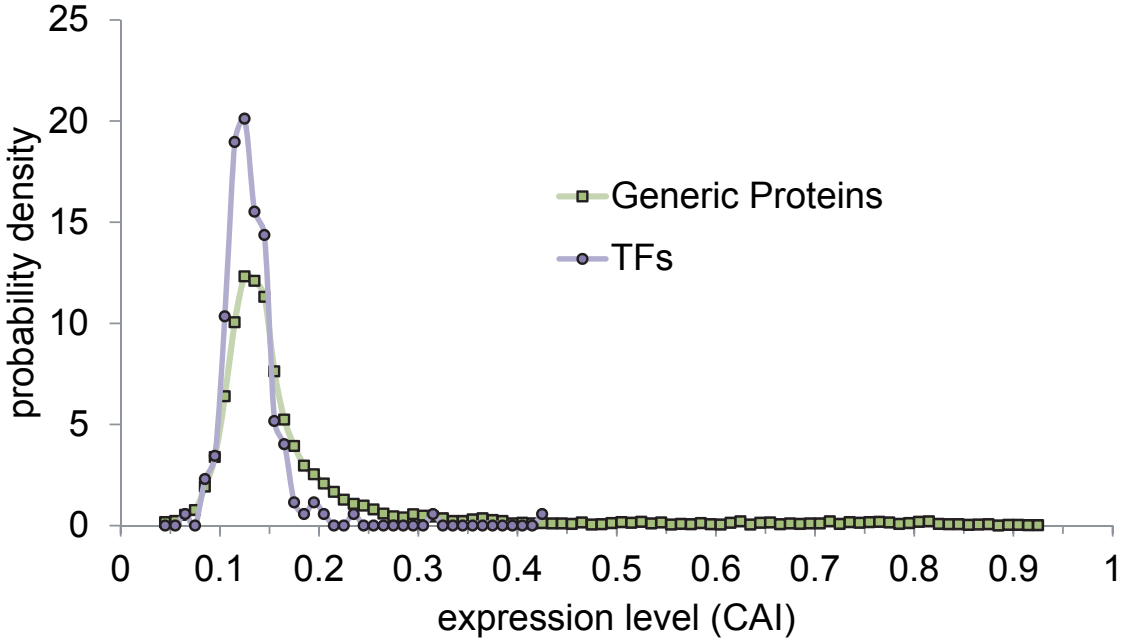
Supplementary Material

Supplementary Figure 1: Expression level distribution for generic proteins and TFs, as measured by Codon Adaption Index (CAI).

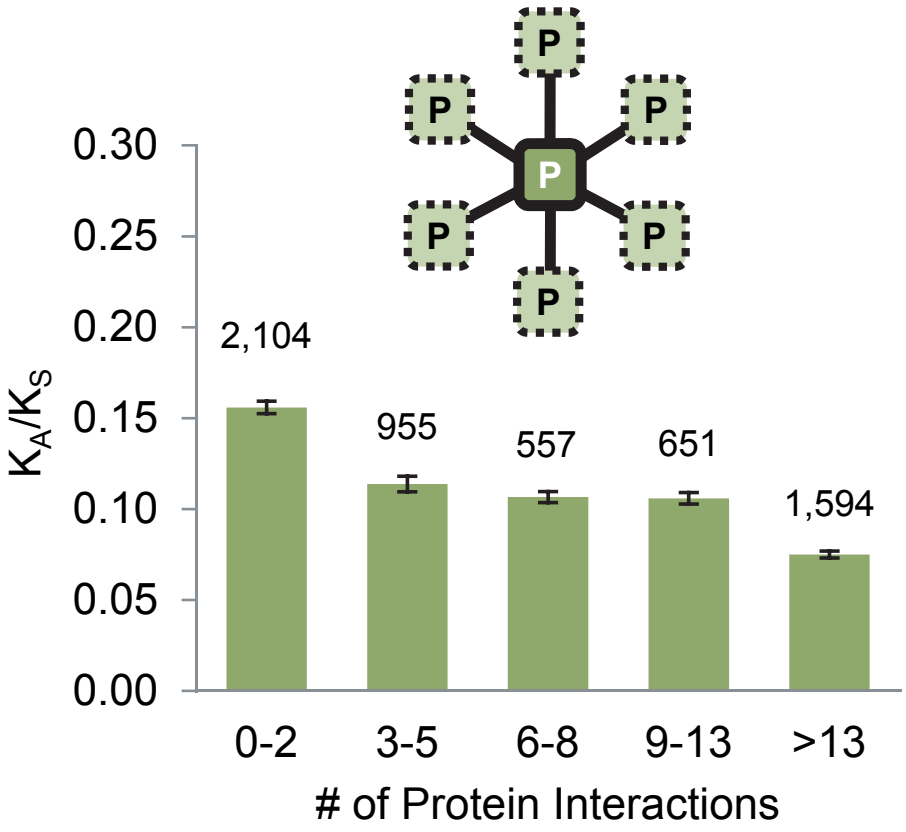
Supplementary Figure 2: Alternative binning of Figure 1a using the same bin intervals as Figure 1b.

Supplementary Figure 3: Alternative binning of Figure 3a using the same bin intervals as Figure 3b.

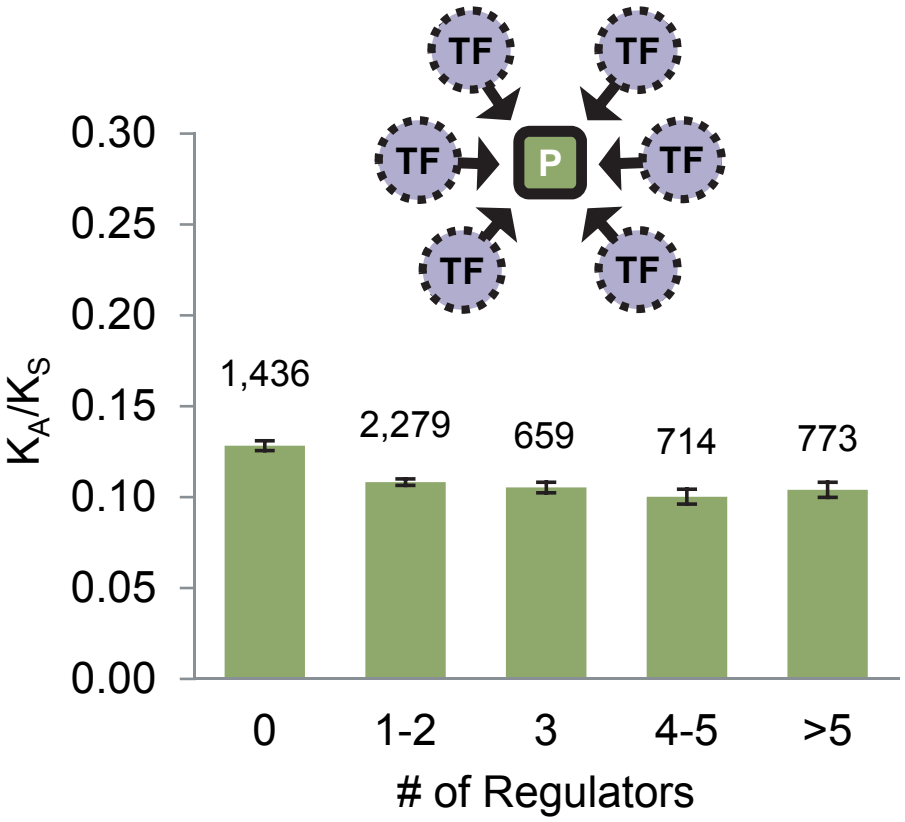
Supplementary Table 1: The list of 174 yeast transcription factors (TFs) by name, measures of evolutionary rate, and degrees in different networks.



Supplementary Figure 1



Supplementary Figure 2



Supplementary Figure 3

Supplementary Table 1:

The list of 174 yeast transcription factors (TFs) by name, evolutionary rate, and degrees in different networks.

ORF	Gene name	Ka	Ks	Ka/Ks	Degree in physical interactome	In-degree in transcriptional regulatory network	Degree in TF co-regulatory network	Number of regulated TFs	Number of regulated target genes
YAL051W	OAF1	0.0279	0.4755	0.0587	13	0	2	5	60
YBL005W	PDR3	0.0473	0.3893	0.1215	5	1	2	1	20
YBL008W	HIR1	0.0437	0.3852	0.1134	12	2	0	0	3
YBL021C	HAP3	0.0033	0.3006	0.011	7	0	24	3	106
YBL103C	RTG3	0.0328	0.2738	0.1198	8	2	39	2	142
YBR049C	REB1	0.0173	0.3263	0.053	24	3	1	6	228
YBR066C	NRG2	0.0609	0.271	0.2247	3	6	#	#	#
YBR083W	TEC1	0.054	0.2838	0.1903	12	8	26	33	508
YBR112C	CYC8	0.0478	0.3598	0.1329	25	5	#	#	#
YBR182C	SMP1	0.1029	0.3938	0.2613	2	3	27	5	100
YBR215W	HPC2	0.0912	0.3392	0.2689	7	0	#	#	#
YBR240C	THI2	0.0324	0.293	0.1106	1	0	12	0	56
YBR297W	MAL33	0.0724	0.2594	0.2791	0	1	26	6	129
YCL055W	KAR4	0.0055	0.4211	0.0131	3	5	#	#	#
YCL066W	HMLALPHA1	#	#	#	2	7	#	#	#
YCL067C	HMLALPHA2	0	0.0178	0	5	7	#	#	#
YCR065W	HCM1	0.0322	0.3204	0.1005	6	8	4	5	243
YCR097W	HMRA1	#	#	#	2	0	#	#	#
YCR106W	RDS1	0.091	0.4128	0.2204	1	5	18	1	46
YDL020C	RPN4	0.0546	0.3542	0.1542	8	5	12	5	197
YDL056W	MBP1	0.0344	0.4037	0.0852	9	2	20	7	238
YDL106C	PHO2	0.0272	0.3804	0.0715	25	2	7	3	80

YDL170W	UGA3	0.0212	0.2651	0.08	0	7	46	1	74
YDR034C	LYS14	0.0281	0.3941	0.0713	3	6	#	#	#
YDR043C	NRG1	#	#	#	5	6	47	16	210
YDR081C	PDC2	0.0411	0.4215	0.0975	2	0	1	1	7
YDR096W	GIS1	0.0559	0.3908	0.143	19	1	#	#	#
YDR123C	INO2	0.069	0.2623	0.2631	7	2	5	3	50
YDR146C	SWI5	0.0686	0.4408	0.1556	28	10	22	4	138
YDR172W	SUP35	0.0174	0.3384	0.0514	40	0	#	#	#
YDR207C	UME6	0.0515	0.2551	0.2019	26	7	0	9	167
YDR213W	UPC2	0.0255	0.3615	0.0705	3	2	7	0	36
YDR216W	ADR1	0.0506	0.4435	0.1141	22	3	6	2	149
YDR253C	MET32	0.0398	0.2584	0.154	1	4	11	4	75
YDR259C	YAP6	0.0618	0.4313	0.1433	14	15	64	10	212
YDR277C	MTH1	0.0121	0.3284	0.0368	7	3	0	0	2
YDR310C	SUM1	0.0578	0.3626	0.1594	7	3	0	2	77
YDR421W	ARO80	0.0522	0.4282	0.1219	1	1	0	3	56
YDR423C	CAD1	0.1956	0.3742	0.5227	3	2	21	3	111
YDR451C	YHP1	0.0584	0.39	0.1497	2	14	7	2	145
YDR463W	STP1	0.048	0.4077	0.1177	7	3	34	1	92
YEL009C	GCN4	0.0336	0.2983	0.1126	35	9	9	13	245
YER028C	MIG3	0.1628	0.2912	0.5591	3	6	28	0	9
YER040W	GLN3	0.0237	0.2732	0.0867	10	6	45	6	117
YER045C	ACA1	0.1401	0.3595	0.3897	1	12	20	0	2
YER088C	DOT6	0.0533	0.2405	0.2216	4	2	0	8	235
YER109C	FLO8	0.0676	0.3502	0.193	4	3	31	23	230
YER111C	SWI4	0.0393	0.3765	0.1044	10	8	27	18	305
YER161C	SPT2	0.0234	0.4091	0.0572	35	1	#	#	#
YER169W	RPH1	0.0276	0.3978	0.0694	3	2	19	0	54
YFL021W	GAT1	0.0352	0.3004	0.1172	3	12	34	5	118

YFL031W	HAC1	0.0138	0.1499	0.0921	7	1	1	0	15
YFR034C	PHO4	0.0334	0.3832	0.0872	147	2	2	5	107
YGL013C	PDR1	0.0245	0.4108	0.0596	10	8	29	1	136
YGL035C	MIG1	0.038	0.3565	0.1066	24	0	8	1	60
YGL071W	AFT1	0.0579	0.3796	0.1525	8	5	11	7	352
YGL073W	HSF1	0.0477	0.3542	0.1347	8	1	8	6	196
YGL096W	TOS8	0.0661	0.465	0.1422	4	9	17	8	239
YGL162W	SUT1	0.0618	0.3872	0.1596	1	7	#	#	#
YGL166W	CUP2	0.1756	0.3166	0.5546	9	1	#	#	#
YGL181W	GTS1	0.0419	0.5444	0.077	14	5	1	2	23
YGL192W	IME4	0.0535	0.3225	0.1659	4	3	31	0	34
YGL209W	MIG2	0.0194	0.2582	0.0751	5	3	9	0	23
YGL237C	HAP2	0.0523	0.2543	0.2057	37	4	25	6	129
YGL254W	FZF1	0.1367	0.5377	0.2542	6	6	11	1	25
YGR044C	RME1	0.1264	0.3165	0.3994	0	0	10	1	45
YGR249W	MGA1	0.0375	0.3529	0.1063	13	19	39	15	189
YGR288W	MAL13	0.0843	0.7441	0.1133	0	2	3	0	3
YHL009C	YAP3	0.1186	0.4137	0.2867	9	1	2	2	34
YHL020C	OPI1	0.0428	0.469	0.0913	9	2	2	0	3
YHL027W	RIM101	0.0726	0.366	0.1984	5	6	36	5	141
YHR006W	STP2	0.0647	0.3126	0.207	0	2	3	1	31
YHR056C	RSC30	0.0695	0.2848	0.244	20	0	#	#	#
YHR084W	STE12	0.0298	0.4067	0.0733	27	5	21	38	591
YHR124W	NDT80	0.0325	0.4005	0.0811	4	1	4	1	18
YHR178W	STB5	0.0279	0.3346	0.0834	3	2	3	1	50
YHR206W	SKN7	0.0157	0.3595	0.0437	9	2	37	14	254
YIL036W	CST6	0.0685	0.5004	0.1369	10	4	8	0	26
YIL101C	XBP1	#	#	#	4	13	51	5	76
YIL131C	FKH1	0.0245	0.3378	0.0725	26	1	5	6	161

YIL154C	IMP2'	0.0159	0.5359	0.0297	2	0	#	#	#
YIR013C	GAT4	0.0561	0.2511	0.2234	0	6	#	#	#
YIR017C	MET28	0.0105	0.3052	0.0344	5	4	7	2	44
YIR018W	YAP5	0.0655	0.3355	0.1952	2	5	29	12	348
YIR023W	DAL81	0.0292	0.3564	0.0819	5	2	22	4	161
YIR033W	MGA2	0.0338	0.3022	0.1118	9	4	#	#	#
YJL056C	ZAP1	0.0692	0.3071	0.2253	2	1	15	3	30
YJL089W	SIP4	0.0631	0.3228	0.1955	10	2	9	1	42
YJL103C	GSM1	0.0603	0.4694	0.1285	3	1	#	#	#
YJL110C	GZF3	0.0806	0.4973	0.1621	13	2	35	2	56
YJR060W	CBF1	0.0573	0.3583	0.1599	14	2	6	16	306
YJR094C	IME1	0.0752	0.3243	0.2319	4	11	26	0	7
YJR127C	RSF2	0.0476	0.3745	0.1271	1	11	17	1	9
YJR147W	HMS2	0.0757	0.2736	0.2767	0	7	15	1	43
YKL005C	BYE1	0.0774	0.3468	0.2232	2	3	#	#	#
YKL015W	PUT3	0.0308	0.3749	0.0822	6	10	20	3	123
YKL020C	SPT23	0.0489	0.361	0.1355	9	3	28	1	28
YKL032C	IXR1	0.008	0.3913	0.0204	1	5	25	1	58
YKL038W	RGT1	0.0376	0.3506	0.1072	11	0	1	3	23
YKL043W	PHD1	0.0466	0.3142	0.1483	3	12	29	29	450
YKL062W	MSN4	0.0336	0.3205	0.1048	6	7	35	4	199
YKL109W	HAP4	0.0507	0.3232	0.1569	9	12	30	4	146
YKL112W	ABF1	0.0404	0.3348	0.1207	11	2	0	14	296
YKL185W	ASH1	0.0427	0.3836	0.1113	20	3	16	3	97
YKR034W	DAL80	0.0146	0.2886	0.0506	3	2	35	0	52
YKR099W	BAS1	0.039	0.4078	0.0956	6	4	12	0	66
YLR013W	GAT3	#	#	#	0	4	27	0	75
YLR014C	PPR1	0.0577	0.4086	0.1412	3	1	1	0	24
YLR098C	CHA4	0.0186	0.2891	0.0643	7	1	6	3	59

YLR131C	ACE2	0.058	0.3171	0.1829	20	5	21	4	112
YLR176C	RFX1	0.0459	0.3406	0.1348	17	1	0	1	50
YLR182W	SWI6	0.0419	0.3412	0.1228	22	0	14	5	87
YLR223C	IFH1	0.0467	0.4469	0.1045	13	1	0	0	2
YLR228C	ECM22	0.0267	0.4517	0.0591	3	4	14	1	139
YLR256W	HAP1	0.0211	0.4025	0.0524	7	3	26	9	150
YLR266C	PDR8	0.0715	0.3035	0.2356	1	6	#	#	#
YLR375W	STP3	0.0155	0.2974	0.0521	5	5	#	#	#
YLR403W	SFP1	0.0357	0.3444	0.1037	9	2	8	4	96
YLR451W	LEU3	0.0272	0.3473	0.0783	7	3	18	1	43
YML007W	YAP1	#	#	#	52	8	30	7	130
YML027W	YOX1	0.0343	0.2793	0.1228	3	3	13	7	342
YML051W	GAL80	0.0122	0.3453	0.0353	8	1	1	0	4
YML076C	WAR1	0.0484	0.3764	0.1286	1	3	1	0	13
YML099C	ARG81	0.0346	0.3953	0.0875	6	3	14	2	41
YMR016C	SOK2	0.0665	0.3858	0.1724	5	9	28	44	797
YMR021C	MAC1	0.0441	0.3692	0.1194	2	0	7	3	57
YMR037C	MSN2	0.0495	0.3728	0.1328	7	9	24	4	168
YMR042W	ARG80	0.0642	0.3893	0.1649	4	1	12	2	25
YMR043W	MCM1	0.024	0.3038	0.079	17	1	19	6	232
YMR070W	MOT3	0.0737	0.3701	0.1991	2	10	27	0	48
YMR164C	MSS11	0.0707	0.4178	0.1692	3	4	7	2	63
YMR172W	HOT1	0.0732	0.4138	0.1769	6	4	#	#	#
YMR182C	RGM1	0.0456	0.2147	0.2124	3	3	23	1	24
YMR280C	CAT8	0.0574	0.3673	0.1563	6	4	#	#	#
YNL027W	CRZ1	0.0393	0.3829	0.1026	25	2	4	1	13
YNL068C	FKH2	0.0295	0.3789	0.0779	12	1	17	10	233
YNL103W	MET4	0.0743	0.4526	0.1642	13	5	12	3	51
YNL167C	SKO1	0.0488	0.3957	0.1233	11	1	13	5	142

YNL199C	GCR2	0.0236	0.3781	0.0624	9	1	17	5	89
YNL204C	SPS18	0.0436	0.4566	0.0955	1	1	#	#	#
YNL216W	RAP1	0.0333	0.3573	0.0932	12	2	20	21	326
YNL255C	GIS2	0.0055	0.2662	0.0207	5	1	#	#	#
YNL314W	DAL82	0.0386	0.3132	0.1232	6	0	7	7	139
YOL028C	YAP7	#	#	#	2	3	16	4	180
YOL067C	RTG1	0.0079	0.4632	0.0171	3	1	23	2	52
YOL089C	HAL9	0.0493	0.4137	0.1192	0	1	18	1	37
YOL108C	INO4	0.0625	0.5504	0.1136	25	3	8	20	564
YOL116W	MSN1	0.0264	0.3371	0.0783	0	4	3	0	6
YOR028C	CIN5	0.053	0.5137	0.1032	8	8	30	18	277
YOR032C	HMS1	0.0579	0.3631	0.1595	2	9	31	0	12
YOR038C	HIR2	0.0315	0.2885	0.1092	11	4	7	1	10
YOR113W	AZF1	0.0581	0.3701	0.157	8	0	16	2	24
YOR140W	SFL1	0.0479	0.276	0.1736	9	13	4	0	2
YOR162C	YRR1	0.0628	0.2918	0.2152	10	3	4	0	23
YOR172W	YRM1	0.061	0.4591	0.1329	2	0	#	#	#
YOR344C	TYE7	0.0215	0.2628	0.0818	5	17	15	4	97
YOR358W	HAP5	0.0454	0.442	0.1027	7	3	25	6	128
YOR363C	PIP2	0.0288	0.4176	0.069	2	0	4	2	36
YOR380W	RDR1	0.0241	0.3215	0.075	2	0	0	0	1
YPL038W	MET31	0.0356	0.3369	0.1057	3	0	14	2	43
YPL075W	GCR1	0.0334	0.379	0.0881	7	2	3	0	24
YPL089C	RLM1	0.0556	0.4464	0.1246	7	0	34	0	69
YPL133C	RDS2	0.0555	0.4546	0.1221	14	1	#	#	#
YPL139C	UME1	0.0635	0.4431	0.1433	22	4	#	#	#
YPL177C	CUP9	0.0547	0.3265	0.1675	5	9	29	1	21
YPL202C	AFT2	0.0733	0.5038	0.1455	0	4	23	3	166
YPL248C	GAL4	0.0845	0.3989	0.2118	37	1	21	6	100

YPL270W	MDL2	0.0244	0.4563	0.0535	2	5	1	1	1
YPR008W	HAA1	0.0332	0.3134	0.1059	6	0	#	#	#
YPR015C	YPR015c	#	#	#	6	7	#	#	#
YPR065W	ROX1	0.0341	0.4459	0.0765	1	12	54	7	135
YPR094W	RDS3	#	#	#	6	2	#	#	#
YPR104C	FHL1	0.0588	0.4816	0.1221	10	3	4	5	234
YPR199C	ARR1	0.012	0.0447	0.2685	0	0	19	0	23

in the table means that the TF is absent in the dataset.