







Supplementary Tables and References

Supplementary Table 1. Circular Dichroism analysis of Ctp1.

Ctp1	α-Helix (%)	β-Sheet (%)	Disordered(%)	NRMSD*
Ctp1 1-294	53.3	6.1	55.9	0.348
Ctp1 1-60	89	-1.4	27.7	0.428
Ctp1 61-294	16.8	17.8	65	0.609

*NRMSD, normalized root mean square deviation. Analysis performed using Selcon3 from the Dichroweb server ¹⁻³.

Supplementary Table 2. Ctp1 DNA binding substrates

Figure Panel	Substrate	Substrate name	Component oligos (sequences in Supp. Table 3)
3b, Supp. Fig. 5a	5 —	single-stranded*	ssDNA
3b, 3d, 3e, 4c, 4e, Supp. Fig. 5a, 5e, 7	5 = , 54 bp =	double-stranded*	dsDNA
3b	5 	DNA bubble*	ssDNA/bubble
3b	5 	3'-overhang*	ssDNA/3over
3b	5 	3'- flap*	ssDNA/3flap
3b	5 	5'- flap*	ssDNA/5flap
3b, 3d, 3e, Supp. Fig. 5a	5 	fork*	ssDNA/splay
3b, 3c	 5	hairpin [§]	44hp
Supp. Fig. 5d	= 39 bp	39bp double-stranded [¥]	39bpf/39bpr

*DNA sequences adapted from Weston *et al.*, (2012)⁴.

§DNA sequence adapted from Lengsfeld, *et al.*, (2007)⁵.

¥DNA sequences from Tumbale *et al.*, (2011)⁶.

Supplementary Table 3. Ctp1 DNA binding substrate oligonucleotide sequences

Oligo Name	5' modification	Sequence	3' modification
ssDNA		GCAGGAGGTGGCGTCGGGTGGACGGGTGGATTGAAATTTAGGCTGGCACGGTCT	6-FAM
dsDNA		AGACCGTGCCAGCCTAAATTTCAATCCACCCGTCCACCCGACGCCACCTCCTGC	
bubble		AGACCGTGCCAGCCATTGGAGTTTCCACCCGTCCACCCGACGCCACCTCCTGC	
3over		TCCACCCGTCCACCCGACGCCACCTCCTG	
3flap		ACAACGACTAGAGTTAGTCGAGACCT	
5flap		CCCGTCCACCCGACGCCACCTCCTGC	
splay		AGACCGTGCCAGCCTAAATTTCAATCCAAGGTCTCGACTAACTCTAGTCGTTGT	
44hp	6-FAM	CACAGCGTACAGGTAATGCTCTGTACGCTTGTGGTCGATCTGG	
39bpf	6-FAM	CAGAGTCATAATATGCAGGTGCAGGTTATTCATGCTCGG	
39bpr		CCGAGCATGAATAACCTGCACCTGCATATTATGACTCTG	

Supplementary Table 4. *Schizosaccharomyces pombe* strains used in this study.

Strain	Genotype	Source or reference
PR109	<i>h⁻ leu1-32 ura4-D18</i>	Ref.7
PR110	<i>h⁺ leu1-32 ura4-D18</i>	Ref.7
WL137	<i>h⁻ leu1-32 ura4-D18 ctp1::kanMX6</i>	This study
SA00A	<i>h⁻ leu1-32 ura4-D18 ctp1-5flag:hphMX6</i>	This study
SA00B	<i>h⁺ leu1-32 ura4-D18 ctp1-5flag:hphMX6</i>	This study
SA001	<i>h⁺ leu1-32 ura4-D18 ctp1-R273A-5flag:hphMX6</i>	This study
SA006	<i>h⁺ leu1-32 ura4-D18 ctp1-H274A-5flag:hphMX6</i>	This study
SA005	<i>h⁺ leu1-32 ura4-D18 ctp-R275A-5flag:hphMX6</i>	This study
SA029	<i>h⁺ leu1-32 ura4-D18 ctp1-R273A-5flag:hphMX6 rad22-YFP:natMX6 his3?</i>	This study
SA031	<i>h⁺ leu1-32 ura4-D18 ctp1-H274A-5flag:hphMX6 rad22-YFP:natMX6 his3?</i>	This study
SA033	<i>h⁻ leu1-32 ura4-D18 ctp-R275A-5flag:hphMX6 rad22-YFP:natMX6 his3?</i>	This study
SA039	<i>h⁺ leu1-32 ura4-D18 ctp1-5flag:hphMX6 rad22-YFP:natMX6 his3?</i>	This study
SA043	<i>h⁺ leu1-32 ura4-D18 ctp1::kanMX6 rad22-YFP:natMX6 his3?</i>	This study
SA052	<i>h⁻ leu1-32 ura4-D18 ctp1-R32A-5flag:hphMX6</i>	This study
SA058	<i>h⁺ leu1-32 ura4-D18 ctp1-K41A-5flag:hphMX6</i>	This study
SA061	<i>h⁺ leu1-32 ura4-D18 ctp1-R32A-K41A-5flag:hphMX6</i>	This study
SA062	<i>h⁻ leu1-32 ura4-D18 ctp1-R32A-5flag:hphMX6 rad22-YFP:natMX6 his3?</i>	This study
SA063	<i>h⁺ leu1-32 ura4-D18 ctp1-K41A-5flag:hphMX6 rad22-YFP:natMX6 his3?</i>	This study
SA064	<i>h⁻ leu1-32 ura4-D18 ctp1-R32A-K41A-5flag:hphMX6 rad22-YFP:natMX6 his3?</i>	This study
SA074	<i>h⁺ leu1-32 ura4-D18 ctp1-ΔN60-5flag:hphMX6</i>	This study
SA088	<i>h⁻ leu1-32 ura4-D18 ctp1-ΔN60-5flag:hphMX6 exo1::ura4+ pku80::natMX6</i>	This study
SA092	<i>h⁺ leu1-32 ura4-D18 ctp1-ΔN60-5flag:hphMX6 pku80::natMX6</i>	This study
SA098	<i>h⁻ leu1-32 ura4-D18 ctp1-ΔN60-5flag:hphMX6 exo1::ura4+</i>	This study
JW146	<i>h⁻ leu1-32 ura4-D18 pku80::natMX6</i>	This study
JW152	<i>h⁻ leu1-32 ura4-D18 ctp1::kanMX6 pku80::natMX6 ade6?</i>	This study
JW158	<i>h⁻ leu1-32 ura4-D18 ctp1-R32A-K41A-5flag:hphMX6 pku80::natMX6</i>	This study
JW160	<i>h⁻ leu1-32 exo1::ura4+</i>	This study
JW162	<i>h⁻ leu1-32 exo1::ura4+ pku80::natMX6</i>	This study
JW166	<i>h⁻ leu1-32 ura4-D18 ctp1-5flag:hphMX6 exo1::ura4+</i>	This study
JW169	<i>h⁻ leu1-32 ura4-D18 ctp1-5flag:hphMX6 pku80::natMX6</i>	This study
JW171	<i>h⁻ leu1-32 ura4-D18 ctp1-R32A-K41A-5flag:hphMX6 exo1::ura4+</i>	This study
JW174	<i>h⁻ leu1-32 ura4-D18 ctp1-R275A-5flag:hphMX6 exo1::ura4+</i>	This study
JW177	<i>h⁺ leu1-32 ura4-D18 ctp1-R275A-5flag:hphMX6 pku80::natMX6</i>	This study
JW186	<i>h⁻ leu1-32 ura4-D18 ctp1::kanMX6 exo1::ura4+ ade6?</i>	This study
JW187	<i>h⁻ leu1-32 ura4-D18 ctp1-R32A-K41A-5flag:hphMX6 exo1::ura4+ pku80::natMX6</i>	This study
JW190	<i>h⁺ leu1-32 ura4-D18 ctp1::natMX6 exo1::ura4+ pku80::hphMX6 ade6?</i>	This study
JW194	<i>h⁻ leu1-32 ura4-D18 ctp1-5flag:hphMX6 exo1::ura4+ pku80::natMX6</i>	This study
JW196	<i>h² leu1-32 ura4-D18 ctp1-R275A-5flag:hphMX6 exo1::ura4+ pku80::natMX6</i>	This study

Supplementary References

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