

**Supplementary Figure 1.** Ssa1/2 overexpression cures  $[PSI^+]$ . Ssa1 or Ssa2 were expressed on plasmids P1506 and P1507 respectively, under the strong, constitutive *SSA2* promoter in yeast cells with wild type Sup35. Single colonies were picked from transformation selective plates and diluted to spot an equal number of cells on YPD. Colonies overexpressing either Ssa1 or Ssa2 give rise to red sectored spots on YPD indicating  $[psi^-]$  phenotype, while all cells from colonies transformed with the vector (P667) remain  $[PSI^+]$  (white). W  $[PSI^+]$  with (L1758) or without (L1759)  $[PIN^+]$  (middle and right panels) is lost more frequently than S  $[PSI^+]$  with (L1762) or without (not shown)  $[PIN^+]$  (left panel). The arrows indicate red sectors.

