

Molecular Probes) and donkey anti-mouse IR800nm (1:10,000, Rockland). Proteins were detected by imaging fluorescent secondary antibodies on an Odyssey scanner (LiCor Inc.).

Protein Data Bank Accession Numbers

Atomic coordinates and structure factors for yeast Vps4_{ΔMIT} have been deposited in the RCSB Protein Data Bank with accession number 3EIE for the SO₄-bound form and 3EIH for the ATP_γS-bound form.

Acknowledgments

We thank Ian Huggins for help with protein purification, Heidi Schubert for advice with crystallography, and a reviewer for suggesting the assignment of electron density as an ethylene glycol molecule. We gratefully acknowledge the DNA Synthesis and Sequencing Core Facilities at the University of Utah. Data for this study were measured at beamline X25 of the National Synchrotron Light Source. Financial support comes principally from the Offices of Biological and Environmental Research and of Basic Energy Sciences of the US Department of Energy, and from the National Center for Research Resources of the National Institutes of Health. This work was supported by National Institutes of Health Grants AI51174 (to W.I.S.) and P50GM082545 (to W.I.S. and C.P.H.).