

## Supporting information

Table S1. The formula of modified Gut microbiota medium (GMM).

Table S2. Distribution of the homologous proteins of glycosidases related to raffinose utilization among human gut bacteria.

Table S3. Raffinose utilization by the selected gut bacteria.

Figure S1. HPLC analysis of raffinose in the supernatant of different strains cultured in GMM, including *Bifidobacterium pseudocatenulatum* B16, *Bifidobacterium longum* subsp. *longum* B15, *Enterococcus avium* E5, *Lactobacillus ruminis* A5 and *Streptococcus salivarius* B5.

Figure S2. HPLC analysis of raffinose in the supernatant of different strains cultured in GMM, including *Enterococcus faecium* D4, *Escherichia coli* B9, *Streptococcus macedonicus* D9 and *Streptococcus pasteurianus* D30.

Figure S3. HPLC analysis of the sugar composition of the supernatant of *Enterococcus avium* E5 and *Streptococcus salivarius* B5.

Figure S4. HPLC analysis of melibiose in the supernatant of *Streptococcus salivarius* B5.

Figure S5. HPLC analysis of sucrose in the supernatant of *Streptococcus salivarius* B5.