Unexpected Architecture of a Membrane Protein Revealed

Scientific Achievement
The crystal structure of a channel-forming O-antigen polysaccharide transporter called Wzm-Wzt was revealed and showed an unexpected, non-traditional architecture.

Significance and Impact
O-antigens are important cell wall components in Gram-negative bacteria; Understanding how O-antigens are synthesized and secreted can help treat many human infections.

Research Details
– X-ray crystallography, structure-derived models, and additional functional analyses showed a processive O-antigen translocation mechanism.
– This mechanism stands in contrast to the classical alternating access mechanism of ABC transporters.


Work was performed in part at Brookhaven National Laboratory.