Supplemental online information for Wojtovich et al. "Cardiac *Slo2.1* is required for volatile anesthetic stimulation of K^+ transport and anesthetic preconditioning"

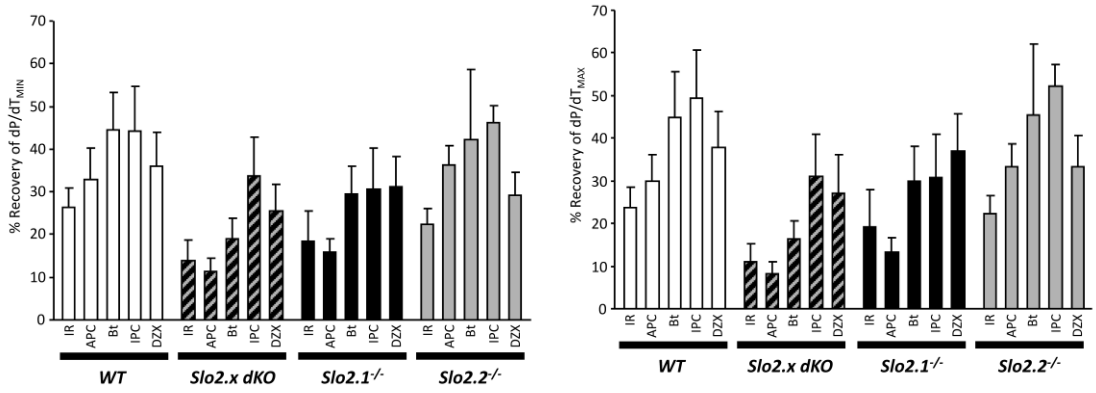
***Note: All original data for the figures in the main manuscript and tables in this supplement, are available in the "FigShare" public data repository, with the following DOI link: https://dx.doi.org/10.6084/m9.figshare.2062833**

Parameter (units)	*WT*	*Slo2 dKO*
Heart Rate (BPM)	403 ± 16	410 ± 15
PR interval (ms)	43.1 ± 1.0	43.6 ± 1.1
QRS duration (ms)	15.6 ± 0.2	16.5 ± 0.5
QT_{CORR} (ms)	54.0 ± 1.4	55.8 ± 0.9

Supplemental Table 1. Electrocardiography for wild-type and *Slo2 dKO* mice. Measurements were obtained from mice anesthetized with tribromoethanol using a 3 lead rodent EKG (Harvard Apparatus, Boston MA). Data are means ± SEM, N>8.

dP/dT_{MAX}	*WT*		*Slo2.x dKO*		*Slo2.1*$^{-/-}$		*Slo2.2*$^{-/-}$	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
IR	3333±204 *(2935-3732)*	832±177 *(486-1179)*	3113±227 *(2668-3559)*	300±102 *(101-499)*	3863±397 *(3086-4640)*	553±171 *(217-889)*	3632±302 *(3040-4224)*	756±141 *(478-1033)*
APC	3695±326 *(3056-4334)*	1020±176 *(675-1365)*	3244±169 *(2912-3575)*	261±85 *(96-427)*	3959±302 *(3367-4551)*	535±137 *(267-802)*	3553±339 *(2888-4218)*	1146±184 *(786-1507)*
Bt	3287±246 *(2805-3769)*	1372±220 *(941-1804)*	3145±265 *(2625-3665)*	577±178 *(229-926)*	3980±374 *(3246-4713)*	1179±330 *(533-1825)*	3560±248 *(3073-4046)*	1377±413 *(568-2185)*
IPC	3176±175 *(2833-3520)*	1499±312 *(888-2111)*	3654±292 *(3083-4226)*	1001±276 *(460-1541)*	3652±299 *(3066-4237)*	992±269 *(464-1521)*	3542±220 *(3110-3973)*	1835±167 *(1507-2162)*
DZX	4250±172 *(3912-4587)*	1614±383 *(863-2364)*	3754±227 *(3308-4199)*	1011±351 *(323-1700)*	4151±287 *(3588-4713)*	1466±311 *(857-2075)*	3667±290 *(3099-4235)*	1268±338 *(606-1931)*

dP/dT_{MIN}	*WT*		*Slo2.x dKO*		*Slo2.1*$^{-/-}$		*Slo2.2*$^{-/-}$	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
IR	-2113±158 *(-2423-1803)*	-575±100 *(-770-379)*	-2107±160 *(-2421-1793)*	-251±75 *(-397-104)*	-2718±301 *(-3309-2127)*	-400±106 *(-607-192)*	-2386±190 *(-2759-2013)*	-499±77 *(-649-349)*
APC	-2357±277 *(-2900-1813)*	-668±97 *(-858-477)*	-2082±105 *(-2287-1877)*	-235±63 *(-358-112)*	-2554±222 *(-2989-2120)*	-428±93 *(-609-246)*	-2276±329 *(-2922-1630)*	-755±101 *(-953-556)*
Bt	-2087±149 *(-2379-1795)*	-889±136 *(-1157-622)*	-2043±91 *(-2221-1864)*	-393±102 *(-594-192)*	-2625±208 *(-3033-2217)*	-812±210 *(-1224-400)*	-2755±247 *(-3240-2271)*	-930±256 *(-1431-429)*
IPC	-2294±144 *(-2577-2012)*	-980±217 *(-1406-555)*	-2122±175 *(-2464-1779)*	-598±139 *(-870-326)*	-2514±205 *(-2917-2112)*	-698±185 *(-1061-336)*	-2467±163 *(-2787-2147)*	-1130±103 *(-1332-927)*
DZX	-2666±170 *(-2999-2332)*	-972±243 *(-1447-496)*	-2616±185 *(-2978-2254)*	-712±226 *(-1155-268)*	-3136±141 *(-3412-2860)*	-940±193 *(-1318-562)*	-2890±238 *(-3357-2424)*	-889±231 *(-1342-436)*



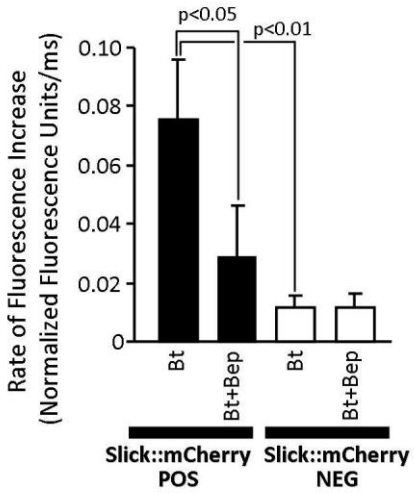
Supplemental Table 2. Pre- and post-IR injury dP/dT_{MIN} and dP/dT_{MAX} for perfused hearts subjected to cardioprotective regimens. Data tables show dP/dT_{MAX} (contraction, upper table) and dP/dT_{MIN} (relaxation, lower table). Values are means ± SEM, with 95% confidence intervals in parentheses below. Data are shown for pre- and post- IR injury (i.e., at 30 min. normoxic perfusion time point, and 60 min. post reperfusion time point). Columns are paired for genotypes (wild-type, *Slo2.x dKO*, *Slo2.1*$^{-/-}$ and *Slo2.2*$^{-/-}$). Rows indicate different treatment regimens: IR injury alone, APC: anesthetic preconditioning, Bt: bithionol, IPC: ischemic preconditioning, DZX: diazoxide. Graphs below show percent recovery of dP/dT_{MIN} (left) and dP/dT_{MAX} (right), i.e. post-IR values expressed as percent of pre- values. Data are means ± SEM for each genotype and treatment regimen. All other experimental details including N for each group are described in the main manuscript.

LVDevP	*WT*		*Slo2.x dKO*		*Slo2.1*$^{-/-}$		*Slo2.2*$^{-/-}$	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
IR	120±7 *(106-134)*	28±4 *(21-36)*	119±4 *(110-127)*	15±2 *(11-19)*	130±8 *(113-146)*	20±3 *(14-26)*	123±10 *(104-143)*	26±5 *(17-35)*
APC	131±7 *(118-145)*	48±5 *(39-58)*	123±9 *(106-141)*	16±3 *(10-21)*	141±6 *(129-153)*	23±4 *(16-31)*	127±12 *(103-152)*	47±6 *(36-59)*
Bt	113±10 *(94-132)*	49±6 *(37-60)*	116±9 *(97-134)*	21±4 *(13-29)*	128±8 *(111-144)*	39±7 *(26-53)*	112±10 *(92-133)*	52±12 *(29-75)*
IPC	105±8 *(90-120)*	53±7 *(40-66)*	113±6 *(101-125)*	42±10 *(23-62)*	115±8 *(100-130)*	41±9 *(24-59)*	113±7 *(100-126)*	63±6 *(52-75)*
DZX	135±8 *(119-151)*	63±9 *(45-81)*	125±6 *(114-137)*	43±8 *(27-60)*	132±5 *(122-142)*	56±6 *(43-69)*	113±6 *(101-125)*	49±8 *(34-64)*

Supplemental Table 3. Pre- and post-IR injury left ventricular developed pressure (LVDevP) for perfused hearts subjected to cardioprotective regimens. Table shows left ventricular developed pressure (LVDevP = systolic minus diastolic, in mmHg) as mean ± SEM, with 95% confidence intervals in parentheses below. Data are shown for pre- and post- IR injury (i.e., at 30 min. normoxic perfusion time point, and 60 min. post reperfusion time point). Columns are paired for genotypes (wild-type, *Slo2.x dKO*, *Slo2.1*$^{-/-}$ and *Slo2.2*$^{-/-}$). Rows indicate different treatment regimens: IR injury alone, APC: anesthetic preconditioning, Bt: bithionol, IPC: ischemic preconditioning, DZX: diazoxide. All other experimental details including N for each group are described in the main manuscript.

LVEndDiaP	*WT*		*Slo2.x dKO*		*Slo2.1*$^{-/-}$		*Slo2.2*$^{-/-}$	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
IR	7±1 *(4-10)*	39±5 *(29-48)*	8±3 *(2-13)*	56±13 *(32-81)*	6±1 *(4-9)*	60±8 *(45-75)*	5±2 *(2-9)*	47±12 *(23-70)*
APC	6±2 *(2-10)*	48±8 *(32-63)*	6±2 *(3-10)*	43±8 *(27-59)*	13±6 *(1-26)*	52±10 *(32-72)*	13±4 *(5-22)*	50±7 *(36-63)*
Bt	9±2 *(5-13)*	42±10 *(22-62)*	7±2 *(3-10)*	44±8 *(29-60)*	3±1 *(1-6)*	50±12 *(25-74)*	4±1 *(1-6)*	36±8 *(20-52)*
IPC	3±2 *(-1-6)*	30±7 *(16-44)*	6±2 *(2-11)*	40±7 *(26-55)*	3±1 *(1-6)*	30±9 *(12-47)*	3±2 *(-1-7)*	35±7 *(22-48)*
DZX	5±2 *(2-8)*	37±6 *(25-49)*	4±2 *(1-7)*	51±16 *(20-82)*	3±1 *(2-4)*	38±6 *(27-50)*	3±3 *(-1-8)*	34±7 *(20-47)*

Supplemental Table 4. Pre- and post-IR injury left ventricular end diastolic pressure (LVEndDiaP) for perfused hearts subjected to cardioprotective regimens. Table shows left ventricular end diastolic pressure (LVDevP, in mmHg) as mean ± SEM, with 95% confidence intervals in parentheses below. Data are shown for pre- and post- IR injury (i.e., at 30 min. normoxic perfusion time point, and 60 min. post reperfusion time point). Columns are paired for genotypes (wild-type, *Slo2.x dKO*, *Slo2.1*$^{-/-}$ and *Slo2.2*$^{-/-}$). Rows indicate different treatment regimens: IR injury alone, APC: anesthetic preconditioning, Bt: bthionol, IPC: ischemic preconditioning, DZX: diazoxide. All other experimental details including N for each group are described in the main manuscript.



Supplemental Figure 1. Pharmacologic modulation of Slick activity. Thallium (Tl^+) based potassium (K^+) flux assay in transfected HEK293 cells, as a function of recombinant Slick::mCherry fusion protein expression, demonstrating the ability of Bt to activate, and Bepridil to inhibit, Slick channels. Data show the rate of fluorescence increase. Errors are SEM from 3 independent experimental replicates, each consisting of 4-6 cells. Expressing cells (POS, filled bars) and non-expressing cells (NEG, open bars) were measured side-by-side in the same field-of-view. For methods see main manuscript.