

# Modeling of the SusCD transport cycle from dominant members of the human gut microbiota

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The large intestine is highly populated with microorganisms which plays an important role in human health and nutrition. The dominant Gram-negative phylum *Bacteroidetes* degrade complex polysaccharides that cannot be metabolized by the host and their survival depends on their ability to import these nutrients by an outer membrane protein complex SusCD. The unresolved question is how the transport cycle works in the SusCD transporter system. In this study, X-ray crystallography, molecular dynamics (MD) simulations and single-channel electrophysiology have been carried out to provide a structural basis for the transport cycle of the SusCD system. Our results provide deeper insights into OM nutrient import by members of the *Bacteroidetes*, which is of major significance for understanding the human-microbiota symbiosis.

Reference:

A. J. Glenwright et al, Nature **541**, 407–411 (2017) .