CHARACTERIZATION OF YpsB, A NOVEL DIVISION-ASSOCIATED PROTEIN IN *Bacillus subtilis*

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In bacteria, the tubulin ortholog FtsZ, polymerizes into a ring structure around the mid-cell region and drives assembly of a membrane-associated protein complex, the divisome, which is responsible for both definition and constriction of the division site. About ten proteins are components of the divisome and are targeted to the division septum in an FtsZ-dependent manner. In *B. subtilis*, DivIVA, is a division protein that determines the localization of the divisome by directing FtsZ polymerization inhibitors MinCD to the cell poles. Using an *in-silico* procedure, we have identified a novel divisome-associated protein, YpsB, a paralog of DivIVA. GFP fusions to YpsB showed that YpsB localizes to the cell poles during vegetative growth and sporulation and targets the division septum during late stages of division, a pattern that closely resembles the localization of DivIVA. YpsB localization to the septum was shown to be dependent on FtsZ but independent of DivIVA. Knockout experiments revealed that inactivation of YpsB had no apparent phenotype, thus indicating that YpsB is not essential for division. One possible explanation for the absence of a division phenotype is that YpsB plays a redundant role in septum formation. We are currently combining the *ypsB* deletion with mutations in other genes to try to identify synthetic phenotypes. Finally, cells over-expressing GFP-YpsB seem to have a delayed entry into sporulation, thus suggesting an involvement of this protein in the sporulation process.