Supplementary Material: Enzymatic oxyfunctionalization driven by photosynthetic water-splitting in the cyanobacterium Synechocystis sp. PCC 6803

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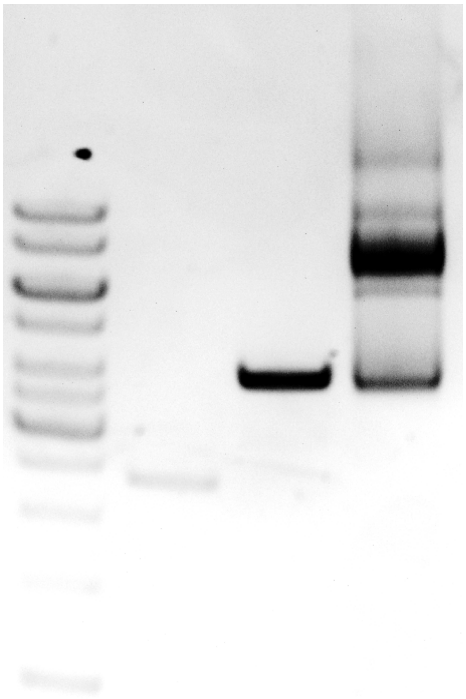

Figure S1. Confirmation of complete segregation by agarose gel electrophoresis. Line 1: DNA Ladder, Lane 2: wild-type Synechocystis, Lane 3: Synechocystis-CHMO, Lane 4: positive control. Fully segregation was confirmed due to the missing wild-type PCR product (2341 bp) and the presence of PCR products of the mutant and the positive control at 3857 bp.

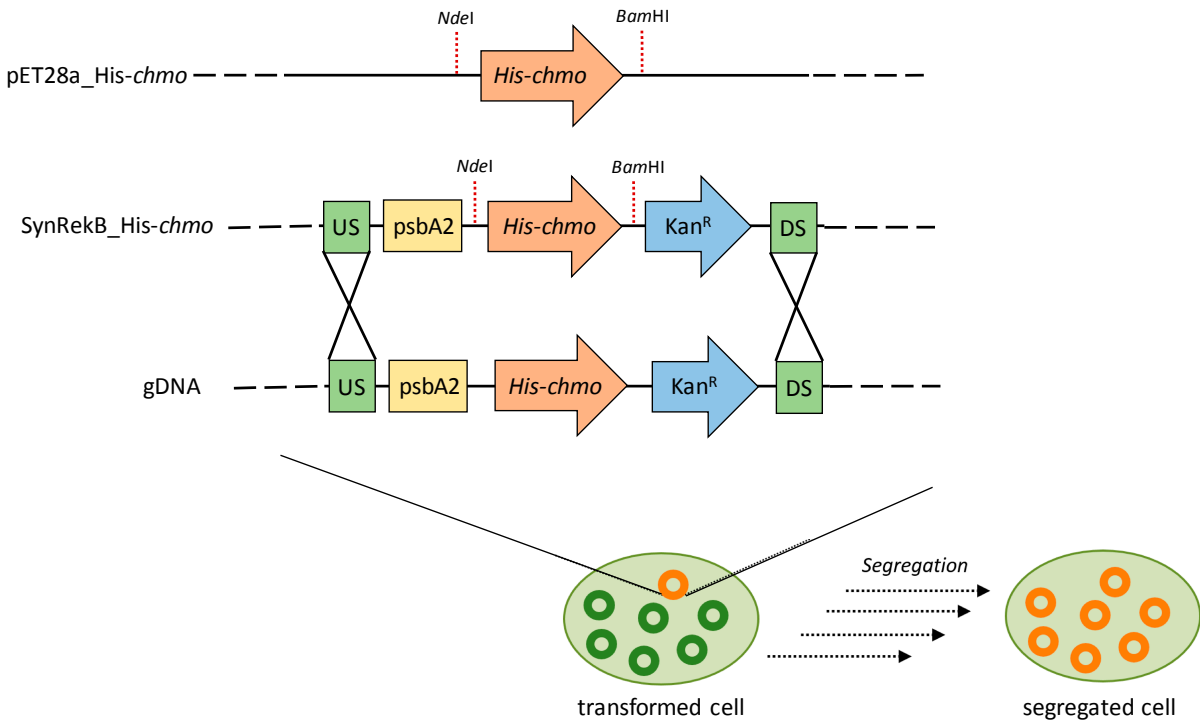

Figure S2. Transformation of Synechocystis cells by homologous recombination and segregation. The shuttle vector SynRekB contains the cloned target gene as well as the light-inducible promoter psbA2 and a kanamycin resistance (KanR) gene for selection of the clones. These components are flanked by upstream (US) and downstream (DS) regions within the double cross-over for homologous recombination in Synechocystis occurs. Initially, the heterogeneous transformants carry in only one genome copy the gene for the recombinant enzyme (chmo), which makes it necessary to increase the segregation pressure to make the cells fully recombinant.

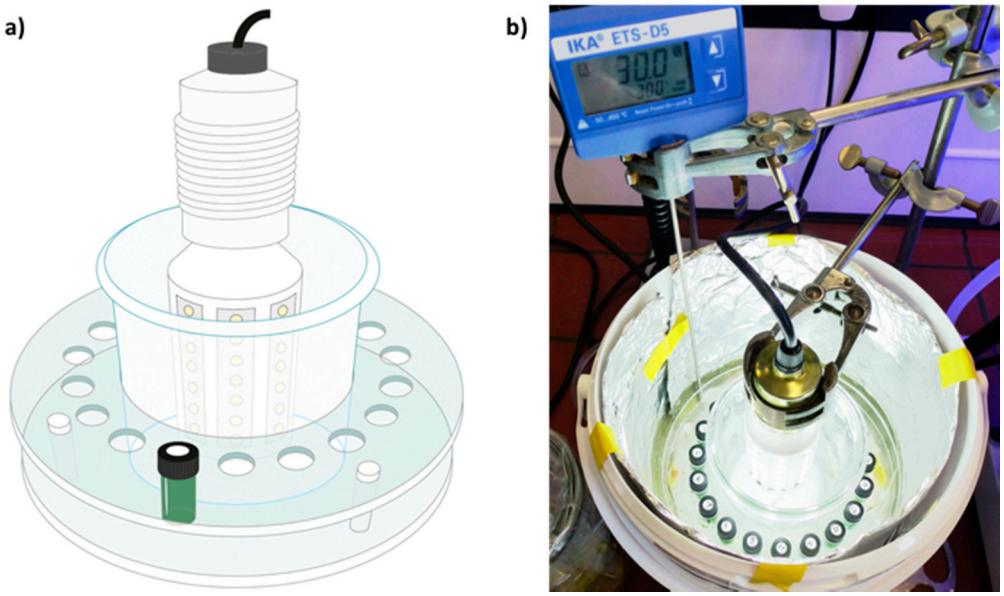

Figure S3. Schematic representation (a) and picture (b) of the light-reactor used for the *Synechocystis* biotransformations on analytical scale.