Cdc37 interacting proteins

(other than Hsp90)

Clients	Interaction	Reference	Evidence
ABL1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ACVR1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ACVR1B	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ACVR1C	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ACVR2B	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ADRBK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
AKT (Protein Kinase B)	Biochemical	Basso et al. (2002) J. Biol. Chem. 277: 39858	Endogenous Akt IPs with Hsp90 and Cdc37. Cdc37 can bind Akt directly, not affected by Hsp90 inhibitors.
ALK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
AMHR2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Androgen receptor	Genetic	Fliss et al. (1997) Mol. Biol. Cell 8: 2501	Yeast *cdc37-34* has decreased activation of heterologous AR
	Biochemical	Rao et al.(2001) J. Biol. Chem. 276: 5814	Human Cdc37 binds to ligand-binding domain of AR in vitro, partially Hsp90-dependent. N-terminal domain (1-173) is dominant negative
AURKC	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Aurora kinase B	Genetic & Biochemical	Lange et al. (2002) EMBO J. 21: 5364	Mammalian & Drosophila Cdc37, inactivation of Hsp90 or Cdc37 reduces Aurora B levels, Aurora B or Cdc37 RNAi phenotypes are almost indistinguishable. Co-IP
AXL	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ß-Galactosidase	Biochemical	Kimura et al. (1997) Genes & Dev. 11: 1775	in vitro chaperone assay with yeast Cdc37
B-Raf	Biochemical	Vaughan et al. (2006) Mol. Cell 23: 697; Grbovic et al. (2006) Proc. Natl. Acad. Sci. USA 103, 57	Co-IP
BLK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
BMP2K	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
BMPR1A	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
BMX	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
BTK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Cak1	Genetic	Mort-Bontemps-Soret et al. (2002) Mol. Genet. Genomics 267: 447	Synthetic lethal screen
	Genetic	Farrell & Morgan (2000) Mol. Cell. Biol. 20: 749	Yeast c*dc37-1* has reduced Cak1 level and activity. Cdc37 stabilises Cak1 after translation
	Biochemical	Polier et al. (2013) Nat. Chem. Biol. 9: 307	gel filtration
CAMK1G	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CAMK2A	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CAMK2B	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CAMK2D	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CAMK2G	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CAMK4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CAMKK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CAMKK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CAMKV	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Cdc15	Genetic	S. cerevisiae: Mort-Bontemps-Soret et al. (2002) Mol. Genet. Genomics 267: 447 / S. pombe (=Cdc7) Liang and Fantes (2007) Euk. Cell 6: 1089	Synthetic lethal screen (and kinase assay in S. pombe)
Cdc2	Genetic & Biochemical	Turnbull et al. (2006) J. Cell Sci. 119: 292	S. pombe Cdc2 fails to associate with cyclin in cdc37 mutant strain; genetic interactions and co-IP.
	Biochemical	García-Morales et al. (2007) Oncogene 26: 7185	Mammalian co-IP
Cdc5	Genetic	Mort-Bontemps-Soret et al. (2002) Mol. Genet. Genomics 267: 447	Synthetic lethal screen
Cdc7	Genetic	Mort-Bontemps-Soret et al. (2002) Mol. Genet. Genomics 267: 447	Synthetic lethal screen
Cdc25c	Biochemical	García-Morales et al. (2007) Oncogene 26: 7185	Co-IP in mammalian cells
Cdc28	Genetic	Gerber et al. (1995) Proc. Natl. Acad. Sci. USA 92: 4651	Yeast *cdc37-1* mutant affects Cdc28/cyclin complex formation and function
	Genetic	Farrell & Morgan (2000) Mol. Cell. Biol. 20: 749	Yeast Cdc37 stabilises Cdc28 after translation
	Genetic & Biochemical	Mort-Bontemps-Soret et al. (2002) Mol. Genet. Genomics 267: 447	Yeast *CDC37* is a multi-copy suppressor of *cdc28*. yeast two-hybrid interaction between Cdc37 C-terminus and Cdc28 N-terminus
Cdk2	Biochemical	Prince et a. (2005) Biochem. 44: 15287	pull-down assays
Cdk4	Biochemical	Dai et al. (1996) J. Biol. Chem. 271: 22030	Immunoprecipitation with mammalian Cdc37 and Hsp90
	Biochemical	Stepanova et al. (1996) Genes & Dev. 10: 1491	Mammalian co-IP (preferentially without cyclin) with Hsp90
		Stepanova et al. (2000) Mol. Cell. Biol. 20: 4462	CDC37 transgenic mice develop mammary tumours, i.e. can function as an oncogene. Can co-operate with Cyclin D1 or with c-myc in transformation of tissue. See also Schwarze et al. (2003) Cancer Res. 63: 4614.
	Biochemical	Lamphere et al. (1997) Oncogene 14: 1999	Yeast 2-hybrid with human Cdc37. GST-Cdc37 co-IP
Cdk6	Biochemical	Lamphere et al. (1997) Oncogene 14: 1999	GST-Cdc37 co-IP
Cdk9	Biochemical	O'Keeffe et al. (2000) J. Biol. Chem. 275: 279	co-IP with Cdk9 before assembly with cyclin T1
CDK10	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Cdk11	Biochemical	Mikolajczyk and Nelson (2004) Biochem. J. 384: 461	co-IP
CDK11A	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CDK14	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CDK15	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CDK17	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CDK18	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CDK19	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CDK20	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CDKL4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CHEK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CKII (casein kinase II)	Genetic	McCann & Glover (1995) Mol. Biol. Cell (Supp.) 6: 133a	Multi-copy suppressor
	Biochemical	Kimura et al. (1997) Genes & Dev. 11: 1775	in vitro chaperone assay with yeast Cdc37
	Genetic	Bandhakavi et al. (2003) J. Biol. Chem. 278:2829	Cdc37 required for CKII function and CKII for Cdc37 phosphorylation
CLK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CLK3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay

Crk1	Genetic & Biochemical	Ni et al. (2004) FEBS Lett. 561: 233	Candida Crk1; 2-hybrid, co-IP, and genetic evidence.
CSF1R	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
CSNK1D	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
DAPK	Biochemical	Citri et al. (2006) J. Biol. Chem. 281: 14361	co-IP
DAPK3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
DCLK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
DDR1	Biochemical	Wu et al. (2012) Mol. Cell. Proteomics 11: M111.016675	co-IP
DDR2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
DMPK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
DPF1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
DSTYK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
DUS3L	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
DYRK1A	Biochemical	Sonamoto et al. (2015) Sci. Rep. 5:12728	Luciferase interaction assay
DYRK1B	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
DYRK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
DYRK4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
EGF receptor mutant	Biochemical	Lavictoire et al. (2003) J. Biol. Chem. 278: 5292	co-IP
EIF2AK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ELK3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
EPHA1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
EPHA10	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
EPHA2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
EPHA4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
EPHB1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
EPHB6	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ERBB2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ERBB3	Biochemical	Taipale et al. (2012) Cell 150:987; Liu and Landgraf (2015) Biochem. 54: 1493	LUMIER assay
ERBB4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ERN1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
FASTK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
FER	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
FES	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
FGF receptor 3	Biochemical	Laederich et al. (2011) J. Biol. Chem. 286: 19597	co-IP
FGFR1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
FGR	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
FLT3-ITD	Biochemical	Kancha et al. (2013) PLoS ONE 8:e68394	co-IP
FLT4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
FOP2-FGFR1	Biochemical	Jin et al. (2011) Cell. Signal. 23: 1758	co-IP
FRK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Fused	Biochemical	Kise et al. (2006) Biochem. Biophys. Res. Com. 351: 78	co-IP
FYN	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Gcn2	Genetic	Donzé & Picard (1999) Mol. Cell. Biol. 19: 8422	*cdc37* mutant yeast strain grows poorly upon amino acid starvation
Glucocorticoid receptor	Genetic	Fliss et al. (1997) Mol. Biol. Cell 8: 2501	Yeast *cdc37-34* has slightly decreased activation of heterologous GR at non-permissive temperature.
GRK4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
GRK6	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
GRK7	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
GSG2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
GSK3A	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
GTF2F1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Harc	Biochemical	Roiniotis et al. (2005) Biochem. 44: 6662	Harc and Cdc37 form both homodimers and heterodimers
HCK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Hck (src family kinase)	Genetic & Biochemical	Scholz et al. (2000) Mol. Cell. Biol. 20: 6984	Human Cdc37 overexpression partially suppresses tsHck499F phenotype, co-IP, Hck kinase domain necessary for binding
HIPK4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Hog1	Genetic & Biochemical	Hawle et al. (2007) Eukaryot. Cell 6: 521	Hog1 function affected by Cdc37 phosphorylation mutant in yeast; co-IP
HRI	Biochemical	Hartson et al. (2000) Biochem. 39: 7631	Human Cdc37 co-IP, maturation intermediates of HRI recruit Cdc37 to Hsp90 heterocomplex
	Biochemical	Shao et al. (2001) J. Biol. Chem. 276: 206	Human Cdc37 associates with nascent HRI co-translationally and persists during maturation and activation, specifically with immature or inactive forms and not with active or repressed forms
ICK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
IGF1R	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
IKK (IκB kinase)	Biochemical	Chen et al. (2002) Mol. Cell 9: 401; Bouwmeester et al. (2004) Nat. Cell Biol. 6:97	Human Cdc37 co-IP, in vitro pull downs, direct binding through the kinase domain. Geldanamycin disrupts complex formation and recruitment to receptor.
Insulin receptor	Cell-based assay	Huang and Wang (2018) Stem Cell Reports 11:883	by BiFC and PLA assays in Drosophila cells
INSRR	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
IRAK-1	Biochemical	De Nardo et al. (2005) J. Biol. Chem. 280: 9813	co-IP
IRAK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
IRAK3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Ire1α	Biochemical	Ota et al. (2012) J. Biol. Chem. 287: 6266	co-IP
ITK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
JAK1	Biochemical	Shang and Tomasi (2006) J. Biol. Chem. 281: 1876	co-IP
Kin28	Genetic	Valay et al. (1995) J. Mol. Biol. 249: 535	Synthetic lethal
KIT	Biochemical	Mariño-Enríquez et al. (2013) Oncogene doi:10.1038/onc.2013.127	co-IP
Ksr	Biochemical	Sundaram et al. (1999) Mol. Cell. Biol. 19: 5523	part of a larger chaperone complex
KSR2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Lck (src family kinase)	Biochemical	Hartson et al. (2000) Biochem. 39: 7631	Co-IP with human Cdc37
LIMK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
LIMK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay

Lkb1	Biochemical	Boudeau et al. (2003) Biochem. J. 370: 849; Nony et al. (2003) Oncogene 22: 9165; Gaude et al. (2012) Oncogene 31: 1582	Co-IP
LMX1B	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
LRRK2	Biochemical	Gloeckner et al. (2006) Hum. Mol. Genet. 15: 223; Wang et al. (2008) J. Neurosci. 28: 3384.	co-IP
Luciferase (firefly)	Biochemical	Kimura et al. (1997) Genes & Dev. 11: 1775	in vitro chaperone assay with yeast Cdc37
LYN	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP2K5	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP2K6	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP2K7	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP3K12	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP3K15	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP3K2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP3K5	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP3K6	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP3K8	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP3K9	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP4K1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP4K2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAP4K4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAPK13	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAPK3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAPK4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAPK7	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MAST2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MATK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MEF2B	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MEKK1/MEKK3	Biochemical	Bouwmeester et al. (2004) Nat. Cell Biol. 6:97	TAP purification
MERTK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MINK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MLK3	Biochemical	Zhang et al. (2004) J. Biol. Chem. 279: 19457	co-IP
MOS	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MPS1	Genetic	Schutz et al. (1997) J. Cell Biol. 136: 969	multi-copy suppressor of *mps1-1* & synthetic lethal (with *cdc37-1*)
MRPL28	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MUSK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MYLK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MYLK3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MYLK4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
MYO3B	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
NEK11	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
NEK8	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
NEK9	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
NIK	Biochemical	Bouwmeester et al. (2004) Nat. Cell Biol. 6:97	TAP purification
NLK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
NOC4L	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
NPR2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
NRBP1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
NTRK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
NTRK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
NTRK3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
P protein of rabies	Biochemical	Xu et al. (2016) Sci. Rep. 6:27123	co-IP
p38	Biochemical	Ota et al. (2010) Circ. Res. 106:1404	Interaction of recombinant proteins
PAK6	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PAK7	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PASK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PDGF receptor α	Biochemical	Matei et al. (2007) J. Biol. Chem. 282:445	co-IP
PDGFRA	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PDGFRB	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PDIK1L	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PDPK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PHKG2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PIM1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PIM2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PIM3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Pink1	Biochemical	Weihofen et al. (2008) Hum. Mol. Genet. 17:602	co-IP
PITX2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PKC (all types)	Biochemical	Gould et al. (2009) J. Biol. Chem. 284: 4921	co-IP
PKCλ	Biochemical	Brajenovic et al. (2004) J. Biol. Chem. 279: 12804	TAP purification
PKMYT1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PKN1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PKN2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKAA2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKACA	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKACG	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKCA	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKCB	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKCE	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKCG	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKCH	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKCQ	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKCZ	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKD1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKD2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKG2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKX	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PRKY	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PSKH1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PSKH2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PTK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay

PTK2B	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
PTK6	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Raf	Biochemical	Perdew et al. (1997) Biochem. 36: 3600	Mammalian Cdc37 IP
	Biochemical	Stancato et al. (1993) J. Biol. Chem. 268: 21711; Wartmann & Davis (1994) J. Biol. Chem. 269: 6695	Mammalian Cdc37 IP, and Hsp90
	Biochemical	Silverstein et al. (1998) J. Biol. Chem. 273: 20090	Mammalian Cdc37 co-IP, Cdc37 directly binds Raf kinase domain, separate from TPR domain protein heterocomplexes
	Biochemical	Grammatikakis et al. (1999) Mol. Cell. Biol. 19: 1661	Human Cdc37 co-IP, N-terminus of Cdc37 binds Raf1, C-terminus of Cdc37 binds Hsp90, N-terminal 1-163 is dominant negative for Raf activation
RET/PTC1	Biochemical	Marsee et al. (2004) J. Biol. Chem. 279: 43990	co-IP
Reverse Transcriptase (Hepadnavirus)	Biochemical	Wang et al. (2002) J. Biol. Chem. 277: 24361	Human Cdc37 IP and pull downs, specific, direct binding in vitro and in vivo, and C-termally truncated Cdc37 bound more strongly
RIPK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
RIPK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
RIPK3	Biochemical	Li et al. (2015) PNAS 112:5017	co-IP
ROR2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
RPS6KA1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
RPS6KA2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
RPS6KA3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
RPS6KA4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
RPS6KA5	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
RPS6KA6	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
RPS6KC1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Ryk	Biochemical	Lyu et al. (2009) J. Biol. Chem. 284: 12940	co-IP
Sevenless	Genetic	Cutforth & Rubin (1994) Cell 77: 1027	In Drosophila a genetic link between Sevenless signaling & CDC37, HSP83 & CDC37, p34cdc2 & CDC37
SGK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
SGK223	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
SGK3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
SIK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
SLK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Slt2	Genetic & Biochemical	Hawle et al. (2007) Eukaryot. Cell 6: 521	Hog1 function affected by Cdc37 phosphorylation mutant in yeast; co-IP, increased for phosphorylated (activated) form of Slt2
Spc1 (SAPK)	Genetic & Biochemical	Tatebe & Shiozaki (2003) Mol. Cell. Biol. 23: 5132	S. pombe: accumulation and phosphorylation of stress kinase Spc1 is lower in cdc37 mutant; co-IP; Cdc37 requirement may be independent of Hsp90.
Ste11	Genetic & Biochemical	Abbas-Terki et al. (2000) FEBS Lett. 467:111	Cdc37 mutant has low Ste11 activity. Pull downs and co-IP
STK16	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
STK3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
STK32A	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
STK32B	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
STK32C	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
STK33	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
STK38	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
STK38L	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
STYK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TAK1	Biochemical	Bouwmeester et al. (2004) Nat. Cell Biol. 6:97	TAP purification
TAOK3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Tau	Biochemical	Jinwal et al. (2011) J. Biol. Chem. 286: 16976	Co-IP
TBK1	Biochemical	Bouwmeester et al. (2004) Nat. Cell Biol. 6:97	TAP purification
TDP-43	Biochemical	Jinwal et al. (2012) J. Biol. Chem. 287:24811	Co-IP
TESK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TESK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TGFβRI and II	Biochemical	Datta et al. (2015) Cell Signal. 27:2410	Co-IP
TIE1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TNK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TNK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TNNI3K	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TP53RK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TSSK1B	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TSSK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TSSK3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TSSK6	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TUT1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TYK2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
TYRO3	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
UHMK1	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ULK1	Biochemical	Behrends et al. (2010) Nature 466: 68	Co-IP
ULK2	Biochemical	Behrends et al. (2010) Nature 466: 69	Co-IP
Vav3	Biochemical	Wu et al. (2013) J. Biol. Chem. 288: 5463	Co-IP
v-Src	Biochemical	Brugge (1986) Curr. Top. Microbiol. Immunol. 123: 1	Mammalian Cdc37 co-IP, with Hsp90
	Genetic	Dey et al. (1996) Mol. Biol. Cell 7: 1405	Yeast *cdc37-34* & *cdc37-17* mutants have decreased src activity but protein level unaffected
	Genetic	Kimura et al. (1997) Genes & Dev. 11: 1775	Yeast *cdc37-1* had decreased src activity. Genetic link between *HSC82* & *HSP82* with *CDC37*
	Biochemical	Perdew et al. (1997) Biochem. 36: 3600	Mammalian Cdc37 IP
VSX2	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
WNK4	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
Ydj1	Genetic	Mort-Bontemps-Soret et al. (2002) Mol. Genet. Genomics 267: 447	Synthetic lethal screen
YES	Genetic	Xu et al. (2012) Mol. Cell 47:434	main tyrosine kinase of Cdc37
ZAK	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ZAP70	Genetic	Matsuda et al. (1999) J. Biol. Chem. 274: 34515	Rat Cdc37 overexpression restores expression of ZAP70 mutant (protein tyrosine kinase involved in signal transduction throught the T-cell receptor)
ZBTB40	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ZGPAT	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ZNF334	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ZNF569	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay

ZNF587	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ZNF610	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay
ZNF843	Biochemical	Taipale et al. (2012) Cell 150:987	LUMIER assay

A non-proteinaceous interactor

Hyaluronan (glycosaminoglycan)	Biochemical	Grammatikakis et al. (1995) J. Biol. Chem. 270: 16198	immunoscreen for hyaluronan-binding proteins identified chicken Cdc37 homologue. Cdc37 contains glycosaminoglycan-binding motif

Hsp90 co-chaperones		Reference	Evidence
Sti1/Hop		Hartson et al. (2000) Biochem. 39: 7631	Very small fraction of Cdc37 appeared as a constituent of mammalian Hop machinery
		Abbas-Terki et al. (2002) Biol. Chem. 383: 1335	In yeast *cdc37-34* and *Δsti1* are synthetically lethal, Sti1 binds GST-Cdc37 in vitro, endogenous proteins co-IP, can interact directly in the absence of Hsp90
FKBP52		Hartson et al. (2000) Biochem. 39: 7631	Cdc37 associates with FKBP52-containing heterocomplexes
FKBP51	Biochemical	Taipale et al. (2014) Cell 158: 434	Co-IP and LUMIER assay
PP5		Shao et al. (2002) Biochem. 41: 6770	PP5 coexists with Cdc37 within Hsp90 heterocomplexes (containing immature HRI), PP5-HRI interaction is mediated through Hsp90
Cyclophilin-40/Cpr7		Hartson et al. (2000) Biochem. 39: 7631	Cdc37 associates with Cyclophilin-40 containing heterocomplexes in retic. lysate
		Abbas-Terki et al. (2002) Biol. Chem. 383: 1335	Endogenous Cdc37 co-IPs with GST-Cpr7 in yeast
p23		Hartson et al. (2000) Biochem. 39: 7631	Small fraction of human Cdc37 pool coadsorbs with anti-p23. p23 occurs in one or more preexisting heterocomplexes with Cdc37. Cdc37 & p23 interaction not direct (via Hsp90)

For more genetic and biochemical interactions of yeast Cdc37, see http://www.yeastgenome.org; for yeast 2-hybrid interactions of C. elegans Cdc37 (W08F4.8), see Li et al. (2004) Science 303, 540. See also Millson et al. (2004) Cell Stress Chap. 9, 359; for Drosophila http://biodata.mshri.on.ca/fly_grid/servlet/SearchPage.

For survey of *CDC37* requirement for kinome (differentially for protection of nascent chains and folding) in yeast, see Mandal et al. (2007) J. Cell Biol. 176, 319, and for mammalian cells, see Taipale et al. (2012) Cell 150, 987. Global CDC37 network, see Taipale et al. (2014) Cell 158, 434.

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