

Figure S1. Echocardiographic assessments showing effects of activated merCremer in the absence of loxP sites. Adult 10-14 week-old naïve wild-type (+/+) mice (n=4), and mice (n=6) expressing a tamoxifen-induced merCremer-recombinase transgene (+/+;Myh6-merCremer), were injected with tamoxifen (40 mg/kg) on three consecutive days followed by echocardiographic assessment of the left ventricle. *P < 0.05 vs +/+; †P < 0.05 vs baseline value (day 0).

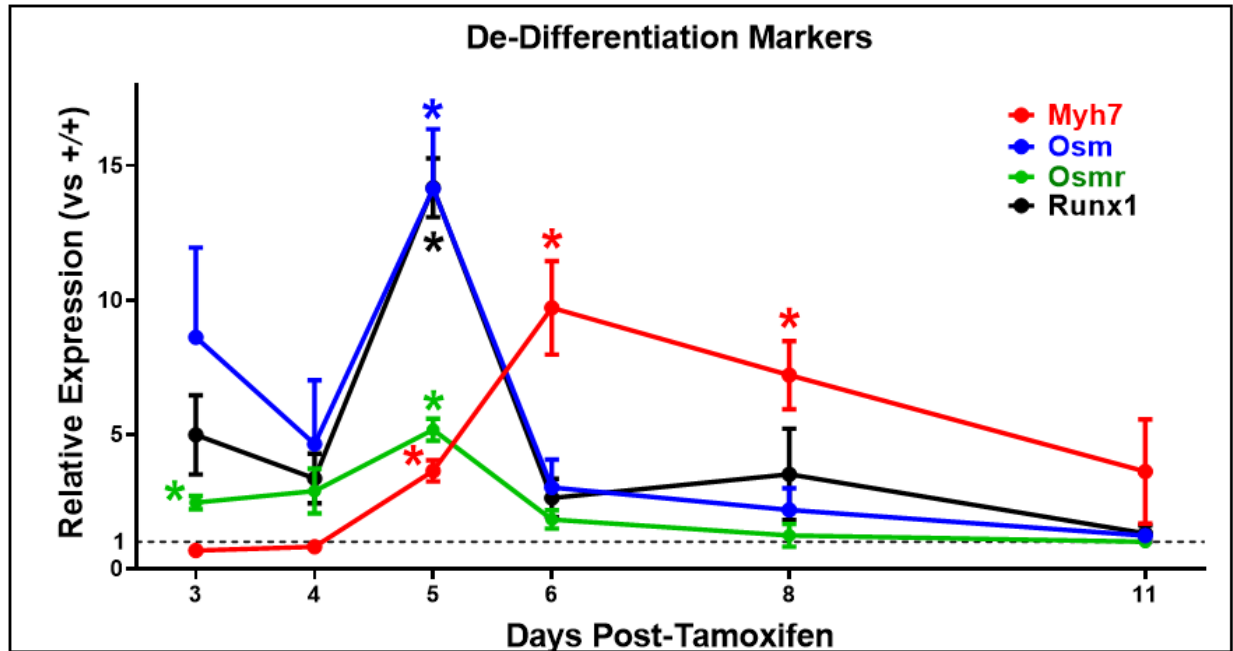


Figure S2. qPCR determinations show induction of de-differentiation marker genes following tamoxifen-induced activation of merCremer. Colored lines denote expression of each gene in $+/+;Myh6-merCremer$ hearts, relative to expression in $+/+$ wild-type controls at $Y=1$ (broken line). Expression of each gene was normalized to *Gapdh*. $N=3$ hearts per timepoint; $*P < 0.05$ versus $+/+$.

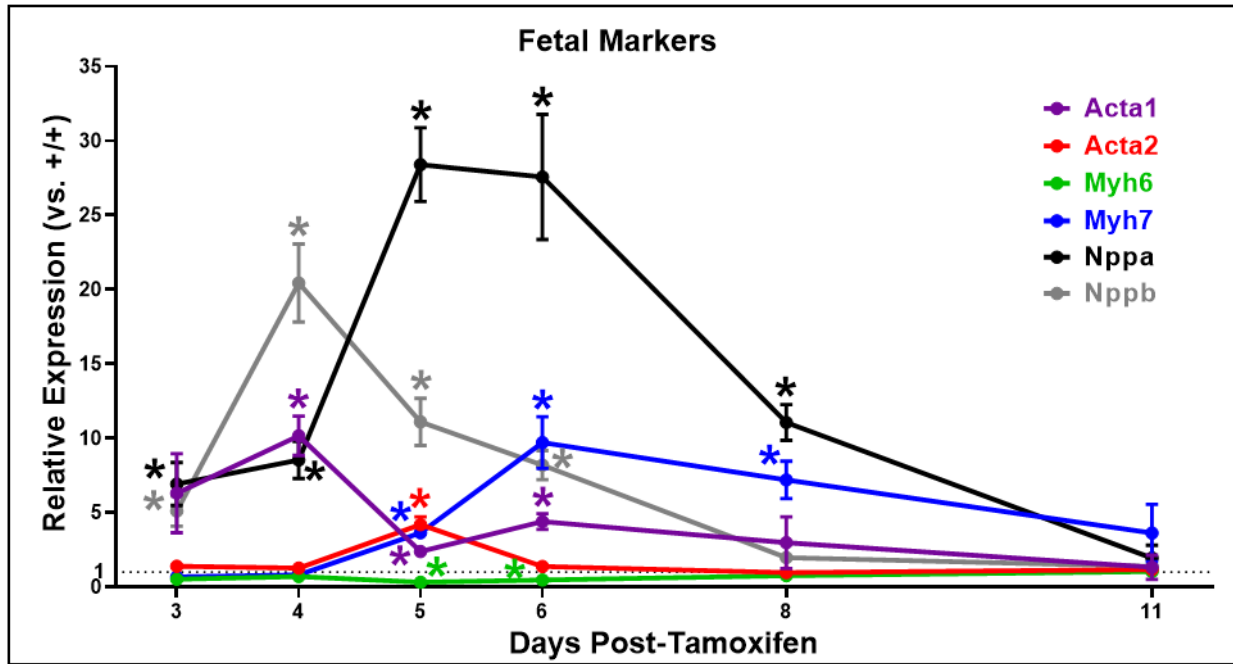


Figure S3. qPCR determinations show induction of fetal gene markers following tamoxifen-induced activation of merCremer. Colored lines denote expression of each gene in $+/+;Myh6\text{-merCremer}$ hearts, relative to expression in $+/+$ wild-type controls at $Y=1$ (broken line). Expression of each gene was normalized to *Gapdh*. $N=3$ hearts per timepoint; $*P < 0.05$ versus $+/+$.

Table S1. ΔCq (relative to Gapdh) of DNA Damage Markers in +/- Wild-type Controls & +/-;Myh6-merCremer Hearts (data are presented as means \pmSEM)						
+/+						
Gene	Days Post-Tamoxifen (N = 3 per timepoint)					
	3	4	5	6	8	11
Bax	7.54 \pm 0.16	7.14 \pm 0.30	7.67 \pm 0.07	7.16 \pm 0.18	7.32 \pm 0.13	7.06 \pm 0.14
Brca1	16.45 \pm 0.11	15.95 \pm 0.38	15.69 \pm 0.01	15.68 \pm 0.21	15.19 \pm 0.25	15.40 \pm 0.30
P53	8.71 \pm 0.10	8.70 \pm 0.37	9.50 \pm 0.20	8.84 \pm 0.37	8.45 \pm 0.21	8.36 \pm 0.23
Vcam1	8.20 \pm 0.28	7.92 \pm 0.29	8.49 \pm 0.10	7.91 \pm 0.27	7.87 \pm 0.08	7.61 \pm 0.16
Wee1	8.89 \pm 0.38	8.33 \pm 0.02	8.64 \pm 0.10	8.47 \pm 0.06	9.00 \pm 0.28	8.94 \pm 0.04
+/-;Myh6-merCremer						
Gene	Days Post-Tamoxifen (N = 3 per timepoint)					
	3	4	5	6	8	11
Bax	6.24 \pm 0.17	6.11 \pm 0.66	5.82 \pm 0.16	6.65 \pm 0.25	7.14 \pm 0.08	7.13 \pm 0.20
Brca1	14.22 \pm 0.44	13.15 \pm 1.44	10.82 \pm 0.21	13.10 \pm 1.01	13.51 \pm 0.70	14.91 \pm 0.25
P53	7.81 \pm 0.24	7.96 \pm 0.86	7.22 \pm 0.16	8.35 \pm 0.45	8.14 \pm 0.21	8.57 \pm 0.24
Vcam1	7.79 \pm 0.29	7.27 \pm 0.68	6.39 \pm 0.33	7.50 \pm 0.19	7.45 \pm 0.27	7.53 \pm 0.19
Wee1	8.61 \pm 0.33	8.42 \pm 0.36	7.89 \pm 0.14	8.57 \pm 0.15	8.95 \pm 0.57	8.57 \pm 0.14

	Baseline		3 days-post-MI		10 days-post-MI		21 days-post-MI		28 days-post-MI	
	+/+ N=5	+/+;Myh6- merCremer N=5	+/+ N=5	+/+;Myh6- merCremer N=5	+/+ N=5	+/+;Myh6- merCremer N=5	+/+ N=5	+/+;Myh6- merCremer N=5	+/+ N=5	+/+;Myh6- merCremer N=5
LVAW d (mm)	0.62±0.03	0.62±0.03	0.79±0.02†	0.70±0.07	0.68±0.02	0.57±0.03	0.63±0.05	0.55±0.02	0.60±0.04	0.53±0.03
LVAW s (mm)	0.82±0.03	0.85±0.03	0.92±0.03	0.78±0.08	0.85±0.03	0.64±0.04*†	0.73±0.07	0.64±0.04†	0.70±0.05	0.61±0.03†
LVPW d (mm)	0.60±0.02	0.62±0.03	0.73±0.40	0.71±0.07	0.68±0.03	0.28±0.05	0.62±0.03	0.59±0.04	0.64±0.03	0.56±0.06
LVPW s (mm)	0.82±0.03	0.85±0.02	0.91±0.02	0.82±0.08	0.91±0.01	0.66±0.07*†	0.77±0.04	0.65±0.06†	0.82±0.04	0.68±0.08
LVID d (mm)	3.83±0.14	4.22±0.20	3.94±0.19	4.64±0.24	4.47±0.11	5.54±0.37*†	4.63±0.19	5.92±0.39*†	4.76±0.13†	6.02±0.37*†
LVID s (mm)	2.89±0.16	3.16±0.24	3.16±0.17	4.10±0.24	3.51±0.06	5.09±0.42*†	3.86±0.22	5.45±0.43*†	4.05±0.15†	5.58±0.39*†
FS (%)	24.7±1.8	25.4±2.3	19.5±2.8	11.6±1.9*†	21.4±1.5	8.4±1.6*†	16.8±2.4†	8.4±1.5*†	14.9±2.2†	7.6±1.3†
LV vol; d (μl)	61.5±4.3	77.9±9.0	68.6±3.6	91.6±8.7	83.0±6.7	137.2±13.0*†	89.7±11.3	167.5±19.2*†	99.3±8.9	165.8±19.2*†
LV vol; s (μl)	37.0±2.7	46.5±5.4	49.6±2.1	66.4±6.5	60.7±4.5	117.3±13.1*†	65.2±8.2	145.8±19.4*†	74.3±6.7†	144.2±17.7*†
EF (%)	39.9±0.3	40.4±0.2	27.6±0.9†	27.6±0.5†	26.6±0.7†	15.3±2.2*†	27.2±0.5†	14.1±2.6*†	25.1±1.0†	13.2±2.0*†
MPI	0.33±0.02	0.34±0.01	0.45±0.02†	0.46±0.01†	0.36±0.03	0.49±0.02*†	0.43±0.04†	0.48±0.02†	0.47±0.03†	0.47±0.02†
HR (bpm)	370±10	374±11	439±4†	418±13	385±28	429±2	364±22	425±30	374±14	416±20

Table S2: Echocardiographic assessment of infarcted +/+ and +/+;Myh6-merCremer mice. *P<0.05 vs. +/+ and †P<0.05 vs. baseline (Day 0).

Table S3. Primers & Taqman Probe Kits		
for PCR Genotyping		
Transgene	Sequence	Amplicon (bp)
<i>Myh6-merCremer</i>	FWD 5'-ATACCGGAGATCATGCAAGC-3'	440 bp
	REV 5'-AGGTGGACCTGATCATGGAG-3'	
Cycling Details: 94°C 5 min, then 35 cycles of 94°C 30sec/61°C 45sec/72°C 45sec, then 72°C 10 min		
for Taqman qRT-PCR		
Gene Target	Thermo-Fisher catalog #	
Normalizers		
Gapdh	Mm99999915_g1	
Cell-Cycle Activation Markers		
Ccna2 (Cyclin A2)	Mm00438063_m1	
Ccnb1 (Cyclin B1)	Mm03053893_gH	
Cdk1	Mm00772472_m1	
Ccnd1 (Cyclin D1)	Mm00432359_m1	
Ccnd2 (Cyclin D2)	Mm00438070_m1	
Cdk4	Mm00726334_s1	
Cell-Cycle Inhibitors		
Cdkn1a (p21)	Mm00432448_m1	
Cdkn1b (p27)	Mm00438168_m1	
DDR Markers		
Bax	Mm00432051_m1	
Brca1	Mm00515386_m1	
Trp53 (p53)	Mm01731290_g1	
Vcam1	Mm01320970_m1	
Wee1	Mm00494175_m1	
De-Differentiation Markers		
Myh7	Mm00600555_m1	
Osm	Mm01193966_m1	
Osmr	Mm01307326_m1	
Runx1	Mm01213404_m1	

Table S4. Antibodies for Immunofluorescent Staining					
Antigen	Manufacturer	Catalog #	Made in	Dilution	
1° 5'-bromodeoxyuridine (BrdU)	Abcam	ab6326	rat	1:200	
2° goat anti-rat 594	Invitrogen	A-11007	goat	1:500	
1° phosphohistone H3 (pH3)	Millipore	06-570	rabbit	1:400	
2° goat anti-rabbit 594	Invitrogen	A-11037	goat	1:500	
1° Ki67	Invitrogen	14-5698-82	rat	1:250	
2° goat anti-rat 594	Invitrogen	A-11007	goat	1:500	
1° Cre-recombinase	Millipore	69050-3	rabbit	1:500	
2° goat anti-rabbit 594	Invitrogen	A-11037	goat	1:500	
1° cardiac-Troponin (cTnT)	Abcam	ab8295	mouse	1:200	
2° goat anti-mouse 488	Invitrogen	A-11029	goat	1:500	