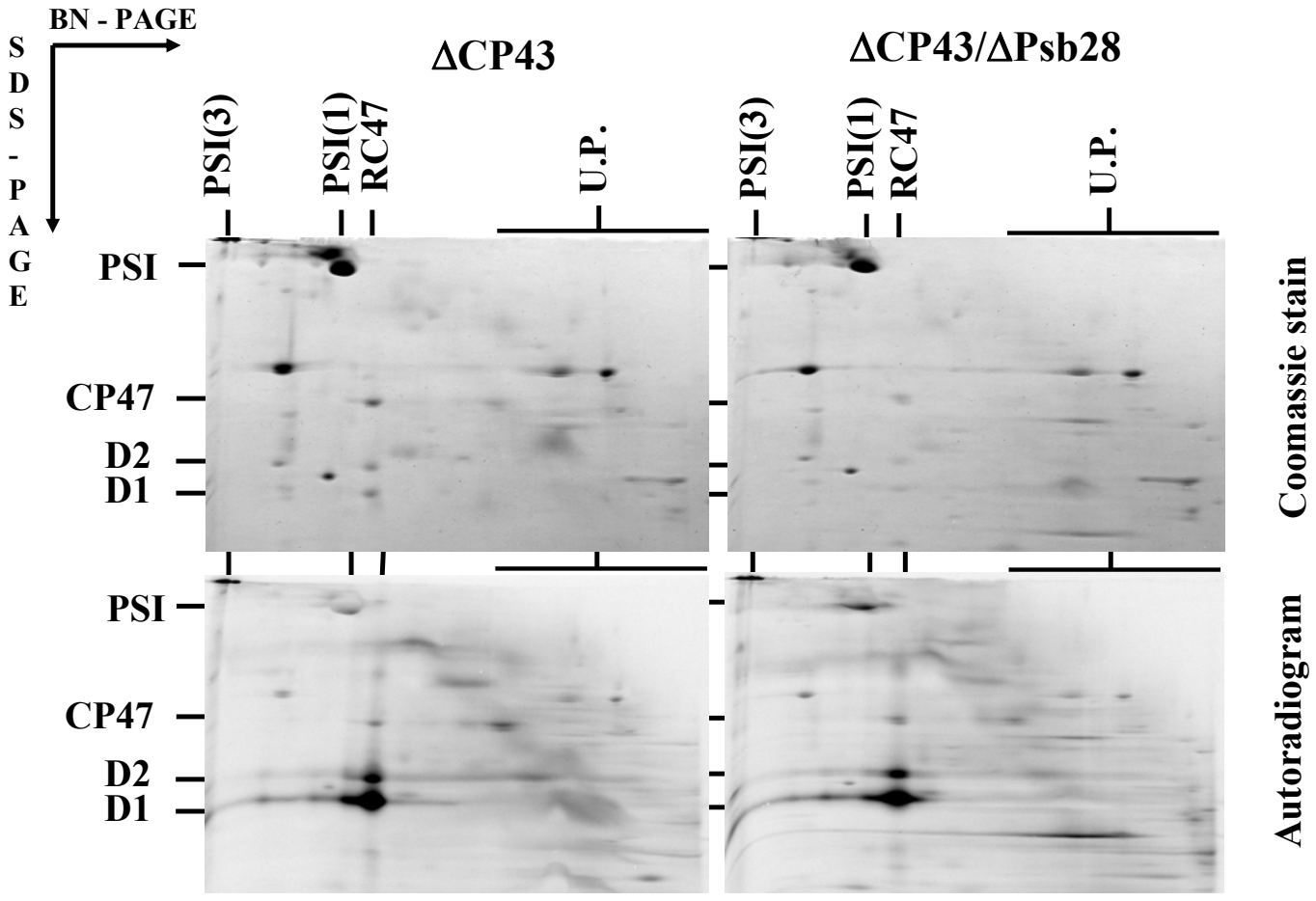

Figure S1. 2D BN/SDS-PAGE of radioactively labeled membrane proteins from *psbC* deletion mutant ΔCP43 and the double mutant ΔCP43/ΔPsb28. Cells of ΔCP43 (left panels) and ΔCP43/ΔPsb28 (right panels) cultivated in the presence of glucose were radiolabeled at 500 µmol photons m^{-2} s^{-1} and 29°C with a mixture of [^{35}S]Met/Cys for 20 min and the labeled cells were used for isolation of thylakoids, which were analyzed by 2D BN/SDS-PAGE and immnoblotting. Upper panels show Coomassie stained gels of proteins, the corresponding autoradiograms are shown in the lower panels. 6 µg of Chl was loaded for each sample. Designation of complexes as in Fig. 1.

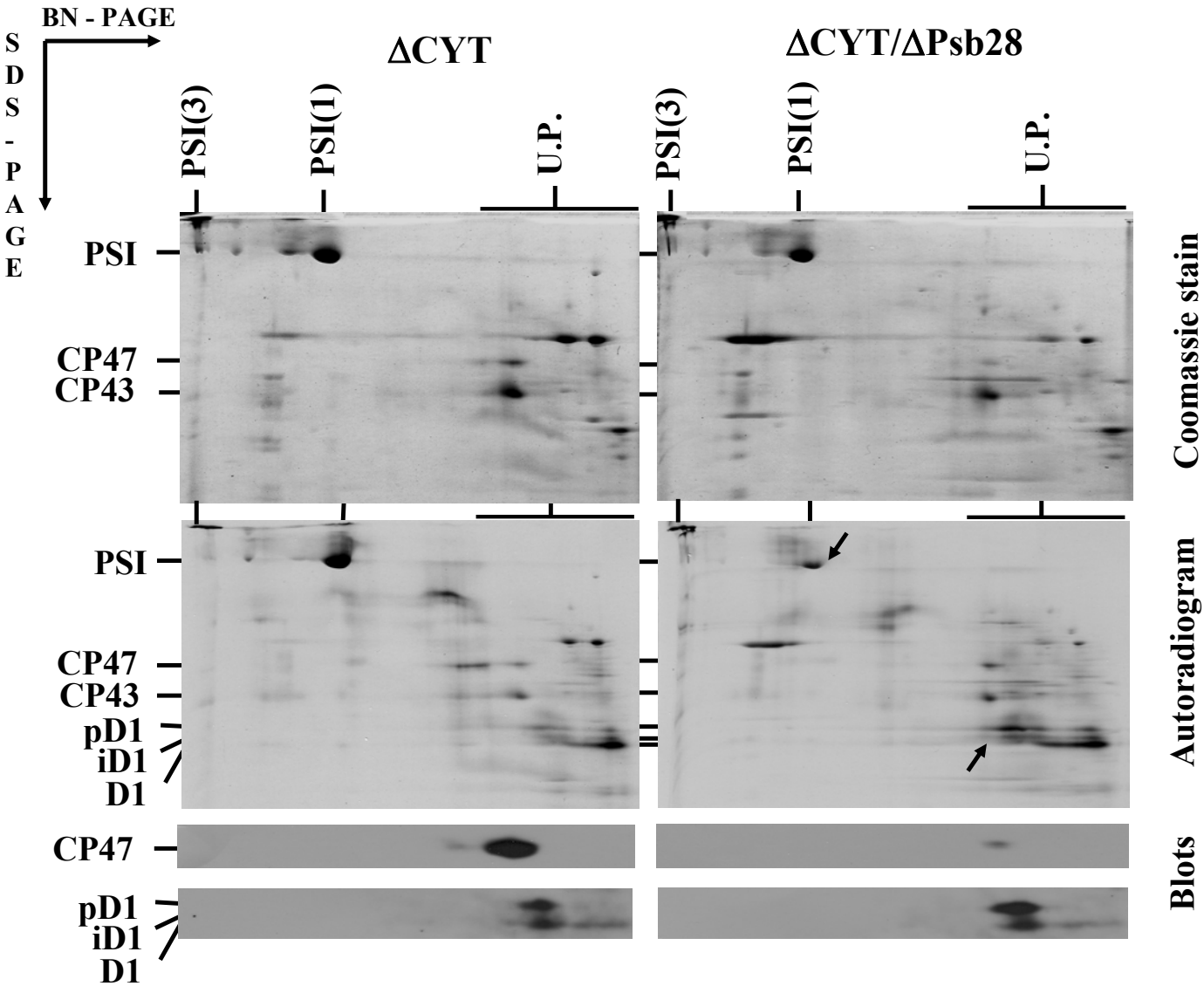

Figure S2. 2D BN/SDS-PAGE of radioactively labeled membrane proteins from *psbEFLJ* deletion mutant ΔCYT and the double mutant ΔCYT/ΔPsb28. Cells of ΔCYT (left panels) and ΔCYT/ΔPsb28 (right panels) cultivated in the presence of glucose were radiolabeled at 500 µmol photons m^{-2} s^{-1} and 29°C with a mixture of [35S]Met/Cys for 20 min and the labeled cells were used for isolation of thylakoids, which were analyzed by 2D BN/SDS-PAGE and immnoblotting. Upper panels show Coomassie stained gels of proteins, the corresponding autoradiograms are shown in the lower panels. Below are blots after blotting of the proteins onto PVDF membrane and detection using antibodies specific for CP47 and D1. 6 µg of Chl was loaded for each sample. Designation of complexes as in Fig. 1.

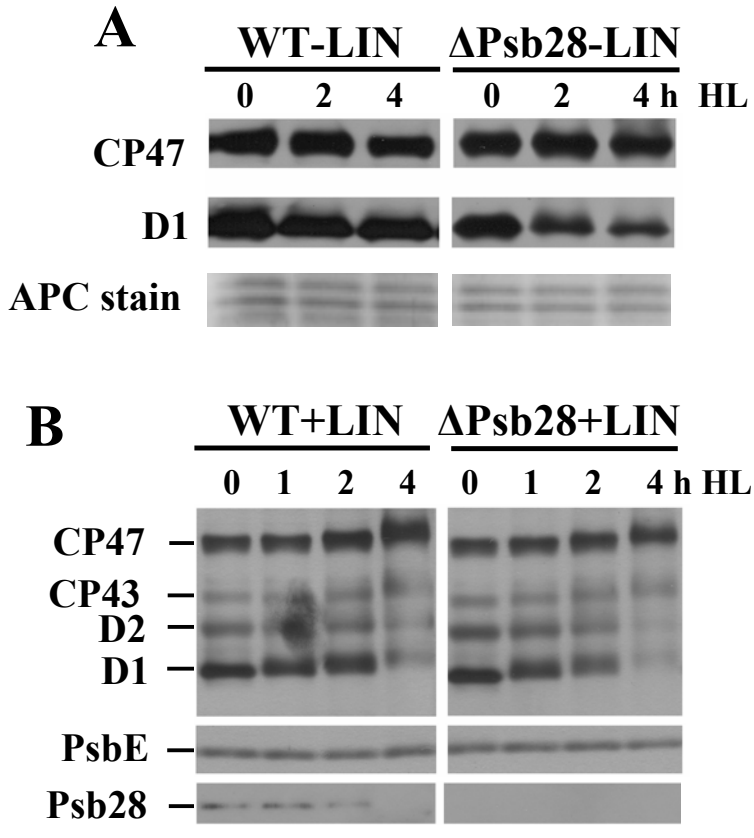

Figure S3. Levels of PSII proteins in cells of WT and ΔPsb28 exposed to high light in the absence (A) and presence (B) of lincomycin. (A) Membrane proteins from cells of WT and ΔPsb28 before and after 4h exposure to white light of 2000 μmol photons m^{-2} s^{-1} were separated by denaturing SDS-PAGE and detected using antibodies specific for CP47 and D1 proteins of *Synechocystis sp*. PCC 6803. Correct protein loading was proven by staining of α and β allophycocyanin-binding subunits (APC stain). 1 μg of Chl were loaded onto the gel. (B) Membrane proteins from cells of WT and ΔPsb28 during 4h exposure to white light of 2000 μmol photons m^{-2} s^{-1} in the presence of lincomycin (100 μg mL^{-1}) were separated by denaturing SDS-PAGE and detected using antibodies specific for CP47, CP43, D2, D1, PsbE and Psb28 proteins of *Synechocystis sp*. PCC 6803. 1 μg of Chl were loaded onto the gel.