

Movie captions

Movie 1: Gata6:H2B-Venus expression dynamics following transient doxycycline treatment.

ES cells carrying the inducible GATA4-mCherry transgene, the transcriptional Gata6:H2B-Venus reporter and a randomly integrated H2B-Cerulean transgene under the control of the CAGS promoter were filmed during and after a 6 h doxycycline pulse. Left panel shows overlay of brightfield image and Gata6:H2B-Venus fluorescence, left panel shows overlay of brightfield image and H2B-Cerulean fluorescence. Cell tracking is indicated by yellow circles (Venus channel) or yellow dots (Cerulean channel). See also Fig. 3G, Fig. S6.

Movie 2: Tracking of GATA4-mCherry expression levels following transient doxycycline treatment

ES cells carrying a doxycycline-inducible GATA4-mCherry transgene and a randomly integrated H2B-Cerulean transgene under the control of the CAGS promoter were filmed during and after a 6 h doxycycline pulse. Left panel shows overlay of brightfield image and GATA4-mCherry fluorescence, right panel shows overlay of brightfield image and H2B-Cerulean fluorescence. Cell tracking is indicated by yellow circles (mCherry channel) or yellow dots (Cerulean channel). See also Fig. 4, Fig. S9.

Movie 3: Subsaturating doses of PD03 do not affect cell viability

ES cells carrying a doxycycline-inducible GATA4-mCherry transgene and a randomly integrated H2B-Cerulean transgene under the control of the CAGS

promoter were filmed during and after a 6 h doxycycline pulse in the absence of PD03 (left) or in 62.5 nM PD03 (right). Movie shows overlay of brightfield image, H2B-Cerulean (cyan) and GATA4-mCherry (red) fluorescence. Subsaturing doses of PD03 do not lead to increased cell death.

Movie 4: Nanog-Venus expression dynamics following transient doxycycline treatment

Time-lapse movie of ES cells carrying a randomly integrated H2B-Cerulean transgene under the control of the CAGS promoter (blue, upper left, overlay with brightfield image), the inducible GATA4-mCherry transgene (red, upper right), and a Nanog-Venus translational reporter (green, lower left) during and after a 6 h doxycycline pulse. Lower right shows overlay of brightfield, GATA4-mCherry and Nanog-Venus fluorescence; note the widespread co-expression of GATA4-mCherry and Nanog-Venus. Cell tracking is indicated by yellow dots and circles. See also Fig. 6E.