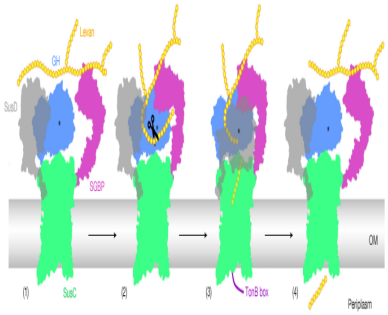
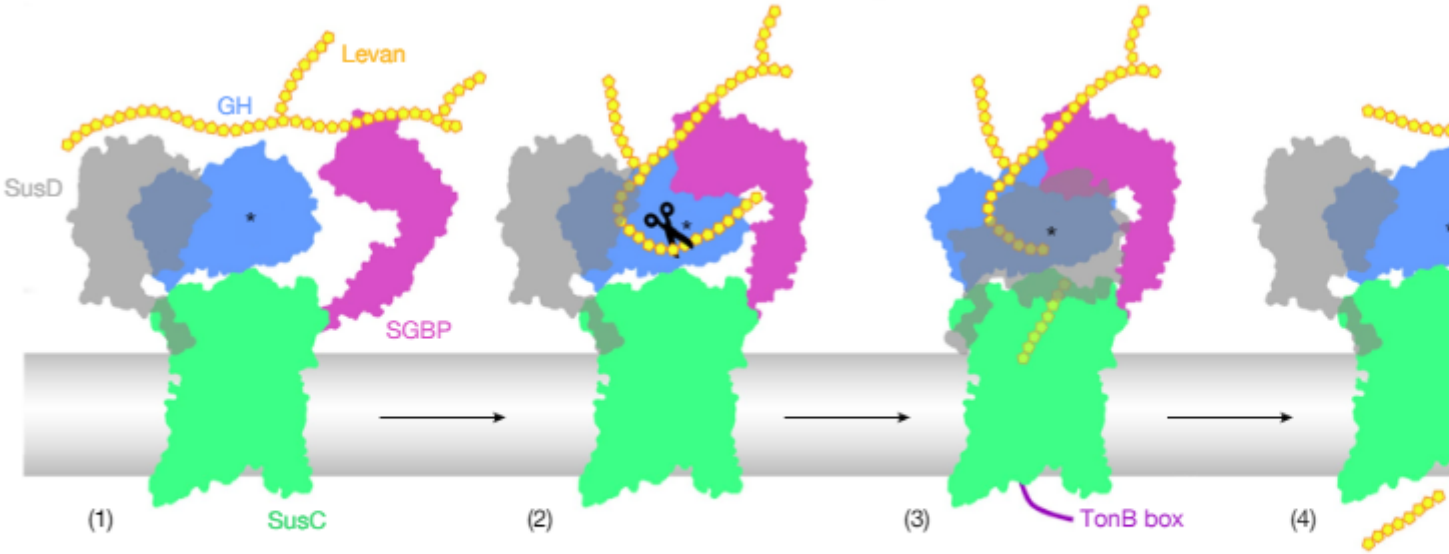


The transport pathway of utilisomes dedicated to the processing and import of simple glycans. Description of states (1)–(4) is provided in the main text. Only one-half of the dimeric utilisome is shown for clarity. An asterisk marks the active site of the GH.

Outer Membrane Utilisomes Mediate Glycan Uptake in Gut Bacteroidetes

Description

Bacteroidetes are abundant members of the human microbiota, utilizing a myriad of diet- and host-derived glycans in the distal gut1. Glycan uptake across the bacterial outer membrane of these bacteria is mediated by SusCD protein complexes, comprising a membrane-embedded barrel and a lipoprotein lid, which is thought to open and close to facilitate substrate binding and transport. However, surface-exposed glycan-binding proteins and glycoside hydrolases also play critical roles in capturing, processing, and transporting large glycan chains. The interactions between these components in the outer membrane are poorly understood, despite being crucial for nutrient acquisition by our colonic microbiota. Here we show that for both the levan and dextran utilization systems of **Bacteroides *thetaiotaomicron***, the additional outer membrane components assemble on the core SusCD



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