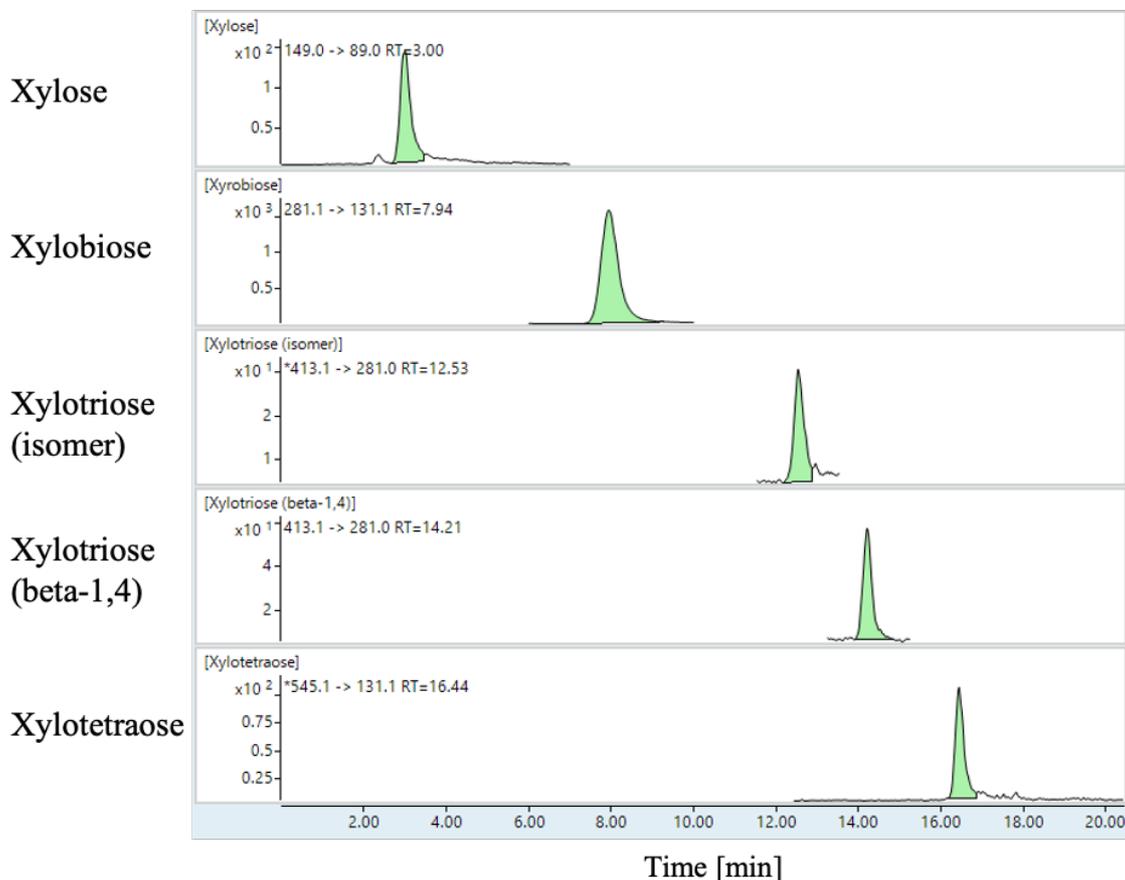


## Supplementary Materials:



**Figure S1:** Representative multiple reaction monitoring (MRM) chromatograms of E1 by sugar component analysis for mono and oligosaccharides. E1 (shown in Figure 1) was analyzed using liquid chromatography (1260 Infinity II Prime Bio LC, Agilent Technologies, Ltd, Santa Clara, CA, USA) coupled with the tandem mass spectrometry (Ultivo Triple Quadrupole LC/MS/MS, Agilent Technologies, Ltd.). The separation column (InfinityLab Poroshell 120 HILIC-Z,  $2.1 \times 100$  mm,  $2.7 \mu\text{m}$ , Agilent Technologies) was maintained at  $60^\circ\text{C}$ . Mobile phase gradient elution was employed by the following conditions (A: 5 mM ammonium bicarbonate, pH 10.4, B: acetonitrile; 0–5 min: 95% B; 5–15 min: 95→80% B; 15–20 min: 80→70% B; 20–25 min: 70% B). The post time for the column equilibration was 12 min. The injection volume was  $0.5 \mu\text{L}$ . The flow rate was  $0.3 \text{ mL/min}$ . Mass detection was performed using MRM in the negative ion mode. LC/MS/MS analysis revealed that E1 contained xylose, xylobiose, xylotriose ( $\beta$ -1,4 linkage), xylotriose (isomer, not  $\beta$ -1,4 linkage), and xylotetraose.