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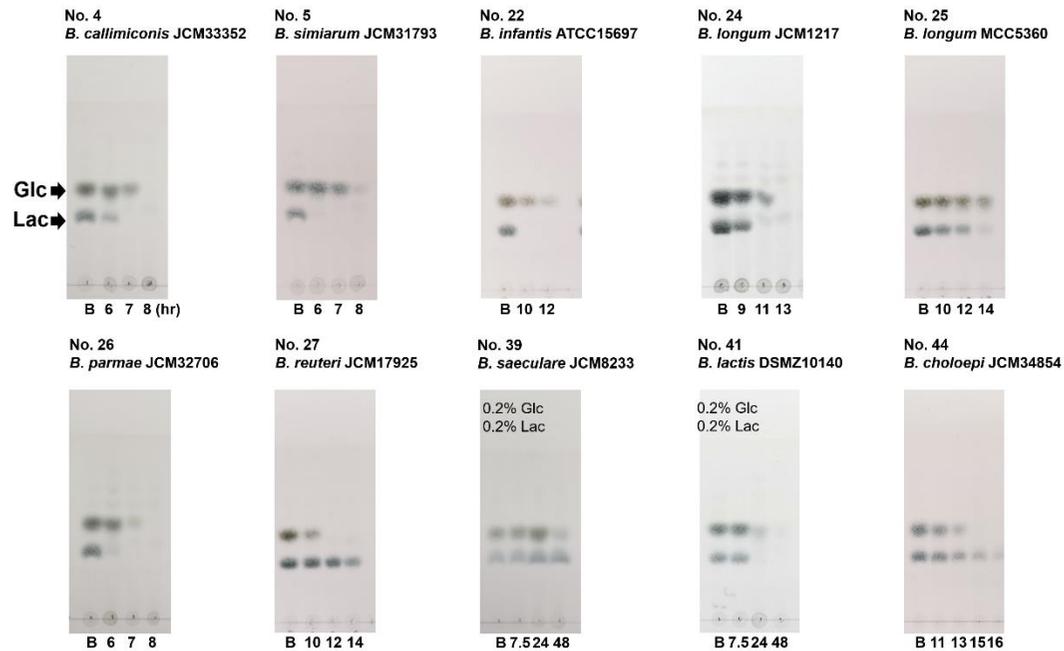
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2 **Supplementary Figure 1.** Preferred consumption of glucose and/or lactose by *Bifidobacterium*. Utilization of carbon source by *Bifidobacterium*
 3 (No. 1 to 45) was evaluated at different time points using HPTLC. Lane B represents mixed glucose and lactose standard solution.

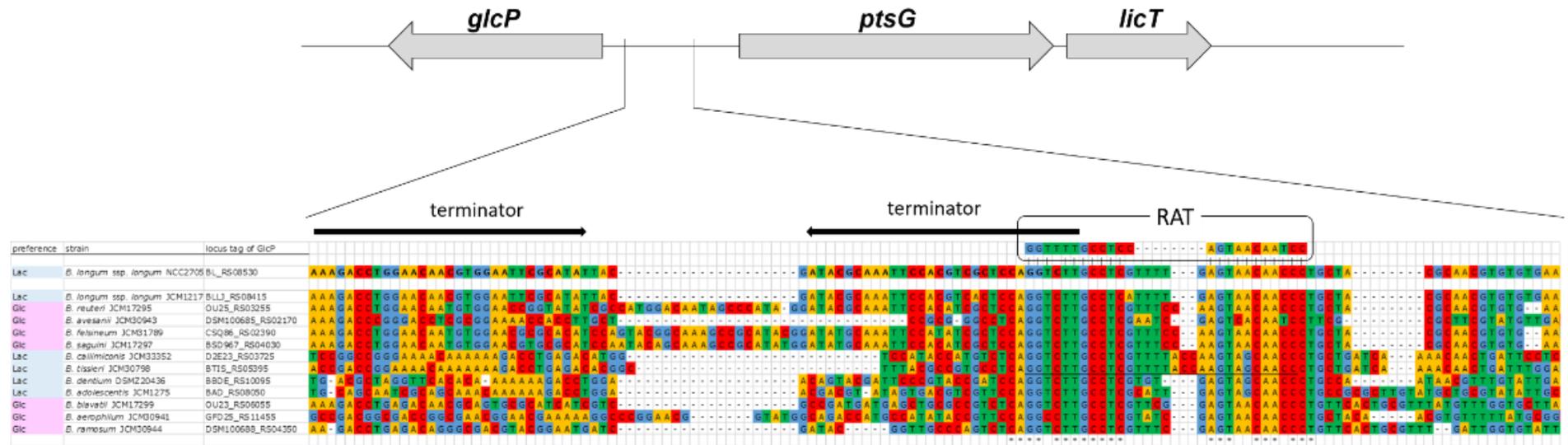
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7 **Supplementary Figure 2.** Preferential utilization of glucose and lactose by *Bifidobacterium* cultured individually according to their growth rate.
 8 Utilization of carbon source by *Bifidobacterium* was evaluated at different time points using HPTLC. Strain Nos. 39 and 41 were cultured with
 9 half the concentration of glucose and lactose. Lane B represents mixed glucose and lactose standard solution.



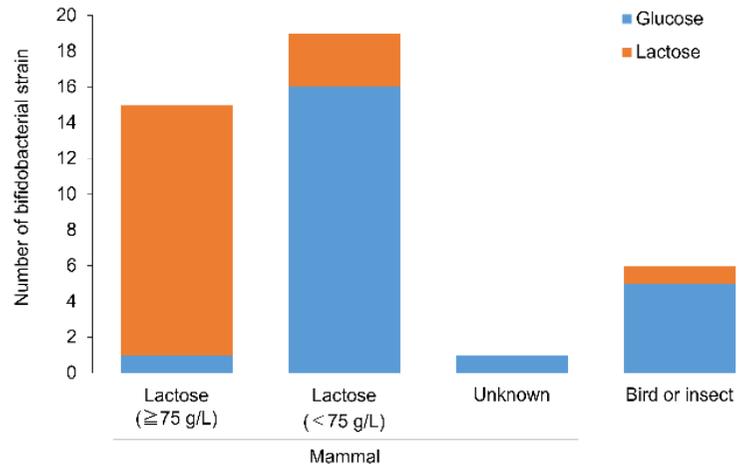
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Supplementary Figure 3. Sequence alignment of regulatory region of the *glcP* gene, which comprises a potential rho-independent terminator and a ribonucleic antiterminator (RAT) element, in 13 bifidobacterial strains harboring *glcP*.



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15 **Supplementary Figure 4.** Number of bifidobacterial strains preferentially utilizing either glucose or lactose based on lactose content in the milk16 of their host. High and low lactose indicates milk containing lactose at ≥ 75 g/L or lower than 75 g/L, respectively.

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