SUPPORTING INFORMATION

Identification of the Oxygen Activation Site in Monomeric Sarcosine Oxidase: Role of Lys265 in Catalysis†

Guohua Zhao, Robert C. Bruckner,

and Marilyn Schuman Jorns*

Department of Biochemistry and Molecular Biology

Drexel University College of Medicine

Philadelphia, PA 19102

†This work was supported in part by Grant GM 31704 (M. S. J.) from the National Institutes of Health.

*To whom requests for reprints should be addressed. Phone: (215) 762-7495 FAX: (215) 762-4452; E-mail: marilyn.jorns@drexelmed.edu

Running Title: Oxygen Activation Site in Monomeric Sarcosine Oxidase

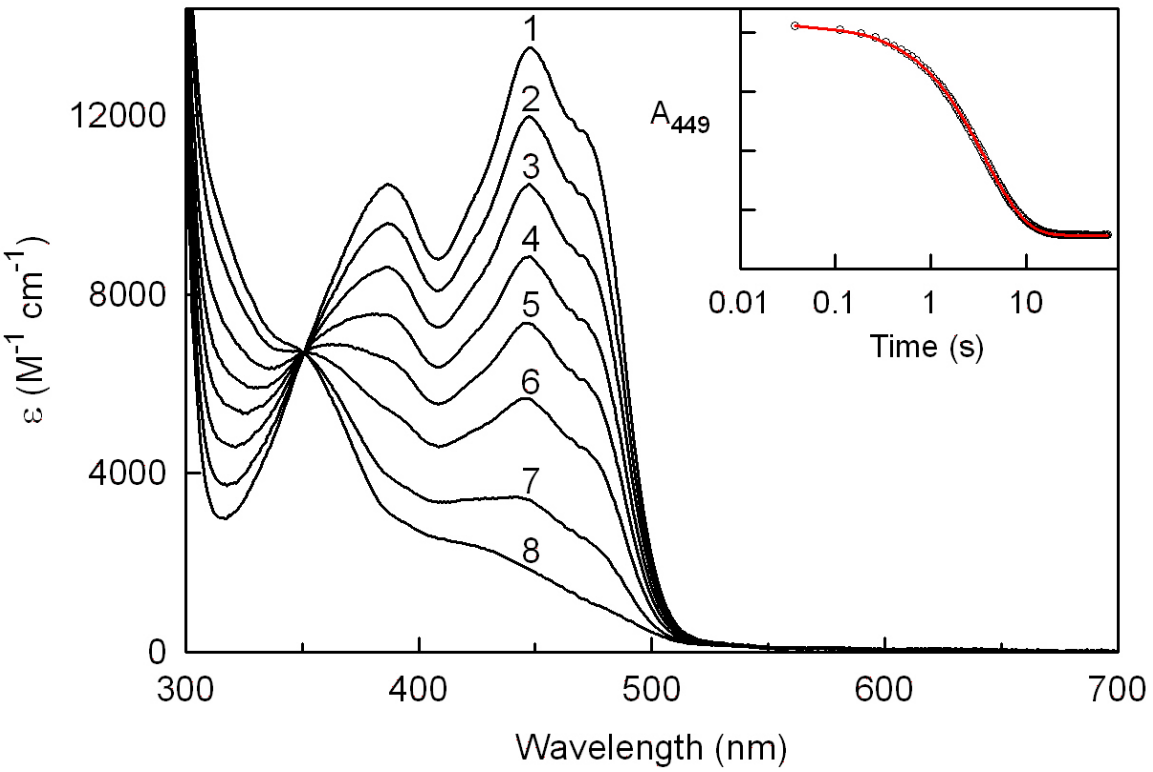

Figure S1 Anaerobic reaction of Lys265Met with unlabeled 1.0 mM sarcosine monitored by stopped-flow diode array spectroscopy. Curves 1 to 8 were obtained from 37.5 ms to 34.95 s after mixing the enzyme with 1.0 mM sarcosine in 100 mM potassium phosphate buffer, pH 8.0, containing 50 mM glucose and glucose oxidase (14.7 U/mL) at 25 ºC. The inset shows a plot of the observed absorbance decrease at 449 nm. The red line was obtained by fitting a single exponential equation ($y = Ae^{-kt} + B$) to the data (open circles).

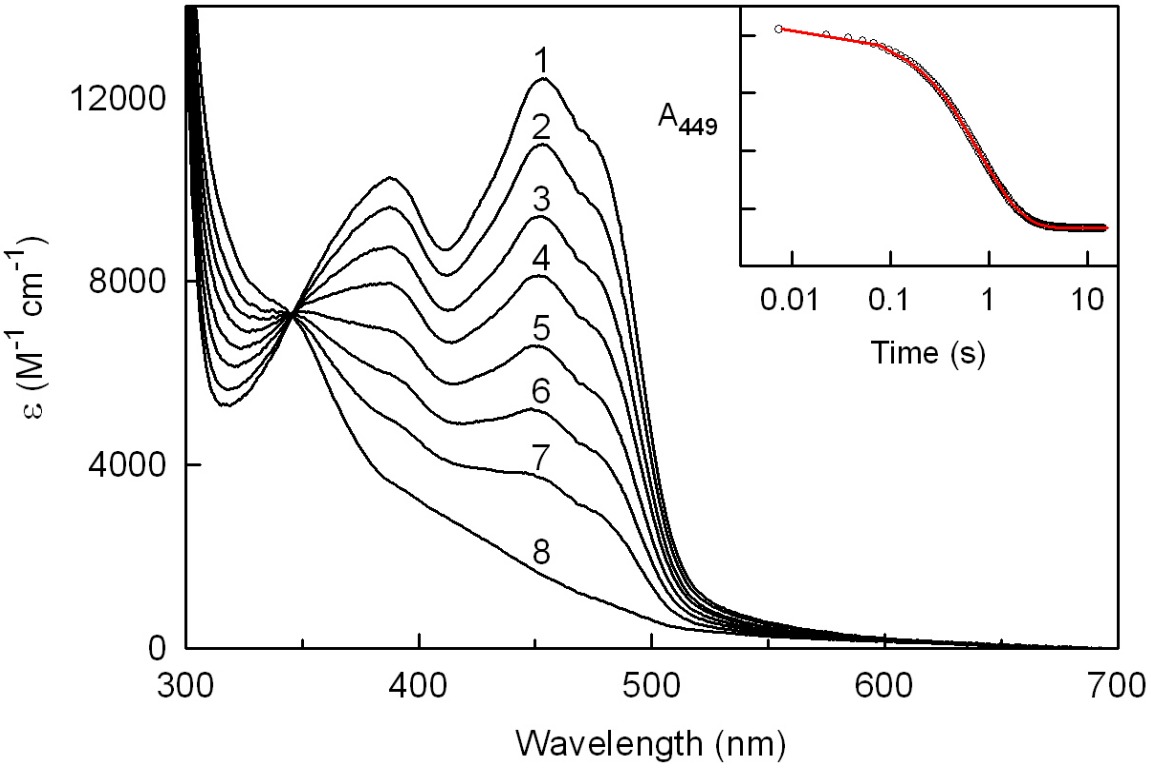

Figure S2 Anaerobic reaction of Lys265Met with 140 mM deuterosarcosine monitored by stopped-flow diode array spectroscopy. Curves 1 to 8 were obtained from 7.49 ms to 14.25 s after mixing the enzyme with 140 mM [N-methyl-D_3]-sarcosine in 100 mM potassium phosphate buffer, pH 8.0, containing 50 mM glucose and glucose oxidase (14.7 U/mL) at 25 ºC. The inset shows a plot of the observed absorbance decrease at 449 nm. The red line was obtained by fitting a single exponential equation ($y = Ae^{-kt} + B$) to the data (open circles).