

MS03-2-1 SorC protein family: the structural insight into their DNA recognition
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Abstract

SorC family is a family of bacterial transcription regulators involved in the control of carbohydrate metabolism and quorum-sensing (1,2). SorC protomers consist of a DNA-binding domain (DBD) and an effector-binding domain (EBD). Several SorC structures have been determined so far (3-6), however, there has been no structural information of their complex with the cognate DNA.

We performed X-ray crystallographic studies of two functionally characterized SorC family members from *Bacillus subtilis*: bsDeoR and bsCggR. Each selected protein represents one of the subgroups that are recognized within the family. To gain insight into the protein/DNA atomic interactions, we determined 2.3 and 2.1 Å resolution crystal structures of bsDeoR and bsCggR DBDs in complex with DNA duplexes representing halves of the operator sequences. However, the molecular packing in the crystal allowed us to make assumptions on recognition of the full operator sequence.

Besides the interest of basic research, our work has potential even for a biotechnological industry, where, recently, transcriptional repressors started to be used as molecular sensors of the metabolic flux of microorganisms.

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