Supplementary Figures

Fig. S1

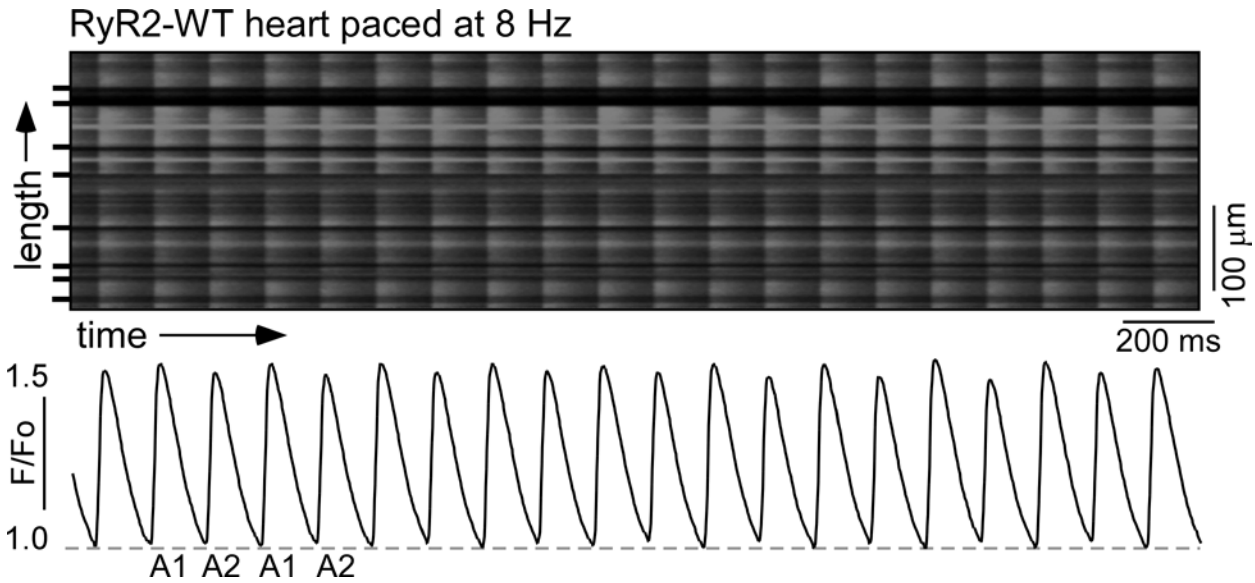

Figure S1. Ca^{2+} transient alternans in intact RyR2-WT hearts.

Langendorff-perfused RyR2-WT hearts were loaded with Rhod-2 AM. Ca^{2+} transients were elicited by pacing at 8 Hz, and recorded using line-scanning confocal imaging. Cell boundaries were indicated by black bars. The F/Fo traces depict the average fluorescence signal of the scan area.

Fig. S2

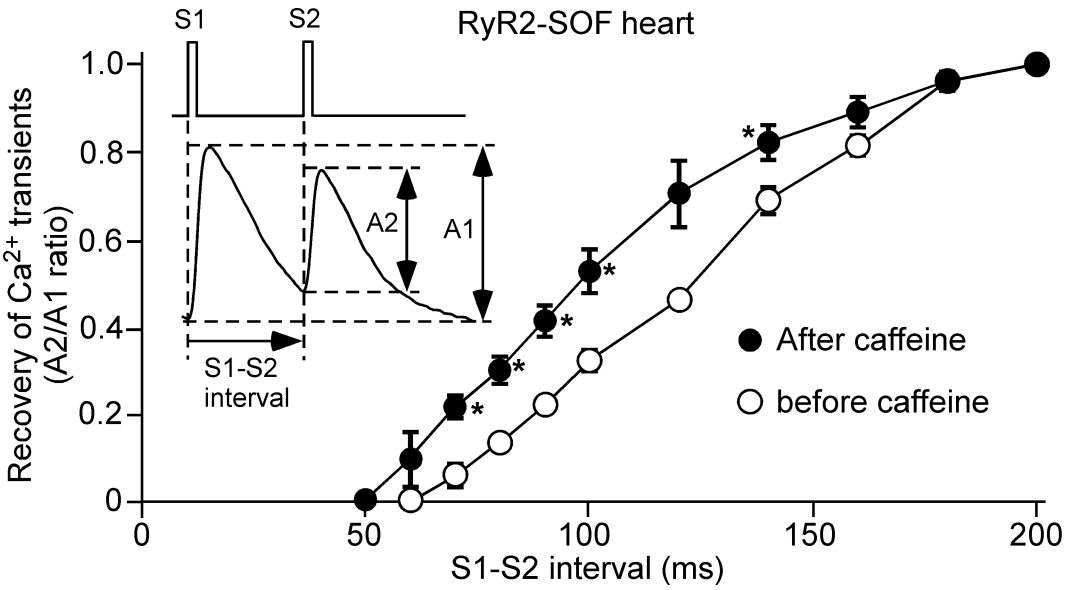

Figure S2. Caffeine shortens the refractoriness of Ca^{2+} transients.

Langendorff-perfused RyR2-SOF mutant hearts were loaded with Rhod-2 AM. Hearts were first stimulated at 5 Hz for 30 seconds (S1), followed by a single S2 stimulation. A series of S1S2 stimulations are repeatedly applied with progressively reduced S1S2 interval from 200 to 50 ms. The amplitude of Ca^{2+} transients was recorded using the line-scan mode. The relationship between S2/S1 ratio of Ca^{2+} transient amplitude and S1S2 interval is shown. Data shown are mean ± SEM (n=3 RyR2-SOF hearts) (*$p<0.05$).

Fig. S3

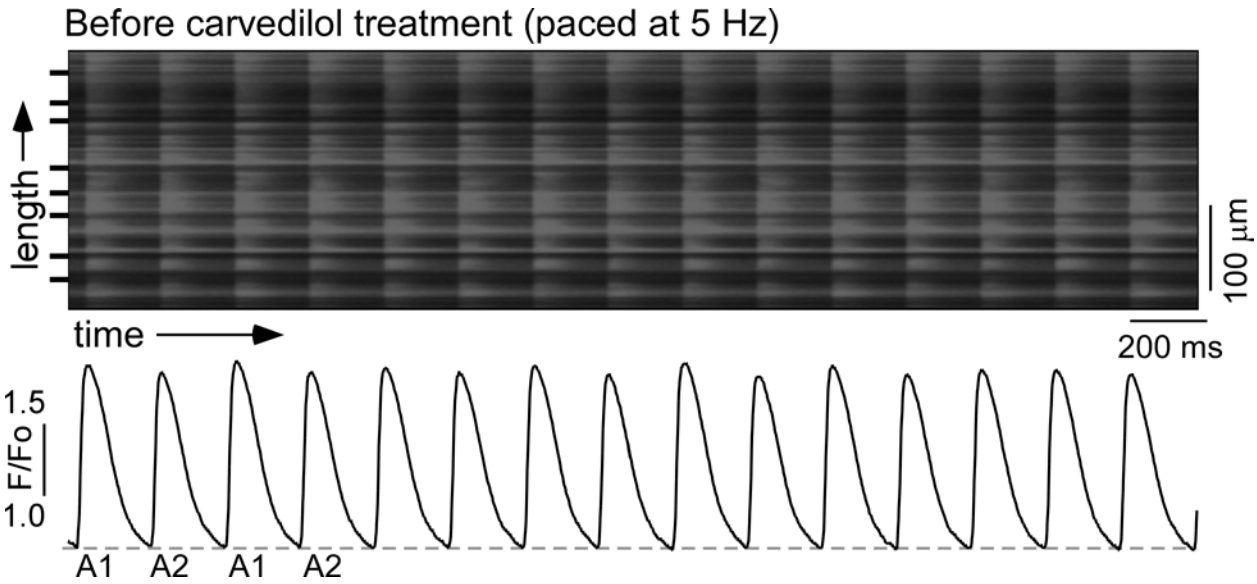

Figure S3. Ca^{2+} transients in intact RyR2-SOF hearts before carvedilol treatment. Langendorff-perfused RyR2-SOF mutant hearts were loaded with Rhod-2 AM. Ca^{2+} transients were elicited in intact RyR2-SOF hearts by pacing at 5 Hz, and recorded before the application of carvedilol using the line-scan mode. Cell boundaries were indicated by the black bars. The F/Fo traces depict the average fluorescence signal of the scan area.