

Article Addendum

The functional domain grouping of microtubule associated proteins

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Abbreviations: GO, gene ontology; MT, microtubule; MAP, microtubule associated protein; RfC, replication factor C

Key words: *Drosophila*, domain, microtubule, MAP, alignment

Supplementary Material

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Supplementary Table 1: All aligned MAPs with domains indicated in FlyBase. All of the proteins shown in Figure 1 are listed here with all of their functional domains. InterPro codes for these domains are indicated for ease of reference.

ACTIN (IPR004001)			
CG4027	Actin 5C	IPR004000	Actin/actin-like
		IPR004001	Actin, conserved site
CG12051	Actin 42A	IPR004000	Actin/actin-like
		IPR004001	Actin, conserved site
CG6174	Actin-related protein 87C	IPR004001	Actin, conserved site
CG10067	Actin 57A	IPR004000	Actin/actin-like
		IPR004001	Actin, conserved site
DYNEIN HEAVY CHAIN (IPR004273)			
CG7507	Dynein heavy chain 64C	IPR000169	Peptidase, cysteine peptidase active site
		IPR003593	AAA+ ATPase, core
		IPR004273	Dynein heavy chain
		IPR011704	ATPase associated with various cellular activities, AAA-5
		IPR013594	Dynein heavy chain, N-terminal region 1
		IPR013602	Dynein heavy chain, N-terminal region 2
CG9492		IPR000169	Peptidase, cysteine peptidase active site
		IPR004273	Dynein heavy chain
		IPR011704	ATPase associated with various cellular activities, AAA-5
		IPR013594	Dynein heavy chain, N-terminal region 1
		IPR013602	Dynein heavy chain, N-terminal region 2
		IPR003593	AAA+ ATPase, core
CG3339		IPR000169	Peptidase, cysteine peptidase active site
		IPR000276	GPCR, rhodopsin-like
		IPR004273	Dynein heavy chain
		IPR011704	ATPase associated with various cellular activities, AAA-5

		IPR013594	Dynein heavy chain, N-terminal region 1
		IPR013602	Dynein heavy chain, N-terminal region 2
KINESIN (IPR001752, IPR010544)			
CG8590	Klp3A	IPR001752	Kinesin, motor region
CG10923	Klp67A	IPR001752	Kinesin, motor region
CG9191	Klp61F	IPR001752	Kinesin, motor region
CG1453	Klp10A	IPR001752	Kinesin, motor region
CG7765	Kinesin heavy chain	IPR001752	Kinesin, motor region
CG12298	subito / KIF20A	IPR001752	Kinesin, motor region
CG6392	CENP-meta* (not all domains shown here)	IPR001752	Kinesin, motor region
		IPR002017	Spectrin repeat
CG5020	CLIP-190* (not all domains shown here)	IPR000938	Cytoskeleton-associated, CAP-Gly
		IPR010544	Kinesin-related
KINASE (IPR000719)			
CG18255	Stretchin / myosin light chain kinase** (also in Immunoglobulin group)	IPR000719	Protein kinase, core
		IPR002290	Serine/threonine protein kinase
		IPR003006	Immunoglobulin/major histocompatibility complex, conserved site
		IPR003598	Immunoglobulin subtype 2
		IPR003599	Immunoglobulin subtype
		IPR003961	Fibronectin, type III
		IPR003962	Fibronectin, type III subdomain
		IPR007110	Immunoglobulin-like
		IPR008271	Serine/threonine protein kinase, active site
		IPR008957	Fibronectin, type III-like fold

		IPR009134	Vascular endothelial growth factor receptor, VEGFR, N-terminal
		IPR011009	Protein kinase-like
		IPR013098	Immunoglobulin I-set
		IPR013151	Immunoglobulin
		IPR013783	Immunoglobulin-like fold
		IPR017441	Protein kinase ATP binding, conserved site
		IPR017442	Serine/threonine protein kinase-related
CG33553	Darkener of Apricot	IPR000719	Protein kinase, core
		IPR002290	Serine/threonine protein kinase
		IPR008271	Serine/threonine protein kinase, active site
		IPR011009	Protein kinase-like
		IPR017441	Protein kinase ATP binding, conserved site
		IPR017442	Serine/threonine protein kinase-related
CG4488	Wee 1	IPR000719	Protein kinase, core
		IPR008271	Serine/threonine protein kinase, active site
		IPR011009	Protein kinase-like
		IPR017164	Wee1-like protein kinase
		IPR017441	Protein kinase ATP binding, conserved site
		IPR017442	Serine/threonine protein kinase-related
CG5363	cdc2	IPR000719	Protein kinase, core
		IPR002290	Serine/threonine protein kinase
		IPR008271	Serine/threonine protein kinase, active site
		IPR011009	Protein kinase-like
		IPR017441	Protein kinase ATP binding, conserved site
		IPR017442	Serine/threonine protein kinase-related
CG10498	cdc2c	IPR000719	Protein kinase, core
		IPR002290	Serine/threonine protein kinase
		IPR008271	Serine/threonine protein kinase, active site
		IPR011009	Protein kinase-like

		IPR017441	Protein kinase ATP binding, conserved site
		IPR017442	Serine/threonine protein kinase-related
SEPTIN (IPR016491)			
CG1403	Septin 1	IPR000038	Cell division/GTP binding protein
		IPR000038	Cell division/GTP binding protein
		IPR008113	Septin 2
		IPR016491	Septin
CG4173	Septin 2	IPR000038	Cell division/GTP binding protein
		IPR016491	Septin
CG8705	Peanut	IPR000038	Cell division/GTP binding protein
		IPR016491	Septin
CG2916	Septin 5	IPR000038	Cell division/GTP binding protein
		IPR000923	Blue (type 1) copper domain
		IPR016491	Septin
EB1 (IPR004953)			
CG18190		IPR001715	Calponin-like actin-binding
		IPR004953	EB1, C-terminal
		IPR016146	Calponin homology
CG3265	EB1	IPR001715	Calponin-like actin-binding
		IPR004953	EB1, C-terminal
		IPR016146	Calponin homology
G-BETA REPEAT (IPR001680)			
CG10132		IPR001680	WD40 repeat
		IPR007111	NACHT nucleoside triphosphatase
		IPR011046	WD40 repeat-like
		IPR015943	WD40/YVTN repeat-like

CG10545	Gbeta13F	IPR015943	WD40/YVTN repeat-like
		IPR001632	G-protein, beta subunit
		IPR001680	WD40 repeat
		IPR011046	WD40 repeat-like
		IPR016346	Guanine nucleotide-binding protein, beta subunit
CG7581	Bub3	IPR015943	WD40/YVTN repeat-like
		IPR001680	WD40 repeat
		IPR011046	WD40 repeat-like
CG5519	Gbp	IPR015943	WD40/YVTN repeat-like
		IPR001680	WD40 repeat
		IPR003613	U box
		IPR011046	WD40 repeat-like
		IPR013083	Zinc finger, RING/FYVE/PHD-type
CG7111	RACK 1	IPR015943	WD40/YVTN repeat-like
		IPR001680	WD40 repeat
		IPR011046	WD40 repeat-like
CG9945		IPR001680	WD40 repeat
		IPR011046	WD40 repeat-like
		IPR015943	WD40/YVTN repeat-like
		IPR017399	WD repeat protein 23
CG18000	Dynein intermediate chain (short wing)	IPR015943	WD40/YVTN repeat-like
		IPR001680	WD40 repeat
		IPR011046	WD40 repeat-like
CG8882	eIF3-S2 / Trip1	IPR015943	WD40/YVTN repeat-like
		IPR001680	WD40 repeat

		IPR011046	WD40 repeat-like
CG3957	Wing Morphogenesis Defect (WMD)	IPR001680	WD40 repeat
		IPR015943	WD40/YVTN repeat-like
		IPR011046	WD40 repeat-like
CG17437	will die slowly	IPR015943	WD40/YVTN repeat-like
		IPR001632	G-protein, beta subunit
		IPR001680	WD40 repeat
		IPR011046	WD40 repeat-like
CG9615	tex	IPR015943	WD40/YVTN repeat-like
		IPR001680	WD40 repeat
		IPR011046	WD40 repeat-like
		IPR011659	WD40-like Beta Propeller
CG6235	twins/aar	IPR015943	WD40/YVTN repeat-like
		IPR000009	Protein phosphatase 2A, regulatory subunit PR55
		IPR001680	WD40 repeat
		IPR011046	WD40 repeat-like
GLUTATHIONE S-TRANSFERASE (IPR004046)			
CG11901	eEF1gamma	IPR001662	Translation elongation factor EF1B, gamma chain, conserved
		IPR004045	Glutathione S-transferase, N-terminal
		IPR004046	Glutathione S-transferase, C-terminal
		IPR010987	Glutathione S-transferase, C-terminal-like
		IPR012335	Thioredoxin fold
		IPR012336	Thioredoxin-like fold
CG30185		IPR004046	Glutathione S-transferase, C-terminal
		IPR010987	Glutathione S-transferase, C-terminal-like
SHORT CHAIN DEHYDROGENASE (IPR002198)			

CG3481	Alcohol Dehydrogenase	IPR000897	Signal recognition particle, SRP54 subunit, GTPase
		IPR002198	Short-chain dehydrogenase/reductase SDR
		IPR002424	Insect alcohol dehydrogenase family
		IPR002425	Insect alcohol dehydrogenase
		IPR016040	NAD(P)-binding
CG7113	scully	IPR002198	Short-chain dehydrogenase/reductase SDR
		IPR002347	Glucose/ribitol dehydrogenase
		IPR016040	NAD(P)-binding
CG5590		IPR002198	Short-chain dehydrogenase/reductase SDR
		IPR002347	Glucose/ribitol dehydrogenase
		IPR003033	Sterol-binding
		IPR016040	NAD(P)-binding
		IPR016083	Sterol-binding-like
TRANSKETOLASE (IPR005475)			
CG11876		IPR002197	Helix-turn-helix, Fis-type
		IPR005475	Transketolase, central region
		IPR005476	Transketolase, C-terminal
			Transketolase, C-terminal/Pyruvate-ferredoxin oxidoreductase, domain II
		IPR009014	domain II
		IPR013177	Protein of Unknown function DUF1713, mitochondria
		IPR015941	Transketolase C-terminal-like
CG8036		IPR005474	Transketolase, N-terminal
		IPR005475	Transketolase, central region
		IPR005476	Transketolase, C-terminal
			Transketolase, C-terminal/Pyruvate-ferredoxin oxidoreductase, domain II
		IPR009014	domain II
		IPR015941	Transketolase C-terminal-like
ACYL-COA DEHYDROGENASE (IPR006090)			
CG7461		IPR006089	Acyl-CoA dehydrogenase, conserved site

	IPR006090	Acyl-CoA oxidase/dehydrogenase, type 1
	IPR006091	Acyl-CoA dehydrogenase/oxidase, central region
	IPR006092	Acyl-CoA dehydrogenase, N-terminal
	IPR009075	Acyl-CoA dehydrogenase/oxidase C-terminal
	IPR009100	Acyl-CoA dehydrogenase/oxidase, middle and N-terminal
	IPR013764	Acyl-CoA oxidase/dehydrogenase, type1/2, C-terminal
	IPR013786	Acyl-CoA dehydrogenase/oxidase, N-terminal
CG9547	IPR006090	Acyl-CoA oxidase/dehydrogenase, type 1
	IPR006091	Acyl-CoA dehydrogenase/oxidase, central region
	IPR006092	Acyl-CoA dehydrogenase, N-terminal
	IPR009075	Acyl-CoA dehydrogenase/oxidase C-terminal
	IPR009100	Acyl-CoA dehydrogenase/oxidase, middle and N-terminal
	IPR013764	Acyl-CoA oxidase/dehydrogenase, type1/2, C-terminal
	IPR013786	Acyl-CoA dehydrogenase/oxidase, N-terminal
CG12262	IPR006089	Acyl-CoA dehydrogenase, conserved site
	IPR006090	Acyl-CoA oxidase/dehydrogenase, type 1
	IPR006091	Acyl-CoA dehydrogenase/oxidase, central region
	IPR006092	Acyl-CoA dehydrogenase, N-terminal
	IPR009075	Acyl-CoA dehydrogenase/oxidase C-terminal
	IPR009100	Acyl-CoA dehydrogenase/oxidase, middle and N-terminal
	IPR013764	Acyl-CoA oxidase/dehydrogenase, type1/2, C-terminal
	IPR013786	Acyl-CoA dehydrogenase/oxidase, N-terminal
ECH – ENOYL-COA HYDRATASE/ISOMERASE (IPR001753)		
CG4389	IPR001753	Crotonase, core
	IPR006108	3-hydroxyacyl-CoA dehydrogenase, C-terminal
	IPR006176	3-hydroxyacyl-CoA dehydrogenase, NAD binding
	IPR008927	6-phosphogluconate dehydrogenase, C-terminal-like
	IPR012803	Fatty acid oxidation complex, alpha subunit, mitochondrial
	IPR013328	Dehydrogenase, multihelical
	IPR016040	NAD(P)-binding

CG6543		IPR001753	Crotonase, core
CG8778		IPR001753	Crotonase, core
HSP20/ALPHA/CRYSTALLIN FAMILY (IPR002068)			
CG4463	Hsp-23	IPR001436	Alpha crystallin/Heat shock protein
		IPR002068	Heat shock protein Hsp20
		IPR008978	Hsp20-like chaperone
		IPR010916	TonB box, conserved site
CG4183	Hsp-26	IPR001436	Alpha crystallin/Heat shock protein
		IPR002068	Heat shock protein Hsp20
		IPR008978	Hsp20-like chaperone
		IPR010916	TonB box, conserved site
CG4466	Hsp-27	IPR001436	Alpha crystallin/Heat shock protein
		IPR002068	Heat shock protein Hsp20
		IPR008978	Hsp20-like chaperone
		IPR010916	TonB box, conserved site
PEPTIDASE/INSULASE FAMILY (IPR011765)			
CG4169	Ubiquinol-Cytochrome c Reductase	IPR007863	Peptidase M16, C-terminal
		IPR011765	Peptidase M16, N-terminal
		IPR011237	Peptidase M16, core
		IPR011249	Metalloenzyme, LuxS/M16 peptidase-like, metal-binding
CG3731		IPR001431	Peptidase M16, zinc-binding site
		IPR007863	Peptidase M16, C-terminal
		IPR011765	Peptidase M16, N-terminal
		IPR011237	Peptidase M16, core
		IPR011249	Metalloenzyme, LuxS/M16 peptidase-like, metal-binding

RNA RECOGNITION MOTIF (IPR000504)			
CG12357	Cap Binding Protein 20	IPR000504	RNA recognition motif, RNP-1
		IPR012677	Nucleotide-binding, alpha-beta plait
CG5119 PAbp		IPR000504	RNA recognition motif, RNP-1
		IPR002004	Polyadenylate-binding protein/Hyperplastic disc protein
		IPR006515	Polyadenylate binding protein, human types 1, 2, 3, 4
		IPR012677	Nucleotide-binding, alpha-beta plait
TETRATRICOPEPTIDE REPEAT (IPR001440)			
CG3678		IPR001440	Tetratricopeptide TRP-1
		IPR011990	Tetratricopeptide-like helical
		IPR013026	Tetratricopeptide region
CG17556		IPR001440	Tetratricopeptide TRP-1
		IPR011990	Tetratricopeptide-like helical
		IPR013026	Tetratricopeptide region
LIPASE (IPR000734)			
CG2985	Yolk protein 1	IPR000734	Lipase
		IPR000734	Lipase
		IPR013818	Lipase, N-terminal
CG2979 Yolk protein 2		IPR000734	Lipase
		IPR013818	Lipase, N-terminal
CG11129 Yolk protein 3		IPR000734	Lipase
		IPR005479	Carbamoyl phosphate synthetase, large subunit, ATP-binding
		IPR013818	Lipase, N-terminal
UBIQUITIN (IPR000626)			
CG32744	Ubi-p5E	IPR000626	Ubiquitin

CG11624	Ubi-p63E	IPR000626	Ubiquitin
AAA ATPASE (IPR003959)			
CG2331	TER94	IPR001984	Peptidase S16, Lon protease
		IPR003338	AAA ATPase VAT, N-terminal
		IPR003593	AAA+ ATPase, core
		IPR003959	AAA ATPase, core
		IPR003960	AAA ATPase, conserved site
		IPR005938	AAA ATPase, CDC48
		IPR009010	Aspartate decarboxylase-like fold
		IPR015415	Vps4 oligomerisation, C-terminal
CG3455	Rpt4b	IPR003593	AAA+ ATPase, core
		IPR003959	AAA ATPase, core
		IPR003960	AAA ATPase, conserved site
		IPR005937	26S proteasome subunit P45
CG2241	Rpt6b	IPR003593	AAA+ ATPase, core
		IPR003959	AAA ATPase, core
		IPR003960	AAA ATPase, conserved site
		IPR005937	26S proteasome subunit P45
CG1489	Pros-45 / Rpt6	IPR003593	AAA+ ATPase, core
		IPR003959	AAA ATPase, core
		IPR003960	AAA ATPase, conserved site
		IPR005937	26S proteasome subunit P45
HELICASE (IPR011545, IPR001650)			
CG10077		IPR000629	RNA helicase, ATP-dependent, DEAD-box, conserved site
		IPR001650	DNA/RNA helicase, C-terminal
		IPR011545	DNA/RNA helicase, DEAD/DEAH box type, N-terminal
		IPR014001	DEAD-like helicase, N-terminal

		IPR014014	RNA helicase, DEAD-box type, Q motif
		IPR014021	Helicase, superfamily 1 and 2, ATP-binding
CG10279	Rm62	IPR000629	RNA helicase, ATP-dependent, DEAD-box, conserved site
		IPR001650	DNA/RNA helicase, C-terminal
		IPR011545	DNA/RNA helicase, DEAD/DEAH box type, N-terminal
		IPR014001	DEAD-like helicase, N-terminal
		IPR014014	RNA helicase, DEAD-box type, Q motif
		IPR014021	Helicase, superfamily 1 and 2, ATP-binding
CG7269	Hel25E	IPR001650	DNA/RNA helicase, C-terminal
		IPR011545	DNA/RNA helicase, DEAD/DEAH box type, N-terminal
		IPR014001	DEAD-like helicase, N-terminal
		IPR014014	RNA helicase, DEAD-box type, Q motif
		IPR014021	Helicase, superfamily 1 and 2, ATP-binding
CG9075	eIF4A	IPR000629	RNA helicase, ATP-dependent, DEAD-box, conserved site
		IPR001650	DNA/RNA helicase, C-terminal
		IPR011545	DNA/RNA helicase, DEAD/DEAH box type, N-terminal
		IPR014001	DEAD-like helicase, N-terminal
		IPR014014	RNA helicase, DEAD-box type, Q motif
		IPR014021	Helicase, superfamily 1 and 2, ATP-binding
CG4916	Maternal Expression at 31B	IPR000629	RNA helicase, ATP-dependent, DEAD-box, conserved site
		IPR001650	DNA/RNA helicase, C-terminal
		IPR011545	DNA/RNA helicase, DEAD/DEAH box type, N-terminal
		IPR014001	DEAD-like helicase, N-terminal
		IPR014014	RNA helicase, DEAD-box type, Q motif
		IPR014021	Helicase, superfamily 1 and 2, ATP-binding
HSP70			
CG31366	Hsp-70Aa	IPR001023	Heat shock protein Hsp70
		IPR013126	Heat shock protein 70

CG18743	Hsp-70Ab	IPR001023 IPR013126	Heat shock protein Hsp70 Heat shock protein 70
CG31449	Hsp-70Ba	IPR001023 IPR013126	Heat shock protein Hsp70 Heat shock protein 70
CG5834	Hsp70Bbb	IPR001023 IPR013126	Heat shock protein Hsp70 Heat shock protein 70
CG4147/ CG1579	Hsp-c3	IPR000886 IPR001023 IPR013126	Endoplasmic reticulum, targeting sequence Heat shock protein Hsp70 Heat shock protein 70
CG8542	Hsp-c5	IPR001023 IPR012725 IPR013126	Heat shock protein Hsp70 Chaperone DnaK Heat shock protein 70
CG4264	Hsp-c4	IPR001023 IPR013126	Heat shock protein Hsp70 Heat shock protein 70
CG8937	Hsp-c1	IPR001023 IPR013126	Heat shock protein Hsp70 Heat shock protein 70
CG5436	Hsp-68	IPR001023 IPR013126	Heat shock protein Hsp70 Heat shock protein 70
CG1519	PROTEOSOME 20S (IPR001353) Pros-alpha7	IPR000426 IPR000426 IPR001353	Proteasome alpha-subunit, conserved site Proteasome alpha-subunit, conserved site 20S proteasome, A and B subunits
CG4904	Pros 35	IPR000426	Proteasome alpha-subunit, conserved site

		IPR001353	20S proteasome, A and B subunits
CG9327	Pros 29	IPR000243	Peptidase T1A, proteasome beta-subunit
		IPR000426	Proteasome alpha-subunit, conserved site
		IPR001353	20S proteasome, A and B subunits
		IPR016050	Proteasome, beta-type subunit, conserved site
T-COMPLEX CHAPERONE (IPR002423)			
CG5374	Tcp1-alpha	IPR001844	Chaperonin Cpn60
		IPR002194	Chaperonin TCP-1, conserved site
		IPR002423	Chaperonin Cpn60/TCP-1
		IPR008950	GroEL-like chaperone, ATPase
		IPR012715	T-complex protein 1, alpha subunit
CG7033	Tcp1-beta	IPR000629	RNA helicase, ATP-dependent, DEAD-box, conserved site
		IPR000629	RNA helicase, ATP-dependent, DEAD-box, conserved site
		IPR001844	Chaperonin Cpn60
		IPR002194	Chaperonin TCP-1, conserved site
		IPR002423	Chaperonin Cpn60/TCP-1
		IPR008950	GroEL-like chaperone, ATPase
		IPR012716	T-complex protein 1, beta subunit
CG8977	Tcp1- gamma	IPR001844	Chaperonin Cpn60
		IPR002194	Chaperonin TCP-1, conserved site
		IPR002423	Chaperonin Cpn60/TCP-1
		IPR008950	GroEL-like chaperone, ATPase
		IPR012719	T-complex protein 1, gamma subunit
CG5525	Tcp1-delta	IPR001844	Chaperonin Cpn60
		IPR002194	Chaperonin TCP-1, conserved site
		IPR002423	Chaperonin Cpn60/TCP-1

		IPR008950	GroEL-like chaperone, ATPase
		IPR012717	T-complex protein 1, delta subunit
CG8439	Tcp1-epsilon	IPR001844	Chaperonin Cpn60
		IPR002194	Chaperonin TCP-1, conserved site
		IPR002423	Chaperonin Cpn60/TCP-1
		IPR008950	GroEL-like chaperone, ATPase
		IPR012718	T-complex protein 1, epsilon subunit
CG8231	Tcp1-zeta	IPR001844	Chaperonin Cpn60
		IPR002194	Chaperonin TCP-1, conserved site
		IPR002423	Chaperonin Cpn60/TCP-1
		IPR008950	GroEL-like chaperone, ATPase
		IPR012722	T-complex protein 1, zeta subunit
CG8351	Tcp1-eta	IPR000719	Protein kinase, core
		IPR001844	Chaperonin Cpn60
		IPR002194	Chaperonin TCP-1, conserved site
		IPR002423	Chaperonin Cpn60/TCP-1
		IPR008950	GroEL-like chaperone, ATPase
		IPR012720	T-complex protein 1, eta subunit
		IPR017441	Protein kinase ATP binding, conserved site
CG8258	Tcp1-theta	IPR001844	Chaperonin Cpn60
		IPR002194	Chaperonin TCP-1, conserved site
		IPR002423	Chaperonin Cpn60/TCP-1
		IPR008950	GroEL-like chaperone, ATPase
		IPR012721	T-complex protein 1, theta subunit
CG12101	Hsp-60	IPR001844	Chaperonin Cpn60
		IPR002423	Chaperonin Cpn60/TCP-1
		IPR008950	GroEL-like chaperone, ATPase
		IPR012723	Chaperonin GroEL

14-3-3 DOMAIN (IPR000308)			
CG31196	14-3-3-epsilon	IPR000308	14-3-3 protein
CG17870	14-3-3-zeta	IPR000308	14-3-3 protein
REPLICATION FACTOR COMPLEX (IPR013748)			
CG14999	Rfc 40kD subunit	IPR003593	AAA+ ATPase, core
		IPR008921	DNA polymerase III clamp loader subunit, C-terminal
		IPR013748	Replication factor C
CG5313	Rfc 3	IPR003593	AAA+ ATPase, core
		IPR003959	AAA ATPase, core
		IPR008921	DNA polymerase III clamp loader subunit, C-terminal
		IPR013748	Replication factor C
CG8142	Rfc4	IPR003593	AAA+ ATPase, core
		IPR003959	AAA ATPase, core
		IPR008921	DNA polymerase III clamp loader subunit, C-terminal
		IPR013748	Replication factor C
CG1119	Rfc 140	IPR001357	BRCT
		IPR003593	AAA+ ATPase, core
		IPR003959	AAA ATPase, core
		IPR012178	DNA replication factor C, large subunit
		IPR013725	DNA replication factor RFC1, C-terminal
		IPR008921	DNA polymerase III clamp loader subunit, C-terminal
CG6258	Rfc 38kD subunit	IPR003593	AAA+ ATPase, core
		IPR008921	DNA polymerase III clamp loader subunit, C-terminal
		IPR013748	Replication factor C
ISOCYTRATE DEHYDROGENASE (IPR001804)			

CG5028		IPR001804	Isocitrate/isopropylmalate dehydrogenase
		IPR004434	Isocitrate dehydrogenase NAD-dependent, mitochondrial
CG6439	Isocitrate Dehydrogenase	IPR001804	Isocitrate/isopropylmalate dehydrogenase
		IPR004434	Isocitrate dehydrogenase NAD-dependent, mitochondrial
CG32026		IPR001804	Isocitrate/isopropylmalate dehydrogenase
LIPID TRANSPORT (IPR001747)			
CG15828		IPR001747	Lipid transport protein, N-terminal
		IPR001846	von Willebrand factor, type D
		IPR009454	Lipid transport, open beta-sheet
		IPR011030	Vitellinogen, superhelical
		IPR015816	Vitellinogen, beta-sheet N-terminal
		IPR015817	Vitellinogen, open beta-sheet, subdomain 1
		IPR015819	Lipid transport protein, beta-sheet shell
		IPR014853	Region of Unknown Function DUF1787
		IPR015255	Vitellinogen, open beta-sheet
CG11064	Retinoid Fatty Acid Binding Protein	IPR015817	Vitellinogen, open beta-sheet, subdomain 1
		IPR015819	Lipid transport protein, beta-sheet shell
		IPR001747	Lipid transport protein, N-terminal
		IPR001846	von Willebrand factor, type D
		IPR009454	Lipid transport, open beta-sheet
		IPR011030	Vitellinogen, superhelical
		IPR015255	Vitellinogen, open beta-sheet
THIOLASE (IPR002155)			
CG10932		IPR002155	Thiolase
		IPR016038	Thiolase-like, subgroup
		IPR016039	Thiolase-like
CG4581	Thiolase	IPR002155	Thiolase

		IPR016038	Thiolase-like, subgroup
		IPR016039	Thiolase-like
CG4600	yippee interacting protein 2	IPR002155	Thiolase
		IPR016039	Thiolase-like
		IPR016038	Thiolase-like, subgroup
IMMUNOGLOBULIN DOMAIN (IPR013098)			
CG18242/	D-Titin	IPR001452	Src homology-3
CG1915		IPR003598	Immunoglobulin subtype 2
		IPR003599	Immunoglobulin subtype
		IPR003961	Fibronectin, type III
		IPR007110	Immunoglobulin-like
		IPR008957	Fibronectin, type III-like fold
		IPR010939	Protein of Unknown function DUF1136
		IPR013098	Immunoglobulin I-set
		IPR013151	Immunoglobulin
		IPR013026	Tetratricopeptide region
		IPR013783	Immunoglobulin-like fold
		IPR000219	Dbl homology (DH) domain
CG10443	Leukocyte-antigen-related-like/Ptp38A	IPR000242	Protein-tyrosine phosphatase, receptor/non-receptor type
		IPR000387	Protein-tyrosine phosphatase
		IPR003598	Immunoglobulin subtype 2
		IPR003961	Fibronectin, type III
		IPR003962	Fibronectin, type III subdomain
		IPR007110	Immunoglobulin-like
		IPR008957	Fibronectin, type III-like fold
		IPR013098	Immunoglobulin I-set
		IPR013151	Immunoglobulin
		IPR013783	Immunoglobulin-like fold
		IPR016130	Protein-tyrosine phosphatase, active site

RNAPol Rbp3/11 DIMERISATION DOMAIN (IPR011261)			
CG3756		IPR009025	DNA-directed RNA polymerase, RBP11-like
		IPR011261	DNA-directed RNA polymerase, dimerisation
		IPR011262	DNA-directed RNA polymerase, insert
		IPR011263	DNA-directed RNA polymerase, RpoA/D/Rpb3-type
CG7885	RNA Pol II 33kD subunit	IPR001514	DNA-directed RNA polymerase, 30-40 kDa subunit, conserved site
		IPR009025	DNA-directed RNA polymerase, RBP11-like
		IPR011261	DNA-directed RNA polymerase, dimerisation
		IPR011263	DNA-directed RNA polymerase, RpoA/D/Rpb3-type
RNA SYNTHETASE (IPR004364, IPR004365)			
CG12141	Lysyl-tRNA synthetase (Aats-Lys)	IPR002313	Lysyl-tRNA synthetase, class II
		IPR004364	Aminoacyl-tRNA synthetase, class II (D, K and N)
		IPR004365	Nucleic acid binding, OB-fold, tRNA/helicase-type
		IPR006195	Aminoacyl-tRNA synthetase, class II
		IPR012340	Nucleic acid-binding, OB-fold
		IPR016027	Nucleic acid-binding, OB-fold-like
CG3821	Aspartyl-tRNA synthetase	IPR002312	Aspartyl-tRNA synthetase, class IIb
		IPR004364	Aminoacyl-tRNA synthetase, class II (D, K and N)
		IPR004365	Nucleic acid binding, OB-fold, tRNA/helicase-type
		IPR004523	Aspartyl-tRNA synthetase, class IIb, archaea/euk type
		IPR006195	Aminoacyl-tRNA synthetase, class II
		IPR012340	Nucleic acid-binding, OB-fold
		IPR016027	Nucleic acid-binding, OB-fold-like
CYCLOPHILIN (IPR002130)			
CG2852		IPR002130	Peptidyl-prolyl cis-trans isomerase, cyclophilin-type
		IPR015891	Cyclophilin-like
CG9916	Cyclophilin 1	IPR002130	Peptidyl-prolyl cis-trans isomerase, cyclophilin-type

		IPR015891	Cyclophilin-like
TIP49 DOMAIN (IPR010339)			
CG9750	Reptin	IPR003593	AAA+ ATPase, core
		IPR010339	TIP49, C-terminal
CG4003	Pontin	IPR003593	AAA+ ATPase, core
		IPR003959	AAA ATPase, core
		IPR010339	TIP49, C-terminal
UNKNOWN/MULTIPLE DOMAINS			
CG5792		IPR010916	TonB box, conserved site
		IPR012981	Nop17p
CG5787		IPR009502	Secretion monitor precursor protein
CG6450	Lava Lamp	IPR009053	Prefoldin
CG10212	SMC2	IPR003395	RecF/RecN/SMC protein, N-terminal
		IPR003439	ABC transporter-like
		IPR010935	SMCs flexible hinge
CG6944	Lamin	IPR001322	Intermediate filament, C-terminal
		IPR001664	Intermediate filament protein
		IPR016044	Filament
CG12819	Slender Lobes	IPR009477	Protein of Unknown Function DUF1098
CG34417		IPR001715	Calponin-like actin-binding
		IPR004829	Cell surface antigen
		IPR016146	Calponin-homology
CG6384	CP190	IPR000210	BTB/POZ-like

		IPR000210	BTB/POZ-like
		IPR000886	Endoplasmic reticulum, targeting sequence
		IPR007087	Zinc finger, C2H2-type
		IPR013069	BTB/POZ
		IPR011333	BTB/POZ fold
		IPR015880	Zinc finger, C2H2-like
CG3696	Kismet	IPR000330	SNF2-related
		IPR000953	Chromo domain
		IPR001650	DNA/RNA helicase, C-terminal
		IPR006576	BRK
		IPR014001	DEAD-like helicase, N-terminal
		IPR014021	Helicase, superfamily 1 and 2, ATP-binding
		IPR016197	Chromo domain-like
CG9765	D-TACC	IPR007707	Transforming acidic coiled-coil-containing