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Review

Cell division symmetry control and cancer stem cells

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Table S1. Genes encoding polarity and fate-determinant proteins involved in asymmetric cell division.

C. elegans ¹	D. melanogaster ¹	Mammals ¹	Description ²	Associated with/ Interactors ³	Cellular Localization (mammalian cell) ⁴
par-1	par-1	MARK1/2/3/4	Serine/threonine protein kinase	microtubule-associated protein MAPT/TAU	cell membrane, peripheral and lateral, cytoplasm, dendrite
par-2	-	-	RING, Lipid binding domain		
par-3	baz	PARD3	PDZ for membrane, Oligomerization domain at NTD	actin, PARD6	cell junction, adherens junction, cell cortex, endomembrane system,

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C. elegans ¹	D. melanogaster ¹	Mammals ¹	Description ²	Associated with/ Interactors ³	Cellular Localization (mammalian cell) ⁴
par-4	Lkb1	STK11/LKB1	Serine/threonine-protein kinase	STRAD complex	nucleus, mitochondria, cytoplasm, membrane
par-5	14-3-3	YWHA B	14-3-3 domain binding phosphoserine/ phosphothreonine motif	adapter to many proteins	cytoplasm
par-6	par-6	PARD6A/B/G	PB1, CRIB, PDZ	PARD3	cell membrane, centriolar satellite, actin cytoskeleton,centrosome, cytoplasm ,ruffles
pkc-3	aPKC	PRKCI/Z	PB1, AGC-Kinase domain, DAG binding, Zinc finger domain	PARD3, and a PARD6 protein (PARD6A, PARD6B or PARD6G) and a GTPase protein (CDC42 or RAC1), LLGL1,ECT2	cytoplasm, nucleus, membrane
let-413	scrib	SCRIB	LRR and PDZ protein family.	Cadherin, Scrib-APC-beta-catenin complex	nucleoplasm, basolateral plasma membrane, adherens junction, extracellular exosome etc
dlg-1	dlg1	DLG1/2/3/4/5	L27, PDZ, SH3, Membrane associated Guanylate like kinase	Scaffold protein-Scrib, LGL	microtubule, nucleus, golgi, cytosol, basolateral and apical membrane, ER
lgl-1	l(2)gl	LLGL1/2	WD repeat L(2)GL family	Myosin, non-muscle myosin II heavy chain, PRKCI/aPKC, PARD6B/Par-6 and PARD6A.	cortical actin cytoskeleton, golgi,basolateral plasma membrane,
insc-1	Insc	INSC	ARM, PBM, Armadillo- like helical,	PAR complex, Pins, Gai	plasma membrane, cortex
lin5	mud	NUMA1	membrane binding domains, globular head and tail	LGN, Microtubule binding GPSM2 and G(i) alpha proteins	cytoplasm, nucleus, spindle pole, microtubule, midzone, centrosome, golgi
GPR-1/2	pins	GPSM3 (LGN)	TPR domains, GoLoco motifs	Numa, dynein-dynactin, LLGL2, Inscuteable and Par3	cell cortex, lateral cell membrane, centrosome. mitotic spindle pole, cytosol
gpa-3	Gai	GNAI1	Guanine nucleotide- binding protein G(i) subunit alpha-1	dynein-dynactin	heterotrimeric G-protein complex, centrosome, nucleus, cell cortex, midbody, cytoplasm
let-99		DEPDC1	DEP domain-containing protein 1A chain, Rho- GAP	ZNF224 complex	nucleus

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C. elegans ¹	D. melanogaster ¹	Mammals ¹	Description ²	Associated with/ Interactors ³	Cellular Localization (mammalian cell) ⁴
air-2	aurA	AURKA	Serine/threonine protein kinase	ARHGEF2, BORA, BRCA1, CDC25B, DLGP5, HDAC6, KIF2A, LATS2, NDEL1, PARD3, PPP1R2, PLK1, RASSF1, TACC3, p53/TP53 and TPX2	centriole, centrosome, spindle midzone, spindle microtubule, mitotic spindle pole, nucleoplasm, centromeric region, nucleus
num-1	numb	Numb	Protein, PH-like domain superfamily	α -catenin, cadherin	focal adhesion, early endosome, basolateral plasma membrane, cytoplasm
	Brat	Trim32	E3 ubiquitin ligase-Zinc finger, NHL repeats	Tau, myosin, ubiquitin, tat, RNA	localized in cytoplasmic bodies, often located around the nucleus.
	Brat	Trim3	Ubiquitin ligase-Zinc finger protein, NHL repeats	myosin and α -actinin-4	golgi, early endosome, cytoplasm, dendrite
	Prospero	PROX1	Prospero homeobox protein 1	DNA binding	nucleus, nuclear chromatin, cytoplasm,
	Stau(Staufen)	STAU1	DRBM domain, tubulin binding domain (TBD)	Double-stranded RNA-binding protein	endoplasmic reticulum, cytoplasm
msi-1	Msi (Musashi)	MSI1/2	RNA recognition motif (RRM) domains	RNA binding protein	cytoplasm, nucleus, ribonuclear protein complex
	Mira (Miranda)		Disordered, coiled coil	Myosin binding, adapter protein	
crb-1	Crb(Crumbs)	CRB1/2/3	EGF-like domain, laminin A globular-like domain, FBM, PBM	Par3, PKC, Part of Crumbs complex	microvilli in Müller glial cells, apical plasma membrane that abuts the adherens junctions in epithelia and photoreceptor cells
-	Sdt (Stardust)	MPP5 (PALS1)	Lin27, PDZ, SH3, HOOK, GUK	Part of Crumbs complex	

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C. elegans ¹	D. melanogaster ¹	Mammals ¹	Description ²	Associated with/ Interactors ³	Cellular Localization (mammalian cell) ⁴
-	Patj	<i>PATJ</i> (INADL)	L27, PDZ	Part of Crumbs complex	
Pig-1		MELK	Serine/threonine protein kinase	myosin, anillin	cytoplasm, cortex

Notes: ¹Gene symbols according to species, commonly used synonyms in paenthesis.²Domain abbreviations: PB1 (Phox and Bem1), CRIB (Cdc42- and Racinteractive binding), DAG binding (diacylglycerol binding), PBM (PDZ-domain binding), GUK (guanylate kinase), YWHAB (tyrosine 3monooxygenase/tryptophan 5-monooxygenase activation protein beta), RING-finger (really interesting new gene), PH (pleckstrin homology), DH (Dbl homology), C1 (protein kinase C conserved region 1), SH2 (Src homology 2), SCRIB (scribble planar cell polarity protein), DLG1 (discs large MAGUK scaffold protein 1), mud (mushroom body defect), pins (partner of inscuteable), FBM (FERM-binding motif), LRR (Leucine-rich repeat), DRBM (double-stranded RNAbinding), TRIM (Tripartite motif-containing protein), Pals1 (protein associated with lin seven 1), Patj (Pals1-associated tight junction protein). ^{3 & 4}Data taken from Uniprot-https://www.uniprot.org/.



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