

Supplementary table 1. Yeast strains used in this study

Strain	Figure
Part A: Strains used for purification of proteasomes and crosslinking*	
sDL66 MATa	2,3,4,5,S4
TG430 MATa <i>scl1::scl1-I87C-6HA (HYG)</i>	2
TG431 MATa <i>pre8::pre8-G79C-6HA (HYG)</i>	4
TG432 MATa <i>pre9::pre9-T81C-6HA (HYG)</i>	4
SP106 MATa <i>pre6::pre6-N79C (URA)</i>	3
TG434 MATa <i>pup2::pup2-T82C-6HA (HYG)</i>	2
TG989 MATa <i>pre5::pre5-A78C-6HA (HYG) pup2::pup2-C117A (TRP)</i>	5
TG807 MATa <i>pre10::pre10-I82C-6HA (HYG) pre5::pre5-C113A (TRP)</i>	5
TG603 MATa <i>rpt1::rpt1-N467C (KAN)</i>	2
TG992 MATa <i>rpt1::rpt1-N467C (KAN) pup2::pup2-C117A (TRP)</i>	5
SP79 MATa <i>rpt2::rpt2-L437C (KAN)</i>	3
SP56 MATa <i>rpt3::rpt3-K428C (KAN)</i>	4
TG607 MATa <i>rpt4::rpt4-L437C (NAT)</i>	2
TG772 MATa <i>rpt4::rpt4-L437C (NAT) pre5::pre5-C113A (TRP)</i>	5
TG1000 MATa <i>rpt5::rpt5-A434C (NAT) pup2::pup2-C117A (TRP)</i>	5
TG1139 MATa <i>rpt5::rpt5-A434C (NAT) pre5::pre5-C113A (TRP)</i>	5
TG611 MATa <i>rpt6::rpt6-K405C (NAT)</i>	4
TG446 MATa <i>rpt1::rpt1-N467C (KAN) pup2::pup2-T82C-6HA (HYG)</i>	2,7,S6
TG1004 MATa <i>rpt1::rpt1-N467C (KAN) pup2::pup2-T82C-6HA (HYG) pup2::pup2-C117A (TRP)</i>	5,7
SP212 MATa <i>rpt2::rpt2-L437C (KAN) pre6::pre6-N79C (URA)</i>	3
TG468 MATa <i>rpt3::rpt3-K428C (KAN) pre8::pre8-G79C-6HA (HYG)</i>	4,7
TG480 MATa <i>rpt4::rpt4-L437C (NAT) scl1::scl1-I87C-6HA (HYG)</i>	2,7
TG795 MATa <i>rpt4::rpt4-L437C (NAT) scl1::scl1-I87C-6HA (HYG) pre5::pre5-C113A (TRP)</i>	5,7
TG1012 MATa <i>rpt5::rpt5-A434C (NAT) pre10::pre10-I82C-6HA (HYG) pup2::pup2-C117A (TRP)</i>	5,7
TG1141 MATa <i>rpt5::rpt5-A434C (NAT) pre10::pre10-I82C-6HA (HYG) pre5::pre5-C113A (TRP)</i>	5,7
TG512 MATa <i>rpt6::rpt6-K405C (NAT) pre9::pre9-T81C-6HA (HYG)</i>	4,7
TG456 MATa <i>rpt2::rpt2-L437C (KAN) pre9::pre9-T81C-6HA (HYG)</i>	4
TG470 MATa <i>rpt3::rpt3-K428C (KAN) pre9::pre9-T81C-6HA (HYG)</i>	4
TG651 MATa <i>pre6::pre6-C32A,C46A-6HA (HYG)</i>	3
TG653 MATa <i>pre6::pre6-C32A,C46A,A79C-6HA (HYG)</i>	3
TG669 MATa <i>rpt2::rpt2-L437C (KAN) pre6::pre6-C32A,C46A-6HA (HYG)</i>	3
TG693 MATa <i>rpt2::rpt2-L437C (KAN) pre6::pre6-C32A,C46A,N79C-6HA (HYG)</i>	3,7