

Table 1 - Subunit-Subunit Interactions of the 19S Regulatory Complex of the 26S Proteasome

ATPase Subunit	Other Names	GenBank Number	Localisation	Domains	Interacting Subunits		Methods	Comments	References
					"Rpt/n" nomenclature	"S" nomenclature			
		(Human)							
Rpt1/ S7		D11094	B	AAA					1, 2
	<i>dm</i> mp42b				Rpt2	S4	P, G	<i>fb</i> , <i>pMss1 res mts2-ts</i>	3, 4
	<i>sc</i> Mss1,Cim5				Rpn1	S2	P	<i>fb</i>	5
					Rpt3	S6b	P	<i>fb</i> , <i>ta</i>	4, 6
					[Rpt1-2-3-6]	[S7 - S4 - S6b - S8]	P	<i>gg</i>	4
						[S7 - S5b* - S4]	P	<i>gg</i>	5
						[S5b* - S7- S4 - S2]	P	<i>gg</i>	5
					Rpn12	S14	G	<i>rpt2-1 sl rpn12-1</i>	7
Rpt2/S4		L02426	B	AAA					8
	<i>h</i> p56				Rpn 1	S2	P, G	<i>pd</i> , <i>mts4-1 sl mts2-1</i> , <i>gg</i>	9, 4
	<i>m</i> M56					[S7 - S4 - S6b - S8]			
	<i>sp</i> Mts2				Rpt1	S7			
	<i>sc</i> Yhs4					[S4 - S5b* - S7]			
Rpt3/S6b		AF038965	B	AAA					10, 11
	<i>h</i> S6, TBP7, <i>h,b</i> p48				Rpt5	S6a	P	<i>ta</i>	10
	<i>ms</i> MS73				Rpt6	S8	P	<i>fb</i> , <i>ta</i>	4, 6
	<i>dm</i> p50				Rpt1	S7			
Rpt4/S10b		D78275	B	AAA					12, 13
	<i>h,b</i> p42				Rpt5	S6a	P	<i>fb</i> , <i>gg</i>	4
	<i>sc</i> Sug2,Nas7p				Rpt6	S8	P, G	<i>2hb</i> , <i>sug2-1 sl sug1-1</i>	14
					Rpn2	S1	P	<i>fb</i>	4
						[S6b - S10b - p27*]	P	<i>co-purification</i>	15
Rpt5/S6a		M34079	B	AAA					4, 10
	<i>h</i> TBP1, S6'				Rpn6?	S9?	P?	<i>pd</i>	16
	<i>sc</i> yTbp1				Rpt3, Rpt4	S6b, S10b			
Rpt6/S8		D44467	B	AAA					17
	<i>h</i> Trip1, <i>h,b</i> p45				Rpn2	S1	P	<i>gg</i> requires S8 modification	5
	<i>sc</i> Cim3, Sug1				Rpt2, Rpt3, Rpt4	S4, S6b, S10b			

Rpn/t=S. cerevisiae nomenclature S=previous (human) nomenclature, *h*=human, *b*=bovine, *sp*=S.pombe, *sc*=S.cerevisiae, *m*=mouse, *dm*=Drosophila melanogaster, *at*=Arabidopsis thaliana, *sm*=Manduca sexta. Localisation: B - base subunit, L - lid subunit; Domains: KEKE, AAA, PCI, MPN - see text, 9xβ/α=sequence predicted to form a half horseshoe somewhat flat hydrophobic surface, also found in APC complexes and similar to the LRR region in ribonuclease inhibitor (35), pUbBD=polyUbiquitin binding domain, PCI? - assigned a PCI domain because of its weak homology to COP9 signalosome subunit 8 within amino acids 180-210 of S14, []=subcomplexes formed, P=protein-protein interaction, G=genetic interactions, fb=filter binding assays, sl=synthetic lethal, res=multi-copy expression of wild type gene rescues mutation, sup=suppressor mutation analysis, pd=pull down including; glutathion sepharose-gst pull down, Ni-agarose-His pull down, immunoprecipitation, gg=co-sedimentation on glycerol gradients, ts=temperature sensitive, ta=transcriptional activation, 2hb=2hybrid. *=species or tissue specific protein, interaction redundancies.

Table 1 - Subunit-Subunit Interactions of the 19S Regulatory Complex of the 26S Proteasome (continued)

Non-ATPase Subunit	Other Names	GenBank Number	Localisation	Domains	Interacting Subunits		Methods	Comments	References
		(Human)			"Rpt/n" nomenclature	"S" nomenclature			
Rpn1/S2	<i>h</i> TRAP2, <i>h,b</i> p97 <i>sp</i> Mts4 <i>sc</i> Nas1p	D78151	B	KEKE 9xβ/α	Rpn11 Rpn9 Rpn10	S13 S11 S5a	G G G	no KEKE in <i>sp</i> <i>mts4⁺ res pad1-1</i> <i>mts4-1 sl mts1-1</i> <i>mts4-1 sl pus1D</i>	9, 18 19 20 21
Rpn2/S1	<i>h,b</i> p112 <i>sc</i> Sen3p	D44466	B	KEKE 9xβ/α	Rpn12	S14	G	<i>sen3D sl nin1-1</i>	22 22
Rpn3/S3	<i>m</i> P91A <i>h</i> p58 <i>sc</i> Sun2	D67025	L	PCI	Rpn12	S14	G	<i>RPN3 res nin1-1</i>	23 23
Rpn5/p55	<i>sc</i> Nas5p	AB003103	L	PCI	none reported				24
Rpn6/S9	<i>b,h</i> p44.5 <i>sc</i> Nas4	AB003102	L	PCI	Rpt5?	S6a?			25
Rpn7/S10a	<i>h</i> KIAAORF07	D14633	L	KEKE PCI	Rpn8	S12	P	<i>fb</i>	26 27
Rpn8/S12	<i>m</i> Mov34 <i>h,b</i> p40	D50063	L	KEKE MPN	Rpn7	S10a			28
Rpn9/S11	<i>h,b</i> p40.5 <i>sp</i> Mts1 <i>sc</i> , Nas7p	AB009398	L	PCI	Rpn10 Rpn12 Rpn1	S5a S14 S2	P G	<i>2hb</i> <i>mts1-1 sl mts3-1</i>	29 30 20
Rpn10/S5a	<i>h</i> AF <i>dm</i> p54 <i>at</i> MBP1 <i>sc</i> Sun1 <i>sp</i> Pus1	U24704	B/L?	pUbBD	Rpn11 Rpn12	S13 S14	G G G	<i>pus1D sl pad1-1</i> <i>RPN10 res rpn 12-1</i> <i>pus1D sl mts3-1</i>	31, 32 21 23 21
Rpn11/S13	<i>h</i> Poh1 <i>sp</i> Pad1	U86782	L	PCI	Rpn1, Rpn9 Rpn12	S2, S11 S14	G	<i>pad1-1 sl mts3-1</i>	33 19
Rpn12/S14	<i>h,b</i> p31 <i>sp</i> Mts3 <i>sc</i> Nin1	D38047	L	PCI?	Rpt1, Rpn2 Rpn3, Rpn9 Rpn10, Rpn11	S7, S1 S3, S5a S11, S13			34 24

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