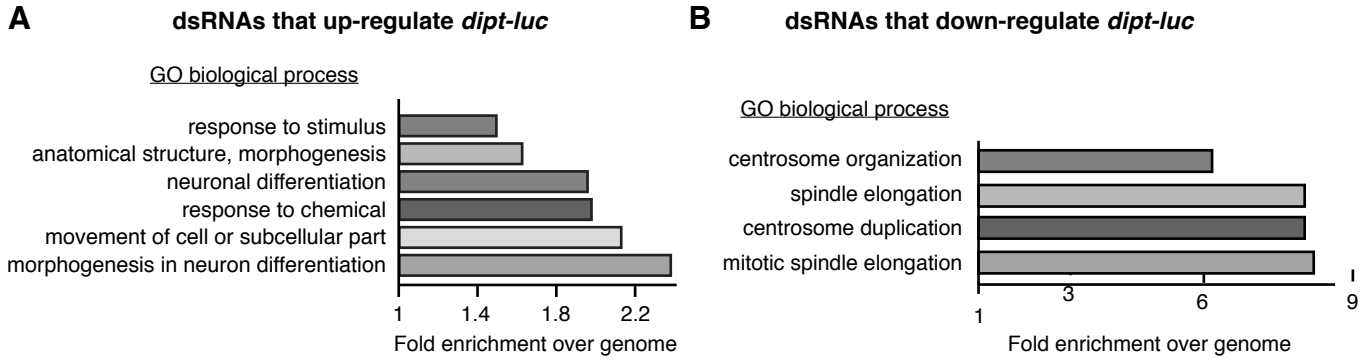
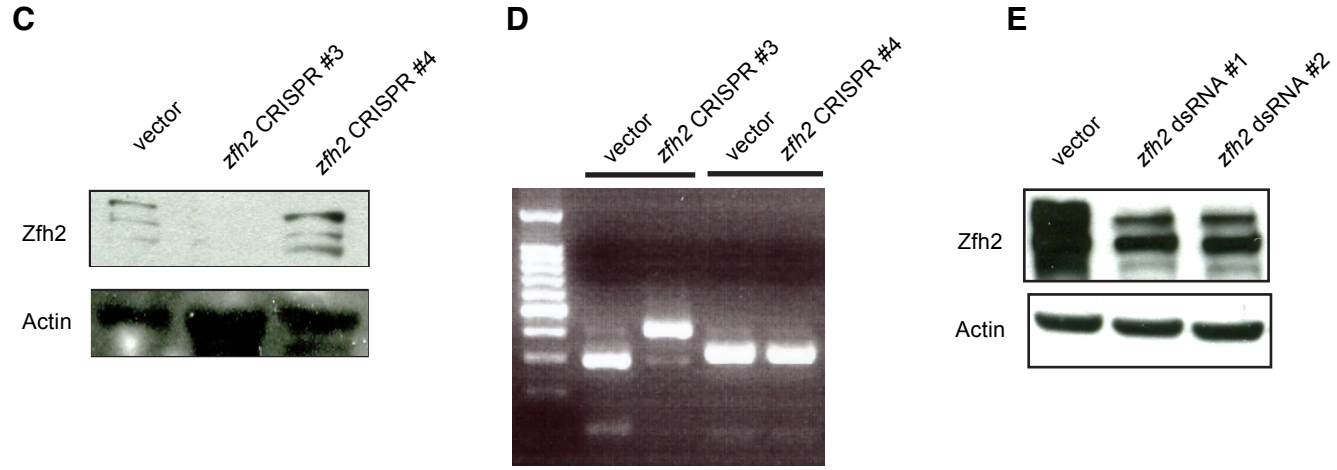


Supplemental Figure 1*A* and *B*. Negative and positive regulators of dipt expression in hypercapnia identified by genome-wide screening are differentially enriched in specific gene functions compared to the whole genome.
Graphs showing the fold enrichment of overrepresented Gene Ontology (GO) terms for the dsRNAs in the primary screen that scored as (A) negative regulators (Z-scores ≥+1.5) or (B) positive regulators (Z-scores ≤-1.5) of dipt expression. Statistical overrepresentation test performed using the Gene Ontology PANTHER Classification System Gene List analysis tool with Bonferroni correction for multiple testing and the GO biological process complete annotation dataset.



Supplemental Figure 1*C*, 1*D* and 1*E*. Demonstration of the specificity of anti-Zfh2 anti-serum.
C) Extracts from cells in which the *zfh2* locus had been mutated by CRISPR targeting (*zfh2* CRISPR #3, see panel D) show reduced staining of all high molecular weight bands that react with anti-Zfh2 anti-serum, whereas cells transfected with an ineffective guide RNA (*zfh2* CRISPR #4) have bands similar to control cells.
D) Restriction digests of PCR fragments spanning CRISPR target sites. The Bpu10I restriction enzyme site in the endogenous *zfh2* locus is disrupted in most cells transfected with a plasmid encoding guide RNA #3, but transfection with a plasmid encoding guide RNA #4, which did not affect immuno-reactive bands in panel A, failed to disrupt the endogenous MefI restriction site.
E) Treatment of S2* cells with either of two distinct dsRNAs that target the *zfh2* mRNA also reduces the intensity of all high molecular weight bands.

Methods: Zfh2 anti-serum, Western blotting and RNAi protocols are described in the main text materials and methods. CRISPR targeting was performed using the stable transfection method of Bassett et al.1 using the pAc-sgRNA-Cas9 vector. Sequences for guide and dsRNAs, and PCR target region primers as follows: Guide #3, 5'-TTCGATTCGGATGTTCCATGCTC-3', 5'-AACGAGCATGGAACATCCGAATC-3' ; Guide #3 genomic target region primers, 5'-TTCGATTCGGATGTTCCATGCTC-3', 5'-AACGAGCATGGAACATCCGAATC-3'; Guide #4, 5'-CGATCCTCAGCTGTGAAATG-3', 5'-ATGTGCCCCACTTTAAGGGT-3'; Guide #4 genomic region primers, 5'-TTCGTAAATGTCCCCAATGCAAT-3', 5'-AACATTGCATTGGGGACATTTAC-3'; dsRNA #1 DRSC amplicon DRSC17178; dsRNA #2, DRSC amplicon DRSC28010.

1. Bassett A.R., C. Tibbit, C.P. Ponting, J.L. Liu. 2014. Mutagenesis and homologous recombination in Drosophila cell lines using CRISPR/Cas9. Biol Open. 3:42-49.

Supplemental Table I. Results of a pilot dsRNA screen targeting candidate CO_2 mediator genes

Gene	Function	CO_2/air	*dipt-luc*[1] (normalized) air	*dipt-luc*[1] (normalized) CO_2	Amplicon
iap2	Inhibitor of apoptosis	0.17	2.23	0.38	DRSC07444
u-shaped	Imd regulation at level of Relish (Friend of GATA homolog)	0.28	5.49	1.56	DRSC00843
basket	Imd negative regulation, Jnk pathway kinase	0.29	1.75	0.50	DRSC03499
caspar	Imd negative regulation	0.30	3.58	1.06	DRSC07164
slmb	Imd negative regulation, SCF Ub ligase	0.37	0.77	0.28	DRSC17056
nos	Nitric oxide synthase	0.39	1.63	0.63	DRSC03381
akt1	Metabolic regulator	0.45	1.14	0.51	DRSC14108
dnr1	Imd negative regulation	0.45	1.41	0.64	DRSC03948
sima	HIF-1 alpha; Hypoxia pathway	0.45	0.60	0.27	DRSC17055
pannier	GATA transcription factor	0.57	1.64	0.94	DRSC17027
crebA	Downstream of adenylyl cyclases	0.61	1.55	0.95	DRSC11122
CAH1 Carbonic anhydrase 1	Putative CO_2 sensor	0.62	1.45	0.90	DRSC02009
imd	Imd pathway	0.62	0.52	0.32	DRSC05928
tak1	Imd regulation at level of Relish, downstream of nuclear import	0.62	1.29	0.80	DRSC20390
stim	Calcium channel	0.63	1.28	0.80	DRSC20158
skpA	Imd negative regulation, SCF Ub ligase	0.64	0.60	0.38	DRSC18833
ac13E	Adenylate cyclase, Imd signaling regulator	0.72	0.77	0.56	DRSC19325
rolled (ERK)	Possible hypercapnia mediator[2]	0.72	1.67	1.20	DRSC07833
relish	Imd pathway	0.74	0.49	0.37	DRSC16819
slo	Calcium-activated potassium channel, Imd regulation	0.89	0.87	0.78	DRSC17057
Gr21a	Neuronal CO_2 sensor	0.95	1.00	0.95	DRSC00366
no dsRNA control	Control 1	1.00	1.00	1.00	
hsf	Stress responses	1.03	0.90	0.93	DRSC07443
SNF1A (AMPK)	Possible hypercapnia mediator[3]	1.08	0.78	0.84	DRSC18714
trp	Calcium channel, Imd regulation	1.14	1.76	2.01	DRSC17088
TOR	Metabolic regulator	1.15	1.25	1.45	DRSC02811
aPKC	Possible hypercapnia mediator[3]	1.28	0.76	0.97	DRSC07639
CaMKKII	Possible hypercapnia mediator[3]	1.32	0.82	1.08	DRSC17214
Gr63a	Neuronal CO_2 sensor	1.32	0.65	0.86	DRSC08438
ira	Imd negative regulation, Jnk pathway TF	1.32	0.61	0.80	DRSC07447
tango	HIF-1 beta; Hypoxia pathway	1.35	0.74	1.00	DRSC17077
pka-C1	Possible hypercapnia mediator[4]	1.41	0.79	1.11	DRSC03399
CAH2 Carbonic anhydrase 2	Putative CO_2 sensor	1.61	1.10	1.78	DRSC10746
STAT92E	JAK/STAT pathway TF	1.85	1.11	2.05	DRSC16870
olf186-F (orai)	Calcium channel	1.96	1.13	2.22	DRSC22061
no dsRNA control	Control 2	2.01	0.78	1.56	

[1]Values for air and 13% CO_2 are normalized *dip-luc* reporter levels for cells treated with dsRNA compared to control cells for the listed condition (e.g. knock down of *iap2* increases *dipt-luc* expression 2.23 fold in air, but suppress *dipt-luc* expression 2.6-fold in 13% CO_2).

[2]Welch LC, Lecuona E, Briva A, Trejo HE, Dada LA, Sznajder JI. FEBS Lett. 2010 Sep 24;584(18):3985-9

[3]Vadász I, Dada LA, Briva A, Trejo HE, Welch LC, Chen J, Tóth PT, Lecuona E, Witters LA, Schumacker PT, Chandel NS, Seeger W,Sznajder JI. J Clin Invest. 2008 Feb;118(2):752-62

[4]Lecuona E[1], Sun H, Chen J, Trejo HE, Baker MA, Sznajder JI. Am J Respir Cell Mol Biol. 2013 May;48(5):626-34.

Supplemental Table II. Primary and secondary screen results

Data formatted as excel spreadsheets can be obtained by contacting the corresponding author, Prof. Greg J Beitel.

Primary screen results: Z-scores for all dsRNAs in the primary screen with a value ≥1.5

Gene	z- score plate 1	z- score plate 2	avg. CO_2 z- score	DRSC Amplicon	CGs	Human Homologene	Human InParanoid	selected for 2° screening?
zfh2	6.24	3.60	**4.92**	DRSC17178	CG1449		ENSP00000050961, ENSP00000268489	Yes
CG15625	5.25	3.99	**4.62**	DRSC39009	CG15625			Yes
CG40270	6.08	2.74	**4.41**	DRSC37740	CG40270			Yes
tna	5.12	3.04	**4.08**	DRSC29530	CG7958	**ZMIZ1**	ENSP00000311778, ENSP00000334474	Yes
CG30441, CG10395	5.99	2.05	**4.02**	DRSC27079	CG30441: CG30441; CG10395: CG10395	**CG10395: INO80B**	CG10395: ENSP00000233331	Yes
CG11152	2.15	5.78	**3.97**	DRSC26567	CG11152			Yes
CG31847	4.61	3.24	**3.93**	DRSC25815	CG31847, CG16851			Yes
zfh2	3.92	3.74	**3.83**	DRSC28010	CG1449		ENSP00000050961, ENSP00000268489	
CG33111	3.17	4.27	**3.72**	DRSC14444	CG33111, CG11957, CG11945, CG10193			Yes
tra2			**3.71**	DRSC29704	CG10128	**TRA2B**	ENSP00000259043, ENSP00000297071	Yes
CG42330	4.85	2.55	**3.70**	DRSC10765	CG42330, CG18630, CG13672, CG33274, CG7060		ENSP00000302472, ENSP00000315465	Yes
CG8239	3.89	3.50	**3.70**	DRSC20096	CG8239	**MVD**	ENSP00000301012	Yes
NAT1	3.23	4.14	**3.69**	DRSC30053	CG3845	**EIF4G2**	ENSP00000340281	Yes
CycD	4.71	2.58	**3.65**	DRSC25031	CG9096	**CCND2**	ENSP00000227507, ENSP00000230338, ENSP00000261254	Yes
CG11123	2.69	4.58	**3.64**	DRSC06040	CG11123	**C14orf21**	ENSP00000267425	Yes
zormin	2.89	4.34	**3.62**	DRSC07969	CG32310, CG11850, CG11952, CG32309, CG32311, CG5699, CG1282, CG33484, CG32307,			Yes

tna	3.43	3.70	**3.57**	DRSC29530	CG7958	**ZMIZ1**	ENSP00000311778, ENSP00000334474	Yes
CG5767	4.88	2.17	**3.53**	DRSC29980	CG5767			Yes
Sos			**3.52**	DRSC23624	CG7793	**SOS1**	ENSP00000263879, ENSP00000346183	Yes
mam	1.00	6.02	**3.51**	DRSC22971	CG8118			
Scr			**3.49**	DRSC29201	CG1030	**HOXB5**	ENSP00000222726, ENSP00000239151, ENSP00000309336	Yes
CG42313	1.84	5.10	**3.47**	DRSC25118	CG42313, CG15277, CG15275, CG33515, CG15276			Yes
CG31772	3.45	3.34	**3.40**	DRSC22869	CG31772, CG10020			Yes
Cpr73D	5.07	1.71	**3.39**	DRSC26591	CG9665			Yes
CG3746	4.32	2.43	**3.38**	DRSC30050	CG3746			Yes
Rpt3R	4.03	2.71	**3.37**	DRSC16501	CG9475			Yes
twi	4.01	2.73	**3.37**	DRSC26056	CG2956		ENSP00000242261	Yes
HDC14093	3.09	3.61	**3.35**	DRSC13217				Yes
phl			**3.34**	DRSC36609	CG2845	**BRAF**	ENSP00000251849, ENSP00000288602, ENSP00000290277	Yes
RhoGAP15B	2.81	3.83	**3.32**	DRSC19925	CG4937			Yes
HDC12864	3.32	3.32	**3.32**	DRSC22204				Yes
CG31457	2.59	4.00	**3.30**	DRSC29229	CG31457, CG4639			Yes
CG5189, CG30120	3.71	2.86	**3.29**	DRSC05726	CG5189: CG5189; CG30120: CG30120	**CG5189: ROBLD3**	CG5189: ENSP00000265204	Yes
CG6361	2.61	3.95	**3.28**	DRSC22231	CG6361			Yes
RnrS			**3.28**	DRSC23541	CG8975	**RRM2**	ENSP00000251810, ENSP00000302955	Yes
h-cup	1.02	5.51	**3.27**	DRSC24713	CG6130			
ena	4.27	2.25	**3.26**	DRSC25393	CG15112		ENSP00000347624, ENSP00000351501	Yes
trx	3.91	2.59	**3.25**	DRSC17089	CG8651			Yes
CG7745	1.12	5.32	**3.22**	DRSC29591	CG7745			
CG33920	1.00	5.42	**3.21**	DRSC37813	CG33920			
Muc30E	2.32	4.08	**3.20**	DRSC01101	CG33300		ENSP00000251819	Yes
CG7320	3.86	2.54	**3.20**	DRSC26050	CG7320			Yes
CG32641, CG32640	2.06	4.25	**3.16**	DRSC22885	CG32641: CG32641; CG32640: CG32640			Yes
Ilp5	1.94	4.32	**3.13**	DRSC08998	CG33273			Yes
snRNP70K	3.63	2.61	**3.12**	DRSC03612	CG8749	**SNRNP70**	ENSP00000221448	Yes
cuff	4.91	1.30	**3.11**	DRSC06315	CG13190			
	4.99	1.23	**3.11**	DRSC21304				
gt			**3.11**	DRSC28482	CG7952			Yes

CG12861	4.77	1.42	**3.10**	DRSC24847	CG12861			
flfl	4.35	1.83	**3.09**	DRSC16474	CG9351	**SMEK2**	ENSP00000310757, ENSP00000339769	Yes
Tsp29Fb	2.86	3.21	**3.04**	DRSC03233	CG9496		ENSP00000003603, ENSP00000286824	Yes
CG6860	1.44	4.64	**3.04**	DRSC29145	CG6860	**LRCH2**	ENSP00000258643, ENSP00000325091,	Yes
CG3099	3.16	2.84	**3.00**	DRSC18276	CG3099	**HECW2**	ENSP00000260983, ENSP00000265522	Yes
Cht2	3.34	2.65	**3.00**	DRSC24801	CG2054			Yes
GABPI	2.09	3.86	**2.98**	DRSC00494	CG17257	**ZDHHC23**	ENSP00000330485	Yes
ced-6	4.11	1.84	**2.98**	DRSC07591	CG11804	**GULP1**	ENSP00000352047	Yes
CG10592	2.26	3.69	**2.98**	DRSC29230	CG10592		ENSP00000295450,	Yes
Ggamma30A	3.64	2.29	**2.97**	DRSC03331	CG3694, CG18511		ENSP00000248150	Yes
bon	3.13	2.78	**2.96**	DRSC16914	CG15687, CG5206	**TRIM33**	ENSP00000299550, ENSP00000340507, ENSP00000351250	Yes
Tsp29Fa	3.82	2.08	**2.95**	DRSC28522	CG9494	**CD63**	ENSP00000257857	Yes
CG31612	3.63	2.25	**2.94**	DRSC03697	CG31612, CG11631,			Yes
Bx	2.70	3.18	**2.94**	DRSC28506	CG6500	**LMO1**	ENSP00000338207, ENSP00000346689	Yes
RhoGAP18B	3.49	2.36	**2.93**	DRSC20048	CG42274, CG17015, CG7502, CG7531, CG7481			Yes
CG13599	2.67	3.17	**2.92**	DRSC14602	CG13599			Yes
CG30438	3.95	1.85	**2.90**	DRSC21419	CG30438	**UGT2B17**	ENSP00000311648	Yes
CG9715	2.29	3.50	**2.90**	DRSC25470	CG9715			Yes
mts			**2.90**	DRSC36626	CG7109	**PPP2CB**	ENSP00000221138,	Yes
prom	3.32	2.45	**2.89**	DRSC24876	CG30165, CG4556, CG30164, CG42310, CG30166		ENSP00000318520	Yes
csw			**2.87**	DRSC36600	CG3954	**PTPN11**	ENSP00000340944, ENSP00000351285	Yes
Rbp1-like	3.09	2.57	**2.83**	DRSC22075	CG1987	**SFRS3**		Yes
Use1	2.05	3.61	**2.83**	DRSC26772	CG14181	**USE1**	ENSP00000263897	Yes
CG2983	2.38	3.27	**2.83**	DRSC38931	CG2983			Yes
CLIP-190	3.50	2.14	**2.82**	DRSC30075	CG5020	**CLIP1**	ENSP00000223398, ENSP00000351665	Yes
CG34180	2.20	3.44	**2.82**	DRSC38745	CG34180			Yes
Cyp18a1	2.34	3.27	**2.81**	DRSC27063	CG6816	**CYP2U1**	ENSP00000257149,	Yes

wntD	3.03	2.59	**2.81**	DRSC28538	CG8458			Yes
sba	3.85	1.72	**2.79**	DRSC17050	CG13598			Yes
CG5599	3.56	2.01	**2.79**	DRSC25764	CG5599	**DBT**	ENSP00000260559	Yes
tre-1	3.70	1.85	**2.78**	DRSC38645	CG34649			Yes
CG7214	2.16	3.37	**2.77**	DRSC03028	CG7214			Yes
Muc68E	1.59	3.95	**2.77**	DRSC09146	CG33265			
bl	2.28	3.22	**2.75**	DRSC07585	CG13425		ENSP00000317788, ENSP00000333256, ENSP00000341659	Yes
CG4168	1.83	3.63	**2.73**	DRSC22789	CG4168			Yes
Gen	2.19	3.25	**2.72**	DRSC09679	CG10670	**GEN1**	ENSP00000318977	
Arp8	2.64	2.75	**2.70**	DRSC20059	CG7846	**ACTR8**	ENSP00000336842	
CG14632	4.08	1.32	**2.70**	DRSC25845	CG14632			
CG11768	2.11	3.29	**2.70**	DRSC29630	CG11768			
CG11367, CG32454	4.35	1.03	**2.69**	DRSC11652	CG11367:		CG11367:	
Empty Control	3.67	1.71	**2.69**					
CG8444	3.07	2.28	**2.68**	DRSC16420	CG8444	**ATP6AP2**	ENSP00000331703	Yes
CG5522	3.23	2.11	**2.67**	DRSC06941	CG5522	**RALGPS1**	ENSP00000259351, ENSP00000263728	Yes
	3.19	2.14	**2.67**	DRSC14535				Yes
Empty Control	2.66	2.68	**2.67**					
Shaw	3.03	2.27	**2.65**	DRSC00788	CG2822,		ENSP00000241333,	Yes
CG14590	4.11	1.18	**2.65**	DRSC04867	CG14590			
CG1707	3.03	2.27	**2.65**	DRSC06657	CG1707	**GLO1**	ENSP00000244746	
beat-Ic	3.68	1.61	**2.65**	DRSC23508	CG4838			
CG14717	2.34	2.93	**2.64**	DRSC14940	CG14717			
sra	2.23	3.03	**2.63**	DRSC17015	CG6072	**RCAN2**	ENSP00000236261, ENSP00000305223, ENSP00000320768	Yes
CG33639	3.54	1.72	**2.63**	DRSC23778	CG33639, CG5936, CG16958			
CG7051	2.46	2.79	**2.63**	DRSC27636	CG7051	**WDR78**		Yes
CG6569	3.23	2.01	**2.62**	DRSC16067	CG6569			
CG1308	2.70	2.54	**2.62**	DRSC24732	CG1308			
aly	3.32	1.90	**2.61**	DRSC39161	CG2075			
CG31648	2.11	3.08	**2.60**	DRSC22692	CG31648, CG6922	**COX11**	ENSP00000299335	Yes
Toll-7	2.61	2.57	**2.59**	DRSC29640	CG8595		ENSP00000260010	Yes
CG9279	2.99	2.16	**2.58**	DRSC11057	CG9279			
xmas-2	2.94	2.22	**2.58**	DRSC22178	CG8919,		ENSP00000291688	Yes
Sln	2.10	3.04	**2.57**	DRSC07133	CG8271	**SLC16A12**		Yes

Pros28.1A	2.82	2.31	**2.57**	DRSC16800	CG17268		ENSP00000217153, ENSP00000311121	Yes
HDC15639 ('+' in Stolc et al)	2.73	2.40	**2.57**	DRSC29010				
conv	2.75	2.36	**2.56**	DRSC07213	CG8561			Yes
CG4933	2.11	3.00	**2.56**	DRSC10461	CG4933	**OSGEP**	ENSP00000206542	Yes
Mitf	3.01	2.11	**2.56**	DRSC17212	CG40476,		ENSP00000265440,	Yes
CG42339	2.69	2.41	**2.55**	DRSC19481	CG42339, CG12626, CG15204			
CG2813	2.93	2.15	**2.54**	DRSC00538	CG2813			
Rpb11	2.79	2.29	**2.54**	DRSC02995	CG6840	**POLR2J**	ENSP00000315849	Yes
CG10321	3.03	2.04	**2.54**	DRSC04061	CG10321			
HDC07158	2.60	2.47	**2.54**	DRSC05730				
retinophilin	2.94	2.14	**2.54**	DRSC12132	CG10233	**MORN4**	ENSP00000335498	Yes
CG13117	2.53	2.55	**2.54**	DRSC26983	CG13117			
ash1	2.83	2.23	**2.53**	DRSC11325	CG8887			
Rgk2	1.08	3.97	**2.53**	DRSC21651	CG34390,	**REM1**	ENSP00000201979	
fas	3.43	1.63	**2.53**	DRSC23756	CG17716			
CG9915	3.07	1.97	**2.52**	DRSC21565	CG9915	**IWS1**	ENSP00000295321	Yes
CG8451	2.96	2.03	**2.50**	DRSC03088	CG8451			
Muc55B	3.97	1.02	**2.50**	DRSC21440	CG5765			
CG31457	2.44	2.56	**2.50**	DRSC22935	CG31457,			
CG5278	2.70	2.27	**2.49**	DRSC15760	CG5278			
n-syb	1.75	3.23	**2.49**	DRSC27077	CG17248	**VAMP1**	ENSP00000314214,	Yes
CG42234	1.45	3.50	**2.48**	DRSC08394	CG42234,		ENSP00000227256	Yes
TwdlL	2.73	2.22	**2.48**	DRSC16042	CG6447			
CG9747	3.44	1.52	**2.48**	DRSC16554	CG9747			
Map205	2.17	2.78	**2.48**	DRSC16732	CG1483			
CG8578	2.08	2.88	**2.48**	DRSC20114	CG8578		ENSP00000338727	
Dad	2.18	2.78	**2.48**	DRSC28345	CG5201	**SMAD7**		Yes
dpa	2.33	2.59	**2.46**	DRSC07604	CG1616	**MCM4**	ENSP00000262105	
scaf6	2.37	2.54	**2.46**	DRSC10676	CG6626,	**CHERP**	ENSP00000198939	Yes
CG12213	1.14	3.77	**2.46**	DRSC22109	CG12213			
CG17364	1.28	3.64	**2.46**	DRSC22689	CG17364			
CG10177	2.66	2.25	**2.46**	DRSC27888	CG10177			
Rrp4	3.77	1.15	**2.46**	DRSC29543	CG3931	**EXOSC2**	ENSP00000253010	
CG42514, CG42513	1.94	2.96	**2.45**	DRSC10428	CG42514:	**CG42513: ADCY5**	CG42514:	Yes

CG1969	1.79	3.10	**2.45**	DRSC15405	CG1969	**GNPNAT1**	ENSP00000216410	Yes
mRpL30	2.17	2.73	**2.45**	DRSC18416	CG7038		ENSP00000338057	
Cklalpha	2.47	2.42	**2.45**	DRSC20231	CG2028	**CSNK1A1L**	ENSP00000261798, ENSP00000322723	Yes
CG31549	3.62	1.28	**2.45**	DRSC21688	CG31549,		ENSP00000263278	
slp2	3.47	1.43	**2.45**	DRSC26622	CG2939		ENSP00000339004	Yes
CG8783	1.93	2.95	**2.44**	DRSC11044	CG8783	**C16orf35**	ENSP00000262313	
CG10703	2.66	2.21	**2.44**	DRSC29299	CG10703	**GCC1**	ENSP00000318821	Yes
CG4259	3.67	1.21	**2.44**	DRSC29614	CG4259			
HDC01093	1.10	3.75	**2.43**	DRSC00929				
CG2292	3.81	1.04	**2.43**	DRSC06837	CG2292	**PIGN**	ENSP00000350263	
Rh6	3.11	1.74	**2.43**	DRSC16823	CG5192	**OPN4**	ENSP00000241891	Yes
MED26	1.63	3.23	**2.43**	DRSC17148	CG1823, CG1793			
CG32533	2.44	2.41	**2.43**	DRSC19443	CG32533,	**DHX34**	ENSP00000331907	
Lcp65Ab2, Lcp65Ab1	2.84	2.02	**2.43**	DRSC29739	Lcp65Ab2:			
Ugt37a1	3.27	1.56	**2.42**	DRSC02114	CG11012			
CSN3	2.31	2.52	**2.42**	DRSC11859	CG18332	**COPS3**	ENSP00000268717	Yes
Eig71Ei	3.52	1.32	**2.42**	DRSC29123	CG7327			Yes
Rev1	2.36	2.46	**2.41**	DRSC08264	CG12189	**REV1**	ENSP00000258428	Yes
HLH106	2.91	1.90	**2.41**	DRSC11182	CG8522	**SREBF1**	ENSP00000261646, ENSP00000355169	
CG32547	1.36	3.46	**2.41**	DRSC19263	CG32547,			
CG15337	3.37	1.44	**2.41**	DRSC22778	CG15337			
CG42303, CG42304	3.09	1.73	**2.41**	DRSC23772	CG42303:	**CG42304: SNUPN**	CG42303:	Yes
CG30105	1.51	3.28	**2.40**	DRSC05668	CG30105		ENSP00000308193	
Cyp6a14	2.43	2.37	**2.40**	DRSC07376	CG8687			
Anxb11	3.48	1.32	**2.40**	DRSC19331	CG9968	**ANXA7**	ENSP00000265447,	
CG8097	2.19	2.61	**2.40**	DRSC20079	CG8097		ENSP00000344989	

CG32856	3.25	1.54	**2.40**	DRSC29746	CG32856			
SerT	3.24	1.53	**2.39**	DRSC04655	CG4545		ENSP00000261707	Yes
CG32368	2.37	2.41	**2.39**	DRSC25473	CG32368			
Ir68b	2.23	2.52	**2.38**	DRSC10251	CG17152			Yes
mfr	2.58	2.17	**2.38**	DRSC10543	CG5747		ENSP00000258104,	Yes
CG3773	2.17	2.59	**2.38**	DRSC15513	CG3773			
CG31266, CG4053	2.69	2.07	**2.38**	DRSC29364	CG31266: CG31266, CG5240; CG4053:			
CG17107	2.47	2.26	**2.37**	DRSC02575	CG17107			
shn	2.10	2.64	**2.37**	DRSC05266	CG7734			Yes
mud	3.16	1.57	**2.37**	DRSC19019	CG12047			
CG33251, CG9915	2.31	2.42	**2.37**	DRSC20217	CG33251: CG33251; CG9915: CG9915	**CG9915: IWS1**	CG9915: ENSP00000295321	
Mms19	3.11	1.63	**2.37**	DRSC27172	CG12005	**MMS19**	ENSP00000307263	
CG40413	3.04	1.70	**2.37**	DRSC37772	CG40413			
CG10264	1.18	3.54	**2.36**	DRSC14222	CG10264			
CG32699	2.88	1.84	**2.36**	DRSC18257	CG32699,	**LPCAT1**	ENSP00000262134,	Yes
scyl	1.69	3.03	**2.36**	DRSC27699	CG7590		ENSP00000307305, ENSP00000354830	Yes
Aplip1	2.96	1.74	**2.35**	DRSC08697	CG1200		ENSP00000241014, ENSP00000330572, ENSP00000337509	Yes
Scsalpha	2.98	1.72	**2.35**	DRSC08698	CG1065	**SUCLG1**	ENSP00000295783	Yes
CG5220	1.81	2.88	**2.35**	DRSC15741	CG5220	**FTSJ1**	ENSP00000326948	
Hsp70Bb, Hsp70Ba,	1.02	3.68	**2.35**	DRSC21248	Hsp70Bb:	**Hsp70Bb:**		Yes
CG14420	2.45	2.25	**2.35**	DRSC25167	CG14420			
CG15141	3.25	1.45	**2.35**	DRSC29031	CG15141	**UBR7**	ENSP00000013070	Yes
CG14453	1.77	2.90	**2.34**	DRSC11710	CG14453			

CG6782, CG6783	2.15	2.53	**2.34**	DRSC16114	CG6782: CG6782, CG31305; CG6783: CG6783, CG31305	**CG6782: SLC25A1**	CG6782: ENSP00000215882, CG6783: ENSP00000237789, CG6783: ENSP00000241156, CG6783: ENSP00000256103, CG6783: ENSP00000256104, CG6783: ENSP00000297258, CG6783: ENSP00000300149, CG6783: ENSP00000311616, CG6783: ENSP00000348931, CG6783:	Yes
CR18275, CG13373	1.19	3.48	**2.34**	DRSC17900	CR18275: CG18275; CG13373: CG13373			
ct	3.06	1.62	**2.34**	DRSC25100	CG11387		ENSP00000261726,	Yes
CG11413, CG4622	3.47	1.19	**2.33**	DRSC04109	CG11413: CG11413; CG4622: CG4622	**CG4622: ZCCHC8**	CG4622: ENSP00000337313	
CG18604	1.42	3.23	**2.33**	DRSC06771	CG18604			
GckIII	1.53	3.13	**2.33**	DRSC15729	CG5169	**STK25**	ENSP00000261573, ENSP00000276210, ENSP00000325748	Yes
Hex-t2	1.49	3.16	**2.33**	DRSC28247	CG32849,	**HK1**	ENSP00000223366,	
sca	2.37	2.26	**2.32**	DRSC07677	CG17579			
l(3)04053	2.11	2.53	**2.32**	DRSC11640	CG11238			
CG6490	2.28	2.36	**2.32**	DRSC16054	CG6490			
CG42268	2.11	2.52	**2.32**	DRSC29387	CG42268,			
CG2943	3.00	1.62	**2.31**	DRSC15455	CG2943	**KIAA0090**	ENSP00000264214	

Ugt86Dh	2.19	2.43	**2.31**	DRSC15641	CG4772		ENSP00000251566, ENSP00000265403, ENSP00000286604, ENSP00000304507, ENSP00000304811, ENSP00000305221, ENSP00000311792, ENSP00000320401, ENSP00000327082, ENSP00000334276,	Yes
CG8543	2.53	2.08	**2.31**	DRSC25399	CG8543			
HDC05705 ('+' in Stolc et al) ('+' in Hild et al)	3.53	1.08	**2.31**	DRSC28261				
HDC09489 ('+' in Stolc et al) ('+' in Hild et al)	2.80	1.80	**2.30**	DRSC09056				
CG17803	2.11	2.48	**2.30**	DRSC15275	CG17803			
CG42339	3.28	1.32	**2.30**	DRSC21843	CG42339, CG12626, CG15204			
Pgk	2.15	2.44	**2.30**	DRSC23340	CG3127	**PGK1**	ENSP00000218265,	Yes
Ubqn	1.68	2.91	**2.30**	DRSC24055	CG14224	**UBQLN1**	ENSP00000292319, ENSP00000297810, ENSP00000345195	Yes
swm	3.30	1.28	**2.29**	DRSC02012	CG10084	**RBM26**	ENSP00000265271,	
CG14903	1.03	3.54	**2.29**	DRSC15024	CG14903	**C2orf79**	ENSP00000330389	
sbr	3.36	1.22	**2.29**	DRSC20368	CG1664, CG17335	**NXF1**	ENSP00000263032, ENSP00000294172,	
fd96Ca	2.75	1.83	**2.29**	DRSC23974	CG11921		ENSP00000304004	Yes
CG5150	2.93	1.63	**2.28**	DRSC10486	CG5150		ENSP00000295450, ENSP00000295453, ENSP00000295463, ENSP00000343937	
byn	2.20	2.35	**2.28**	DRSC11332	CG7260	**T**	ENSP00000271394, ENSP00000296946	Yes
CG14907, CG14906	2.96	1.59	**2.28**	DRSC15026	CG14907: CG14907; CG14906: CG14906	**CG14906: METTL4**	CG14906: ENSP00000320349	
CG32371	1.95	2.60	**2.28**	DRSC22209	CG32371		ENSP00000217347, ENSP00000233121, ENSP00000300249	
CG14177	1.83	2.71	**2.27**	DRSC10176	CG14177			
CG31294	2.75	1.78	**2.27**	DRSC22217	CG31294			
CG7465	2.15	2.38	**2.27**	DRSC23943	CG7465			

Pgd	1.85	2.68	**2.27**	DRSC39148	CG3724	**PGD**	ENSP00000270776	Yes
CG10137	1.91	2.61	**2.26**	DRSC02014	CG10137	**KIAA0562**	ENSP00000263739	Yes
CG18493	2.47	2.05	**2.26**	DRSC15334	CG18493			
Bap	1.89	2.62	**2.26**	DRSC23868	CG12532	**AP1B1**	ENSP00000314414,	Yes
CG17386	2.33	2.18	**2.26**	DRSC29366	CG17386		ENSP00000299213	
Cenp-C	2.85	1.67	**2.26**	DRSC29707	CG11746,			
GFP Control	2.90	1.61	**2.26**					
CG1663	1.99	2.50	**2.25**	DRSC06613	CG1663			
CG11307	2.69	1.81	**2.25**	DRSC11648	CG11307			
Dip-B	2.14	2.36	**2.25**	DRSC25975	CG9285			
FucT6	2.61	1.89	**2.25**	DRSC26057	CG2448	**FUT8**	ENSP00000353910	Yes
Ptpmeg	1.90	2.58	**2.24**	DRSC08684	CG1228	**PTPN4**	ENSP00000262539, ENSP00000263708	Yes
Ca-beta	2.23	2.25	**2.24**	DRSC23813	CG6320, CG14923,	**CACNB2**	ENSP00000201943, ENSP00000320025,	Yes
Btk29A	2.87	1.58	**2.23**	DRSC02666	CG18355,	**TEC**	ENSP00000231189,	Yes
CG3925	3.26	1.20	**2.23**	DRSC15521	CG3925	**CRBN**	ENSP00000231948	
CG17597	3.10	1.36	**2.23**	DRSC24788	CG17597		ENSP00000262668	Yes
CG31958	3.07	1.39	**2.23**	DRSC25319	CG31958,			
CG5466	3.21	1.25	**2.23**	DRSC25795	CG5466			
CG15649	2.23	2.22	**2.23**	DRSC29626	CG15649			
CG31798	3.19	1.25	**2.22**	DRSC01702	CG31798			
CG11034	2.32	2.12	**2.22**	DRSC02122	CG11034	**DPP4**	ENSP00000188790,	Yes
CG3253	2.47	1.96	**2.22**	DRSC04350	CG3253	**B3GNT1**	ENSP00000309096	
CG6834	2.95	1.49	**2.22**	DRSC16125	CG6834			
CG7084	2.94	1.50	**2.22**	DRSC16194	CG7084			
CG9009	2.02	2.41	**2.22**	DRSC19064	CG9009			
CG5794	1.31	3.13	**2.22**	DRSC23167	CG5794	**USP34**	ENSP00000263989	Yes
CG13407	1.87	2.57	**2.22**	DRSC25675	CG13407			
AcCoAS	2.77	1.66	**2.22**	DRSC25972	CG9390	**ACSS2**	ENSP00000253382	Yes
Tango9	1.58	2.83	**2.21**	DRSC14173	CG10007		ENSP00000350792	
CR41604	1.50	2.92	**2.21**	DRSC38594				
CG6388	2.25	2.14	**2.20**	DRSC02951	CG6388	**TRMT1**	ENSP00000319457, ENSP00000331394	
CG9548	1.91	2.49	**2.20**	DRSC03261	CG9548	**PHF5A**	ENSP00000216252	

Mical	2.89	1.51	**2.20**	DRSC14351	CG18667, CG18484, CG18668, CG33208, CG11687, CG33190, CG11685, CG33186		ENSP00000207726, ENSP00000256194	Yes
CG32686	1.44	2.95	**2.20**	DRSC17645	CG32686			
CG14995	2.85	1.54	**2.20**	DRSC22991	CG14995		ENSP00000270115	Yes
hang	1.59	2.81	**2.20**	DRSC23216	CG4416,			
HDC08793 ('+' in	2.05	2.34	**2.20**	DRSC25305				
cpo, CG42457	1.80	2.60	**2.20**	DRSC25799	cpo: CG31243,		cpo:	Yes
CG9797	1.62	2.77	**2.20**	DRSC29073	CG9797			
CG33482	1.64	2.76	**2.20**	DRSC38625	CG33482,			
Empty Control	1.85	2.54	**2.20**					
kis	1.47	2.91	**2.19**	DRSC00625	CG18326, CG3696, CG3660	**CHD7**	ENSP00000219084, ENSP00000244003, ENSP00000262707, ENSP00000307304	Yes
CG32263	2.74	1.63	**2.19**	DRSC22431	CG32263, CG10854		ENSP00000247712	Yes
Gr9a	1.25	3.12	**2.19**	DRSC22506	CG32693			Yes
dpr	2.42	1.94	**2.18**	DRSC06399	CG13439			Yes
CG2218	1.86	2.50	**2.18**	DRSC28089	CG2218	**UBOX5**		Yes
CG33276	1.58	2.77	**2.18**	DRSC29463	CG33276	**URM1**	ENSP00000300461	Yes
kek5	1.48	2.88	**2.18**	DRSC39004	CG12199	**LRRC24**		Yes
Empty Control	1.57	2.79	**2.18**					
Rapgap1	2.34	2.00	**2.17**	DRSC02293	CG6682,	**RAP1GAP**	ENSP00000254695,	Yes
Psi	2.49	1.85	**2.17**	DRSC07519	CG8912	**KHSRP**	ENSP00000201886, ENSP00000294623,	
Xrp1	2.21	2.13	**2.17**	DRSC15283	CG17836			
CG1924	2.84	1.50	**2.17**	DRSC19823	CG1924	**CLGN**	ENSP00000247461,	Yes
HDC20561	2.24	2.09	**2.17**	DRSC21176				
CG18193	1.72	2.62	**2.17**	DRSC25198	CG18193			
CG31404	1.64	2.70	**2.17**	DRSC28438	CG31404,			
CG34172	2.14	2.20	**2.17**	DRSC38937	CG34172			
CG30005	1.03	3.28	**2.16**	DRSC06244	CG30005,			
CG13727	1.16	3.15	**2.16**	DRSC10055	CG13727			

CG12290	2.67	1.64	**2.16**	DRSC14497	CG12290			
Ucp4A	2.49	1.82	**2.16**	DRSC19996	CG6492	**SLC25A27**	ENSP00000283295	Yes
CG3803	2.12	2.17	**2.15**	DRSC04420	CG3803	**COX15**	ENSP00000016171	Yes
CG1271	2.88	1.41	**2.15**	DRSC08290	CG1271	**GK5**	ENSP00000311422	Yes
CG32207	1.95	2.34	**2.15**	DRSC09616	CG32207			
CG33630	1.61	2.69	**2.15**	DRSC14546	CG33630,			
CG42458	2.77	1.53	**2.15**	DRSC23261	CG42458,			
CG14508	2.47	1.82	**2.15**	DRSC28229	CG14508		ENSP00000317159	Yes
CG30118	1.59	2.69	**2.14**	DRSC06632	CG30118,			
LysX	2.44	1.84	**2.14**	DRSC08678	CG9120		ENSP00000261267	
Nha2	2.25	2.02	**2.14**	DRSC15623	CG4682,			
Irc	2.16	2.12	**2.14**	DRSC28100	CG8913			Yes
CG31694	2.17	2.08	**2.13**	DRSC00566	CG31694, CG3098, CG15401	**IFRD1**	ENSP00000347784	Yes
CG8668	3.13	1.13	**2.13**	DRSC24942	CG8668	**B3GALT1**	ENSP00000294647, ENSP00000303740, ENSP00000323479,	Yes
PEK	2.77	1.46	**2.12**	DRSC12361	CG2087	**EIF2AK3**	ENSP00000307235	Yes
CG8500	1.28	2.95	**2.12**	DRSC27083	CG8500	**DIRAS2**	ENSP00000297682,	
CG11455	2.52	1.69	**2.11**	DRSC00311	CG11455			
CG11249	2.66	1.56	**2.11**	DRSC11645	CG11249			
nerfin-2	1.00	3.22	**2.11**	DRSC28542	CG12809			
CG10384	2.97	1.24	**2.11**	DRSC28924	CG10384			
Empty Control	2.19	2.03	**2.11**					
CG9663	2.30	1.90	**2.10**	DRSC00724	CG9663			
CG31742	2.05	2.15	**2.10**	DRSC01617	CG31742			
l(2)03659	2.18	2.01	**2.10**	DRSC07638	CG11803, CG8799	**ABCC4**	ENSP00000261295	Yes
CG32198	2.16	2.03	**2.10**	DRSC09553	CG32198			
CG4757	2.36	1.84	**2.10**	DRSC14130	CG4757			
CG14401	2.36	1.83	**2.10**	DRSC24098	CG14401			
CG32702	2.05	2.15	**2.10**	DRSC29380	CG32702, CG2996	**CUBN**	ENSP00000265929	Yes
l(2)44DEa	1.44	2.74	**2.09**	DRSC07252	CG8732	**ACSL3**	ENSP00000339787, ENSP00000350012	Yes
Lrrk	1.74	2.44	**2.09**	DRSC15816	CG5483		ENSP00000298910	Yes
Ras85D	1.81	2.37	**2.09**	DRSC16814	CG9375	**KRAS**	ENSP00000256078,	Yes
CG34294	1.44	2.73	**2.09**	DRSC38649	CG34294			

lola	2.65	1.51	**2.08**	DRSC05222	CG30013, CG12052, CG18379, CG30014, CG18380, CG18378, CG18376, CG18381,		ENSP00000331926, ENSP00000339023, ENSP00000351539	Yes
l(2)05510	2.42	1.74	**2.08**	DRSC05896	CG13432, CG13433			
CG9855	2.40	1.75	**2.08**	DRSC12344	CG9855	**5-Mar**	ENSP00000351813	
CG42508, CG4468	2.49	1.66	**2.08**	DRSC15586	CG42508:			
Or94b	2.17	1.99	**2.08**	DRSC16773	CG6679			Yes
CG2865	2.97	1.19	**2.08**	DRSC18527	CG2865			
ptr	1.67	2.49	**2.08**	DRSC22106	CG2841			Yes
CG15695	1.83	2.32	**2.08**	DRSC29582	CG15695			
CG3499	1.20	2.93	**2.07**	DRSC04378	CG3499	**YME1L1**	ENSP00000318480	Yes
iPLA2-VIA	2.10	2.03	**2.07**	DRSC10699	CG6718	**PLA2G6**	ENSP00000333142	Yes
Pnn	1.83	2.31	**2.07**	DRSC16415	CG8383	**PNN**	ENSP00000216832	
CG9793	2.48	1.65	**2.07**	DRSC16564	CG9793			
CecA2	1.75	2.39	**2.07**	DRSC16604	CG1367			Yes
HDC10807	1.97	2.17	**2.07**	DRSC21683				
CG31054	2.84	1.30	**2.07**	DRSC22134	CG31054			
CG4752	3.11	1.03	**2.07**	DRSC27141	CG4752	**OPLAH**	ENSP00000353877	
Tsp42Ej	1.46	2.65	**2.06**	DRSC06113	CG12143			Yes
Corin	2.96	1.15	**2.06**	DRSC06818	CG2105		ENSP00000273857	Yes
Ank2	2.60	1.51	**2.06**	DRSC08894	CG34416,	**ANK2**	ENSP00000280772,	Yes
Pif1A	1.50	2.62	**2.06**	DRSC14383	CG9808,			
SF2	1.94	2.17	**2.06**	DRSC16845	CG6987	**SFRS1**	ENSP00000258962	
Cda5	2.09	2.00	**2.05**	DRSC00532	CG2761, CG2776,			
CG5539	1.90	2.19	**2.05**	DRSC04510	CG5539			
sprt	1.76	2.33	**2.05**	DRSC07323	CG9026,			
CG5819	1.69	2.41	**2.05**	DRSC28265	CG5819			

HDC01093	1.33	2.77	**2.05**	DRSC29110				
Scgalpha	1.36	2.74	**2.05**	DRSC29625	CG7851		ENSP00000262018,	Yes
Shal	1.57	2.51	**2.04**	DRSC11283	CG9262	**KCND2**	ENSP00000218176, ENSP00000319591,	Yes
Cyp6v1	1.20	2.87	**2.04**	DRSC20565	CG1829			
btz	2.08	1.99	**2.04**	DRSC23613	CG12878	**CASC3**	ENSP00000264645	
B52	2.26	1.82	**2.04**	DRSC25482	CG10851	**SFRS6**	ENSP00000234982, ENSP00000244020	
Ir56c	2.15	1.92	**2.04**	DRSC26227	CG15122			Yes
CG18605	1.94	2.14	**2.04**	DRSC26583	CG18605			
CG13126	2.63	1.45	**2.04**	DRSC27620	CG13126	**METT11D1**	ENSP00000343041	
tutl	1.20	2.85	**2.03**	DRSC00443	CG15427,		ENSP00000198587	
CG31897	1.14	2.92	**2.03**	DRSC01020	CG31897			
CG15263	2.15	1.90	**2.03**	DRSC01974	CG15263			
CG5694	1.60	2.46	**2.03**	DRSC02879	CG5694			
CG12344	2.51	1.54	**2.03**	DRSC06136	CG12344			
gk	1.58	2.48	**2.03**	DRSC10045	CG13696,			
CG42269	2.27	1.78	**2.03**	DRSC10670	CG42269,			
CG14375	1.82	2.24	**2.03**	DRSC14835	CG14375			
CG32581, CG8974	2.17	1.88	**2.03**	DRSC20136	CG32581: CG32581; CG8974: CG8974	**CG32581: RNF185; CG8974: RNF185**	CG32581: ENSP00000320508, CG8974: ENSP00000320508	
sif	1.81	2.25	**2.03**	DRSC22065	CG5256, CG5406, CG32414,		ENSP00000286827	Yes
CG13705	2.69	1.37	**2.03**	DRSC22691	CG13705			
	2.85	1.21	**2.03**	DRSC22765				
Bx	2.46	1.59	**2.03**	DRSC23048	CG6500	**LMO1**	ENSP00000338207,	
fz3	1.82	2.23	**2.03**	DRSC29682	CG16785			Yes
CG4594	2.55	1.48	**2.02**	DRSC02762	CG4594	**DCI**	ENSP00000301729	Yes
CG13445	1.59	2.44	**2.02**	DRSC09992	CG13445			
CG8607	1.65	2.38	**2.02**	DRSC11012	CG8607			
CG33722, CG18749	1.97	2.07	**2.02**	DRSC15386	CG33722: CG33722, CG31188, CG18238; CG18749: CG18749, CG18238, CG31188		CG33722: ENSP00000306625	
Trc8	2.17	1.87	**2.02**	DRSC15437	CG2304	**RNF139**	ENSP00000304051	

Cyp1	2.41	1.63	**2.02**	DRSC20234	CG9916	**PPIF**	ENSP00000225174	
HDC20548	2.80	1.24	**2.02**	DRSC21162				
HDC18916	2.19	1.85	**2.02**	DRSC21407				
HDC08957 ('+' in	2.74	1.29	**2.02**	DRSC25844				
pdm3	2.59	1.45	**2.02**	DRSC29989	CG11641		ENSP00000330190,	Yes
CG41561	1.25	2.79	**2.02**	DRSC38629	CG41561			
HDC02230,	2.14	1.88	**2.01**	DRSC00072				
CG31827, CG18478	1.89	2.13	**2.01**	DRSC01958	CG31827:			
CG14490	1.57	2.45	**2.01**	DRSC06461	CG14490	**MORN3**	ENSP00000347486	
Or65a	1.96	2.05	**2.01**	DRSC08808	CG32401			Yes
CG11501	2.62	1.39	**2.01**	DRSC14317	CG11501			
alpha-Man-IIb	1.48	2.53	**2.01**	DRSC16898	CG4606			
CG7299	1.28	2.74	**2.01**	DRSC25553	CG7299			
CG34308	2.16	1.86	**2.01**	DRSC38663	CG34308			
loqs	2.58	1.42	**2.00**	DRSC02997	CG6866	**TARBP2**	ENSP00000266987,	
CG7720	2.43	1.57	**2.00**	DRSC16306	CG7720			
CG11816	1.17	2.82	**2.00**	DRSC19428	CG11816			
Lsd-2	1.54	2.46	**2.00**	DRSC20143	CG9057		ENSP00000221957,	
CG14650	2.03	1.96	**2.00**	DRSC23822	CG14650			
iav	1.15	2.84	**2.00**	DRSC25119	CG4536		ENSP00000265310, ENSP00000310825	Yes
W	1.17	2.83	**2.00**	DRSC25461	CG5123			
CG9682	2.92	1.08	**2.00**	DRSC25635	CG9682			
CG9723	1.52	2.47	**2.00**	DRSC26963	CG9723		ENSP00000300128	
HDC06432 ('+' in Stolc et al) ('+' in Hild	1.32	2.67	**2.00**	DRSC28109				
dom			**2.00**	DRSC29669	CG9696		ENSP00000330620	Yes
CG18591	2.64	1.34	**1.99**	DRSC02680	CG18591	**LOC100130109**	ENSP00000327930, ENSP00000329276	
PGRP-LA	1.31	2.67	**1.99**	DRSC10414	CG4384, CG4361, CG18614, CG32042			Yes
Mbs	1.71	2.27	**1.99**	DRSC10553	CG32156, CG5891, CG5600	**PPP1R12A**	ENSP00000261207, ENSP00000337897	
CG32436	2.48	1.50	**1.99**	DRSC11683	CG32436,			
HDC12032	1.85	2.13	**1.99**	DRSC12098				

CG8138	1.79	2.19	**1.99**	DRSC16386	CG8138		ENSP00000350818	
CG31523	2.22	1.75	**1.99**	DRSC27253	CG31523, CG9798		ENSP00000163344	
CG1368	2.00	1.97	**1.99**	DRSC38997	CG1368			
HDC04226	1.42	2.54	**1.98**	DRSC03972				
CG9018	1.99	1.96	**1.98**	DRSC08618	CG9018	**RPRD1B**	ENSP00000217394,	
shep	1.58	2.37	**1.98**	DRSC09771	CG10647, CG32423, CG10649	**RBMS3**	ENSP00000262031, ENSP00000273139, ENSP00000294904	
Gl	2.25	1.70	**1.98**	DRSC11175	CG9206	**DCTN1**	ENSP00000354791	
CG12499	1.42	2.53	**1.98**	DRSC14521	CG12499			
HDC20560	2.40	1.55	**1.98**	DRSC21175				
CG42336	2.25	1.70	**1.98**	DRSC29534	CG42336,			
Empty Control	2.33	1.62	**1.98**					
CG9389	1.65	2.28	**1.97**	DRSC11857	CG9389	**IMPA2**		
l(3)mbt	2.67	1.26	**1.97**	DRSC16983	CG5954	**L3MBTL3**	ENSP00000318543, ENSP00000329844, ENSP00000354526	
Pp2B-14D	2.18	1.76	**1.97**	DRSC20270	CG9842	**PPP3CA**	ENSP00000240139,	Yes
stai	1.94	2.00	**1.97**	DRSC28369	CG5981,		ENSP00000220876,	
CG8038	1.3	2.63	**1.97**	DRSC29825	CG8038	**POP4**	ENSP00000221770	
CG12082	2.46	1.45	**1.96**	DRSC08244	CG12082	**USP5**	ENSP00000229268,	
Ard1, CG42455	2.03	1.88	**1.96**	DRSC09867	Ard1: CG11989; CG42455;	**Ard1: ARD1A**	Ard1: ENSP00000218149, Ard1:	
Hpr1	2.31	1.60	**1.96**	DRSC12296	CG2031	**THOC1**	ENSP00000261600	
CG10311	2.21	1.71	**1.96**	DRSC14228	CG10311			
CHKov1	2.11	1.81	**1.96**	DRSC14258	CG10618			
aop	2.39	1.52	**1.96**	DRSC25805	CG3166		ENSP00000266427, ENSP00000341843	Yes
mas	2.47	1.45	**1.96**	DRSC28905	CG15002			
HDC18999 ('+' in Stolc et al) ('+' in Hild	1.51	2.41	**1.96**	DRSC29372				
CG4259	2.76	1.16	**1.96**	DRSC29614	CG4259			
CG6409	1.22	2.68	**1.95**	DRSC10630	CG6409			
LysP	1.09	2.80	**1.95**	DRSC25210	CG9116		ENSP00000261267	
Syn1	1.5	2.39	**1.95**	DRSC30039	CG7152,	**SNTB1**	ENSP00000217381,	
ia2	1.95	1.92	**1.94**	DRSC00304	CG11344,		ENSP00000295718,	Yes

lectin-24A	2.21	1.67	**1.94**	DRSC00604	CG3410		ENSP00000254850, ENSP00000264072, ENSP00000269299, ENSP00000315477, ENSP00000316228, ENSP00000327599, ENSP00000352869	
CG15485	2.18	1.69	**1.94**	DRSC02495	CG15485			
Tim17b2	1.99	1.88	**1.94**	DRSC03457	CG15257	**TIMM17A**	ENSP00000263235,	Yes
Acox57D-d	2.19	1.69	**1.94**	DRSC04561	CG9709		ENSP00000293217	Yes
tatl, moi	2.11	1.77	**1.94**	DRSC16371	tatl: CG8045, CG31241; moi: CG42350		tatl: ENSP00000260129	
hfw	1.90	1.97	**1.94**	DRSC18506	CG3095		ENSP00000291592, ENSP00000326763	
CG1529	1.75	2.12	**1.94**	DRSC20515	CG1529			
	1.46	2.41	**1.94**	DRSC21129				
CG14210, CG12788,	2.02	1.85	**1.94**	DRSC29021	CG14210:	**CG14210:**	CG12788:	
CG4291	2.06	1.80	**1.93**	DRSC00650	CG4291	**WBP4**	ENSP00000239880	
dyn-p25	1.22	2.64	**1.93**	DRSC03525	CG10846	**DCTN5**	ENSP00000300087	
Eps-15	1.84	2.01	**1.93**	DRSC04288	CG16932	**EPS15L1**	ENSP00000248070,	
CG14974	2.05	1.81	**1.93**	DRSC08433	CG14974			
CG8757	1.91	1.94	**1.93**	DRSC24587	CG8757		ENSP00000354182	
CG15080	1.65	2.20	**1.93**	DRSC29374	CG15080			
unc-5	1.58	2.26	**1.92**	DRSC05545	CG8166, CG8168	**UNC5C**	ENSP00000261961, ENSP00000287272, ENSP00000328673, ENSP00000349775	
CG14210, CG12788, Tim9b	1.74	2.09	**1.92**	DRSC19566	CG14210: CG14210; CG12788: CG12788, CG33066; Tim9b: CG33066, CG17767	**CG14210: CCDC86**	CG12788: ENSP00000313077, CG14210: ENSP00000227520, CG14210: ENSP00000343680, Tim9b: ENSP00000254616	
jdp	1.71	2.12	**1.92**	DRSC29394	CG2239	**DNAJC12**	ENSP00000225171	Yes
HDC09397 ('+' in Stolc et al) ('+' in Hild et al)	2.74	1.09	**1.92**	DRSC29527				
CG31813	1.49	2.34	**1.92**	DRSC29629	CG31813			

CG17712	2.10	1.71	**1.91**	DRSC00266	CG17712	**GFOD1**	ENSP00000268797, ENSP00000274688	
HDC02513	1.94	1.88	**1.91**	DRSC02484				
eEF1delta	2.00	1.82	**1.91**	DRSC02790	CG4912	**EEF1D**	ENSP00000339046, ENSP00000343513,	
sm	1.21	2.61	**1.91**	DRSC05795	CG9218	**HNRNPL**	ENSP00000221419,	
CG32100	2.40	1.42	**1.91**	DRSC10331	CG32100, CG10429, CG18638			
futsch	1.34	2.48	**1.91**	DRSC17949	CG34387,	**MAP1B**	ENSP00000296755,	
m	2.39	1.42	**1.91**	DRSC29636	CG9369			
Cyt-c-d	2.65	1.17	**1.91**	DRSC30051	CG13263			
CG7945	1.80	2.00	**1.90**	DRSC10934	CG7945, CG17014	**BAG2**	ENSP00000265033	
Mec2	2.12	1.67	**1.90**	DRSC26162	CG7635			
CG32147	2.77	1.01	**1.89**	DRSC09346	CG32147	**PGPEP1**	ENSP00000252813	
CG3257	1.82	1.96	**1.89**	DRSC27446	CG3257			
Srp68	2.28	1.50	**1.89**	DRSC28655	CG5064	**SRP68**	ENSP00000312066	
CG1468	2.14	1.61	**1.88**	DRSC17946	CG1468			
Act79B	1.77	1.96	**1.87**	DRSC11604	CG7478	**ACTA2**		
Nnf1b	1.72	2.02	**1.87**	DRSC22080	CG31658			
CG6870	1.50	2.23	**1.87**	DRSC25586	CG6870			
TBPH	1.80	1.93	**1.87**	DRSC28032	CG10327	**TARDBP**	ENSP00000240185, ENSP00000313129, ENSP00000323324	
CG15436	2.12	1.61	**1.87**	DRSC29550	CG15436			
slmo, CG34179	2.00	1.71	**1.86**	DRSC03143	slmo: CG9131;	**slmo: SLMO2**	slmo:	
ems	1.95	1.77	**1.86**	DRSC25044	CG2988	**EMX2**	ENSP00000258106,	
CG8157	1.17	2.55	**1.86**	DRSC25401	CG8157			
MtnB	1.52	2.20	**1.86**	DRSC29147	CG4312			
CG42389	1.36	2.33	**1.85**	DRSC02769	CG42389, CG13260, CG13261, CG4668, CG31738		ENSP00000338523, ENSP00000338579	
CG7461	1.54	2.13	**1.84**	DRSC07022	CG7461	**ACADVL**	ENSP00000349297	
CG32590	1.72	1.93	**1.83**	DRSC19594	CG32590			
CG30369	1.76	1.90	**1.83**	DRSC29843	CG30369			
Dhc64C	1.16	2.46	**1.81**	DRSC08656	CG7507	**DYNC1H1**	ENSP00000351750	
CG7102	2.44	1.16	**1.80**	DRSC02647	CG7102, CG17973	**BTBD19**		
CG8813	1.78	1.80	**1.79**	DRSC00706	CG8813			
CG8552	2.51	1.06	**1.79**	DRSC03095	CG8552, CG14278	**SEC23IP**	ENSP00000315208, ENSP00000325142	

CG5174	1.92	1.65	**1.79**	DRSC06920	CG5174	**TPD52L2**	ENSP00000217121, ENSP00000263850, ENSP00000341677, ENSP00000351493	
CG15564	2.13	1.38	**1.76**	DRSC15102	CG15564			
CG1667	2.02	1.47	**1.75**	DRSC29477	CG1667			
drongo	1.95	1.51	**1.73**	DRSC00814	CG3365	**AGFG1**	ENSP00000300176, ENSP00000312059	
Updo	1.82	1.61	**1.72**	DRSC30007	CG1818	**UROD**	ENSP00000246337	Yes
HDC07044 ('+' in Stolc et al) ('+' in Hild et al)	1.17	2.25	**1.71**	DRSC30040				
CG3709	1.49	1.90	**1.70**	DRSC00629	CG3709	**PUS10**	ENSP00000326003	
CG8155	1.98	1.41	**1.70**	DRSC28386	CG8155	**TBC1D25**	ENSP00000156097	
Rpd3	1.67	1.69	**1.68**	DRSC08696	CG7471	**HDAC1**	ENSP00000271095,	Yes
Empty Control	1.74	1.62	**1.68**					
CG8032	1.61	1.7	**1.66**	DRSC29586	CG8032	**SMOX**	ENSP00000278060, ENSP00000307252	
CG4375	1.12	2.17	**1.65**	DRSC25177	CG4375			
CG6834	1.64	1.62	**1.63**	DRSC29321	CG6834			
CG7288	1.56	1.70	**1.63**	DRSC29836	CG7288	**USP39**	ENSP00000312981	
CG14128	1.96	1.24	**1.60**	DRSC10132	CG14128			
CG31048	1.42	1.74	**1.58**	DRSC14373	CG31048, CG11754, CG14530	**DOCK3**	ENSP00000266037, ENSP00000343906	
CG31755	1.43	1.70	**1.57**	DRSC02901	CG31755, CG5831		ENSP00000310073	
CG10000	1.56	1.52	**1.54**	DRSC29791	CG10000			
CG3520	1.90	1.12	**1.51**	DRSC04383	CG3520			
CG14529	1.14	1.86	**1.50**	DRSC14880	CG14529			

Primary screen results:

Known regulators of IMD/Dipt pathway identified in the primary screen

Negative Regulators

Gene	Amplicon	Z-score (CO_2 only)
cycD	DRSC25031	3.65
ena	DRSC25393	3.26
falafel	DRSC16474	3.09
bx	DRSC23048, DRSC28506	2.94 2.03
kismet	DRSC00625	2.19
kek5	DRSC39004	2.18
Ras85D	DRSC16814	2.09

Positive regulators

Gene	Amplicon	Z-score (CO_2 only)
relish	DRSC16819	-3.45
tak1	DRSC20562	-2.40
PGRP-LC	DRSC28556	-2.29
RPL27A	DRSC28466	-1.75

Secondary screen results: Top hits from secondary screening (in CO_2)

Gene	Amplicon ID	Z-score		
		Expt. 1	Expt. 2	**Avg.**
Rpd3	DRSC08696	2.3	2.3	**2.3**
xmas-2	DRSC22178	1.3	2.1	**1.7**
Irc	DRSC28100	2.1	1.1	**1.6**
mts	DRSC36626	2.0	1.1	**1.6**
Ubqn	DRSC24055	1.4	1.4	**1.4**
Acox57D-d	DRSC04561	2.2	0.6	**1.4**
drk	DRSC27911	1.4	1.0	**1.2**
flfl	DRSC16474	0.9	1.4	**1.1**
CG42330	DRSC10765	1.3	0.7	**1.0**
Scgalpha	DRSC29625	0.8	1.2	**1.0**
Cht2	DRSC24801	0.5	1.4	**1.0**
zfh2	DRSC17178	1.3	0.5	**0.9**
Bap	DRSC23868	0.6	1.2	**0.9**
trx	DRSC17089	1.2	0.5	**0.9**
CSN3	DRSC11859	0.9	0.8	**0.9**
scyl	DRSC27699	1.3	0.4	**0.8**
scaf6	DRSC10676	0.6	1.1	**0.8**
ena	DRSC25393	0.5	1.1	**0.8**
tna	DRSC29530	1.6	0.0	**0.8**
Sos	DRSC23624	1.7	-0.1	**0.8**
CG33276	DRSC29463	1.1	0.3	**0.7**
Toll-7	DRSC29640	0.2	1.2	**0.7**
Aplip1	DRSC08697	1.3	0.1	**0.7**
Corin	DRSC06818	0.2	1.1	**0.7**
Sln	DRSC07133	0.3	1.0	**0.7**
SerT	DRSC04655	0.5	0.7	**0.6**
PEK	DRSC12361	-0.3	1.5	**0.6**
sif	DRSC22065	0.0	1.2	**0.6**
sba	DRSC17050	0.2	0.9	**0.6**
CG1271	DRSC08290	0.8	0.3	**0.6**
ced-6	DRSC07591	0.3	0.8	**0.6**
kis	DRSC00625	0.1	1.0	**0.6**
wntD	DRSC28538	-0.4	1.5	**0.6**
Ras85D	DRSC16814	-0.4	1.5	**0.6**
RhoGAP15B	DRSC19925	0.8	0.3	**0.5**
gt	DRSC28482	0.6	0.5	**0.5**
CG2218	DRSC28089	1.0	0.1	**0.5**
CG31457	DRSC29229	0.5	0.6	**0.5**
CG3099	DRSC18276	0.0	1.1	**0.5**
Spargel	DRSC12340	1.4	-0.3	**0.5**
tra2	DRSC29704	-0.1	1.0	**0.5**
mfr	DRSC10543	0.6	0.3	**0.5**
CG30441, CG10395	DRSC27079	1.4	-0.5	**0.5**
CG6361	DRSC22231	0.4	0.6	**0.5**

Or94b	DRSC16773	0.1	0.8	**0.5**
	DRSC14535	-0.1	1.0	**0.5**
zormin	DRSC07969	1.0	-0.1	**0.4**
Rev1	DRSC08264	0.5	0.4	**0.4**
Pros28.1A	DRSC16800	-0.3	1.2	**0.4**
CG32702	DRSC29380	-0.2	1.0	**0.4**
CG5522	DRSC06941	0.3	0.4	**0.4**
CG4594	DRSC02762	0.9	-0.2	**0.4**
Scr	DRSC29201	0.2	0.5	**0.4**
CG5599	DRSC25764	-0.6	1.3	**0.4**
CG8239	DRSC20096	0.2	0.5	**0.3**
Cpr73D	DRSC26591	1.0	-0.4	**0.3**
Sur	DRSC03447	0.2	0.3	**0.3**
CG32263	DRSC22431	0.0	0.5	**0.3**
Gr9a	DRSC22506	-0.1	0.6	**0.3**
CG13599	DRSC14602	-0.4	1.0	**0.3**
GckIII	DRSC15729	0.2	0.4	**0.3**
CG10703	DRSC29299	0.1	0.4	**0.3**
CG7051	DRSC27636	0.5	0.0	**0.2**
NAT1	DRSC30053	0.6	-0.1	**0.2**
Pvr	DRSC36840	-0.1	0.5	**0.2**
CG15625	DRSC39009	-1.0	1.2	**0.1**
CG8444	DRSC16420	-1.5	1.5	**0.0**

Supplemental Table III. Ratio of induction of *dipt-luc* in elevated CO_2 and in air for 39 candidate regulators

Gene	Amplicon	CO_2/air @ [dsRNA]		Predicted functions	Predicted human ortholog(s)
		Low	High		
zormin	DRSC07969	3.46	7.14	muscle/chromatin associated protein (Titin)	Titin
zfh2	DRSC17178	3.42	4.69	zinc finger homeodomain transcription factor	ZFHX3, ZFHX4
Flfl[1]	DRSC16474	3.81	3.08	Serine/threonine-protein phosphatase 4 regulatory subunit 3, centromere protein binding, cell cycle regulation, asymmetric cell division, Rho GTPase regulation	SMEK2
cg8239	DRSC20096	2.05	4.69	diphosphomevalonate decarboxylase activity - no clear function	MVD
mfr	DRSC10543	3.55	2.89	synaptic vesicle exocytosis	-
*ras85d**[,1]	DRSC16814	3.37	2.73	small GTPase RTK signaling, IMD regulation	KRas
rhogap15b	DRSC19925	2.78	2.90	GAP for Rho family small GTPases	ARAP1, ARAP2, ARAP3
scaf6	DRSC10676	2.21	3.35	predicted mRNA binding	CHERP
corin	DRSC06818	1.62	3.56	scavenger receptor activity; serine-type endopeptidase activity	SFRS1
rpd3	DRSC08696	2.30	2.66	Histone deacetylase superfamily	HDAC1
acox57D-d	DRSC04561	0.98	3.91	acyl-CoA dehydrogenase activity	ACOX1/2
trx	DRSC17089	2.69	2.09	histone methyltransferase activity (H3-K4 specific)	KMT2A/B
ced-6	DRSC07591	1.34	2.98	PTB domain	GULP1
cg1271	DRSC08290	2.06	2.18	Carbohydrate kinase	GK5
gckIII	DRSC15729	1.73	2.35	Serine/threonine/dual specificity protein kinase	STK25
*kis**[,2]	DRSC00625	2.14	1.83	ATP-dependent helicase activity, SNF2-related	CHD6/7
serT	DRSC04655	1.62	2.18	neurotransmitter:sodium symporter activity	SLC6A
cg5522	DRSC06941	1.67	1.93	Ral guanyl-nucleotide exchange factor activity	RALGPS1/2
cycd	DRSC08264	1.02	2.40	cyclin-dependent protein serine/threonine kinase regulator activity	CCND2
rev1	DRSC08264	1.36	1.88	DNA-directed DNA polymerase activity	REV1
sur	DRSC03447	1.12	1.80	ABC transporter-like, sulfonylurea receptor activity	ABCC8/9
drk	DRSC27911	1.64	1.10	SH3/SH2 adaptor activity	GRB2
wntD	DRSC28538	1.10	1.58	frizzled binding; G-protein coupled receptor binding	WNT8/9
mts	DRSC36626	1.51	1.11	protein serine/threonine phosphatase activity	PPP4C/6C/2C
cg31772	DRSC22869	0.93	1.60	PDZ domain; Pleckstrin homology domain	PPP1R9, ADAP1
ubqn	DRSC24055	0.82	1.53	Ubiquitin-related domain	UBQLN1-4
cg30438	DRSC21419	1.02	1.14	UDP-glucuronosyl/UDP-glucosyltransferase	UGT8/1/2/4

gt	DRSC28482	1.11	1.04	sequence-specific DNA binding transcription factor activity	TEF, DBP, HLF
*pvr**[,2,3]	DRSC36840	0.84	1.30	PDGF/VEGF-related receptor tyrosine kinase	PDGFR, VEGFR
scgalpha	DRSC29625	1.33	0.79	Sarcoglycan α (Dystroglycan-type cadherin-like)	Sarcoglycan epsilon
tra2	DRSC29704	1.35	0.62	mRNA splicing factor	TRA2
irc	DRSC28100	0.57	1.33	Immune-regulated catalase	PTGS2
sos	DRSC23624	1.15	0.75	Ras/Rac guanyl-nucleotide exchange factor activity	SOS1/2
tna	DRSC29530	0.85	1.02	Zinc finger, MIZ-type	ZMIZ2/1
xmas-2	DRSC22178	1.11	0.71	RRM (RNA recognition motif) domain	MCM3AP
ena	DRSC25393	0.48	1.28	Actin organization	VASP
bap	DRSC23868	0.92	0.74	Transcription factor	NKX3
slp2	DRSC26622	0.92	0.68	Transcription factor	FOXG1
cht2	DRSC24801	0.65	0.93	Glycoside hydrolase	CHIA. OVGP1,CHIT1

Genes are ordered approximately because the two screening conditions not directly comparable as the magnitude of the air/CO_2 ratio is variable between batches of cells

* previously implicated in regulation of IMD signaling:

[1]Foley E, O'Farrell PH. Functional dissection of an innate immune response by a genome-wide RNAi screen. PLoS Biol. 2004 Aug;2(8):E203.

[2]Inhibitor of apoptosis 2 and TAK1-binding protein are components of the Drosophila Imd pathway. Kleino A[1], Valanne S, Ulvila J, Kallio J, Myllymäki H, Enwald H, Stöven S, Poidevin M, Ueda R, Hultmark D, Lemaitre B, Rämet M. EMBO J. 2005 Oct 5;24(19):3423-34.

[3]Bond D, Foley E. A quantitative RNAi screen for JNK modifiers identifies Pvr as a novel regulator of Drosophila immune signaling. PLoS Pathog. 2009Nov;5(11)