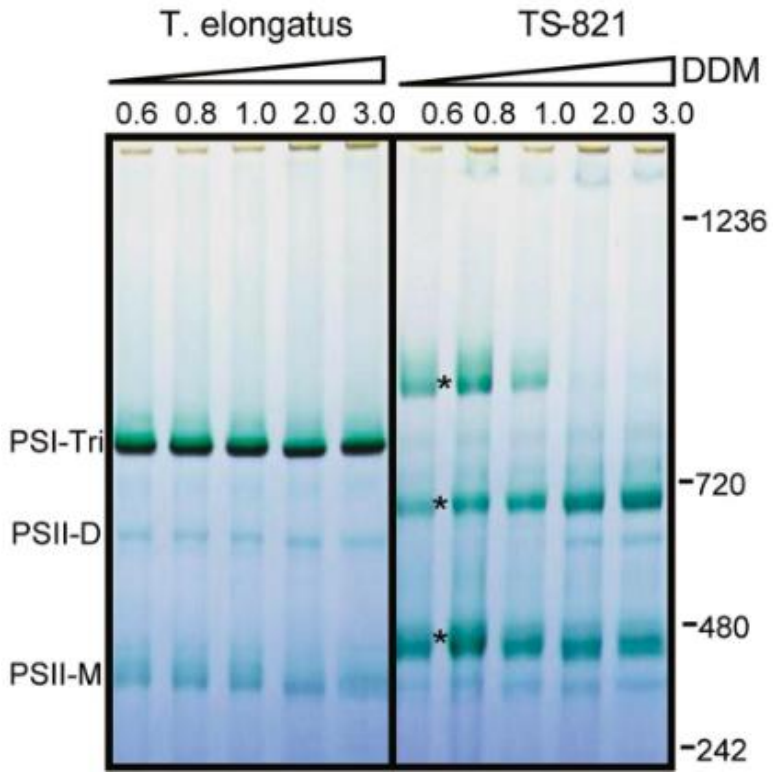

Figure 1. BN-PAGE of the β-DDM solubilized thylakoids of *T. elongatus* (left lanes) and TS-821 (right lanes) using increasing amounts of β-DDM. The *T. elongatus* photosystems are identified on the left, and the molecular weight standards are shown on the right. Asterisks indicate the PSI tetramer, PSI dimer, and PSI monomer. Modified from Semchonok et al., 2022.

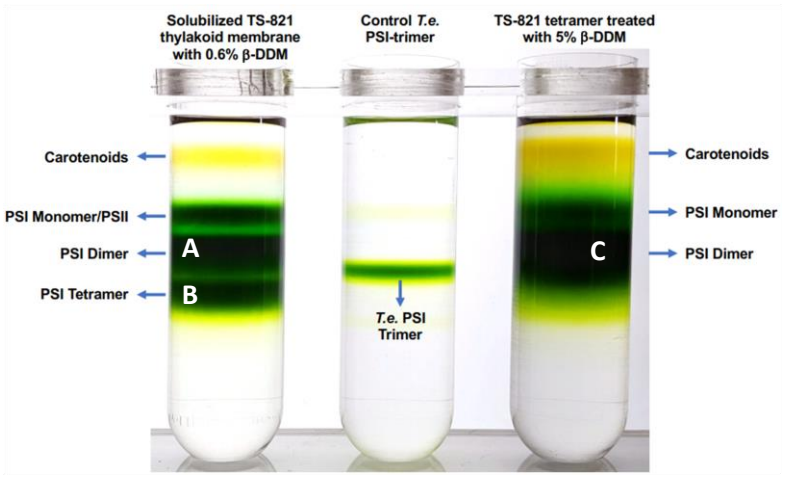

Figure 2. Sucrose density gradient centrifugation of solubilized TS-821 thylakoid membrane. The main bands corresponding to carotenoids (Car), PSI monomer (Mon), PSI dimer (Dim), trimer (Tri), and tetramer (Tet) are labelled.

The A) PSI dimer and B) tetramer are obtained with a mild 0.6% b-DDM detergent concentration. C) PSI dimer results from isolation using harsh (5% b-DDM) detergent concentration and is a result of PSI tetramer disassembling.

As a control, the *Thermosynechococcus elongatus* (*T.e*) band for the PSI trimer is represented in the middle.

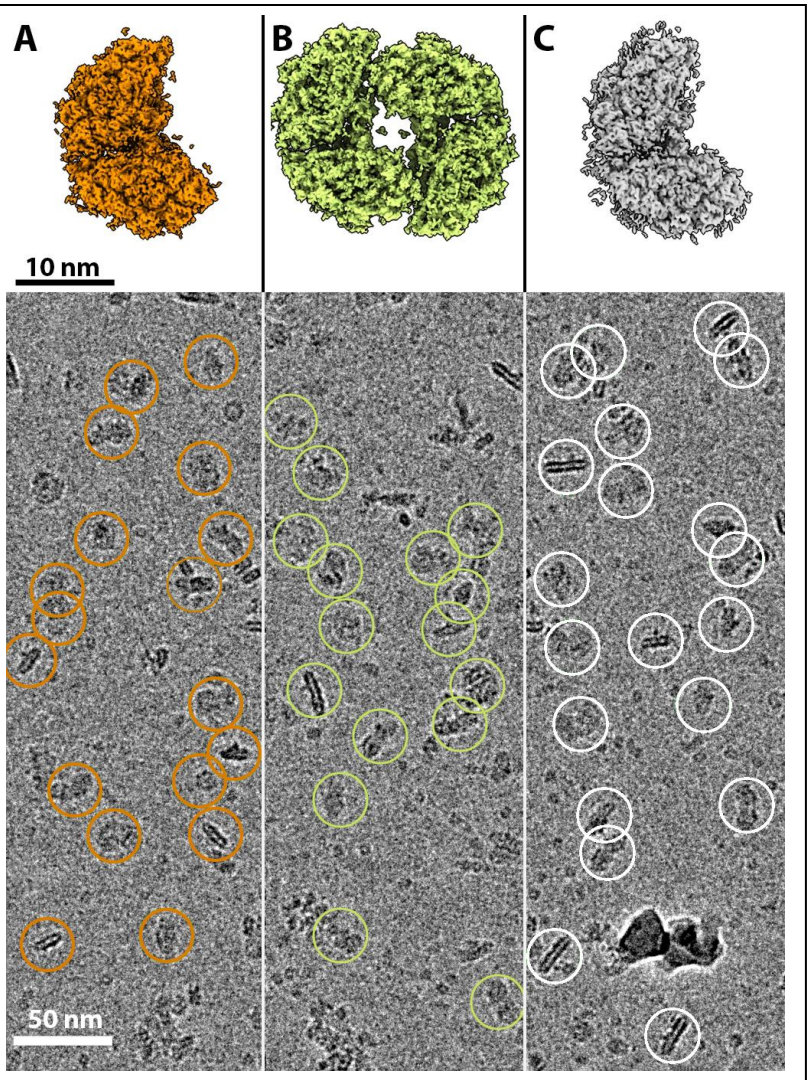

Figure 3. Preliminary low-resolution cryo-EM 3D PSI maps of TS-821 thermophilic cyanobacterium: A) Dimer Untreated (brown), B) Tetramer Untreated (green), and C) Dimer 5% DDM Treated*. The correspondent fragments of cryo-EM micrographs are shown below.