

Table 3. Relative permeabilities for Na⁺ and K⁺ ions and yeast growth phenotype of mutant G protein-coupled inwardly rectifying potassium 3.2 (GIRK2) channels

	ΔE	$P_{\text{Na}}/P_{\text{K}}$	N	0.5 K
S177T	-79.35 ± 1.48	0.047 ± 0.002	16	+
S177W	-17.85 ± 0.84	0.5 ± 0.01	31	-
S177T (TPN-Q)	-131.4 ± 3.66	0.006 ± 0.0009	4	ND
Type 1	-98.3 ± 4.29	0.026 ± 0.005	10	+
Type 1a	-107.74 ± 4.81	0.018 ± 0.003	11	+
Type 2	-96.67 ± 4.55	0.026 ± 0.005	7	+
Type 3	-87.5 ± 4.77	0.039 ± 0.006	10	+
S177T*	-103.48 ± 5.81	0.023 ± 0.004	8	+
S177W*	-21.21 ± 1.09	0.52 ± 0.02	18	-
Y102N-S177W*	-89.1 ± 2.03	0.032 ± 0.002	11	+
F147Y-S177W*	-77.73 ± 2.14	0.05 ± 0.004	11	-
N184D-S177W*	-77.85 ± 3.02	0.051 ± 0.005	8	+
N94I-S177W*	-57.76 ± 5.10	0.12 ± 0.02	6	-
N94Y-S177W	-51.3 ± 1.8	0.14 ± 0.009	26	+
N94Y-S177W*	-43.72 ± 1.22	0.18 ± 0.008	8	+
F98I-S177W*	-54.76 ± 5.48	0.14 ± 0.03	9	-
F98Y-S177W*	-49.1 ± 3.06	0.15 ± 0.01	4	-
M123L-S177W*	-31.98 ± 1.26	0.34 ± 0.01	9	-
S177W-D346N*	-24.1 ± 0.01	0.39 ± 0.01	3	-
S177W-Y336H*	-23.24 ± 1.26	0.40 ± 0.01	7	-
P26L-S177W*	-21.6 ± 1.11	0.43 ± 0.02	6	-
M19T-S177W*	-21.1 ± 1.51	0.44 ± 0.02	7	-

	ΔE	$P_{\text{Na}}/P_{\text{K}}$	N	0.5 K
T136I–S177W*	-22.67 ± 1.58	0.49 ± 0.03	6	–
S177W–N263S*	-22.35 ± 2.23	0.50 ± 0.04	8	–
S177W–K219R*	-21.6 ± 2.1	0.52 ± 0.04	8	–
S177W–T80P*	ND	ND	4	–
<i>Weaver</i>	-7.8 ± 2	0.64 ± 0.04	10	–
N94Y- <i>weaver</i>	-7.4 ± 1.8	0.65 ± 0.04	9	–
N94F- <i>weaver</i>	-7.85 ± 0.84	0.74 ± 0.02	8	–
F98Y- <i>weaver</i>	-12.6 ± 2.39	0.54 ± 0.04	9	–
Y102N- <i>weaver</i>	-8.3 ± 3.2	0.64 ± 0.06	6	–
F147Y- <i>weaver</i>	-11.62 ± 3.45	0.58 ± 0.07	8	–
N184D- <i>weaver</i>	-8.62 ± 3.17	0.64 ± 0.06	8	–
N94F–S177W	-47.48 ± 4	0.19 ± 0.03	19	+
N94F–S177W*	-51.72 ± 1.49	0.13 ± 0.008	8	+
N94H–S177W	-40.9 ± 3.37	0.22 ± 0.03	10	+
N94M–S177W	-21.56 ± 2.9	0.45 ± 0.04	6	–
N94D–S177W	-22.35 ± 3.3	0.45 ± 0.05	10	–

The difference in reversal potential (ΔE_{rev}) that occurred with 90 mM Na⁺ and 90 mM K⁺ solutions was measured from the averaged current–voltage relations obtained from recording *Xenopus* oocytes expressing GIRK2 channels and corrected for junction potential (4 mV). The relative permeability ratios ($P_{\text{Na}}/P_{\text{K}}$) then were deduced by using a form of the Goldman–Hodgkin–Katz equation. For tertiapin, currents were obtained in Na⁺ and K⁺ before and after addition of 1 μM blocking peptide, and the difference current was used to determine the reversal potential. When current was indistinguishable from leak, $P_{\text{Na}}/P_{\text{K}}$ could not be determined (indicated as ND). N indicates number of oocytes. Yeast growth phenotype was deduced from low-potassium concentration plate (0.5 mM KCl).