Table S1. **Quantitation detail for null strain datasets**

P-Body dataset

Null strain +/- Glu	PB marker	Av. foci size (μm^2)	SD	Cells 1+ foci (%)	SD	Av. Foci/Cell	SD
BY4741 (WT) -	Edc3	0.102	0.021	93.98	4.90	2.33	0.49
BY4741 (WT) +	Edc3	0.062	0.014	42.57	15.80	0.65	0.37
***Pub1Δ* -**	Edc3	0.084	0.006	74.19	13.39	1.26	0.50
***Pub1Δ* +**	Edc3	0.065	0.004	53.49	18.35	0.95	0.48
***Ngr1Δ* -**	Edc3	0.096	0.018	88.77	12.65	2.20	0.45
***Ngr1Δ* +**	Edc3	0.083	0.024	59.81	17.50	0.97	0.25
***Pbp1Δ* -**	Edc3	0.084	0.032	88.14	3.92	2.10	0.38
***Pbp1Δ* +**	Edc3	0.060	0.033	35.87	6.73	0.52	0.20
***eIF4GIΔ* -**	Edc3	0.094	0.029	88.03	4.99	1.46	0.39
***eIF4GIΔ* +**	Edc3	0.058	0.013	39.18	25.89	0.51	0.35
***eIF4GIIΔ* -**	Edc3	0.089	0.008	94.80	19.81	1.94	0.36
***eIF4GIIΔ* +**	Edc3	0.060	0.008	44.21	25.61	0.66	0.56
yRP840 (WT) -	Dcp2	0.091	0.022	81.61	11.13	2.02	0.64
yRP840 (WT) +	Dcp2	0.049	0.004	18.35	8.68	0.27	0.19
***Edc3Δ* -**	Dcp2	0.068	0.018	52.18	6.77	0.88	0.26
***Edc3Δ* +**	Dcp2	0.000	0.000	0.00	0.00	0.00	0.00
***Lsm4cΔ* -**	Dcp2	0.081	0.020	74.83	14.17	1.72	0.76
***Lsm4cΔ* +**	Dcp2	0.065	0.024	2.23	1.48	0.03	0.03
***Edc3Δ Lsm4cΔ* -**	Dcp2	0.052	0.011	12.75	7.95	0.21	0.12
***Edc3Δ Lsm4cΔ* +**	Dcp2	0.000	0.000	0.00	0.00	0.00	0.00
***Edc3Δ Pat1Δ* -**	Dcp2	0.000	0.000	0.00	0.00	0.00	0.00
***Edc3Δ Pat1Δ* +**	Dcp2	0.000	0.000	0.00	0.00	0.00	0.00
***Pat1Δ* -**	Edc3	0.097	0.010	77.16	3.05	1.02	0.02
***Pat1Δ* +**	Edc3	0.072	0.008	49.74	8.85	0.91	0.12
***Dhh1Δ* -**	Edc3	0.077	0.022	88.34	10.30	2.10	0.35
***Dhh1Δ* +**	Edc3	0.066	0.016	34.53	9.38	0.43	0.21
***Dhh1Δ Pat1Δ* -**	Edc3	0.093	0.025	46.69	20.82	0.71	0.42
***Dhh1Δ Pat1Δ* +**	Edc3	0.099	0.058	30.71	10.28	0.35	0.15
***Dcp1Δ* -**	Edc3	0.085	0.035	97.64	2.67	3.67	0.72
***Dcp1Δ* +**	Edc3	0.087	0.022	97.08	3.15	3.36	0.48
***Xrn1Δ* -**	Edc3	0.242	0.047	94.87	8.88	6.37	4.47
***Xrn1Δ* +**	Edc3	0.484	0.122	98.04	3.40	3.32	0.54

Pab1-GFP dataset

Null strain +/- Glu	Av foci size (μm^2)	SD	Cells 1+ foci (%)	SD	Av. Foci/Cell	SD
BY4741 (WT) -	0.060	0.007	70.28	9.16	3.59	0.30
BY4741 (WT) +	0.000	0.000	0.00	0.00	0.00	0.00
***Pub1Δ* -**	0.043	0.015	16.83	5.36	0.22	0.04
***Pub1Δ* +**	0.000	0.000	0.00	0.00	0.00	0.00
***Ngr1Δ* -**	0.071	0.008	75.92	14.94	3.91	1.43
***Ngr1Δ* +**	0.028	0.005	11.07	4.81	0.15	0.26
***Pbp1Δ* -**	0.034	0.017	24.24	9.16	0.52	0.19
***Pbp1Δ* +**	0.000	0.000	0.00	0.00	0.00	0.00
***eIF4GIΔ* -**	0.064	0.003	40.78	12.51	0.80	0.42
***eIF4GIΔ* +**	0.000	0.000	0.00	0.00	0.00	0.00
***eIF4GIIΔ* -**	0.058	0.023	22.69	16.86	0.61	0.56
***eIF4GIIΔ* +**	0.000	0.000	0.00	0.00	0.00	0.00
yRP840 (WT) -	0.104	0.018	76.17	5.55	3.74	0.50
yRP840 (WT) +	0.000	0.000	0.00	0.00	0.00	0.00
***Edc3Δ* -**	0.067	0.004	36.39	3.67	0.83	0.33
***Edc3Δ* +**	0.000	0.000	0.00	0.00	0.00	0.00
***Lsm4cΔ* -**	0.073	0.009	48.07	5.88	1.89	0.38
***Lsm4cΔ* +**	0.000	0.000	0.00	0.00	0.00	0.00
***Edc3Δ Lsm4cΔ* -**	0.056	0.005	23.81	2.10	0.64	0.04
***Edc3Δ Lsm4cΔ* +**	0.000	0.000	0.00	0.00	0.00	0.00
***Edc3Δ Pat1Δ* -**	0.044	0.011	13.97	2.59	0.44	0.20
***Edc3Δ Pat1Δ* +**	0.000	0.000	0.00	0.00	0.00	0.00
***Pat1Δ* -**	0.033	0.022	20.45	13.77	0.55	0.40

Pat1Δ +	0.000	0.000	0.00	0.00	0.00	0.00
Dhh1Δ -	0.045	0.005	26.72	11.29	1.35	0.92
Dhh1Δ +	0.036	0.004	1.33	1.17	0.04	0.04
Dhh1Δ Pat1Δ -	0.038	0.025	25.03	20.82	0.68	0.42
Dhh1Δ Pat1Δ +	0.031	0.015	2.08	1.64	0.04	0.03
Dcp1Δ -	0.106	0.050	83.48	6.41	5.23	1.03
Dcp1Δ +	0.032	0.029	4.63	4.35	0.07	0.06
Xrn1Δ -	0.285	0.061	95.01	1.27	6.80	3.07
Xrn1Δ +	0.405	0.117	20.45	22.09	1.10	1.70

Pub1-mCh dataset (Z-stack data)

Null strain +/- Glu	Av foci size (μm^2)	SD	Cells 1+ foci (%)	SD	Av. Foci/Cell	SD
BY4741 (WT) -	0.089	0.007	66.18	9.16	3.81	0.30
BY4741 (WT) +	0.000	0.000	0.00	0.00	0.00	0.00
Pbp1Δ -	0.062	0.005	30.16	32.15	0.95	0.79
Pbp1Δ +	0.000	0.000	0.00	0.00	0.00	0.00
4GlΔ -	0.091	0.012	70.99	27.00	4.08	2.96
4GlΔ +	0.000	0.000	0.00	0.00	0.00	0.00
4GlIΔ -	0.067	0.005	37.74	27.84	1.38	1.36
4GlIΔ +	0.000	0.000	0.00	0.00	0.00	0.00
yRP840 (WT) -	0.096	0.010	82.97	1.45	5.44	1.27
yRP840 (WT) +	0.000	0.000	0.00	0.00	0.00	0.00
Edc3Δ -	0.066	0.002	22.50	3.54	0.64	0.07
Edc3Δ +	0.000	0.000	0.00	0.00	0.00	0.00
Lsm4cΔ -	0.078	0.012	33.97	5.61	1.10	0.54
Lsm4cΔ +	0.000	0.000	0.00	0.00	0.00	0.00
Edc3Δ Lsm4cΔ -	0.053	0.022	8.18	2.08	0.23	0.03
Edc3Δ Lsm4cΔ +	0.000	0.000	0.00	0.00	0.00	0.00
Edc3Δ Pat1Δ -	0.057	0.017	9.91	7.91	0.48	0.34
Edc3Δ Pat1Δ +	0.000	0.000	0.00	0.00	0.00	0.00
Pat1Δ -	0.063	0.019	21.03	3.69	1.46	0.58
Pat1Δ +	0.000	0.000	0.00	0.00	0.00	0.00
Dhh1Δ -	0.049	0.004	35.36	26.86	1.54	1.61
Dhh1Δ +	0.000	0.000	0.00	0.00	0.00	0.00
Dhh1Δ Pat1Δ -	0.073	0.038	7.81	8.00	0.15	0.18
Dhh1Δ Pat1Δ +	0.000	0.000	0.00	0.00	0.00	0.00
Dcp1Δ -	0.135	0.002	87.40	2.39	3.65	1.55
Dcp1Δ +	0.078	0.013	67.15	3.83	1.51	0.18
Xrn1Δ -	0.401	0.096	70.04	4.77	2.67	1.30
Xrn1Δ +	0.439	0.236	73.04	1.31	1.63	0.29

GCN2c dataset – Edc3-mCh

Strain +/- Glu	Av foci size (μm^2)	SD	Cells 1+ foci (%)	SD	Av. Foci/Cell	SD
WT + Empty vector -	0.167	0.045	94.87	4.44	3.50	1.27
WT + Empty vector +	0.097	0.017	63.91	18.64	1.59	1.02
WT + GCN2c -	0.181	0.032	95.99	3.47	5.23	2.50
WT + GCN2c +	0.118	0.025	67.44	15.56	1.58	0.73

GCN2c dataset – Pab1-GFP

Strain +/- Glu	Av foci size (μm^2)	SD	Cells 1+ foci (%)	SD	Av. Foci/Cell	SD
WT + Empty vector -	0.080	0.010	88.09	8.21	5.59	3.02
WT + Empty vector +	0.026	0.015	1.11	1.93	0.01	0.02
WT + GCN2c -	0.110	0.033	95.59	3.87	8.94	3.98
WT + GCN2c +	0.034	0.012	6.20	4.45	0.13	0.12

Table S2. **Experimental reagents**

Name	Properties	Reference
Yeast strains		
yRP840	*MATa leu2-3,112 trp1 ura3-52 his4-539 cup1::LEU2/PGK1pG/MFA2pG*	Hatfield et al., 1996
yRP1199	*MATa his4-539 leu2-3,112 trp1-Δ1 ura3-52 xrn1::URA3*	Anderson and Parker, 1998
yRP1200	*MATa his4-539 leu2-3, 112 trp1-Δ1 ura3-52 dcp1::URA3*	Anderson and Parker, 1998
yRP1358	*MATa his4 leu2 lys2 trp1 ura3 dcp2::TRP1*	Dunckley and Parker, 1999
yRP1600	*MATa his4 leu2 cup1::LEU2PM trp1 ura3 pat1::LEU2*	Segal et al., 2006
yRP1745	*MATa his4-539 leu2-3112 trp1 ura3-52 edc3::NEO cup1::LEU2/PGK1pG/MFA2pG*	Kshirsagar and Parker, 2004
yRP1752	*MATa trp1 leu- ura- edc3::NEO pat1::LEU2 cup1::LEU2/PGK1pG/MFA2pG*	Kshirsagar and Parker, 2004
yRP1941	*MATa leu2 ura3 his3 met15 EIF4GI-GFP (HIS)*	Brengues and Parker, 2003
yRP1946	*MATa leu2 ura3 his3 met15 EIF4E-GFP (HIS)*	Brengues and Parker, 2003
yRP2065	*MATa his3D1 leu2D0 met15D0 ura3D0 ('BY4741')*	
yRP2069	*MATa ura3 leu2 his3 pat1Δ::KanMX dhh1Δ::KanMX*	Coller and Parker, 2005
yRP2160	*MATa ura3 leu2 his4 trp1 lys2 cup1::LEU2/PGK1pG/MFA2pG m dhh1::URA3*	Unpublished data
yRP2190	*MATa leu2 ura3 his3 met15 PRT1-GFP (HIS)*	Huh et al., 2003
yRP2191	*MATa leu2-3,112 trp1 ura3-52 his4-539 cup1::LEU2/PGK1pG/MFA2pG PAB1-GFP (NEO)*	Brengues and Parker, 2003
yRP2337	*MATa leu2 trp1 ura3 lys2 cup1::LEU2/PGK1pG/MFA2pG Lsm4Dc::NEO*	Decker et al., 2007
yRP2338	*MATa leu2 trp1 ura3 lys2 his4 cup1::LEU2/PGK1pG/MFA2pG Lsm4Dc::NEO edc3::NEO*	Decker et al., 2007
yRP2346	*MATa leu2-3,112 trp1 ura3-52 his4-539 cup1::LEU2/PGK1pG/MFA2pG PBP1-GFP (NEO)*	This study
yRP2519	*MATa leu2 ura3 his3 met15 EIF4GII-GFP (HIS)*	Huh et al., 2003
yRP2520	*MATa leu2 ura3 his3 met15 SUI2-GFP (HIS)*	Huh et al., 2003
yRP2521	*MATa leu2 ura3 his3 met15 GCN3-GFP (HIS)*	Huh et al., 2003
yRP2522	*MATa leu2 ura3 his3 met15 SUP35-GFP (HIS)*	Huh et al., 2003
yRP2523	*MATa leu2 ura3 his3 met15 SUP45-GFP (HIS)*	Huh et al., 2003
yRP2524	*MATa leu2 ura3 his3 met15 PUB1-GFP (HIS)*	Huh et al., 2003
yRP2525	*MATa leu2 ura3 his3 met15 NGR1-GFP (HIS)*	Huh et al., 2003
yRP2526	*MATa leu2 ura3 his3 met15 NRP1-GFP (HIS)*	Huh et al., 2003
yRP2527	*MATa leu2 ura3 his3 met15 EAP1-GFP (HIS)*	Huh et al., 2003
yRP2528	*MATa leu2 ura3 his3 met15 YGR250C-GFP (HIS)*	Huh et al., 2003
yRP2529	*MATa leu2 ura3 his3 met15 HRP1-GFP (HIS)*	Huh et al., 2003
yRP2530	*MATa leu2 ura3 his3 met15 GBP2-GFP (HIS)*	Huh et al., 2003
yRP2531	*MATa his3D1 leu2D0 met15D0 ura3D0 pbp1::KANMX*	Invitrogen/Resgen collection
yRP2532	*MATa his3D1 leu2D0 met15D0 ura3D0 pub1::KANMX*	Invitrogen/Resgen collection
yRP2533	*MATa his3D1 leu2D0 met15D0 ura3D0 eIF4GI::KANMX*	Invitrogen/Resgen collection
yRP2534	*MATa his3D1 leu2D0 met15D0 ura3D0 eIF4GII::KANMX*	Invitrogen/Resgen collection
yRP2535	*MATa his3D1 leu2D0 met15D0 ura3D0 ngr1::KANMX*	Invitrogen/Resgen collection

Plasmids		
pRP1192	Tet promoter-regulated MFA2pG; Cen; *URA3* marker	Brengues et al., 2005
pRP1205	Wt Dcp2 + promoter; Cen; *LYS2* marker	Unpublished data
pRP1400	Lsm1-mCh; Cen; *LEU2* marker	Beckham et al., 2007
pRP1432	Wt Edc3 + promoter; Cen; *TRP1* marker	Unpublished data
pRP1574	Edc3-mCh; Cen; *URA3* marker	This study
pRP1575	Edc3-mCh; Cen; *TRP1* marker	This study
pRP1657	Pab1-GFP, Edc3-mCh; Cen; *URA3* marker	This study
pRP1658	Pab1-GFP, Dcp2-mCh; Cen; *URA3* marker	This study
pRP1659	Pab1-GFP, Edc3-mCh; Cen; *TRP1* marker	This study
pRP1660	Pab1-GFP, Dcp2-mCh; Cen; *TRP1* marker	This study
pRP1661	Pub1-mCh; Cen; *URA3* marker	This study
pRP1662	Pub1-mCh; Cen; *TRP1* marker	This study
pRP1663	Gcn2c ('GCN2c-515'); Cen; *URA3* marker	Ramirez et al., 1992
pRS416	Empty cloning vector; Cen; *URA3* marker	Christianson et al., 1992
Oligos		
oRP121	AATTCCCCCCCCCCCCCCCCCA	Muhlrad et al., 1994
oRP1405	CAAACTAGCCACCATGGCCACCATAATAGTAGTACCAGTGGCCATAAACGGATCCCCGGGTTAATTAAC	This study
oRP1406	CATGAATTTATTACTATATATTGCTTTTTCTGACGTGCTTCCTTCAGAATTCGAGCTCGTTTAAACTGG	This study
oRP1407	CTTCGATTAACAGTTTTCGTTAAACATGATTGATCTAGAGTCGACCGCACACTTCGAAATGGCCTTCTTTG	This study
oRP1408	CAGGAAACAGCTATGACCATGATTACGCCAAGCTTGCATGCCTGCACTCGAGCAAATCTAATAGCAGGGAC CCGTC	This study
oRP1409	CTTCGATTAACAGTTTTCGTTAAACATGATTGATCTAGAGTCGACCCGTCGTAAGGCTGACACTGCAG	This study
oRP1410	CAGGAAACAGCTATGACCATGATTACGCCAAGCTTGCATGCCTGCACGTACGCACTTCCTATGCAAAATGC TTAATAATTC	This study
oRP1411	AAACTGATCTTTTCGTCACTGACGGGTCCCTGCTATTAGATTTGCTCGAGCCCGGGTTAATTAACATGGTGA GCAAGGGCGAGGAG	This study
oRP1412	TGGAACTTCAGGGTCTAATGAATTATTAAGCATTTTGCATAGGAAGCGTACGCCCGGGTTAATTAACATGGT GAGCAAGGGCGAGGAG	This study
oRP1413	CAGGAAACAGCTATGACCATGATTACGCCAAGCTTGCATGCCTGCAGGCATAAAGGCATTAAAAGAGGAGG	This study
oRP1414	CGATTAACAGTTTTCGTTAAACATGATTGATCTAGAGTCGACCGTGATTTATTTTGCTTACCCTTCCCAC	This study
oRP1415	CCTCCTCGCCCTTGCTCACCATGTTAATTAACCCGGGCTCGAGTTGTTGTTGCTGCTGTTGCTGCTG	This study

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