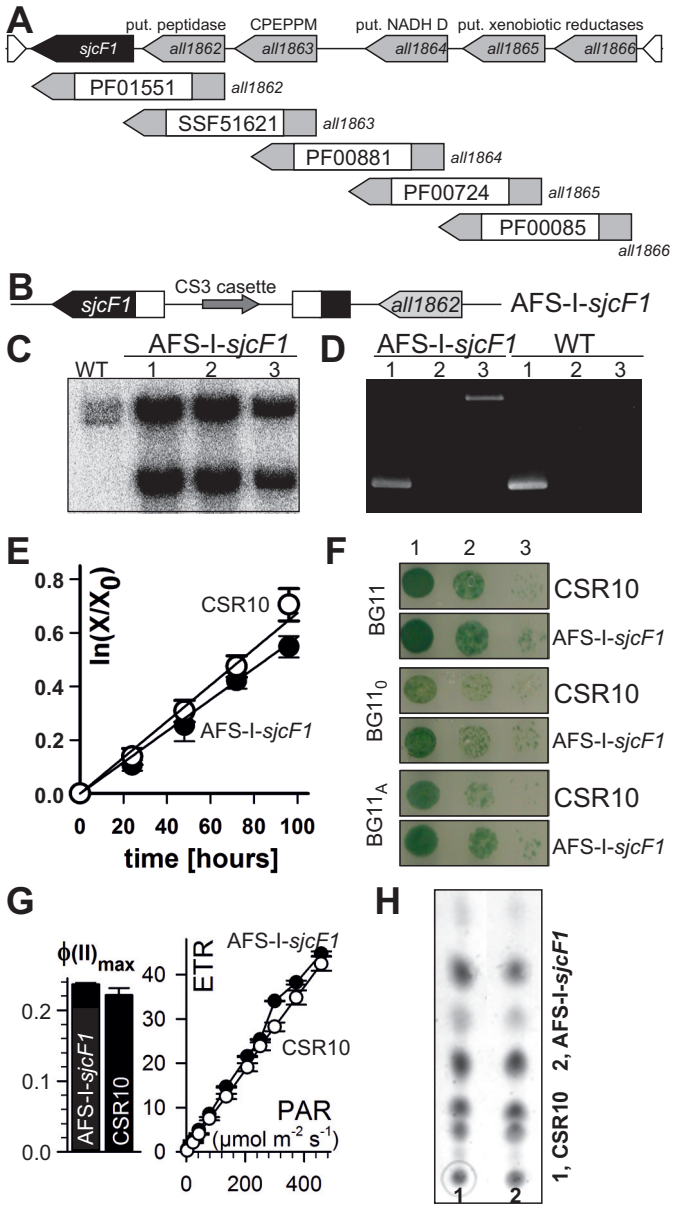

FIG S1 SjcF1 is essential for *Anabaena* sp. growth. (A) The gene cluster is shown as in Fig. 1A. The assigned Pfam domains for the individual encoded proteins are shown. The global classification of the proteins is shown on top with the following abbreviations: CPEPPM, carboxy phosphonoenolpyruvate phosphonomutase; NADH D, putative NADH dehydrogenase. The domain characterization for each gene is indicated. All1862 is characterized by the Pfam domain PF01551: Peptidase M23 domain; All1863 is characterized by the superfamily domain SSF51621: Phosphoenolpyruvate/pyruvate kinase domain; All1864 is characterized by the Pfam domain PF00881: Nitroreductase; All1865 is characterized by the Pfam domain PF00724: NADH:flavin oxidoreductase / NADH oxidase family; All1866 is characterized by the Pfam domain PF00085: Thioredoxin. (B) Scheme of AFS-I-*sjcF1*: white boxes are duplicated region used for recombination. C) Southern blot analysis on genomic DNA isolated from *Anabaena* (WT) or three independent clones of AFS-I-*sjcF1* digested with HindIII using a P^{32}-labelled *sjcF1* probe. (D) PCR was performed on genomic DNA isolated from AFS-I-*sjcF1* or wild-type cells using *sjcF1* specific primers (lane 1), and the *sjcF1* forward (lane 2) or reverse primer (lane 3) with $Sp^{R}Sm^{R}$-R primer. (E) Growth of *Anabaena* wild type and AFS-I-*sjcF1* in BG11 medium. (F) 5 µl of three dilutions of cell suspensions of CSR10 as control and AFS-I-*sjcF1* were spotted on BG11, $BG11_0$ or $BG11_A$ (ammonia instead of nitrate as nitrogen source) medium, and growth was inspected after 7 days. (G) Photosynthetic parameters were determined by PAM measurements and the maximal quantum yield of photosystem II (left) and the electron transport rate (right) were determined for CSR10 (used as a control; 50) and AFS-I-*sjcF1*. (H) Lipid analysis of CSR10 or AFS-I-sjcF1 grown in $BG11_0$ medium.