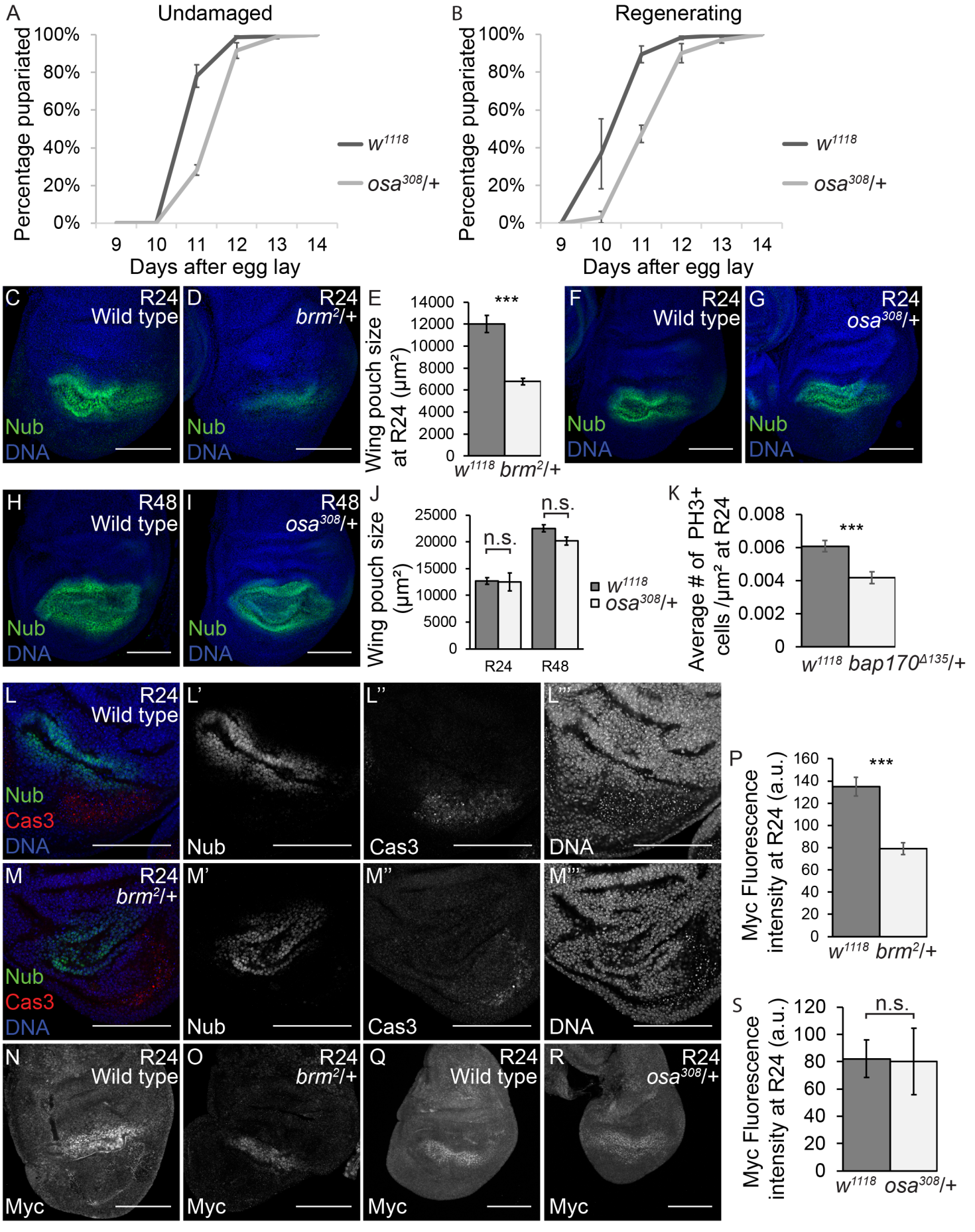
S1 Table. Screen of chromatin regulators

PcG & TrxG			
Gene	Complex	Genotype	Δ Index
Pc	PRC1	*Pc*^{3}	7%
Psc	PRC1	*Psc*^{1}	9%
		Psc^{e24}	-20%
Sce	PRC1	*Sce*^{1}	18%
Scm	PRC1	*Scm*^{D1}	46%
E(z)	PRC2	*E(z)*^{731}	-14%
Su(z)12	PRC2	*Su(z)12*^{2}	-9%
esc	PRC2	*esc*^{21}	26%
Caf1-55	PRC2, NURF	*Caf1-55*^{DG25308}	-19%
escl	PRC2	*escl*^{d01514}	-20%
phol	PhoRC	*phol*^{81A}	41%
ash2	COMPASS, COMPASS-like	*ash2*^{1}	16%
trx	COMPASS-like, TAC1	*trx*^{E2}	-5%
Utx	COMPASS-like	*Utx*^{f01321}	16%
nej	TAC1, ASH1	*nej*^{EP1179}	-29%
ash1	ASH1	*ash1*^{22}	7%
E(bx)	NURF	*E(bx)*$^{nurf301-3}$	-17%
Nurf-38	NURF	*Nurf-38*^{k16102}	-1%
Mi-2	NURD	*Mi-2*^{4}	5%
brm	SWI/SNF(BAP & PBAP)	*brm*^{2}	-23%
		brm$^{RNAi\ VDRC37721}$	18%
osa	SWI/SNF(BAP)	*osa*^{308}	28%
Bap170	SWI/SNF(PBAP)	*Bap170*$^{\Delta 135}$	-19%
Snr1	SWI/SNF(BAP & PBAP)	*Snr1*^{E2}	5%
		Snr1^{SR21}	17%
mor	SWI/SNF(BAP & PBAP)	*mor*^{1}	11%
		mor^{12}	13%
		mor$^{RNAi\ VDRC6969}$	42%
Bap55	SWI/SNF(BAP & PBAP)	*Bap55*^{LL05955}	23%
Bap60	SWI/SNF(BAP & PBAP)	*Bap60*$^{RNAi\ VDRC12673}$	12%
Bap111	SWI/SNF(BAP & PBAP)	*Bap111*$^{RNAi\ VDRC104361}$	-28%

PcG/trxG related proteins			
Gene	Complex	Genotype	Δ Index
psq		*psq*^{E39}	15%
Rbf		*Rbf*^{14}	22%
Dsp1		*Dsp1*^{EP355}	25%
grh		*grh*^{IM}	6%
lolal		*lolal*^{K02512}	1%
Pcl		*Pcl*^{5}	16%

HDAC1		*HDAC1*^{def24}	20%
Sirt1		*Sirt1*$^{2A-7-11}$	23%
vtd	Cohesin	*vtd*^{4}	47%
Su(z)2		*Su(z)2*$^{1.b7}$	-14%
gpp		*gpp*^{03342}	-14%
mod(mdg4)		*mod(mdg4)*^{L3101}	19%
su(Hw)		*su(Hw)*^{e04061}	25%
lid		*lid*^{10424}	23%
Asx		*Asx*^{XF23}	11%
dom	TIP60 complex	*dom*^{LL05537}	-3%
E(Pc)		*E(Pc)*^{1}	41%
kis		*kis*^{1}	0%
kto	Mediator	*kto*^{1}	-11%
skd	Mediator	*skd*^{2}	21%

Supplemental Figure 1



S1 Fig. The PBAP complex is required for regenerative growth whereas the BAP complex is not.

(A) Pupariation rates of animals during normal development at 18°C. n = 79 pupae (*osa*^{308}/+) and 173 pupae (*w*^{1118}) from 3 independent experiments.

(B) Pupariation rates of animals after tissue damage (30°C) and regeneration (18°C). n = 101 pupae (*osa*^{308}/+) and 155 pupae (*w*^{1118}) from 3 independent experiments. Because the temperature shift to 30°C in the ablation protocol increases the developmental rate, the pupariation timing of regenerating animals (B) cannot be compared to the undamaged control animals (A).

(C) Wild-type (*w*^{1118}) regenerating wing disc at R24 with wing pouch marked by anti-Nubbin (green) immunostaining. DNA (blue) was detected with Topro3.

(D) *brm*^{2}/+ regenerating wing disc at R24 with wing pouch marked by anti-Nubbin (green) immunostaining. DNA (blue) was detected with Topro3.

(E) Comparison of regenerating wing pouch size at 24 hours after imaginal disc damage in *brm*^{2}/+ and wild-type (*w*^{1118}) animals. n = 11 wing discs (*brm*^{2}/+) and 10 wing discs (*w*^{1118}).

(F) Wild-type (*w*^{1118}) regenerating wing disc at R24 with wing pouch marked by anti-Nubbin (green) immunostaining. DNA (blue) was detected with Topro3.

(G) *osa*^{308}/+ regenerating wing disc at R24 with wing pouch marked by anti-Nubbin (green) immunostaining. DNA (blue) was detected with Topro3.

(H) Wild-type (w^{1118}) regenerating wing disc at R48 with wing pouch marked by anti-Nubbin (green) immunostaining. DNA (blue) was detected with Topro3.

(I) osa^{308}/+ regenerating wing disc at R48 with wing pouch marked by anti-Nubbin (green) immunostaining. DNA (blue) was detected with Topro3.

(J) Comparison of regenerating wing pouch size at 24 and 48 hours after imaginal disc damage and regeneration in osa^{308}/+ and wild-type (w^{1118}) animals. At R24, n = 8 wing discs (osa^{308}/+) and 10 wing discs (w^{1118}). At R48, n = 6 wing discs (osa^{308}/+) and 8 wing discs (w^{1118}).

(K) Average number of mitotic cells (marked with PH3 immunostaining) per μm^2 in the regenerating wing primordium at R24 in $bap170^{\Delta 135}$/+ and wild-type (w^{1118}) animals. n = 8 wing discs ($bap170^{\Delta 135}$/+) and 10 wing discs (w^{1118}).

(L) Wild-type (w^{1118}) regenerating wing disc at R24 with Nubbin (green) (L') and cleaved Caspase 3 (red)(L'') immunostaining. DNA (blue)(L''') was detected with Topro3.

(M) brm^{2}/+ regenerating wing disc at R24 with Nubbin (green)(M') and cleaved Caspase 3 (red)(M'') immunostaining. DNA (blue)(M''') was detected with Topro3.

(N-O) Wild-type (w^{1118}) (N) and brm^{2}/+ (O) regenerating wing discs at R24 with Myc immunostaining.

(P) Quantification of anti-Myc immunostaining fluorescence intensity in the wing pouch in brm^{2}/+ and wild-type (w^{1118}) regenerating wing discs at R24. n = 11 wing

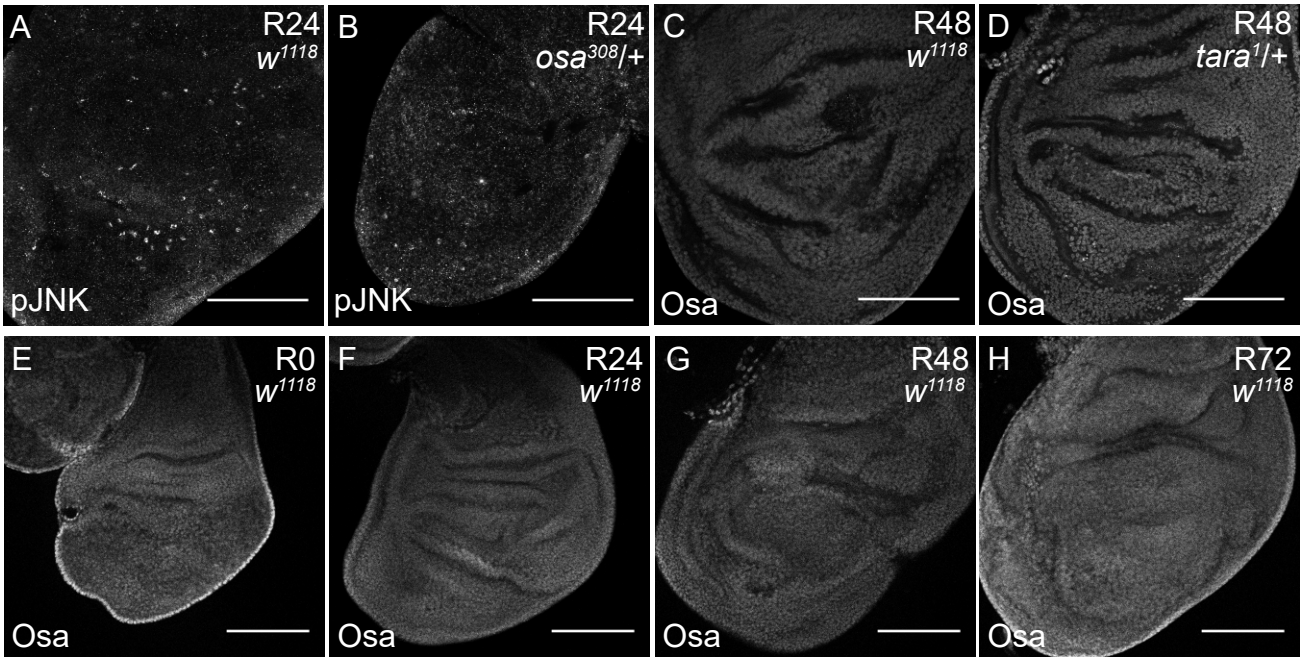
discs (*brm*^{2}/+) and 12 wing discs (*w*^{1118}).

(Q-R) Wild-type (*w*^{1118}) (Q) and *osa*^{308}/+ (R) regenerating wing discs at R24 with Myc immunostaining.

(S) Quantification of anti-Myc immunostaining fluorescence intensity in the wing pouch in *osa*^{308}/+ and wild-type (*w*^{1118}) regenerating wing discs at R24. n = 6 wing discs (*osa*^{308}/+) and 8 wing discs (*w*^{1118}).

Error bars are SEM. Scale bars are 100μm for all wing discs images. *** $p < 0.01$, Student's *t*-test.

Supplemental Figure 2



S2 Fig. The function of BAP in preventing P-to-A transformation.

(A-B) Wild-type (w^{1118}) (A) and osa^{308}/+ (B) regenerating wing discs at R24 with phospho-JNK immunostaining.

(C-D) Wild-type (w^{1118}) (C) and $tara^{1}$/+ (D) regenerating wing discs at R48 with Osa immunostaining.

(E-H) Wild-type (w^{1118}) regenerating wing discs at 0, 24, 48, and 72 hours after imaginal disc damage and regeneration with Osa immunostaining.

Scale bars are 100μm for all wing discs images.