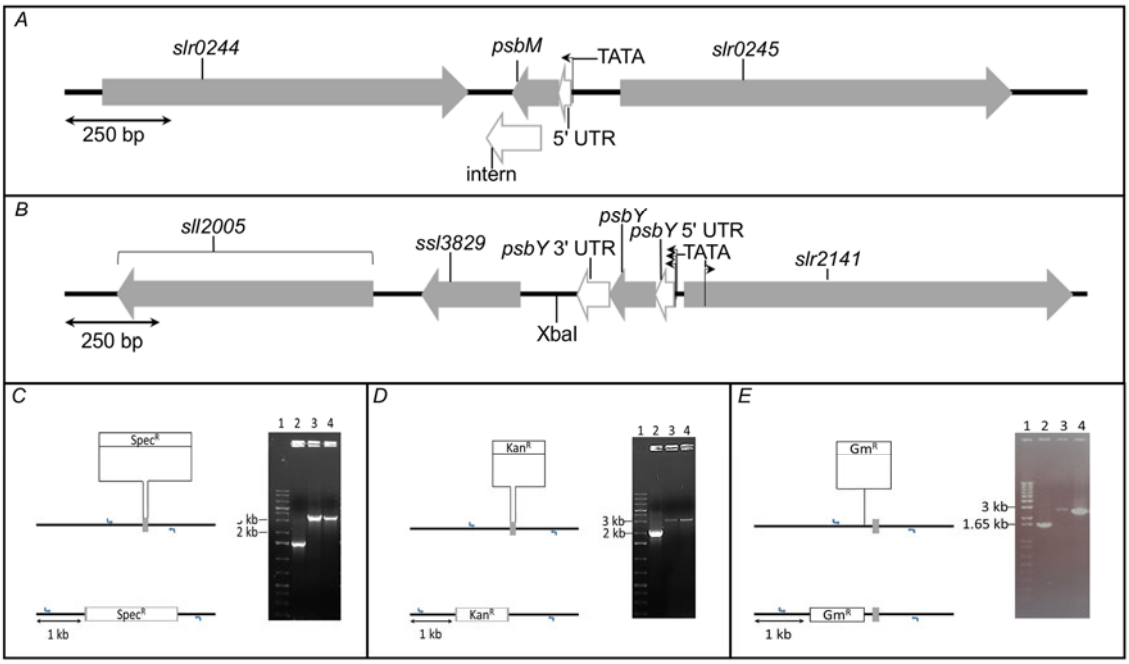

Fig. 2S. Construction of knockout mutants. (*A*) Location of *psbM* and adjacent genes. (*B*) Location of *psbY* and adjacent genes, along with the location of the XbaI site used for construction of the Ycomp strain. (*C*) Genomic diagram for the replacement of 96 bp out of 108 bp of *psbM* with a 2 kb spectinomycin-resistance cassette (SpecR) and confirmation of segregation in the resulting ΔPsbM mutant by colony PCR. 1 Kb Plus DNA marker (*Invitrogen*, Carlsbad, CA, USA) (lane 1); wild type (lane 2); ΔPsbM (lane 3) and ΔPsbM:ΔPsbY (lane 4). The primers were RFR-PsbM-Rv and LFR-PsbM-Fw (supplemental Table 1S). (*D*) Genomic diagram for the replacement of 110 bp out of 120 bp of *psbY* with a 1.2 kb kanamycin-resistance cassette (KanR) and confirmation of segregation in the resulting ΔPsbY mutant by colony PCR. 1 Kb Plus DNA marker (*Invitrogen*, Carlsbad, CA, USA) (lane 1); wild type (lane 2); ΔPsbY (lane 3) and ΔPsbM:ΔPsbY (lane 4). The primers were RFR-PsbY-Rv and LFR-PsbY-Fw (supplemental Table 1S). (*E*) Genomic diagram for the construction of the Ycomp strain by inserting a 1 kb gentamycin-resistance cassette (GmR) at the unique XbaI site downstream of *psbY* and confirmation of segregation in the resulting strain by colony PCR. 1 Kb Plus DNA marker (*Invitrogen*, Carlsbad, CA, USA) (lane 1); wild type (lane 2); ΔPsbM:ΔPsbY (lane 3) and Ycomp (lane 4). The primers were PsbY-Fw-N and PsbY-RV-N (supplemental Table 1S).