

**Supplementary Table 5. Down-regulated genes in 4 dpf *glut12* morphant larvae**

Gene	Gene Id	Fold change	p-value
si:dkey-18h14.2	ENSDARG00000091368	-108.2477236	1.34E-06
si:ch211-263m18.4	ENSDARG00000093353	-39.64632808	0.01041913
si:dkey-3n22.9	ENSDARG00000096273	-33.55495164	2.54E-06
BX005305.5	ENSDARG00000090131	-17.68674499	0.04011555
si:dkey-108f8.7	ENSDARG00000092040	-13.41849261	0.012366771
opn1mw3	ENSDARG00000044279	-5.471444475	0.048222791
BX569798.1	ENSDARG00000037619	-5.187163286	0.046987055
CR749741.5	ENSDARG00000091778	-4.923517466	0.001119876
CLN5 (1 of 2)	ENSDARG00000076339	-4.761010433	0.0244229
CR392330.2	ENSDARG00000094383	-4.708559602	0.018272284
fabp1b.2	ENSDARG00000095866	-4.516979708	0.010146955
si:dkey-78l4.2	ENSDARG00000095384	-4.465286021	0.003005103
si:dkey-254e13.13	ENSDARG00000096100	-4.398513011	8.87E-05
he1b	ENSDARG00000019122	-4.303850795	0.000271732
zp2	ENSDARG00000086352	-4.25309965	0.007702509
rhcgl1	ENSDARG00000007080	-4.158698977	0.016907844
si:ch211-121a2.2	ENSDARG00000039682	-3.795031753	1.48E-11
CABZ01059408.1	ENSDARG00000059786	-3.750005814	0.008874047
si:dkey-58b18.2	ENSDARG00000092773	-3.743073705	0.045625282
si:ch73-374e19.1	ENSDARG00000095858	-3.713975272	0.030936054
si:ch211-215m21.29	ENSDARG00000095270	-3.610761262	0.002845766
si:ch211-285c6.1	ENSDARG00000076257	-3.606575157	0.021999085
si:dkey-9c18.6	ENSDARG00000096588	-3.592639762	0.031348826
	ENSDARG00000089358	-3.502023467	2.77E-07
si:dkey-21k10.2	ENSDARG00000093789	-3.497685383	0.017335623
METTL21C (2 of 2)	ENSDARG00000055437	-3.482923436	0.015919488
zgc:162952	ENSDARG00000095373	-3.429194097	0.037329719
CABZ01055343.2	ENSDARG00000088324	-3.399610209	0.001375367
ascc1	ENSDARG00000077760	-3.384176454	1.32E-08
si:dkey-1p9.5	ENSDARG00000093175	-3.357011515	0.033111961
si:ch73-263o4.3	ENSDARG00000096207	-3.314634736	0.000479089
zp2.2	ENSDARG00000091737	-3.302959679	0.045332197
CR788316.2	ENSDARG00000073836	-3.296198611	0.007641476
si:dkey-4i23.5	ENSDARG00000092137	-3.240732266	0.016394106
si:ch211-170d8.2	ENSDARG00000094887	-3.236094721	0.002259383
he1a	ENSDARG00000023656	-3.218599431	0.016216745
myh11b	ENSDARG00000006281	-3.184130655	0.000301534
si:dkey-93l1.9	ENSDARG00000092368	-3.043234154	0.007829935
si:dkey-9c18.3	ENSDARG00000096579	-3.035142138	0.002915833
CABZ01055343.4	ENSDARG00000089208	-3.033037954	0.01216105
BX323854.3	ENSDARG00000086586	-3.021487614	0.011735085

tgm1l2	ENSDARG00000019024	-2.994762182	0.040440926
fabp7b	ENSDARG00000034650	-2.985932038	0.000320782
si:ch211-139k8.3	ENSDARG00000093499	-2.956549691	0.044982921
si:ch73-129a22.11	ENSDARG00000003209	-2.89920056	0.03508409
si:dkey-242h9.3	ENSDARG00000069189	-2.866043193	4.63E-05
zgc:172053	ENSDARG00000038321	-2.829434055	0.030364929
SHISA5 (2 of 2)	ENSDARG00000071543	-2.801707063	0.002811312
foxb2	ENSDARG00000037475	-2.801680082	0.024215192
zgc:113364	ENSDARG00000037192	-2.76915508	0.000322233
CR788316.1	ENSDARG00000038111	-2.733805182	0.004414166
si:ch211-106h4.4	ENSDARG00000093629	-2.648930828	0.025698586
si:ch211-125e6.6	ENSDARG00000093010	-2.567940642	0.034232432
rhcga	ENSDARG00000003203	-2.556926036	3.80E-05
plekhs1	ENSDARG00000079227	-2.527064163	0.00383497
MPEG1 (2 of 3)	ENSDARG00000043093	-2.494020877	1.41E-11
CABZ01080229.2	ENSDARG00000086253	-2.490723009	0.005072944
gnrh2	ENSDARG00000044754	-2.463435213	0.010715178
si:ch211-10j20.4	ENSDARG00000093231	-2.443122837	0.028078012
AL954655.7	ENSDARG00000095409	-2.394020041	0.0076757
rbp7a	ENSDARG00000091906	-2.38221008	0.000191463
	ENSDARG00000078242	-2.369801854	0.022729554
si:dkeyp-84f11.4	ENSDARG00000063319	-2.369542722	0.014252255
C6H2orf62	ENSDARG00000063009	-2.368732889	0.004700656
zgc:174862	ENSDARG00000077571	-2.360775654	0.017580399
CR735107.2	ENSDARG00000087955	-2.355118607	1.14E-05
si:ch211-222k6.2	ENSDARG00000087046	-2.335288568	0.014639303
BX072532.1	ENSDARG00000074642	-2.319572897	0.005891416
si:dkey-118k5.3	ENSDARG00000087736	-2.289127387	0.039814507
si:ch211-214p16.1	ENSDARG00000044129	-2.288242129	0.003928591
card9	ENSDARG00000067672	-2.282463365	0.001626913
si:dkey-17e16.18	ENSDARG00000095025	-2.28163375	0.014399961
TPRX1	ENSDARG00000088885	-2.261309365	8.72E-07
IRS2	ENSDARG00000037099	-2.261256666	8.48E-05
si:ch211-133l5.5	ENSDARG00000093753	-2.260464259	4.93E-07
cept1a	ENSDARG00000058716	-2.245401589	0.001453573
GPR3	ENSDARG00000094860	-2.219940953	0.000612692
TBC1D10C	ENSDARG00000037408	-2.20037501	0.034365311
zgc:153932	ENSDARG00000052779	-2.173914332	8.58E-07
PARP6 (1 of 2)	ENSDARG00000078528	-2.169336109	9.28E-05
zgc:163030	ENSDARG00000069192	-2.13854802	4.80E-06
stc1l	ENSDARG00000058476	-2.136202883	0.000579592
CABZ01044297.1	ENSDARG00000074745	-2.134330313	1.76E-14
CABZ01074298.1	ENSDARG00000087767	-2.134002478	0.029286364
si:ch211-215c18.3	ENSDARG00000095308	-2.119111371	0.037588764

mrm1	ENSDARG00000059658	-2.112362652	0.038465777
zgc:113232	ENSDARG00000040118	-2.10906376	1.28E-05
BX323876.2	ENSDARG00000052948	-2.105667971	0.002171256
CABZ01097761.1	ENSDARG00000086928	-2.103420949	1.81E-05
BX539307.1	ENSDARG00000071588	-2.100128531	0.010380323
mir451a	ENSDARG00000095304	-2.089461692	0.016667256
haao	ENSDARG00000076487	-2.083697735	1.88E-05
CABZ01109105.1	ENSDARG00000090525	-2.078647314	0.015171596
si:dkey-21e2.13	ENSDARG00000094840	-2.056805948	0.002017548
caspbl	ENSDARG00000094433	-2.041659031	0.016683395
si:ch211-117m20.5	ENSDARG00000091996	-2.038051352	2.04E-13
BX072532.2	ENSDARG00000092250	-2.036048797	0.033068924
cart4	ENSDARG00000070142	-2.030433608	0.033600071
lect2l	ENSDARG00000033227	-2.027396618	4.98E-07
tcap	ENSDARG00000007344	-2.018412426	0.003517943
BX470254.1	ENSDARG00000055160	-2.002217083	0.038077385
CABZ01048958.1	ENSDARG00000078617	-1.99830801	0.021241343
BX927362.1	ENSDARG00000087873	-1.997697091	0.000392243
si:zfos-364h11.1	ENSDARG00000090946	-1.997104265	0.028505023
tmem136b	ENSDARG00000035163	-1.99576863	0.011241382
cenpv	ENSDARG00000092285	-1.99452056	0.037745602
si:dkey-46k9.4	ENSDARG00000093128	-1.991779504	0.033248343
col9a1	ENSDARG00000031483	-1.973215455	2.83E-07
ube2j2	ENSDARG00000061161	-1.95980619	0.035234454
BX547934.1	ENSDARG00000089881	-1.956466687	0.038539394
slc12a10.3	ENSDARG00000055253	-1.956380377	0.005751564
pdxka	ENSDARG00000088959	-1.948137156	0.021896046
CU151895.1	ENSDARG00000090991	-1.94755277	0.045239034
plac8l1	ENSDARG00000069031	-1.947468977	0.044540427
si:dkey-11o15.5	ENSDARG00000095592	-1.946290043	0.016795444
si:dkeyp-79f12.7	ENSDARG00000094050	-1.94287532	0.033725466
nmnat1	ENSDARG00000055893	-1.939968987	4.57E-06
si:ch211-106h4.12	ENSDARG00000092920	-1.93734288	0.011195779
ST3GAL1 (5 of 5)	ENSDARG00000057593	-1.924127574	0.025178252
ddit4	ENSDARG00000037618	-1.922034045	0.0002711
ctsba	ENSDARG00000055120	-1.919807735	0.00932637
ggact.1	ENSDARG00000070581	-1.915493316	0.008920077
zgc:77118	ENSDARG00000093176	-1.897363179	0.015616819
henmt1	ENSDARG00000018871	-1.892173388	0.006261635
crygm2f	ENSDARG00000078134	-1.890920045	0.000616415
zgc:153723	ENSDARG00000007769	-1.889121234	0.044742904
zgc:123217	ENSDARG00000059026	-1.888331703	0.014408007
CU672227.1	ENSDARG00000086452	-1.885016328	0.033479402
CR548641.1	ENSDARG00000091734	-1.86950027	0.021798339

si:dkey-253d23.3	ENSDARG00000095643	-1.868561028	0.000420944
BX072532.5	ENSDARG00000094951	-1.866048856	0.02446516
BX005305.7	ENSDARG00000093101	-1.845875943	0.038762214
BX072532.3	ENSDARG00000092704	-1.845401478	0.026989684
si:ch211-158m24.12	ENSDARG00000095885	-1.842040106	4.60E-12
guca1g	ENSDARG00000045737	-1.836579404	0.001891318
snx10a	ENSDARG00000004405	-1.834312232	0.003097824
zgc:55413	ENSDARG00000014208	-1.830599123	0.020659271
si:ch211-222k6.1	ENSDARG00000071581	-1.830327355	0.001326654
si:dkey-19c16.12	ENSDARG00000096488	-1.828648455	0.000960205
hbbe2	ENSDARG00000045143	-1.815334894	0.024575271
CABZ01040055.1	ENSDARG00000086869	-1.815120623	0.029479616
CABZ01008086.1	ENSDARG00000039491	-1.815113598	0.020848012
C17H14orf159	ENSDARG00000005179	-1.809134094	0.004134358
btr04	ENSDARG00000060962	-1.807647588	0.011947595
si:dkey-23a17.1	ENSDARG00000086904	-1.800191762	0.005171176
thap3	ENSDARG00000041080	-1.79989478	0.004845488
rab15	ENSDARG00000020822	-1.799489943	0.038831608
hbz	ENSDARG00000045142	-1.795123451	0.026480653
zgc:110377	ENSDARG00000055036	-1.793681528	3.49E-05
BX465841.1	ENSDARG00000073749	-1.787204666	0.028580618
zgc:101553	ENSDARG00000040427	-1.784597584	0.043692243
C12H7orf62	ENSDARG00000053520	-1.780226874	0.010022418
ggcta	ENSDARG00000076406	-1.779139882	0.007746244
si:ch211-132b12.1	ENSDARG00000061480	-1.774664901	0.043135161
rgs9a	ENSDARG00000037925	-1.771268261	0.022154244
mal	ENSDARG00000030094	-1.770346372	0.00024532
bspry	ENSDARG00000059758	-1.769173355	0.010417588
zgc:153258	ENSDARG00000076839	-1.767900012	0.000503492
si:ch73-308b14.1	ENSDARG00000095351	-1.766474993	0.00232753
lypd6b	ENSDARG00000077643	-1.763762016	0.004549904
kazald3	ENSDARG00000053509	-1.761092846	6.56E-06
cyr611l	ENSDARG00000035422	-1.760903003	0.014970498
CR385054.1	ENSDARG00000087066	-1.754283447	7.12E-07
zgc:111983	ENSDARG00000006588	-1.753194587	0.000434197
dsccl	ENSDARG00000019907	-1.750163473	0.006514894
rtn4rl2a	ENSDARG00000052012	-1.744032445	0.045652687
si:dkey-266f7.9	ENSDARG00000075958	-1.743476488	0.039635861
TMEM27	ENSDARG00000041644	-1.742134009	0.011081605
socs3a	ENSDARG00000025428	-1.735373343	0.012821732
si:dkey-92i17.2	ENSDARG00000093612	-1.731292384	0.028519045
zgc:172075	ENSDARG00000076146	-1.73094612	0.009515205
slc2a5	ENSDARG00000077875	-1.729562729	0.026836368
	ENSDARG00000094308	-1.727342487	0.047313947

zgc:86709	ENSDARG00000057911	-1.726360578	0.028571232
casp3b	ENSDARG00000055045	-1.725782731	1.65E-05
zgc:112263	ENSDARG00000057365	-1.725722606	0.000158911
si:ch211-62a1.3	ENSDARG00000092534	-1.722869832	0.037555525
crygm2d15	ENSDARG00000069826	-1.721206374	0.001644414
crygs2	ENSDARG00000041171	-1.718702117	0.030850255
si:dkeyp-82b4.2	ENSDARG00000087800	-1.714658929	0.011698216
inhbab	ENSDARG00000024759	-1.71425407	0.029675789
fabp1a	ENSDARG00000019357	-1.712317723	0.002024185
si:dkeyp-1h4.6	ENSDARG00000093936	-1.712200492	0.008238136
si:dkey-253d23.4	ENSDARG00000079762	-1.711986211	9.53E-06
npas4a	ENSDARG00000055752	-1.706713288	0.020961305
urp1	ENSDARG00000093493	-1.704530721	0.025927927
si:dkey-9c18.1	ENSDARG00000096577	-1.698761502	0.049354428
sst3	ENSDARG00000031649	-1.698507416	0.000162136
CU693369.1	ENSDARG00000089534	-1.697657781	0.00084363
tph1a	ENSDARG00000029432	-1.69296596	0.0155369
si:dkey-22a18.2	ENSDARG00000087222	-1.690090948	0.034880796
zgc:113265	ENSDARG00000076807	-1.68650943	0.000647473
btr30	ENSDARG00000090028	-1.682474426	0.006398477
si:zfos-223e1.2	ENSDARG00000079997	-1.676483728	0.00713654
ABHD12B (2 of 2)	ENSDARG00000092071	-1.672955795	0.026908524
	ENSDARG00000089050	-1.668385234	0.035103513
ankrd1b	ENSDARG00000076192	-1.668037104	0.046774105
arsk	ENSDARG00000059714	-1.667667495	0.033580411
CABZ01059415.2	ENSDARG00000087345	-1.66692852	0.032218156
CA4	ENSDARG00000044512	-1.66691107	0.001469778
odam	ENSDARG00000074476	-1.665061356	0.039240276
BX897747.1	ENSDARG00000053761	-1.659893979	0.012205866
gamt	ENSDARG00000070844	-1.654401448	0.000241152
si:ch211-286l10.2	ENSDARG00000096172	-1.649214193	0.036145186
gyg1b	ENSDARG00000059391	-1.647594454	0.009131534
zgc:165347	ENSDARG00000088687	-1.645581523	0.00193999
ftr15	ENSDARG00000074118	-1.643487453	0.04144292
CU459152.1	ENSDARG00000031588	-1.643182907	1.76E-06
fndc4a	ENSDARG00000043396	-1.639778689	0.046226528
snx8b	ENSDARG00000078057	-1.637421955	0.042409703
sncga	ENSDARG00000034423	-1.635069721	9.83E-05
crygm2d6	ENSDARG00000073874	-1.635033879	0.006261783
FAM210A (1 of 2)	ENSDARG00000035985	-1.630166259	0.001449841
dbh	ENSDARG00000069446	-1.628810813	0.019026976
CELA1 (3 of 8)	ENSDARG00000092890	-1.628004492	0.047271029
CR774195.2	ENSDARG00000078832	-1.625310136	0.043919679
tek	ENSDARG00000028663	-1.622328961	0.002793166

hoxc6b	ENSDARG00000046045	-1.620055682	0.006494934
stx11b.1	ENSDARG00000029290	-1.619077227	0.000321186
HYAL1 (3 of 3)	ENSDARG00000061044	-1.618459295	0.014413145
zgc:113625	ENSDARG00000054160	-1.618438322	0.022575633
CR788231.1	ENSDARG00000052288	-1.61596421	0.047633367
si:ch211-184m19.3	ENSDARG00000096655	-1.610328226	0.000644212
hspb3	ENSDARG00000067714	-1.608338775	0.041851938
ube2w	ENSDARG00000044923	-1.606223881	0.002126468
	ENSDARG00000095913	-1.600494441	0.036216892
si:dkey-22f5.9	ENSDARG00000092044	-1.597489484	0.011432897
si:dkey-94e7.2	ENSDARG00000068474	-1.597039943	0.029894177
itih2	ENSDARG00000045516	-1.594315412	1.80E-06
coll1a1a	ENSDARG00000012405	-1.59425088	5.67E-07
adh8b	ENSDARG00000024278	-1.591144098	0.026079373
PROCA1	ENSDARG00000069823	-1.590556658	0.021953362
spg20a	ENSDARG00000068782	-1.5871894	0.01063504
dok6	ENSDARG00000063032	-1.586062993	0.000604624
FAM3C (2 of 2)	ENSDARG00000045824	-1.580708035	0.015958868
gm2a	ENSDARG00000088439	-1.577825175	0.000556877
CABZ01032473.1	ENSDARG00000087683	-1.577423988	0.014356571
TNFRSF14 (11 of 12)	ENSDARG00000068963	-1.576898165	0.000825352
SH3D21	ENSDARG00000041190	-1.576856377	0.000124406
slc2a12	ENSDARG00000036865	-1.575884296	0.003091715
slc17a5	ENSDARG00000055190	-1.574694682	1.77E-05
enpp6	ENSDARG00000040469	-1.571205584	0.007506683
si:ch73-352p18.4	ENSDARG00000088584	-1.568735124	0.021638609
	ENSDARG00000087502	-1.567948958	0.019234489
cldn11b	ENSDARG00000030723	-1.567819463	0.001366661
snx8b	ENSDARG00000077708	-1.567290358	0.039044389
spg7	ENSDARG00000068187	-1.566838184	1.49E-05
hoxb13a	ENSDARG00000056015	-1.55688042	0.030823203
plekhf1	ENSDARG00000027852	-1.554018319	0.00016978
si:dkey-162b3.5	ENSDARG00000094362	-1.552305523	3.39E-05
BX957297.2	ENSDARG00000090615	-1.552100405	0.004164885
klf2a	ENSDARG00000042667	-1.551452513	0.03311512
si:dkey-184p9.7	ENSDARG00000092726	-1.550174184	0.018372754
cyp11c1	ENSDARG00000042014	-1.549656629	0.036261523
hmgcra	ENSDARG00000052734	-1.549542871	8.75E-05
ensaa	ENSDARG00000036944	-1.547890292	0.029624666
sult2st1	ENSDARG00000033170	-1.546402026	0.001791107
her8.2	ENSDARG00000069675	-1.546391488	0.029694481
ctssb.2	ENSDARG00000013771	-1.544577884	0.00987128
slc22a6l	ENSDARG00000055523	-1.543742765	0.000101663

si:ch211-265g21.1	ENSDARG00000096508	-1.543228954	0.004727924
actc1a	ENSDARG00000042535	-1.541706291	9.60E-06
lgals111	ENSDARG00000088711	-1.540861881	0.045440824
CABZ01079764.1	ENSDARG00000068589	-1.539127281	0.000200557
colla2	ENSDARG00000020007	-1.538667998	3.28E-06
si:dkey-17e16.17	ENSDARG00000091669	-1.535476295	0.011866119
CABZ01048960.1	ENSDARG00000074683	-1.533008796	0.037185527
rgrb	ENSDARG00000044445	-1.532841265	0.002042771
TCF24	ENSDARG00000086944	-1.532808625	0.03598696
aqp8a.1	ENSDARG00000045141	-1.531759999	0.021144823
mycbp	ENSDARG00000091001	-1.53107983	0.010858193
wu:fa03e10	ENSDARG00000088636	-1.530222971	0.000513825
crygm2d9	ENSDARG00000073750	-1.528138827	8.37E-06
anxa1c	ENSDARG00000011168	-1.524841388	0.00011707
fbp2	ENSDARG00000012366	-1.523891043	7.71E-06
acta1b	ENSDARG00000055618	-1.523187298	7.31E-06
fos	ENSDARG00000031683	-1.516659191	0.040713627
crygm2d12	ENSDARG00000069801	-1.51583555	0.01392033
si:ch211-56a11.2	ENSDARG00000093677	-1.515163205	0.042190768
sf3b5	ENSDARG00000016855	-1.514688234	0.023743844
actc1b	ENSDARG00000037840	-1.513944982	2.67E-05
crygm2d14	ENSDARG00000087301	-1.513594844	0.004160976
ncs1a	ENSDARG00000055229	-1.512599546	0.011196261
si:ch73-335m24.2	ENSDARG00000074285	-1.505779636	0.02521216
si:ch1073-286c18.5	ENSDARG00000096582	-1.505042565	0.009659931
sumf2	ENSDARG00000069497	-1.503936829	0.00810991
cyt1	ENSDARG00000092947	-1.503624062	0.00066341
sult1st4	ENSDARG00000003181	-1.502191548	0.011142784
mdh1b	ENSDARG00000092649	-1.501259845	0.00544939
ces3	ENSDARG00000041595	-1.50059697	8.58E-06