

Supporting Information

Jullien et al. 10.1073/pnas.1000599107

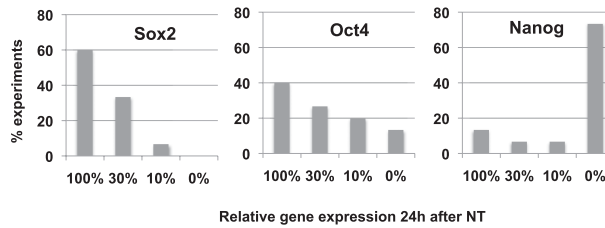


Fig. S1. Quantification of *Sox2*, *Oct4*, and *Nanog* reactivation from nuclei of retinoic acid-differentiated ES (RA-ES) cells transplanted into a *Xenopus* oocyte. The graphs summarize the results of 15 experiments analyzed as in Fig. 1B and show the extent of *Sox2*, *Oct4*, and *Nanog* gene transcription in RA-ES nuclei 24 h after nuclear transfer to oocytes. The results are shown as the per cent of experiments in which, after nuclear transfer, transplanted nuclei regained 0%, 10%, 30%, or 100% of the transcription level of ES nuclei.

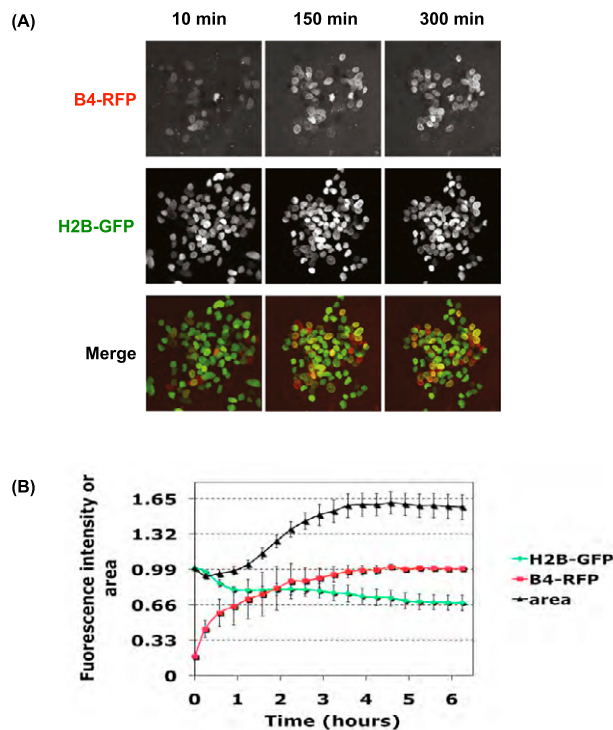


Fig. S2. Real-time monitoring of histone H2B and oocyte linker histone following nuclear transfer into oocyte germinal vesicle. (A) Core histone H2B remains associated with transplanted nuclei. Real-time monitoring of H2B-GFP (present in HeLa nuclei before transplantation) and B4-RFP (expressed in the oocyte by mRNA injection) was carried out during the first 6 h of reprogramming (a complete series of images is shown in Movie S1). (B) Average change in fluorescence intensity with time in the experiment shown in (A). Also shown is the decondensation of nuclei as measured by changes in nuclear area. Error bars indicate the mean \pm SEM ($n = 15$ nuclei).

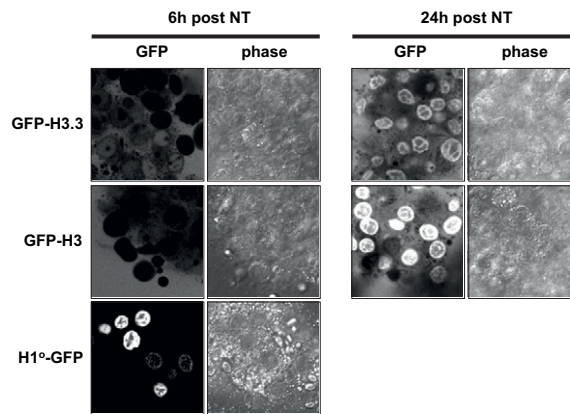
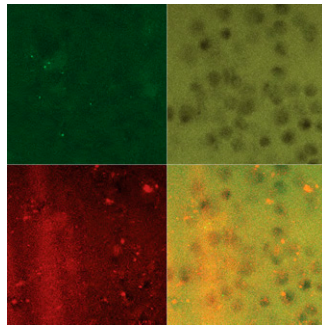


Fig. S3. H3 and H3.3 incorporation into the chromatin of transplanted nuclei. C2C12 nuclei were transplanted into oocytes preinjected with mRNA for GFP-H3.3, GFP-H3, or H1^o-GFP. Six hours after nuclear transfer (*Left*), chromatin is labeled with H1^o (*Bottom Row*) but not with H3.3 or H3 (*Top and Middle Rows*). At 24 h after nuclear transfer (*Right*), chromatin labeling by H3.3 or H3 is observed.

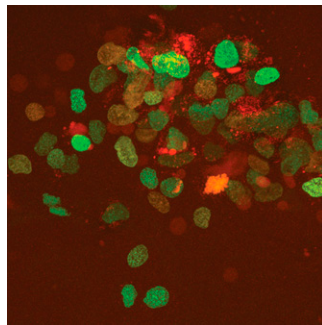
Other Supporting Information Files



Movie S1. Real-time monitoring of gene activation following nuclear transplantation. Reporter nuclei (1) were transplanted in oocyte expressing CFP-LacR (green), MS2-YFP (yellow), and oocyte linker histone B4-RFP (red). Images were collected every 10 minutes, starting 10 minutes after transplantation.

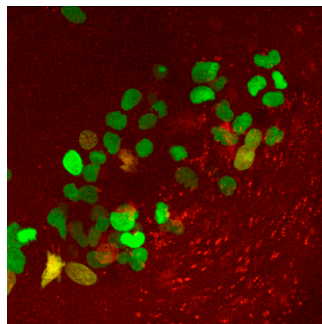
1. Janicki SM, et al. (2004) From silencing to gene expression: Real-time analysis in single cells. *Cell* 116:683–698.

[Movie S1 \(MP4\)](#)



Movie S2. Real-time monitoring of linker histone exchange in transplanted nuclei. NIH3T3 nuclei expressing H1o-GFP were transplanted into *Xenopus* oocyte expressing oocyte linker histone B4-RFP. Images were collected every 20 minutes, starting 10 minutes after transplantation.

[Movie S2 \(MP4\)](#)



Movie S3. Real-time monitoring of histones exchange in transplanted nuclei. HeLa nuclei expressing H2B-GFP were transplanted into *Xenopus* oocyte expressing oocyte linker histone B4-RFP. Images were collected every 20 minutes, starting 10 minutes after transplantation.

[Movie S3 \(MP4\)](#)