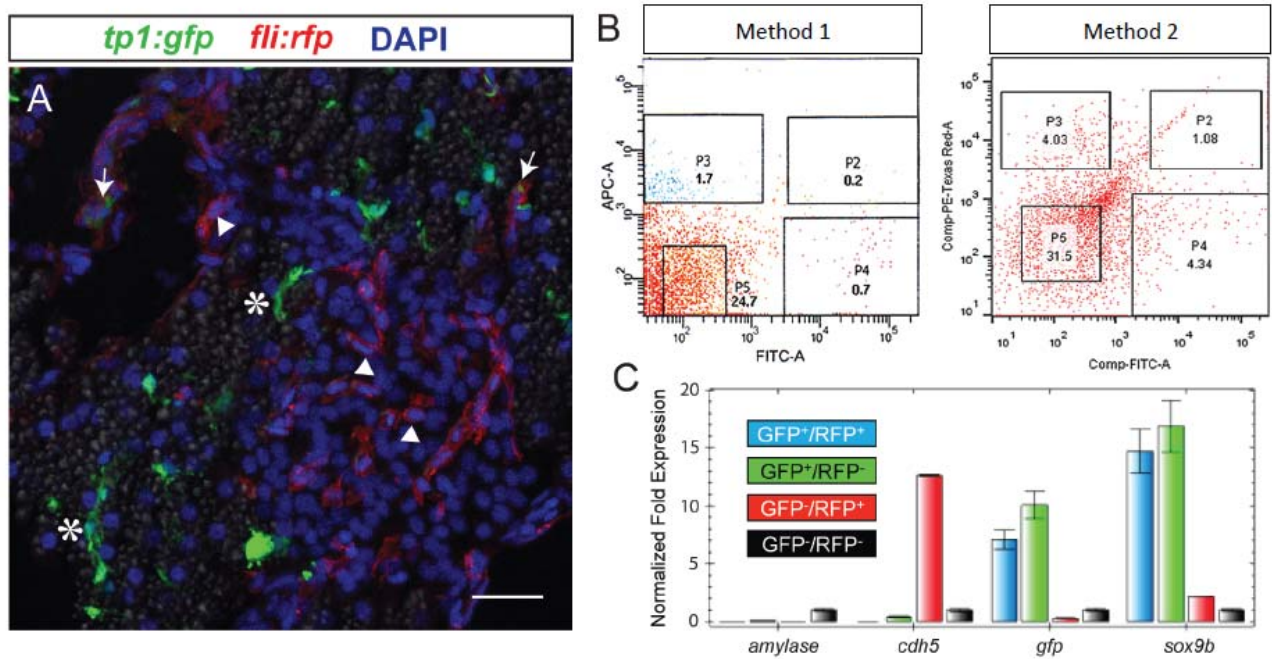


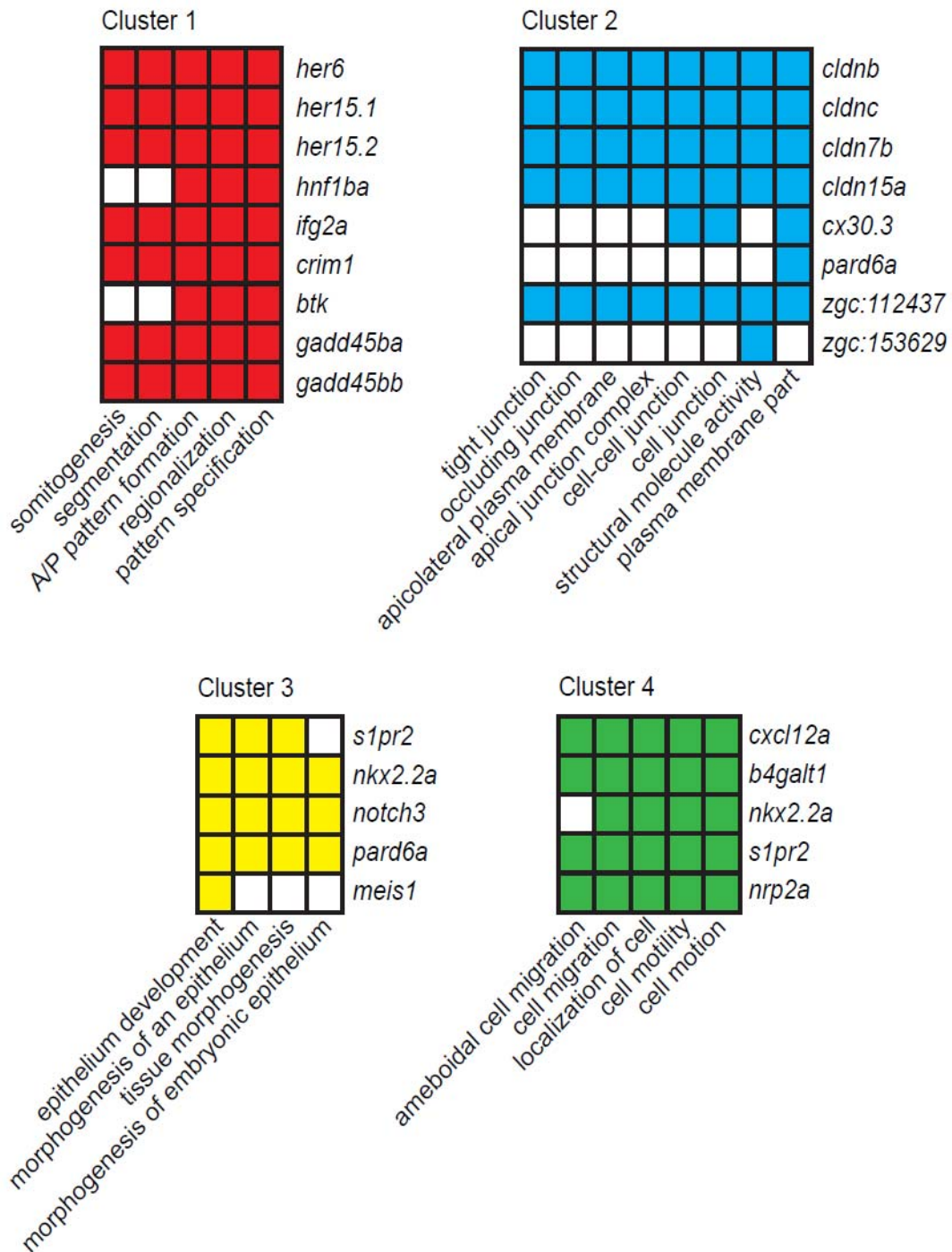
SUPPLEMENTARY DATA

Supplementary Figure 1. Isolation of CACs. (A) Confocal image of *Tp1:GFP; fli:rfp* fish used for Method 2. Notch-responsive cells (green, asterisks), endothelial cells (red, arrowheads), Notch-responsive endothelial cells (arrows). (B) FACS plots for Preparation 1 sorted using Method 1, and Preparation 2 using Method 2. (C) qPCR from sorted cells for the acinar cell marker *amylase*, the endothelial cell marker *cdh5*, *gfp*, and *sox9b*. Enrichment for *amylase* was not detected in any of the cell fractions.



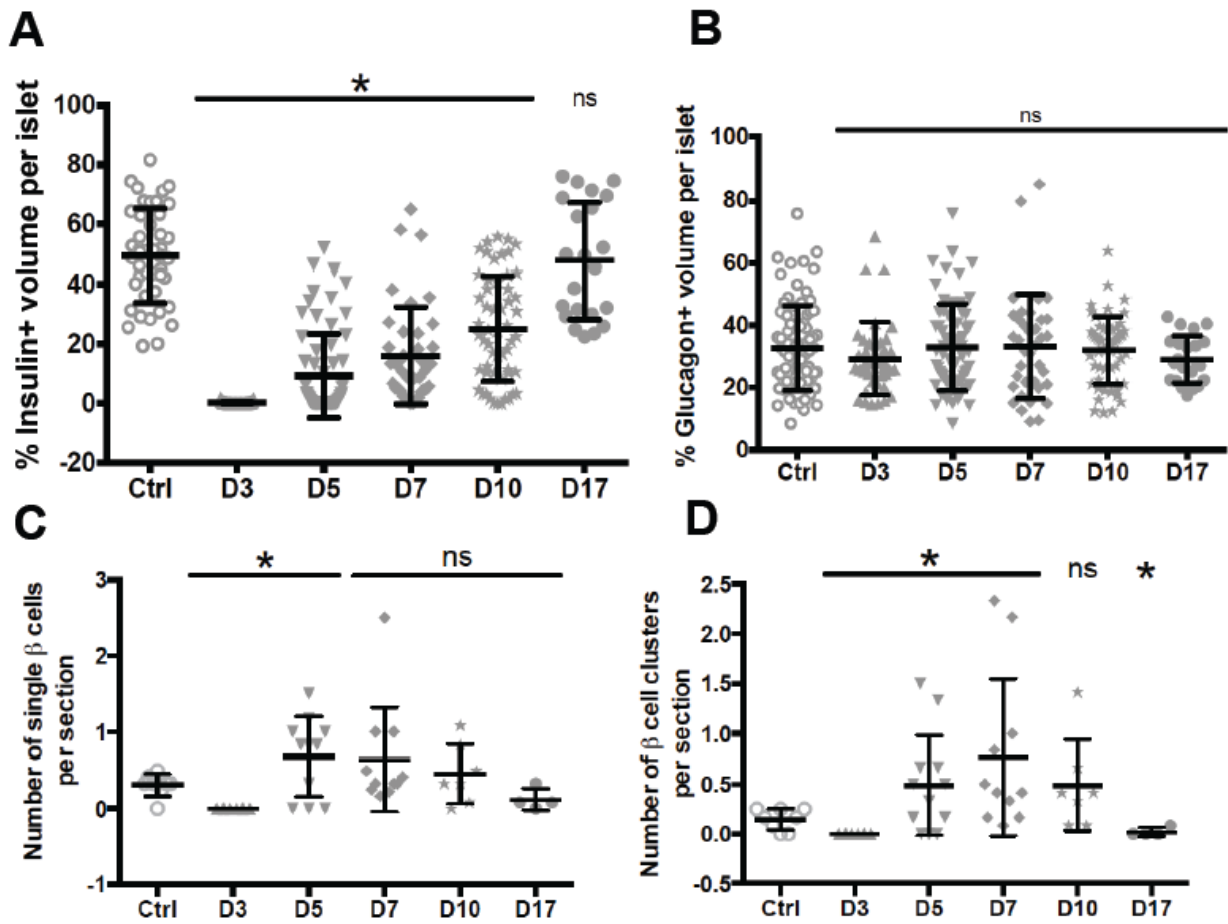
SUPPLEMENTARY DATA

Supplementary Figure 2. Functional annotation clustering of CAC-enriched genes. Clusters represent GO terms associated with developmental programming (Cluster 1), epithelial cell biology (Cluster 2), epithelial development (Cluster 3), and cell motility/cytoskeletal organization (Cluster 4).



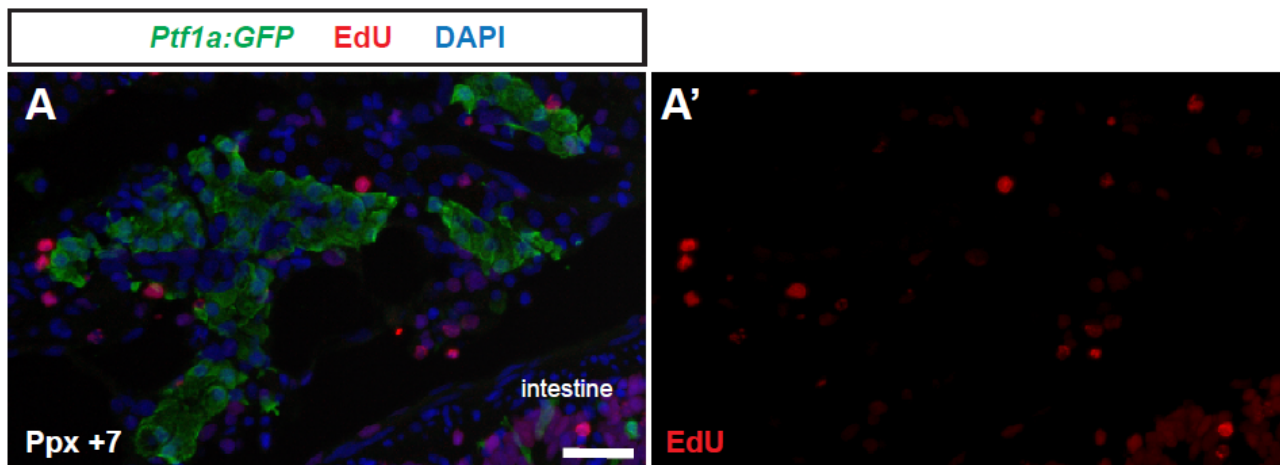
SUPPLEMENTARY DATA

Supplementary Figure 3. Quantification of β -cell regeneration. (A) Percentage of Glucagon+ volume in islets. (B) Number of single β cells and (C) β -cell clusters. Glucagon+ volume was calculated using Nikon NIS Elements 4.1 software. * $p < 0.05$, t-test compared to control. ns = not significant.



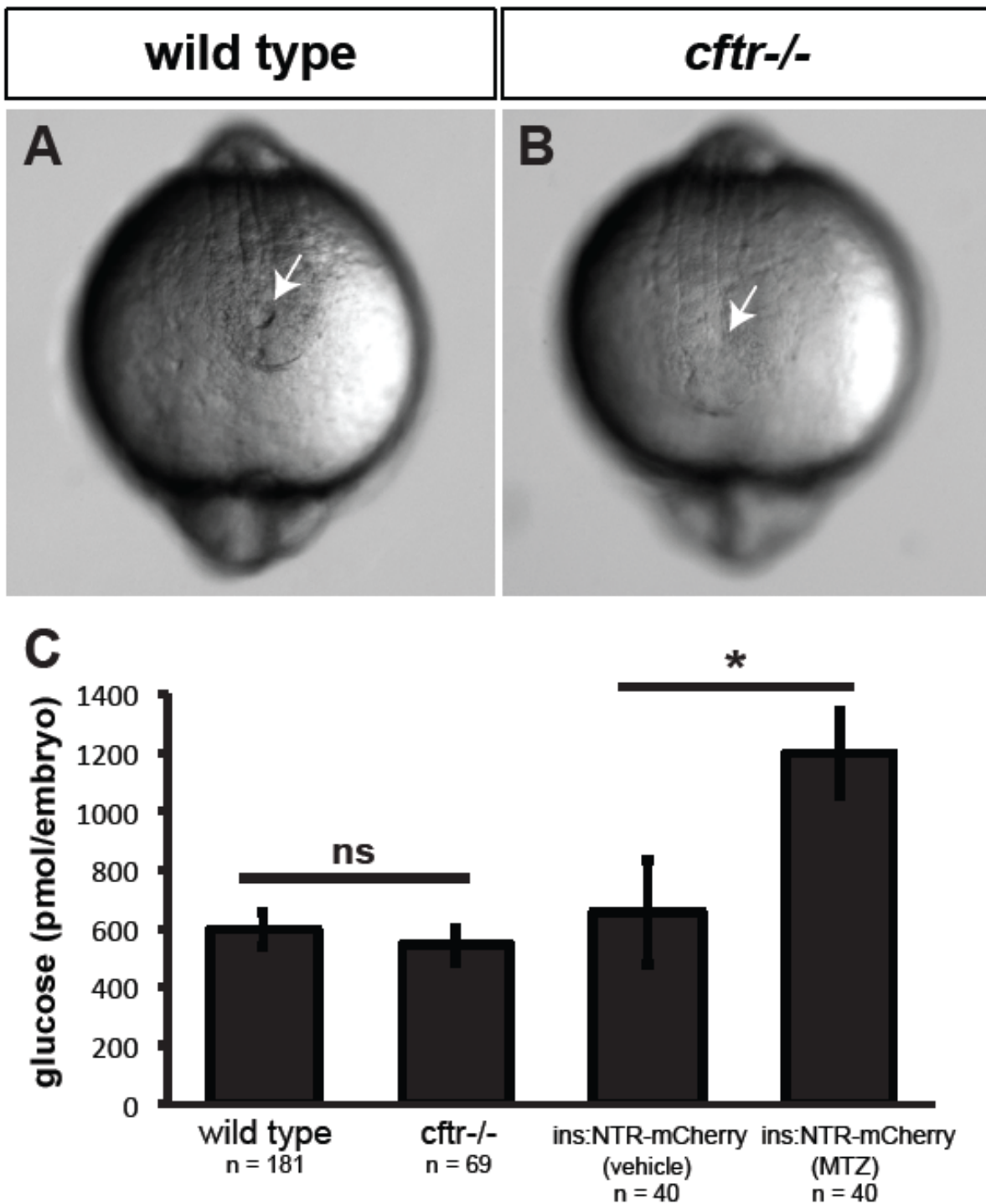
SUPPLEMENTARY DATA

Supplementary Figure 4. Proliferation following PPx. (A) EdU incorporation in adult pancreas at PPx +7 days. *Ptf1a:GFP* (green), EdU (red), DAPI (blue). scale bar = 20 μ m.



SUPPLEMENTARY DATA

Supplementary Figure 5. Glycemia in *cftr* mutant larvae. (A-B) Kupffer's vesicle (arrow) is clearly visible in wild-type embryos at the 10 somite stage (14 hpf), but is absent from *cftr*^{-/-} embryos. (C) Glucose per embryo at 5 dpf is not significantly different in wild-type and *cftr*^{-/-} embryos. As a control, *ins:NTR* embryos treated with MTZ contain more glucose than *ins:NTR* embryos treated with vehicle. *p < 0.05, ns = not significant, t-test.



SUPPLEMENTARY DATA

Supplementary Table 1. Genes Differentially Expressed in CACs vs non-CACs

ensembl id	gene name	Preparation 1		Preparation 2	
		fold change	P	fold change	P
ENSDARG00000089382	zgc:158463	250589.627	0.000E+00	15.678	2.478E-13
ENSDARG00000012269	clcn1b	2144.024	1.862E-12	68.854	0.000E+00
ENSDARG00000054562	her15.1	1336.912	1.789E-11	18.995	6.845E-11
ENSDARG00000090140	TMEM196	645.479	6.535E-10	13.374	5.933E-05
ENSDARG00000009215	zgc:112437	569.971	2.173E-09	46.662	1.045E-06
ENSDARG00000045141	aqp8a.1	469.959	4.636E-09	13.017	5.240E-14
ENSDARG00000041107	cftr	428.940	7.645E-09	29.001	0.000E+00
ENSDARG00000054560	her15.2	320.080	1.700E-08	20.747	1.119E-10
ENSDARG00000069332	TMEM72	252.812	4.994E-08	15.610	4.595E-07
ENSDARG00000044975	zgc:153629	230.014	2.063E-07	11.871	1.454E-14
ENSDARG00000078638	zgc:171750	226.078	1.621E-07	456.112	0.000E+00
ENSDARG00000086857	MUC21	207.098	1.555E-07	18.032	9.818E-07
ENSDARG00000051711	CR339041.3	194.463	1.732E-07	13.413	5.974E-07
ENSDARG00000024032	coch	190.783	2.286E-07	19.583	0.000E+00
ENSDARG00000088911	CR774179.2	187.570	2.118E-07	34.981	3.763E-05
ENSDARG00000019130	plk2b	179.048	3.600E-07	6.923	9.116E-08
ENSDARG00000088306	CABZ0108873 7.1	176.823	3.049E-07	226.105	0.000E+00
ENSDARG00000090738	mylka	164.362	3.819E-07	9.386	4.810E-04
ENSDARG00000086057	PLXND1	160.300	5.023E-07	12.768	2.413E-03
ENSDARG00000069103	si:dkeyp- 82a1.4	160.247	5.181E-07	33.095	5.058E-13
ENSDARG00000069608	PALM2- AKAP2	156.521	5.944E-07	12.080	4.909E-12
ENSDARG00000091014	CU138542.4	155.084	2.286E-06	56.772	6.539E-08
ENSDARG00000057606	arl4ca	150.142	8.712E-07	7.592	1.668E-04
ENSDARG00000077424	im:7137006	142.012	7.761E-07	20.080	1.501E-05
ENSDARG00000074509	TACR2	139.390	1.053E-06	11.045	5.764E-04
ENSDARG00000053358	BASP1	138.295	1.285E-06	20.894	0.000E+00
ENSDARG00000058389	si:ch211- 89f7.4	131.314	2.522E-06	4.223	6.692E-05
ENSDARG00000016691	cd9b	127.967	1.680E-06	13.909	1.409E-11
ENSDARG00000036820	mgll	127.004	2.418E-06	8.401	8.443E-11
ENSDARG00000074319	sall1a	123.492	2.415E-06	8.936	5.136E-11
ENSDARG00000042707	cx30.3	123.098	2.356E-06	20.866	0.000E+00
ENSDARG00000075112	si:dkey- 162b23.3	122.107	4.174E-06	25.424	1.034E-03
ENSDARG00000059507	BX323555.3	118.947	3.460E-06	6.889	4.527E-09
ENSDARG00000014047	cldn7b	115.910	5.149E-06	13.483	5.329E-15
ENSDARG00000089038	PLEKHG5	111.428	4.191E-06	6.852	4.849E-09
ENSDARG00000042106	hlxb9la	109.827	3.095E-06	33.522	3.878E-13

SUPPLEMENTARY DATA

ENSDARG00000069504	IL12B	108.944	2.627E-06	7.677	4.317E-03
ENSDARG00000022569	nkx6.1	108.220	3.885E-06	4.977	1.607E-05
ENSDARG00000013576	gadd45bb	105.162	6.561E-06	8.807	9.566E-11
ENSDARG00000078258	GGT5	101.729	4.034E-06	18.357	3.317E-08
ENSDARG00000044808	slc4a4b	101.182	6.524E-06	13.089	1.152E-13
ENSDARG00000006514	her6	99.010	9.793E-06	7.359	1.503E-09
ENSDARG00000041051	mid1ip1a	98.291	4.524E-06	31.566	3.126E-11
ENSDARG00000075406	PVRL4	94.594	8.544E-06	21.620	0.000E+00
ENSDARG00000069027	ADM	92.081	5.747E-06	30.734	1.565E-04
ENSDARG00000018383	frzb	91.947	1.151E-05	5.288	1.002E-06
ENSDARG00000005648	olfml2a	91.709	7.760E-06	4.562	8.225E-05
ENSDARG00000089858	COBLL1	89.802	9.282E-06	22.065	4.441E-16
ENSDARG00000079907	si:ch211- 234e14.2	88.993	6.896E-06	40.291	6.975E-06
ENSDARG00000079155	si:ch211- 67f13.8	88.382	7.301E-06	22.398	1.016E-09
ENSDARG00000060148	sh3pxd2aa	86.659	1.847E-05	18.330	0.000E+00
ENSDARG00000053298	nkx2.2a	85.872	9.579E-06	7.390	2.351E-06
ENSDARG00000016695	p2rx1	85.602	8.062E-06	25.424	1.034E-03
ENSDARG00000087607	CU896640.1	84.882	9.377E-06	3.164	6.617E-03
ENSDARG00000068219	B3GNT8	84.244	1.402E-05	11.201	1.943E-12
ENSDARG00000089441	si:ch211- 105c13.3	83.483	1.304E-05	3.727	1.894E-03
ENSDARG00000027310	BX004812.1	83.150	1.455E-05	21.751	1.221E-15
ENSDARG00000012078	meis1	82.285	1.789E-05	5.313	1.902E-06
ENSDARG00000020133	JDP2	81.973	2.599E-05	5.181	3.206E-06
ENSDARG00000005565	entpd8	81.179	2.249E-05	7.345	2.197E-09
ENSDARG00000003411	foxa2	81.085	1.579E-05	12.298	4.148E-12
ENSDARG00000090953	IGSF5	77.740	1.660E-05	12.923	1.405E-08
ENSDARG00000036463	cldn15a	76.942	3.362E-05	6.622	1.000E-08
ENSDARG00000000002	ccdc80	75.096	1.869E-05	5.705	1.722E-05
ENSDARG00000042586	CABZ0108465 5.1	74.509	1.617E-05	8.218	5.217E-06
ENSDARG00000010625	clic2	73.702	3.500E-05	4.029	1.382E-04
ENSDARG00000089544	BX572619.6	73.390	2.914E-05	8.159	8.030E-08
ENSDARG00000034210	si:dkey- 240h12.4	72.972	2.479E-05	9.362	8.980E-10
ENSDARG00000038969	zgc:113142	72.420	2.798E-05	20.416	7.988E-12
ENSDARG00000039232	DUSP8	71.536	2.805E-05	3.739	1.220E-03
ENSDARG00000055158	prox1	70.712	3.672E-05	7.046	5.255E-09
ENSDARG00000091539	ptprjb	69.448	3.012E-05	10.916	1.950E-09
ENSDARG00000095866	fabp1b.2	68.651	2.660E-05	7.065	2.928E-03
ENSDARG00000059680	fscn1	68.535	3.298E-05	11.401	5.178E-10
ENSDARG00000003046	sorbs2a	68.095	3.445E-05	6.648	1.167E-07
ENSDARG00000018787	efna1b	65.443	4.426E-05	7.423	9.052E-09

SUPPLEMENTARY DATA

ENSDARG00000052139	notch3	65.083	7.371E-05	6.914	3.453E-09
ENSDARG00000035875	tmem54	64.561	3.626E-05	5.095	4.970E-04
ENSDARG00000037960	lrrc17	64.549	3.560E-05	8.863	2.558E-07
ENSDARG00000040534	EPCAM	63.984	9.587E-05	7.391	1.203E-09
ENSDARG00000004433	btk	62.583	4.427E-05	3.989	1.660E-03
ENSDARG00000032724	pmp22a	62.186	3.586E-05	18.709	3.655E-05
ENSDARG00000095453	si:rp71-17i16.6	61.656	4.330E-05	13.147	7.885E-07
ENSDARG00000002779	pdx1	60.822	6.314E-05	3.967	3.777E-04
ENSDARG00000067831	C10orf27	59.847	4.378E-05	11.337	4.300E-04
ENSDARG00000076981	zgc:198329	59.542	7.809E-05	10.992	1.631E-12
ENSDARG00000077293	SYNPO2L	59.229	4.518E-05	20.114	7.792E-03
ENSDARG00000005673	f3b	58.940	1.383E-04	4.880	4.007E-06
ENSDARG00000079092	gprc5c	58.873	1.111E-04	10.359	4.837E-13
ENSDARG00000060610	PCDH7	58.551	5.399E-05	5.945	3.217E-06
ENSDARG00000055100	cxcl12b	58.187	5.404E-05	3.820	8.592E-04
ENSDARG00000090614	PCDHAC1	58.101	5.726E-05	46.896	9.774E-07
ENSDARG00000038709	MYADM	56.946	5.325E-05	214.445	0.000E+00
ENSDARG00000077540	f2rl1.2	56.761	1.301E-04	12.137	2.154E-14
ENSDARG00000018921	fam84a	56.575	6.751E-05	10.494	1.252E-10
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ENSDARG00000007982	onecut1	56.305	8.209E-05	34.277	6.661E-16
ENSDARG00000055632	smtnl	56.031	6.591E-05	4.102	1.036E-03
ENSDARG00000009544	cldnb	55.105	1.084E-04	10.701	1.361E-11
ENSDARG00000079549	CDC42EP1	53.810	1.031E-04	4.247	1.793E-04
ENSDARG00000052630	pvr1b	53.647	7.809E-05	5.683	2.865E-03
ENSDARG00000073870	si:dkey-31j3.9	51.765	1.272E-04	8.759	7.055E-10
ENSDARG00000076431	AL732629.1	51.579	1.539E-04	4.799	9.745E-06
ENSDARG00000076496	FRMD4B	51.218	1.018E-04	4.918	3.694E-03
ENSDARG00000020298	btg2	49.502	4.598E-04	3.486	2.708E-03
ENSDARG00000008030	myl9b	49.498	2.598E-04	4.476	2.298E-05
ENSDARG00000042722	blnk	49.106	2.140E-04	3.583	1.028E-03
ENSDARG00000018643	igf2a	48.903	1.591E-04	6.920	1.166E-07
ENSDARG00000015955	cldnc	47.233	2.787E-04	10.700	6.060E-13
ENSDARG00000089354	TSPAN4	46.910	1.899E-04	7.900	1.417E-08
ENSDARG00000014488	ca2	46.779	3.010E-04	5.410	5.495E-07
ENSDARG00000093233	si:ch211- 215d8.2	46.576	1.556E-04	25.424	1.034E-03
ENSDARG00000076799	rnd3a	46.070	2.081E-04	5.098	8.649E-06
ENSDARG00000088122	CT583709.2	45.553	1.606E-04	27.824	4.337E-04
ENSDARG00000062788	irg1l	44.877	3.111E-04	19.976	2.548E-13
ENSDARG00000091231	BX572619.7	44.220	4.754E-04	3.930	2.006E-04
ENSDARG00000006202	erbb3a	44.202	3.099E-04	15.594	6.117E-14
ENSDARG00000044569	cldn19	43.392	1.859E-04	0.088	6.059E-03
ENSDARG00000015033	slc23a1	41.635	2.822E-04	6.866	5.525E-06
ENSDARG00000093331	si:ch211-	41.267	2.254E-04	9.172	6.284E-04

SUPPLEMENTARY DATA

	192f15.3				
ENSDARG00000062707	PLAT	41.151	3.077E-04	13.822	3.566E-07
ENSDARG00000086742	ECM1	40.980	5.106E-04	6.426	2.552E-08
ENSDARG00000003169	magi1	40.972	5.546E-04	4.924	4.061E-06
ENSDARG00000011821	plod2	40.757	3.705E-04	3.287	8.299E-03
ENSDARG00000070702	s100v2	40.530	5.117E-04	5.007	3.797E-06
ENSDARG00000077084	col28a1	40.378	2.540E-04	112.820	4.931E-13
ENSDARG00000036548	s1pr2	40.343	3.470E-04	5.602	3.972E-05
ENSDARG00000094511	ccl20	40.236	2.751E-04	8.469	3.748E-05
ENSDARG00000070174	PLEKHH3	39.949	4.505E-04	4.317	2.840E-04
ENSDARG00000022650	cyp2ad3	39.883	5.111E-04	5.146	4.848E-06
ENSDARG00000077811	sox11a	39.860	2.711E-04	20.063	3.609E-10
ENSDARG00000009978	icn	39.827	4.946E-04	7.140	6.946E-07
ENSDARG00000059196	si:ch73- 177h5.4	39.472	3.712E-04	13.351	3.752E-09
ENSDARG00000076548	si:dkey- 266m15.5	39.282	5.133E-04	6.415	4.366E-07
ENSDARG00000042285	ATP8B3	38.954	4.219E-04	5.235	6.031E-04
ENSDARG00000092870	si:dkey- 100n23.4	37.302	4.168E-04	5.467	1.637E-03
ENSDARG00000021004	C5	37.146	9.851E-04	16.633	2.220E-16
ENSDARG00000010654	ARHGAP42	37.009	6.154E-04	5.486	3.805E-06
ENSDARG00000026329	ARHGAP29	36.796	8.334E-04	3.925	2.054E-04
ENSDARG00000042293	ca4b	36.223	5.673E-04	11.360	8.629E-11
ENSDARG00000052954	RAB25	35.506	6.016E-04	4.841	3.121E-03
ENSDARG00000036245	WIPF3	34.927	5.874E-04	5.786	2.326E-03
ENSDARG00000057714	cmah	34.527	8.830E-04	4.305	2.649E-04
ENSDARG00000031622	nrp2a	34.074	8.567E-04	5.690	6.053E-05
ENSDARG00000069476	spint2	34.001	1.420E-03	5.558	3.860E-07
ENSDARG00000039941	OLFML2A	33.830	1.337E-03	6.282	2.724E-08
ENSDARG00000007108	zgc:91985	32.765	7.613E-04	19.779	2.411E-07
ENSDARG00000021806	zfp36l2	32.735	1.624E-03	3.152	7.030E-03
ENSDARG00000079355	FLRT2	32.584	8.199E-04	9.366	2.365E-08
ENSDARG00000094056	si:dkey- 235d18.6	32.235	6.753E-04	0.018	7.286E-09
ENSDARG00000077982	elf3	31.336	2.449E-03	8.718	3.652E-11
ENSDARG00000006705	pkn2	31.225	1.424E-03	4.268	9.035E-05
ENSDARG00000068874	PTCHD3	31.187	9.811E-04	5.693	5.310E-03
ENSDARG00000094123	si:dkey- 210i3.1	31.024	2.969E-03	13.973	7.641E-03
ENSDARG00000017127	pdzk1ip1l	30.804	1.892E-03	4.985	3.213E-06
ENSDARG00000056206	CAMK2G	30.505	1.314E-03	5.795	2.324E-05
ENSDARG00000034801	MYLK	29.918	1.416E-03	10.848	4.896E-08
ENSDARG00000062204	sigirr	29.871	2.013E-03	3.959	2.427E-04
ENSDARG00000070162	stox2	29.752	2.108E-03	5.275	9.019E-07

SUPPLEMENTARY DATA

ENSDARG00000075718	rpz5	29.708	1.912E-03	3.769	6.564E-04
ENSDARG00000002634	b4galt1	29.422	1.378E-03	4.924	3.766E-05
ENSDARG00000074381	FARP1	29.371	1.901E-03	6.017	1.872E-06
ENSDARG00000044688	dusp4	29.189	2.161E-03	3.658	1.063E-03
ENSDARG00000069378	pard6a	28.900	1.605E-03	4.374	1.615E-04
ENSDARG00000069956	pdlim2	28.224	2.349E-03	5.513	1.014E-06
ENSDARG00000087508	FP236869.1	28.190	3.142E-03	3.439	2.321E-03
ENSDARG00000006615	hnf1ba	28.155	2.755E-03	7.865	4.387E-10
ENSDARG00000004782	fgfr3	27.893	1.536E-03	4.496	8.538E-04
ENSDARG00000017165	slc3a1	26.880	3.311E-03	5.913	6.046E-07
ENSDARG00000040513	zgc:92313	26.821	2.837E-03	3.465	2.164E-03
ENSDARG000000061827	zbtb4	26.763	3.384E-03	3.851	2.904E-04
ENSDARG000000086578	zgc:158345	26.743	1.810E-03	22.238	3.419E-03
ENSDARG00000074390	tmem176l.4	26.409	2.348E-03	6.338	1.179E-06
ENSDARG00000079307	si:dkey- 205h13.1	26.395	2.554E-03	3.833	2.648E-03
ENSDARG00000079317	DLC1	26.234	3.203E-03	3.615	8.677E-04
ENSDARG00000053344	gpr133	25.817	4.510E-03	3.861	2.680E-04
ENSDARG00000019709	rhous	25.726	2.717E-03	3.374	9.855E-03
ENSDARG00000075121	hbegfa	25.651	4.304E-03	3.904	3.166E-04
ENSDARG00000057743	TMEM56	25.444	1.870E-03	8.425	9.019E-03
ENSDARG00000003963	traf4a	24.721	4.024E-03	3.733	9.250E-04
ENSDARG00000042939	gpr39	24.546	5.124E-03	4.269	8.059E-05
ENSDARG00000077169	wu:fj08f03	24.532	4.276E-03	19.638	1.049E-08
ENSDARG00000039351	si:dkey- 200l5.2	24.476	5.239E-03	4.909	4.573E-05
ENSDARG00000027744	gadd45ba	24.399	6.432E-03	3.164	6.208E-03
ENSDARG00000029668	crim1	24.357	3.284E-03	3.585	6.369E-03
ENSDARG00000041869	tnfrsf19	24.171	4.073E-03	6.471	2.625E-07
ENSDARG00000046124	rab11fip1a	24.159	4.016E-03	3.507	1.805E-03
ENSDARG00000078108	dok1a	23.877	3.137E-03	7.889	9.846E-06
ENSDARG00000006693	tmprss4a	23.480	3.119E-03	6.901	7.230E-06
ENSDARG00000087844	plekhn1	23.300	6.373E-03	5.067	3.325E-06
ENSDARG00000089414	CU463857.1	23.159	2.826E-03	7.674	2.949E-06
ENSDARG00000069912	hmga2	23.086	3.475E-03	5.455	6.962E-04
ENSDARG00000042518	hipk2	22.692	8.177E-03	3.864	2.611E-04
ENSDARG00000067984	gas1b	22.642	5.169E-03	3.252	9.623E-03
ENSDARG00000076120	foxp4	22.642	7.238E-03	6.024	6.652E-08
ENSDARG00000036135	bbox1	22.523	8.413E-03	6.395	3.572E-08
ENSDARG00000042071	PAM	22.414	9.834E-03	3.458	1.787E-03
ENSDARG00000091408	CCDC165	22.320	4.612E-03	4.993	3.092E-03
ENSDARG00000057706	si:ch211- 137i24.10	22.207	9.377E-03	12.436	9.004E-14
ENSDARG00000089449	KAZN	21.807	3.787E-03	9.299	3.529E-03
ENSDARG00000090526	C12H10orf81	21.755	4.151E-03	5.930	3.392E-03

SUPPLEMENTARY DATA

ENSDARG00000042956	cyp2ad6	21.723	7.224E-03	4.538	1.596E-04
ENSDARG00000021366	fbp1a	21.551	6.662E-03	3.830	2.187E-03
ENSDARG00000087431	zgc:173962	21.321	4.353E-03	9.680	8.767E-03
ENSDARG00000088630	ARHGEF10L	21.016	6.029E-03	4.397	5.161E-04
ENSDARG00000075764	grik5	20.520	5.753E-03	7.541	3.718E-06
ENSDARG00000091766	ARHGEF17	20.366	6.119E-03	7.606	3.401E-06
ENSDARG00000027609	HPN	19.929	8.226E-03	5.479	1.462E-05
ENSDARG00000094428	si:dkey-31f5.8	19.698	5.513E-03	11.560	1.178E-06
ENSDARG00000061672	si:ch73-334d15.1	19.670	6.171E-03	11.735	2.902E-05
ENSDARG00000090967	HPN	19.576	9.664E-03	5.392	5.841E-06
ENSDARG00000026166	emilin1b	19.479	7.616E-03	3.692	5.047E-03
ENSDARG00000058323	tmbim1	19.126	9.994E-03	3.212	8.159E-03
ENSDARG00000092899	si:dkey-33i11.4	18.838	6.553E-03	11.854	4.837E-03
ENSDARG00000040469	enpp6	18.837	8.225E-03	6.049	2.715E-03
ENSDARG00000079898	cd248a	18.403	7.695E-03	4.764	7.805E-03
ENSDARG00000074721	RASSF9	17.982	9.959E-03	5.085	1.510E-05
ENSDARG00000090665	CABZ01063203.1	17.528	9.384E-03	6.156	1.431E-05
ENSDARG00000078279	foxp3b	0.028	9.918E-03	0.183	1.006E-04
ENSDARG00000089731	BX511311.7	0.026	7.639E-03	0.231	7.130E-05
ENSDARG00000075227	GRM5	0.026	9.221E-03	0.244	7.401E-03
ENSDARG00000058775	SLC22A3	0.026	7.714E-03	0.246	1.217E-03
ENSDARG00000060053	KCNH2	0.025	6.765E-03	0.247	1.076E-03
ENSDARG00000070627	BX908806.2	0.024	8.794E-03	0.230	9.646E-06
ENSDARG00000043475	tagap	0.023	6.799E-03	0.120	5.114E-08
ENSDARG00000037995	dvr1	0.023	5.717E-03	3.542	8.557E-03
ENSDARG00000071745	CR456631.1	0.023	9.980E-03	0.144	4.249E-03
ENSDARG00000093004	BX548044.8	0.022	7.485E-03	0.025	3.441E-12
ENSDARG00000053535	lmo7b	0.021	4.748E-03	8.695	1.111E-08
ENSDARG00000078368	si:dkey-199f5.4	0.020	7.296E-03	0.152	5.622E-06
ENSDARG00000094132	igf1	0.019	6.568E-03	0.100	2.385E-04
ENSDARG00000090127	CR855997.3	0.019	5.026E-03	161.052	3.331E-16
ENSDARG00000057769	si:dkey-10f21.3	0.019	5.278E-03	0.197	1.936E-05
ENSDARG00000070885	si:ch211-258l4.4	0.019	3.691E-03	0.096	1.397E-08
ENSDARG00000094927	si:dkey-93l1.4	0.018	4.195E-03	0.238	7.213E-04
ENSDARG0000009550	foxi3b	0.017	9.434E-03	0.104	2.668E-03
ENSDARG00000094917	BX324155.2	0.017	8.970E-03	28.907	2.955E-04
ENSDARG00000093631	BX470083.8	0.017	2.540E-03	0.198	3.379E-05
ENSDARG00000071020	si:dkey-42l16.1	0.017	3.036E-03	4.090	3.023E-03

SUPPLEMENTARY DATA

ENSDARG00000014420	elavl3	0.017	3.267E-03	0.268	6.900E-03
ENSDARG00000079556	C2CD4C	0.016	4.132E-03	0.058	7.064E-05
ENSDARG00000094552	CR450805.3	0.016	7.557E-03	0.011	9.717E-13
ENSDARG00000075598	scpp6	0.016	7.151E-03	0.016	6.212E-10
ENSDARG00000077665	si:dkey- 236a14.6	0.016	1.952E-03	0.278	1.277E-03
ENSDARG00000094348	CR848663.2	0.016	6.878E-03	0.012	5.984E-12
ENSDARG00000070340	hoxc5a	0.016	6.873E-03	0.025	6.741E-11
ENSDARG00000092514	BX510654.1	0.015	6.573E-03	0.033	3.587E-10
ENSDARG00000092280	si:ch211- 215m21.15	0.015	6.452E-03	0.095	6.573E-08
ENSDARG00000095577	cybrd1	0.015	1.982E-03	0.139	5.924E-03
ENSDARG00000094827	si:ch211- 255l14.4	0.015	6.276E-03	0.120	9.492E-06
ENSDARG00000021032	foxd3	0.015	6.021E-03	0.024	7.620E-07
ENSDARG00000089640	si:dkey- 117n7.5	0.015	6.021E-03	0.040	3.658E-04
ENSDARG00000021936	zgc:109949	0.014	2.019E-03	0.291	7.990E-04
ENSDARG00000094014	si:ch211- 165a10.4	0.014	3.524E-03	0.126	2.827E-08
ENSDARG00000063269	DUPD1	0.014	2.761E-03	0.184	5.679E-06
ENSDARG00000090413	BX470083.5	0.014	5.259E-03	0.123	6.743E-04
ENSDARG00000043907	FGF11	0.014	2.219E-03	0.255	1.728E-03
ENSDARG00000070419	nkdl	0.014	1.536E-03	0.206	4.555E-06
ENSDARG00000040938	C22H3orf32	0.014	5.019E-03	0.114	1.256E-03
ENSDARG00000052122	rag1	0.014	5.019E-03	0.277	7.219E-03
ENSDARG00000010384	lpar6l	0.014	5.007E-03	0.130	4.463E-04
ENSDARG00000094200	si:dkey-2j6.2	0.014	4.953E-03	0.104	2.668E-03
ENSDARG00000092486	si:dkey- 152b24.8	0.013	4.644E-03	0.056	7.440E-03
ENSDARG00000095771	BX511311.11	0.013	1.440E-03	0.219	9.020E-06
ENSDARG00000070346	hoxc8a	0.013	2.385E-03	0.151	1.231E-03
ENSDARG00000092456	si:ch211- 188i4.4	0.013	1.405E-03	0.297	1.314E-03
ENSDARG00000014391	CSMD3	0.013	1.770E-03	0.173	2.962E-06
ENSDARG00000035169	layna	0.012	3.549E-03	0.114	1.220E-03
ENSDARG00000094999	si:ch211- 254p10.3	0.012	3.519E-03	0.138	3.802E-05
ENSDARG00000076789	cx32.2	0.012	1.048E-03	0.212	2.789E-04
ENSDARG00000069025	si:ch211- 283g2.5	0.012	3.304E-03	0.114	6.744E-03
ENSDARG00000077938	cd248b	0.012	3.304E-03	0.095	2.206E-05
ENSDARG00000095450	si:ch211- 213i16.2	0.012	3.280E-03	0.273	2.193E-03
ENSDARG00000009511	tnfa	0.012	3.195E-03	0.036	1.220E-04
ENSDARG00000090396	CABZ0107494	0.011	1.069E-03	0.148	1.251E-05

SUPPLEMENTARY DATA

	6.1				
ENSDARG00000054497	chrna3	0.011	2.896E-03	0.034	2.442E-08
ENSDARG00000002502	VAT1L	0.011	2.838E-03	0.198	3.403E-04
ENSDARG00000091445	CU137681.8	0.011	2.811E-03	0.043	7.772E-16
ENSDARG00000067767	BX510309.1	0.011	9.487E-04	0.213	1.781E-06
ENSDARG00000070121	rhoh	0.011	2.717E-03	0.072	7.896E-04
ENSDARG00000045282	BX322605.1	0.011	2.715E-03	0.160	4.804E-06
ENSDARG00000076873	C9orf172	0.011	1.420E-03	4.296	9.548E-04
ENSDARG00000089567	PATL2	0.011	1.361E-03	5.087	2.534E-04
ENSDARG00000041041	cxcr3.2	0.011	2.513E-03	0.023	1.045E-11
ENSDARG00000076862	FAM198A	0.011	2.447E-03	8.424	4.041E-05
ENSDARG00000036139	lctla	0.011	2.444E-03	0.156	1.727E-03
ENSDARG00000013649	CASR	0.011	2.426E-03	0.160	2.247E-05
ENSDARG00000091737	zp2.2	0.011	2.421E-03	37.842	0.000E+00
ENSDARG00000092653	si:dkey-1h24.6	0.010	1.892E-03	0.076	5.121E-06
ENSDARG00000074082	CU467828.1	0.009	1.731E-03	8.423	9.047E-03
ENSDARG00000016348	DIP2B	0.009	6.872E-04	3.644	1.423E-03
ENSDARG00000069984	CR786578.1	0.009	1.600E-03	0.203	7.771E-06
ENSDARG00000053966	cyp17a2	0.009	8.168E-04	0.262	2.206E-03
ENSDARG00000090613	CABZ0104251	0.009	1.551E-03	0.154	3.788E-04
	3.3				
ENSDARG00000076262	pou3f2	0.009	1.443E-03	0.043	1.045E-11
ENSDARG00000074782	GPR97	0.009	1.425E-03	0.050	4.734E-09
ENSDARG00000042130	zp3a.2	0.009	1.423E-03	47.510	0.000E+00
ENSDARG00000087717	TMPRSS5	0.008	1.340E-03	0.224	2.468E-03
ENSDARG00000092223	si:dkey-211e20.1	0.008	8.472E-04	0.304	9.086E-03
ENSDARG00000086084	CU571170.2	0.008	1.175E-03	0.201	9.453E-03
ENSDARG00000090151	CT033790.3	0.008	1.120E-03	0.108	1.689E-09
ENSDARG00000086688	AL772241.1	0.007	9.173E-04	0.138	9.252E-03
ENSDARG00000086403	CR381537.1	0.007	8.937E-04	0.243	6.469E-04
ENSDARG00000093408	si:dkey-1p9.3	0.007	8.546E-04	0.118	2.328E-06
ENSDARG00000090777	PKD2L2	0.007	8.540E-04	0.326	8.577E-03
ENSDARG00000040433	cyp2k22	0.007	4.312E-04	14.139	8.721E-04
ENSDARG00000089439	TMEM132A	0.007	8.173E-04	0.079	1.184E-04
ENSDARG00000073809	CR936484.2	0.007	7.992E-04	0.098	1.427E-13
ENSDARG00000079034	wu:fi38e01	0.007	7.320E-04	4.080	1.388E-04
ENSDARG00000011633	dnah9	0.007	1.823E-04	0.279	2.515E-03
ENSDARG00000043436	si:dkey-5n18.1	0.006	3.060E-04	0.153	6.237E-04
ENSDARG00000092830	NLRX1	0.006	5.575E-04	0.216	1.690E-03
ENSDARG00000059616	hs3st2	0.006	5.472E-04	5.536	2.804E-04
ENSDARG00000076897	CU570782.1	0.006	4.970E-04	0.090	1.494E-07
ENSDARG00000002816	rasgrf2	0.006	1.548E-04	0.290	1.190E-03
ENSDARG00000089747	FP565451.1	0.006	4.475E-04	0.310	7.278E-03
ENSDARG00000069251	si:dkeyp-	0.005	3.997E-04	27.834	0.000E+00

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	50f7.2				
ENSDARG00000091232	kcnj1	0.005	3.467E-04	0.183	1.789E-05
ENSDARG00000094631	si:ch211-81a5.2	0.005	3.457E-04	0.159	2.772E-05
ENSDARG00000069692	col7a1l	0.005	3.093E-04	0.176	2.038E-03
ENSDARG00000026049	mxl	0.004	2.345E-04	0.164	2.382E-05
ENSDARG00000095715	si:ch211-202e12.3	0.004	2.329E-04	0.256	2.417E-03
ENSDARG00000092016	BX296549.2	0.004	2.174E-04	0.154	1.678E-07
ENSDARG00000040178	zgc:92647	0.004	2.049E-04	0.117	1.089E-04
ENSDARG00000075551	si:ch211-274p24.3	0.004	1.729E-04	0.205	3.468E-05
ENSDARG00000075342	BX649628.1	0.004	1.670E-04	0.072	3.905E-07
ENSDARG00000086522	zp2.5	0.004	1.630E-04	1128.149	0.000E+00
ENSDARG00000086096	CT033790.1	0.004	1.592E-04	0.297	2.571E-03
ENSDARG00000058045	tlr21	0.004	1.469E-04	0.207	5.627E-05
ENSDARG00000058386	BX323449.1	0.004	1.277E-04	0.086	2.438E-10
ENSDARG00000057253	si:dkey-236a14.13	0.003	1.044E-04	0.218	9.963E-05
ENSDARG00000095627	c1qc	0.003	9.306E-05	0.142	1.746E-07
ENSDARG00000089682	BX323556.1	0.003	4.082E-05	0.187	8.875E-07
ENSDARG00000092701	FP016063.1	0.003	8.602E-05	0.061	1.273E-13
ENSDARG00000038226	CABZ0107499 4.1	0.003	7.198E-05	0.158	1.001E-07
ENSDARG00000053833	mtnr1ba	0.003	6.747E-05	0.107	2.382E-07
ENSDARG00000042712	tim44	0.003	5.832E-05	45.186	1.604E-06
ENSDARG00000095804	CH211-14C17.6	0.003	5.718E-05	0.238	2.619E-03
ENSDARG00000088626	BX927341.2	0.003	5.427E-05	0.082	3.964E-09
ENSDARG00000075091	CU571064.1	0.003	5.175E-05	0.098	1.378E-12
ENSDARG00000095591	si:ch73-138e16.7	0.003	5.095E-05	239.188	0.000E+00
ENSDARG00000088658	CU041380.1	0.003	4.669E-05	0.211	1.070E-05
ENSDARG00000079792	BX511311.1	0.002	3.867E-05	0.105	2.005E-03
ENSDARG00000088745	MFAP4	0.002	3.287E-05	0.119	1.420E-06
ENSDARG00000077344	BX000700.1	0.002	2.907E-05	0.180	5.837E-04
ENSDARG00000056723	si:dkey-24f17.5	0.002	1.073E-05	0.313	3.691E-03
ENSDARG00000057265	si:dkey-236a14.11	0.002	2.015E-05	0.148	3.987E-06
ENSDARG00000057284	si:dkey-1p9.2	0.002	1.679E-05	0.214	2.243E-05
ENSDARG00000052935	BX629350.2	0.002	1.621E-05	0.097	1.193E-13
ENSDARG00000091103	CABZ0106849 9.1	0.002	1.463E-05	0.250	5.873E-04
ENSDARG00000023236	KCNH1	0.001	3.561E-06	0.183	1.642E-06
ENSDARG00000094144	CU137681.9	0.001	1.161E-06	0.173	6.495E-08

SUPPLEMENTARY DATA

Supplementary Table 2. Transgenic Lines

line	abbreviation	reference
<i>Tg(HS4-sst2:CFP;ins:PhiYFP-m-dest1-2TA-nfsB)^{lmc009}</i>	<i>ins:NTR</i>	this work
<i>Tg(Tp1glob:creER^{T2})^{yh1}</i>	cre driver	Wang, et al. (2011)
<i>Tg(T2Kβactin:loxP-stop-loxP-hmgb1-mCherry)^{jh15}</i>	cre responder	Wang, et al. (2011)
<i>Tg(Tp1bglob:eGFP)^{um14}</i>	<i>Tp1:GFP</i>	Wang, et al. (2011)
<i>Tg(Tp1glob:hmgb1-mCherry)^{fh32}</i>	<i>Tp1:hmgb1-mCherry</i>	Wang, et al. (2011)
<i>Tg(fli1aep:DsRed)</i>	<i>fli:dsRed</i>	Villefranc, et al. (2007)
<i>TgBAC(cftr-GFP)^{pd1041}</i>		Navis, et al. (2013)
<i>cftr^{pd1049}</i>		Navis, et al. (2013)
<i>TgBAC(nkx2.2a:meGFP)^{vu17}</i>		Ng, et al. (2005)

SUPPLEMENTARY DATA

Supplementary Table 3. Primer Sequences

<u>qPCR</u>		
gene	fwd	rvs
cftr	CCGCATTTTCACCACTCTCT	CTCATCCCATGAAGCATGCA
clcn1b	CCGTCTGATTTACCCTGGTG	TGAACCCAGATCTTTGTCC
her15	CTCCAAGCTTTCCAAGG	AAAACCACCGTCATCTCCAG
nkx6.1	CGTGCTCACCACATCAAAC	CGGTTTTGAAACCACACCTT
sox9b	AGGGCGAGAAGCGTCCGTTTGTG G	CGGTGCTGGAGTCGGGTGTTTCTG
bactin	CGAGCAGGAGATGGGAACC	CAACGGAAACGCTCATTGC
<u>in situ probes</u>		
gene	fwd	rvs
cftr	AGATCACCTGTGGAGGATGC	CGGGCAGTAAACAACAAACC
clcn1b	AGTAGGATGTGCTGTTGGGG	AGCTGCTGCCCTATCACTG
her15	TACTCCAAGCTTTCCAACAAGGAG A	GCATTGATAATGCACAAATGATCAC A

Supplementary Table 4. Antibodies

antigen	concentration	species	source
Nkx6.1	1:100	mouse monoclonal	DSHB
GFP	1:400	rabbit polyclonal	Life Technologies
dsRed	1:400	mouse monoclonal	Clontech
Insulin	1:400	guinea pig polyclonal	Dako
Glucagon	1:400	rabbit polyclonal	Dako
fluorescent secondaries	1:400		Jackson ImmunoResearch Labs