Electronic Supplementary Material (ESI) for Lab on a Chip.

Supplementary Information

Monitoring of Chromosome Dynamics of Single Yeast Cell in a Microfluidic Platform with Aperture Cell Traps

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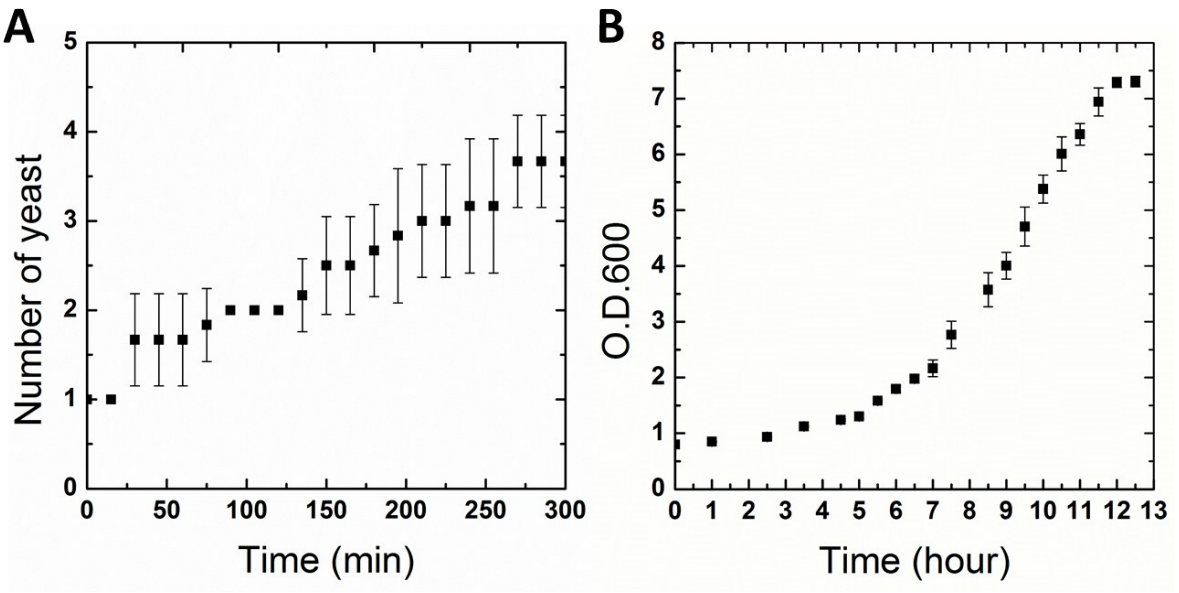

Fig. S1 Growth curve of the KKY 619 strain. (A) Single cell growth in a microfluidic device with aperture cell traps. (B) Growth curve of the KKY 619 strain in conventional flask culture. Error bar indicates the standard deviations.

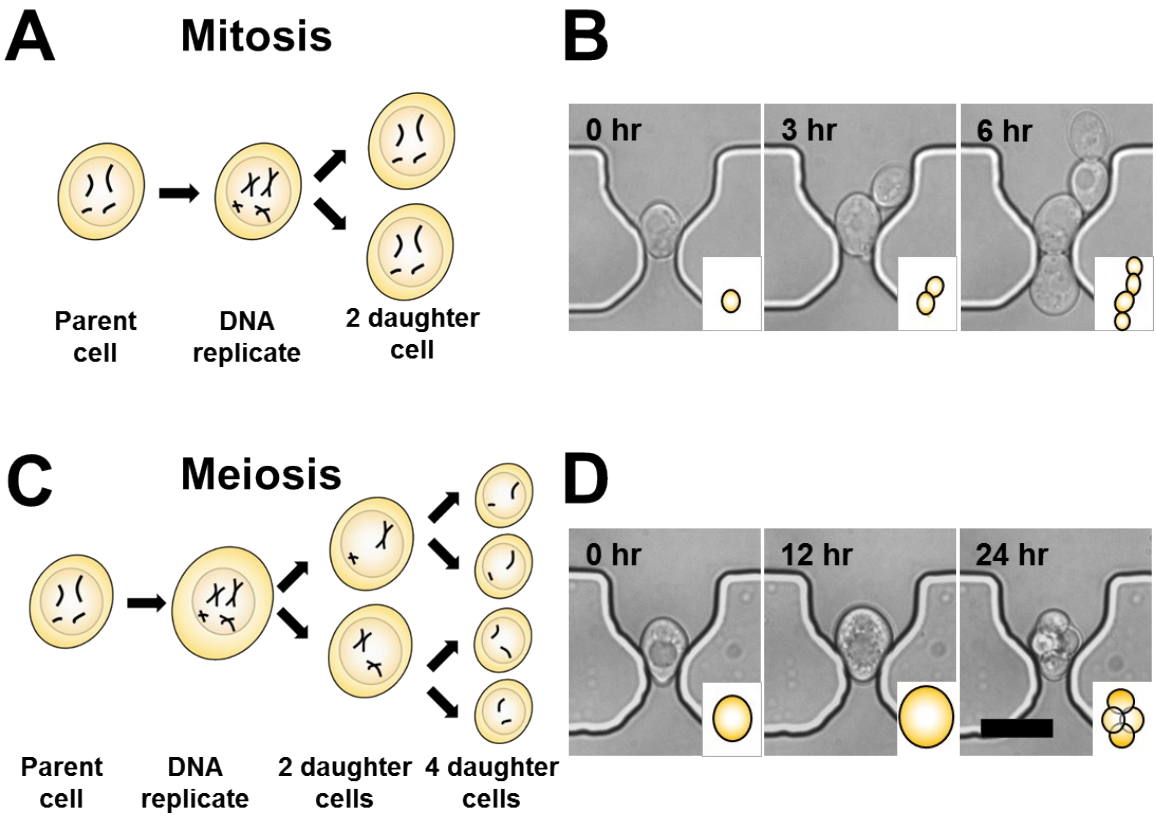

Fig. S2 (A) Example of mitosis in YPD medium in the microfluidic device. (B) High-resolution images are taken using a 100X oil-immersion objective (*N.A.* = 1.45). Mitosis produces two diploid daughter cells, genetically identical to the parent cell. **(C)** Example of meiosis in SPM medium in the microfluidic device (scale bar = 5 μm). (D) Meiosis occurs in diploid cells. The chromosomes duplicate and homologous chromosomes exchange genetic information before a first division, called meiosis I. The daughter cells divide again in meiosis II. Finally, four haploid cells are produced with half the chromosome number of the parental cell.

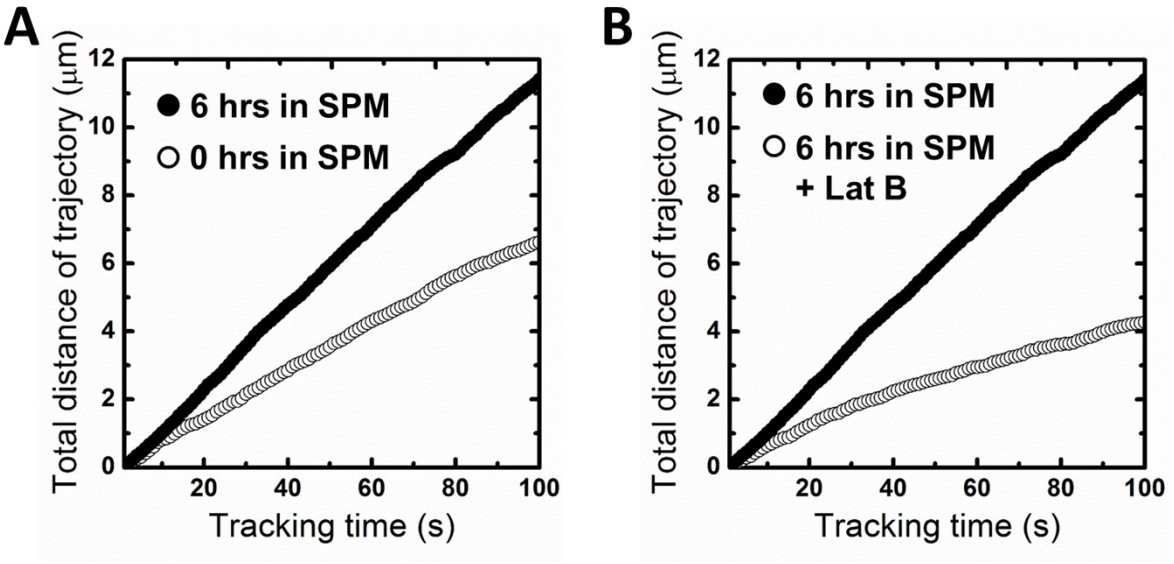

Fig. S3 (A) Total distances traversed by prophase meiotic chromosomes in SPM medium before treatment and 6 hours following treatment. (B) Analysis of the total distance of trajectory of TetR-GFP movement at the prophase meiotic chromosome without or with treatment with 20 μM LatB.

Supplementary movie legends

Movie S1 *TetR*–GFP movement in 0 hour SPM medium.

Movie S2 *TetR*–GFP movement in 6 hour SPM medium.

Movie S3 Movement of *Nup49*-GFP.

Movie S4 3 dimensional image of chromosome (*Zip1*–GFP).

Movie S5 *Zip1*–GFP movement in 6 hour SPM medium.

Movie S6 *Zip1*–GFP movement with treatment of LatB in 6 hour SPM medium.