

**TABLE S1** ChIP-Seq Peaks Called with MACS

MACS was used to call peaks of significant enrichment for the Sir protein ChIP-Seq datasets. The “Sir” column indicates the Sir protein dataset (either Sir2, Sir3 or Sir4) that the peak was identified in. The start and end coordinates indicate the chromosomal coordinate of the peak as identified by MACS. A “yes” in columns 5-7 indicate that the peak was detected in that dataset for the particular Sir protein and a “No” indicates that the peak was not called in that dataset. The “Genome Features” column indicates the genome features within the starting and ending coordinates of the peak as annotated in SGD.

Sir	Telomere	start	end	Sonication Replicate 1	Sonication Replicate 2	MNase	Genome Features
Sir2	TEL01-L	1	3165	Yes	Yes	Yes	TR, X element, PAU8
Sir3	TEL01-L	1	3204	Yes	Yes	Yes	TR, X element, PAU8
Sir4	TEL01-L	1	3211	Yes	Yes	Yes	TR, X element, PAU8
Sir2	TEL01-L	1	1905	No	Yes	Yes	Y'
Sir3	TEL02-L	1	8824	No	Yes	Yes	X-Y', PAU9
Sir4	TEL02-L	1	8824	Yes	Yes	Yes	X-Y', PAU9
Sir2	TEL02-L	4924	8824	Yes	Yes	Yes	X element, PAU9
Sir2	TEL03-L	1	18568	Yes	Yes	Yes	TR, X element, YCL076W, YCL075W, YCL074W, GEX1, VBA3, YCL068C, YCL065W, HML, CHA1
Sir3	TEL03-L	1	18622	Yes	Yes	Yes	TR, X element, YCL076W, YCL075W, YCL074W, GEX1, VBA3, YCL068C, YCL065W, HML, CHA1
Sir4	TEL03-L	1	15202	Yes	Yes	Yes	TR, X element, YCL076W, YCL075W, YCL074W, GEX1, VBA3, YCL068C, YCL065W, HML
Sir4	TEL03-L	15460	18178	Yes	Yes	Yes	HML
Sir4	TEL03-R	312518	315021	Yes	Yes	Yes	TR, X element
Sir2	TEL03-R	313064	315102	Yes	Yes	Yes	TR, X element
Sir2	TEL04-L	1	1725	Yes	Yes	Yes	TR, X element
Sir3	TEL04-L	1	1800	Yes	Yes	Yes	TR, X element
Sir4	TEL04-L	1	1731	Yes	Yes	Yes	TR, X element
Sir4	TEL04-R	1521508	1525877	No	Yes	Yes	X element, PAU10
Sir3	TEL04-R	1522260	1526289	Yes	Yes	Yes	X element, PAU10
Sir2	TEL04-R	1522281	1526268	Yes	Yes	Yes	X element, PAU10

Sir3	TEL04-R	1526513	1529507	No	Yes	Yes	Y'
Sir2	TEL09-L	1	5882	Yes	Yes	Yes	Y'
Sir3	TEL09-L	1	5999	Yes	Yes	Yes	Y'
Sir4	TEL09-L	1	7027	Yes	Yes	Yes	Y'
Sir2	TEL09-L	6054	9980	Yes	Yes	Yes	X element, PAU14
Sir3	TEL09-L	6057	10087	Yes	Yes	Yes	X element, PAU14
Sir4	TEL09-L	7049	9980	Yes	Yes	Yes	X element, PAU14
Sir4	TEL09-L	16947	18692	No	Yes	Yes	IMA3
Sir4	TEL09-R	437481	439152	No	Yes	Yes	X element
Sir2	TEL09-R	437501	439339	No	Yes	Yes	X element
Sir2	TEL05-L	1	7618	Yes	Yes	Yes	X-Y'
Sir3	TEL05-L	1	7804	Yes	Yes	Yes	X-Y'
Sir4	TEL05-L	1	7826	Yes	No	Yes	X-Y'
Sir4	TEL05-R	567524	571291	No	Yes	Yes	X element
Sir2	TEL05-R	568755	571249	No	Yes	Yes	X element
Sir3	TEL05-R	568818	571793	No	Yes	Yes	X element
Sir4	TEL06-L	1	7113	Yes	Yes	Yes	X-Y', YFL063W, COS4, YFL058W
Sir3	TEL06-L	1	7067	No	Yes	Yes	X-Y', YFL063W, COS4, YFL058W
Sir2	TEL06-L	374	8410	No	Yes	Yes	X-Y', YFL063W, COS4, YFL058W
Sir4	TEL06-R	263978	265355	Yes	Yes	No	IRC7
Sir3	TEL06-R	263993	265339	Yes	Yes	Yes	IRC7
Sir2	TEL06-R	264026	265321	Yes	No	Yes	IRC7
Sir3	TEL07-L	1	875	Yes	Yes	No	TR, X-element
Sir4	TEL07-R	1081144	1083523	No	Yes	Yes	COS6
Sir2	TEL07-R	1082655	1085210	Yes	Yes	Yes	X element
Sir3	TEL07-R	1083258	1085832	No	Yes	Yes	X element
Sir3	TEL07-R	1085851	1087178	No	Yes	Yes	Y'
Sir2	TEL08-L	1	2478	Yes	Yes	Yes	X element
Sir3	TEL08-L	1	2476	Yes	Yes	Yes	X element
Sir4	TEL08-L	1	6631	Yes	Yes	Yes	X-Y'
Sir3	TEL08-L	4505	6572	No	Yes	Yes	X element
Sir2	TEL08-L	4521	6542	Yes	Yes	Yes	X element
Sir4	TEL08-R	552041	558152	Yes	Yes	No	X element, Y', IMD2
Sir3	TEL08-R	552750	562261	No	Yes	Yes	X element, Y', IMD2
Sir2	TEL08-R	552885	557851	Yes	Yes	Yes	X element, Y', IMD2
Sir2	TEL10-L	1	5942	Yes	Yes	Yes	Y'
Sir3	TEL10-L	1	7045	Yes	Yes	Yes	Y'
Sir4	TEL10-L	1	10006	Yes	Yes	Yes	X-Y'
Si, Y'L10-L	6061	9999	Yes	Yes	Yes	X element	

Sir3	TEL10-L	7070	10068	Yes	Yes	Yes	X element
Sir2	TEL11-L	1	3067	Yes	Yes	Yes	TR, X element, PAU16
Sir3	TEL11-L	1	3107	Yes	Yes	Yes	TR, X element, PAU16
Sir4	TEL11-L	1	3117	Yes	Yes	Yes	TR, X element, PAU16
Sir4	TEL11-R	658211	660866	Yes	Yes	Yes	VBA5
Sir3	TEL11-R	658212	660806	Yes	Yes	Yes	VBA5
Sir2	TEL11-R	658227	660267	Yes	Yes	Yes	VBA5
Sir3	TEL11-R	660881	663222	Yes	Yes	No	GEX2
Sir2	TEL11-R	661907	664824	X	No	Yes	GEX2
Sir3	TEL12-L	1	4543	No	Yes	Yes	Y'
Sir2	TEL12-L	1	4537	Yes	Yes	Yes	Y'
Sir4	TEL12-L	1	14200	Yes	Yes	Yes	X-Y'
Sir3	TEL12-L	4752	10100	Yes	Yes	Yes	X-Y'
Sir2	TEL12-L	4786	10091	Yes	Yes	Yes	X-Y'
Sir3	TEL12-L	10354	14187	No	Yes	Yes	X-Y'
Sir2	TEL12-L	10392	14195	Yes	Yes	Yes	X-Y'
Sir3	TEL12-R	1061965	1066024	No	Yes	Yes	X element, PAU4
Sir4	TEL12-R	1061988	1072866	Yes	Yes	No	X element, PAU4
Sir2	TEL12-R	1062036	1066015	Yes	Yes	Yes	X element, PAU4
Sir3	TEL12-R	1066129	1072549	No	Yes	Yes	Y'
Sir2	TEL12-R	1066155	1072450	Yes	Yes	Yes	Y'
Sir3	TEL12-R	1072672	1077188	No	Yes	Yes	Y'
Sir2	TEL13-L	1	4459	Yes	Yes	Yes	Y'
Sir3	TEL13-L	1	4429	Yes	Yes	Yes	Y'
Sir4	TEL13-L	1	7494	Yes	Yes	Yes	X-Y'
Sir3	TEL13-L	4617	7435	Yes	Yes	Yes	X element
Sir2	TEL13-L	4658	7401	Yes	Yes	Yes	X element
Sir2	TEL14-L	1	5012	Yes	Yes	Yes	Y'
Sir3	TEL14-L	1	5265	No	Yes	Yes	Y'
Sir4	TEL14-L	1	8603	Yes	Yes	Yes	X-Y'
Sir2	TEL14-L	5748	8491	Yes	Yes	Yes	X element
Sir3	TEL14-L	5748	8575	Yes	Yes	Yes	X element
Sir2	TEL15-L	1	2868	Yes	Yes	Yes	X element, AAD15
Sir4	TEL15-L	1	2883	Yes	Yes	Yes	X element, AAD15
Sir3	TEL15-L	1	2924	Yes	Yes	Yes	X element, AAD15
Sir4	TEL15-L	10818	12699	Yes	Yes	No	PAU20
Sir3	TEL15-L	10840	12798	Yes	Yes	No	PAU20
Sir3	TEL15-R	1082035	1085505	No	Yes	Yes	X element, PAU21
Sir2	TEL15-R	1082045	1085443	Yes	Yes	Yes	X element, PAU21
Sir3	TEL15-R	1085649	1090020	No	Yes	Yes	Y'

Sir2	TEL16-L	1	4519	Yes	Yes	Yes	Y'
Sir3	TEL16-L	1	5215	No	Yes	Yes	Y'
Sir4	TEL16-L	1	8760	Yes	Yes	Yes	Y'
Sir2	TEL16-L	5594	9094	Yes	Yes	Yes	X element
Sir3	TEL16-L	5648	9097	No	Yes	Yes	X element
Sir3	TEL16-R	941574	945387	No	Yes	Yes	X element
Sir2	TEL16-R	942173	944929	No	Yes	Yes	X element
Sir2	TEL16-R	945624	947502	No	Yes	Yes	Y'