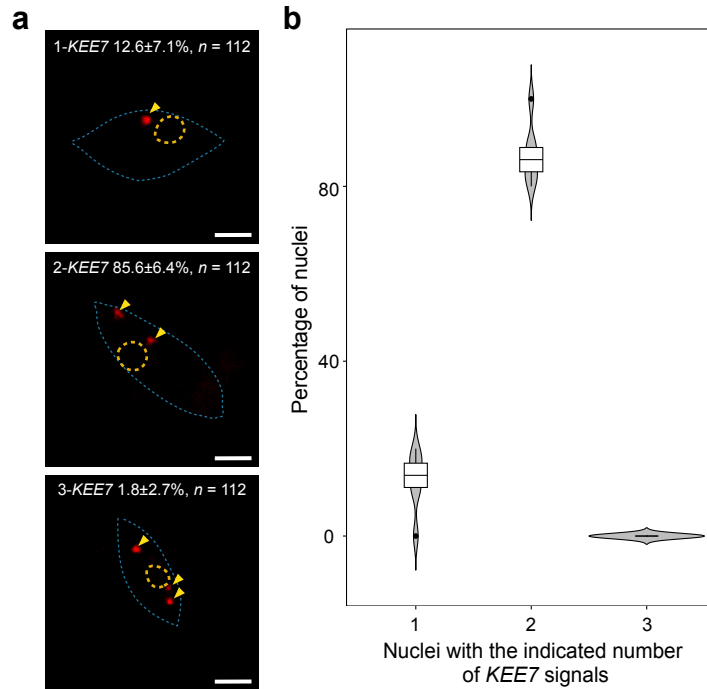
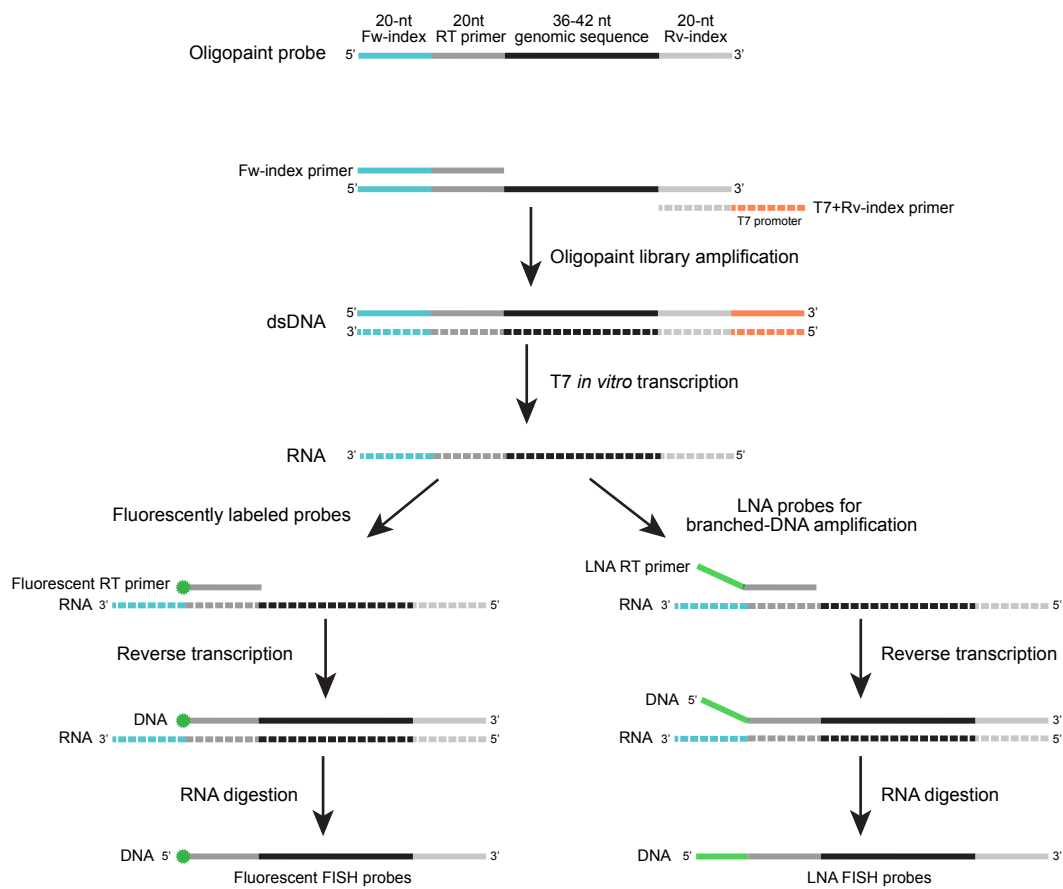


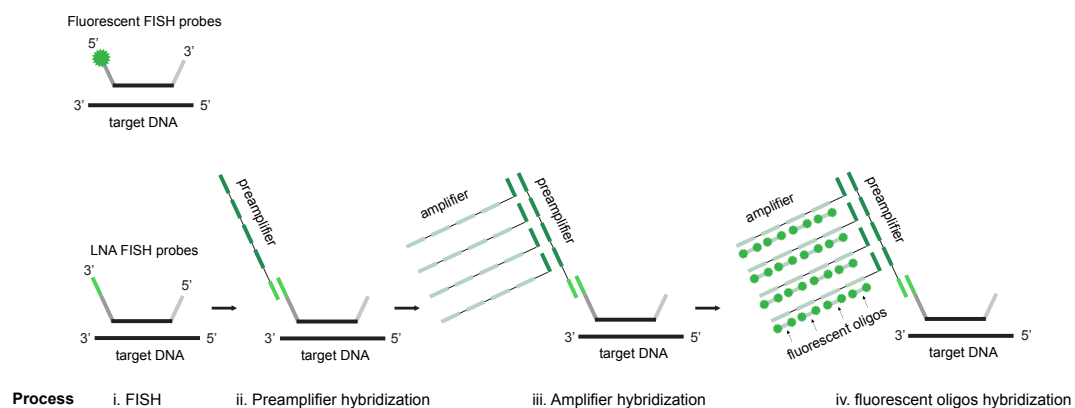


Supplementary Fig. 1. Sister chromatids are mostly aligned at the *KEE7* locus in pavement epidermal cells. **a** Confocal images showing *KEE7* FISH signals in pavement-cell nuclei from the cotyledons of 4-d-old *PBC* seedlings grown under $10 \mu\text{mol m}^{-2} \text{s}^{-1}$ R light at 16°C . *KEE7* was labeled via Oligopaint FISH (red) and indicated by orange arrowheads. Representative nuclei containing one to three *KEE7* signals are shown. The numbers indicate the percentage of each type of nuclei and the s.e. among the total number of observed nuclei (n). The boundaries of the nucleus and nucleolus are traced by dashed blue and orange lines, respectively. Scale bars are equal to $2 \mu\text{m}$. **b** Violin plots showing the percentage of nuclei containing one, two, or three *KEE7* FISH signals. In the box and whisker plots, the boxes represent the 25% to 75% percentiles, the bars are equal to the mean. The source data underlying the PB quantifications in **b** are provided in the Source Data file.

a



b



Supplementary Fig. 2. Oligopaint FISH probe synthesis.

Supplementary Table 1. List of fluorescently labeled reverse transcription primers for labeling *CEN178* probes.

Name	Sequence 5' - 3'
Fluorescent RT primer_Alex488	/5Alex488N/ACGTTCTGCGATCGGTCTGGA
Fluorescent RT primer_ATTO565	/5ATTO565N/ACGTTCTGCGATCGGTCTGGA
Fluorescent RT primer_ATTO633	/5ATTO633N/ACGTTCTGCGATCGGTCTGGA

Supplementary Table 2. List of oligo sequences used in the branched-DNA amplification of Oligopaint FISH. For LNA oligos, the LNA residues are labeled with a “+” sign preceding their positions.

Name	Sequence 5' - 3'
RT primer_488	TGCTGAGTGTGCGACGTTCTGCGATCGGTCTGGA
Preamplifier_488	TGCGA+C+ACTC+AGC+ATTTTTTTTTTGTAGCCTATCAGATTTGCTAGCCTATCAGATTTGCTAGCCTAT CAGATTTGCTAGCCTATCAGA
Amplifier_488	TC+TG+ATA+GGCTAGCTTTTTTTTTTCGCTATCCAGTGACTTTTCGCTATCCAGTGACTTTTCGCTATCCAGT GACTTTTCGCTATCCAGTGAC
Fluorescent oligo_ATTO488	/5ATTO488N/AG+TCACTGG+A+TAG+CGA/3ATTO488N/
RT primer_565	CGCTGACGTACGGTCGTTCTGCGATCGGTCTGGA
Preamplifier_565	A+CCGTACGT+CAG+CGTTTTTTTTTTAGCTAGCGCGTGTTTTAGCTAGCGCGTGTTTTAGCTAGCGC GTGTTTTAGCTAGCGCGTG
Amplifier_565	A+C+ACGCGCTAGCT+ATTTTTTTTTTGATCCGAGTATAGCTTTGATCCGAGTATAGCTTTGATCCGAGTAT AGCTTTGATCCGAGTATAGC
Fluorescent oligo_ATTO565	/5ATTO565N/AGCT+ATAC+TC+GG+ATC/3ATTO565N/
RT primer_647	GCGCGTATATCAGCCGTTCTGCGATCGGTCTGGA
Preamplifier_647	GC+T+GATA+T+ACG+CGTTTTTTTTTCGTGCGCCATAGTGTTTTCGTCGCCATAGTGTTTTCGTCGCCAT AGTGTTTTCGTCGCCATAGTG
Amplifier_647	AC+AC+TATG+GCGA+CGTTTTTTTTTGTCGCTCTCTCGATTTGTGCGCTCTCTCGATTTGTGCGCTCTC TCGATTTGTGCGCTCTCTCGA
Fluorescent oligo_ATTO647	/5ATTO647N/TCG+AG+AG+AGCGCAC/3ATTO647N/