

Figure 1. SEC elution profile of SERCA in detergent. An elution profile showing the isolation of pure SERCA. Retention time is consistent with a 110 kDa membrane protein in high purity. SDS-PAGE of the fractions collected reveal SERCA in high concentration and purity (inset).

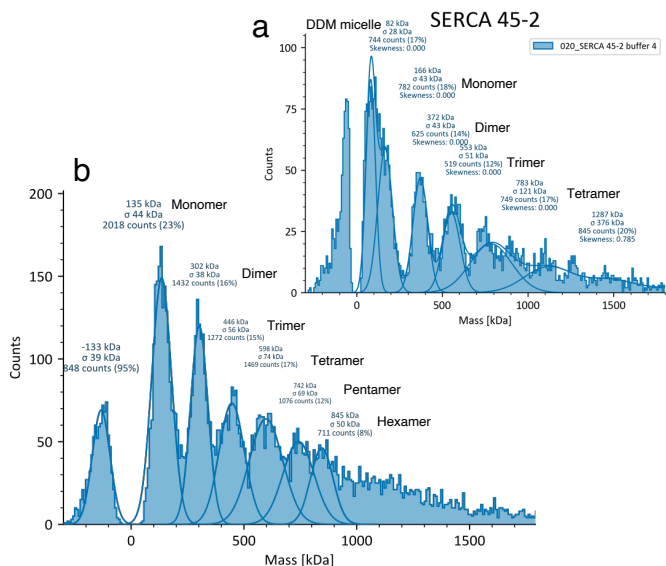


Figure 2. Mass profile of SERCA regulatory complexes in detergent. Mass profile of (a) SERCA ($\sim 6 \mu\text{M}$) and (b) SERCA-DWORF in buffer, solubilized with DDM ($< \text{CMC}$) as determined by Mass Photometry (Refeyn TwoMP Mass Photometer). Counts refer to events recorded at sizes respective to the size of MGTA oligomeric states. This curve indicates that there are discrete oligomeric states characteristic of a pure sample.

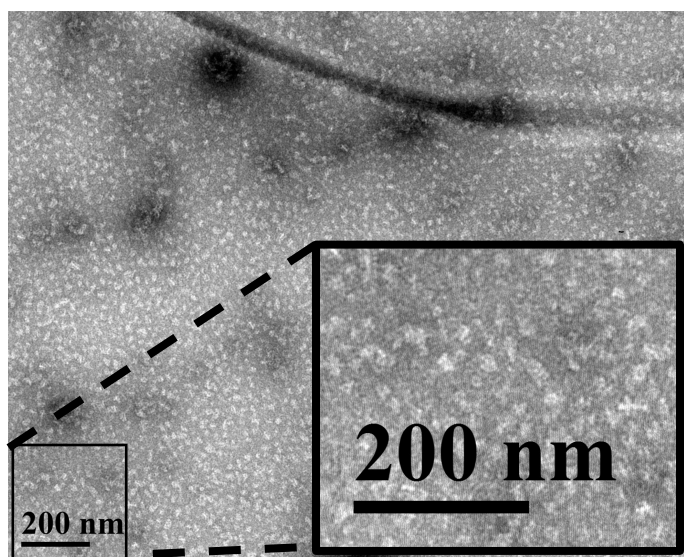


Figure 3. Negative-stain TEM micrograph of purified SERCA-DWORF complexes. Initial negative stain TEM screens reveal particles consistent with a micelle containing SERCA and DWORF.

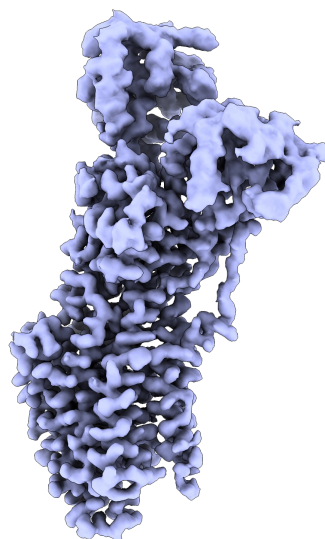


Figure 4. Single Particle Analysis by Cryo-EM reveal MgtA structure. A reconstruction based on data collected at the PNCC reveals that detergent solubilized P-Type ATPases can be reconstructed to below 4Å resolution.

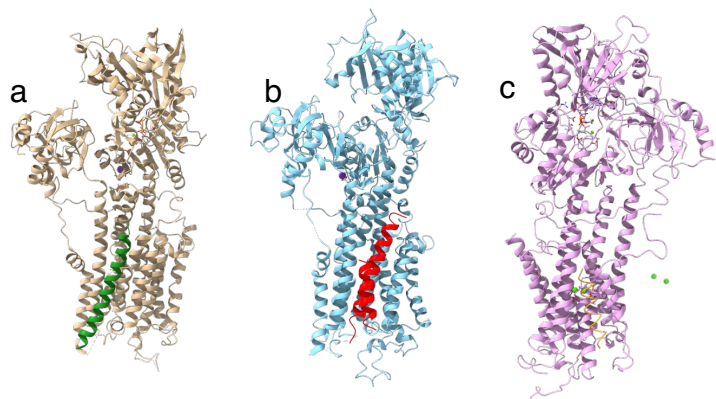


Figure 5. X-ray crystallography reveals regulin interaction with SERCA. Models determined by X-ray crystallography reveal (a) SLN (4H1W), (b) PLN (4Y3U), and (c) DWORF (unpublished) interacting SERCA's transmembrane domain.

(a) Winther A.M., et al. (2013). The sarcoplasmic-bound calcium pump stabilizes calcium sites exposed to the cytoplasm. *Nature. Mar 14*;495(7440):265-9
(b) Akin B.L., et al. (2013) The structural basis for phospholamban inhibition of the calcium pump in sarcoplasmic reticulum. *J Biol Chem. Oct 18*;288(42):30181-30191.

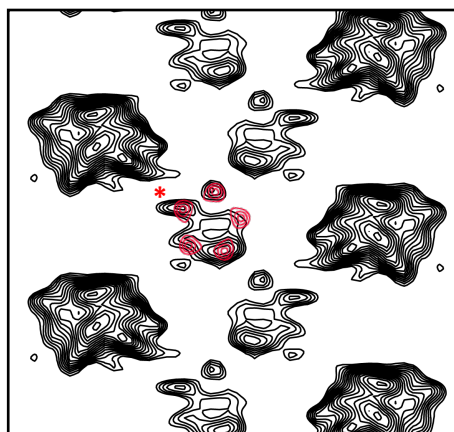


Figure 6. 2D electron crystallography reveals pentamer interaction with SERCA. In this sharpened projection map of 2D crystals containing SERCA and PLN, we can clearly see the pentameric architecture interacting with SERCA's accessory site.
Glaves, J. P., et al. (2011) Phosphorylation and mutation of phospholamban alter physical interactions with the sarcoplasmic reticulum calcium pump. *J. Mol. Biol.* **405**, 707-723