



Fig. S9. Two models of PSI in the complex of PBS-PSII-PSI. Crystal structure of PSI (PDB: 1JB0) are manually modeled at both sides of PSII so that the transmembrane helices are parallel and PSI is as close as possible to PSII without overlap. Liu *et al* reported two cross-links between ApcD and PSI subunits: K48-ApcD/K11-PsaA and K49-ApcD/PsaD77. If ApcD is in disc1 (A), the distances would be 40 Å and 34 Å, respectively. If ApcD is in disc4, the distances would be 43 Å and 47 Å (B), respectively. Structure information of PBS-PSII-PSI complex is needed to unambiguously determine whether disc 1 or disc 4 contains ApcD.