The structure of the peripheral stalk of *T. thermophilus* H^+-ATPase/synthase

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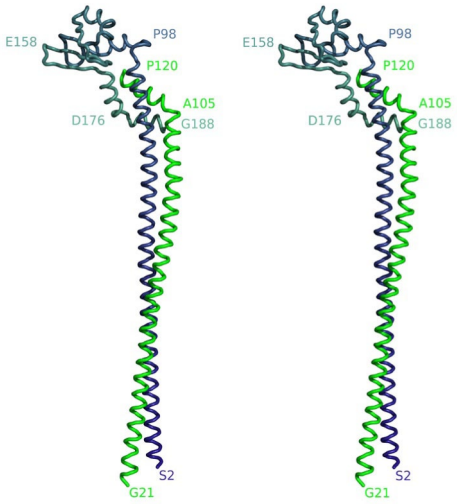
Supplementary Information

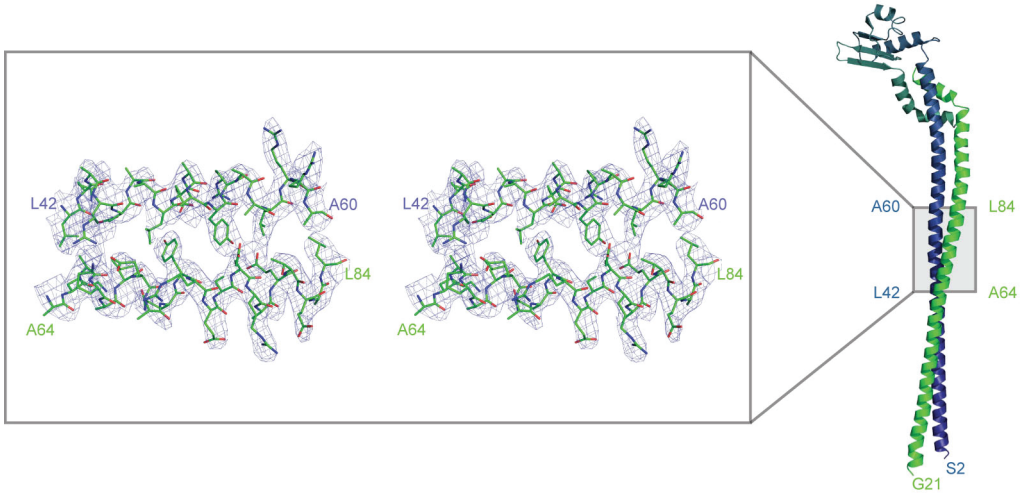
Supplementary Figure 1



Supplementary Figure 1. Stereo view of the Cα trace of the EG peripheral stalk complex.

'Wall-eyed' stereo view of the Cα trace of the A-type ATPase EG peripheral stalk complex from *T. thermophilus*. Subunit E is shown in dark to light blue from N to C terminus and subunit G is shown in green.

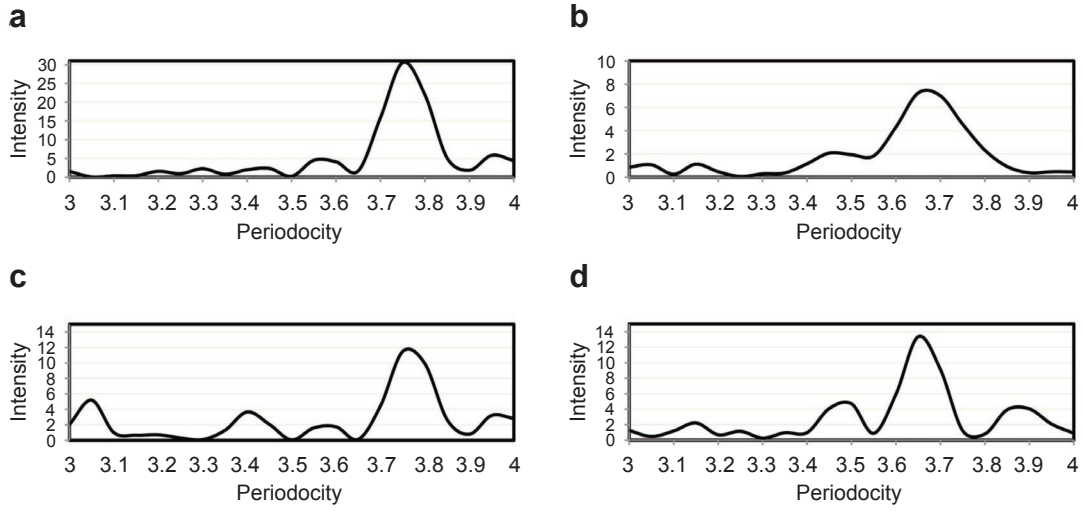
Supplementary Figure 2



Supplementary Figure 2. Sample portion of electron density from the EG peripheral stalk complex.

'Wall-eyed' stereo view of representative portion of electron density from the long helices of the EG peripheral stalk complex from *T. thermophilus* A-type ATPase. The density spans residues Leu42 to Ala60 of subunit E and residues Ala64 to Leu84 of subunit G and was contoured at 1 σ. The location of the density within the structure is indicated on the right.

Supplementary Figure 3



Supplementary Figure 3. Fourier transform analysis of the periodicities of hydrophobic residues.

Sequences of E and G subunits from A-type ATPases from six archaeal organisms (*P. horikoshii*, *T. thermophilus*, *E. hirae*, *T. acidophilum*, *M. mazei* and *M. jannaschii*) and from V-type ATPases from five eukaryotic organisms (*S. cerevisiae*, *N. crassa*, *B. taurus*, *H. sapiens* and *M. sexta*) were aligned with a ClustalW multiple sequence alignement. To identify periodicities in the hydrophobic residues, we summed the Kyte and Doolittle hydrophobicity plots from each organism and performed a Fourier transform analysis on the summed hydrophobicity plots over the first 100 residues with a sampling rate of 0.02 over a range of periodicities from 3.0 – 4.0. The Fourier transform graphs of A-type subunits G, A-type subunits E, eukaryotic V-type subunits G and eukaryotic V-type subunits E are displayed (**a**, **b**, **c** and **d** respectively). Subunits G and E from both A-type and V-type ATPases display a single prominent peak at a periodicity of 3.75 and 3.66, corresponding to a quindecad (15/4) and a hendecad (11/3) RHCC respectively. Notably, there is no prominent peak at a periodicity of 3.5, which would correspond to a LHCC (7/2).