

Table 2: Kinetic Parameters of Wild-Type and Evolved *R. rubrum* Rubiscos

Rubisco	$S_{c/o}$ ($k_c^{cat}/K_o/k_o^{cat}K_c$)	k_c^{cat} (s^{-1}) ^a	K_c (μM)	K_o (μM)	k_o^{cat} (s^{-1}) ^b	k_c^{cat}/K_c ($s^{-1} mM^{-1}$)	k_o^{cat}/K_o ($s^{-1} mM^{-1}$)	$K_r^{(app)}$ (μM)	$K_T(FBP)$ (μM)
wild-type	9.0 ± 0.3	12.3 ± 0.3	149 ± 8	159 ± 25	1.4	83	8.9	63 ± 2	465 ± 70
D117V	5.3 ± 0.1	7.4 ± 0.3	196 ± 18	199 ± 51	1.5	38	7.6	55 ± 6	347 ± 83
D117H	5.3 ± 0.1	7.5 ± 0.2	192 ± 10	153 ± 35	1.1	39	7.3	48 ± 8	245 ± 64
H44Q	5.3 ± 0.1	9.3 ± 0.6	301 ± 38	185 ± 58	1.2	31	6.4	56 ± 14	348 ± 40
H44N	5.5 ± 0.3	9.8 ± 0.4	204 ± 18	116 ± 25	1.0	48	8.8	59 ± 11	320 ± 92

^a Rate calculated from maximal carboxylase activity extrapolated from the Michaelis–Menten fit from K_c measurements. ^b Rate calculated from the equation $S_{c/o} = (k_c^{cat}/K_c)/(k_o^{cat}/K_o)$ (36).