Supplemental Table S1: List of genes affected in the frontal bones of Wnt1-cre:Dlx3$^{F/LacZ}$ mice as identified by microarray analysis (p value < 0.05; Fold-change >1.5)

Gene Symbol	RefSeq Transcript ID	p-value(ko vs. wt)	Fold-Change(ko vs. wt)
Dlx3	NM_010055	2.27E-05	-16.77
Lect1	NM_010701	0.0006	-4.19
Angptl1	NM_028333	0.0079	-3.23
Calca	NM_001033954 /// NM_007587	0.0430	-3.17
Sost	NM_024449	0.0119	-2.81
Susd5	NM_001101510 /// XM_356198 /// XM_912282	0.0007	-2.78
Lhx9	NM_001025565 /// NM_001042577 /// NM_010714	0.0479	-2.72
Prokr1	NM_021381	0.0147	-2.65
Dlk1	NM_010052	0.0132	-2.64
Ambn	NM_009664	0.0085	-2.62
Agtr2	NM_007429	0.0158	-2.51
Ntng1	NM_001163348 /// NM_001163349 /// NM_001163350 /// NM_001163351 /// NM_030699 //	0.0119	-2.36
Col9a1	NM_007740	0.0143	-2.34
Adam33	NM_001163529 /// NM_033615	0.0402	-2.25
Nov	NM_010930	0.0497	-2.25
Cntfr	NM_001136056 /// NM_001146080 /// NM_016673	0.0180	-2.16
Gpr64	NM_001079847 /// NM_001079848 /// NM_001079857 /// NM_178712	0.0267	-2.13
Mirg	NR_028265 /// XM_001475138	0.0392	-2.09
H2-K1	NM_001001892	0.0115	-2.08
Col14a1	NM_181277	0.0205	-2.07
Hoxd9	NM_013555	0.0314	-2.07
Lrrc49	NM_001146046 /// NM_001146047 /// NM_145616	0.0278	-2.06
H2afv	NM_029938 /// XM_001476068 /// XM_907680	0.0005	-2.02
Cbln2	NM_172633	0.0214	-2.01
Tex15	NM_031374	0.0162	-2.01
Sox10	NM_011437 /// XM_128139 /// XM_985075	0.0067	-1.97
Foxp2	NM_053242 /// NM_212435	0.0356	-1.97
Hapln1	NM_013500	0.0022	-1.97
Meg3	NR_003633 /// NR_027651 /// NR_027652 /// XR_035480 /// XR_035483 /// XR_035484	0.0227	-1.96
Acan	NM_007424	0.0132	-1.95
Sfrp2	NM_009144	0.0453	-1.94
Pou4f1	NM_011143	0.0472	-1.91
Vcan	NM_001081249 /// NM_001134474 /// NM_001134475 /// NM_019389 /// NM_172955	0.0160	-1.88
Egfl6	NM_019397	0.0202	-1.87
Adam23	NM_001177600 /// NM_011780	0.0148	-1.87
Mepe	NM_053172	0.0139	-1.85
Rian	NR_028261 /// XM_901568 /// XM_922645	0.0274	-1.84
Hdgfrp2	NM_008233	0.0396	-1.84
H2afb3 /// Vps52	NM_172620 /// XM_619451 /// XM_889501 /// XM_911022	0.0116	-1.83
Fbln7	NM_024237	0.0172	-1.81
Ccl19	NM_011888	0.0004	-1.81
Cpm	NM_027468 /// XM_917914 /// XM_994613	0.0006	-1.80
Loxl1	NM_010729	0.0265	-1.78
Pcdhb15	NM_053140	0.0386	-1.78
Lce1a2	NM_028625	0.0097	-1.78
Edar	NM_010100	0.0460	-1.78
Kcp	NM_001029985	0.0101	-1.77
Klf14	NM_001135093 /// XM_001476241 /// XM_884028	0.0184	-1.77
Gal3st4	NM_001033416	0.0486	-1.74
Ahnak2	NM_001033476 /// XM_001475946	0.0180	-1.73
Hs3st3a1	NM_178870	0.0156	-1.73
Erbb3	NM_010153	0.0004	-1.73
Mup1 /// Mup10 /// Mup2 /// Mup3	NM_001039544 /// NM_001045550 /// NM_001122647 /// NM_001163010 /// NM_001163011	0.0000	-1.72
Vwf	NM_011708	0.0463	-1.71
Rbm16	NM_134123 /// XM_619423 /// XM_918778	0.0019	-1.68
Utp18	NM_001013375	0.0024	-1.67
Pcdhb22	NM_053147	0.0223	-1.66
Fam160b2	NM_194345 /// XM_001480783 /// XM_914171	0.0040	-1.65
Flnc	NM_001081185	0.0115	-1.65
Fetub	NM_001083904 /// NM_001083905 /// NM_021564	0.0027	-1.64
Inha	NM_010564	0.0453	-1.63
Hoxd8	NM_008276	0.0459	-1.63
Cd83	NM_009856	0.0065	-1.63
Six6os1	NM_029444	0.0379	-1.63
Slc7a2	NM_001044740 /// NM_007514	0.0289	-1.63
Vgll3	NM_028572 /// XM_001480406 /// XM_283372	0.0376	-1.62
Magi2	NM_001170745 /// NM_001170746 /// NM_015823 /// XM_001000876 /// XM_001000915 //	0.0170	-1.62
Rspo3	NM_028351	0.0283	-1.62
Rspo2	NM_172815	0.0104	-1.61
Megf6	NM_001162977 /// XM_620148 /// XM_909777	0.0290	-1.60
Dnm1	NM_010065	0.0270	-1.60
Lin7b	NM_011698	0.0372	-1.60
Aif1l	NM_145144	0.0066	-1.60
Hs3st3b1	NM_018805	0.0239	-1.59
Rpp30	NM_019428	0.0134	-1.59
Rad54l	NM_001122958 /// NM_001122959 /// NM_009015	0.0170	-1.59
Sdk1	NM_177879	0.0478	-1.59
Tmem26	NM_177794	0.0374	-1.59
Zfr2	NM_001034895	0.0291	-1.58
Pla2g4b	NM_145378	0.0259	-1.57
Prdm6	NM_001033281	0.0166	-1.57
Ypel4	NM_001005342	0.0317	-1.57
Ephb3	NM_010143	0.0255	-1.56
Igfbp5	NM_010518	0.0004	-1.56
Cap2	NM_026056	0.0226	-1.56
Bmp4	NM_007554	0.0189	-1.55
Zfp40	NM_009555	0.0020	-1.55
Shisa2	NM_145463	0.0337	-1.55
Tmem44	NM_172614	0.0138	-1.55
Arhgef10	NM_001037736 /// NM_172751	0.0453	-1.55
Smpdl3b	NM_133888	0.0423	-1.55
Gng8	NM_010320	0.0126	-1.55
Dnahc8	NM_013811	0.0160	-1.55

Fam131b	NM_001113327 /// NM_029528	0.0489	-1.54
Capn6	NM_007603	0.0109	-1.54
Ltbp2	NM_013589	0.0200	-1.54
Atp8b1	NM_001001488	0.0223	-1.54
Slc6a7	NM_201353	0.0314	-1.54
Arl4d	NM_025404 /// XM_001471772	0.0035	-1.54
Col16a1	NM_028266	0.0443	-1.53
Dscc1	NM_183089	0.0006	-1.53
Cpxm2	NM_018867	0.0237	-1.53
Slc9a5	NM_001081332	0.0063	-1.52
Cdon	NM_021339	0.0073	-1.52
Rbpj	NM_001080927 /// NM_001080928 /// NM_009035	0.0429	-1.52
Leng8	NM_172736	0.0213	-1.52
Cpne5	NM_153166	0.0334	-1.51
Hic1	NM_001098203 /// NM_010430	0.0417	-1.50
Rnf144b	NM_001170643 /// NM_146042	0.0188	1.50
Rassf3	NM_138956	0.0347	1.50
Rab44	NM_001002786	0.0048	1.50
Plcd1	NM_019676	0.0347	1.50
Eps8 /// LOC632638	NM_007945 /// XR_031552	0.0126	1.50
Etl4	NM_001081006 /// NM_001177630 /// NM_001177631 /// NM_029895 /// NM_178059	0.0029	1.51
Podxl	NM_013723	0.0043	1.51
Myct1	NM_026793	0.0418	1.51
Nr4a1	NM_010444	0.0368	1.51
Lifr	NM_001113386 /// NM_013584	0.0345	1.51
Ddo	NM_027442	0.0191	1.51
Wdr26	NM_145514	0.0284	1.52
Acyp2	NM_029344	0.0048	1.52
Pth1r	NM_001083935 /// NM_001083936 /// NM_011199	0.0369	1.52
Kcnk1	NM_008430	0.0073	1.52
Tpp2	NM_009418	0.0001	1.52
Hspb7	NM_013868	0.0155	1.53
Lama4	NM_010681	0.0300	1.53
Trps1	NM_032000	0.0234	1.53
Wisp1	NM_018865	0.0422	1.53
Alpl	NM_007431	0.0109	1.53
Rom1	NM_009073	0.0266	1.53
Lama1	NM_008480	0.0178	1.53
Strn	NM_011500	0.0190	1.53
Arl5b	NM_029466	0.0096	1.53
Asb10	NM_080444	0.0239	1.54
Kcnma1	NM_010610	0.0066	1.54
Id3	NM_008321	0.0200	1.54
Galnt3	NM_015736 /// XM_885274 /// XM_980400	0.0105	1.55
Ms4a4c	NM_029499	0.0302	1.55
Pde6c	NM_001170959 /// NM_033614	0.0303	1.55
Gimap6	NM_153175	0.0019	1.55
Mefv	NM_001161790 /// NM_001161791 /// NM_019453	0.0283	1.55
Rab37	NM_001163753 /// NM_021411	0.0110	1.55
Card6	NM_001163138 /// XM_139295 /// XM_904712	0.0063	1.56
Sfmbt2	NM_177386	0.0304	1.56
Tmod3	NM_016963	0.0303	1.56
Rabgap1	NM_001033960 /// NM_146121	0.0185	1.56
Rhag	NM_011269	0.0482	1.57
Ets1	NM_001038642 /// NM_011808	0.0307	1.57
Flt4	NM_008029	0.0436	1.57
Abcd2	NM_011994	0.0024	1.57
Pltp	NM_011125	0.0320	1.57
Kdm6a	NM_009483	0.0109	1.57
Cd200	NM_010818	0.0111	1.57
Chd4	NM_145979	0.0344	1.57
Ddit4	NM_029083	0.0118	1.58
Kel	NM_032540	0.0335	1.58
Cdh15	NM_007662	0.0151	1.58
Kcnma1	NM_010610	0.0412	1.58
Cdc42ep3	NM_026514	0.0030	1.58
Scn3a	NM_018732	0.0365	1.59
Cdh2	NM_007664	0.0188	1.59
Apod	NM_007470	0.0214	1.59
Ccnd1	NM_007631	0.0104	1.59
Carns1	NM_134148 /// XM_902445 /// XM_919865	0.0040	1.60
Actb	NM_007393	0.0134	1.61
Pdgfa	NM_008808	0.0156	1.61
Pde1a	NM_001009978 /// NM_001009979 /// NM_001159582 /// NM_016744	0.0453	1.61
Zfa /// Zfx	NM_001044386 /// NM_009540 /// NM_011768	0.0328	1.62
St3gal6	NM_018784	0.0253	1.62
Hist1h2be	NM_001177653 /// NM_178194	0.0218	1.62
Cd93	NM_010740	0.0011	1.63
Asb4	NM_023048	0.0397	1.63
H2-T10 /// H2-T22 /// H2-T9	NM_010395 /// NM_010397 /// NM_010399	0.0337	1.64
Kcnk1	NM_008430	0.0107	1.64
Rbp7	NM_022020	0.0277	1.64
Tmie	NM_146260	0.0136	1.64
Hhip	NM_020259	0.0003	1.65
Chst15	NM_029935	0.0208	1.65
Cuedc1	NM_001172099 /// NM_198013	0.0128	1.65
Zfp36l1	NM_007564	0.0136	1.65
Gsg2	NM_010353	0.0105	1.65
Wnt4	NM_009523	0.0448	1.66
Notch4	NM_010929	0.0132	1.67
Taf4b	NM_001100449 /// XM_128905 /// XM_911701	0.0432	1.68
Dnahc6	NM_001164669 /// XM_001478021 /// XM_913416	0.0257	1.69
Egr2	NM_010118	0.0129	1.69
Enpp6	NM_177304	0.0309	1.69
Abcg3	NM_030239	0.0416	1.70
Fbxo32	NM_026346	0.0051	1.70

Rasgrp2	NM_011242	0.0007	1.71
Ano1	NM_178642	0.0129	1.71
Vil1	NM_009509	0.0356	1.71
Ncf1	NM_010876	0.0097	1.74
Xaf1	NM_001037713	0.0358	1.74
Mef2c	NM_001170537 /// NM_025282	0.0133	1.75
Ddr1	NM_007584 /// NM_172962	0.0317	1.76
Col22a1	NM_027174 /// XM_907370 /// XM_981889	0.0077	1.77
Uba6	NM_172712	0.0145	1.77
Ranbp3l	NM_198024 /// XM_001473207	0.0233	1.78
Spic	NM_011461	0.0469	1.78
Ramp1	NM_001168392 /// NM_016894 /// NM_178401	0.0076	1.78
Gcet2	NM_001159297 /// NM_008099	0.0045	1.79
Myom1	NM_001083934 /// NM_010867	0.0161	1.81
Dysf	NM_001077694 /// NM_021469	0.0395	1.81
Hrc	NM_010473	0.0248	1.83
Lifr	NM_001113386 /// NM_013584	0.0313	1.83
Wnk4	NM_175638	0.0274	1.83
Ihh	NM_010544	0.0071	1.83
Slc13a5	NM_001004148	0.0026	1.84
Chst13	NM_027928 /// XM_978459 /// XM_994764	0.0449	1.84
Sgca	NM_001136080 /// NM_009161	0.0125	1.84
Flt1	NM_010228	0.0265	1.85
Btnl9	NM_172793	0.0091	1.87
Ibsp	NM_008318	0.0041	1.87
Clic5	NM_172621	0.0145	1.89
Sos1	NM_009231	0.0221	1.90
Agt	NM_007428	0.0017	1.91
Wdr63	NM_172864	0.0124	1.93
Rnf43	NM_172448	0.0340	1.93
Bmp8b	NM_007559	0.0449	1.95
Myl3	NM_010859	0.0173	1.97
Bmp8a	NM_007558	0.0064	1.98
Capsl	NM_029341	0.0165	1.98
Cadm1	NM_001025600 /// NM_018770 /// NM_207675 /// NM_207676	0.0107	2.01
Notum	NM_175263	0.0122	2.01
Ahsp	NM_133245	0.0023	2.05
Slc4a1	NM_011403	0.0076	2.07
Panx3	NM_172454	0.0191	2.09
Hba-a1 /// Hba-a2	NM_001083955 /// NM_008218	0.0014	2.10
Fli1	NM_008026	0.0207	2.10
Mlph	NM_053015	0.0229	2.14
Fosb	NM_008036	0.0494	2.14
Adamts18	NM_172466	0.0094	2.19
H2-Q10	NM_010391	0.0026	2.23
Gypa	NM_010369	0.0465	2.47
Nr4a3	NM_015743	0.0333	2.47
Ankrd56	NM_175270	0.0032	2.56
Chi3l3 /// Chi3l4	NM_009892 /// NM_145126	0.0302	2.58
Klhl30	NM_027551	0.0241	2.64
Chi3l3	NM_009892	0.0373	2.67
Chad	NM_007689	4.73E-05	2.79
Elovl7	NM_029001	0.0137	2.89
H2afb3	XM_619451 /// XM_889501 /// XM_911022	2.34E-05	2.90
Spink3	NM_009258	0.0414	2.91
Slc22a6	NM_008766	0.0467	2.92
Slc30a2	NM_001039677	0.0018	3.11
Tns3	NM_001083587	0.0024	3.49
Btla	NM_001037719 /// NM_177584	0.0011	3.56
Car12	NM_178396	0.0255	4.88
Rpl7l1	NM_025433	0.0029	9.42
Xist	NR_001463 /// NR_001570	0.0414	20.72