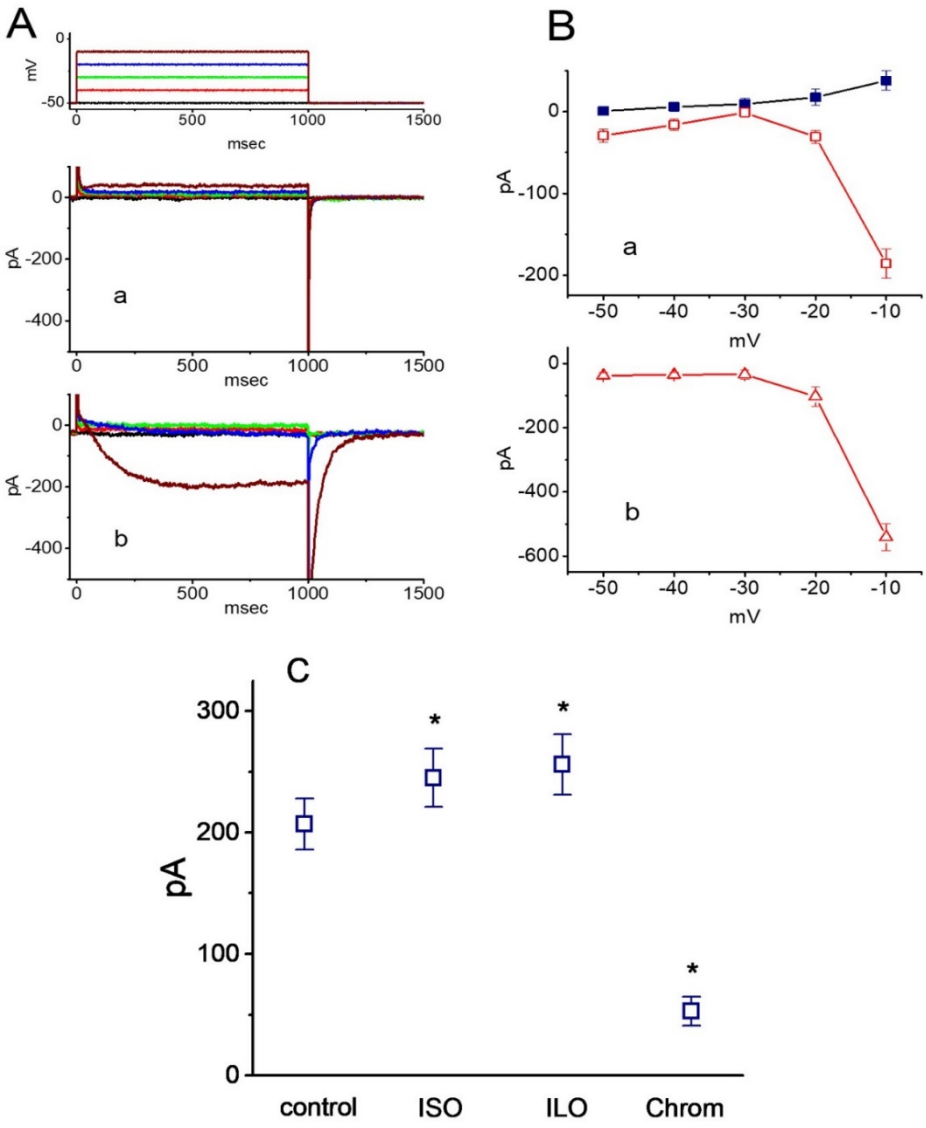

Figure S1. Effect of high K^+ solution on K^+ current in H9c2 cells. The superimposed current traces shown in (**Aa**) are control, and those in (**Ab**) were obtained 2 min after cells were exposed to high-K^+ (145 mM), Ca^{2+}-free solution. (**Ba**) Averaged current-voltage (*I-V*) relationships of K^+ current measured at the end of voltage pulses in the presence of 5.4 mM KCl (filled squares) or 145 mM KCl (open squares) (n=8-12). (**Bb**) Averaged *I-V* relationship for the activation of I_{tail} measured from cells bathed in high-K^+, Ca^{2+}-free solution (n=8-11 for each point). (**C**) Plot graph showing effect of isoproterenol, iloprost, chromanol 293B on $I_{K(S)}$ amplitude. (n = 7–9 for each point). ISO: 1 μM isoproterenol; ILO: 10 μM iloprost; Chrom: 1 μM chromanol 293B. *Significantly different from control (i.e., high-K^+, Ca^{2+}-free solution without addition of any agent), $p < 0.05$ by contrasts from one-way analysis of variance (ANOVA).

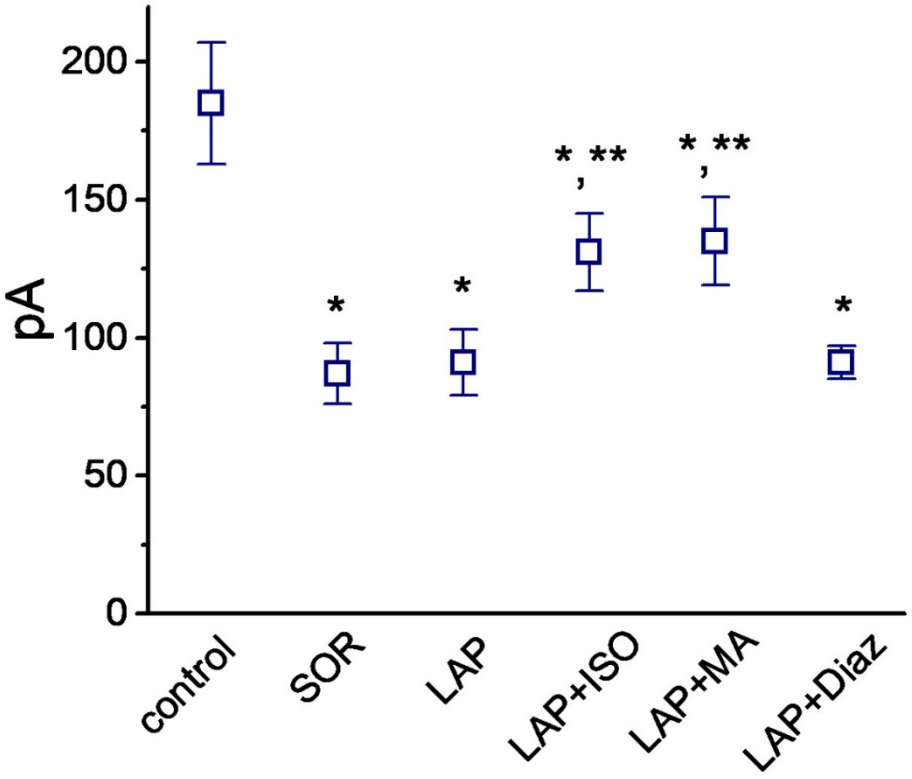

Figure S2. Summary of plot graph showing the effects of SOR, LAP, LAP plus isoproterenol, LAP plus meclofenamic acid and LAP plus diazoxide on $I_{K(S)}$ amplitude. Each bar represents the mean±SEM (n = 8–11). SOR: 3 μM SOR; LAP: 3 μM LAP; ISO: 1 μM isoproterenol; MA: 10 μM meclofenamic acid; Diaz: 30 μM diazoxide. (an ATP-sensitive potassium *channel* activator) *Significantly different from control (P<0.05) and **significantly different from 3 μM LAP alone group ($p < 0.05$). *$p < 0.05$ by contrasts from one-way analysis of variance (ANOVA).

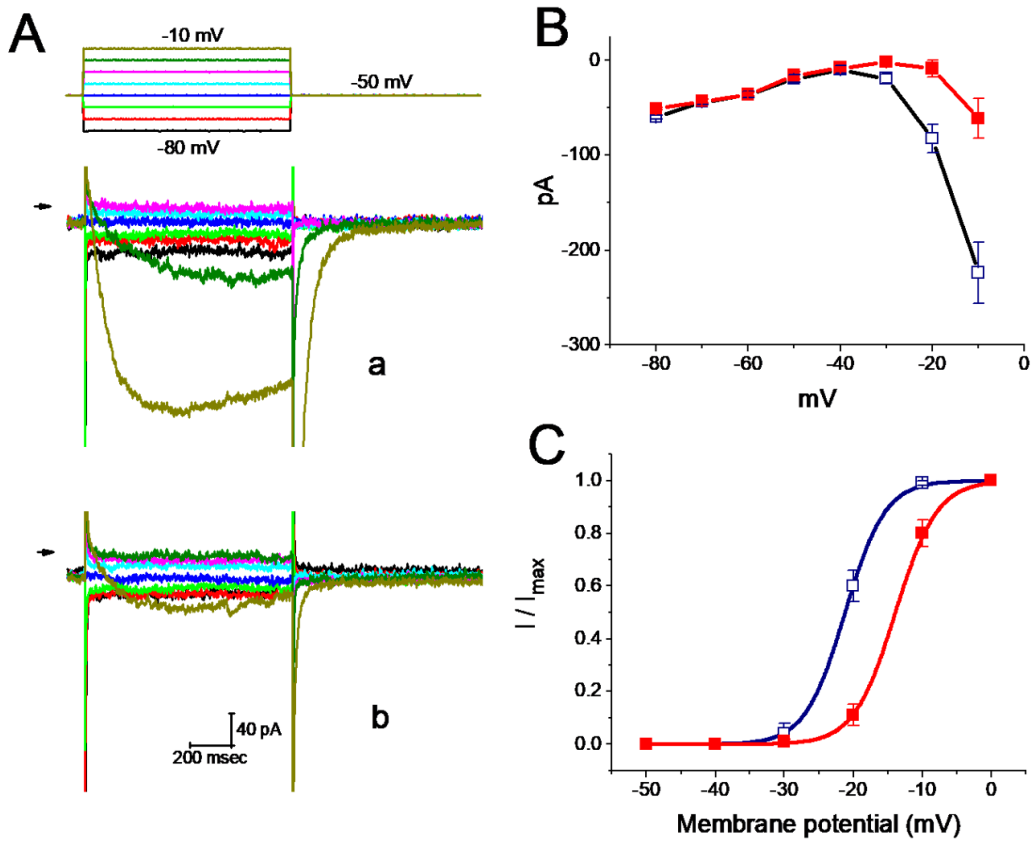

Figure S3. Effect of LAP on *I-V* relation of $I_{K(S)}$ recorded from H9c2 cells. (**A**) Superimposed current traces obtained in the absence (**a**) and presence (**b**) of 3 μM LAP. (**B**) Effect of LAP on averaged *I-V* relation of $I_{K(S)}$ in H9c2 cells ($n = 10$ for each point). □: control; ■: 3 μM LAP. (**C**) Voltage dependence of $I_{K(S)}$ in the absence (□) and presence (■) of 3 μM LAP ($n = 9$ for each point).

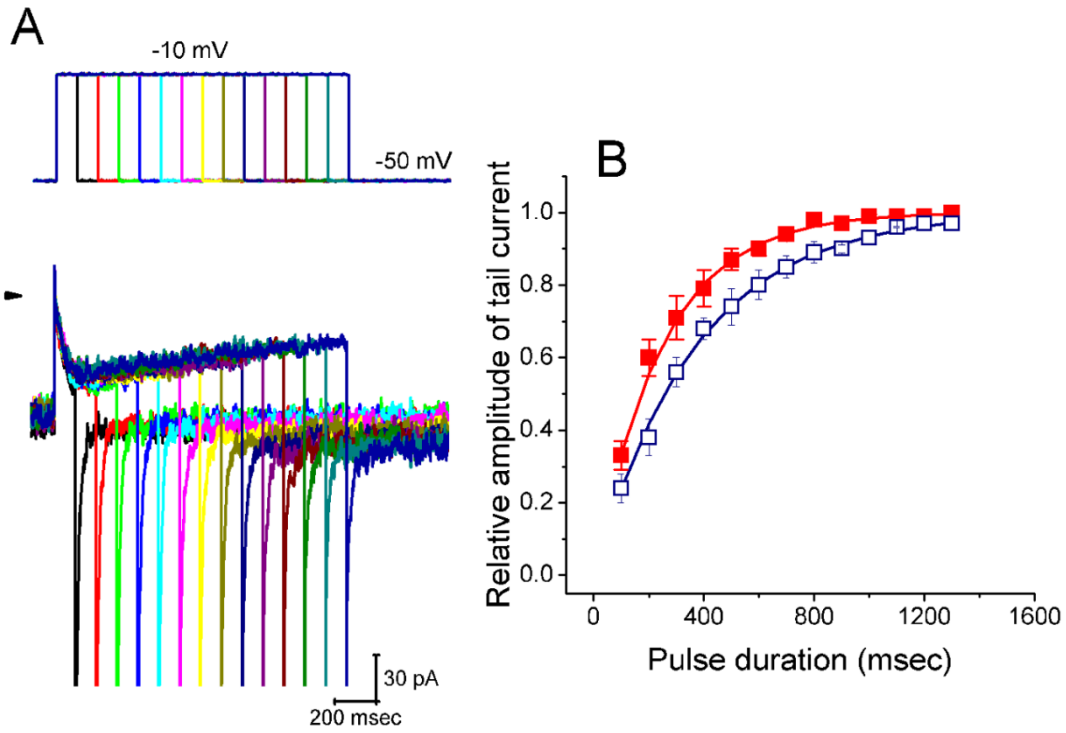

Figure S4. Effect of LAP on the recovery of $I_{K(S)}$ deactivation recorded from H9c2 cells. (**A**) Superimposed voltage and current traces obtained in the presence of 3 μM LAP are shown in the upper and lower part of panel, respectively. Arrowhead indicates the zero current level. (**B**) Relationships of pulse intervals versus amplitude of deactivating tail current in the absence (□) and presence (■) of 3 μM LAP (n=7–8 for each point).

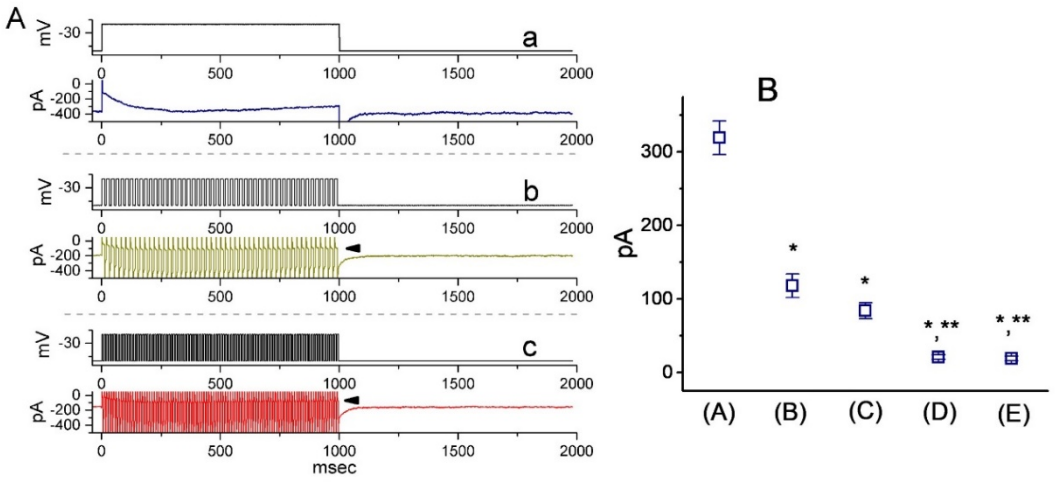

Figure S5. Effect of LAP on $I_{K(S)}$ evoked by repetitive stimuli in H9c2 cells. (**A**) Original current traces elicited in response to a single depolarizing pulse (**a**), during repetitive depolarizations with a duration of 12 msec at a rate of 50 Hz (**b**) and that with a duration of 6 msec at a rate of 100 Hz (c). (**B**) Summary of the data showing effect of LAP on $I_{K(S)}$ elicited by a single pulse and repetitive stimuli with 50 or 100 Hz (n = 7–9 for each point). A: single pulse; B: repetitive stimuli with 50 Hz; C: repetitive stimuli with 100 Hz; D: 50-Hz repetitive stimuli with 3 μM LAP; E: 100-Hz repetitive stimuli with 3 μM LAP. *Significantly different from control (i.e., during single pulse; $p < 0.05$) and **significantly

different from the group with repetitive stimuli at 100 Hz alone, $p < 0.05$ by contrasts from one-way analysis of variance (ANOVA).