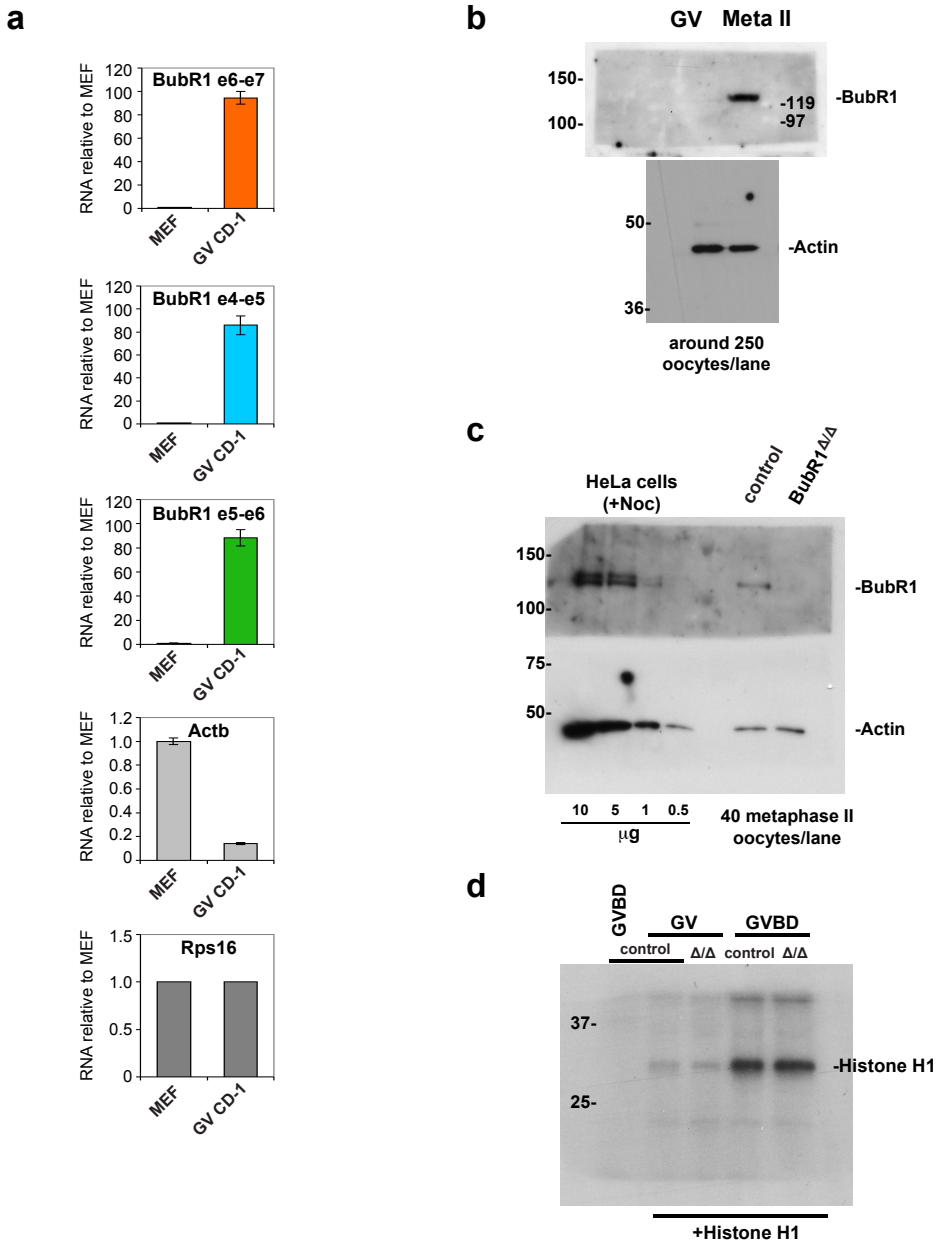
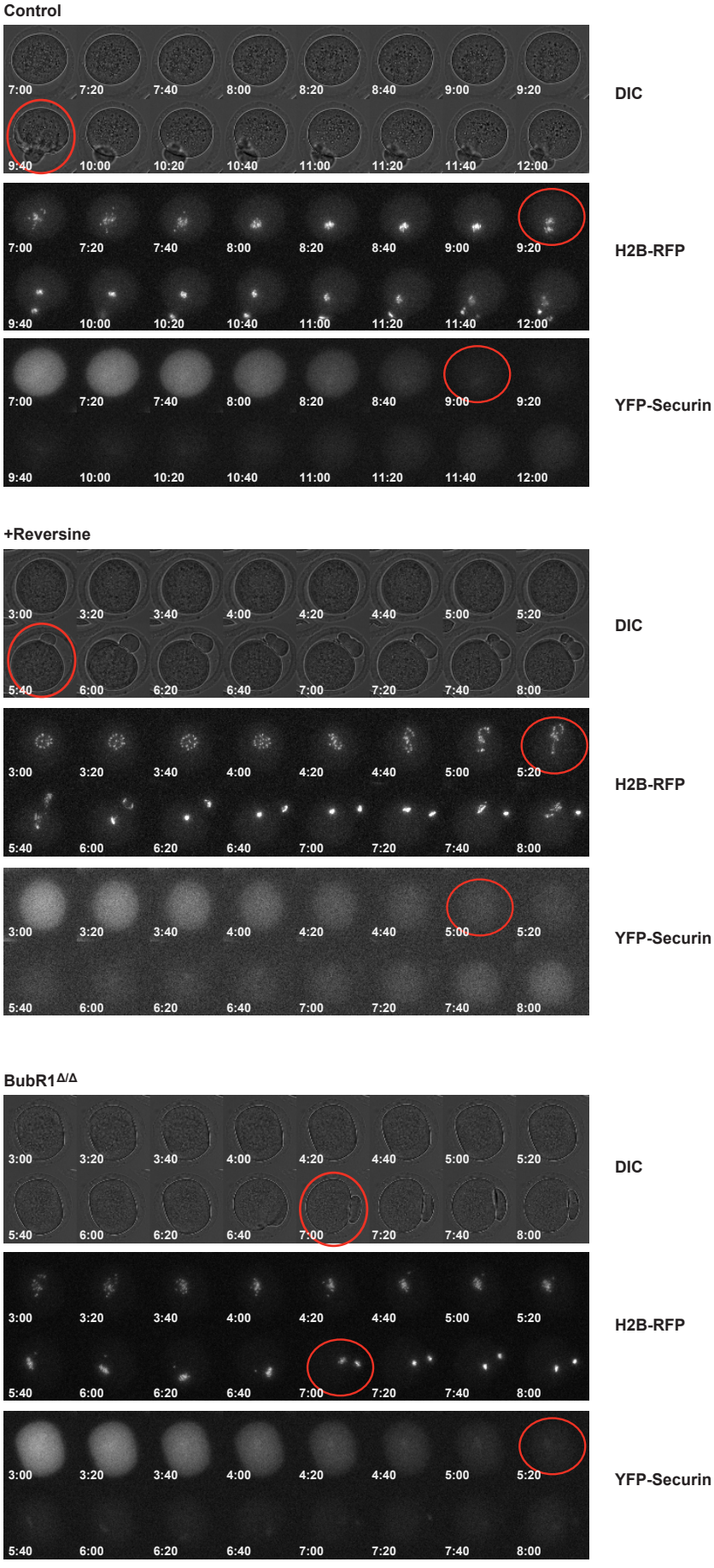


Supplementary Figure 1

GV oocytes contain high levels of BubR1 mRNA.

(**a**) RNA levels from 20 CD-1 oocytes or 500ng of RNA from MEF cells were analysed by RT-qPCR relative to MEFs (set to 1) and normalized to levels of Rps16 RNA. Control reactions in which the RT enzyme was omitted were verified to be negative. Graphs show averages normalized to Rps16 and SEM from triplicate samples from a representative experiment. Error bars are +/-S.E.M. of mean value. (**b**) Whole gels of western blot in Fig. 1b. (**c**) Whole gels of western blot in Fig.1c., including control western in HeLa cells, treated with Nocodazole for 18 hours. (**d**) Whole gel of kinase assay in Fig. 1d, shorter exposure.

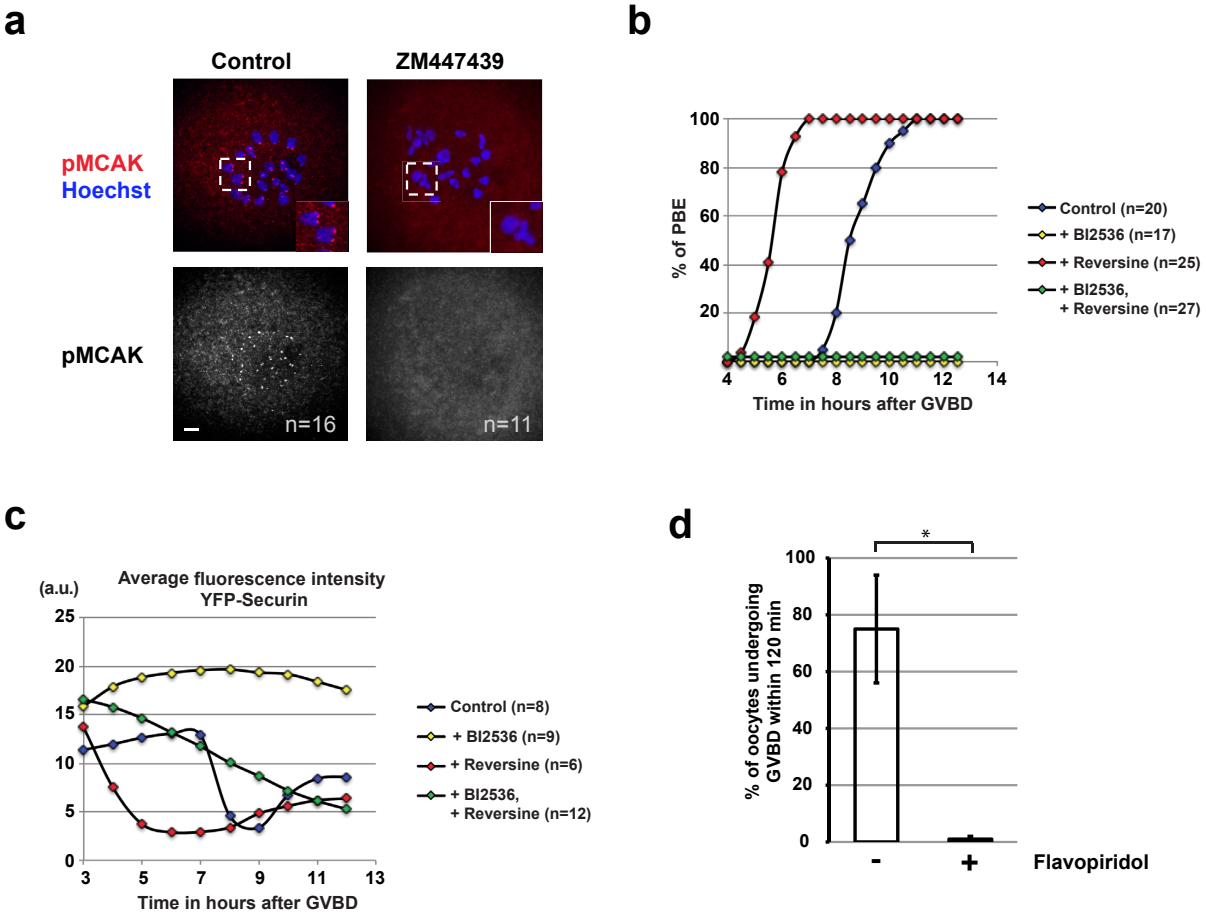


Supplementary Figure 2

Supplementary Figure 2

Anaphase I onset after YFP-securin degradation is delayed without BubR1.

Selected time frames of representative movies of H2B-RFP and YFP-Securin injected control, Reversine-treated (from GVBD onwards), and BubR1$^{\Delta/\Delta}$ oocytes undergoing the first meiotic division. 10 z-sections of 3µm were taken to visualize chromosomes, shown are individual channels (The overlays of the three channels are shown in Figure 6d). Time points were taken every 20 min, time after GVBD is indicated. The circle in red marks key events: PB extrusion (DIC channel), anaphase I onset (red, H2B-RFP), and lowest YFP-Securin levels (yellow channel). Number of oocytes analysed in three independent experiments is indicated in Figure 6e.



Supplementary Figure 3

Effects of treating oocytes with the AuroraB/C inhibitor ZM447439, the Cdk inhibitor Flavopiridol, and the Plk1 inhibitor BI2536.

(**a**) Whole mount control, or for 3 hours ZM447439 treated oocytes at GVBD + 3 h were stained for phospho-MCAK (S95, red), and Hoechst (Chromosomes, blue). Scale bar: 5µm. Inserts show magnifications to better visualize the kinetochore signal. Number of oocytes analysed in three independent experiments is indicated. (**b**) Rate of PB extrusion in oocytes treated with the indicated inhibitors, from three independent experiments. (**c**) Quantification of YFP-securin signal in control oocytes and oocytes treated with the indicated inhibitors, during meiotic maturation by live imaging. Representative graphs from three independent experiments are shown and the total number of oocytes analysed is indicated. (**d**) Percentage of GV oocytes undergoing GVBD in medium containing the Cdk inhibitor Flavopiridol (1µM), within 120 minutes after release. Results from three independent experiments were pooled, the number of oocytes analysed is indicated. (Student's t-test, error bars indicate mean +/- S.D. ; ***: $p < 0{,}0001$)