## **Supporting Information**

Spectroscopic and Electronic Structure Studies of a DMSO Reductase Caltalytic Intermediate: Implications for Electron and Atom Transfer Reactivity *Regina P. Mtei*,<sup>1</sup> *Ganna Lyashenko*,<sup>2</sup> *Benjamin Stein*,<sup>1</sup> *Nick Rubie*,<sup>1</sup> *Russ Hille*,<sup>2</sup>\* *and Martin L. Kirk*<sup>1</sup>\*

<sup>1</sup>Department of Chemistry and Chemical Biology, The University of New Mexico, MSC03 2060, 1 University of New Mexico, Albuquerque, NM 87131-0001; <sup>2</sup>Department of Biochemistry, University of California Riverside, Riverside, CA 92521

mkirk@unm.edu russ.hille@ucr.edu

Contents:

S1. Active space orbitals used in SORCI calculations of the electronic absorption and MCD

spectra for 1 (D = doubly occupied; S = singly occupied; U = unoccupied). Perspective view is

looking down the pseudo 3-fold molecular "z" axis.



S2. Calculated reaction coordinate for DMSOR with TMAO as substrate showing the **TS** and the **I-P** intersection.





