are indicated in the structure. Other fragments are combinations of both kinds of fragmentation. B. MALDI-TOF/TOF spectrum of the peak at *m/z* 1085 detected in liquid growth media of 7-day-old *Atxyl1-2* seedlings. C. Calibration curve of XXXG. Maltoheptaose at 50 µM final concentration was added to triplicated samples of each calibration point and the ratio of the peak areas at m/z 1085 (XXXG) and 1175 (maltoheptaose) was calculated. D. MALDI-TOF/TOF spectrum of commercial XLLG. Structure is shown in upper left corner. Triangles mark Y and B ions resulting from fragmentation between the central glucose residues. E. MALDI-TOF/TOF spectrum of the peak at *m/z* 1247 detected in liquid growth media of 7-day-old *Atxyl1-2* seedlings. Expected ions resulting from fragmentation between the central glucose residues are shown for both XXLG and XLXG. The 659 ion is much more abundant than the 773 ion (grey triangles) suggesting that XLXG is, at most, a minor component. It might not even be present since several double and triple fragmentations can produce 773 ions from XXLG (one is shown by dotted lines). This type of fragmentation is represented by the 935 peak in the XLLG spectrum.

Supplemental Figure 3. MALDI-TOF/TOF spectrum of the peak at *m/z* 1247 in enzyme-accessible xyloglucan from *Atxyl1-2* stems. Ions resulting from fragmentation of glycosidic bonds are labeled with their size and losses. Expected ions resulting from fragmentation between the central glucose residues are shown for both XXLG and XLXG. The 659 ion is much more abundant than the 773 ion (grey triangles) suggesting that XLXG is, at most, a minor component.

Supplemental Figure 4. Silique development in *Atxyl1-1*. A. Silique length from anthesis to 10 days after. Error bars are standard deviations. Two asterisks indicate non-significant differences, one asterisk is for differences significant with a 95% confidence, all other differences are significant with a 99.5% confidence. B. Silique width in *Atxyl1-2*. Data are from the same siliques as in A and symbols are used in the same way.

REFERENCES

Domon B, Costello CE (1988) A systematic nomenclature for carbohydrate fragmentations in FAB-MS/MS spectra of glycoconjugates. Glycoconj J **5**: 397-409

Supplemental Table I. Sequence and annealing temperatures of the primers used in this work.

Purpose	Name	Sequence	Annealing
Screening for *Atxyl1-1*	MUT1	TTTCTCCATATTGACCATCATACTCATTG	65ºC
	JL-202	CATTTTATAATAACGCTGCGGACATCTAC	
Absence of insertion *Atxyl1-1*	XYL1-1L	TCTTGGACACTACTGCTTGAGTCAT	58ºC
	XYL1-1R	TGGGATGATCCTCCTTACAAGATTA	
Presence of insertion *Atxyl1-1*	XYL1-1R	TGGGATGATCCTCCTTACAAGATTA	58ºC
	WIS-LB	TTTATAATAACGCTGCGGACATCTAC	
Absence of insertion *Atxyl1-2*	XYL1-2L	TTTATGGTTCGCATCCGATGTA	58ºC
	XYL1-2R	CAAGAACCGTGGTCCATGTCTA	
Presence of insertion *Atxyl1-2*	XYL1-2L	TTTATGGTTCGCATCCGATGTA	58ºC
	GABI-LB	CCATATTGACCATCATACTCATTGC	
Cloning AtXYL*2*	XYL2L1	TGCTAAACAAAATCAATGGCTTC	58ºC
	XYL2R1	TCTCTCTCTTTTGGGGACAATTT	
Promoter *AtXYL1*	PRXYL1L1	GGGGACAAGTTTGTACAAAAAAGCAGGCTGATTT TAACGGCCGTATGTGTG	58ºC for 10 cycles, 68ºC for 25
	PRXYL1R1	GGGGACCACTTTGTACAAGAAAGCTGGGTGGAG AGAGAGATGGAGGGGTTT	

Supplemental Figure1

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Wassilewskija    caATGGCTTCTTGTCTTTCTCTTCTTGTTGCTATTATCCTCTGCTTCTCATCTCTCCAGTGTTCCAACGCCATCGGC
                    G  F  L  S  F  S  S  C  C  Y  Y  P  L  L  L  I  S  P  V  F  Q  R  H  R  Q
                   W  L  L  V  F  L  F  L  L  L  S  S  A  S  H  L  S  S  V  P  T  P  S  A
                  M  A  S  C  L  S  L  L  V  A  I  I  L  C  F  S  S  L  Q  C  S  N  A  I  G
Columbia         caATGGCTTCTTGTCTTTCTCTTCTTGTTGCTATTATCCTCTGCTTCTCATCTCTCCAGTGTTCCAACGCCATCGGC

  91 AAAGGCTACCGTCTGATCTCCATGGAGAAGTCTCCCGATGATGGCAGCTTCATTGGCTATCTCCAAGTGAAGCAGAGTAACAAAATCTAC
       R  L  P  S  D  L  H  G  E  V  S  R  *  W  Q  L  H  W  L  S  P  S  E  A  E  *  Q  N  L  R
      K  A  T  V  *  S  P  W  R  S  L  P  M  M  A  A  S  L  A  I  S  K  *  S  R  V  T  K  S  T
     K  G  Y  R  L  I  S  M  E  K  S  P  D  D  G  S  F  I  G  Y  L  Q  V  K  Q  S  N  K  I  Y
     AAAGGCTACCGTCTGATCTCCATGGAGAAGTCTCCCGATGATGGCAGCTTCATTGGCTATCTCCAAGTGAAGCAGAGTAACAAAATCTAC

 181 GGCTCTGATATAACCATCCTTCGACTCTTCATCAAgtacagagtttttaatcctctgcttcgcagcccacattatccatccattcctaac
       L  *  Y  N  H  P  S  T  L  H  Q
      A  L  I  *  P  S  F  D  S  S  S  S
     G  S  D  I  T  I  L  R  L  F  I  K
     GGCTCTGATATAACCATCCTTCGACTCTTCATCAActacagagtttttaatcctctgcttcgcagcccacattatccatccattcctaac

 271 cgttttttttttgtagGCACGAGACGGATCATCGCCTCCGCGTTCACATCACAGACGCAAAGAAACAACGATGGGAAGTTCCGTACAATC
                       H  E  T  D  H  R  L  R  V  H  I  T  D  A  K  K  Q  R  W  E  V  P  Y  N  L
                      A  R  D  G  S  S  P  P  R  S  H  H  R  R  K  E  T  T  M  G  S  S  V  Q  S
                        T  R  R  I  I  A  S  A  F  T  S  Q  T  Q  R  N  N  D  G  K  F  R  T  I
     cgttttttttttgtagGCACGAGACGGATCATCGCCTTCGCGTTCACATTACAGACGCAAAGAAACAACGATGGGAAGTTCCGTACAATC

 361 TCCTCCGCCGGGAACAACCACCGAATGTAATCGGAAAATCAAGAAAATCTCCGGTTACGGTACAAGAAATATCCGGACGTGAGCTGATTT
       L  R  R  E  Q  P  P  N  V  I  G  K  S  R  K  S  P  V  T  V  Q  E  I  S  G  R  E  L  I  L
      P  P  P  G  T  T  T  E  C  N  R  K  I  K  K  I  S  G  Y  G  T  R  N  I  R  T  *  A  D  F
     S  S  A  G  N  N  H  R  M  *  S  E  N  Q  E  N  L  R  L  R  Y  K  K  Y  P  D  V  S  *  F
     TCCTCCGCCGGGAACAACCACCGAATGTAATCGGAAAATCAAGAAAATCTCCGGTTACGGTACAAGAAATATCCGGACCGGAGCTGATTT

 451 TAATCTTCACCGTATATCCTTTCAGCTTCGCCGTGAGAAGAAGATCCAACGGCGAGACGATTTTCAACACTAGTAGCTCCGATGAGTCAT
       I  F  T  V  Y  P  F  S  F  A  V  R  R  R  S  N  G  E  T  I  F  N  T  S  S  S  D  E  S  F
      N  L  H  R  I  S  F  Q  L  R  R  E  K  K  I  Q  R  R  D  D  F  Q  H  *  *  L  R  *  V  I
     *  S  S  P  Y  I  L  S  A  S  P  R  E  E  D  P  T  A  R  R  F  S  T  L  V  A  P  M  S  H
     TAATCTTCACCGTAGATCCTTTCAGCTTCGCCGTAAGAAGAAGATCCAACGGCGAGACGATTTTCAACACTAGTAGCTCCGATGAGTCAT

 541 TCTGGAGAGATGGTGTTCAAGGACCAGTACCTCGAGATCTCAACTTCTTTACCTAAAGACGCGTCTCTATACGGATTTGGTGAAAACTCT
       W  R  D  G  V  Q  G  P  V  P  R  D  L  N  F  F  T  *  R  R  V  S  I  R  I  W  *  K  L  S
      L  E  R  W  C  S  R  T  S  T  S  R  S  Q  L  L  Y  L  K  T  R  L  Y  T  D  L  V  K  T  L
     S  G  E  M  V  F  K  D  Q  Y  L  E  I  S  T  S  L  P  K  D  A  S  L  Y  G  F  G  E  N  S
     TC-GGAGAGATGGTGTTCAAGGACCAGTACCTCGAGATCTCAACTTCTTTACCTAAAGACGCGTCTCTATACGGATTTGGTGAAAACTCT

 631 CAAGCCAATGGAATCAAACTGGTTCCTAATGAGCCATACACTCTCTTCACTGAAGACGTCTCGGCGTTTAATCTCAACACTGATCTTTAC
       S  Q  W  N  Q  T  G  S  *  *  A  I  H  S  P  H  *  R  R  L  G  V  *  S  Q  H  *  S  L  R
      K  P  M  E  S  N  W  F  L  M  S  H  T  L  S  S  L  K  T  S  R  R  L  I  S  T  L  I  F  T
     Q  A  N  G  I  K  L  V  P  N  E  P  Y  T  L  F  T  E  D  V  S  A  F  N  L  N  T  D  L  Y
     CAAGCCAATGGAATCAAACTGGTTCCTAATGAGCCATACACTCTCTTCACTGAAGACGTCTCGGCGTTTAATCTCAACACTGATCTTTAC

 721 GGGTCGCATCCGGTTTACATGGATTTGAGAAACGTTAGAGGTAAAGCCTATGCACACTCTGTTCTGCTTCTTAACAGTCATGGTATGGAT
       V  A  S  G  L  H  G  F  E  K  R  *  R  *  S  L  C  T  L  C  S  A  S  *  Q  S  W  Y  G  C
      G  R  I  R  F  T  W  I  *  E  T  L  E  V  K  P  M  H  T  L  F  C  F  L  T  V  M  V  W  M
     G  S  H  P  V  Y  M  D  L  R  N  V  R  G  K  A  Y  A  H  S  V  L  L  L  N  S  H  G  M  D
     GGGTCGCATCCGGTTTACATGGATTTGAGAAACGTTAGTGGTAAAGCCTATGCACACTCTGTTCTGCTTCTTAACAGTCATGGTATGGAT

 811 GTGTTTTACAGAGGCGATTCCTTGACGTACAAGGTAATTGGAGGTGTTTTTGATTTCTATTTCTTCGCTGGACCGTCGCCTCTTAATGTC
       V  L  Q  R  R  F  L  D  V  Q  G  N  W  R  C  F  *  F  L  F  L  R  W  T  V  A  S  *  C  R
      C  F  T  E  A  I  P  *  R  T  R  *  L  E  V  F  L  I  S  I  S  S  L  D  R  R  L  L  M  S
     V  F  Y  R  G  D  S  L  T  Y  K  V  I  G  G  V  F  D  F  Y  F  F  A  G  P  S  P  L  N  V
     GTGTTTTACAGAGGCGATTCCTTGACGTACAAGGTAATTGGAGGTGTTTTTGATTTCTATTTCTTCGCTGGACCGTCGCCTCTTAATGTC

 901 GTTGATCAATACACTTCGTTAATAGGACGGCCAGCGCCAATGCCGTACTGGTCTCTAGGgtaatatatctcacttgtcttagtttaactgt
       *  S  I  H  F  V  N  R  T  A  S  A  N  A  V  L  V  S  R
      L  I  N  T  L  R  *  *  D  G  Q  R  Q  C  R  T  G  L  *
     V  D  Q  Y  T  S  L  I  G  R  P  A  P  M  P  Y  W  S  L  G
     GTTGATCAATACACTTCGTTAATAGGACGGCCAGCGCCAATGCCGTACTGGTCTCTAGGgtaatatatctcacttgtcttagtttaactgt

 991 aacttatgtggtttcttactaatctttaacctaatttgtgctctagGGTTTCACCAATTTAGATGGGGGTACCGTAATGTATCAGTTGTT
                                                     V  S  P  I  *  M  G  V  P  *  C  I  S  C  *
                                                    G  F  T  N  L  D  G  G  T  V  M  Y  Q  L  L
                                                      F  H  Q  F  R  W  G  Y  R  N  V  S  V  V
     aacttatgtggtttcttactaatctttaacctaatttgtgctctagGGTTTCACCAATGTAGATGGGGGTACCGTAATGTATCAGTTGTT

1081 AAAGATGTGGTGGATAATTACCAAAAGGCTAAGATCCCTCTTGATGTGATTTGGAACGATGCTGATTACATGGATGGTTACAAGGACTTC
       R  C  G  G  *  L  P  K  G  *  D  P  S  *  C  D  L  E  R  C  *  L  H  G  W  L  Q  G  L  H
      K  M  W  W  I  I  T  K  R  L  R  S  L  L  M  *  F  G  T  M  L  I  T  W  M  V  T  G  T  S
     K  D  V  V  D  N  Y  Q  K  A  K  I  P  L  D  V  I  W  N  D  A  D  Y  M  D  G  Y  K  D  F
     AAAGATGTGGTGGATAATTACCAAAAGGCTAAGATCCCTCTTGATGTGATTTGGAACGATGCTGATTACATGGATGGTTACAAGGACTTC
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1171 ACTTTGGATCTTGTGAATTTTCCTCATGCTAAGCTATTGAGTTTCTTGGATAGAATCCATAAGATGGGAATGAAGTATGTTGTGATAAAA
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      L  W  I  L  *  I  F  L  M  L  S  Y  R  V  S  W  I  E  S  I  R  W  E  *  S  M  L  *  *  K
     T  L  D  L  V  N  F  P  H  A  K  L  L  S  F  L  D  R  I  H  K  M  G  M  K  Y  V  V  I  K
     ACTTTGGATCTTGTGAATTTTCCTCATGCTAAGCTATTGAGTTTCTTGGATAGAATCCATAAGATGGGAATGAAGTATGTTGTGATAAAA

1261 GATCCTGGTATTGGTGTCAACGCGAGTTACGGTGTATACCAAAGAGGCATGGCTAGTGATGTGTTCATTAAATATGAAGGAAAGCCTTTC
       S  W  Y  W  C  Q  R  E  L  R  C  I  P  K  R  H  G  *  *  C  V  H  *  I  *  R  K  A  F  L
      I  L  V  L  V  S  T  R  V  T  V  Y  T  K  E  A  W  L  V  M  C  S  L  N  M  K  E  S  L  S
     D  P  G  I  G  V  N  A  S  Y  G  V  Y  Q  R  G  M  A  S  D  V  F  I  K  Y  E  G  K  P  F
     GATCCTGGTATTGGTGTCAACGCGAGTTACGGTGTATACCAAAGAGGCATGGCTAGTGATGTGTTCATTAAATATGAAGGAAAGCCTTTC

1351 TTGGCTCAAGTGTGGCCTGGTCCAGTTTACTTCCCTGATTTCCTTAACCCGAAAACGGTTTCTTGGTGGGGCGATGAAATTCGACGTTTC
       G  S  S  V  A  W  S  S  L  L  P  *  F  P  *  P  E  N  G  F  L  V  G  R  *  N  S  T  F  P
      W  L  K  C  G  L  V  Q  F  T  S  L  I  S  L  T  R  K  R  F  L  G  G  A  M  K  F  D  V  S
     L  A  Q  V  W  P  G  P  V  Y  F  P  D  F  L  N  P  K  T  V  S  W  W  G  D  E  I  R  R  F
     TTGGCTCAAGTGTGGCCTGGTCCAGTTTACTTCCCTGATTTCCTTAACCCGAAAACGGTTTCTTGGTGGGGCGATGAAATTCGACGTTTC

1441 CATGAGTTAGTACCCATTGATGGTCTTTGGATCGACATGAATGAGGTCTCTAATTTCTGCTCTGGATTGTGCA--TAATCCCGGAGGGAAAA
       *  V  S  T  H  *  W  S  L  D  R  H  E  *  G  L  *  F  L  L  W  I  V  H  N  P  G  G  K  T
      M  S  *  Y  P  L  M  V  F  G  S  T  *  M  R  S  L  I  S  A  L  D  C  A  *  S  R  R  E  N
     H  E  L  V  P  I  D  G  L  W  I  D  M  N  E  V  S  N  F  C  S  G  L  C  I  I  P  E  G  K
     CATGAGTTAGTACCCATTGATGGTCTTTGGATCGACATGAATGAGGTCTCTAATTTCTGCTCTGGATTGTGCATATAATCCCGGAGGGAAAA

1531 CAGTGTCCGAGTGGGGGAGAACCTGGTGTAACGTGTTGCTTGGACTGCAAGAATATAACCAATACAAGCTGGGATGATCCACCATTCCAC
       V  S  E  W  G  R  T  W  C  N  V  L  L  G  L  Q  E  Y  N  Q  Y  K  L  G  *  S  T  I  P  P
      S  V  R  V  G  E  N  L  V  *  R  V  A  W  T  A  R  I  *  P  I  Q  A  G  M  I  H  H  S  T
     Q  C  P  S  G  G  E  P  G  V  T  C  C  L  D  C  K  N  I  T  N  T  S  W  D  D  P  P  F  H
     CAGTGTCCGAGTGGGGGAGAACCTGGTGTAACGTGTTGCTTGGACTGCAAGAATATAACCAATACAAGCTGGGATGATCCACCATTCCAC

1621 CTTACAAGATCAATGCTACTGGACACAAAGCTCCTCTAGGGTTCAAGACTATTCCCACAAGTGCTTATCACTACAATGGTGTTCGTGAGT
       Y  K  I  N  A  T  G  H  K  A  P  L  G  F  K  T  I  P  T  S  A  Y  H  Y  N  G  V  R  E  Y
      L  Q  D  Q  C  Y  W  T  Q  S  S  S  R  V  Q  D  Y  S  H  K  C  L  S  L  Q  W  C  S  *  V
     L  T  R  S  M  L  L  D  T  K  L  L  *  G  S  R  L  F  P  Q  V  L  I  T  T  M  V  F  V  S
     CTTACAAGATCAATGCTACTGGACACAAAGCTTCTCTAGGGTTCAAGACTATTCCCACAAGTGCTTATCACTACAATGGTGTTCGTGAGT

1711 ACGACGCTCACAGCATCTACGGGTTCTCTGAGGCCATAGCGACCCACAAGGCCTTGCTTGCTGTCCAAGGCAAACGTCCATTTATATTGT
       D  A  H  S  I  Y  G  F  S  E  A  I  A  T  H  K  A  L  L  A  V  Q  G  K  R  P  F  I  L  S
      R  R  S  Q  H  L  R  V  L  *  G  H  S  D  P  Q  G  L  A  C  C  P  R  Q  T  S  I  Y  I  V
     T  T  L  T  A  S  T  G  S  L  R  P  *  R  P  T  R  P  C  L  L  S  K  A  N  V  H  L  Y  C
     ACGACGCTCACAGCATCTACGGGTTCTCTGAGGCCATAGCGACCCACAAGGCCTTGCTTGCTGTCCAAGGCAAACGTCCATTTATATTGT

1801 CACGGTCCACTTTTGTTGGTTCAGGTCAATATGCTGCTCACTGGACTGGAGATAACCAAGGAACATGGCAGAGCTTGCAAGTATCTATCT
       R  S  T  F  V  G  S  G  Q  Y  A  A  H  W  T  G  D  N  Q  G  T  W  Q  S  L  Q  V  S  I  S
      T  V  H  F  C  W  F  R  S  I  C  C  S  L  D  W  R  *  P  R  N  M  A  E  L  A  S  I  Y  L
     H  G  P  L  L  L  V  Q  V  N  M  L  L  T  G  L  E  I  T  K  E  H  G  R  A  C  K  Y  L  S
     CACGGTCCACTTTTGTTGGTTCAGGTCAATATGCTGCTCACTGGACTGGAGATAACCAAGGAACATGGCAGAGCTTGCAAGTATCTATCT

1891 CAACGATGTTGAATTTTGGAATTTTTGGAGTTCCTATGGTTGGTTCAGATATATGTGGATTCTTTCCTCCAACACCAGAAGAACTCTGCA
       T  M  L  N  F  G  I  F  G  V  P  M  V  G  S  D  I  C  G  F  F  P  P  T  P  E  E  L  C  N
      N  D  V  E  F  W  N  F  W  S  S  Y  G  W  F  R  Y  M  W  I  L  S  S  N  T  R  R  T  L  Q
     Q  R  C  *  I  L  E  F  L  E  F  L  W  L  V  Q  I  Y  V  D  S  F  L  Q  H  Q  K  N  S  A
     CAACGATGTTGAATTTTGGAATTTTTGGAGTTCCTATGGTTGGTTCAGATATATGTGGATTCTTTCCTCCAACACCAGAAGAACTCTGCA

1981 ACCGTTGGATTGAAGTTGGTGCGTTTTACCCCTTTTCAAGAGATCACGCTGATTACTACGCTCCAAGAAAAGAGCTTTACCAATGGGGAA
       R  W  I  E  V  G  A  F  Y  P  F  S  R  D  H  A  D  Y  Y  A  P  R  K  E  L  Y  Q  W  G  T
      P  L  D  *  S  W  C  V  L  P  L  F  K  R  S  R  *  L  L  R  S  K  K  R  A  L  P  M  G  N
     T  V  G  L  K  L  V  R  F  T  P  F  Q  E  I  T  L  I  T  T  L  Q  E  K  S  F  T  N  G  E
     ACCGTTGGATTGAAGTTGGTGCGTTTTACCCCTTTTCAAGAGATCACGCTGATTACTACGCTCCAAGAAAAGAGCTTTACCAATGGGGAA

2071 CAGTAGCAGAGTCAGCTCGTAACGCTCTTGGGATGAGATACAAACTCCTTCCTTTTCTCTACACTCTCAACTACGAAGCCCATATGAGTG
       V  A  E  S  A  R  N  A  L  G  M  R  Y  K  L  L  P  F  L  Y  T  L  N  Y  E  A  H  M  S  G
      S  S  R  V  S  S  *  R  S  W  D  E  I  Q  T  P  S  F  S  L  H  S  Q  L  R  S  P  Y  E  W
     Q  *  Q  S  Q  L  V  T  L  L  G  *  D  T  N  S  F  L  F  S  T  L  S  T  T  K  P  I  *  V
     CAGTAGCAGAGTCAGCTCGTAACGCTCTTGGGATGAGATACAAACTCCTTCCTTTTCTCTACACTCTCAACTACGAAGCCCATATGAGTG

2161 GTGCATCAATCGCTAGACCGCTCTTCTTCTCTTTCCCTGAGTTCACTGAATGCTACGGTTTGAGCAAACAGTTCTTGCTCGGAAGCAGCT
       A  S  I  A  R  P  L  F  F  S  F  P  E  F  T  E  C  Y  G  L  S  K  Q  F  L  L  G  S  S  L
      C  I  N  R  *  T  A  L  L  L  F  P  *  V  H  *  M  L  R  F  E  Q  T  V  L  A  R  K  Q  L
     V  H  Q  S  L  D  R  S  S  S  L  S  L  S  S  L  N  A  T  V  *  A  N  S  S  C  S  E  A  A
     GTGCACCAATCGCTAGACCGCTCTTCTTCTCTTTCCCTGAGTTCACTGAATGCTACGGTTTGAGCAAACAGTTCTTGCTCGGAAGCAGCT

2251 TAATGATATCGCCGGTTCTTGAACAAGGTAAAACCCAAGTTGAAGCACTGTTCCCACCAGGTTCTTGGTACCACATGTTTGACATGACTC
       M  I  S  P  V  L  E  Q  G  K  T  Q  V  E  A  L  F  P  P  G  S  W  Y  H  M  F  D  M  T  Q
      N  D  I  A  G  S  *  T  R  *  N  P  S  *  S  T  V  P  T  R  F  L  V  P  H  V  *  H  D  S
     *  *  Y  R  R  F  L  N  K  V  K  P  K  L  K  H  C  S  H  Q  V  L  G  T  T  C  L  T  *  L
     TAATGATATCGCCGGTTCTTGAACAAGGTAAAACCCAAGTTGAAGCACTGTTCCCACCAGGTTCTTGGTACCACATGTTTGACATGACTC
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2341 AGGTCGTTGTTTCAAAGAACGGGAGGCTTTTCACCCTCCCCGCTCCGTTTAACGTTGTGAACGTGCATCTTTACCAGAACGCGATACTAC
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     R  S  L  F  Q  R  T  G  G  F  S  P  S  P  L  R  L  T  L  *  T  C  I  F  T  R  T  R  Y  Y
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      H  A  T  R  W  V  D  F  *  R  S  K  N  D  A  V  *  S  S  R  R  F  P  G  G  S  I  R  G  I
     P  C  N  K  V  G  R  F  L  K  K  Q  E  R  R  R  L  V  *  S  S  L  S  R  R  E  H  Q  R  D
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2611 CGGTTGGAAATGAGAGTTTGAAGATATGGTCGCAAGTGAAAGAAGGTCAGTTTGCGTTGAGCCAAGGTTTGGTGATTGAGAAAGTGATTG
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      G  W  K  *  E  F  E  D  M  V  A  S  E  R  R  S  V  C  V  E  P  R  F  G  D  *  E  S  D  C
     R  L  E  M  R  V  *  R  Y  G  R  K  *  K  K  V  S  L  R  *  A  K  V  W  *  L  R  K  *  L
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2791 CCAAGGAGCAGATGTATGTGGTGGGTTCTGAAGATGAAGGAGAGAGTAAAAGCTTCATGGTTGAGCTTAAGGGCCTTGAGATGCTAGTGG
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      *  G  L  Q  H  I  L  E  N  G  *  Y  *  C  T  I  N  G  R  K  *  G  Y  R  A  L
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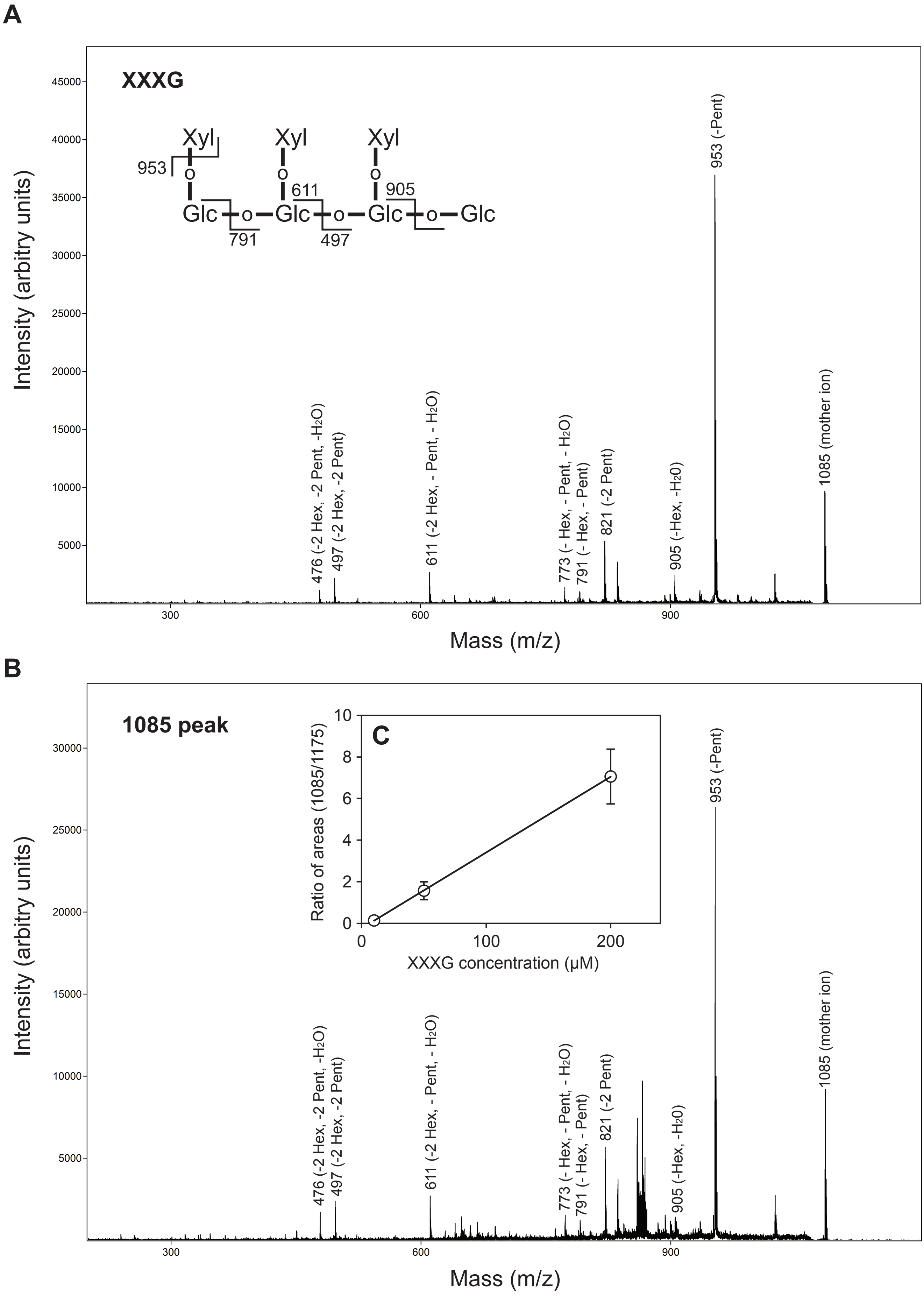
Supplemental Figure 2



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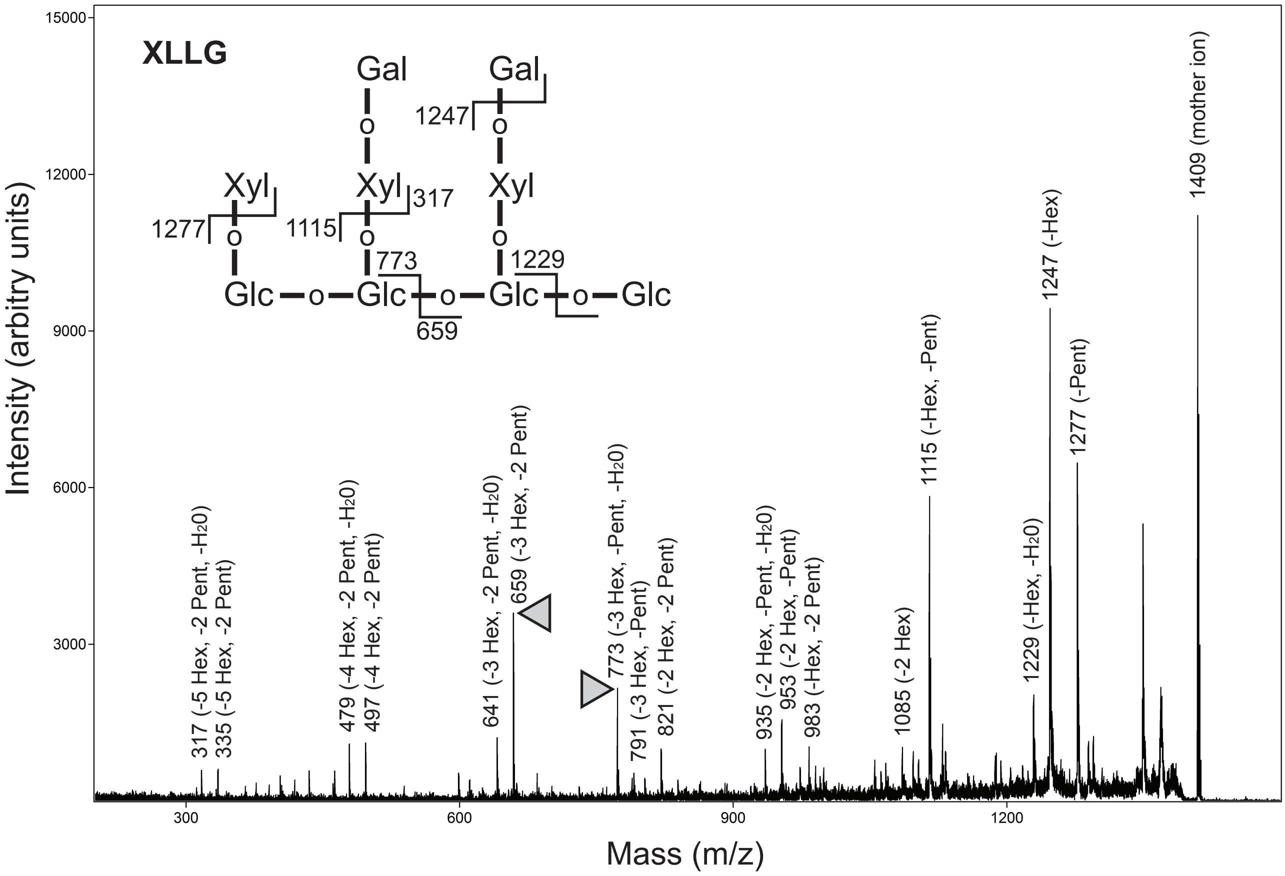
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Gal
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Xyl
Xyl
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773
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Glc
Glc
Glc
659
1409 (mother ion)
1247 (-Hex)
1277 (-Pent)
1115 (-Hex, -Pent)
1229 (-Hex, -H2O)
1085 (-2 Hex)
935 (-2 Hex, -Pent, -H2O)
953 (-2 Hex, -Pent)
983 (-Hex, -2 Pent)
773 (-3 Hex, -Pent, -H2O)
791 (-3 Hex, -Pent)
821 (-2 Hex, -2 Pent)
641 (-3 Hex, -2 Pent, -H2O)
659 (-3 Hex, -2 Pent)
479 (-4 Hex, -2 Pent, -H2O)
497 (-4 Hex, -2 Pent)
317 (-5 Hex, -2 Pent, -H2O)
335 (-5 Hex, -2 Pent)
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Mass (m/z)
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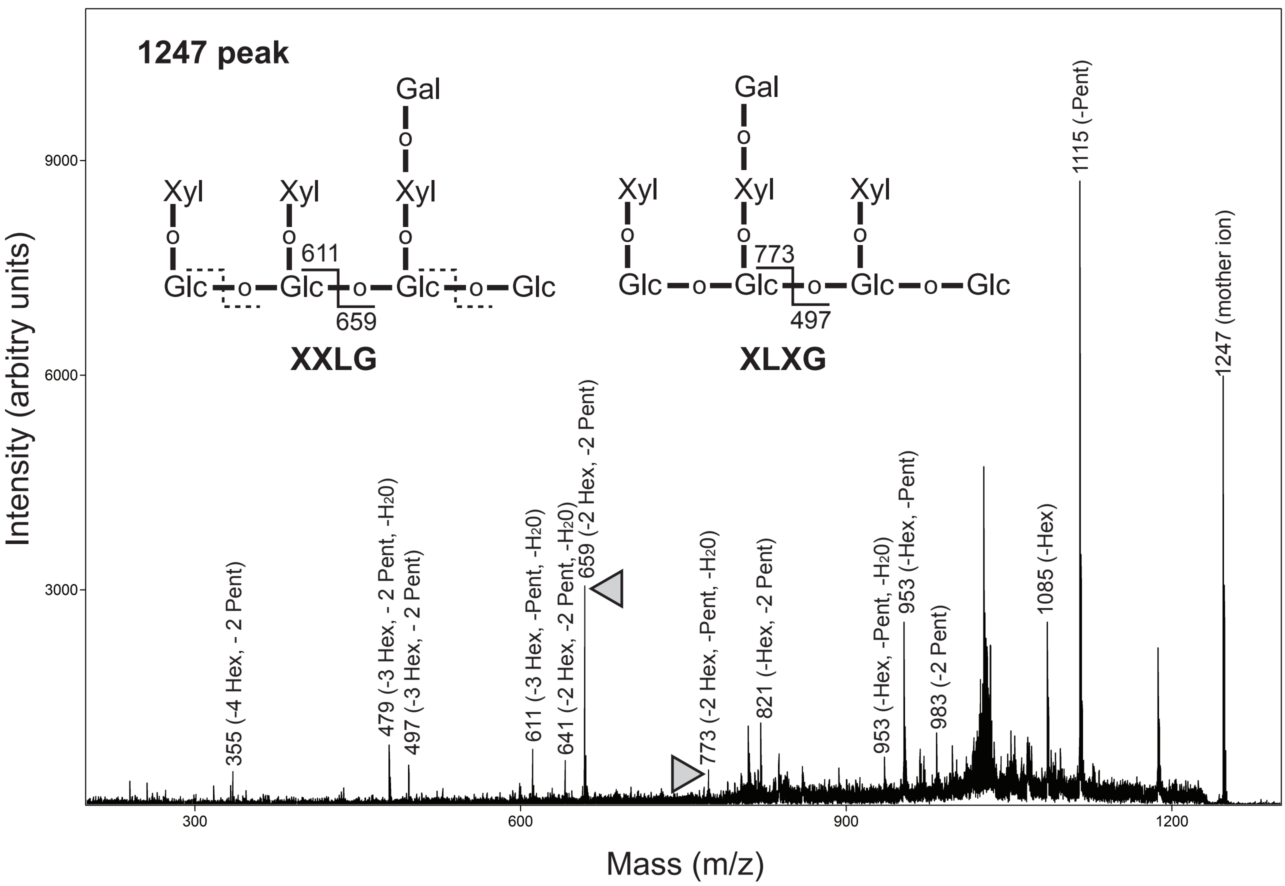
12000
9000
6000
3000
300
600
900
1200

E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Xyl
Xyl
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Glc
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Glc
611
659
XXLG
Gal
Xyl
Xyl
Xyl
Glc
Glc
Glc
Glc
773
497
XLXG
1247 (mother ion)
1115 (-Pent)
1085 (-Hex)
953 (-Hex, -Pent, -H2O)
953 (-Hex, -Pent)
983 (-2 Pent)
773 (-2 Hex, -Pent, -H2O)
821 (-Hex, -2 Pent)
611 (-3 Hex, -Pent, -H2O)
641 (-2 Hex, -2 Pent, -H2O)
659 (-2 Hex, -2 Pent)
479 (-3 Hex, - 2 Pent, -H2O)
497 (-3 Hex, - 2 Pent)
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Intensity (arbitry units)
Mass (m/z)
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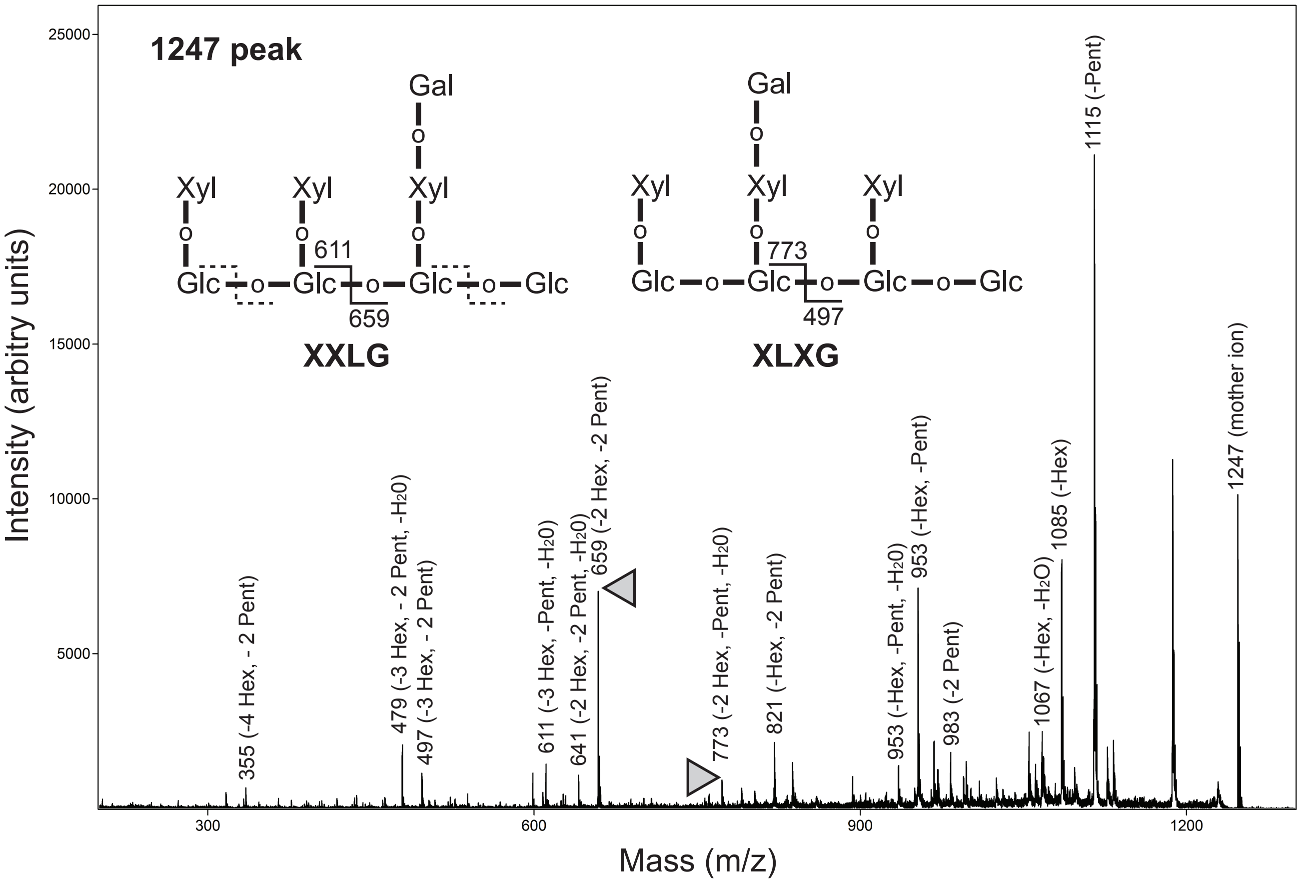
6000
3000
300
600
900
1200

Supplemental Figure 3



Supplemental Figure 4