Captions for Supplemental Movies

**Movie S1: CLN2pr-GFP expression during aging.**
Whole lifespan movie of a Whi5-tdTomato (red) and CLN2pr-GFP (green) expressing cell. DIC is shown blue (A36566). CLN2pr-GFP induction peaks gradually decline as cells age and fragmentation of the nucleus occurs.

**Movie S2: CLN2-PP7 cytoplasmic mRNA expression during aging.**
Whole lifespan movie of a strain expressing CLN2-PP7 mRNA and PCP-GFP-NLS (green). DIC is shown in blue (A39858). The bright green signal represents the nucleus. The periodic appearance of cytoplasmic mRNA foci can be observed throughout most of the movie but focus number declines during the divisions leading up to cell death. The aging cell is marked with an arrow in the first frame.

**Movie S3: CLN2-PP7-MS2 nuclear mRNA expression during aging.**
Whole lifespan movie of a strain expressing CLN2-PP7-MS2 mRNA, and PCP-GFP-NLS (green) and MCP-tagRFP-NLS (not shown). DIC is shown in blue (A39860). CLN2-PP7-MS2 mRNA forms bright nuclear foci prior to bud emergence throughout the time course, but focus formation decreases with old age. The aging cell is marked with an arrow in the first frame.

**Movie S4: CLN2pr-GFP reactivation and rejuvenation in an old cell.**
Whole lifespan movie of a Whi5-tdTomato (red) and CLN2pr-GFP (green) expressing cell. DIC is shown in blue (A36566). CLN2pr-GFP expression first declines but then is spontaneously reactivated. Shorter cell cycle times follow in the mother cell, but the daughter cell arrests permanently. Importantly, transmission of most of Whi5 into the daughter cell during anaphase precedes CLN2 promoter reactivation in the mother cell in the following G1. The cell is washed away at the end of the movie. GFP intensities for this cell during its lifespan are shown in Fig. 4A.

**Movie S5: Reactivation of CLN2-PP7-MS2 mRNA expression.**
Whole lifespan movie of a strain expressing CLN2-PP7-MS2 mRNA. DIC is shown in blue (A39860). Bright nuclear foci appear prior to bud emergence in young cells but decline with age. After partitioning of a large portion of the nucleus into the daughter cell, CLN2-PP7-MS2 mRNA foci reappear for a few divisions before the CLN2 promoter is silenced again. The aging cell is marked with an arrow in the first frame.
**Movie S6: Reactivation of *Cln2pr-GFP* coincides with Cfi1 loss.**

Whole lifespan movie of a strain expressing Cfi1-mCherry (red) and *CLN2pr-GFP* (green). DIC is shown in blue (A39862). Inactivation of *CLN2pr-GFP* is followed by 2 reactivation events. Partitioning of a large portion of the Cfi1 signal into the daughter cell during anaphase is followed by *CLN2pr-GFP* reactivation in the subsequent G1 phase. GFP- and mCherry intensities for this cell during its lifespan are shown in Fig. S8B.