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In all living organisms, ABC transporters provide specific and active transport facilities to export or import a variety of molecules across cellular membranes. Their molecular organisation is based on two conserved components: a transmembrane channel and cytosolic ATP-hydrolysing modules providing the driving force needed for the translocation process. These components are often fused into a single polypeptide in export systems like, for example, those from the MDR (Multi-Drug Resistance) family. However, some systems use individual proteins to build-up the transporter, while bacterial import systems display an additional membrane-bound substrate-binding subunit dedicated to nutrients uptake.

When cultured on a medium containing glucose as main carbon source, the hyperthermophilic *Sulfolobus solfataricus* expresses a very strong glucose-binding activity. The gene encoding this glucose-binding protein (GlcS) was found next to an operon containing three genes showing a high similarity with bacterial ABC importers: two integral membrane permeases (GlcT and GlcU) and GlcV as the molecular motor of the system.

GlcV was over-produced in *E. coli* and purified in large amounts using three chromatographic steps. Initial crystallisation screens and rounds of optimisation without ATP provided crystals diffracting to high resolution. Our progress toward the crystal structure of GlcV will be presented.