

## Crystal Structure of the NgcE Protein of the *Streptomyces* ABC transporter

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The NgcE protein binds *N*-acetylglucosamine (GlcNAc) as well as *N,N'*-diacetylchitobiose and is a component of the ABC transporter Ngc for GlcNAc-uptake in *Streptomyces olivaceoviridis*. The NgcE protein was overproduced in a soluble and purified to homogeneity. Crystals of NgcE, which grew in the presence of 1 mM GlcNAc, 20 % (w/v) PEG MME 2000, and 100 mM Tris-HCl (pH 8.5), showed plate-like form, and belonged to either space group  $P2_12_12$  ( $a=59.9$ ,  $b=153.0$ ,  $c=41.7$  Å) or  $P2_12_12_1$  ( $a=58.1$ ,  $b=96.3$ ,  $c=151.7$  Å). The former crystals diffracted to 2.2 Å resolution and the latter to 1.8 Å. The MAD phasing and the initial model building were performed using 2.0 Å data sets of a selenomethionine-derivative  $P2_12_12_1$  crystal. The structure of the NgcE protein containing GlcNAc was solved as well as the structure containing *N,N'*-diacetylchitobiose. The overall structure shows a two-domain joined by a hinge-bending sugar binding region, which is similar to the maltose binding protein MalE of *Escherichia coli* and other solved sugar-binding protein of ABC transporter.

**Keywords:** ABC transporter, solute-binding protein, *N*-acetylglucosamine