

STable 4. 101 activity-depednent *dPum* regulators

101 genes	Flybase_ID	VDRC	gene name	human orthologs	FF/Ren ratio	Relative recovery time
			<i>para^{bss}</i> Control			1.00
CG2259	FBgn0040319	33512	Glutamate-cysteine ligase catalytic subunit	GCLC	0.48	0.16
CG7574	FBgn0026263	26106	bip1	-	0.67	0.27
CG4561	FBgn0027080	105615	Tyrosyl-tRNA synthetase	YARS, AIMP1	0.57	0.28
CG8922	FBgn0002590	101472	Ribosomal protein S5a	MRPS7, RPS5	0.69	0.34
CG13630	FBgn0039219	107078	unknown gene (CG13630)	METAP1D, METAP1	0.65	0.36
CG5543	FBgn0034908	27454	unknown gene (CG5543)	WDR70	0.36	0.37
CG12749	FBgn0004237	51759	Heterogeneous nuclear ribonucleoprotein at 87B	MSI1, HNRNPA1L2, DAZAP1, SRSF10, BOLL	0.20	0.38
CG33202	FBgn0053202	4797	defective proboscis extension response 11	KIRREL, KIRREL3, IGSF9B, KIRREL2, USH2A	0.62	0.39
CG9750	FBgn0040075	19021	reptin	RUVBL2, RUVBL1, SCCPDH	0.32	0.39
CG4022	FBgn0035986	26359	unknown gene (CG4022)	PIH1D2	0.59	0.40
CG7393	FBgn0024846	108099	p38b MAP kinase	MAPK7, MAPK12, MAPK1, MAPK14, MAPK11	0.57	0.42
CG5650	FBgn0004103	35025	Protein phosphatase 1 at 87B	PPP1CC, PPP1CA, PPP1CB	0.60	0.43
CG31671	FBgn0031390	25793	tho2	THOC2, ZC3H13	0.62	0.43
CG17800	FBgn0033159	25623	Down syndrome cell adhesion molecule 1	PTPRU, MYLK4, PTPRM, DSCAML1, IL12RB2	0.56	0.44
CG6824	FBgn0003028	41584	ovo	OVOL3, ZNF770, OVOL2, ZNF131, REST, OV	0.62	0.44
CG7808	FBgn0039713	35277	Ribosomal protein S8	RPS8	0.61	0.45
CG15899	FBgn0264386	31961	Ca ²⁺ -channel protein alpha1 subunit T	CACNA1G, CATSPER1, CACNA1I, CACNA1H	0.58	0.47
CG11981	FBgn0026380	31608	Proteasome beta3 subunit	PSMB3	0.45	0.48
CG9900	FBgn0004643	24171	Zeste-white 10	ZW10	0.64	0.48
CG5151	FBgn0036576	27363	unknown gene (CG5151)	LDLRAD4	0.50	0.48
CG15319	FBgn0261617	102885	nejire	CREBBP, EP300	0.54	0.49
CG5371	FBgn0011703	15683	Ribonucleoside diphosphate reductase large su	RRM1	0.56	0.50
CG42314	FBgn0259214	30203	plasma membrane calcium ATPase	ATP2B1, ATP2B3, ATP2B2, ATP2B4	0.69	0.53
CG10361	FBgn0036208	16034	unknown gene (CG10361)	GCAT, ALAS1, NCLN, ALAS2	0.58	0.53
CG18495	FBgn0263121	49681	Proteasome alpha1 subunit	PSMA6	0.49	0.55
CG9983	FBgn0001215	29523	Heterogeneous nuclear ribonucleoprotein at 98B	DAZAP1, SLIRP, HNRNPD, HNRNPA1L2, DAZ	0.13	0.55
CG15218	FBgn0025674	36215	Cyclin K	CCNT1, FAM58A, CCNK, CCNT2	0.21	0.56
CG8392	FBgn0010590	35923	Proteasome beta1 subunit	PSMB9, PSMB6	0.45	0.56
CG2852	FBgn0034753	15069	unknown gene (CG2852)	NKTR, PPIB, RGPD4, RGPD5, PPIAL4A, PPIA	0.66	0.57
CG10938	FBgn0016697	16105	Proteasome alpha5 subunit	PSMA8, PSMA5, PSMA2, PSMA7	0.41	0.58
CG11840	FBgn0031260	7247	Signal peptide peptidase	SPPL2C, SPPL3, HM13	0.65	0.58
CG10809	FBgn0036052	38407	unknown gene (CG10809)	ANKRD46, ANKRD61, ANKRD54	0.59	0.58
CG7671	FBgn0038609	108595	Nucleoporin 43kD	NUP43	0.63	0.58
CG4252	FBgn0004367	11251	meiotic 41	ATR	0.59	0.59
CG42276	FBgn0259171	106959	Phosphodiesterase 9	PDE4D, PDE10A, PDE2A, PDE8B, PDE4C, P	0.54	0.60
CG1163	FBgn0003275	105937	RNA polymerase II 18kD subunit	POLR2F	0.41	0.62
CG5363	FBgn0004106	106130	Cyclin-dependent kinase 1	CDK5, CDK1, CDK18, CDK14, CDK3, CDK15,	0.65	0.62
CG4157	FBgn0028693	21799	Regulatory particle non-ATPase 12	PSMD8	0.53	0.63
CG14788	FBgn0266284	18379	Nucleostemin ortholog (H. sapiens) 3	GNL1, LSG1	0.53	0.63
CG2128	FBgn0025825	20814	Histone deacetylase 3	HDAC3, HDAC1, HDAC2, HDAC8	0.63	0.64
CG10320	FBgn0034645	8837	NADH dehydrogenase (ubiquinone) B12 subuni	NDUFB3	0.57	0.64
CG10682	FBgn0264848	27306	vihar	UBE2U, UBE2C	0.46	0.64
CG4173	FBgn0014029	26413	Septin 2	SEPT9, SEPT12, SEPT5, SEPT4, SEPT10, SE	0.50	0.65
CG10601	FBgn0014343	50133	mirror	TGIF2-C20orf24, MKX, MEIS2, TGIF2LX, IRX5	0.34	0.65
CG32082	FBgn0052082	50019	Insulin receptor substrate 53 kDa	ALG10, PACSIN3, ALG10B, BAIAP2L2, BAIAP	0.56	0.66
CG12113	FBgn0026679	18743	Integrator 4	INTS4	0.56	0.67
CG33129	FBgn0053129	27554	unknown gene (CG33129)	TMEM214	0.59	0.68
CG8190	FBgn0034029	43917	eIF2B-gamma	EIF2B3	0.59	0.68
CG8787	FBgn0261823	107274	Additional sex combs	ASXL1, ASXL3, ASXL2	0.63	0.68
CG7340	FBgn0040493	3175	granny smith	LAP3, NPEPL1	0.21	0.69
CG12249	FBgn0021776	51484	miranda	SLMAP	0.13	0.69
CG3068	FBgn0000147	108446	aurora A	AURKC, AURKB, AURKA	0.67	0.69
CG5986	FBgn0043455	101446	unknown gene (CG5986)	SDE2	0.58	0.69
CG42342	FBgn0259244	24934	unknown gene (CG42342)	COL5A1, COL17A1, COL6A3, COL14A1, COL	0.59	0.69
CG11115	FBgn0037202	49941	Suppressor of Stem-Loop mutation ortholog (S	GTF2H2C_2, GTF2H2C, GTF2H2	0.40	0.71
CG8975	FBgn0011704	7965	Ribonucleoside diphosphate reductase small su	RRM2, RRM2B	0.69	0.73
CG6593	FBgn0003134	105525	Protein phosphatase 1alpha at 96A	PPP1CB, PPP1CA, PPP1CC	0.48	0.78
CG14821	FBgn0035719	not available	target of wingless	C1orf21	0.53	-
CG30382	FBgn0050382	not available	unknown gene (CG30382)	PSMA6	0.44	-
CG31666	FBgn0086758	not available	Chronologically inappropriate morphogenesis	ZBTB12, ZBTB49, ZBTB9, ZBTB10, BACH2, Z	0.66	-
CG5520	FBgn0039562	not available	Glycoprotein 93	HSP90AB1, HSP90AA1, HSP90B1	0.22	-
CG14791	FBgn0025382	not available	Rab27	RAB27B, RAB27A	0.67	-
CG18616	FBgn0260444	not available	unknown gene (CG18616)	CNOT10	0.68	-
CG34186	FBgn0262954	not available	Rpb12	POLR2K	0.40	-

CG1057	FBgn0037262	101488	Mediator complex subunit 31	MED31	0.55	ns
CG12000	FBgn0250746	16381	Proteasome beta7 subunit	PSMB4	0.66	ns
CG13316	FBgn0023215	101991	Mnt	MNT, MXI1, MXD3	0.47	ns
CG13628	FBgn0039218	29253	Rpb10	POLR2L	0.35	ns
CG15862	FBgn0022382	101763	cAMP-dependent protein kinase R2	PRKAR2B, CNBD2, PRKAR1B, PRKAR2A, PR	0.54	ns
CG18009	FBgn0261793	101318	TATA box binding protein-related factor 2	TBPL1, TBPL2, TBP	0.63	ns
CG2252	FBgn0004656	108662	female sterile (1) homeotic	BRDT, BAZ1A, BAZ2B, CECR2, BRD4, CCDC	0.70	ns
CG3127	FBgn0250906	110081	Phosphoglycerate kinase	PGK2, PGK1	0.65	ns
CG3180	FBgn0262955	45960	RNA polymerase II 140kD subunit	POLR3B, POLR2B	0.67	ns
CG42330	FBgn0263219	23488	Down syndrome cell adhesion molecule 4	NRCAM, MYLK4, SPEG, NFASC, DSCAML1, H	0.70	ns
CG4746	FBgn0029003	100700	mab-21	MAB21L1, MAB21L3, MB21D1, C2orf54, TMEM	0.32	ns
CG5669	FBgn0039169	30734	Sp1-like factor for pairing sensitive-silencing	SP9, SP4, SP2, SP5, SP8, KLF10, SP3, SP7, S	0.61	ns
CG6050	FBgn0024556	48981	Elongation factor Tu mitochondrial	TUFM	0.53	ns
CG7564	FBgn0036734	100562	unknown gene (CG7564)	LUC7L2, LUC7L3, LUC7L	0.49	ns
CG7764	FBgn0261109	12596	marionette	GTF2H4	0.57	ns
CG7977	FBgn0026372	101337	Ribosomal protein L23A	RPL23A	0.56	ns
CG8151	FBgn0033929	12580	TFB1 ortholog (S. cerevisiae)	GTF2H1	0.44	ns
CG8542	FBgn0001220	106236	Heat shock protein cognate 5	HSPA9	0.54	ns
CG10281	FBgn0010282	110225	Transcription factor IIFalpha	GTF2F1	0.26	ns
CG10377	FBgn0004838	101555	Heterogeneous nuclear ribonucleoprotein at 270	HNRNPA3, HNRNPA0, HNRNPA2B1, HNRNP	0.50	ns
CG11103	FBgn0030522	110763	unknown gene (CG11103)	TM2D2	0.69	ns
CG14981	FBgn0035473	109502	maggie	TOMM22	0.49	ns
CG32743	FBgn0263968	41988	no-on-and-no-off transient C	BOLA2-SMG1P6, BOLA2B, BOLA2, PRKDC, N	0.44	ns
CG33106	FBgn0043884	103411	multiple ankyrin repeats single KH domain	ANKRD17, ANKRD22, ANKHD1-EIF4EBP3, AN	0.19	ns
CG3710	FBgn0010422	22979	RNA polymerase II elongation factor	MED26, TCEANC2, TCEA3, TCEA2, TCEANC	0.47	ns
CG3756	FBgn0031657	15675	unknown gene (CG3756)	POLR1C	0.70	ns
CG3931	FBgn0034879	102375	Rrp4	EXOSC2	0.68	ns
CG4097	FBgn0002284	105673	Proteasome beta6 subunit	PSMB1	0.57	ns
CG42273	FBgn0259168	107066	minibrain	DYRK4, DYRK3, DYRK2, DYRK1A, HIPK1, HIF	0.58	ns
CG4319	FBgn0011706	12045	reaper	TSC1, RIN1	0.68	ns
CG6323	FBgn0039465	109600	Tetraspanin 97E	TSPAN13, TSPAN31	0.64	ns
CG7903	FBgn0039730	106475	unknown gene (CG7903)	RBM4, ADK, RBM14	0.56	ns
CG9412	FBgn0015778	109911	rasputin	G3BP2, G3BP1	0.65	ns
CG9819	FBgn0267912	109858	CanA-14F	PPP3CA, PPP3CB, PPP3CC	0.62	ns
CG1528	FBgn0028968	25101	Coat Protein (coatomer) gamma	COPG2, COPG1	0.67	sterile
CG2009	FBgn0026262	48036	bip2	ING4, TAF8, ING2, ING3, ING1, ING5, TAF3	0.68	sterile
CG5949	FBgn0263600	41027	DNA-polymerase-delta	POLD1, REV3L	0.51	sterile

94 lines tested

60.6% 57 lines reduced seizure duration of para^{bss}

44.7% 42 lines exhibited similar or greater rescue effect compared to phenytoin treatment (64%)

3 lines are sterile