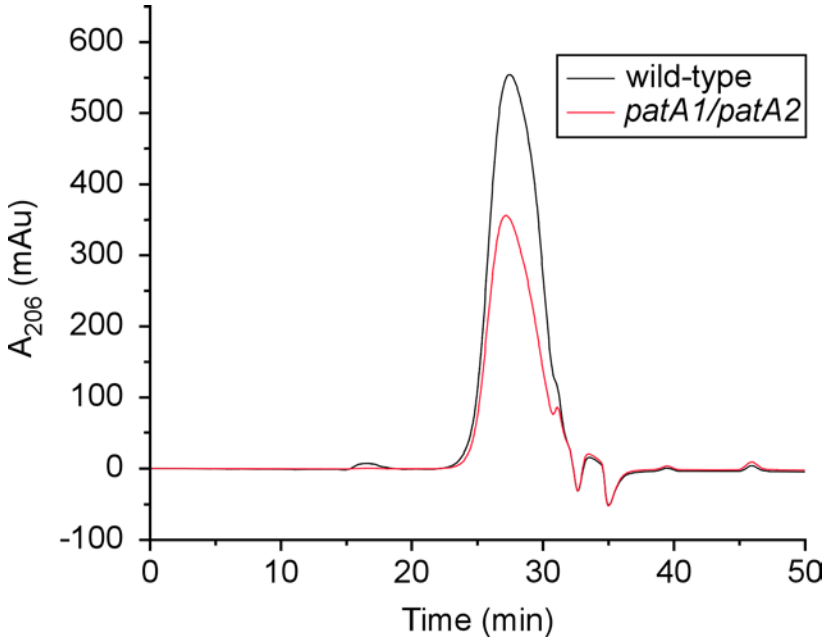

FIG. S1. High performance size exclusion chromatography (HPSEC) of the secondary cell wall polysaccharide (SCWP) isolated from either *Bacillus anthracis* Sterne (wild-type) or the *patA1/patA2* mutant strain. Ethanol-precipitated SCWP was subjected to HPSEC. The singular peak at 206 nm was used to normalize the concentration of SCWP for subsequent quantification of sodium hydroxide-released acetate.

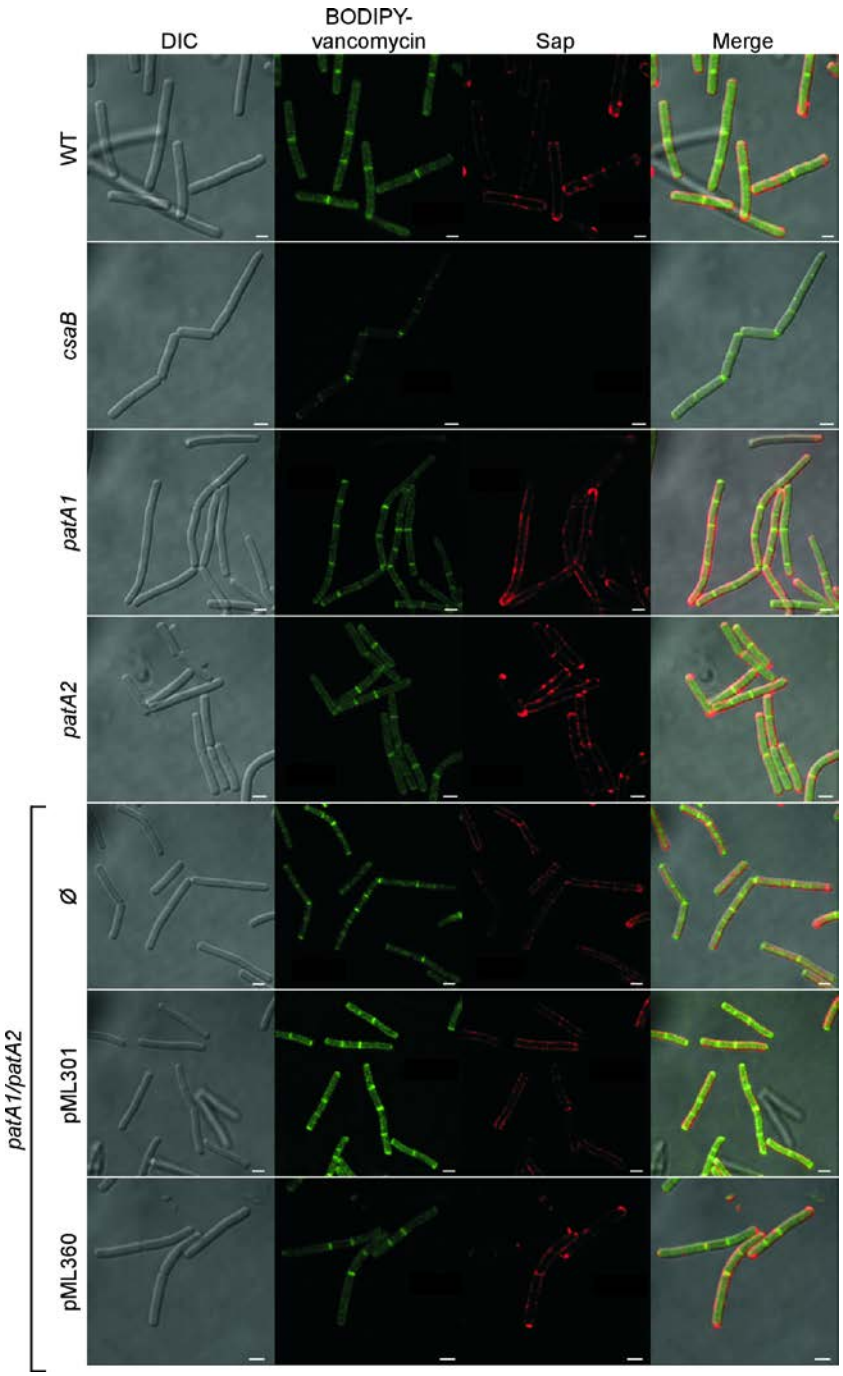

FIG. S2. Localization of the S-layer protein Sap in the envelope of wild-type, *csaB, patA1, patA2* and *patA1*/*patA2 B. anthracis*. Spores from wild-type and mutant *B. anthracis* strains were diluted into BHI and germinated bacilli were incubated for three hours. Vegetative forms were fixed in 4% buffered formalin. Differential interference contrast (DIC) and fluorescence microscopy with BODIPY-vancomycin or rabbit polyclonal antibodies staining against the S-layer

protein Sap followed by secondary antibody Alexafluor458 conjugate were used to acquire images. Data sets were merged to reveal the location of cell wall septa (BODIPY-vancomycin) and S-layer protein Sap in wild-type and mutant bacilli. The *patA1*/*patA2* mutant strain was transformed with plasmids pML301, expressing *patA1* and *patB1*, or pML360, expressing *patA2* and *patB2*, or left untransformed (Ø). Space bars denote 1 µm.