

Figure S1. MS/MS spectra of pEtN-glycan modified glycopeptides from *C. jejuni* JHH1

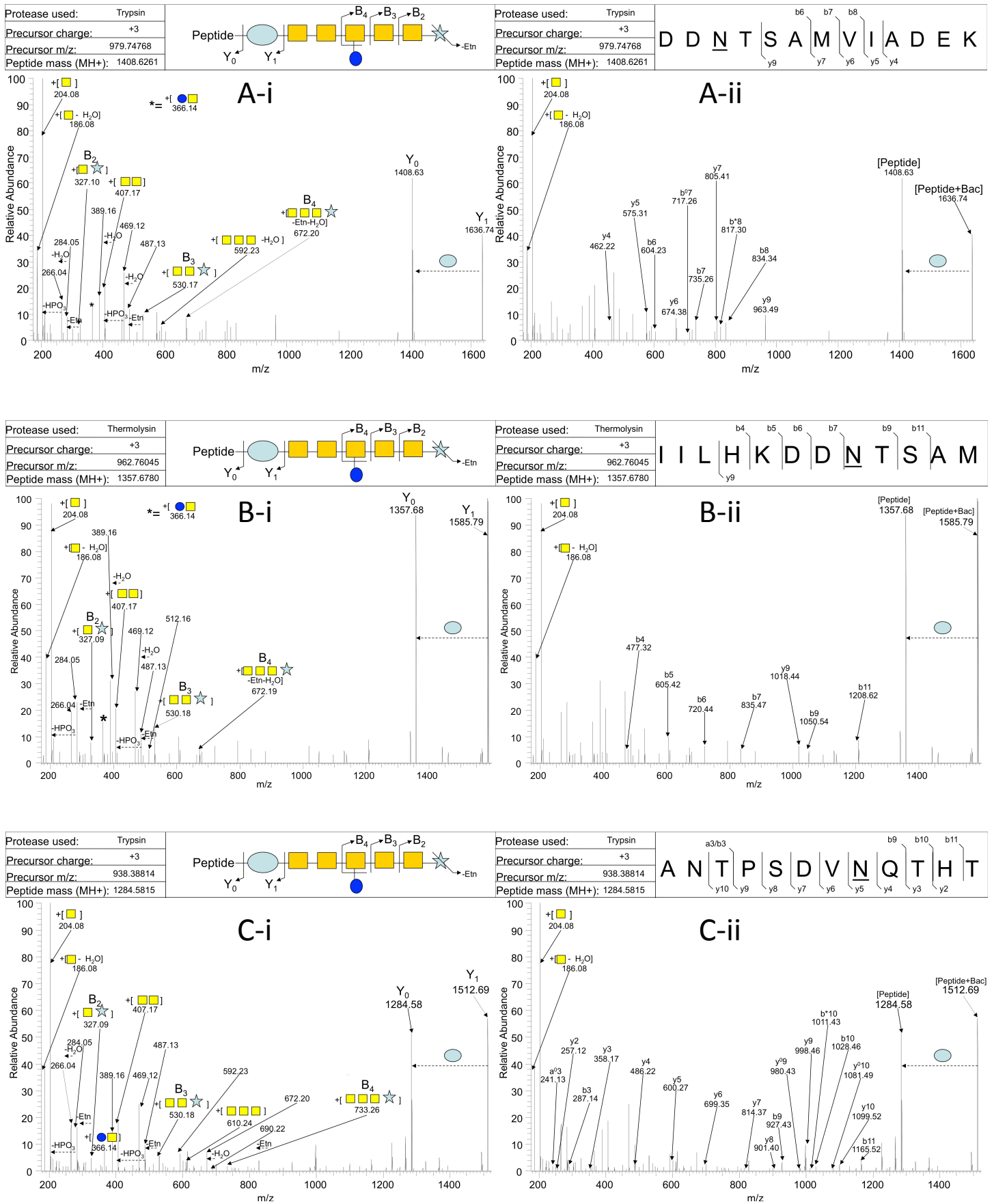


Figure S1. HCD MS/MS fragmentation of pEtN-glycan modified glycopeptides derived from Cj0131c (A and B) and Cj0168c (C). Spectra denoted as 'i' show ions associated with glycan fragmentation, spectra denoted as 'ii' show peptide related ions.

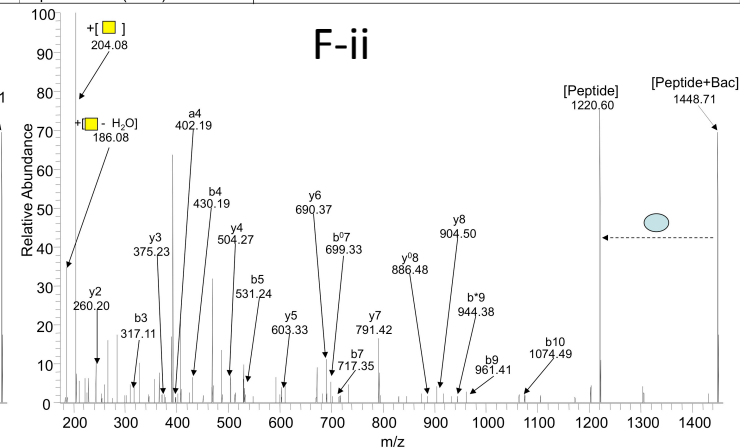
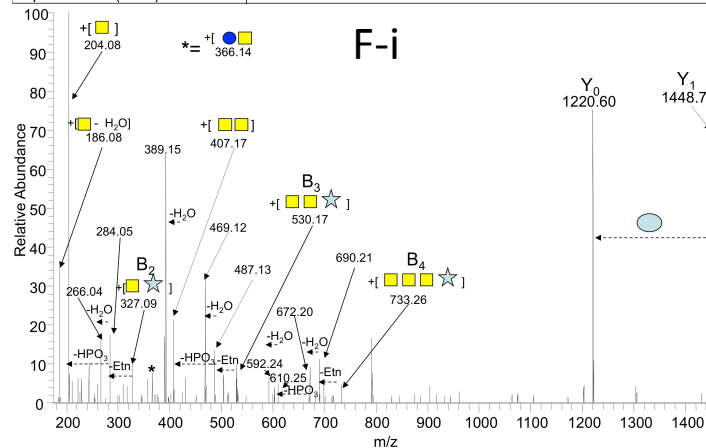
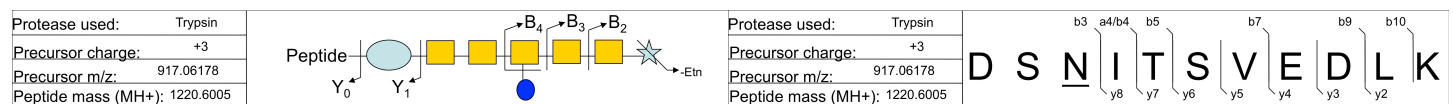
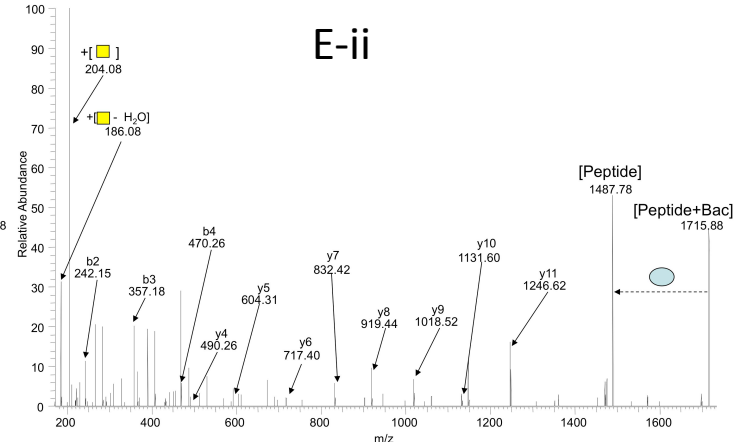
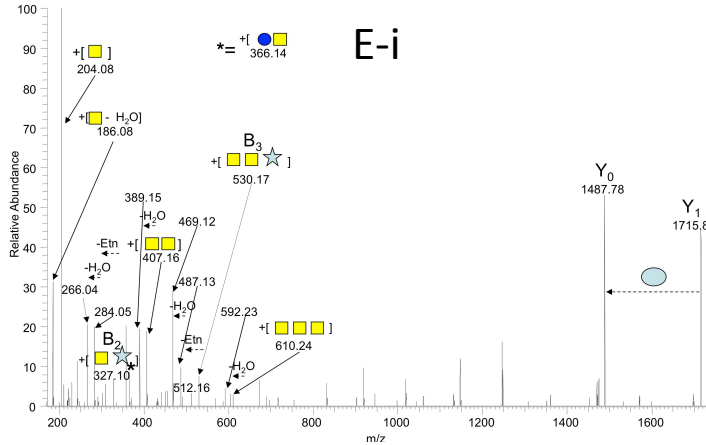
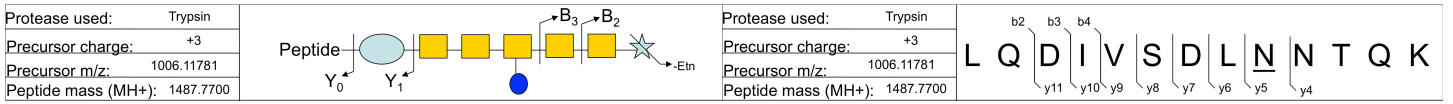
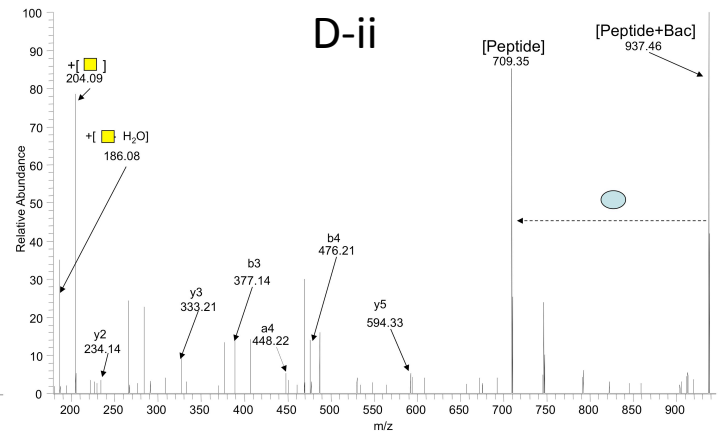
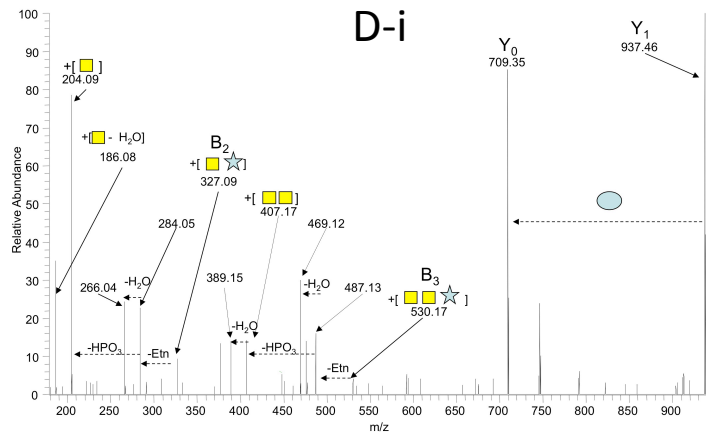
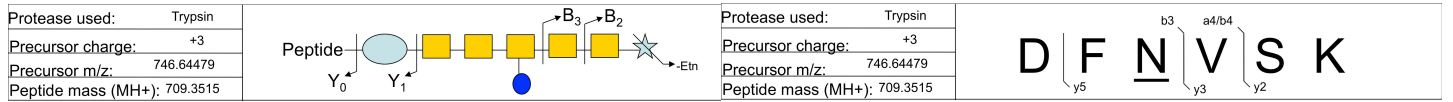


Fig. S1 cont. Glycopeptides derived from Cj0289c (D), Cj0399 (E) and Cj0982c (F). Spectra denoted as 'i' show ions associated with glycan fragmentation, spectra denoted as 'ii' show peptide related ions.

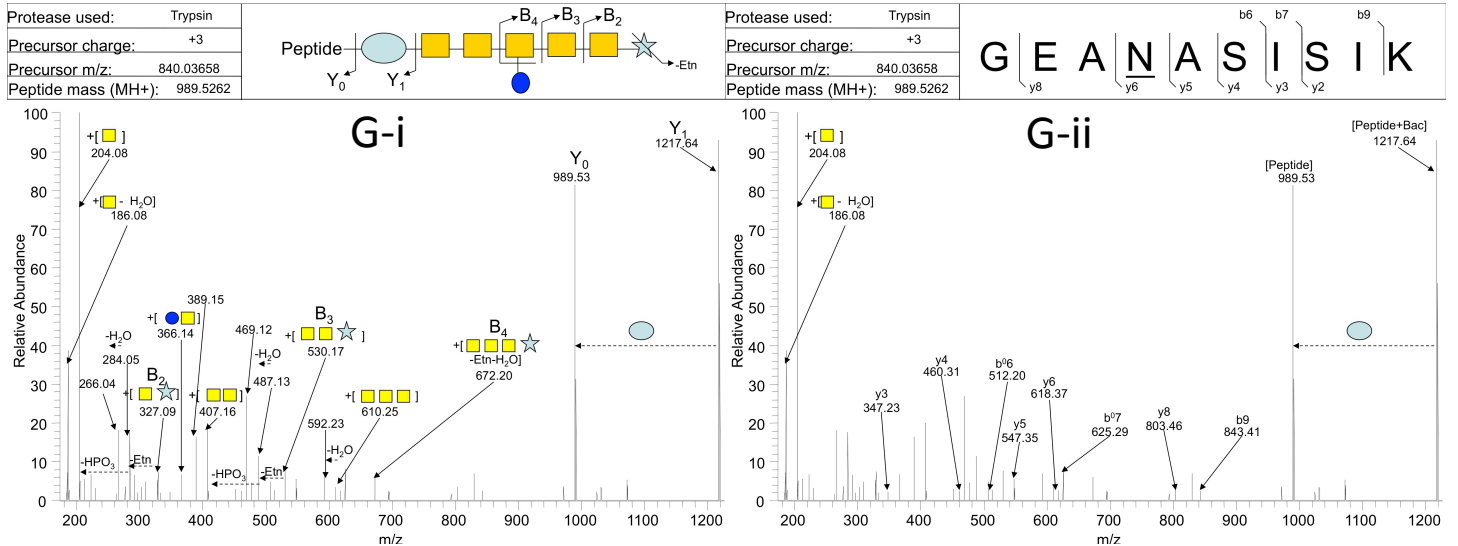


Fig. S1 cont. Glycopeptides derived from Cj0983 (G). Spectra denoted as ‘i’ show ions associated with glycan fragmentation, spectra denoted as ‘ii’ show peptide related ions.

Figure S2. Extracted ion chromatograms (XIC) of canonical *N*-glycan and pEtN-glycan modified glycopeptides from *C. jejuni* JHH1

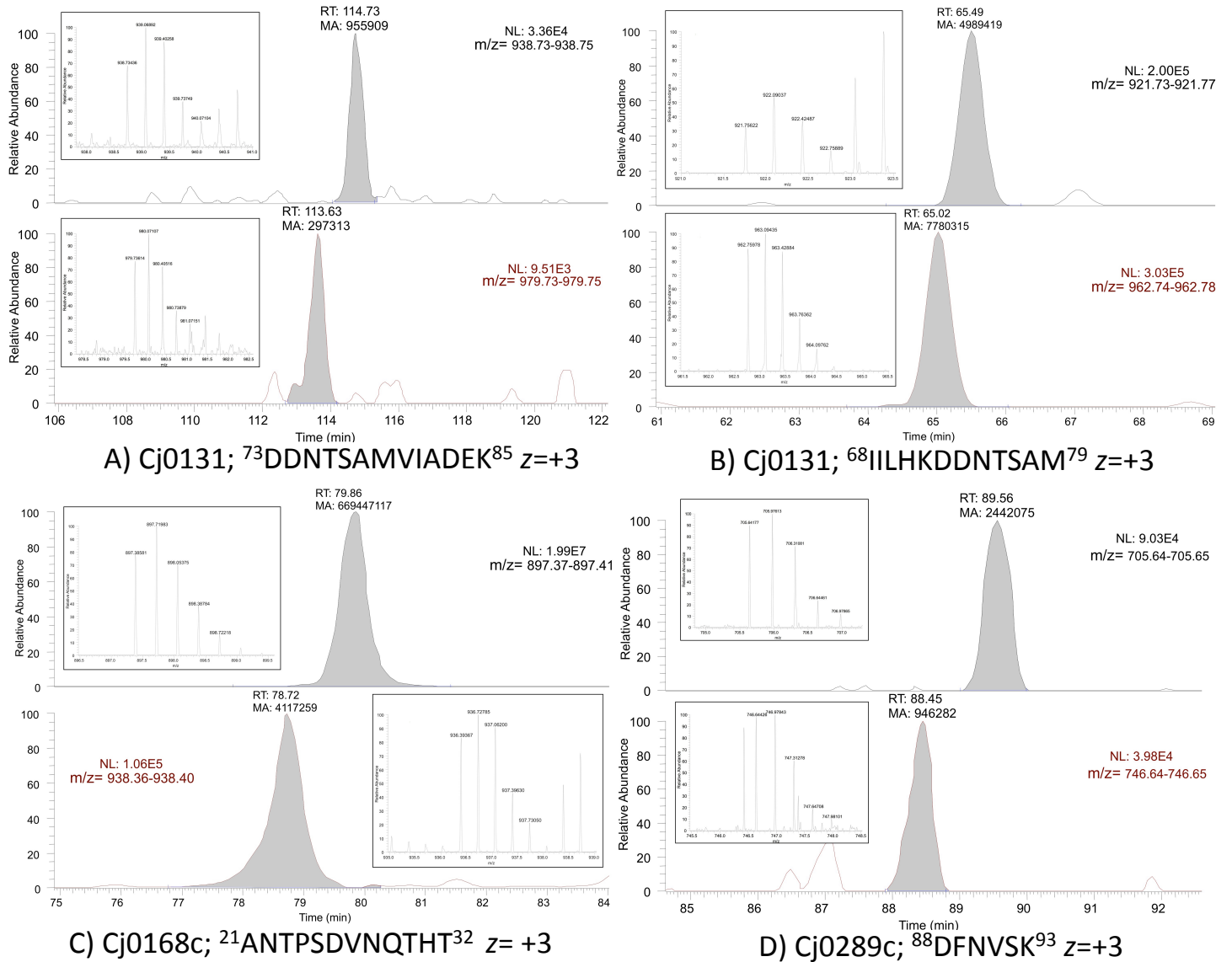


Fig. S2. The top panels (black trace) show the canonical *N*-glycan while the bottom panels (red trace) show the pEtN-glycan modified form. MS scans associated with each XIC are provided.

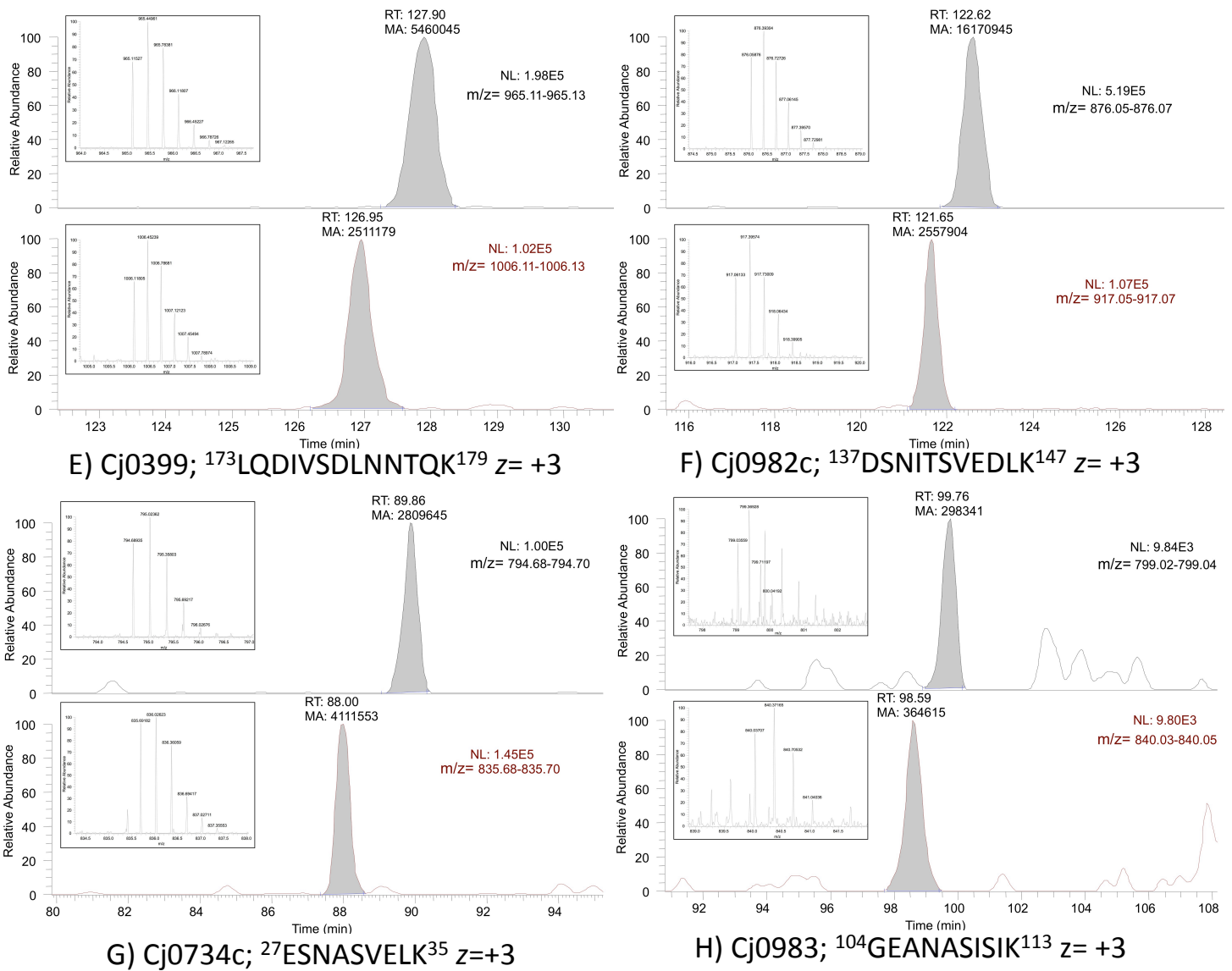


Fig. S2. The top panels (black trace) show the canonical *N*-glycan while the bottom panels (red trace) show the pEtN-glycan modified form. MS scans associated with each XIC are provided.

Figure S3. MS/MS spectra of pEtN-glycan modified glycopeptide from *C. jejuni* NCTC 11168 O

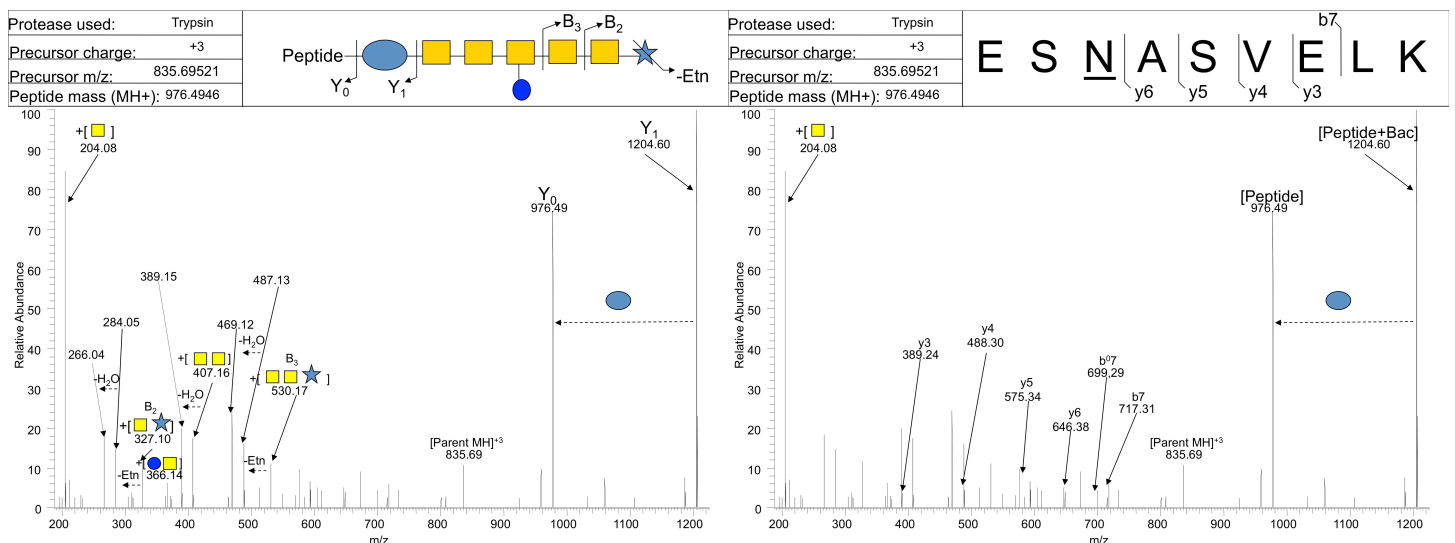


Fig. S3. Glycopeptide derived from Cj0734c. Spectrum denoted as 'i' show ions associated with glycan fragmentation, spectrum denoted as 'ii' shows peptide related ions.

Figure S4. MS/MS spectrum of an AcrA glycopeptide generated in *E. coli*

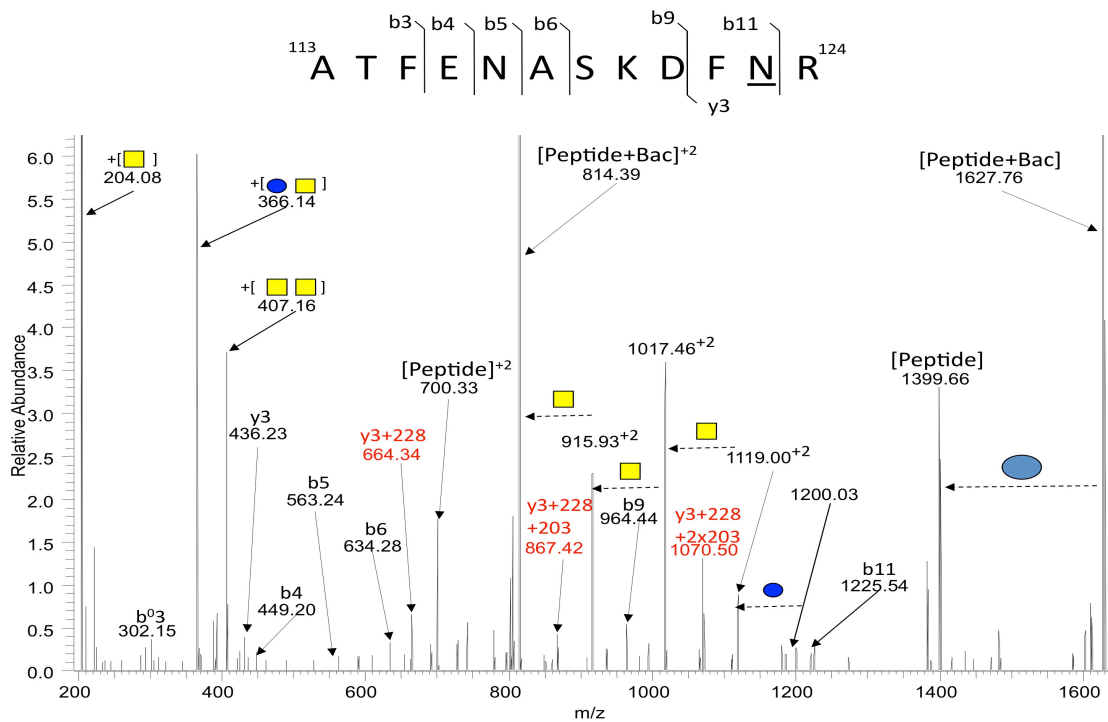


Fig. S4. HCD fragmentation of pEtN-glycan modified glycopeptide with $m/z=976.75$, y and b ions confirm the identity of the peptide sequence $^{113}\text{ATTFENASKDFNR}^{124}$ and the localization of the glycan to N¹²³.

Figure S5. Patient sera reactivity to whole cell lysates of *C. jejuni* JHH1 wt, $\Delta pglB$ and ΔptC

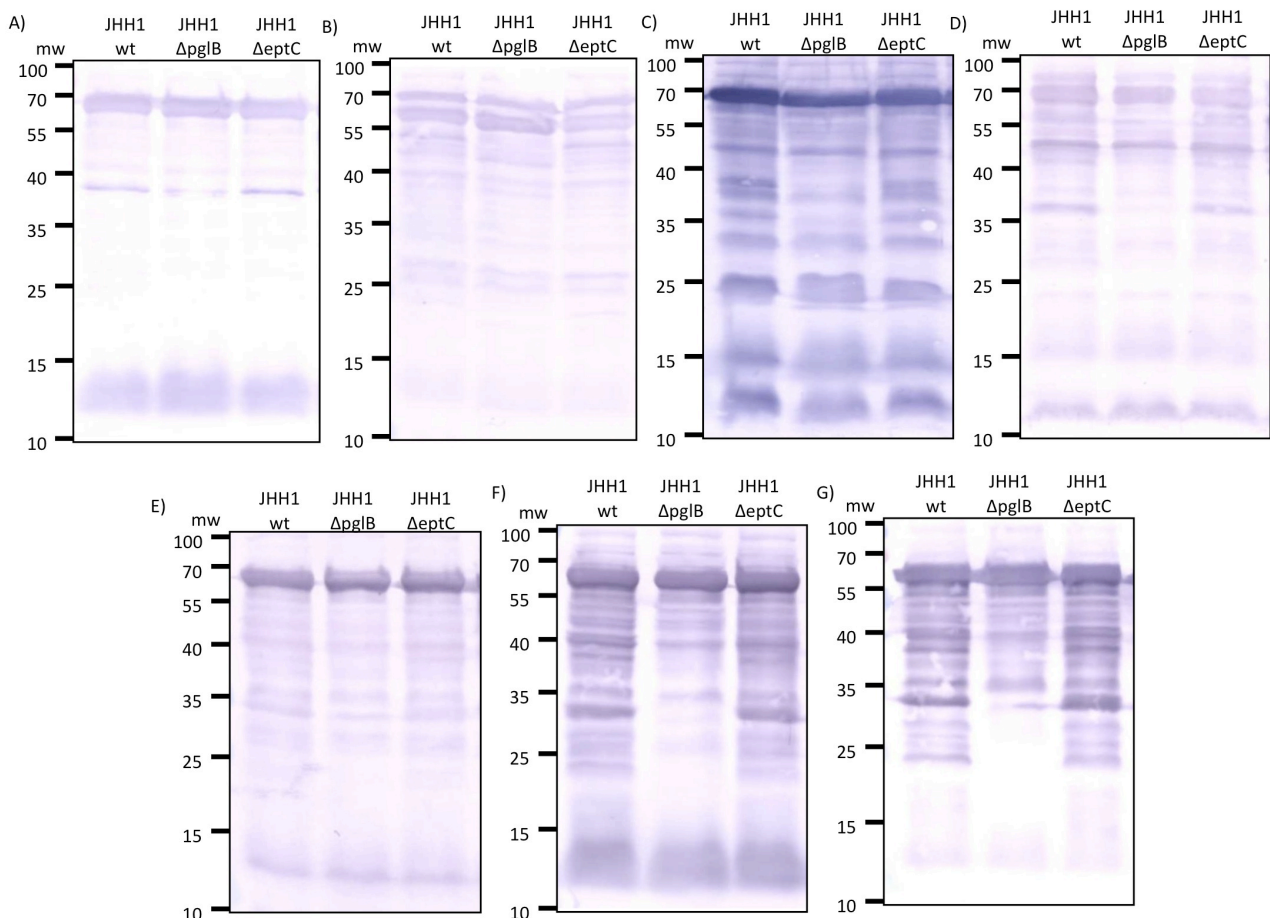


Fig. S5. Human patient sera reactivity to JHH1 wt, $\Delta pglB$ and ΔptC . Seven patient sera were used. Subtle to moderate alterations in reactivity were observed in $\Delta pglB$ while no global difference in reactivity to ΔptC was observed.

Figure S6: MS/MS spectra of unusual glycoforms generated on AcrA in *E. coli* (+*pgl* cluster) without *eptC*

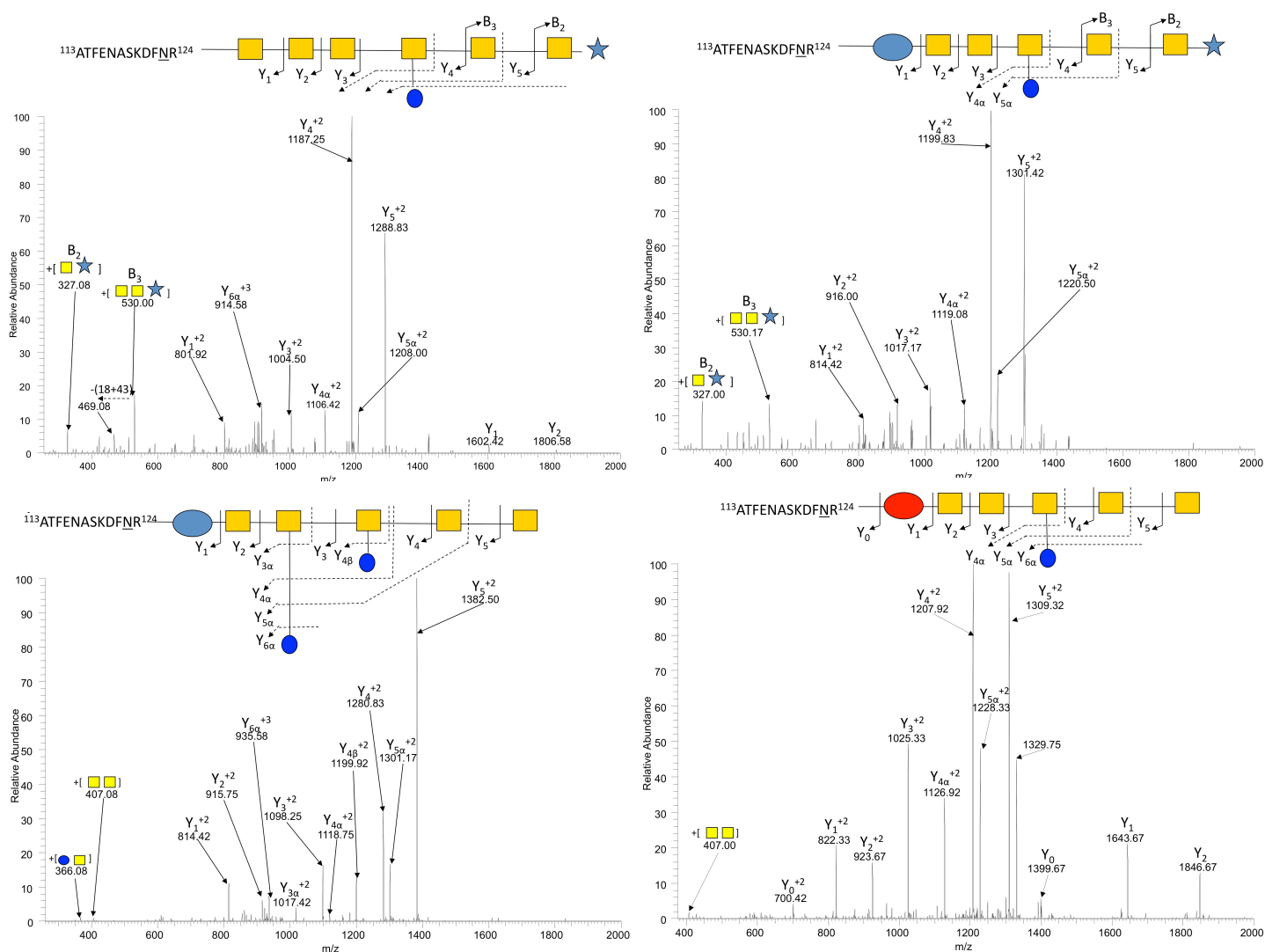


Fig. S6. Top, left – pEtNHex6HexNAc; right – pEtNHex5HexNAcBac. Lower, left – 2Hex5HexNAcBac; right – Hex5HexNAc244.