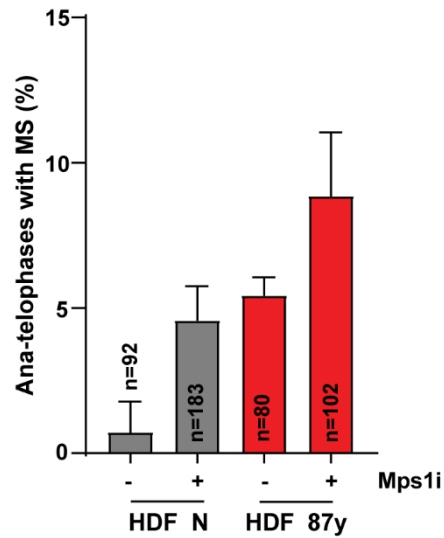


Appendix for Barroso-Vilares et al., Small molecule inhibition of aging-associated chromosomal instability delays cellular senescence (2020)

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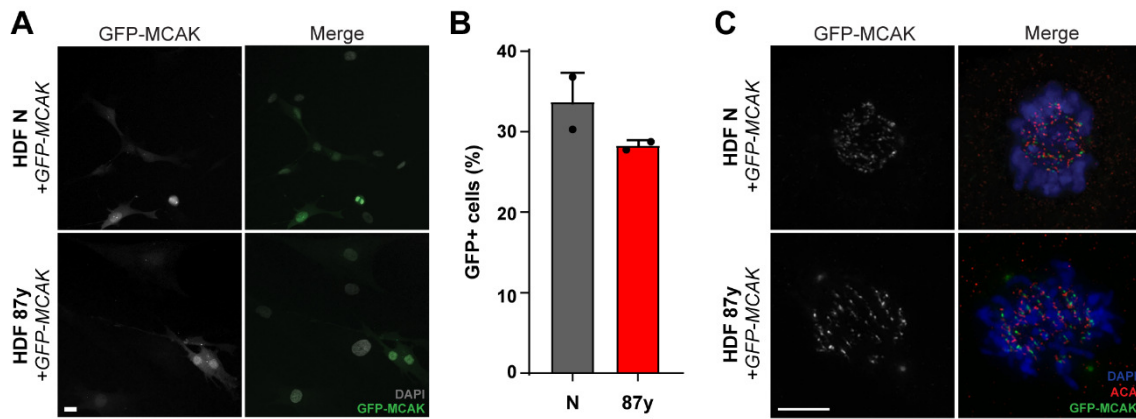
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Appendix Figure S1 (related to Fig 1). Increased frequency of chromosome mis-segregation in elderly vs. neonatal cells following Mps1 partial inhibition.

Percentage of ana-telophases with chromosome mis-segregation (MS) in neonatal vs. elderly cells treated with DMSO (-) or 500 nM AZ3146/Mps1i (+) for 4 hours as scored by Fluorescence *in situ* hybridization (FISH) using centromeric probes against chromosomes 7, 12 and 18.

Data information: values shown are mean \pm s.d. of at least two independent experiments.

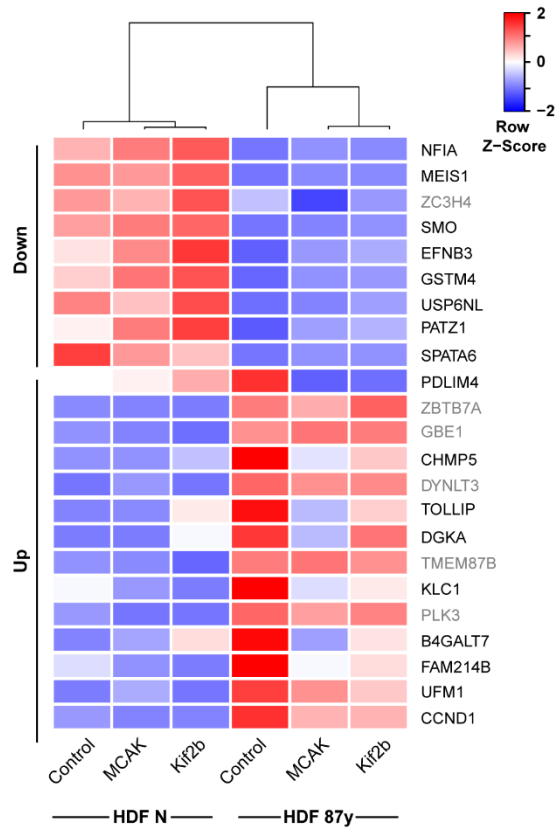


Appendix Figure S2 (related to Fig 2). GFP-MCAK overexpression in young and elderly cells.

(A, B) Representative images (A) and percentages (B) of GFP-MCAK positive cells in total cell populations of neonatal (HDF N) or elderly (HDF 87y) after lentiviral transduction. Scale bar, 20 μ m.

(C) Representative images of mitotic cells overexpressing GFP-MCAK in neonatal and elderly cell populations transduced with lentiviruses. Scale bar, 5 μ m.

Data Information: Values shown in (B) are mean \pm s.d. of two independent experiments, which are indicated as dots.



Appendix Figure S3 (related to Fig 3). Kinesin-13 overexpression rescues senescence core gene expression signature in elderly fibroblasts.

Heatmap of differentially expressed senescence core signature genes (see Dataset EV3). Down and Up refer to the expected changes reported for senescent cells. Gene symbols highlighted in grey indicate genes whose expression remained unaltered following Kinesin-13 overexpression. Z-score row color intensities indicate higher (red) to lower (blue) expression.

Appendix Table S1. List of primers used for lentiviral plasmid assembly and quantitative PCR.

| Gene/Fragment name | Gene Symbol | Forward primer (5' to 3') | Reverse primer (5' to 3') | Experiment |
|--|-----------------------------------|---|--|-------------------|
| BamHI-GFP-MCAK-NotI | - | TATCGCGGATCCATGGTGAGCA AGGGCGAGGAG | TATATAGCGGCCGCTCACTGGGGC CGTTTCTTGCTG | LP |
| NotI-GFP-Kif2b-MluI | - | TATATAGCGGCCGCATGGTGAG CAAGGGCGAGGAG | TATACGACGCGTTCACCTCTACCTT GCTCTTCA | LP |
| BamHI-EOS- α -tubulin-NotI | - | CGCCGCGGATCCATGAGTGCGA TTAAGCCAGAC | TATATAGCGGCCGCTTAGTATTCC TCTCCTTCTTCC | LP |
| Aurora kinase B | <i>AURKB</i> | CGCAGAGAGATCGAAATCCAG | AGATCCTCCTCCGGTCATAAAA | qPCR |
| Beta-1,4-Galactosyltransferase 7 | <i>B4GALT7</i> | CACTACCGGCTGTGCAATG | ACCCAGTTGTGATTCCCGAG | qPCR |
| Cyclin D1 | <i>CCND1</i> | AGCTGTGCATCTACACCGAC | GAAATCGTGCGGGGTCATTG | qPCR |
| Cyclin-Dependent Kinase Inhibitor 1A | <i>CDKN1A/P21</i> | TGGACCTGGAGACTCTCAGG | CGGATTAGGGCTTCCTCTTGG | qPCR |
| Cyclic GMP-AMP synthase | <i>CGAS</i> | ACGTGCTGTGAAAACAAAGAAG | GTCCCACTGACTGTCTTGAGG | qPCR |
| Family With Sequence Similarity 214 Member B | <i>FAM214B</i> | CACCATCCAAGTGACCTTATTTA ACC | AGAAGTCAAAGGTCACAAGGAAC AT | qPCR |
| Hypoxanthine phosphoribosyltransferase 1 kinesin family member 2C | <i>HPRT1</i> <i>KIF2C/MCAK</i> | TGACCAGTCAACAGGGGACA CTCAGTTCGGAGGAAATCATGTC | CTGCATTGTTTTGCCAGTGTC TGCTCTTCGATAGAATCAGTCAC | qPCR qPCR |
| NDC80 kinetochore complex component | <i>NDC80/HEC1</i> | CCTCTCCATGCAGGAGTTAAGA | GGTCTCGGGTCCTTGATTTTCT | qPCR |
| Polo like kinase 1 | <i>PLK1</i> | AAAGAGATCCCGGAGGTCCTA | GGCTGCGGTGAATGGATATTTT | qPCR |
| TATA-box binding protein | <i>TBP</i> | GAGCCAAGAGTGAAGAACAGTC | GCTCCCCACCATATTCTGAATCT | qPCR |
| Toll Interacting Protein | <i>TOLLIP</i> | GACTTCCTCCGCATCACGC | CCAACCTTGCTGTACCACC | qPCR |

LP - lentiviral plasmid assembly; qPCR - quantitative PCR