

Table S1. ¹⁸O- Kinetic isotope effects (KIEs) determined for O₂-consuming enzymes in previous studies with errors as reported therein.

Active site	Enzyme	¹⁸ O-KIE			Reference
copper	amine oxidase from <i>Hansenula polymorpha</i>	1.011	±	0.001	Welford et al., 2007
copper	bovine serum amine oxidase	1.010	±	0.001	Su and Klinman, 1998
copper	dopamine β-monooxygenase	1.0197	±	0.0003	Tian et al., 1994
copper	galactose oxidase	1.0188	±	0.0006	Humphreys et al., 2009
copper	pea seedling amine oxidase	1.014	±	0.001	Mukherjee et al., 2008
copper	peptidylglycine monooxygenase	1.0173	±	0.0009	Francisco et al., 2003
copper	tyrosinase	1.010	±	0.002	Feldman et al., 1959
copper/heme	cytochrome- <i>c</i> oxidase	1.0210	±	0.0003	Ribas-Carbo et al., 1997
copper/heme	cytochrome- <i>c</i> oxidase	1.0190	±	0.0005	Cheah et al., 2014
copper/heme	cytochrome- <i>c</i> oxidase	1.023	±	0.001	Cheah et al., 2014
flavin	choline oxidase	1.020	±	0.002	Cheah et al., 2014
flavin	D-amino-acid oxidase	1.053	±	0.002	Cheah et al., 2014
flavin	glucose oxidase	1.0326	±	0.0005	Cheah et al., 2014
flavin	glucose oxidase	1.027	±	0.003	Roth and Klinman, 2003
flavin	glucose oxidase	1.028	±	0.002	Su and Klinman, 1999
flavin	(<i>S</i>)-2-hydroxy-acid (glycolate) oxidase	1.0235	±	0.0009	Cheah et al., 2014
flavin	(<i>S</i>)-2-hydroxy-acid (glycolate) oxidase	1.0232	±	0.0004	Guy et al., 1993
flavin	L-amino-acid oxidase	1.0478	±	0.0003	Cheah et al., 2014
iron	alternative (ubiquinol) oxidase	1.0281	±	0.0004	Cheah et al., 2014
iron	aminocyclopropanecarboxylate oxidase	1.0215	±	0.0005	Mirica and Klinman, 2008
iron	cyclooxygenase-1 (prostaglandin-endoperoxide synthase)	1.014	±	0.001	Mukherjee et al., 2007
iron	camphor 5-monooxygenase (cytochrome P450cam)	1.0147	±	0.0007	Purdy et al., 2006
iron	2-hydroxyethylphosphonate dioxygenase	1.0148	±	0.0009	Zhu et al., 2015
iron	methylphosphonate synthase	1.016	±	0.001	Zhu et al., 2015
iron	nitrobenzene dioxygenase	1.016	±	0.001	Pati et al., 2022
iron	(<i>S</i>)-2-hydroxypropylphosphonic acid epoxidase	1.0120	±	0.0002	Mirica et al., 2008
iron	soluble methane monooxygenase	1.0152	±	0.0007	Stahl et al., 2001
iron	soybean lipoxygenase	1.009	±	0.001	Guy et al., 1989
iron	soybean lipoxygenase	1.012	±	0.001	Knapp and Klinman, 2003
iron	taurine dioxygenase	1.0102	±	0.0002	Mirica et al., 2008
iron	tyrosine 3-monooxygenase	1.0175	±	0.0019	Francisco et al., 1998
magnesium	ribulose-1,5-bisphosphate carboxylase/oxygenase	1.0234	±	0.0004	Cheah et al., 2014
magnesium	ribulose-1,5-bisphosphate carboxylase/oxygenase	1.0218	±	0.0002	Guy et al., 1993

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