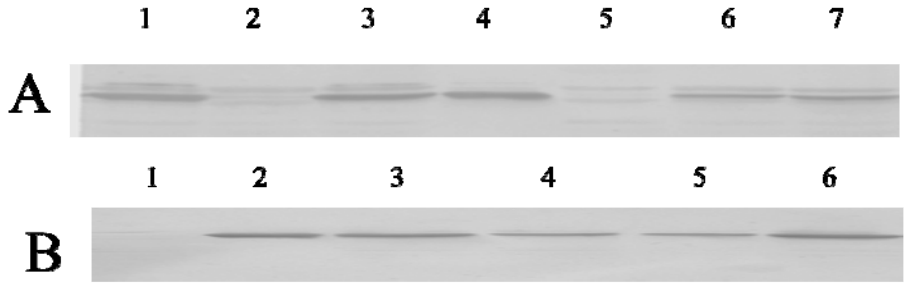
A Rubisco mutant that confers growth under a normally "inhibitory" oxygen concentration[†]

Sriram Satagopan[§, ||], Stephanie S. Scott [§], Todd G. Smith[§, ±], and F. Robert Tabita[*, §]

Department of Microbiology and the Plant Molecular Biology/Biotechnology Program[1], The Ohio State University, 484 West 12th Avenue, Columbus, Ohio 43210-1292, USA

Fig. S1



Western immunoblot analysis of crude extracts from (A) photoheterotrophic and (B) photoautotrophic grown *R. capsulatus* cultures of Rubisco-deficient strain SBI/II$^-$ complemented with wild-type or mutant *Synechococcus* enzymes. Western analyses were performed on crude extracts using form I antisera to the *Synechococcus* sp. strain PCC6301 enzyme from the cultures indicated. All lanes were loaded with approximately 5 µg protein except for the purified recombinant *Synechococcus* 6301 enzyme, loaded at at 1 µg. In (A) cultures were grown under photoheterotrophic conditions for four days under anaerobic conditions in malate minimal media in the light at 30°C at 5% CO_2/95% H_2. The following enzymes were used: lane 1, D103V/A375V in strain SBI/II$^-$; lane 2, strain SBI/II$^-$ grown with DMSO as electron acceptor without any Rubisco; lane 3, D103V/A375V in strain SBI/II$^-$; lane 4, purified *Synechococcus* 6301 Rubisco; lane 5, strain SBI/II$^-$ grown with DMSO as electron acceptor without any Rubisco; lane 6, D103V in strain SBI/II$^-$; lane 7, A375V in strain SBI/II$^-$. In (B) cultures were grown under photoautotrophic conditions for eight days in the light at 30°C at 5% CO_2/95% H_2. Lane 1, strain SBI/II$^-$ without any Rubisco grown initially in malate media containing DMSO; lane 2, purified *Synechococcus* 6301 Rubisco; lane 3, A375V in strain SBI/II$^-$; lane 4, wild-type *Synechococcus* 6301 Rubisco in strain SBI/II$^-$; lane 5, D103V in strain SBI/II$^-$; lane 6, D103V/A375V in strain SBI/II$^-$.