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**Crystal Structure of the Escherichia Coli SbmC Protein that Protects Cells from the DNA Replication Inhibitor Microcin B17**

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Beamline(s): X9A

Escherichia coli SbmC, also known as gyrase inhibitory protein Gyrl and YeeB, is a 157-residue polypeptide with a predicted molecular mass of 18081.4 Da and a calculated pI = 4.61. The gene encoding SbmC is an SOS regulon gene induced by DNA-damaging agents and by the entry of cells into the stationary phase. The SbmC protein was originally identified as a factor that protects cells from the ribosomally synthesized 43-residue-long DNA replication inhibitor peptide microcin B17. More recently, it was shown that SbmC inhibits the supercoiling activity of the bacterial gyrase complex in vitro and that both overexpression of the protein and expression of the antisense sbmC RNA induce filamentous growth of cells and suppress cell proliferation. Therefore, the protein was renamed to reflect this function.[2]