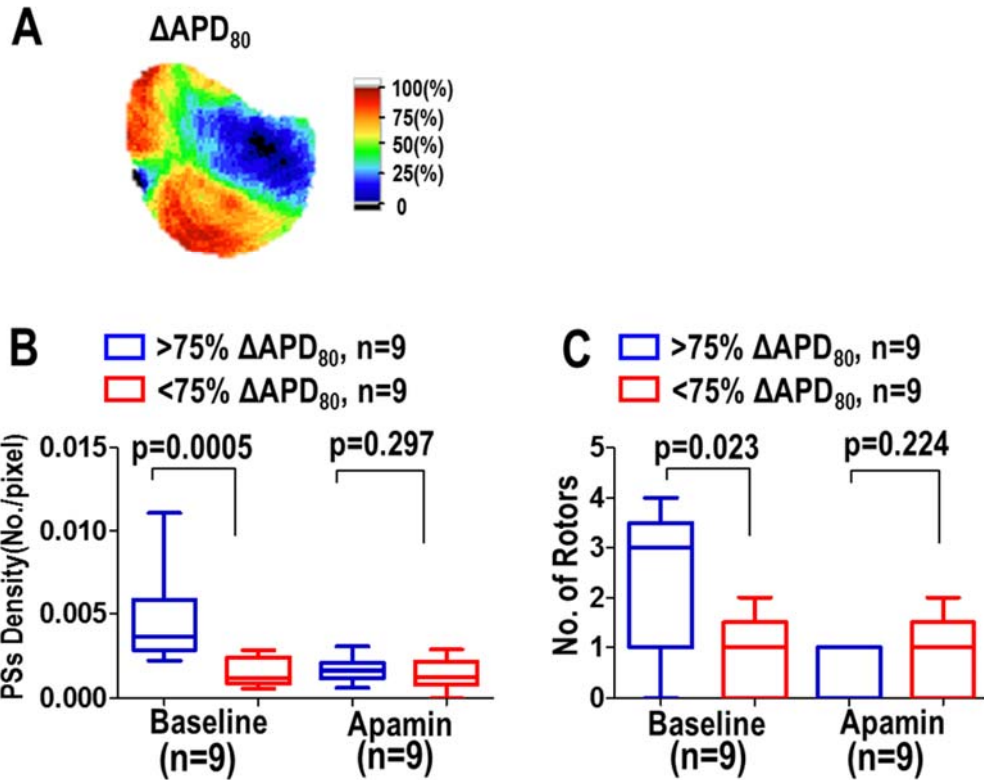
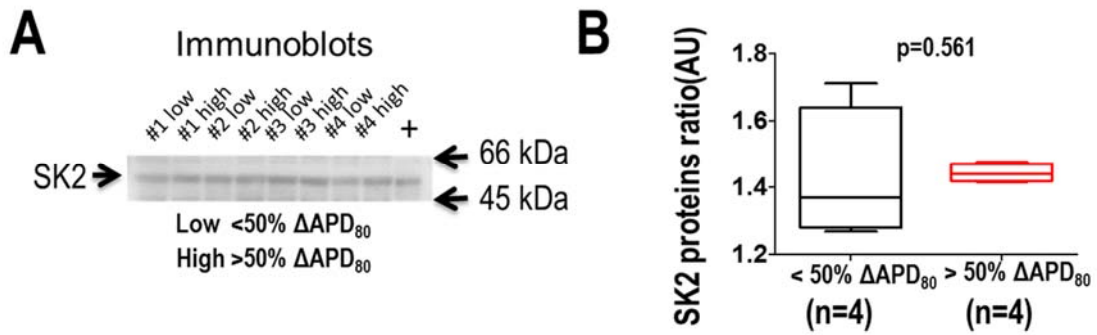


Supplemental Material



Data Supplement Figure 1: Effects of apamin on phase singularities and rotors during VF in heart failure. The figures show the results from data using a 75% change in ΔAPD_{80} after apamin infusion to define the areas with a high I_{KAS} distribution. Similar to the data using a 50% change in ΔAPD_{80} , PSs (panel B) correlated to an increase in ΔAPD_{80} at baseline, however, this relationship disappeared after apamin infusion. Summary data showing the correlation of the location of rotors to ΔAPD is shown in Panel C. The figure demonstrates a significantly higher number of rotors in areas with a $>75\%$ change in ΔAPD_{80} .



Data Supplement Figure 2. SK2 protein expression determined by Western blot analysis.

In four failing hearts, crude membrane vesicles were prepared from the high and low ΔAPD_{80} areas determined with optical mapping after apamin infusion. Western blot analysis was then performed to determine the expression of SK2 proteins. SK2 expression in each heart is shown in panel A. Summary data is shown in panel B. R:rabbit. +: Positive control using human embryonic kidney cells transfected with KCNN2.

Movie 1 – Baseline – Continuous phase map during VF at baseline in a rabbit heart failure model. A spatially stable phase singularity is observed correlating to a stable reentrant spiral wave.

Movie 2 – Apamin – Continuous phase map during VF after apamin infusion in a rabbit heart failure model. Transient phase singularities are observed as no spatially stable reentrant spiral waves were seen with apamin.