Supplemental Table 1

Scheme V

	Control				300 nM Zn				Mean	Global
	mean	sem	global fit		mean	sem	global fit		Zn^{2+} / Control	Zn^{2+} / Control
k1	1200	150	1100	s^{-1}	860	80	900	s^{-1}	0.72	0.82
k2	3500	830	2700	s^{-1}	3300	530	3200	s^{-1}	0.94	1.19
k3	4600	990	3800	s^{-1}	4700	760	4200	s^{-1}	1.02	1.11
k4	2200	510	1900	s^{-1}	2700	400	2600	s^{-1}	1.23	1.37
k5	8000	2000	6300	s^{-1}	6200	690	6500	s^{-1}	0.78	1.03
k6	1400	150	1200	s^{-1}	1300	89	1200	s^{-1}	0.93	1.00
k7	1.4e+9	--	1.4e+9	$M^{-1}s^{-1}$	1.4e+9	1.4e+9	1.4e+9	$M^{-1}s^{-1}$	--	--
k8	**49**	**10**	**47**	s^{-1}	**14**	**1**	**12**	s^{-1}	**0.29**	**0.26**
k9	**670**	**190**	**630**	s^{-1}	**160**	**12**	**150**	s^{-1}	**0.24**	**0.24**
kH1	360	38	300	s^{-1}	620	77	610	s^{-1}	1.69	2.03
kH2	1100	220	750	s^{-1}	2200	320	2200	s^{-1}	2.00	2.93
kH3	1300	340	900	s^{-1}	890	130	820	s^{-1}	0.68	0.91
kH4	6700	1400	5800	s^{-1}	6300	1200	6700	s^{-1}	0.94	1.16
kH5	5000	510	5500	s^{-1}	4400	240	5000	s^{-1}	0.88	0.91
kH6	950	72	1100	s^{-1}	990	180	920	s^{-1}	1.04	0.84
LogL event	*5.14*		*5.13*		*5.03*		*5.02*			

Idealized and segmented current records from the same patches were fit by *Scheme V* as shown in Figure 8C. Records from all 7 patches were fitted individually and also pooled and fitted simultaneously. The proton concentration was 62 nM (pH 7.3). All loops were constrained to obey microscopic reversibility; proton association rate was fixed to 1.4×10^9 $M^{-1}s^{-1}$ (Banke et al., 2005); all other rate constants were free parameters during fitting. The ratio of the fitted rate constants determined in 300 nM Zn^{2+} to those determined for control conditions (10 mM tricine, no added Zn^{2+}) is given in the far right columns. Rate constants in bold show more than a 3-fold change in the presence of Zn^{2+}. Rate constants are given to two significant digits.