

**Role of force-sensitive amyloid-like interactions in fungal catch-
bonding and biofilms**

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SUPPLEMENTAL FIGURES

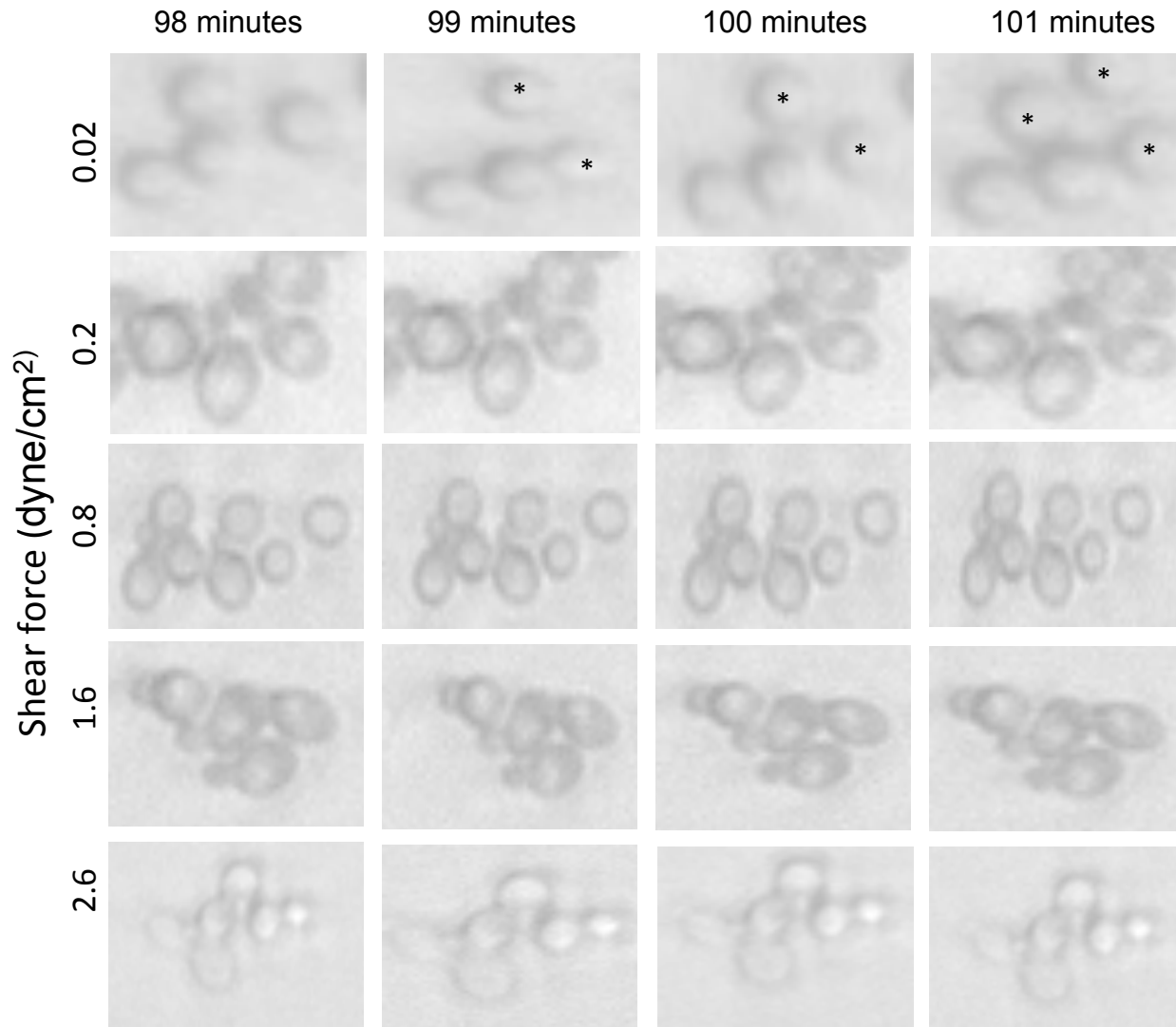
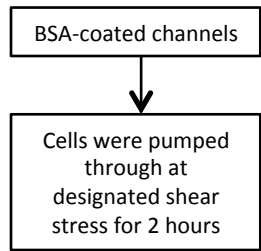


FIGURE S1. Movement of yeast cells over a surface at different shear forces. Representative clusters of *C. albicans* SC5314 cells were imaged after 99 min at the indicated shear stresses. Note the cells moving between frames at the lowest shear stress (*).

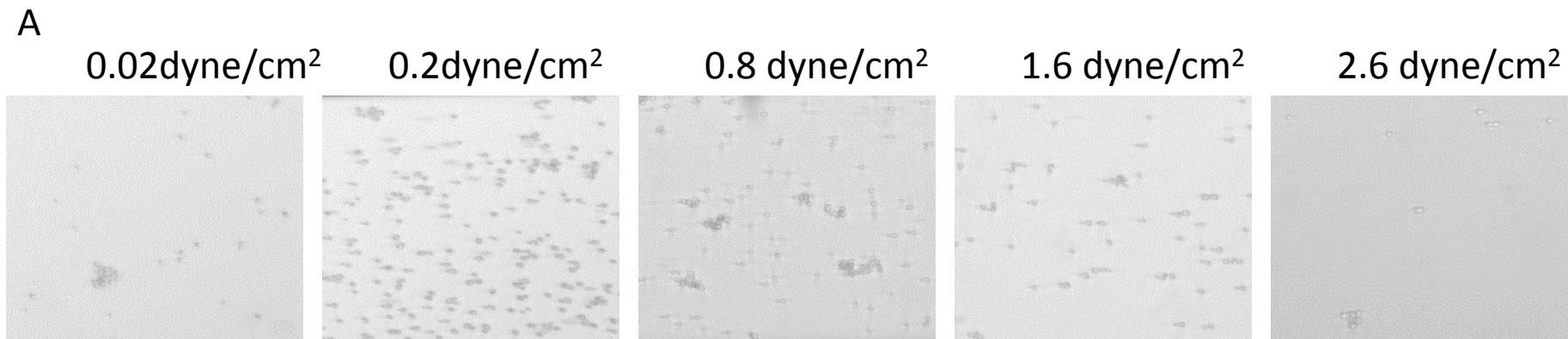
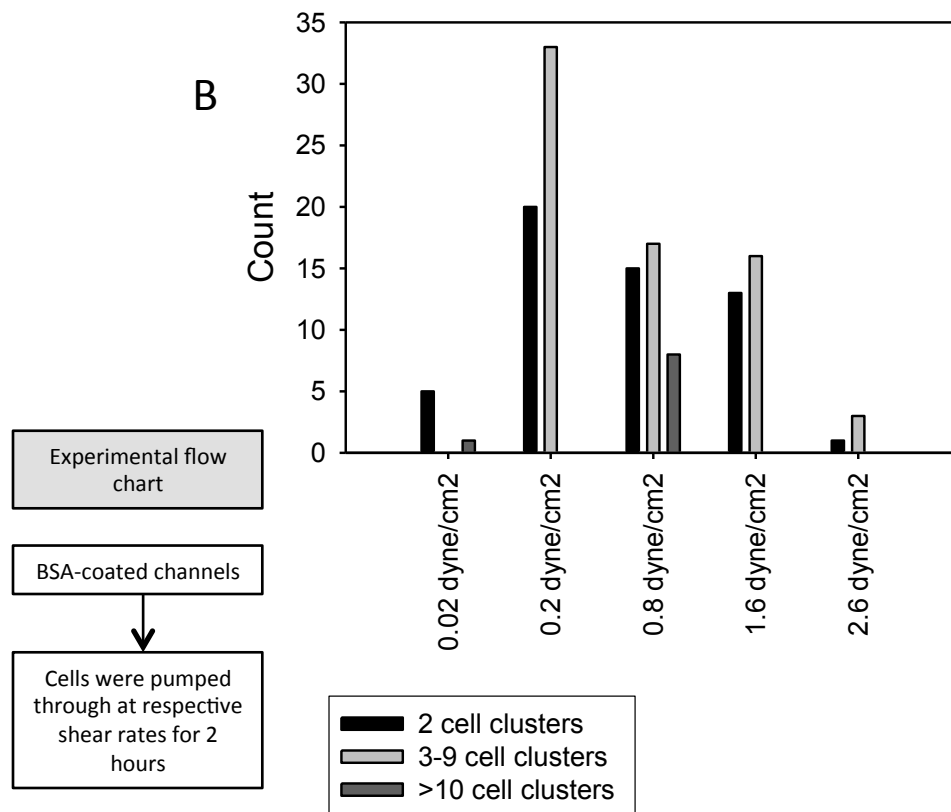


FIGURE S2. Effect of shear on clustering of *C. albicans*. *C. albicans* SC5314 cells were adhered to channels under continuous flow at different rates for 2 hours. A) Micrographs of representative fields. B) Cell counts binned by cluster size. Increased shear led to increased cluster size.



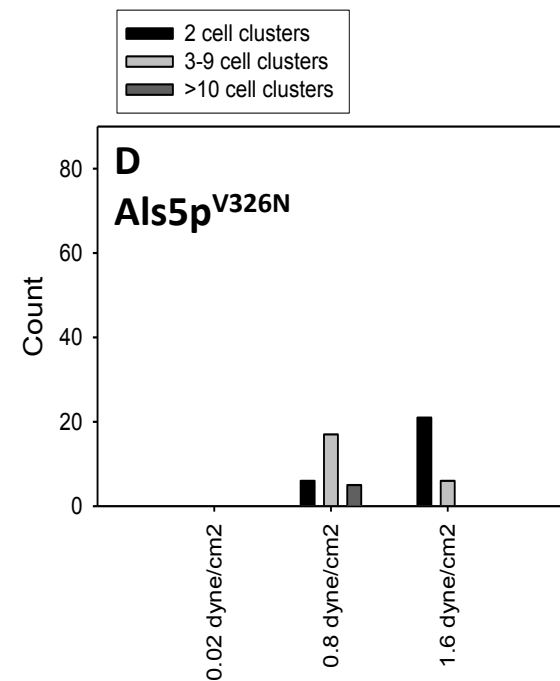
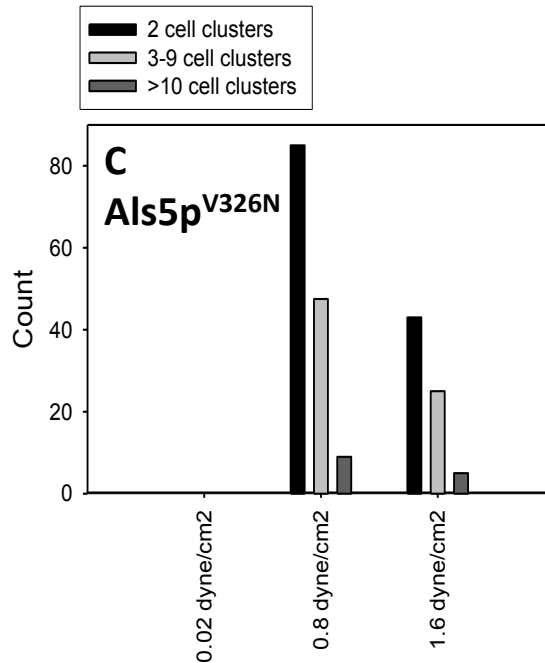
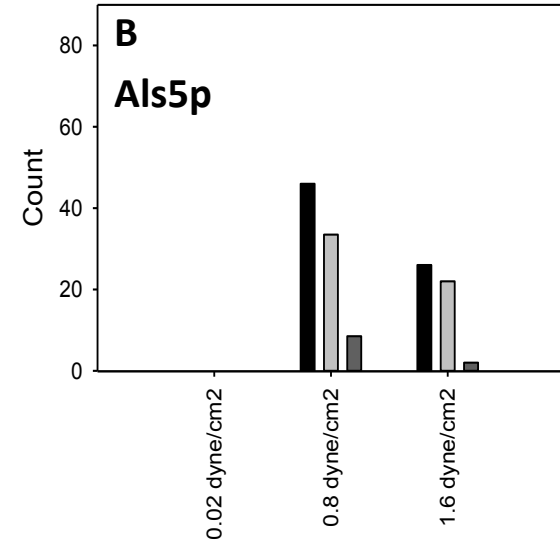
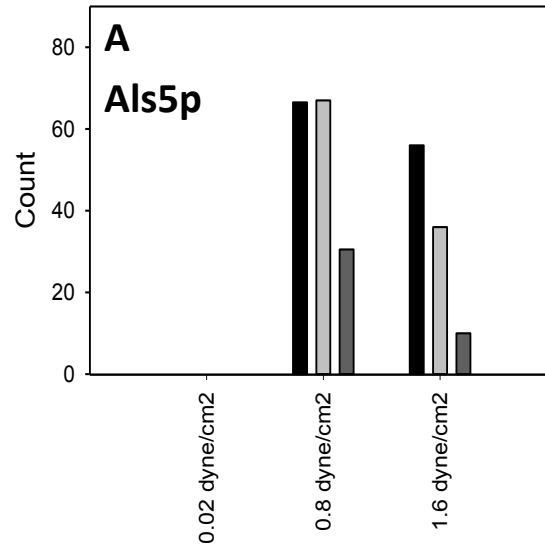
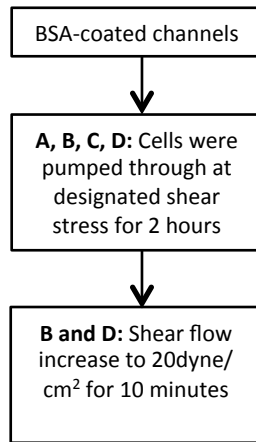
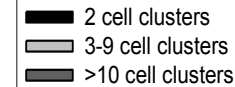
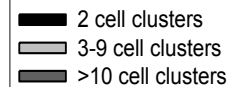


FIGURE S3. Effect of shear on clustering of *S. cerevisiae*. *S. cerevisiae* cells expressing Als5p (A and B) or Als5pV326N (C and D) were adhered to channels under continuous flow at different rates. Cells in representative micrographs were analyzed with Image J and counts binned by cluster size. A and C: Left two panels were analyzed after 2 hours under shear stress as designated. Cells expressing empty vector did not bind to the channel surface (data not shown). B and D (right two panels): The stress was then increased to 20dyne/cm² for 10 min, and the remaining cells analyzed.



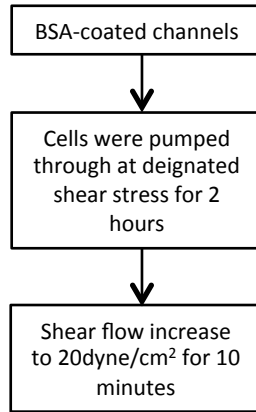
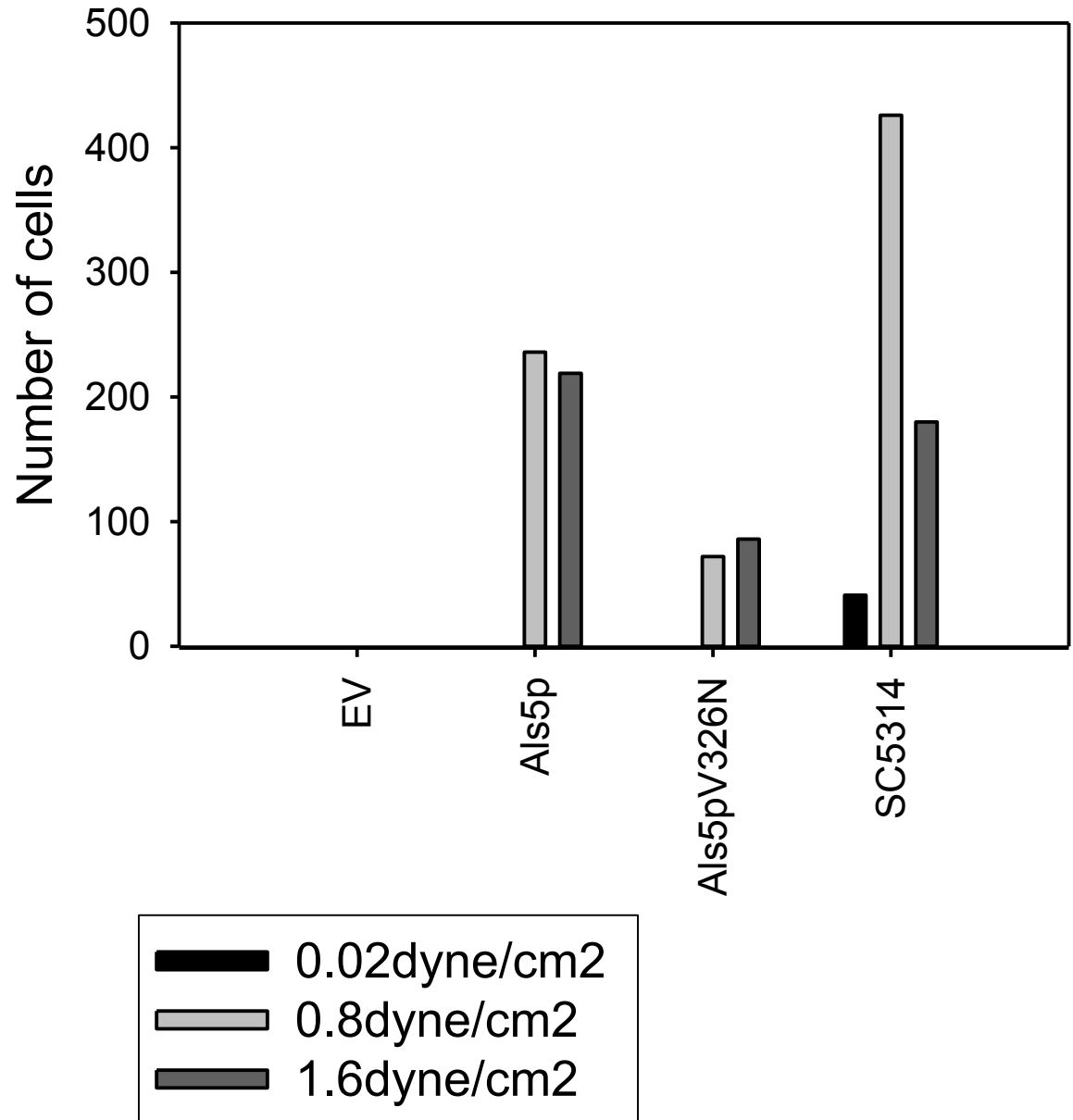


Figure S4. Resistance of surface-bound cells to high shear. *S. cerevisiae* cells harboring empty vector (EV), or expressing Als5p or Als5p^{V326N} or *C. albicans* SC5314 cell were bound to BSA-coated flow channels under the designated shear stress. After 2 hours, the flow was increased to 20dyne/cm² for 10 minutes. The number of cells remaining bound was determined with Image J.



Cells were allow to adhere to uncoated channel for 15 minutes



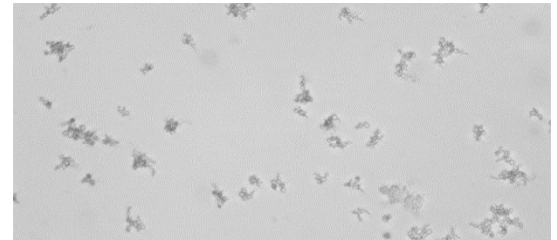
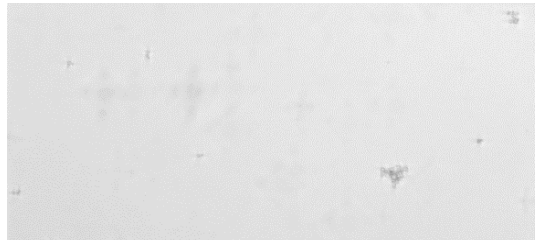
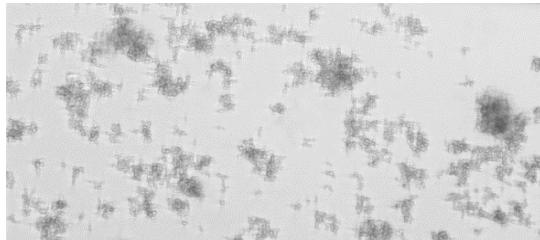
Flow of media +/- treatment over cells turned on for 24 hours, 1 dyne/cm²

No treatment

ThS (0.2 mM)

CR (0.01 mM)

Als5



SC5314

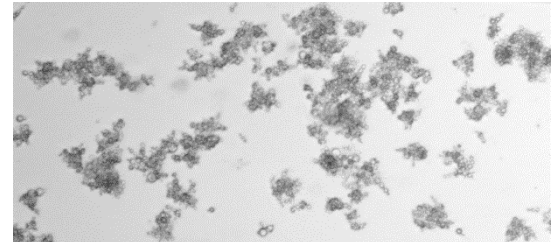
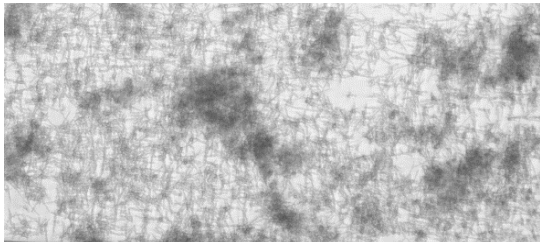


FIGURE S5. Effects of amyloid-perturbing dyes thioflavin S and Congo red on biofilm formation of Als5p-expressing and SC5314 cells. Micrographic images of channel surfaces with cells grown 24 hours at 1 dyne/cm² in media without or with amyloid-perturbing dyes.

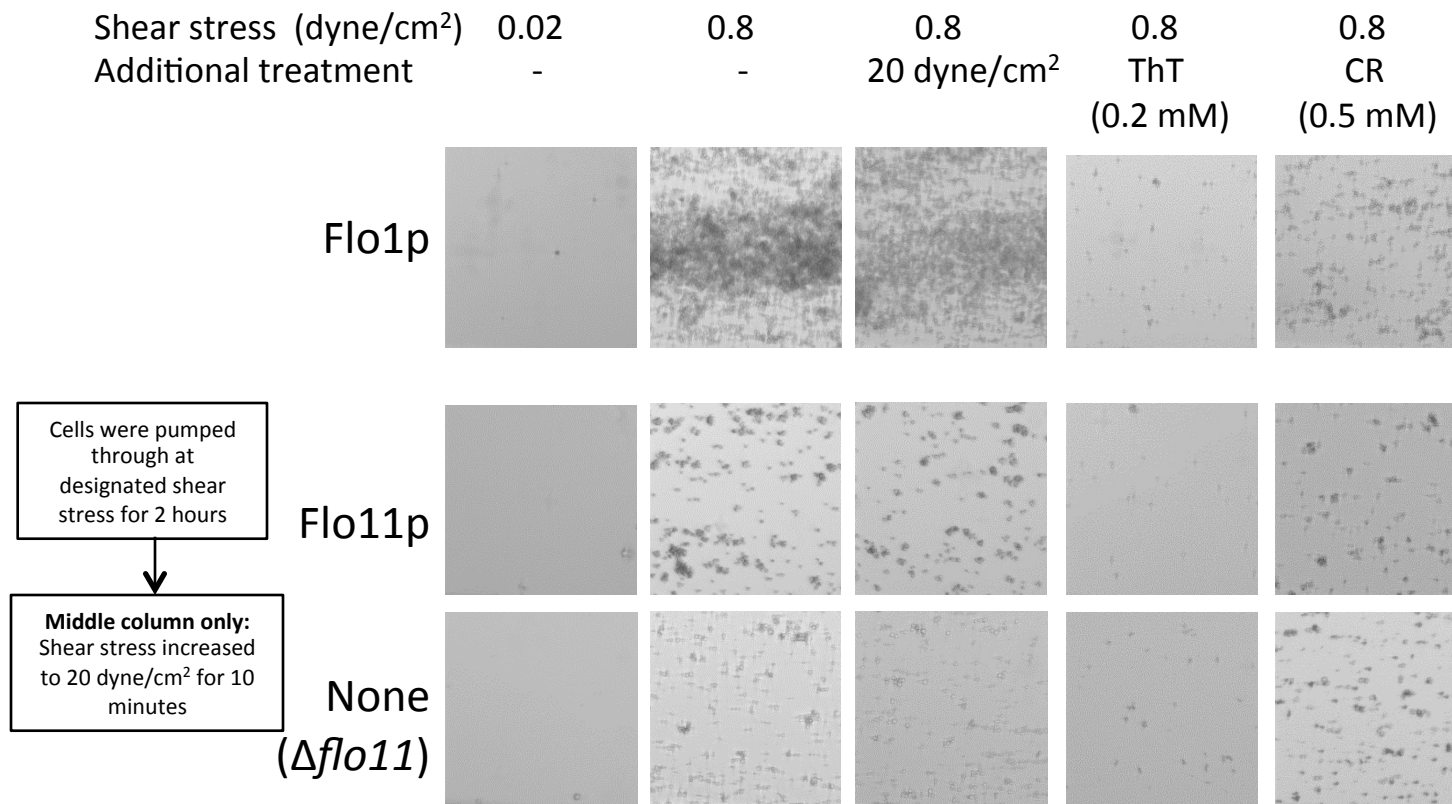


FIGURE S6. Effects of shear and anti-amyloid compounds on flocculin-dependent adhesion. *S. cerevisiae* expressing Flo1p or *S. cerevisiae v. diastaticus* expressing Flo11p or its congenic *flo11* deletion strain were adhered to uncoated channels for 2 hours at the designated shear stresses. The third column shows effects of subsequent 10 min. washes at 20 dyne/cm². The 4th and 5th columns show the effects of anti-amyloid compounds present during shear at 0.8 dyne/cm².

Supplemental video 1. *C. albicans* SC5314 cells imaged in a BSA-coated laminar flow channel at shear stress of 0.02 dyne/cm². Images were acquired each minute for 120 min.

Supplemental video 2. *C. albicans* SC5314 cells imaged in a BSA-coated laminar flow channel at shear stress of 0.8 dyne/cm². Images were acquired each minute for 120 min.

Supplemental video 3. *S. cerevisiae* cells expressing Als5p imaged in a BSA-coated laminar flow channel at shear stress of 0.02 dyne/cm². Images were acquired each minute for 120 min.

Supplemental video 4. *S. cerevisiae* cells expressing Als5p imaged in a BSA-coated laminar flow channel at shear stress of 0.8 dyne/cm². Images were acquired each minute for 120 min.