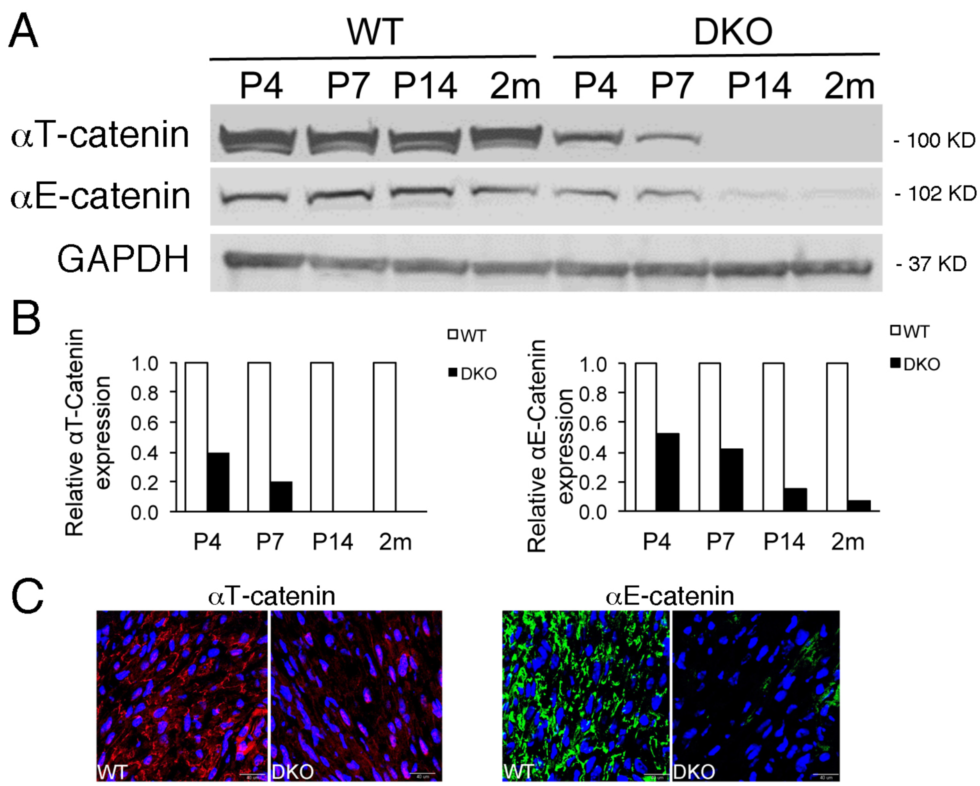
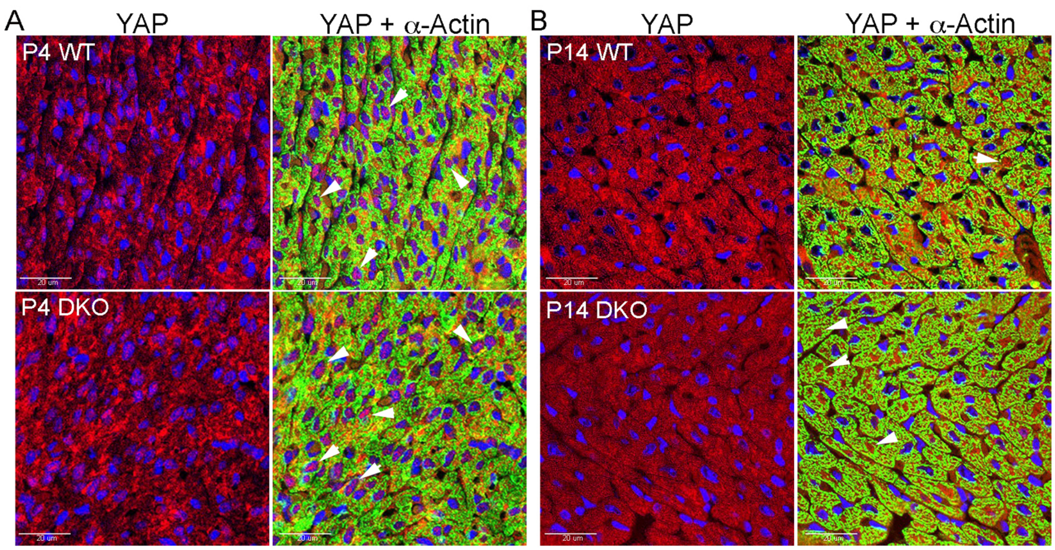


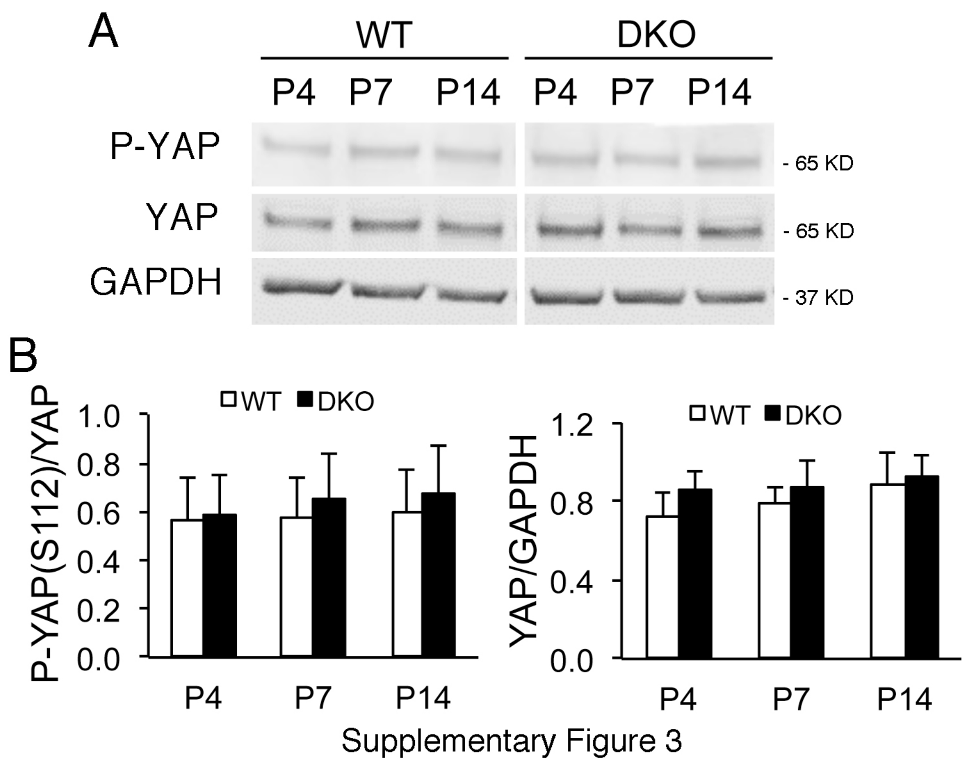
Supplementary Figure 1

Supplementary Figure 1. Loss of αT- and αE-catenins in DKO hearts. (A) Representative image of Western blot analysis of heart lysates from P4, P7, P14 and 2-month-old WT and DKO mice and (B) quantification of αT- and αE-catenin expression relative to WT, n=4 individual hearts/time point. (C) Representative immunofluorescent images of heart sections from P4 WT and DKO mice. Sections were stained for αT-catenin (red) and (B) αE-catenin (green).

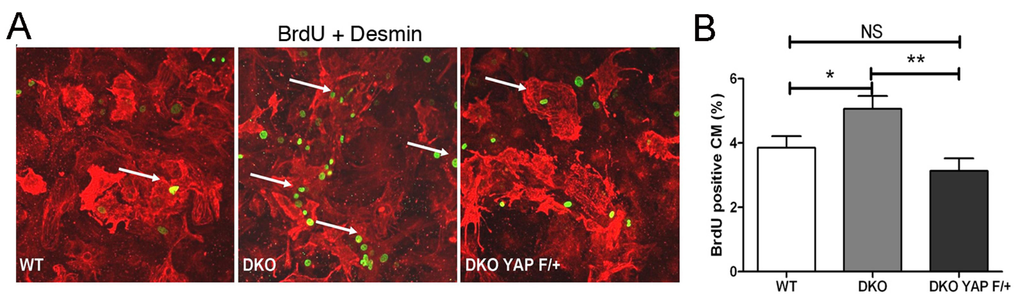


Supplementary Figure 2

Supplementary Figure 2. Yap expression in postnatal hearts. Representative immunofluorescent images of heart sections from (A) P4 and (B) P14 WT and DKO mice. Sections were co-stained for Yap (red) and α-Actin (green). Note the decrease in nuclear Yap-positive cardiomyocytes between P4 and P14 (arrowheads).

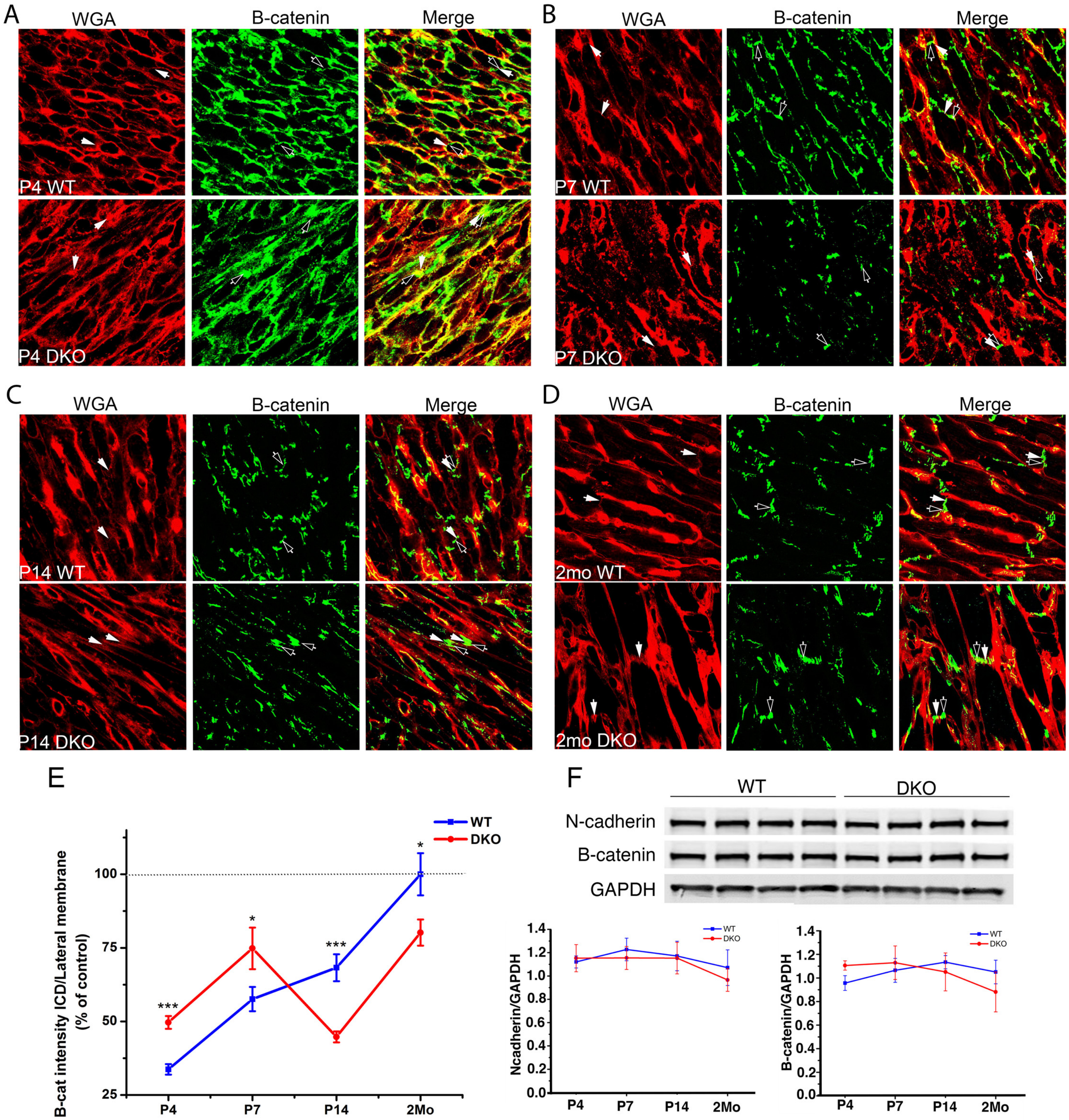


Supplementary Figure 3. Western analysis of Yap in postnatal hearts. (A) Representative image of Western blot analysis of heart lysates from P4, P7, and P14 WT and DKO mice and (B) quantification of phosphorylated (p) Yap at serine 112 and total Yap levels, n=4 individual hearts/time point. NS, by Student's *t*-test. Error bars represent s.e.m..



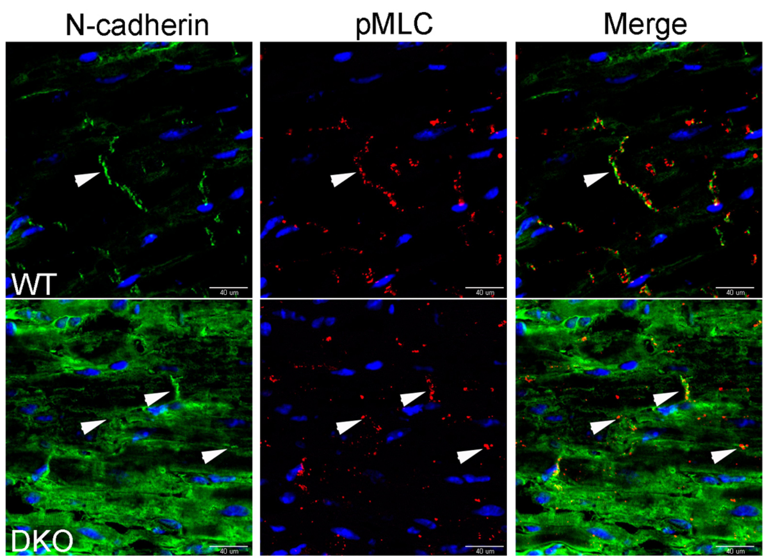
Supplementary Figure 4

Supplementary Figure 4. Increase proliferation in cultured α-catenin DKO cardiomyocytes. (A) Representative images of BrdU (5-Bromo-2'-deoxyuridine, green) incorporation (arrows) in cultured neonatal cardiomyocytes. Cells were co-stained for the cardiac marker desmin (red). (B) Quantification of BrdU-positive cardiomyocytes from WT, DKO and DKO Yap +/- mice. *, p <0.05, **, p<0.01 by Student's *t*-test. Error bars represent s.e.m..



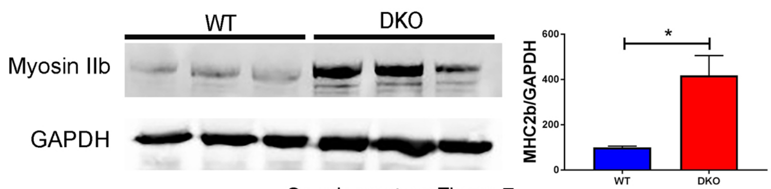
Supplementary Figure 5

Supplementary Figure 5. Analysis of β-catenin cellular distribution in cardiomyocytes during postnatal heart development. Representative immunofluorescent images of heart sections from (A) P4, (B) P7, (C) P14, and (D) 2-month-old WT and DKO mice. Sections were co-stained for β-catenin (green, hollow arrowheads) and WGA (red, solid arrowheads). (E) For each time point (N=3 hearts), the ratio of the relative β-catenin terminal/lateral signal intensity for each CM (n=60 CMs in each group) was normalized to the average β-catenin terminal/lateral ratio calculated for the 2 month WT control. (F) Western analysis of N-cadherin and β-catenin heart lysates from P4, P7, P14 and 2-month-old WT and DKO mice. n=4 individual hearts/time point. *, $p < 0.05$, ***, $p > 0.001$ by Student's *t*-test. Error bars represent s.e.m..



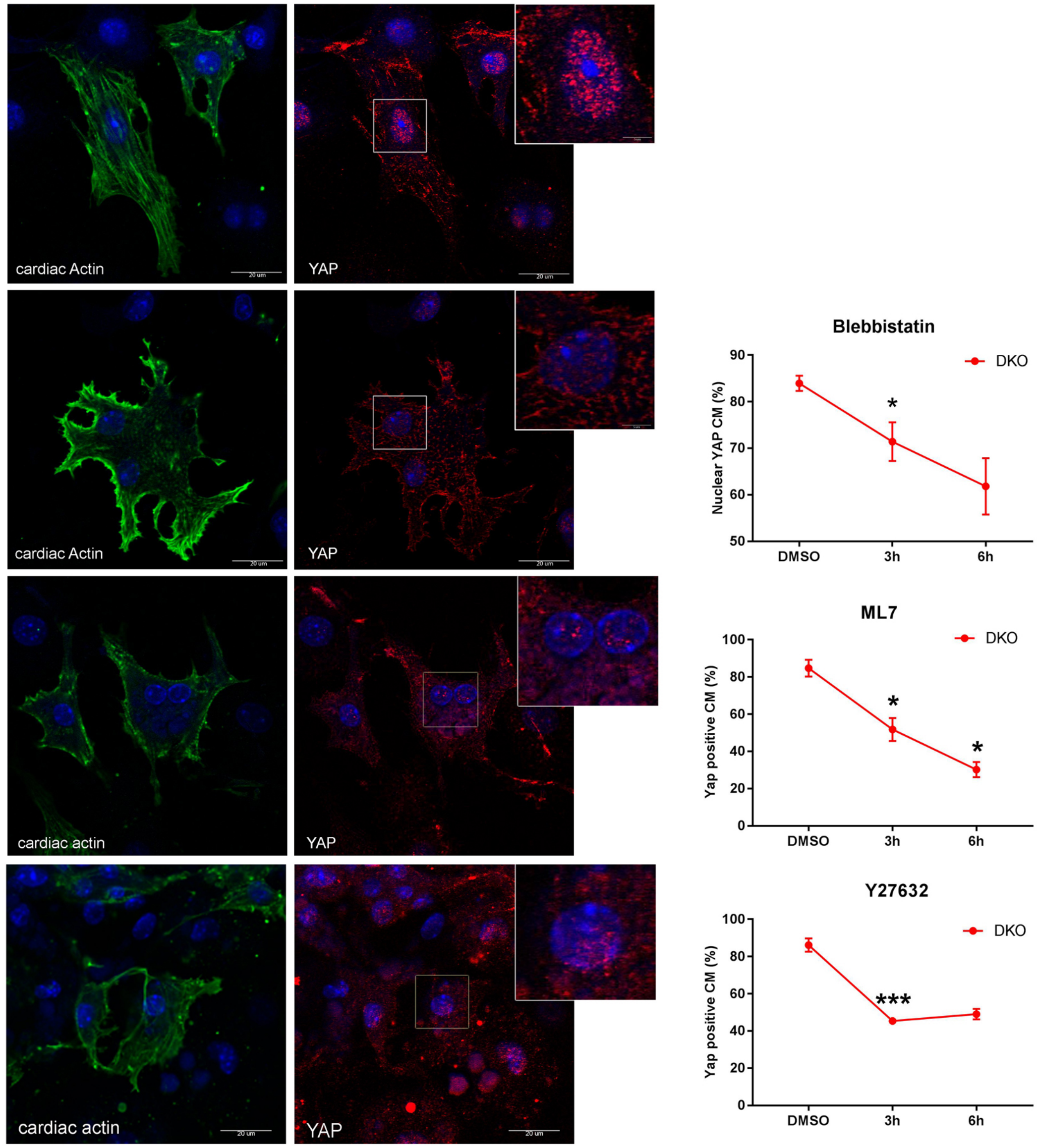
Supplementary Figure 6

Supplementary Figure 6. Mislocalization of actomyosin activity in adult α-catenin DKO hearts. Representative immunofluorescent images of heart sections from 2-month-old WT and DKO mice. Sections were co-stained for N-cadherin (green, arrowheads) and pMLC (red, arrowheads).



Supplementary Figure 7

Supplementary Figure 7. Myosin IIb expression in adult hearts. Western blot analysis and quantification of Myosin IIb expression in whole heart lysates from 2-month-old WT and DKO mice. *, $p < 0.05$ by Student's *t*-test. Error bars represent s.e.m..



Supplementary Figure 8

Supplementary Figure 8. Inhibition of ROCK/MLCK pathway in α-catenin DKO cardiomyocytes causes Yap to exit the nucleus. Representatives images of DKO cardiomyocytes cultured on glass for 4 days and treated for 3 hr (shown) or 6 hr with Blebbistatin (50 μM), Myosin Light Chain Kinase (MLCK) inhibitor ML7 (20 μM) or Rho-associated protein kinase (ROCK) inhibitor Y27632 (20 μM). The cells were co-stained for Yap (red) and α-actin (green). Right, quantification of nuclear Yap-positive cardiomyocytes after Blebblistatin, ML7 or Y27632 for 3 or 6 hr (N=3 experiments, n= minimum 100 cells/experiment). *, $p < 0.05$, ***, $p < 0.001$ by Student's *t*-test. Error bars represent s.e.m..

Supplementary Table I: Primers used for qRT-PCR

mGAPGH F	CATCTTCCAGGAGCGAGACC
mGAPGH R	CTCGTGGTTCACACCCATCA
mSGCD F	GACTCTCATCCGCCACTCTG
mSGCD R	AGGCATCTTTTCCTCCAGCC
mCTGF F	GAACAAATGCTGTGCAGGTGA
mCTGF R	TCCTGGTAGGAATCGGACCTT
mCYR61 F	CTGCGCTAAACAACTCAACGA
mCYR61 R	GCAGATCCCTTTCAGAGCGG
mBIRC5 F	CAGATCTGGCAGCTGTACCT
mBIRC5 R	CTCCGCCATTCGCTCTGG
mLIN9 F	GAAATCCCTCTACCCCTGGTT
mLIN9 R	GTGTCCACTGCATCTATCTGAC
mAURKb F	CAGAAGGAGAACGCCTACCC
mAURKb R	GAGAGCAAGCGCAGATGTC