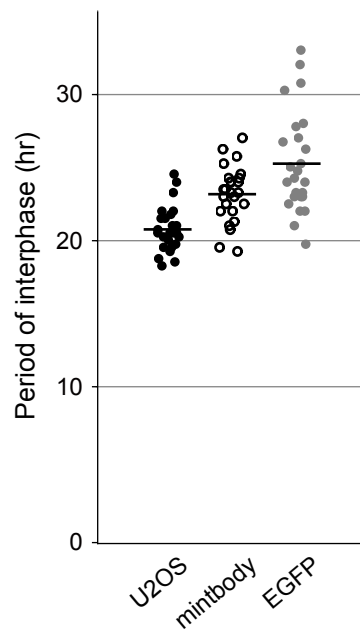


## Supplementary Figures

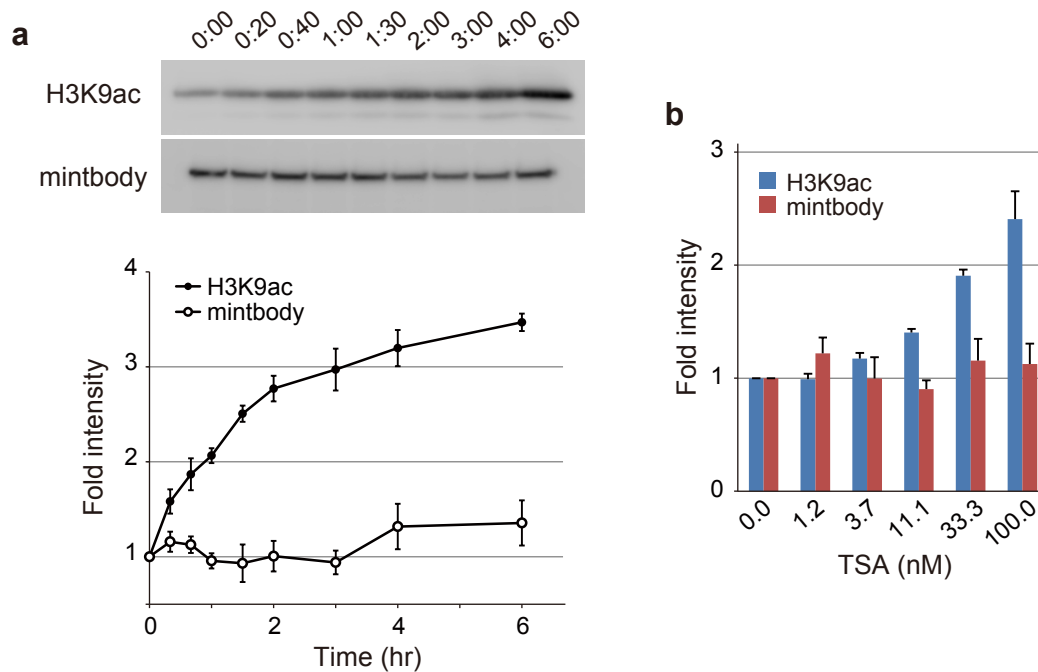
Genetically encoded system to track histone modification *in vivo*

Sato, Y. et al.



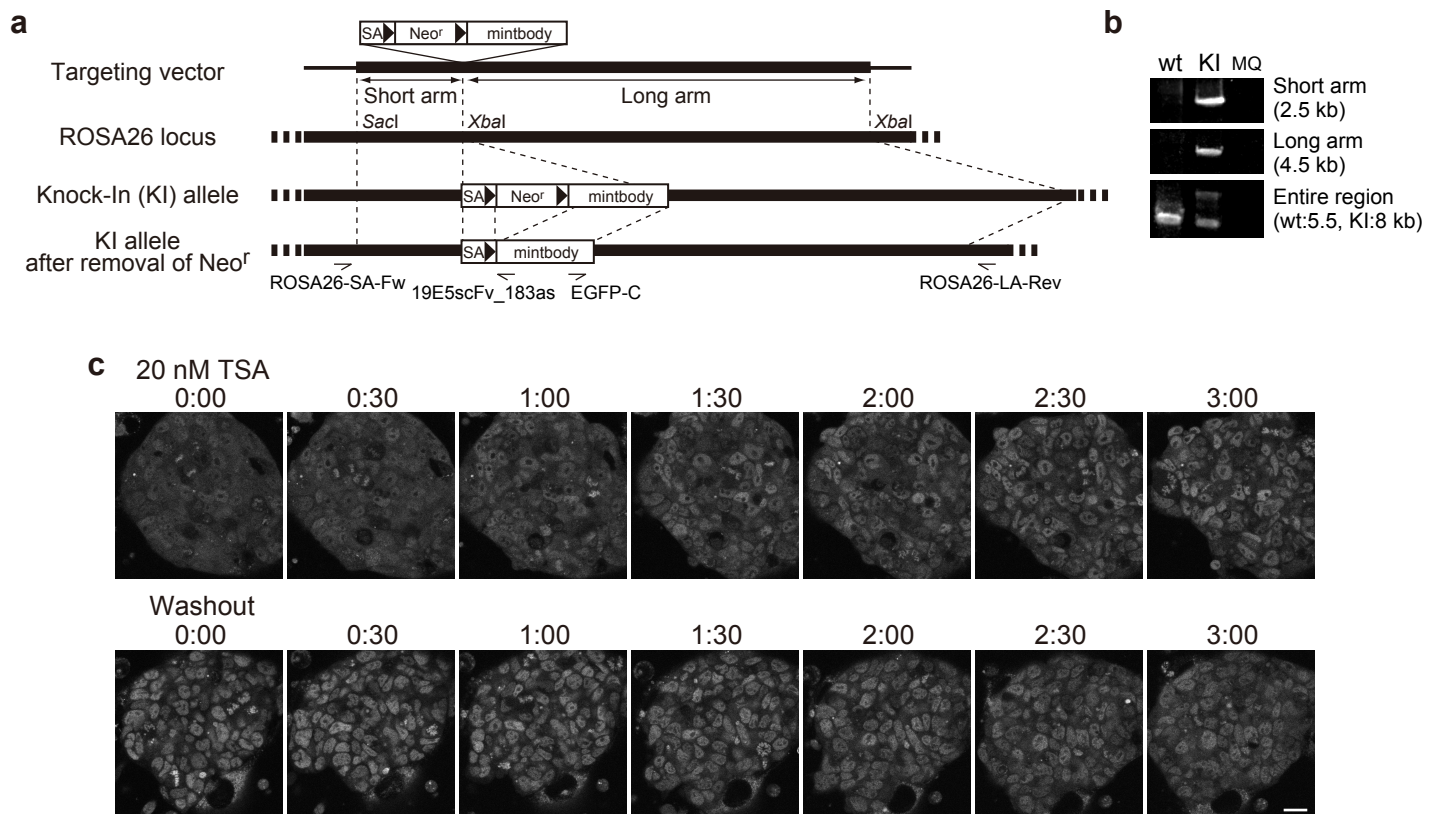
Supplementary Figure S1. Comparison of cell cycle period among U2OS cells and those expressing H3K9ac-mintbody and EGFP.

The periods of interphase in wild-type U2OS cells (black circles) and those expressing mintbody (white circles) and EGFP alone (gray circles) were measured by time-lapse phase-contrast imaging (n = 25). The average is indicated as a bar. U2OS cells expressing H3K9ac-mintbody v3 grow at a similar rate to those expressing EGFP alone.



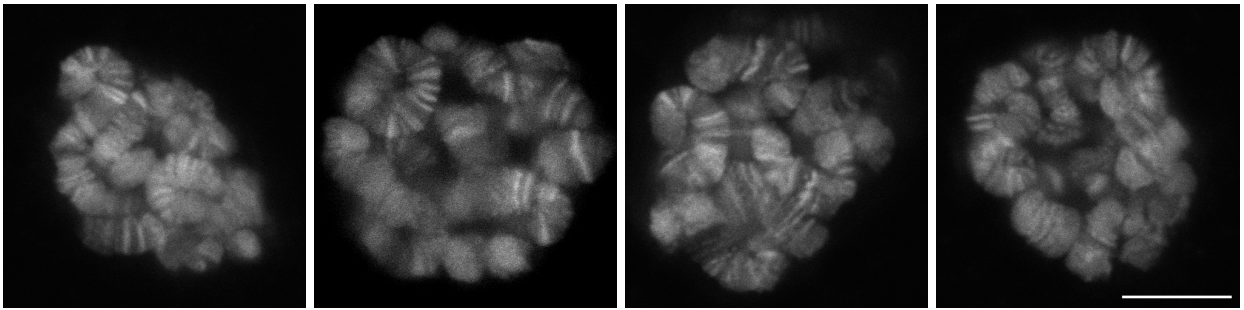
Supplementary Figure S2. Effects of TSA on H3K9ac and mintbody levels analyzed by immunoblotting.

**(a)** Time-course. Effects of TSA in different time points were analyzed by immunoblotting. Total cell lysates were prepared from U2OS cells expressing H3K9ac-mintbody before (0:00) or after the addition of 100 nM TSA at indicated time (h:mm). After the separation in an SDS-polyacrylamide gel, the levels of H3K9ac and mintbody were analyzed by immunoblotting using anti-H3K9ac and anti-EGFP, respectively (top). The intensity in each time point relative to that before TSA addition was measured. Averages from three independent experiments are plotted with s.e.m. **(b)** Dose-dependence. Effects of different concentrations of TSA were analyzed by immunoblotting. U2OS cells expressing H3K9ac-mintbody were treated with the indicated concentrations of TSA for 2 h. The levels of H3K9ac and mintbody were measured as in **(a)**. Averages from three independent experiments are plotted with s.e.m.



Supplementary Figure S3. Mouse ES cells expressing H3K9ac-mintbody.

(a) Scheme of targeting vector to the ROSA26 locus. (b) PCR genotyping. DNA samples from wild-type (wt) and knock-in (KI) cells and water (MQ) are analyzed by PCR using primers indicated in (a). Expected sizes of wild-type and knock-in alleles are indicated on the right. (c) Effects of TSA by time-lapse imaging. Mouse ES cells expressing H3K9ac-mintbody were treated with 20 nM TSA (top) and then washed and incubated in normal medium (bottom). The elapsed time (h:mm) is indicated. Scale bar, 20  $\mu$ m.



Supplementary Figure S4. H3K9ac-mintbody in *Drosophila* polytene chromosomes.

A panel of confocal images of mintbody in *Drosophila* polytene chromosomes in living salivary gland.  
Scale bar, 10  $\mu$ m.