

Data Supplement

Channel (n)	Inactivation		Activation		E _{rev} (mV)
	V _{0.5} (mV)	k (mV)	V _{0.5} (mV)	k (mV)	
wt hERG (9)	-73.9 ± 3.9	-29.9 ± 1.3	-16.9 ± 1.8	8.2 ± 0.3	-94 ± 1.1
wt hEAG (4)	*	*	nd	nd	nd
wt rELK2 (5)	+31.8 ± 3.4	-9.2 ± 1.7	nd	nd	-85 ± 3.9
hERG/hEAG S5P (5)	-57.4 ± 4.1	-30.8 ± 1.6	-12.6 ± 2.6	9.2 ± .03	-93 ± 3.7
hERG/rELK2 S5P (4)	+27.3 ± 0.3	-34.4 ± 1.2	-12.8 ± 0.5	6.7 ± 0.1	-87 ± 2.5
hERG N588E (5)	-109 ± 5.2	-17.3 ± 1.5	-11.9 ± 1.6	9.6 ± .05	-98 ± 1.8
hERG D591R/Q592R (5)	+28.7 ± 3.3	-10.2 ± 1.4	-13.2 ± 9.9	5.7 ± 1.8	-89 ± 4.4
rELK2/hERG S5P (5)	-80.0 ± 4.2 +28.5±2.2 [†]	-22.6 ± 2.3 -8.7 ± 4.1 [†]	nd	nd	-99 ± 3.5
hERG H587K (4)	-102 ± 0.6	-23.5 ± 1.0	-23.7 ± 1.0	7.2 ± 0.3	-97 ± 1.1
hERG N588K (5)	66.2 ± 11	-17.1 ± 2.3	-2.3 ± 2.9	14.3 ± 0.6	-96 ± 1.6
hERG D591K (4)	12.3 ± 3.0	-21.0 ± 0.7	-27.8 ± 2.0	8.3 ± 0.8	-97 ± 0.8
hERG Q592K (4)	52.9 ± 4.4	-22.6 ± 1.2	-7.1 ± 1.0	7.4 ± 0.2	-90 ± 0.4
hERG H587D (4)	-87.6 ± 3.1	-27.5 ± 1.0	-31.3 ± 1.3	7.1 ± 0.1	-98 ± 0.4
hERG N588D (4)	-108 ± 1.9	-23.1 ± 0.8	-25.5 ± 0.5	8.1 ± 0.4	-97 ± 1.1
hERG D591Q (10)	-72.0 ± 2.8	-30.2 ± 2.1	-13.0 ± 1.8	9.2 ± 0.1	-82 ± 0.9
hERG Q592D (6)	-63.4 ± 5.4	-27.3 ± 1.2	-28.9 ± 1.2	8.0 ± 0.6	-97 ± 0.6

* wt hEAG channels do not inactivate

† rELK2/hERG S5P channels exhibit two components for steady-state inactivation (see text for details)

nd not determined