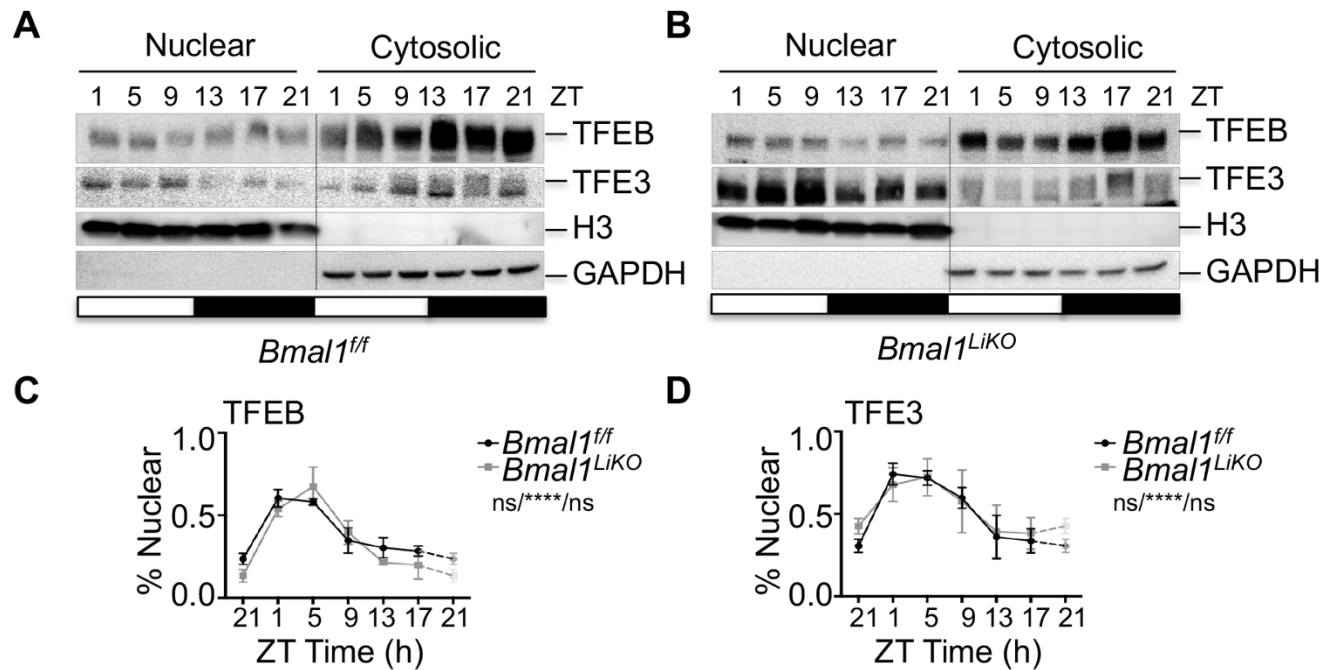


NUTRIENT-SENSITIVE TRANSCRIPTION FACTORS TFEB AND TFE3 COUPLE AUTOPHAGY AND METABOLISM TO THE PERIPHERAL CLOCK

Nunzia Pastore^{1,2*}, Anna Vainshtein^{1,2}, Niculin J. Herz^{1,2}, Tuong Huynh^{1,2}, Lorenzo Brunetti^{3,4}, Tiamo J. Klisch^{1,2}, Margherita Mutarelli⁵, Patrizia Annunziata⁵, Kenichiro Kinouchi⁶, Nicola Brunetti-Pierri^{5,7}, Paolo Sassone-Corsi⁶, and Andrea Ballabio^{1,2,5,7*}

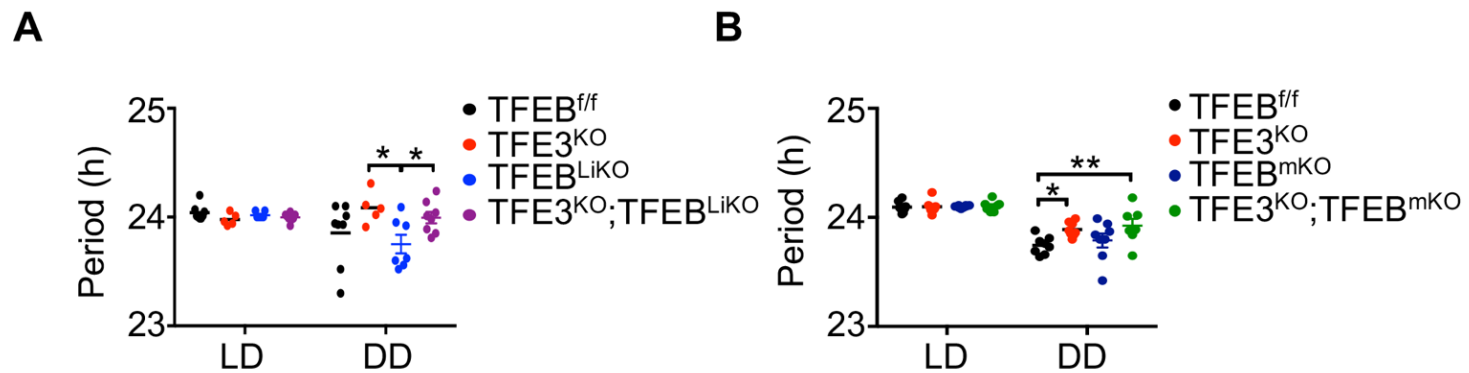
Appendix table of content:

- **Appendix Figures**
- **Appendix Figure legends**
- **Appendix Tables**



Appendix Figure S1. TFEB and TFE3 nuclear localization over the circadian cycle is not dependent of the core clock component BMAL1.

A,B Circadian activation of TFEB and TFE3 as determined by western blot analysis on nuclear and cytosolic enriched liver fractions (A) and relative quantification (B) from *Bmal1^{LiKO}* mice and control ($n=3$ samples/group/time point). ZT21 is double plotted for visualization. Data are presented as mean \pm SEM (two-way ANOVA test (interaction/time/group) followed by Bonferroni post hoc test: (ns non-significant; **** $p < 0.0001$)).



Appendix Figure S2. TFEB/TFE3 deficiency does not alter the circadian period.

A,B Circadian period (τ) in mice of the indicated genotypes under normal light:dark cycles 14:10 (LD) or constant darkness (DD) (n=6-8/group). Data are presented as mean \pm SEM. (two-way ANOVA test followed by Bonferroni post hoc test: * $p \leq 0.05$; ** $p < 0.01$).

Appendix Tables

Appendix Table 1. Complete list of the transcripts bound by TFE3, TFEB and REV-ERB α . Autophagy, lysosome and circadian rhythm genes are indicated.

RefSeq	Symbol	Autophagy	Lysosome	Circadian Rhythm	TFEB HeLA targets	Tfe3 in promoter	Rev-erbA in promoter	Overlap in promoter	Promoter coordinates
NM_009397	Tnfrsf3	YES	YES		YES	YES	YES	YES	chr10:18737716-18733716
NM_138950	Wdr81	YES	YES		YES	YES	YES	YES	chr11:75270719-75266719
NM_001003908	Cltc	YES	YES		YES	YES	YES	YES	chr11:86573569-86569569
NM_001356393	Cltc	YES	YES		YES	YES	YES	YES	chr11:86573569-86569569
NM_017475	Rragc	YES	YES		YES	YES	YES	YES	chr4:123592175-123596175
NM_001359513	Vps33a	YES	YES		YES	YES	YES	YES	chr5:124025524-124021524
NM_029929	Vps33a	YES	YES		YES	YES	YES	YES	chr5:124025524-124021524
NM_178635	Uvrag	YES	YES		YES	YES	YES	YES	chr7:106292154-106288154
NM_053177	Mcoln1	YES	YES		YES	YES	YES	YES	chr8:3498018-3502018
NM_001317353	Lamp1	YES	YES		YES	YES	YES	YES	chr8:13156660-13160660
NM_010684	Lamp1	YES	YES		YES	YES	YES	YES	chr8:13156660-13160660
NM_009984	Ctsl	YES	YES			YES	YES	YES	chr13:64474328-64470328
NM_009713	Arsa	YES	YES			YES	YES	YES	chr15:89310355-89306355
NM_001200038	Rubcn	YES	YES			YES	YES	YES	chr16:32870952-32866952
NM_172615	Rubcn	YES	YES			YES	YES	YES	chr16:32870952-32866952
NM_029623	Rmc1	YES	YES			YES	YES	YES	chr18:12324738-12328738
NM_009983	Ctsd	YES	YES			YES	YES	YES	chr7:149576232-149572232
NM_001310442	Atp6v1h	YES			YES	YES	YES	YES	chr1:5070666-5074666
NM_133826	Atp6v1h	YES			YES	YES	YES	YES	chr1:5070666-5074666
NM_011796	Capn10	YES			YES	YES	YES	YES	chr1:94828484-94832484
NM_178691	Yod1	YES			YES	YES	YES	YES	chr1:132611403-132615403
NM_001163754	Rab3gap2	YES			YES	YES	YES	YES	chr1:187025546-187029546
NM_001314013	Atg5	YES			YES	YES	YES	YES	chr10:43985644-43989644
NM_001358596	Atg5	YES			YES	YES	YES	YES	chr10:43985644-43989644
NM_053069	Atg5	YES			YES	YES	YES	YES	chr10:43985644-43989644

NM_001036293	Nrbf2	YES			YES	YES	YES	YES	chr10:66750529-66746529
NM_001290183	Ddit3	YES			YES	YES	YES	YES	chr10:126725348-126729348
NM_007837	Ddit3	YES			YES	YES	YES	YES	chr10:126725348-126729348
NM_001271356	Flcn	YES			YES	YES	YES	YES	chr11:59626041-59622041
NM_001271357	Flcn	YES			YES	YES	YES	YES	chr11:59625603-59621603
NM_146018	Flcn	YES			YES	YES	YES	YES	chr11:59626041-59622041
NR_073164	Flcn	YES			YES	YES	YES	YES	chr11:59626041-59622041
NR_156702	Flcn	YES			YES	YES	YES	YES	chr11:59626041-59622041
NM_001085440	Smcr8	YES			YES	YES	YES	YES	chr11:60588526-60592526
NM_175491	Smcr8	YES			YES	YES	YES	YES	chr11:60588526-60592526
NM_001304432	Eif4g1	YES			YES	YES	YES	YES	chr16:20670299-20674299
NM_145941	Eif4g1	YES			YES	YES	YES	YES	chr16:20670299-20674299
NM_001356366	Atg3	YES			YES	YES	YES	YES	chr16:45156441-45160441
NM_026402	Atg3	YES			YES	YES	YES	YES	chr16:45156441-45160441
NM_001361188	Trappc8	YES			YES	YES	YES	YES	chr18:21057079-21053079
NM_177038	Trappc8	YES			YES	YES	YES	YES	chr18:21057079-21053079
NM_029491	Trappc8	YES			YES	YES	YES	YES	chr18:21057079-21053079
NM_001195633	Epg5	YES			YES	YES	YES	YES	chr18:78132704-78136704
NM_001289575	Tsc1	YES			YES	YES	YES	YES	chr2:28494252-28498252
NM_001289576	Tsc1	YES			YES	YES	YES	YES	chr2:28494252-28498252
NM_022887	Tsc1	YES			YES	YES	YES	YES	chr2:28494252-28498252
NM_020590	Gabarapl1	YES			YES	YES	YES	YES	chr6:129480709-129484709
NM_010442	Hmox1	YES			YES	YES	YES	YES	chr8:77615016-77619016
NM_001310624	Pikfyve	YES				YES	YES	YES	chr1:65230758-65234758
NM_011086	Pikfyve	YES				YES	YES	YES	chr1:65230758-65234758
NM_022327	Ralb	YES				YES	YES	YES	chr1:121403859-121399859
NM_028860	Mttr3	YES				YES	YES	YES	chr11:4497318-4493318
NM_011694	Vdac1	YES				YES	YES	YES	chr11:52171852-52175852
NM_001362693	Vdac1	YES				YES	YES	YES	chr11:52172598-52176598
NM_001358315	Srebf1	YES				YES	YES	YES	chr11:60038583-60034583
NM_026389	Poldip2	YES				YES	YES	YES	chr11:78323297-78327297
NM_029654	Atg2b	YES				YES	YES		chr12:106925951-106921951
NM_009000	Rab24	YES				YES	YES		chr13:55425841-55421841
NM_025770	Atg10	YES				YES	YES	YES	chr13:91366092-91362092

NM_172599	Atg14	YES				YES	YES	YES	chr14:48190609-48186609
NM_001285991	Tbc1d5	YES				YES	YES	YES	chr17:51321177-51317177
NM_028162	Tbc1d5	YES				YES	YES	YES	chr17:51321177-51317177
NM_026833	Washc1	YES				YES	YES	YES	chr17:66458385-66462385
NM_001037757	Washc1	YES				YES	YES	YES	chr17:66458484-66462484
NM_053100	Trim8	YES				YES	YES	YES	chr19:46573637-46577637
NM_033526	Ubqln4	YES				YES	YES	YES	chr3:88355137-88359137
NM_026689	Mul1	YES				YES	YES	YES	chr4:137988086-137992086
NM_025562	Fis1	YES				YES	YES		chr5:137435446-137439446
NM_026693	Gabarapl2	YES				YES	YES	YES	chr8:114462102-114466102
NM_001357241	Pafah1b2	YES				YES	YES	YES	chr9:45823273-45819273
NM_016898	Cd164		YES		YES	YES	YES	YES	chr10:41236805-41240805
NM_001113355	Vps26a		YES		YES	YES	YES	YES	chr10:61951846-61947846
NM_001358543	Vps26a		YES		YES	YES	YES	YES	chr10:61952053-61948053
NM_133672	Vps26a		YES		YES	YES	YES	YES	chr10:61952053-61948053
NM_001364695	Gns		YES		YES	YES	YES	YES	chr10:120799645-120803645
NM_029364	Gns		YES		YES	YES	YES	YES	chr10:120799645-120803645
NM_015740	Bloc1s1		YES		YES	YES	YES	YES	chr10:128363080-128359080
NM_153139	Slc36a1		YES		YES	YES	YES	YES	chr11:55015341-55019341
NM_008175	Grn		YES		YES	YES	YES	YES	chr11:102289135-102293135
NM_001159324	Gaa		YES		YES	YES	YES	YES	chr11:119126776-119130776
NM_008064	Gaa		YES		YES	YES	YES	YES	chr11:119126776-119130776
NM_018822	Sgsh		YES		YES	YES	YES	YES	chr11:119219324-119215324
NM_178743	Slc26a11		YES		YES	YES	YES	YES	chr11:119214370-119218370
NM_153550	Dirc2		YES		YES	YES	YES	YES	chr16:35771956-35767956
NM_011930	Clcn7		YES		YES	YES	YES	YES	chr17:25267835-25271835
NM_001357463	Snx2		YES		YES	YES	YES	YES	chr18:53333445-53337445
NM_026386	Snx2		YES		YES	YES	YES	YES	chr18:53333445-53337445
NM_001081108	Lamtor4		YES		YES	YES	YES	YES	chr5:138694209-138698209
NM_001302383	March8		YES		YES	YES	YES	YES	chr6:116285539-116289539
NM_001302384	March8		YES		YES	YES	YES	YES	chr6:116285539-116289539
NM_001302385	March8		YES		YES	YES	YES	YES	chr6:116285539-116289539
NM_027920	March8		YES		YES	YES	YES	YES	chr6:116285539-116289539
NM_010749	M6pr		YES		YES	YES	YES	YES	chr6:122256237-122260237

NM_025605	Lamtor1		YES		YES	YES	YES	YES	chr7:109051850-109055850
NM_010421	Hexa		YES		YES	YES	YES	YES	chr9:59384846-59388846
NM_007494	Ass1		YES	YES		YES	YES	YES	chr2:31323289-31327289
NM_026719	Lmbrd1		YES			YES	YES	YES	chr1:24682882-24686882
NM_001310483	Lmbrd1		YES			YES	YES	YES	chr1:24683256-24687256
NM_001146120	Psap		YES			YES	YES	YES	chr10:59737875-59741875
NM_001146121	Psap		YES			YES	YES	YES	chr10:59737875-59741875
NM_001146122	Psap		YES			YES	YES	YES	chr10:59737875-59741875
NM_001146123	Psap		YES			YES	YES	YES	chr10:59737875-59741875
NM_011179	Psap		YES			YES	YES	YES	chr10:59737875-59741875
NM_031251	Ctns		YES			YES	YES		chr11:73015021-73011021
NM_001357891	Ctns		YES			YES	YES		chr11:73015044-73011044
NM_001357892	Ctns		YES			YES	YES		chr11:73015044-73011044
NM_199199	Tmem199		YES			YES	YES	YES	chr11:78328170-78324170
NM_133706	Tmem97		YES			YES	YES	YES	chr11:78366737-78362737
NM_023409	Npc2		YES			YES	YES		chr12:86116562-86112562
NM_008079	Galc		YES			YES	YES	YES	chr12:99500169-99496169
NM_001033271	Pip4p1		YES			YES	YES	YES	chr14:51553024-51549024
NM_001310505	Pip4p1		YES			YES	YES	YES	chr14:51553024-51549024
NM_001310506	Pip4p1		YES			YES	YES	YES	chr14:51553024-51549024
NM_001310507	Pip4p1		YES			YES	YES	YES	chr14:51553024-51549024
NM_007798	Ctsb		YES			YES	YES	YES	chr14:63738798-63742798
NM_033521	Laptm4b		YES			YES	YES	YES	chr15:34165280-34169280
NM_001355546	Naga		YES			YES	YES	YES	chr15:82171756-82167756
NM_008669	Naga		YES			YES	YES	YES	chr15:82171756-82167756
NM_010386	H2-DMa		YES			YES	YES	YES	chr17:34257276-34261276
NM_019441	Ppt2		YES			YES	YES		chr17:34766593-34762593
NM_001039088	Seh1l		YES			YES	YES	YES	chr18:67932029-67936029
NM_001360934	Seh1l		YES			YES	YES	YES	chr18:67932029-67936029
NM_028112	Seh1l		YES			YES	YES	YES	chr18:67932029-67936029
NM_146251	Pnpla7		YES			YES	YES	YES	chr2:24829052-24833052
NM_031843	Dpp7		YES			YES	YES	YES	chr2:25214352-25210352
NM_031248	Lamtor2		YES			YES	YES	YES	chr3:88359373-88355373
NR_155541	Lamtor2		YES			YES	YES	YES	chr3:88359373-88355373

NR_155542	Lamtor2		YES			YES	YES	YES	chr3:88359373-88355373
NR_155543	Lamtor2		YES			YES	YES	YES	chr3:88359373-88355373
NM_001362368	Lamtor2		YES			YES	YES	YES	chr3:88359373-88355373
NM_027855	Atraid		YES			YES	YES	YES	chr5:31348512-31352512
NM_212470	Atraid		YES			YES	YES	YES	chr5:31348512-31352512
NM_018772	Bri3		YES			YES	YES	YES	chr5:145013593-145017593
NM_027992	Tmem106b		YES			YES	YES	YES	chr6:13017258-13021258
NM_001305819	Apoe		YES			YES	YES	YES	chr7:20286247-20282247
NM_001305843	Apoe		YES			YES	YES	YES	chr7:20287037-20283037
NM_001305844	Apoe		YES			YES	YES	YES	chr7:20286470-20282470
NM_009696	Apoe		YES			YES	YES	YES	chr7:20287037-20283037
NM_010240	Ftl1		YES			YES	YES	YES	chr7:52717756-52713756
NM_019734	Asah1		YES			YES	YES	YES	chr8:42462551-42458551
NM_001163747	Tmem192		YES			YES	YES	YES	chr8:67468583-67472583
NM_028427	Tmem192		YES			YES	YES	YES	chr8:67468583-67472583
NM_023065	lfi30		YES			YES	YES		chr8:73293062-73289062
NM_010764	Man2b1		YES			YES	YES	YES	chr8:87604667-87608667
NM_013602	Mt1		YES			YES	YES	YES	chr8:96700488-96704488
NM_001331161	Hyal1		YES			YES	YES	YES	chr9:107476757-107480757
NM_008317	Hyal1		YES			YES	YES	YES	chr9:107476757-107480757
NM_145434	Nr1d1			YES	YES	YES	YES	YES	chr11:98639191-98635191
NM_013792	Naglu			YES	YES	YES	YES	YES	chr11:100928907-100932907
NM_001355676	Ddx5			YES	YES	YES	YES	YES	chr11:106652721-106648721
NM_001355677	Ddx5			YES	YES	YES	YES	YES	chr11:106652999-106648999
NM_007840	Ddx5			YES	YES	YES	YES	YES	chr11:106652308-106648308
NM_001289429	Cipc			YES	YES	YES	YES	YES	chr12:88285490-88289490
NM_001289430	Cipc			YES	YES	YES	YES	YES	chr12:88285490-88289490
NM_001289431	Cipc			YES	YES	YES	YES	YES	chr12:88285490-88289490
NM_001289432	Cipc			YES	YES	YES	YES	YES	chr12:88285792-88289792
NM_001364274	Cipc			YES	YES	YES	YES	YES	chr12:88285792-88289792
NM_173735	Cipc			YES	YES	YES	YES	YES	chr12:88285792-88289792
NR_157110	Cipc			YES	YES	YES	YES	YES	chr12:88285792-88289792
NM_001287180	Atf4			YES	YES	YES	YES	YES	chr15:80083113-80087113
NM_009716	Atf4			YES	YES	YES	YES	YES	chr15:80083113-80087113

NM_007890	Dyrk1a			YES	YES	YES	YES	YES	chr16:94789312-94793312
NM_001113389	Dyrk1a			YES	YES	YES	YES	YES	chr16:94790013-94794013
NM_001356455	Thrap3			YES	YES	YES	YES	YES	chr4:125882454-125878454
NM_001356456	Thrap3			YES	YES	YES	YES	YES	chr4:125880751-125876751
NM_146153	Thrap3			YES	YES	YES	YES	YES	chr4:125882454-125878454
NM_011498	Bhlhe40			YES	YES	YES	YES	YES	chr6:108608122-108612122
NM_145381	Lactb2				YES	YES	YES	YES	chr1:13653090-13649090
NM_001097644	Ccnyl1				YES	YES	YES		chr1:64735418-64739418
NM_001356264	Cnppd1				YES	YES	YES	YES	chr1:75140765-75136765
NM_026977	Cnppd1				YES	YES	YES	YES	chr1:75141785-75137785
NM_023732	Abcb6				YES	YES	YES	YES	chr1:75179466-75175466
NM_010880	Ncl				YES	YES	YES	YES	chr1:88258530-88254530
NM_001110212	Gigyf2				YES	YES	YES	YES	chr1:89221072-89225072
NM_146112	Gigyf2				YES	YES	YES	YES	chr1:89221072-89225072
NR_027859	Pfkfb2				YES	YES	YES	YES	chr1:132614898-132610898
NM_008825	Pfkfb2				YES	YES	YES	YES	chr1:132614898-132610898
NM_001162416	Pfkfb2				YES	YES	YES	YES	chr1:132613653-132609653
NM_001357228	Zc3h11a				YES	YES	YES	YES	chr1:135560476-135556476
NM_001276767	Zc3h11a				YES	YES	YES	YES	chr1:135560476-135556476
NM_144530	Zc3h11a				YES	YES	YES	YES	chr1:135560476-135556476
NM_030245	Tada1				YES	YES	YES	YES	chr1:168306797-168310797
NM_001358796	Rmnd1				YES	YES	YES	YES	chr10:5911652-5915652
NM_025343	Rmnd1				YES	YES	YES	YES	chr10:5911652-5915652
NM_001359806	Supv3l1				YES	YES	YES	YES	chr10:61914986-61910986
NM_181423	Supv3l1				YES	YES	YES	YES	chr10:61914986-61910986
NM_026201	Ccar1				YES	YES	YES	YES	chr10:62257616-62253616
NM_173751	Ilvbl				YES	YES	YES	YES	chr10:78034744-78038744
NM_001359301	Ilvbl				YES	YES	YES	YES	chr10:78034757-78038757
NM_001359302	Ilvbl				YES	YES	YES	YES	chr10:78035235-78039235
NM_001359303	Ilvbl				YES	YES	YES	YES	chr10:78035235-78039235
NM_001077184	Bsg				YES	YES	YES	YES	chr10:79164602-79168602
NM_009768	Bsg				YES	YES	YES	YES	chr10:79164602-79168602
NM_001077363	Ptbp1				YES	YES	YES	YES	chr10:79314676-79318676
NM_001283013	Ptbp1				YES	YES	YES	YES	chr10:79314676-79318676

NM_008956	Ptbp1				YES	YES	YES	YES	chr10:79314676-79318676
NM_021501	Pias4				YES	YES	YES	YES	chr10:80632965-80628965
NM_007907	Eef2				YES	YES	YES	YES	chr10:80636875-80640875
NM_001168655	Socs2				YES	YES	YES	YES	chr10:94881346-94877346
NM_001168656	Socs2				YES	YES	YES	YES	chr10:94880618-94876618
NM_001168657	Socs2				YES	YES	YES	YES	chr10:94880417-94876417
NM_007706	Socs2				YES	YES	YES	YES	chr10:94881991-94877991
NM_001003717	Osbpl8				YES	YES	YES	YES	chr10:110599357-110603357
NM_175489	Osbpl8				YES	YES	YES	YES	chr10:110599357-110603357
NM_001355005	Cdk4				YES	YES	YES	YES	chr10:126498090-126502090
NM_009870	Cdk4				YES	YES	YES	YES	chr10:126498090-126502090
NM_001347171	Mbd6				YES	YES	YES	YES	chr10:126728574-126724574
NM_033072	Mbd6				YES	YES	YES	YES	chr10:126728574-126724574
NM_009284	Stat6				YES	YES	YES	YES	chr10:127077541-127081541
NM_026444	Cs				YES	YES	YES		chr10:127772282-127776282
NM_026443	Mtfp1				YES	YES	YES	YES	chr11:3997934-3993934
NM_001077661	Urgcp				YES	YES	YES	YES	chr11:5664879-5660879
NM_001361588	Urgcp				YES	YES	YES	YES	chr11:5664879-5660879
NM_001361589	Urgcp				YES	YES	YES	YES	chr11:5664879-5660879
NM_001361592	Urgcp				YES	YES	YES	YES	chr11:5664879-5660879
NM_001252282	Ogdh				YES	YES	YES	YES	chr11:6189099-6193099
NM_001252283	Ogdh				YES	YES	YES	YES	chr11:6189099-6193099
NM_010956	Ogdh				YES	YES	YES	YES	chr11:6189099-6193099
NM_001361905	Ogdh				YES	YES	YES	YES	chr11:6189108-6193108
NM_001252287	Ogdh				YES	YES	YES	YES	chr11:6189161-6193161
NM_001361903	Ogdh				YES	YES	YES	YES	chr11:6189161-6193161
NM_001361904	Ogdh				YES	YES	YES	YES	chr11:6189672-6193672
NM_001252288	Ogdh				YES	YES	YES	YES	chr11:6190060-6194060
NM_001361902	Ogdh				YES	YES	YES	YES	chr11:6190081-6194081
NM_001290676	Cpeb4				YES	YES	YES	YES	chr11:31768439-31772439
NM_001290678	Cpeb4				YES	YES	YES	YES	chr11:31768439-31772439
NM_026252	Cpeb4				YES	YES	YES	YES	chr11:31768439-31772439
NM_001252260	Npm1				YES	YES	YES		chr11:33065706-33061706
NM_008722	Npm1				YES	YES	YES		chr11:33065706-33061706

NM_001252261	Npm1				YES	YES	YES		chr11:33065706-33061706
NM_001362685	Ube2b				YES	YES	YES	YES	chr11:51816788-51812788
NM_001362686	Ube2b				YES	YES	YES	YES	chr11:51816493-51812493
NM_009458	Ube2b				YES	YES	YES	YES	chr11:51816493-51812493
NM_009012	Rad50				YES	YES	YES	YES	chr11:53523321-53519321
NM_001039092	Tom1l2				YES	YES	YES	YES	chr11:60168907-60164907
NM_153080	Tom1l2				YES	YES	YES	YES	chr11:60168907-60164907
NM_001039093	Tom1l2				YES	YES	YES	YES	chr11:60168907-60164907
NM_001359810	Tom1l2				YES	YES	YES	YES	chr11:60168907-60164907
NM_009410	Top3a				YES	YES	YES	YES	chr11:60593367-60589367
NM_009171	Shmt1				YES	YES	YES	YES	chr11:60627267-60623267
NM_019921	Akap10				YES	YES	YES	YES	chr11:61746259-61742259
NM_007888	Dvl2				YES	YES	YES	YES	chr11:69811593-69815593
NM_001164223	Rpa1				YES	YES	YES	YES	chr11:75164385-75160385
NM_026653	Rpa1				YES	YES	YES	YES	chr11:75164385-75160385
NM_001102611	Smyd4				YES	YES	YES	YES	chr11:75159434-75163434
NM_001029934	Usp32				YES	YES	YES	YES	chr11:84955957-84951957
NM_001080931	Med13				YES	YES	YES	YES	chr11:86173527-86169527
NM_009546	Trim25				YES	YES	YES	YES	chr11:88858216-88862216
NM_001013375	Utp18				YES	YES	YES	YES	chr11:93749580-93745580
NM_001363336	Mbtd1				YES	YES	YES	YES	chr11:93744663-93748663
NM_001346525	Mbtd1				YES	YES	YES	YES	chr11:93744984-93748984
NM_134012	Mbtd1				YES	YES	YES	YES	chr11:93744984-93748984
NM_134021	Pnpo				YES	YES	YES	YES	chr11:96807833-96803833
NM_028207	Dusp3				YES	YES	YES	YES	chr11:101848605-101844605
NM_001077696	Hdac5				YES	YES	YES	YES	chr11:102093986-102089986
NM_001284248	Hdac5				YES	YES	YES	YES	chr11:102093986-102089986
NM_001284249	Hdac5				YES	YES	YES	YES	chr11:102093986-102089986
NM_001284250	Hdac5				YES	YES	YES	YES	chr11:102093986-102089986
NM_001361596	Hdac5				YES	YES	YES	YES	chr11:102093986-102089986
NM_010412	Hdac5				YES	YES	YES	YES	chr11:102093986-102089986
NM_001166685	Cep95				YES	YES	YES	YES	chr11:106648065-106652065
NM_177088	Cep95				YES	YES	YES	YES	chr11:106648065-106652065
NM_010303	Gna13				YES	YES	YES		chr11:109221607-109225607

NM_001359034	Gna13				YES	YES	YES		chr11:109221644-109225644
NM_001347642	Wbp2				YES	YES	YES	YES	chr11:115950809-115946809
NM_001361446	Wbp2				YES	YES	YES	YES	chr11:115950809-115946809
NM_016852	Wbp2				YES	YES	YES	YES	chr11:115950809-115946809
NM_001271898	Acox1				YES	YES	YES	YES	chr11:116062859-116058859
NM_015729	Acox1				YES	YES	YES	YES	chr11:116062859-116058859
NM_027107	Ten1				YES	YES	YES	YES	chr11:116057668-116061668
NM_011358	Srsf2				YES	YES	YES	YES	chr11:116716908-116712908
NM_001361585	Mfsd11				YES	YES	YES	YES	chr11:116712575-116716575
NM_001361586	Mfsd11				YES	YES	YES	YES	chr11:116712813-116716813
NM_001361587	Mfsd11				YES	YES	YES	YES	chr11:116712813-116716813
NM_178620	Mfsd11				YES	YES	YES	YES	chr11:116712813-116716813
NM_010756	Mafg				YES	YES	YES	YES	chr11:120497361-120493361
NM_001363055	Aspscr1				YES	YES	YES	YES	chr11:120531786-120535786
NM_026877	Aspscr1				YES	YES	YES	YES	chr11:120531786-120535786
NM_001363056	Aspscr1				YES	YES	YES	YES	chr11:120532168-120536168
NM_026272	Narf				YES	YES	YES	YES	chr11:121096049-121100049
NM_001270988	Asxl2				YES	YES	YES	YES	chr12:3424356-3428356
NM_172421	Asxl2				YES	YES	YES	YES	chr12:3424356-3428356
NM_001361928	Hbp1				YES	YES	YES	YES	chr12:32637610-32633610
NM_153198	Hbp1				YES	YES	YES	YES	chr12:32637610-32633610
NM_177993	Hbp1				YES	YES	YES	YES	chr12:32637610-32633610
NM_001146176	Max				YES	YES	YES	YES	chr12:78065735-78061735
NM_001361664	Max				YES	YES	YES	YES	chr12:78065735-78061735
NM_008558	Max				YES	YES	YES	YES	chr12:78065735-78061735
NM_001361663	Max				YES	YES	YES	YES	chr12:78065735-78061735
NM_134042	Aldh6a1				YES	YES	YES	YES	chr12:85794474-85790474
NM_173756	Lin52				YES	YES	YES	YES	chr12:85789957-85793957
NM_031391	Gtf2a1				YES	YES	YES	YES	chr12:92830589-92826589
NM_175335	Gtf2a1				YES	YES	YES	YES	chr12:92831427-92827427
NM_001047159	Net1				YES	YES	YES	YES	chr13:3895327-3891327
NM_001081059	Mcur1				YES	YES	YES		chr13:43658060-43654060
NM_053180	Cdk20				YES	YES	YES	YES	chr13:64531360-64535360
NM_053163	Mrpl36				YES	YES	YES	YES	chr13:73465956-73469956

NM_009874	Cdk7				YES	YES	YES	YES	chr13:101503397-101499397
NM_001361085	Srek1				YES	YES	YES	YES	chr13:104567188-104563188
NM_026965	Comtd1				YES	YES	YES	YES	chr14:22670632-22666632
NM_001134465	Dennd6a				YES	YES	YES	YES	chr14:27396535-27400535
NM_145969	Dennd6a				YES	YES	YES	YES	chr14:27396535-27400535
NM_008715	Ints6				YES	YES	YES	YES	chr14:63382449-63378449
NM_001164503	Akap11				YES	YES	YES	YES	chr14:78939167-78935167
NM_145930	AW549877				YES	YES	YES	YES	chr15:3948252-3944252
NM_172402	Slc25a32				YES	YES	YES	YES	chr15:38946762-38942762
NM_198606	Dcaf13				YES	YES	YES	YES	chr15:38941919-38945919
NM_001355589	Top1mt				YES	YES	YES	YES	chr15:75511730-75507730
NM_028404	Top1mt				YES	YES	YES	YES	chr15:75511730-75507730
NM_001017983	Foxred2				YES	YES	YES	YES	chr15:77789652-77785652
NM_001168260	Foxred2				YES	YES	YES	YES	chr15:77789652-77785652
NM_001304830	Maff				YES	YES	YES	YES	chr15:79174550-79178550
NM_010755	Maff				YES	YES	YES	YES	chr15:79175449-79179449
NM_001304831	Maff				YES	YES	YES	YES	chr15:79175990-79179990
NM_001304832	Maff				YES	YES	YES	YES	chr15:79176331-79180331
NM_133726	St13				YES	YES	YES	YES	chr15:81232624-81228624
NM_017376	Tef				YES	YES	YES	YES	chr15:81639343-81643343
NM_001111288	Sco2				YES	YES	YES	YES	chr15:89206822-89202822
NM_026967	Rhebl1				YES	YES	YES	YES	chr15:98714345-98710345
NM_001113545	Lima1				YES	YES	YES	YES	chr15:99708387-99704387
NM_145625	Eif4b				YES	YES	YES	YES	chr15:101901703-101905703
NM_134100	Mfsd5				YES	YES	YES	YES	chr15:102107386-102111386
NM_030205	Coro7				YES	YES	YES	YES	chr16:4682220-4678220
NM_001079814	Glyr1				YES	YES	YES	YES	chr16:5052503-5048503
NM_028720	Glyr1				YES	YES	YES	YES	chr16:5052503-5048503
NM_001359747	Glyr1				YES	YES	YES	YES	chr16:5052503-5048503
NM_001359748	Glyr1				YES	YES	YES	YES	chr16:5052503-5048503
NM_001356320	Ubn1				YES	YES	YES	YES	chr16:5047649-5051649
NM_026666	Ubn1				YES	YES	YES	YES	chr16:5047649-5051649
NM_013796	Nagpa				YES	YES	YES	YES	chr16:5206605-5202605
NR_027804	Nagpa				YES	YES	YES	YES	chr16:5206605-5202605

NM_001081400	1810013L24Rik			YES	YES	YES	YES	chr16:8827692-8831692
NM_001110147	Tnk2			YES	YES	YES	YES	chr16:32642228-32646228
NM_016788	Tnk2			YES	YES	YES	YES	chr16:32642228-32646228
NM_175111	Hspbap1			YES	YES	YES	YES	chr16:35767971-35771971
NR_152314	Hspbap1			YES	YES	YES	YES	chr16:35767971-35771971
NM_001358203	Atp6v1a			YES	YES	YES		chr16:44141872-44137872
NM_001358204	Atp6v1a			YES	YES	YES		chr16:44141872-44137872
NM_007508	Atp6v1a			YES	YES	YES		chr16:44141872-44137872
NM_001347239	Naa50			YES	YES	YES		chr16:44137403-44141403
NM_028108	Naa50			YES	YES	YES		chr16:44137421-44141421
NM_001356453	Slc35a5			YES	YES	YES	YES	chr16:45161286-45157286
NM_028756	Slc35a5			YES	YES	YES	YES	chr16:45161286-45157286
NM_172935	Amdhd2			YES	YES	YES	YES	chr17:24303200-24299200
NM_023480	Fahd1			YES	YES	YES	YES	chr17:24989747-24985747
NM_024284	Hagh			YES	YES	YES	YES	chr17:24984934-24988934
NM_001159626	Hagh			YES	YES	YES	YES	chr17:24985111-24989111
NM_013642	Dusp1			YES	YES	YES	YES	chr17:26647917-26643917
NM_029870	Crebrf			YES	YES	YES	YES	chr17:26850094-26854094
NM_026307	Cuta			YES	YES	YES	YES	chr17:27078983-27074983
NM_026948	Cuta			YES	YES	YES	YES	chr17:27078983-27074983
NR_104458	Cuta			YES	YES	YES	YES	chr17:27078903-27074903
NM_001281491	Syngap1			YES	YES	YES	YES	chr17:27075896-27079896
NM_001109913	Hnrnpm			YES	YES	YES	YES	chr17:33824903-33820903
NM_029804	Hnrnpm			YES	YES	YES	YES	chr17:33824903-33820903
NM_021346	Zfp318			YES	YES	YES	YES	chr17:46518214-46522214
NM_207671	Zfp318			YES	YES	YES	YES	chr17:46518214-46522214
NM_025887	Rab5a			YES	YES	YES	YES	chr17:53616058-53620058
NM_028782	Lonp1			YES	YES	YES	YES	chr17:56768826-56764826
NM_001357897	Catsperd			YES	YES	YES	YES	chr17:56763969-56767969
NM_175350	Catsperd			YES	YES	YES	YES	chr17:56765065-56769065
NM_025538	Alkbh7			YES	YES	YES	YES	chr17:57134261-57138261
NM_027372	Alkbh7			YES	YES	YES	YES	chr17:57134261-57138261
NM_011104	Prkce			YES	YES	YES	YES	chr17:86564624-86568624
NM_019654	Socs5			YES	YES	YES	YES	chr17:87504518-87508518

NM_001039692	Arhgap12				YES	YES	YES	YES	chr18:6138596-6134596
NM_029277	Arhgap12				YES	YES	YES	YES	chr18:6138596-6134596
NM_027497	Epc1				YES	YES	YES	YES	chr18:6493355-6489355
NM_001276350	Epc1				YES	YES	YES	YES	chr18:6493355-6489355
NM_146084	Fam13b				YES	YES	YES	YES	chr18:34668977-34664977
NM_175375	Ankhd1				YES	YES	YES	YES	chr18:36717756-36721756
NM_001357462	Dctn4				YES	YES	YES	YES	chr18:60683307-60687307
NM_026302	Dctn4				YES	YES	YES	YES	chr18:60683307-60687307
NM_026316	Aldh3b1				YES	YES	YES		chr19:3932278-3928278
NM_011237	Rad9a				YES	YES	YES	YES	chr19:4204103-4200103
NM_001162946	Pcx				YES	YES	YES	YES	chr19:4507971-4511971
NM_001362044	Ubxn1				YES	YES	YES	YES	chr19:8943537-8947537
NM_146093	Ubxn1				YES	YES	YES	YES	chr19:8943537-8947537
NM_001361971	Lpxn				YES	YES	YES	YES	chr19:12868182-12872182
NM_025423	1110059E24Rik				YES	YES	YES	YES	chr19:21729781-21725781
NM_146096	Abhd17b				YES	YES	YES	YES	chr19:21725298-21729298
NM_028152	Mms19				YES	YES	YES	YES	chr19:42058126-42054126
NM_145500	Ubt1				YES	YES	YES	YES	chr19:42053752-42057752
NM_026152	Hoga1				YES	YES	YES	YES	chr19:42117859-42121859
NM_001346703	Hps1				YES	YES	YES	YES	chr19:42856968-42852968
NM_019424	Hps1				YES	YES	YES	YES	chr19:42856968-42852968
NM_001362410	Hps1				YES	YES	YES	YES	chr19:42855636-42851636
NM_145503	Lzts2				YES	YES	YES	YES	chr19:45087165-45091165
NM_001130525	Lzts2				YES	YES	YES	YES	chr19:45087199-45091199
NM_001130526	Lzts2				YES	YES	YES		chr19:45090124-45094124
NM_001102471	Cnm2				YES	YES	YES	YES	chr19:46833598-46837598
NM_033569	Cnm2				YES	YES	YES	YES	chr19:46833598-46837598
NM_001356986	Smndc1				YES	YES	YES	YES	chr19:53467031-53463031
NM_172429	Smndc1				YES	YES	YES	YES	chr19:53467624-53463624
NM_001172096	Cacul1				YES	YES	YES	YES	chr19:60659426-60655426
NM_001172097	Cacul1				YES	YES	YES	YES	chr19:60659426-60655426
NM_030197	Cacul1				YES	YES	YES	YES	chr19:60659426-60655426
NM_177648	Dolk				YES	YES	YES	YES	chr2:30144374-30140374
NM_198304	Nup188				YES	YES	YES	YES	chr2:30139435-30143435

NR_156132	Nup188				YES	YES	YES	YES	chr2:30139435-30143435
NM_001252536	Ciz1				YES	YES	YES		chr2:32216029-32220029
NM_001252538	Ciz1				YES	YES	YES		chr2:32216029-32220029
NM_001252534	Ciz1				YES	YES	YES		chr2:32216217-32220217
NM_001252537	Ciz1				YES	YES	YES		chr2:32216217-32220217
NM_028412	Ciz1				YES	YES	YES		chr2:32216217-32220217
NM_029774	Ttll11				YES	YES	YES	YES	chr2:35837644-35833644
NM_018828	Fnbp4				YES	YES	YES		chr2:90583026-90587026
NM_001317241	Mtch2				YES	YES	YES	YES	chr2:90684811-90688811
NM_001317242	Mtch2				YES	YES	YES	YES	chr2:90684811-90688811
NM_001317243	Mtch2				YES	YES	YES	YES	chr2:90684811-90688811
NM_001317244	Mtch2				YES	YES	YES	YES	chr2:90684811-90688811
NM_019758	Mtch2				YES	YES	YES	YES	chr2:90684811-90688811
NM_001290837	Serf2				YES	YES	YES	YES	chr2:121272433-121276433
NM_011354	Serf2				YES	YES	YES	YES	chr2:121272433-121276433
NR_110986	Serf2				YES	YES	YES	YES	chr2:121272433-121276433
NM_001291144	Dhx35				YES	YES	YES	YES	chr2:158618042-158622042
NM_145742	Dhx35				YES	YES	YES	YES	chr2:158618042-158622042
NM_001085495	Arfgef2				YES	YES	YES	YES	chr2:166628580-166632580
NM_001311131	Ube2v1				YES	YES	YES		chr2:167460005-167456005
NM_001311146	Ube2v1				YES	YES	YES		chr2:167460005-167456005
NM_023230	Ube2v1				YES	YES	YES		chr2:167460005-167456005
NM_177586	Eif5a2				YES	YES	YES	YES	chr3:28677698-28681698
NM_025813	Mfsd1				YES	YES	YES	YES	chr3:67384189-67388189
NM_001309909	Scamp3				YES	YES	YES	YES	chr3:88978812-88982812
NM_001309910	Scamp3				YES	YES	YES	YES	chr3:88978812-88982812
NM_011886	Scamp3				YES	YES	YES	YES	chr3:88978812-88982812
NM_027315	Ube2q1				YES	YES	YES	YES	chr3:89575030-89579030
NM_001287086	4933434E20Rik				YES	YES	YES	YES	chr3:89854223-89858223
NM_025762	4933434E20Rik				YES	YES	YES	YES	chr3:89854223-89858223
NM_027500	4933434E20Rik				YES	YES	YES	YES	chr3:89854223-89858223
NM_001293707	Pip5k1a				YES	YES	YES	YES	chr3:94913352-94909352
NM_008847	Pip5k1a				YES	YES	YES	YES	chr3:94913352-94909352
NM_001009935	Txnip				YES	YES	YES	YES	chr3:96359379-96363379

NM_023719	Txnip				YES	YES	YES	YES	chr3:96359379-96363379
NM_001161854	Csde1				YES	YES	YES	YES	chr3:102821968-102825968
NM_001310693	Csde1				YES	YES	YES	YES	chr3:102821968-102825968
NM_144901	Csde1				YES	YES	YES	YES	chr3:102821968-102825968
NM_001045807	Rbm15				YES	YES	YES	YES	chr3:107138707-107134707
NM_001316995	H2afz				YES	YES	YES	YES	chr3:137524950-137528950
NM_016750	H2afz				YES	YES	YES	YES	chr3:137524950-137528950
NM_007917	Eif4e				YES	YES	YES	YES	chr3:138186654-138190654
NM_001313980	Eif4e				YES	YES	YES	YES	chr3:138187731-138191731
NM_145546	Gtf2b				YES	YES	YES		chr3:142425710-142429710
NM_001346655	Zzz3				YES		YES	YES	chr3:152055936-152059936
NM_001080755	Zzz3				YES	YES	YES	YES	chr3:152056466-152060466
NM_001355673	Zzz3				YES	YES	YES	YES	chr3:152056466-152060466
NM_001287139	Zzz3				YES	YES	YES	YES	chr3:152057147-152061147
NM_175175	Plekhf2				YES	YES	YES		chr4:10937266-10933266
NM_013889	Zfp292				YES	YES	YES	YES	chr4:34832697-34828697
NM_134097	Topors				YES	YES	YES	YES	chr4:40219374-40215374
NM_001290448	Nfx1				YES	YES	YES	YES	chr4:40915438-40919438
NM_001290449	Nfx1				YES	YES	YES	YES	chr4:40915438-40919438
NM_023739	Nfx1				YES	YES	YES	YES	chr4:40915475-40919475
NM_172694	Megf9				YES	YES	YES	YES	chr4:70198462-70194462
NM_001356561	Kdm4c				YES	YES	YES	YES	chr4:73895282-73899282
NM_144787	Kdm4c				YES	YES	YES	YES	chr4:73895282-73899282
NM_028132	Pgm2				YES	YES	YES	YES	chr4:99599555-99603555
NM_027250	Coa7				YES	YES	YES	YES	chr4:107998256-108002256
NM_007983	Faf1				YES	YES	YES	YES	chr4:109346731-109350731
NM_009478	Urod				YES	YES	YES	YES	chr4:116669518-116665518
NM_175244	Hectd3				YES	YES	YES	YES	chr4:116665438-116669438
NM_033617	Atp6v0b				YES	YES	YES	YES	chr4:117562434-117558434
NM_001355214	Ppcs				YES	YES	YES	YES	chr4:119097525-119093525
NM_026494	Ppcs				YES	YES	YES	YES	chr4:119097525-119093525
NM_001014900	Zmynd12				YES	YES	YES	YES	chr4:119092788-119096788
NM_001346660	Rlf				YES	YES	YES	YES	chr4:120890189-120886189
NM_009030	Rbbp4				YES	YES	YES	YES	chr4:129015114-129011114

NM_025970	Zbtb8os				YES	YES	YES	YES	chr4:129010769-129014769
NR_045036	Khdrbs1				YES	YES	YES	YES	chr4:129422047-129418047
NM_011317	Khdrbs1				YES	YES	YES	YES	chr4:129422047-129418047
NM_019641	Stmn1				YES	YES	YES	YES	chr4:134021734-134025734
NM_198248	Zbtb40				YES	YES	YES	YES	chr4:136607110-136603110
NM_172338	Dnajc16				YES	YES	YES	YES	chr4:141349059-141345059
NM_011929	Clcn6				YES	YES	YES	YES	chr4:147415422-147411422
NM_010840	Mthfr				YES	YES	YES	YES	chr4:147410685-147414685
NM_022022	Ube4b				YES	YES	YES	YES	chr4:148803240-148799240
NM_026984	Kmt2e				YES	YES	YES	YES	chr5:22937781-22941781
NM_153526	Insig1				YES	YES	YES	YES	chr5:28395451-28399451
NM_001360000	Zfp512				YES	YES	YES	YES	chr5:31752308-31756308
NM_001360001	Zfp512				YES	YES	YES	YES	chr5:31752308-31756308
NM_172993	Zfp512				YES	YES	YES	YES	chr5:31752308-31756308
NM_001113460	Tec				YES	YES	YES		chr5:73262187-73258187
NM_001113461	Tec				YES	YES	YES		chr5:73262187-73258187
NM_001113464	Tec				YES	YES	YES		chr5:73262187-73258187
NM_013689	Tec				YES	YES	YES		chr5:73262187-73258187
NM_001081107	Helq				YES	YES	YES	YES	chr5:101230119-101226119
NM_026826	Mrps18c				YES	YES	YES	YES	chr5:101225277-101229277
NM_028794	Nudt9				YES	YES	YES	YES	chr5:104473382-104477382
NM_001081203	Sbno1				YES	YES	YES	YES	chr5:124878466-124874466
NM_001359978	Sbno1				YES	YES	YES	YES	chr5:124878111-124874111
NM_001359979	Sbno1				YES	YES	YES	YES	chr5:124878111-124874111
NM_011639	Trip6				YES	YES	YES	YES	chr5:137757969-137753969
NM_010312	Gnb2				YES	YES	YES	YES	chr5:137977034-137973034
NM_001356576	Mcm7				YES	YES	YES	YES	chr5:138614994-138610994
NM_001356577	Mcm7				YES	YES	YES	YES	chr5:138614994-138610994
NM_008568	Mcm7				YES	YES	YES	YES	chr5:138615611-138611611
NM_021392	Ap4m1				YES	YES	YES	YES	chr5:138610748-138614748
NM_133916	Eif3b				YES	YES	YES		chr5:140892758-140896758
NM_001177572	Slc25a13				YES	YES	YES	YES	chr6:6169673-6165673
NM_015829	Slc25a13				YES	YES	YES	YES	chr6:6169673-6165673
NM_001171000	Ahcyl2				YES	YES	YES	YES	chr6:29715942-29719942

NM_021414	Ahcyl2				YES	YES	YES	YES	chr6:29715942-29719942
NM_001361617	Slc37a3				YES	YES	YES	YES	chr6:39330206-39326206
NM_001361618	Slc37a3				YES	YES	YES	YES	chr6:39330206-39326206
NM_001361619	Slc37a3				YES	YES	YES	YES	chr6:39330206-39326206
NM_028123	Slc37a3				YES	YES	YES	YES	chr6:39330206-39326206
NR_155076	Slc37a3				YES	YES	YES	YES	chr6:39329934-39325934
NR_155077	Slc37a3				YES	YES	YES	YES	chr6:39330206-39326206
NM_001355668	Klf15				YES	YES	YES	YES	chr6:90410069-90414069
NM_023184	Klf15				YES	YES	YES	YES	chr6:90410069-90414069
NM_001164089	Cops7a				YES	YES	YES	YES	chr6:124918056-124914056
NM_001355541	Cops7a				YES	YES	YES	YES	chr6:124918056-124914056
NM_001355542	Cops7a				YES	YES	YES	YES	chr6:124918056-124914056
NM_012003	Cops7a				YES	YES	YES	YES	chr6:124918056-124914056
NM_019426	Atf7ip				YES	YES	YES	YES	chr6:136464871-136468871
NM_025898	Napa				YES	YES	YES	YES	chr7:16681428-16685428
NM_001285891	Sae1				YES	YES	YES	YES	chr7:16975745-16971745
NM_001285892	Sae1				YES	YES	YES	YES	chr7:16975745-16971745
NM_019748	Sae1				YES	YES	YES	YES	chr7:16975745-16971745
NM_001243888	BC024978				YES	YES	YES	YES	chr7:27978299-27982299
NM_001290511	BC024978				YES	YES	YES	YES	chr7:27978299-27982299
NM_001290513	BC024978				YES	YES	YES	YES	chr7:27978299-27982299
NM_001037957	Dyrk1b				YES	YES	YES	YES	chr7:28962001-28966001
NM_010092	Dyrk1b				YES	YES	YES	YES	chr7:28962001-28966001
NM_001271370	Dyrk1b				YES	YES	YES	YES	chr7:28962834-28966834
NM_001357668	Yif1b				YES		YES	YES	chr7:30020112-30024112
NM_001110201	Yif1b				YES	YES	YES	YES	chr7:30020841-30024841
NM_029887	Yif1b				YES	YES	YES	YES	chr7:30020841-30024841
NM_001357664	Yif1b				YES	YES	YES	YES	chr7:30020975-30024975
NM_001357666	Yif1b				YES	YES	YES	YES	chr7:30020975-30024975
NM_009438	Rpl13a				YES	YES	YES	YES	chr7:52386615-52382615
NM_007527	Bax				YES	YES	YES	YES	chr7:52724768-52720768
NM_001005247	Hps5				YES	YES	YES	YES	chr7:54053751-54049751
NM_001005248	Hps5				YES	YES	YES	YES	chr7:54053751-54049751
NM_001167864	Hps5				YES	YES	YES	YES	chr7:54053751-54049751

NM_001360076	Gtf2h1				YES	YES	YES	YES	chr7:54048963-54052963
NM_008186	Gtf2h1				YES	YES	YES	YES	chr7:54048963-54052963
NM_001291075	Gtf2h1				YES	YES	YES	YES	chr7:54049540-54053540
NM_001360075	Gtf2h1				YES	YES	YES	YES	chr7:54049540-54053540
NM_133740	Prmt3				YES	YES	YES	YES	chr7:57031227-57035227
NM_001252520	Picalm				YES	YES	YES	YES	chr7:97276222-97280222
NM_001252521	Picalm				YES	YES	YES	YES	chr7:97276222-97280222
NM_001252522	Picalm				YES	YES	YES	YES	chr7:97276222-97280222
NM_001252523	Picalm				YES	YES	YES	YES	chr7:97276222-97280222
NM_001252524	Picalm				YES	YES	YES	YES	chr7:97276222-97280222
NM_001360867	Picalm				YES	YES	YES	YES	chr7:97276222-97280222
NM_146194	Picalm				YES	YES	YES	YES	chr7:97276222-97280222
NM_026734	Tmem126b				YES	YES	YES	YES	chr7:97627005-97623005
NM_001081679	Tomt				YES	YES	YES	YES	chr7:109057373-109053373
NM_001282088	Tomt				YES	YES	YES	YES	chr7:109054799-109050799
NM_011247	Rbbp6				YES	YES	YES	YES	chr7:130111577-130115577
NM_175023	Rbbp6				YES	YES	YES	YES	chr7:130111577-130115577
NM_023712	Spns1				YES	YES	YES	YES	chr7:133523948-133519948
NR_045537	Spns1				YES	YES	YES	YES	chr7:133523948-133519948
NM_001029982	Sec23ip				YES	YES	YES	YES	chr7:135885883-135889883
NM_011592	Timm44				YES	YES	YES	YES	chr8:4278405-4274405
NM_023662	Pcm1				YES	YES	YES		chr8:42322612-42326612
NM_001363117	Ddx39				YES	YES	YES	YES	chr8:86236575-86240575
NM_197982	Ddx39				YES	YES	YES	YES	chr8:86236575-86240575
NR_156447	Ddx39				YES	YES	YES	YES	chr8:86236575-86240575
NM_001363116	Ddx39				YES	YES	YES	YES	chr8:86236972-86240972
NM_001039514	Dhps				YES	YES	YES	YES	chr8:87593155-87597155
NM_172758	Slc38a7				YES	YES	YES	YES	chr8:98379891-98375891
NM_001024606	Pdp2				YES	YES	YES	YES	chr8:107112867-107116867
NM_013477	Atp6v0d1				YES	YES	YES	YES	chr8:108092464-108088464
NM_146216	Vac14				YES	YES	YES	YES	chr8:113139966-113143966
NR_151674	Vac14				YES	YES	YES	YES	chr8:113139966-113143966
NR_151675	Vac14				YES	YES	YES	YES	chr8:113139966-113143966
NM_026844	Cmc2				YES	YES	YES	YES	chr8:119447836-119443836

NM_001163761	6430548M08Rik				YES	YES	YES	YES	chr8:122635551-122639551
NM_001163762	6430548M08Rik				YES	YES	YES	YES	chr8:122635551-122639551
NM_172286	6430548M08Rik				YES	YES	YES	YES	chr8:122635551-122639551
NM_024214	Tomm20				YES	YES	YES	YES	chr8:129472321-129468321
NM_001039824	Fdx1l				YES	YES	YES	YES	chr9:20880475-20876475
NR_157201	Fdx1l				YES	YES	YES	YES	chr9:20880475-20876475
NR_157202	Fdx1l				YES	YES	YES	YES	chr9:20880475-20876475
NR_157203	Fdx1l				YES	YES	YES	YES	chr9:20880475-20876475
NR_157204	Fdx1l				YES	YES	YES	YES	chr9:20880475-20876475
NM_001042707	lfl3				YES	YES	YES	YES	chr9:21169814-21173814
NM_001042708	lfl3				YES	YES	YES	YES	chr9:21169814-21173814
NM_001042709	lfl3				YES	YES	YES	YES	chr9:21169814-21173814
NM_001277321	lfl3				YES	YES	YES	YES	chr9:21169814-21173814
NM_010561	lfl3				YES	YES	YES	YES	chr9:21169814-21173814
NM_001277322	lfl3				YES	YES	YES	YES	chr9:21170475-21174475
NM_145611	Kank2				YES	YES	YES	YES	chr9:21605490-21601490
NM_001163787	Ccdc151				YES	YES	YES	YES	chr9:21809578-21805578
NM_029939	Ccdc151				YES	YES	YES	YES	chr9:21809578-21805578
NM_001293650	Prkcsh				YES	YES	YES	YES	chr9:21804931-21808931
NM_001293651	Prkcsh				YES	YES	YES	YES	chr9:21804931-21808931
NM_008925	Prkcsh				YES	YES	YES	YES	chr9:21804931-21808931
NM_173038	Tbcel				YES	YES	YES	YES	chr9:42282841-42278841
NM_027498	Sik3				YES	YES	YES	YES	chr9:45818402-45822402
NM_001359739	Usp28				YES	YES	YES	YES	chr9:48790989-48794989
NM_175482	Usp28				YES	YES	YES	YES	chr9:48790989-48794989
NM_001161618	Cul5				YES	YES	YES	YES	chr9:53478112-53474112
NM_027807	Cul5				YES	YES	YES	YES	chr9:53478112-53474112
NM_025417	Commd4				YES	YES	YES	YES	chr9:57008606-57004606
NM_138584	Spg21				YES	YES	YES	YES	chr9:65306243-65310243
NM_001357813	Spg21				YES	YES	YES	YES	chr9:65308007-65312007
NM_007399	Adam10				YES	YES	YES	YES	chr9:70524288-70528288
NM_001359816	Fam214a				YES	YES	YES	YES	chr9:74798186-74802186
NR_153342	Fam214a				YES	YES	YES	YES	chr9:74798186-74802186
NM_001113283	Fam214a				YES	YES	YES	YES	chr9:74798359-74802359

NM_001114977	U2surp				YES	YES	YES	YES	chr9:95414915-95410915
NM_001357974	U2surp				YES	YES	YES	YES	chr9:95414915-95410915
NM_001357975	U2surp				YES	YES	YES	YES	chr9:95414915-95410915
NM_001357976	U2surp				YES	YES	YES	YES	chr9:95414915-95410915
NM_001357977	U2surp				YES	YES	YES	YES	chr9:95414915-95410915
NM_026476	U2surp				YES	YES	YES	YES	chr9:95414915-95410915
NM_153459	Dusp7				YES	YES	YES	YES	chr9:106268462-106272462
NM_013785	Ip6k1				YES	YES	YES	YES	chr9:107902478-107906478
NM_001329527	Gpx1				YES	YES	YES	YES	chr9:108238910-108242910
NM_001329528	Gpx1				YES	YES	YES	YES	chr9:108238910-108242910
NM_008160	Gpx1				YES	YES	YES	YES	chr9:108238910-108242910
NM_001109757	Atp7a				YES	YES	YES	YES	chrX:103220062-103224062
NM_009726	Atp7a				YES	YES	YES	YES	chrX:103220062-103224062
NM_001146081	Fancb				YES	YES	YES		chrX:161416023-161420023
NM_175027	Fancb				YES	YES	YES		chrX:161416023-161420023
NM_011065	Per1			YES		YES	YES	YES	chr11:68909950-68913950
NM_001159367	Per1			YES		YES	YES	YES	chr11:68911153-68915153
NM_001291268	Hnf1b			YES		YES	YES	YES	chr11:83661870-83665870
NM_009330	Hnf1b			YES		YES	YES	YES	chr11:83661870-83665870
NM_001291269	Hnf1b			YES		YES	YES	YES	chr11:83663961-83667961
NM_001347600	Fbxl3			YES		YES	YES	YES	chr14:103501283-103497283
NM_001347601	Fbxl3			YES		YES	YES	YES	chr14:103500721-103496721
NM_001360341	Fbxl3			YES		YES	YES	YES	chr14:103500721-103496721
NM_001360342	Fbxl3			YES		YES	YES	YES	chr14:103501283-103497283
NM_015822	Fbxl3			YES		YES	YES	YES	chr14:103501249-103497249
NM_027060	Btdb9			YES		YES	YES	YES	chr17:30715732-30711732
NM_172618	Btdb9			YES		YES	YES	YES	chr17:30715732-30711732
NM_008960	Pten			YES		YES	YES	YES	chr19:32829566-32833566
NM_009408	Top1			YES		YES	YES	YES	chr2:160469132-160473132
NM_001033302	Ciart			YES		YES	YES	YES	chr3:95688651-95684651
NM_013668	Kdm5c			YES		YES	YES	YES	chrX:148665269-148669269
NM_183028	Pcmdt1					YES	YES	YES	chr1:7076500-7080500
NM_011200	Ptp4a1					YES	YES	YES	chr1:31009100-31005100
NR_002688	Gm13363					YES	YES	YES	chr1:31009055-31005055

NM_172054	Txndc9					YES	YES		chr1:38056553-38052553
NM_198303	Eif5b					YES	YES		chr1:38052354-38056354
NM_001039710	Coq10b					YES	YES	YES	chr1:55107113-55111113
NM_026424	Coq10b					YES	YES	YES	chr1:55107113-55111113
NR_038009	2810408111Rik					YES	YES		chr1:64739733-64735733
NM_001111320	ldh1					YES	YES	YES	chr1:65235553-65231553
NM_026195	Atic					YES	YES	YES	chr1:71601229-71605229
NM_001356516	Pecr					YES	YES	YES	chr1:72333395-72329395
NM_023523	Pecr					YES	YES	YES	chr1:72333395-72329395
NM_175564	Tmem169					YES	YES	YES	chr1:72328446-72332446
NM_024264	Cyp27a1					YES	YES	YES	chr1:74757608-74761608
NM_001305231	Retreg2					YES	YES	YES	chr1:75136859-75140859
NM_170755	Retreg2					YES	YES	YES	chr1:75136859-75140859
NM_001305232	Retreg2					YES	YES	YES	chr1:75137231-75141231
NM_001313723	Tuba4a					YES	YES	YES	chr1:75218369-75214369
NM_001313724	Tuba4a					YES	YES	YES	chr1:75218369-75214369
NM_009447	Tuba4a					YES	YES	YES	chr1:75218369-75214369
NM_001278075	Farsb					YES	YES	YES	chr1:78487972-78483972
NM_011811	Farsb					YES	YES	YES	chr1:78487972-78483972
NR_102757	Farsb					YES	YES	YES	chr1:78487972-78483972
NR_102758	Farsb					YES	YES	YES	chr1:78487972-78483972
NM_001313728	Cul3					YES	YES	YES	chr1:80339765-80335765
NM_016716	Cul3					YES	YES	YES	chr1:80339765-80335765
NM_001310713	Agfg1					YES	YES		chr1:82833534-82837534
NM_001347077	Agfg1					YES	YES		chr1:82833534-82837534
NM_010472	Agfg1					YES	YES		chr1:82833534-82837534
NR_015507	C130036L24Rik					YES	YES	YES	chr1:88253648-88257648
NM_001159725	Rab17					YES	YES		chr1:92866744-92862744
NM_001357556	Hdlbp					YES	YES	YES	chr1:95377454-95373454
NM_133808	Hdlbp					YES	YES	YES	chr1:95377994-95373994
NM_001159717	Sept2					YES	YES	YES	chr1:95373069-95377069
NM_001159718	Sept2					YES	YES	YES	chr1:95373069-95377069
NM_010891	Sept2					YES	YES	YES	chr1:95373069-95377069
NM_001159719	Sept2					YES	YES	YES	chr1:95373137-95377137

NM_001105667	Dtymk					YES	YES	YES	chr1:95701011-95697011
NM_023136	Dtymk					YES	YES	YES	chr1:95701011-95697011
NM_025454	Ing5					YES	YES	YES	chr1:95698041-95702041
NM_027534	Kdsr					YES	YES	YES	chr1:108658819-108654819
NM_001316750	Kdsr					YES	YES	YES	chr1:108658819-108654819
NM_001037999	Dbi					YES	YES	YES	chr1:122019996-122015996
NM_007830	Dbi					YES	YES	YES	chr1:122020173-122016173
NM_001172074	3110009E18Rik					YES	YES	YES	chr1:122015263-122019263
NM_028439	3110009E18Rik					YES	YES	YES	chr1:122015263-122019263
NM_001356529	Ubxn4					YES	YES	YES	chr1:130138213-130142213
NM_026390	Ubxn4					YES	YES	YES	chr1:130138213-130142213
NM_011082	Pigr					YES	YES	YES	chr1:132720760-132724760
NM_001195025	Nuak2					YES	YES	YES	chr1:134210201-134214201
NM_028778	Nuak2					YES	YES	YES	chr1:134210201-134214201
NM_133819	Ppp1r15b					YES	YES		chr1:135025242-135029242
NM_001166552	Zbed6					YES	YES	YES	chr1:135559962-135555962
NM_001358626	Tor1aip2					YES	YES	YES	chr1:157885469-157889469
NM_001358627	Tor1aip2					YES	YES	YES	chr1:157885469-157889469
NM_001160181	Tor1aip2					YES	YES	YES	chr1:157885490-157889490
NM_022329	Tor1aip2					YES	YES	YES	chr1:157885490-157889490
NM_009721	Atp1b1					YES	YES	YES	chr1:166390986-166386986
NM_011137	Pou2f1					YES	YES	YES	chr1:167935265-167931265
NM_198932	Pou2f1					YES	YES	YES	chr1:167935265-167931265
NM_027188	Smyd3					YES	YES	YES	chr1:181450672-181446672
NM_023341	Coq8a					YES	YES	YES	chr1:182128651-182124651
NM_001359268	Coq8a					YES	YES	YES	chr1:182128651-182124651
NM_001359269	Coq8a					YES	YES	YES	chr1:182128651-182124651
NM_145943	Sde2					YES	YES	YES	chr1:182778781-182782781
NM_001360783	Degs1					YES	YES	YES	chr1:184214826-184210826
NM_007853	Degs1					YES	YES	YES	chr1:184215432-184211432
NM_172546	Cnksr3					YES	YES	YES	chr10:3131803-3135803
NM_001079686	Syne1					YES	YES	YES	chr10:5149333-5153333
NM_024261	Armt1					YES	YES	YES	chr10:5916436-5912436
NM_175155	Sash1					YES	YES	YES	chr10:8608368-8604368

NM_001359559	Abracl					YES	YES	YES	chr10:17745558-17741558
NM_001359560	Abracl					YES	YES	YES	chr10:17745396-17741396
NM_028440	Abracl					YES	YES	YES	chr10:17745558-17741558
NM_011603	Tbpl1					YES	YES		chr10:22453753-22449753
NM_001162957	Rsph4a					YES	YES	YES	chr10:33622416-33626416
NM_001173500	Mfsd4b3					YES	YES	YES	chr10:39682459-39678459
NM_001277229	Zbtb24					YES	YES	YES	chr10:41167663-41171663
NM_001277230	Zbtb24					YES	YES	YES	chr10:41167663-41171663
NM_153398	Zbtb24					YES	YES	YES	chr10:41167663-41171663
NR_102360	Zbtb24					YES	YES	YES	chr10:41167663-41171663
NM_019740	Foxo3					YES	YES	YES	chr10:41999048-41995048
NM_017472	Snx3					YES	YES		chr10:42219359-42223359
NM_001359601	Bend3					YES	YES	YES	chr10:43209944-43213944
NM_011240	Ranbp2					YES	YES	YES	chr10:57907099-57911099
NR_027926	4930507D05Rik					YES	YES	YES	chr10:61909407-61913407
NM_177372	Dna2					YES	YES		chr10:62407276-62411276
NR_152862	Dna2					YES	YES		chr10:62407276-62411276
NM_001079824	Hnrnp3					YES	YES	YES	chr10:62489097-62485097
NM_026085	Pblid2					YES	YES	YES	chr10:62484759-62488759
NM_001204915	Reep3					YES	YES	YES	chr10:66562236-66558236
NM_178606	Reep3					YES	YES	YES	chr10:66562236-66558236
NM_172549	Cabin1					YES	YES	YES	chr10:75229602-75225602
NM_010027	Ddt					YES	YES	YES	chr10:75238619-75234619
NM_010361	Gstt2					YES	YES	YES	chr10:75300126-75296126
NM_172134	Pdxk					YES	YES	YES	chr10:77930193-77926193
NR_029447	E130317F20Rik					YES	YES	YES	chr10:79320216-79316216
NM_008162	Gpx4					YES	YES	YES	chr10:79513732-79517732
NM_001037741	Gpx4					YES	YES	YES	chr10:79514263-79518263
NM_001305798	Midn						YES	YES	chr10:79608516-79612516
NM_001347117	Midn						YES	YES	chr10:79608516-79612516
NM_021565	Midn						YES	YES	chr10:79608516-79612516
NM_001305799	Midn					YES	YES	YES	chr10:79609926-79613926
NM_021462	Mknk2					YES	YES	YES	chr10:80141538-80137538
NM_007460	Ap3d1					YES	YES	YES	chr10:80207520-80203520

NR_049186	Mir5615-1					YES	YES	YES	chr10:80569918-80565918
NM_001347144	Map2k2					YES	YES	YES	chr10:80566159-80570159
NM_001358539	Map2k2					YES	YES	YES	chr10:80566159-80570159
NM_023138	Map2k2					YES	YES	YES	chr10:80566159-80570159
NM_010731	Zbtb7a					YES	YES		chr10:80596515-80600515
NM_001282095	Tjp3					YES	YES	YES	chr10:80756826-80752826
NM_013769	Tjp3					YES	YES	YES	chr10:80756512-80752512
NM_001146687	Pip5k1c					YES	YES	YES	chr10:80753207-80757207
NM_001293646	Pip5k1c					YES	YES	YES	chr10:80753207-80757207
NM_001293647	Pip5k1c					YES	YES	YES	chr10:80753207-80757207
NM_008844	Pip5k1c					YES	YES	YES	chr10:80753207-80757207
NR_152732	Gm16104					YES	YES	YES	chr10:80869819-80873819
NM_001304572	Vezt					YES	YES		chr10:93501044-93497044
NM_001304575	Vezt					YES	YES		chr10:93501044-93497044
NM_001304720	Vezt					YES	YES		chr10:93500987-93496987
NM_172538	Vezt					YES	YES		chr10:93501044-93497044
NR_045338	5730420D15Rik					YES	YES	YES	chr10:94877508-94881508
NR_045339	5730420D15Rik					YES	YES	YES	chr10:94877508-94881508
NM_080560	Ube2n					YES	YES	YES	chr10:94975295-94979295
NM_026268	Dusp6					YES	YES	YES	chr10:98723364-98727364
NM_025706	Tbc1d15					YES	YES	YES	chr10:114691049-114687049
NM_027994	Cand1					YES	YES	YES	chr10:118679611-118675611
NM_080446	Helb					YES	YES		chr10:119552521-119548521
NM_001081056	Xpot					YES	YES	YES	chr10:121065888-121061888
NM_001359618	Xpot					YES	YES	YES	chr10:121065888-121061888
NM_025537	Tsfm					YES	YES		chr10:126470370-126466370
NM_025716	Spryd4					YES	YES	YES	chr10:127651350-127647350
NM_134003	Zc3h10					YES	YES	YES	chr10:127987300-127983300
NM_013765	Rps26					YES	YES		chr10:128066062-128062062
NM_001253705	Pym1					YES	YES		chr10:128182434-128186434
NM_030100	Pym1					YES	YES		chr10:128182434-128186434
NM_001170869	Pym1					YES	YES		chr10:128183010-128187010
NM_001253704	Pym1					YES	YES		chr10:128183010-128187010
NM_001363163	Osbp2					YES	YES	YES	chr11:3766406-3762406

NM_152818	Osbp2				YES	YES	YES	chr11:3766406-3762406
NM_001130459	Tcn2				YES	YES	YES	chr11:3834464-3830464
NM_001130458	Tcn2				YES	YES	YES	chr11:3834581-3830581
NM_015749	Tcn2				YES	YES	YES	chr11:3834547-3830547
NM_022889	Pes1				YES	YES	YES	chr11:3861477-3865477
NM_001283061	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_001283062	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_001362612	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_001362613	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_001362614	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_001362615	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_001362616	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_001362617	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_001362620	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_007968	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_001283063	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_001362618	Ewsr1				YES	YES	YES	chr11:5001599-4997599
NM_001290491	Rhbdd3				YES	YES	YES	chr11:4996775-5000775
NM_001290492	Rhbdd3				YES	YES	YES	chr11:4996775-5000775
NM_177370	Rhbdd3				YES	YES	YES	chr11:4996775-5000775
NR_110961	Rhbdd3				YES	YES	YES	chr11:4997250-5001250
NM_001290493	Rhbdd3				YES	YES	YES	chr11:4997667-5001667
NR_015577	Ube2d-ps				YES	YES	YES	chr11:5659652-5663652
NR_045893	Snhg15				YES	YES	YES	chr11:6431263-6427263
NR_105791	Mir6372				YES	YES	YES	chr11:26099739-26103739
NM_001033865	Rps27a				YES	YES	YES	chr11:29450540-29446540
NM_024277	Rps27a				YES	YES	YES	chr11:29450540-29446540
NM_001163521	Clhc1				YES	YES	YES	chr11:29445449-29449449
NM_028504	Clhc1				YES	YES	YES	chr11:29445449-29449449
NM_001024846	Zfp62				YES	YES	YES	chr11:49014293-49018293
NM_001362725	Zfp62				YES	YES	YES	chr11:49014293-49018293
NM_001362726	Zfp62				YES	YES	YES	chr11:49014293-49018293
NM_001362728	Zfp62				YES	YES	YES	chr11:49014293-49018293
NM_001362729	Zfp62				YES	YES	YES	chr11:49014293-49018293

NM_001362730	Zfp62					YES	YES	YES	chr11:49014293-49018293
NM_009562	Zfp62					YES	YES	YES	chr11:49014293-49018293
NM_001362731	Zfp62					YES	YES	YES	chr11:49014732-49018732
NM_001362727	Zfp62					YES	YES	YES	chr11:49015320-49019320
NM_001044697	Zfp2					YES	YES	YES	chr11:50732178-50728178
NM_001044698	Zfp2					YES	YES	YES	chr11:50732178-50728178
NM_001044700	Zfp2					YES	YES	YES	chr11:50732178-50728178
NM_001294323	Zfp2					YES	YES	YES	chr11:50732178-50728178
NM_178447	Zfp2					YES	YES	YES	chr11:50732178-50728178
NM_025346	Rmnd5b					YES	YES	YES	chr11:51451898-51447898
NM_029976	Cdkn2aipnl					YES	YES		chr11:51778632-51782632
NM_008300	Hspa4					YES	YES	YES	chr11:53116481-53112481
NM_001326614	Uqcrq					YES	YES	YES	chr11:53246833-53242833
NM_025352	Uqcrq					YES	YES	YES	chr11:53246833-53242833
NR_106131	Mir7671					YES	YES	YES	chr11:53579656-53575656
NM_026949	Cnot8					YES	YES		chr11:57914971-57918971
NM_001356477	Cnot8					YES	YES		chr11:57915230-57919230
NM_001363086	Cnot8					YES	YES		chr11:57915310-57919310
NR_045686	Gm16062					YES	YES	YES	chr11:59621081-59625081
NM_001290011	Pemt					YES	YES	YES	chr11:59862491-59858491
NM_001290012	Pemt					YES	YES	YES	chr11:59862491-59858491
NM_029044	Drc3					YES	YES	YES	chr11:60164381-60168381
NM_001364117	Atpaf2					YES	YES	YES	chr11:60233036-60229036
NM_001364118	Atpaf2					YES	YES	YES	chr11:60233036-60229036
NM_145427	Atpaf2					YES	YES	YES	chr11:60233036-60229036
NR_157083	Atpaf2					YES	YES	YES	chr11:60233036-60229036
NM_025757	Gid4					YES	YES	YES	chr11:60228146-60232146
NR_039559	Mir5100					YES	YES		chr11:60539664-60543664
NM_001168507	Tmem11					YES	YES	YES	chr11:60695040-60691040
NM_173453	Tmem11					YES	YES	YES	chr11:60695040-60691040
NM_025294	Natd1					YES	YES	YES	chr11:60729794-60725794
NR_138545	Aldh3a2					YES	YES	YES	chr11:61083530-61079530
NM_001331114	Aldh3a2					YES	YES	YES	chr11:61083188-61079188
NM_001331115	Aldh3a2					YES	YES	YES	chr11:61083530-61079530

NM_007437	Aldh3a2				YES	YES	YES	chr11:61083188-61079188
NM_011664	Ubb				YES	YES	YES	chr11:62362172-62366172
NM_001313984	Ubb				YES	YES	YES	chr11:62362732-62366732
NM_001363304	Ndel1				YES	YES	YES	chr11:68669137-68665137
NM_001363305	Ndel1				YES	YES	YES	chr11:68669137-68665137
NM_023668	Ndel1				YES	YES	YES	chr11:68669137-68665137
NM_001017426	Kdm6b				YES	YES		chr11:69232196-69228196
NM_001159375	Eif4a1				YES	YES	YES	chr11:69488425-69484425
NM_144958	Eif4a1				YES	YES	YES	chr11:69488425-69484425
NM_001364137	Nlgn2				YES	YES	YES	chr11:69653786-69649786
NM_026982	Tmem256				YES	YES	YES	chr11:69649526-69653526
NM_001166589	Eif5a				YES	YES	YES	chr11:69737388-69733388
NM_001166590	Eif5a				YES	YES	YES	chr11:69736632-69732632
NM_001166591	Eif5a				YES	YES	YES	chr11:69737388-69733388
NM_001166592	Eif5a				YES	YES	YES	chr11:69736949-69732949
NM_001166593	Eif5a				YES	YES	YES	chr11:69737960-69733960
NM_001166594	Eif5a				YES	YES	YES	chr11:69736949-69732949
NM_001166595	Eif5a				YES	YES	YES	chr11:69737277-69733277
NM_001166596	Eif5a				YES	YES	YES	chr11:69737087-69733087
NM_181582	Eif5a				YES	YES	YES	chr11:69737388-69733388
NM_001291141	Rabep1				YES	YES	YES	chr11:70655762-70659762
NM_001291142	Rabep1				YES	YES	YES	chr11:70655762-70659762
NM_001291143	Rabep1				YES	YES	YES	chr11:70655762-70659762
NM_019400	Rabep1				YES	YES	YES	chr11:70655762-70659762
NM_029031	Shpk				YES	YES		chr11:73010483-73014483
NM_010813	Mnt				YES	YES	YES	chr11:74641925-74645925
NM_197943	Sgsm2				YES	YES	YES	chr11:74713082-74709082
NM_177325	Tsr1				YES	YES	YES	chr11:74709081-74713081
NM_008952	Pipox				YES	YES	YES	chr11:77709874-77705874
NM_022411	Slc13a2				YES	YES	YES	chr11:78238236-78234236
NR_028363	AA465934				YES	YES	YES	chr11:83102700-83106700
NR_028364	AI450353				YES	YES	YES	chr11:83104431-83108431
NM_001291440	Rad51c				YES	YES	YES	chr11:87220956-87216956
NM_053269	Rad51c				YES	YES	YES	chr11:87220508-87216508

NR_156495	Rad51c				YES	YES	YES	chr11:87220508-87216508
NM_031386	Tex14				YES	YES	YES	chr11:87216066-87220066
NM_001168472	Dynll2				YES	YES	YES	chr11:87802587-87798587
NM_001042541	Akap1					YES	YES	chr11:88728400-88724400
NM_008704	Nme1				YES	YES	YES	chr11:93832335-93828335
NM_153807	Acsf2				YES	YES	YES	chr11:94465600-94461600
NR_003293	D030028A08Rik				YES	YES	YES	chr11:96802959-96806959
NM_008379	Kpnb1				YES	YES	YES	chr11:97051706-97047706
NM_025927	Mrpl45				YES	YES	YES	chr11:97174529-97178529
NM_011971	Psmb3				YES	YES	YES	chr11:97562247-97566247
NM_001080935	B230217C12Rik				YES	YES		chr11:97699593-97703593
NM_009024	Rara				YES	YES	YES	chr11:98796509-98800509
NM_001177302	Rara				YES	YES	YES	chr11:98796531-98800531
NM_011508	Eif1				YES	YES	YES	chr11:100178762-100182762
NM_011486	Stat3				YES	YES	YES	chr11:100803354-100799354
NM_213659	Stat3				YES	YES	YES	chr11:100803354-100799354
NM_213660	Stat3				YES	YES	YES	chr11:100803354-100799354
NM_175935	G6pc3				YES	YES	YES	chr11:102048512-102052512
NR_106179	Mir8101				YES	YES	YES	chr11:102093964-102089964
NM_026542	Slc25a39				YES	YES	YES	chr11:102271331-102267331
NM_025918	Ccdc43				YES	YES	YES	chr11:102561539-102557539
NM_138753	Hexim1				YES	YES		chr11:102975138-102979138
NM_001081045	Kansl1				YES	YES		chr11:104306105-104302105
NM_181071	Tanc2				YES	YES	YES	chr11:105448799-105452799
NR_030703	Snord104				YES	YES	YES	chr11:106359804-106363804
NM_001362749	Abca8b				YES	YES	YES	chr11:109859659-109855659
NM_013851	Abca8b				YES	YES	YES	chr11:109859659-109855659
NM_001243584	Mif4gd				YES	YES		chr11:115476783-115472783
NM_001243587	Mif4gd				YES	YES		chr11:115476783-115472783
NM_146032	Srp68				YES	YES	YES	chr11:116138031-116134031
NM_198022	Tnrc6c				YES	YES	YES	chr11:117513102-117517102
NM_007707	Socs3				YES	YES	YES	chr11:117833180-117829180
NM_001313923	Actg1				YES	YES		chr11:120212309-120208309
NM_009609	Actg1				YES	YES		chr11:120212309-120208309

NR_105900	Mir6935					YES	YES		chr11:120211227-120207227
NR_038126	0610009L18Rik					YES	YES		chr11:120207491-120211491
NM_007988	Fasn					YES	YES		chr11:120688361-120684361
NM_025402	Ogfod3					YES	YES	YES	chr11:121068462-121064462
NM_001001333	Hexdc					YES	YES	YES	chr11:121063246-121067246
NM_001080932	Foxk2					YES	YES	YES	chr11:121118800-121122800
NM_001363033	Foxk2					YES	YES	YES	chr11:121118800-121122800
NR_030694	1110002L01Rik					YES	YES	YES	chr12:3429247-3425247
NM_030723	Pum2					YES	YES		chr12:8678986-8682986
NM_001130412	Lpin1					YES	YES		chr12:16599076-16595076
NM_015763	Lpin1					YES	YES		chr12:16599076-16595076
NM_172950	Lpin1					YES	YES		chr12:16599076-16595076
NR_044986	4933406C10Rik					YES	YES	YES	chr12:33641154-33637154
NM_013635	Sypl						YES	YES	chr12:33636309-33640309
NM_198710	Sypl					YES	YES	YES	chr12:33636550-33640550
NM_013562	lfrd1					YES	YES	YES	chr12:40952276-40948276
NR_035459	Mir1938					YES	YES	YES	chr12:40951898-40947898
NR_045157	Gm7008					YES	YES	YES	chr12:40947450-40951450
NM_013760	Dnajb9					YES	YES	YES	chr12:45313555-45309555
NR_049203	Mir5627					YES	YES	YES	chr12:45308799-45312799
NM_008910	Ppm1a					YES	YES	YES	chr12:73859697-73863697
NM_029580	Trmt5					YES	YES		chr12:74390198-74386198
NM_001037717	Slc38a6					YES	YES		chr12:74385334-74389334
NR_046013	D830013O20Rik					YES	YES		chr12:74513050-74509050
NM_023721	Atp6v1d					YES	YES	YES	chr12:79965125-79961125
NM_026114	Eif2s1					YES	YES	YES	chr12:79960558-79964558
NM_001346669	Actn1					YES	YES	YES	chr12:81363868-81359868
NM_134156	Actn1					YES	YES	YES	chr12:81363858-81359858
NM_001242419	Susd6					YES	YES	YES	chr12:81889018-81893018
NM_178682	Susd6					YES	YES	YES	chr12:81889018-81893018
NM_001364416	Rbm25					YES	YES	YES	chr12:84970692-84974692
NM_027349	Rbm25					YES	YES	YES	chr12:84970692-84974692
NM_028863	Isca2					YES	YES		chr12:86111719-86115719
NM_001364360	Acyp1					YES	YES		chr12:86631888-86627888

NM_172414	Zc2hc1c				YES	YES		chr12:86627040-86631040
NR_045282	Gm10433				YES	YES	YES	chr12:101423677-101427677
NM_029705	Atxn3				YES	YES	YES	chr12:103198953-103194953
NM_001167914	Atxn3				YES	YES	YES	chr12:103198953-103194953
NM_178613	Gskip				YES	YES		chr12:106921061-106925061
NR_033340	B930059L03Rik				YES	YES	YES	chr12:111827083-111831083
NM_001024602	Cep170b				YES	YES		chr12:113957884-113961884
NR_015492	C230035I16Rik				YES	YES		chr13:23525386-23521386
NM_025790	Acot13				YES	YES	YES	chr13:24925858-24921858
NM_019551	Tdp2				YES	YES	YES	chr13:24921027-24925027
NR_155347	A730081D07Rik				YES	YES	YES	chr13:41099015-41095015
NM_026550	Pak1ip1				YES	YES	YES	chr13:41093878-41097878
NM_025772	Dtnbp1				YES	YES	YES	chr13:45099965-45095965
NR_029463	9430083A17Rik				YES	YES	YES	chr13:51198596-51194596
NM_001283028	Spin1				YES	YES	YES	chr13:51193748-51197748
NM_001283030	Spin1				YES	YES	YES	chr13:51193748-51197748
NM_146043	Spin1				YES	YES	YES	chr13:51193748-51197748
NM_001283029	Spin1				YES	YES	YES	chr13:51194415-51198415
NM_025415	Cks2				YES	YES	YES	chr13:51738100-51742100
NM_025596	Preli1				YES	YES		chr13:55420915-55424915
NM_016662	Mxd3				YES	YES		chr13:55433591-55429591
NM_001301340	Hnrnpk				YES	YES	YES	chr13:58506373-58502373
NM_001301341	Hnrnpk				YES	YES	YES	chr13:58507204-58503204
NM_001301343	Hnrnpk				YES	YES	YES	chr13:58506030-58502030
NM_001301344	Hnrnpk				YES	YES	YES	chr13:58506373-58502373
NM_001301345	Hnrnpk				YES	YES	YES	chr13:58506373-58502373
NM_025279	Hnrnpk				YES	YES	YES	chr13:58506373-58502373
NM_001360490	Hnrnpk				YES	YES	YES	chr13:58505978-58501978
NM_001360491	Hnrnpk				YES	YES	YES	chr13:58506373-58502373
NM_001360493	Hnrnpk				YES	YES	YES	chr13:58506373-58502373
NM_001360494	Hnrnpk				YES	YES	YES	chr13:58505978-58501978
NM_001360495	Hnrnpk				YES	YES	YES	chr13:58505978-58501978
NR_153501	Hnrnpk				YES	YES	YES	chr13:58506373-58502373
NR_153502	Hnrnpk				YES	YES	YES	chr13:58506373-58502373

NR_153503	Hnrnpk				YES	YES	YES	chr13:58505978-58501978
NR_153504	Hnrnpk				YES	YES	YES	chr13:58506373-58502373
NR_031761	Rmi1				YES	YES	YES	chr13:58501108-58505108
NM_001168248	Rmi1				YES	YES	YES	chr13:58501457-58505457
NM_028904	Rmi1				YES	YES	YES	chr13:58501457-58505457
NM_007994	Fbp2				YES	YES	YES	chr13:62962230-62958230
NR_110520	2010111I01Rik				YES	YES	YES	chr13:63338837-63342837
NR_110521	2010111I01Rik				YES	YES	YES	chr13:63338837-63342837
NM_001163246	Zfp729b				YES	YES		chr13:67713144-67709144
NM_001308475	Mtrr				YES	YES		chr13:68723481-68719481
NM_172480	Mtrr				YES	YES		chr13:68723546-68719546
NR_131892	Mtrr				YES	YES		chr13:68723546-68719546
NM_001330423	Fastkd3				YES	YES		chr13:68718586-68722586
NM_027123	Fastkd3				YES	YES		chr13:68718586-68722586
NR_138477	Fastkd3				YES	YES		chr13:68718586-68722586
NR_138478	Fastkd3				YES	YES		chr13:68718586-68722586
NM_007684	Cetn3				YES	YES	YES	chr13:81919745-81923745
NM_029153	Scamp1				YES	YES		chr13:95057736-95053736
NM_027711	Iqgap2				YES	YES		chr13:96664377-96660377
NM_178716	Tnpo1				YES	YES		chr13:99698839-99694839
NM_001077495	Pik3r1				YES	YES		chr13:102540672-102536672
NM_028151	Mtrex				YES	YES	YES	chr13:113720088-113716088
NM_172594	Dhx29				YES	YES	YES	chr13:113715500-113719500
NM_008710	Nnt				YES	YES	YES	chr13:120200318-120196318
NM_001308506	Nnt				YES	YES	YES	chr13:120200564-120196564
NR_029446	6230400D17Rik				YES	YES	YES	chr14:21524821-21520821
NM_025366	Chchd1				YES	YES	YES	chr14:21519748-21523748
NM_001243041	Adk				YES	YES		chr14:21892873-21896873
NM_011695	Vdac2				YES	YES	YES	chr14:22648282-22652282
NM_134084	Ppif				YES	YES		chr14:26511155-26515155
NM_153547	Gnl3				YES	YES	YES	chr14:31834817-31830817
NR_104298	Gnl3				YES	YES	YES	chr14:31834817-31830817
NM_001081251	Pbrm1				YES	YES	YES	chr14:31829823-31833823
NM_001359854	Pbrm1				YES	YES	YES	chr14:31830390-31834390

NM_001359855	Pbrm1					YES	YES	YES	chr14:31830390-31834390
NM_001359856	Pbrm1					YES	YES	YES	chr14:31830390-31834390
NM_001359857	Pbrm1					YES	YES	YES	chr14:31830390-31834390
NM_001359858	Pbrm1					YES	YES	YES	chr14:31830390-31834390
NM_001316734	Fam213a					YES	YES	YES	chr14:41829622-41825622
NM_001316735	Fam213a					YES	YES	YES	chr14:41829622-41825622
NM_001316737	Fam213a					YES	YES	YES	chr14:41829622-41825622
NM_027464	Fam213a					YES	YES	YES	chr14:41829622-41825622
NM_022023	Gmfb					YES	YES	YES	chr14:47444417-47440417
NM_001293635	Ktn1					YES	YES	YES	chr14:48266485-48270485
NM_001293636	Ktn1					YES	YES	YES	chr14:48266485-48270485
NM_001347519	Ktn1					YES	YES	YES	chr14:48266485-48270485
NM_001347520	Ktn1					YES	YES	YES	chr14:48266485-48270485
NM_001347521	Ktn1					YES	YES	YES	chr14:48266485-48270485
NM_001347523	Ktn1					YES	YES	YES	chr14:48266485-48270485
NM_001347524	Ktn1					YES	YES	YES	chr14:48266485-48270485
NM_001347525	Ktn1					YES	YES	YES	chr14:48266485-48270485
NM_001347526	Ktn1					YES	YES	YES	chr14:48266485-48270485
NM_001347527	Ktn1					YES	YES	YES	chr14:48266485-48270485
NM_001347528	Ktn1					YES	YES	YES	chr14:48266485-48270485
NM_001253694	Zfp219					YES	YES		chr14:52641888-52637888
NM_001310603	Spryd7					YES	YES		chr14:62178223-62174223
NM_025697	Spryd7					YES	YES		chr14:62178223-62174223
NM_026001	Rnaseh2b					YES	YES	YES	chr14:62948404-62952404
NR_045503	4931440J10Rik					YES	YES	YES	chr14:63376837-63380837
NM_001110162	Cdca2					YES	YES	YES	chr14:68336167-68332167
NM_175384	Cdca2					YES	YES	YES	chr14:68336398-68332398
NM_001111028	Kctd9					YES	YES	YES	chr14:68331654-68335654
NM_001285933	Kctd9					YES	YES	YES	chr14:68331654-68335654
NM_134073	Kctd9					YES	YES	YES	chr14:68331654-68335654
NM_001359875	Zc3h13					YES	YES	YES	chr14:75681672-75685672
NM_026083	Zc3h13					YES	YES	YES	chr14:75681679-75685679
NM_026177	Gpalpp1					YES	YES		chr14:76513122-76509122
NM_027906	Vwa8					YES	YES	YES	chr14:79246484-79250484

NM_173758	Vwa8				YES	YES	YES	chr14:79246484-79250484
NM_018765	Wbp4				YES	YES		chr14:79883575-79879575
NM_007920	Elf1				YES	YES		chr14:79878500-79882500
NM_001128307	Dock9				YES	YES		chr14:122140651-122136651
NM_001128308	Dock9				YES	YES		chr14:122140651-122136651
NR_045740	Gm2093				YES	YES	YES	chr15:3943538-3947538
NM_001353141	Myo10				YES	YES		chr15:25701267-25705267
NM_001081359	Ubr5				YES	YES	YES	chr15:38011109-38007109
NM_001112721	Ubr5				YES	YES	YES	chr15:38011109-38007109
NM_001102458	Azin1				YES	YES	YES	chr15:38451521-38447521
NM_001301688	Azin1				YES	YES	YES	chr15:38451521-38447521
NM_018745	Azin1				YES	YES	YES	chr15:38451521-38447521
NR_125913	Azin1				YES	YES	YES	chr15:38451521-38447521
NM_001146180	Mtss1				YES	YES		chr15:58916081-58912081
NM_144800	Mtss1				YES	YES		chr15:58916081-58912081
NM_025567	Cyc1				YES	YES		chr15:76171452-76175452
NM_198119	Lrrc24				YES	YES		chr15:76555103-76551103
NM_001161712	Gcat				YES	YES	YES	chr15:78858803-78862803
NM_013847	Gcat				YES	YES	YES	chr15:78858803-78862803
NM_001347075	Xpnpep3				YES	YES	YES	chr15:81228067-81232067
NM_177310	Xpnpep3				YES	YES	YES	chr15:81228067-81232067
NM_020507	Tob2				YES	YES	YES	chr15:81691256-81687256
NR_027980	1700001L05Rik				YES	YES	YES	chr15:83200227-83196227
NM_016714	Nup50				YES	YES	YES	chr15:84751357-84755357
NR_077233	C230037L18Rik				YES	YES	YES	chr15:89304182-89308182
NM_001357893	Fkbp11				YES	YES	YES	chr15:98560558-98556558
NM_024169	Fkbp11				YES	YES	YES	chr15:98561129-98557129
NM_011654	Tuba1b				YES	YES		chr15:98767321-98763321
NM_001076789	Cbx5				YES	YES	YES	chr15:103072783-103068783
NM_001358950	Cbx5				YES	YES	YES	chr15:103072783-103068783
NM_001039129	Hnrnpa1				YES	YES	YES	chr15:103068327-103072327
NM_010447	Hnrnpa1				YES	YES	YES	chr15:103068327-103072327
NR_104427	Hnrnpa1				YES	YES	YES	chr15:103068327-103072327
NR_002885	Gm10052				YES	YES	YES	chr15:103068362-103072362

NR_002883	Gm5643					YES	YES	YES	chr15:103068384-103072384
NM_031182	Tfap4					YES	YES		chr16:4562220-4558220
NM_145359	Ubald1					YES	YES	YES	chr16:4882351-4878351
NM_001252437	Mgrn1					YES	YES	YES	chr16:4883599-4887599
NM_001357061	Mgrn1					YES	YES	YES	chr16:4883599-4887599
NM_001357062	Mgrn1					YES	YES	YES	chr16:4883599-4887599
NM_029657	Mgrn1					YES	YES	YES	chr16:4883599-4887599
NR_037666	Gm16861					YES	YES	YES	chr16:4942085-4938085
NM_001316715	Nudt161					YES	YES	YES	chr16:4936610-4940610
NM_025839	Nudt161					YES	YES	YES	chr16:4936610-4940610
NM_001362486	Tmem186					YES	YES	YES	chr16:8640090-8636090
NM_025708	Tmem186					YES	YES	YES	chr16:8640304-8636304
NM_001362485	Pmm2					YES	YES	YES	chr16:8635299-8639299
NM_016881	Pmm2					YES	YES	YES	chr16:8635299-8639299
NM_001039521	Rrn3					YES	YES	YES	chr16:13778291-13782291
NM_001301818	Fgd4					YES	YES	YES	chr16:16530004-16526004
NM_011239	Ranbp1					YES	YES		chr16:18251287-18247287
NM_001080999	Trmt2a					YES	YES		chr16:18246475-18250475
NM_001081000	Trmt2a					YES	YES		chr16:18246475-18250475
NM_001195205	Trmt2a					YES	YES		chr16:18246475-18250475
NM_001357146	Trmt2a					YES	YES		chr16:18246475-18250475
NM_001302970	Ap2m1					YES	YES	YES	chr16:20533052-20537052
NM_009679	Ap2m1					YES	YES	YES	chr16:20533052-20537052
NM_009900	Cicn2					YES	YES	YES	chr16:20719209-20715209
NM_145632	Polr2h					YES	YES	YES	chr16:20715398-20719398
NM_001356423	Polr2h					YES	YES	YES	chr16:20715749-20719749
NM_001081368	Tbccd1					YES	YES	YES	chr16:22860242-22856242
NM_001316746	Tbccd1					YES	YES	YES	chr16:22860242-22856242
NM_001190804	Dnajb11					YES	YES	YES	chr16:22855417-22859417
NM_001190805	Dnajb11					YES	YES	YES	chr16:22855417-22859417
NM_026400	Dnajb11					YES	YES	YES	chr16:22855417-22859417
NM_001252435	Dlg1					YES	YES	YES	chr16:31661028-31665028
NM_001252433	Dlg1					YES	YES	YES	chr16:31661520-31665520
NM_001252434	Dlg1					YES	YES	YES	chr16:31661520-31665520

NM_001357282	Dlg1					YES	YES	YES	chr16:31661520-31665520
NM_007862	Dlg1					YES	YES	YES	chr16:31661520-31665520
NR_045516	Dlg1					YES	YES	YES	chr16:31661520-31665520
NM_001272070	Abhd10					YES	YES	YES	chr16:45745568-45741568
NM_172511	Abhd10					YES	YES	YES	chr16:45745568-45741568
NR_073572	Abhd10					YES	YES	YES	chr16:45745568-45741568
NM_001134480	Plcx2					YES	YES	YES	chr16:46013026-46009026
NM_001110275	ltsn1					YES	YES	YES	chr16:91727115-91731115
NM_001110276	ltsn1					YES	YES	YES	chr16:91727115-91731115
NM_010587	ltsn1					YES	YES	YES	chr16:91727115-91731115
NM_028083	Chaf1b					YES	YES	YES	chr16:93881645-93885645
NM_007834	Vps26c					YES	YES	YES	chr16:94750736-94746736
NM_145125	Brwd1					YES	YES	YES	chr16:96306535-96302535
NM_001103179	Brwd1					YES	YES	YES	chr16:96306535-96302535
NM_176928	Brwd1					YES	YES	YES	chr16:96306535-96302535
NM_001111017	Serac1					YES	YES	YES	chr17:6082239-6078239
NM_001360148	Serac1					YES	YES	YES	chr17:6082239-6078239
NM_177311	Serac1					YES	YES	YES	chr17:6082239-6078239
NM_181392	Gtf2h5					YES	YES	YES	chr17:6077327-6081327
NM_001357804	Gtf2h5					YES	YES	YES	chr17:6077420-6081420
NM_001113533	Wtap					YES	YES	YES	chr17:13187625-13183625
NM_001113532	Wtap					YES	YES	YES	chr17:13187625-13183625
NM_175394	Wtap					YES	YES	YES	chr17:13187905-13183905
NM_008799	Pdcd2					YES	YES	YES	chr17:15666765-15662765
NR_126484	6330415G19Rik					YES	YES	YES	chr17:23685265-23689265
NR_126485	6330415G19Rik					YES	YES	YES	chr17:23685265-23689265
NM_001364895	Igfals					YES	YES	YES	chr17:25012288-25016288
NM_001364896	Igfals					YES	YES	YES	chr17:25012675-25016675
NM_008340	Igfals					YES	YES	YES	chr17:25013191-25017191
NM_001357694	Ube2i					YES	YES		chr17:25413039-25409039
NM_001177609	Ube2i					YES	YES		chr17:25413359-25409359
NM_001177610	Ube2i					YES	YES		chr17:25412876-25408876
NM_011665	Ube2i					YES	YES		chr17:25413755-25409755
NR_027452	Gm17801					YES	YES		chr17:25408568-25412568

NM_019719	Stub1				YES	YES	YES	chr17:25972364-25968364
NR_157361	Stub1				YES	YES	YES	chr17:25972364-25968364
NR_157362	Stub1				YES	YES	YES	chr17:25972364-25968364
NR_037243	Mir3082				YES	YES		chr17:25970873-25966873
NM_001025427	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001039356	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001166535	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001166536	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001166539	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001166540	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001166541	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001166542	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001166543	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001166544	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001166545	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001166546	Hmga1				YES	YES	YES	chr17:27691018-27695018
NM_001166537	Hmga1				YES	YES	YES	chr17:27691048-27695048
NM_016660	Hmga1				YES	YES	YES	chr17:27691048-27695048
NM_001166476	Hmga1b				YES	YES	YES	chr17:27691097-27695097
NM_001166477	Hmga1b				YES	YES	YES	chr17:27691097-27695097
NM_001357173	Stk38				YES	YES	YES	chr17:29147440-29143440
NM_134115	Stk38				YES	YES	YES	chr17:29147440-29143440
NM_001364913	Pim1				YES	YES	YES	chr17:29627529-29631529
NM_021322	Wdr4				YES	YES	YES	chr17:31651932-31647932
NM_001083891	Ndufv3				YES	YES	YES	chr17:31654559-31658559
NM_030087	Ndufv3				YES	YES	YES	chr17:31654559-31658559
NM_001346705	Zfp871				YES	YES	YES	chr17:32926992-32922992
NM_172458	Zfp871				YES	YES	YES	chr17:32927732-32923732
NM_001204973	Brd2				YES	YES	YES	chr17:34262052-34258052
NM_010238	Brd2				YES	YES	YES	chr17:34261192-34257192
NM_017406	Atf6b				YES	YES	YES	chr17:34781590-34785590
NM_033075	D17H6S56E-5				YES	YES		chr17:35140191-35136191
NM_011690	Vars				YES	YES		chr17:35135351-35139351
NM_019693	Ddx39b				YES	YES	YES	chr17:35376190-35380190

NM_001252457	Ddx39b				YES	YES	YES	chr17:35377261-35381261
NM_001347380	Mrps18b				YES	YES	YES	chr17:36055885-36051885
NM_001361453	Mrps18b				YES	YES	YES	chr17:36055885-36051885
NM_001361454	Mrps18b				YES	YES	YES	chr17:36055885-36051885
NM_001361455	Mrps18b				YES	YES	YES	chr17:36055885-36051885
NM_025878	Mrps18b				YES	YES	YES	chr17:36055885-36051885
NM_001163818	Ppp1r10				YES	YES	YES	chr17:36051640-36055640
NR_035445	Mir1894				YES	YES	YES	chr17:36052333-36056333
NM_152810	Cdc5l				YES	YES	YES	chr17:45573156-45569156
NR_130960	B230354K17Rik				YES	YES	YES	chr17:45568279-45572279
NR_130961	B230354K17Rik				YES	YES	YES	chr17:45568279-45572279
NM_001199115	Slc29a1				YES	YES	YES	chr17:45739052-45735052
NM_001356290	Taf8				YES	YES	YES	chr17:47641740-47637740
NM_022015	Taf8				YES	YES	YES	chr17:47641740-47637740
NM_001164729	Tomm6				YES	YES	YES	chr17:47827835-47823835
NM_025365	Tomm6				YES	YES	YES	chr17:47827835-47823835
NR_045945	Tomm6os				YES	YES	YES	chr17:47822058-47826058
NM_001357909	Kdm4b				YES	YES	YES	chr17:56462972-56466972
NM_172132	Kdm4b				YES	YES	YES	chr17:56462972-56466972
NM_133801	Gtf2f1				YES	YES	YES	chr17:57153211-57149211
NM_001359813	Crb3				YES	YES	YES	chr17:57199123-57203123
NM_001359814	Crb3				YES	YES	YES	chr17:57199123-57203123
NM_001347408	Crb3				YES	YES	YES	chr17:57199153-57203153
NM_177638	Crb3				YES	YES	YES	chr17:57199153-57203153
NM_001198949	Ralbp1				YES	YES		chr17:66236763-66232763
NM_009067	Ralbp1				YES	YES		chr17:66237595-66233595
NM_026064	Myl12a				YES	YES	YES	chr17:71354373-71350373
NM_007566	Birc6				YES	YES	YES	chr17:74925134-74929134
NM_028233	Lrrprc				YES	YES	YES	chr17:85192626-85188626
NR_015506	4833418N02Rik				YES	YES	YES	chr17:87684654-87680654
NM_028639	Ttc7				YES	YES	YES	chr17:87679725-87683725
NM_008448	Kif5b				YES	YES	YES	chr18:6244022-6240022
NR_035446	Mir1893				YES	YES	YES	chr18:6493144-6489144
NM_001252490	Osbpl1a				YES	YES	YES	chr18:13024389-13020389

NM_001252491	Osbpl1a				YES	YES	YES	chr18:13023722-13019722
NM_001252492	Osbpl1a				YES	YES	YES	chr18:13023722-13019722
NM_001252493	Osbpl1a				YES	YES	YES	chr18:13023722-13019722
NM_001357396	Impact				YES	YES	YES	chr18:13130468-13134468
NM_001100449	Taf4b				YES	YES	YES	chr18:14939253-14943253
NM_026301	Rnf125				YES	YES		chr18:21100615-21104615
NM_153058	Mapre2				YES	YES	YES	chr18:23959970-23963970
NM_001081256	Kdm3b				YES	YES	YES	chr18:34934161-34938161
NM_010481	Hspa9				YES	YES	YES	chr18:35116505-35112505
NM_010771	Matr3				YES	YES	YES	chr18:35719311-35723311
NM_026040	Srfbp1				YES	YES	YES	chr18:52622846-52626846
NM_178686	Cep120				YES	YES	YES	chr18:53906762-53902762
NR_029879	Mir378a				YES	YES	YES	chr18:61560054-61556054
NM_172832	Pcyox1l				YES	YES	YES	chr18:61869789-61865789
NM_001014981	Wdr7				YES	YES	YES	chr18:63865848-63869848
NM_001360837	Wdr7				YES	YES	YES	chr18:63865848-63869848
NR_028560	Scarna17				YES	YES	YES	chr18:74940609-74936609
NM_177470	Acaa2				YES	YES	YES	chr18:74936365-74940365
NR_155535	Gm20544				YES	YES	YES	chr18:75529242-75525242
NM_001042660	Smad7				YES	YES	YES	chr18:75524518-75528518
NM_026295	Ctdp1				YES	YES	YES	chr18:80668931-80664931
NM_013495	Cpt1a				YES	YES	YES	chr19:3320800-3324800
NM_001362043	Gstp3				YES	YES	YES	chr19:4061947-4057947
NM_144869	Gstp3				YES	YES	YES	chr19:4061947-4057947
NM_016666	Aip				YES	YES	YES	chr19:4128358-4124358
NM_001078649	Tmem134				YES	YES	YES	chr19:4123459-4127459
NM_025889	Tmem134				YES	YES	YES	chr19:4123459-4127459
NM_011778	Coro1b				YES	YES	YES	chr19:4146162-4150162
NR_157185	Gm21992				YES	YES		chr19:4814099-4810099
NM_001290127	Gm21992				YES	YES		chr19:4814134-4810134
NM_001290128	Gm21992				YES	YES		chr19:4814134-4810134
NM_019869	Rbm14				YES	YES		chr19:4814134-4810134
NM_027877	Mus81				YES	YES	YES	chr19:5490879-5486879
NR_153768	Mus81				YES	YES	YES	chr19:5490879-5486879

NR_153769	Mus81				YES	YES	YES	chr19:5490879-5486879
NM_001361921	Scyl1				YES	YES	YES	chr19:5773919-5769919
NM_001361922	Scyl1				YES	YES	YES	chr19:5773919-5769919
NM_023912	Scyl1				YES	YES	YES	chr19:5773919-5769919
NR_155264	Scyl1				YES	YES	YES	chr19:5773919-5769919
NM_001358444	Prdx5				YES	YES	YES	chr19:6987096-6983096
NM_012021	Prdx5				YES	YES	YES	chr19:6987096-6983096
NM_001166370	Trmt112				YES	YES	YES	chr19:6981687-6985687
NM_026306	Trmt112				YES	YES	YES	chr19:6981687-6985687
NM_010316	Gng3				YES	YES		chr19:8916236-8912236
NM_001290823	Bscl2				YES	YES		chr19:8912492-8916492
NM_024256	B3gat3				YES	YES	YES	chr19:8992382-8996382
NM_026007	Eef1g				YES	YES	YES	chr19:9039030-9043030
NM_146094	Fads1				YES	YES	YES	chr19:10254877-10258877
NR_015567	A930007119Rik				YES	YES	YES	chr19:29598977-29594977
NM_001081319	Ric1				YES	YES	YES	chr19:29594271-29598271
NM_001362434	Kif20b				YES	YES	YES	chr19:34994347-34998347
NM_183046	Kif20b				YES	YES	YES	chr19:34994347-34998347
NM_016854	Ppp1r3c				YES	YES	YES	chr19:36813594-36809594
NM_001365054	Blnk				YES	YES	YES	chr19:41071211-41067211
NM_008528	Blnk				YES	YES	YES	chr19:41071211-41067211
NM_145501	Pi4k2a				YES	YES	YES	chr19:42162424-42166424
NM_027106	Avpi1				YES	YES	YES	chr19:42205983-42201983
NM_001081225	Slf2				YES	YES	YES	chr19:45003108-45007108
NM_172638	Slf2				YES	YES	YES	chr19:45003108-45007108
NM_053164	Mrpl43				YES	YES	YES	chr19:45083432-45079432
NM_153796	Twink				YES	YES	YES	chr19:45078547-45082547
NM_001039351	Nolc1				YES	YES	YES	chr19:46147836-46151836
NM_001039352	Nolc1				YES	YES	YES	chr19:46147836-46151836
NM_001039353	Nolc1				YES	YES	YES	chr19:46147836-46151836
NM_053086	Nolc1				YES	YES	YES	chr19:46147836-46151836
NM_010362	Gsto1				YES	YES	YES	chr19:47926962-47930962
NM_011050	Pdcd4				YES	YES		chr19:53964220-53968220
NM_001013376	Rpp38				YES	YES	YES	chr2:3252400-3248400

NM_001355207	Meig1				YES	YES	YES	chr2:3338901-3334901
NM_001355208	Meig1				YES	YES	YES	chr2:3338901-3334901
NM_001355209	Meig1				YES	YES	YES	chr2:3338901-3334901
NM_001355210	Meig1				YES	YES	YES	chr2:3338369-3334369
NM_025626	Fam107b				YES	YES	YES	chr2:3628229-3632229
NM_001356411	Sec61a2				YES	YES	YES	chr2:5818978-5814978
NM_021305	Sec61a2				YES	YES	YES	chr2:5818978-5814978
NM_001177752	Pfkfb3				YES	YES	YES	chr2:11426217-11422217
NM_001177753	Pfkfb3				YES	YES	YES	chr2:11426217-11422217
NM_001177754	Pfkfb3				YES	YES	YES	chr2:11426217-11422217
NM_001177755	Pfkfb3				YES	YES	YES	chr2:11426217-11422217
NM_001177756	Pfkfb3				YES	YES	YES	chr2:11426217-11422217
NM_001177757	Pfkfb3				YES	YES	YES	chr2:11426217-11422217
NM_133232	Pfkfb3				YES	YES	YES	chr2:11426217-11422217
NM_001252560	Mlit10				YES	YES		chr2:17983711-17987711
NM_001252561	Mlit10				YES	YES		chr2:17983711-17987711
NR_045538	Mlit10				YES	YES		chr2:17983711-17987711
NR_045539	Mlit10				YES	YES		chr2:17983711-17987711
NM_147778	Commd3				YES	YES	YES	chr2:18591588-18595588
NM_001031808	Mrpl41				YES	YES	YES	chr2:24833118-24829118
NM_153125	Sec16a				YES	YES	YES	chr2:26303236-26299236
NR_152207	0610009E02Rik				YES	YES	YES	chr2:26298943-26302943
NR_152208	0610009E02Rik				YES	YES	YES	chr2:26298943-26302943
NR_152209	0610009E02Rik				YES	YES	YES	chr2:26298943-26302943
NM_001271724	Surf1				YES	YES	YES	chr2:26774550-26770550
NM_013677	Surf1				YES	YES	YES	chr2:26774550-26770550
NR_073420	Surf1				YES	YES	YES	chr2:26774550-26770550
NM_013678	Surf2				YES	YES	YES	chr2:26769427-26773427
NM_001204875	Set				YES	YES	YES	chr2:29919493-29923493
NM_146252	Tbc1d13				YES	YES	YES	chr2:29986765-29990765
NM_007760	Crat				YES	YES	YES	chr2:30273768-30269768
NM_001362733	Ptpa				YES	YES	YES	chr2:30269069-30273069
NM_001362734	Ptpa				YES	YES	YES	chr2:30269069-30273069
NM_138748	Ptpa				YES	YES	YES	chr2:30269069-30273069

NM_172268	Nup214				YES	YES	YES	chr2:31827469-31831469
NM_001159548	Nr6a1				YES	YES	YES	chr2:38642535-38638535
NM_001159549	Nr6a1				YES	YES	YES	chr2:38642535-38638535
NM_028118	Wdsub1				YES	YES	YES	chr2:59723163-59719163
NM_001159636	Wdsub1				YES	YES	YES	chr2:59723163-59719163
NM_025633	Metap1d				YES	YES	YES	chr2:71288894-71292894
NM_001359971	Hnrnpa3				YES	YES		chr2:75494815-75498815
NM_053263	Hnrnpa3				YES	YES		chr2:75494815-75498815
NM_146130	Hnrnpa3				YES	YES		chr2:75494815-75498815
NM_198090	Hnrnpa3				YES	YES		chr2:75494815-75498815
NR_033513	Gm6793				YES	YES		chr2:75494846-75498846
NR_029544	Mir130a				YES	YES	YES	chr2:84583835-84579835
NM_013899	Timm10				YES	YES		chr2:84664677-84668677
NM_001033451	Zfp408				YES	YES	YES	chr2:91492448-91488448
NM_001347175	Zfp408				YES	YES	YES	chr2:91492448-91488448
NM_001145902	Arhgap1				YES	YES	YES	chr2:91487774-91491774
NM_001359970	Arhgap1				YES	YES	YES	chr2:91487774-91491774
NR_027371	Arhgap1				YES	YES	YES	chr2:91487774-91491774
NR_027372	Arhgap1				YES	YES	YES	chr2:91487774-91491774
NR_027373	Arhgap1				YES	YES	YES	chr2:91487774-91491774
NM_178890	Abtb2				YES	YES		chr2:103403966-103407966
NM_153126	Nat10				YES	YES	YES	chr2:103603927-103599927
NM_001111289	Caprin1				YES	YES		chr2:103639735-103635735
NM_001111290	Caprin1				YES	YES		chr2:103639735-103635735
NM_001111292	Caprin1				YES	YES		chr2:103639735-103635735
NM_144804	Depdc7				YES	YES	YES	chr2:104585458-104581458
NM_178695	Prrg4				YES	YES	YES	chr2:104692507-104688507
NM_026929	Chac1				YES	YES	YES	chr2:119174477-119178477
NM_001164274	Mga					YES	YES	chr2:119720463-119724463
NM_013720	Mga					YES	YES	chr2:119720463-119724463
NM_145531	Spg11				YES	YES	YES	chr2:121946622-121942622
NM_146126	Sord				YES	YES	YES	chr2:122058074-122062074
NM_001164325	Trpm7				YES	YES	YES	chr2:126704497-126700497
NM_021450	Trpm7				YES	YES	YES	chr2:126704497-126700497

NM_001159593	Slc20a1				YES	YES	YES	chr2:129022008-129026008
NM_015747	Slc20a1				YES	YES	YES	chr2:129022008-129026008
NM_001311138	1700037H04Rik				YES	YES	YES	chr2:130988317-130984317
NM_001361375	1700037H04Rik				YES	YES	YES	chr2:130988317-130984317
NM_026091	1700037H04Rik				YES	YES	YES	chr2:130988317-130984317
NR_154886	1700037H04Rik				YES	YES	YES	chr2:130988317-130984317
NR_154887	1700037H04Rik				YES	YES	YES	chr2:130988317-130984317
NM_001291039	Cds2				YES	YES		chr2:132109174-132113174
NM_001356442	Trmt6				YES	YES	YES	chr2:132644290-132640290
NM_001356443	Trmt6				YES	YES	YES	chr2:132644290-132640290
NM_001356444	Trmt6				YES	YES	YES	chr2:132644290-132640290
NM_175113	Trmt6				YES	YES	YES	chr2:132644290-132640290
NM_001291054	Mcm8				YES	YES	YES	chr2:132639376-132643376
NM_025676	Mcm8				YES	YES	YES	chr2:132639376-132643376
NM_024196	Tbc1d20				YES	YES	YES	chr2:152117063-152121063
NR_156111	Tbc1d20				YES	YES	YES	chr2:152117063-152121063
NM_025543	Mcts2				YES	YES	YES	chr2:152510383-152514383
NM_001291105	E2f1				YES	YES	YES	chr2:154397662-154393662
NM_007891	E2f1				YES	YES	YES	chr2:154398128-154394128
NM_025699	Oser1				YES	YES	YES	chr2:163247706-163243706
NR_151490	2900093K20Rik				YES	YES	YES	chr2:163243006-163247006
NM_001252573	Slc35c2				YES	YES	YES	chr2:165115787-165111787
NM_001252574	Slc35c2				YES	YES	YES	chr2:165115787-165111787
NM_001252575	Slc35c2				YES	YES	YES	chr2:165115838-165111838
NM_001363015	Slc35c2				YES	YES	YES	chr2:165115838-165111838
NM_001363016	Slc35c2				YES	YES	YES	chr2:165115838-165111838
NM_144893	Slc35c2				YES	YES	YES	chr2:165115838-165111838
NM_001033196	Znfx1				YES	YES		chr2:166891015-166887015
NR_138563	Zfas1				YES	YES		chr2:166885933-166889933
NM_001310086	Adnp				YES	YES	YES	chr2:168035112-168031112
NM_001310088	Adnp				YES	YES	YES	chr2:168035112-168031112
NM_009628	Adnp				YES	YES	YES	chr2:168035112-168031112
NM_001291185	Aurka				YES	YES	YES	chr2:172198570-172194570
NM_011497	Aurka				YES	YES	YES	chr2:172198570-172194570

NM_024199	Cstf1				YES	YES	YES	chr2:172194002-172198002
NM_019547	Rbm38				YES	YES	YES	chr2:172844902-172848902
NM_133849	Hrh3				YES	YES		chr2:179841612-179837612
NR_102309	Hrh3				YES	YES		chr2:179841612-179837612
NM_011481	Srms				YES	YES	YES	chr2:180950376-180946376
NM_026765	Uckl1				YES	YES		chr2:181319178-181315178
NM_001357528	Sec62				YES	YES	YES	chr3:30689297-30693297
NM_027016	Sec62				YES	YES	YES	chr3:30689297-30693297
NM_023644	Mccc1				YES	YES	YES	chr3:35902100-35898100
NR_029456	Mccc1os				YES	YES	YES	chr3:35896334-35900334
NM_001291044	Nudt6				YES	YES	YES	chr3:37321018-37317018
NM_153561	Nudt6				YES	YES	YES	chr3:37321018-37317018
NM_001163511	Spata5				YES	YES	YES	chr3:37316371-37320371
NM_001310473	Spata5				YES	YES	YES	chr3:37316371-37320371
NM_021343	Spata5				YES	YES	YES	chr3:37316371-37320371
NM_198657	Gm5148				YES	YES	YES	chr3:37625782-37621782
NM_027558	Pgrmc2				YES	YES	YES	chr3:40889468-40885468
NR_027955	4931440P22Rik				YES	YES	YES	chr3:65335836-65331836
NR_106200	Mir8120				YES	YES		chr3:65460709-65464709
NM_001162999	Fnip2				YES	YES	YES	chr3:79374101-79370101
NR_152118	4930589L23Rik				YES	YES	YES	chr3:79369613-79373613
NM_001310605	Pmf1				YES	YES	YES	chr3:88216819-88212819
NM_025928	Pmf1				YES	YES	YES	chr3:88216819-88212819
NM_001145876	Slc25a44				YES	YES	YES	chr3:88231563-88227563
NM_001145877	Slc25a44				YES	YES	YES	chr3:88231563-88227563
NM_001281795	Slc25a44				YES	YES	YES	chr3:88231563-88227563
NM_001357749	Slc25a44				YES	YES	YES	chr3:88231563-88227563
NM_178696	Slc25a44				YES	YES	YES	chr3:88231563-88227563
NR_130957	4632404H12Rik				YES	YES	YES	chr3:89579822-89575822
NM_028475	Ubap2l				YES	YES	YES	chr3:89858902-89854902
NM_153489	Ubap2l				YES	YES	YES	chr3:89858902-89854902
NM_001165983	Ubap2l				YES	YES	YES	chr3:89858902-89854902
NM_001165984	Ubap2l				YES	YES	YES	chr3:89858937-89854937
NM_001357307	Ubap2l				YES	YES	YES	chr3:89858937-89854937

NM_001165985	Ubap2l				YES	YES	YES	chr3:89858902-89854902
NM_001165986	Ubap2l				YES	YES	YES	chr3:89858937-89854937
NM_001165987	Ubap2l				YES	YES	YES	chr3:89858902-89854902
NM_001165988	Ubap2l				YES	YES	YES	chr3:89858937-89854937
NM_206924	Jtb				YES	YES	YES	chr3:90033018-90037018
NR_106175	Mir8099-1				YES	YES	YES	chr3:94945608-94941608
NR_106201	Mir8099-2				YES	YES	YES	chr3:94945608-94941608
NM_001355750	Car14				YES	YES	YES	chr3:95711108-95707108
NM_001355751	Car14				YES	YES	YES	chr3:95711108-95707108
NM_011797	Car14				YES	YES	YES	chr3:95711108-95707108
NM_001355752	Car14				YES	YES	YES	chr3:95711108-95707108
NM_001165952	Trim45				YES	YES		chr3:100723915-100727915
NM_001165953	Trim45				YES	YES		chr3:100723915-100727915
NM_194343	Trim45				YES	YES		chr3:100723915-100727915
NM_009196	Slc16a1				YES	YES	YES	chr3:104440086-104444086
NM_001304719	Atp5f1				YES		YES	chr3:105765666-105761666
NM_009725	Atp5f1				YES		YES	chr3:105765666-105761666
NM_027432	Wdr77				YES	YES	YES	chr3:105759915-105763915
NM_001289719	Ampd2				YES	YES		chr3:107892084-107888084
NM_028779	Ampd2				YES	YES		chr3:107892084-107888084
NM_023214	Slc30a7				YES	YES	YES	chr3:115712824-115708824
NM_001163515	Extl2				YES	YES	YES	chr3:115707866-115711866
NM_021388	Extl2				YES	YES	YES	chr3:115707866-115711866
NM_001163514	Extl2				YES	YES	YES	chr3:115708714-115712714
NM_001025438	Camk2d				YES	YES		chr3:126297368-126301368
NM_001025439	Camk2d				YES	YES		chr3:126297368-126301368
NM_001293663	Camk2d				YES	YES		chr3:126297368-126301368
NM_001293664	Camk2d				YES	YES		chr3:126297368-126301368
NM_001293665	Camk2d				YES	YES		chr3:126297368-126301368
NM_001293666	Camk2d				YES	YES		chr3:126297368-126301368
NM_001346635	Camk2d				YES	YES		chr3:126297368-126301368
NM_001346636	Camk2d				YES	YES		chr3:126297368-126301368
NM_023813	Camk2d				YES	YES		chr3:126297368-126301368
NM_007926	Aimp1				YES	YES		chr3:132349343-132345343

NM_001163455	Tbck					YES	YES		chr3:132344607-132348607
NM_001163457	Mttp					YES	YES	YES	chr3:137808882-137804882
NM_001355051	Mttp					YES	YES	YES	chr3:137808882-137804882
NM_001355052	Mttp					YES	YES	YES	chr3:137808882-137804882
NM_175389	Trmt10a					YES	YES	YES	chr3:137803911-137807911
NM_001348196	Trmt10a					YES	YES	YES	chr3:137803980-137807980
NM_001348197	Trmt10a					YES	YES	YES	chr3:137804262-137808262
NM_007409	Adh1					YES	YES	YES	chr3:137938048-137942048
NR_035481	Mir1956					YES	YES	YES	chr3:138186884-138190884
NM_013752	Nbn					YES	YES	YES	chr4:15882613-15886613
NM_026742	Ndufaf4					YES	YES	YES	chr4:24822729-24826729
NM_001349093	Smim27					YES	YES	YES	chr4:40214111-40218111
NM_016689	Aqp3					YES	YES		chr4:41047716-41043716
NR_155499	Gm42274					YES	YES	YES	chr4:41705145-41701145
NM_016658	Galt					YES	YES	YES	chr4:41699600-41703600
NM_001302511	Galt					YES	YES	YES	chr4:41700582-41704582
NM_028053	Tmem38b					YES	YES	YES	chr4:53836416-53840416
NM_001045528	Fkbp15					YES	YES	YES	chr4:62024130-62020130
NM_001355385	Fkbp15					YES	YES	YES	chr4:62024130-62020130
NM_175090	Slc31a1					YES	YES	YES	chr4:62019234-62023234
NM_001356354	Tmem268					YES	YES	YES	chr4:63217296-63221296
NM_001356355	Tmem268					YES	YES	YES	chr4:63217296-63221296
NM_144905	Tmem268					YES	YES	YES	chr4:63218760-63222760
NM_007408	Plin2					YES	YES	YES	chr4:86318463-86314463
NM_001081184	Focad					YES	YES	YES	chr4:87738033-87742033
NR_045776	9530080O11Rik					YES	YES	YES	chr4:95636846-95632846
NR_045777	9530080O11Rik					YES	YES	YES	chr4:95636226-95632226
NM_030014	Hook1					YES	YES	YES	chr4:95631569-95635569
NM_001285852	Sgip1					YES	YES		chr4:102430239-102434239
NM_001285859	Sgip1					YES	YES		chr4:102430239-102434239
NM_001285860	Sgip1					YES	YES		chr4:102430239-102434239
NM_001285862	Sgip1					YES	YES		chr4:102430239-102434239
NM_144906	Sgip1					YES	YES		chr4:102430239-102434239
NM_011034	Prdx1					YES	YES		chr4:116355703-116359703

NM_001004178	Frg2f1					YES	YES	YES	chr4:119213874-119209874
NM_001290696	Foxj3					YES	YES	YES	chr4:119209765-119213765
NM_172699	Foxj3					YES	YES	YES	chr4:119209765-119213765
NM_194060	Foxo6					YES	YES		chr4:119962366-119958366
NM_023423	Akirin1					YES	YES	YES	chr4:123430042-123426042
NM_001145827	Stk40					YES	YES	YES	chr4:125778700-125782700
NM_028800	Stk40					YES	YES	YES	chr4:125778700-125782700
NR_028537	Snord99					YES	YES		chr4:131864117-131868117
NM_001290725	Ppp1r8					YES	YES	YES	chr4:132401584-132397584
NM_001355198	Ppp1r8					YES	YES	YES	chr4:132401549-132397549
NM_001355199	Ppp1r8					YES	YES	YES	chr4:132401549-132397549
NM_146154	Ppp1r8					YES	YES	YES	chr4:132401584-132397584
NM_001163792	Fam76a					YES	YES	YES	chr4:132480966-132476966
NM_145553	Fam76a					YES	YES	YES	chr4:132480966-132476966
NM_025667	Tmem222					YES	YES	YES	chr4:132836205-132832205
NR_110978	Tmem222					YES	YES	YES	chr4:132836205-132832205
NM_172876	Gpatch3					YES	YES	YES	chr4:133128159-133132159
NM_001363070	Arid1a					YES	YES	YES	chr4:133315184-133311184
NM_016957	Hmgn2					YES	YES		chr4:133526406-133522406
NM_023665	Rsrp1					YES	YES	YES	chr4:134477039-134481039
NM_026780	Syf2					YES	YES	YES	chr4:134484394-134488394
NM_001130477	Srrm1					YES	YES	YES	chr4:134911629-134907629
NM_016799	Srrm1					YES	YES	YES	chr4:134911629-134907629
NM_022980	Rcan3					YES	YES	YES	chr4:134992220-134988220
NM_008254	Hmgcl					YES	YES	YES	chr4:135499862-135503862
NM_001357529	Hmgcl					YES	YES	YES	chr4:135500820-135504820
NM_001357530	Hmgcl					YES	YES	YES	chr4:135500820-135504820
NM_001305423	Tmco4					YES	YES	YES	chr4:138525697-138529697
NM_029857	Tmco4					YES	YES	YES	chr4:138526319-138530319
NM_001355730	Zfp933					YES	YES	YES	chr4:147225027-147221027
NM_198619	Zfp933					YES	YES	YES	chr4:147225027-147221027
NM_001003893	Masp2					YES	YES	YES	chr4:147974152-147978152
NM_010767	Masp2					YES	YES	YES	chr4:147974152-147978152
NM_025582	Fam213b					YES	YES		chr4:154275652-154271652

NM_177186	Slc35e2					YES	YES	YES	chr4:154973024-154977024
NM_080445	B3galt6					YES	YES		chr4:155369287-155365287
NM_011341	Sdf4					YES	YES		chr4:155364451-155368451
NM_001302467	Sdf4					YES	YES		chr4:155364513-155368513
NM_001302469	Sdf4					YES	YES		chr4:155364761-155368761
NM_001302468	Sdf4					YES	YES		chr4:155364945-155368945
NM_172991	Rbm48					YES	YES	YES	chr5:3599047-3595047
NM_001293806	Pex1					YES	YES	YES	chr5:3593565-3597565
NM_027777	Pex1					YES	YES	YES	chr5:3593565-3597565
NM_010305	Gnai1					YES	YES		chr5:17868731-17864731
NM_001359963	Napepld					YES	YES	YES	chr5:21209714-21205714
NM_001359964	Napepld					YES	YES	YES	chr5:21209714-21205714
NM_001359965	Napepld					YES	YES	YES	chr5:21209940-21205940
NM_178728	Napepld					YES	YES	YES	chr5:21209714-21205714
NM_001310524	Khk					YES	YES	YES	chr5:31221431-31225431
NM_001310525	Khk					YES	YES	YES	chr5:31221431-31225431
NM_001349066	Khk					YES	YES	YES	chr5:31221431-31225431
NM_008439	Khk					YES	YES	YES	chr5:31221431-31225431
NM_001294302	Preb					YES	YES		chr5:31265200-31261200
NM_016703	Preb					YES	YES		chr5:31265200-31261200
NM_001177621	Slc5a6					YES	YES	YES	chr5:31353435-31349435
NM_001177622	Slc5a6					YES	YES	YES	chr5:31353797-31349797
NM_001360022	Slc5a6					YES	YES	YES	chr5:31352952-31348952
NM_177870	Slc5a6					YES	YES	YES	chr5:31352952-31348952
NM_001177379	Cpeb2					YES	YES	YES	chr5:43622201-43626201
NM_175937	Cpeb2					YES	YES	YES	chr5:43622201-43626201
NM_024236	Qdpr					YES	YES	YES	chr5:45843968-45839968
NM_001347357	Rfc1					YES	YES	YES	chr5:65729378-65725378
NM_001347358	Rfc1					YES	YES	YES	chr5:65729378-65725378
NM_011258	Rfc1					YES	YES	YES	chr5:65729378-65725378
NM_133697	Smim14					YES	YES	YES	chr5:65886574-65882574
NM_172146	Ppat					YES	YES	YES	chr5:77383103-77379103
NM_001356971	Paics					YES	YES	YES	chr5:77377826-77381826
NM_001356972	Paics					YES	YES	YES	chr5:77377826-77381826

NM_001356973	Paics				YES	YES	YES	chr5:77377826-77381826
NM_001356974	Paics				YES	YES	YES	chr5:77377826-77381826
NM_025939	Paics				YES	YES	YES	chr5:77377826-77381826
NM_001289776	Rufy3				YES	YES		chr5:89010037-89014037
NM_001289777	Rufy3				YES	YES		chr5:89010037-89014037
NM_001359208	Rufy3				YES	YES		chr5:89010037-89014037
NM_001359209	Rufy3				YES	YES		chr5:89010037-89014037
NM_027530	Rufy3				YES	YES		chr5:89010037-89014037
NM_026735	Mob1b				YES	YES	YES	chr5:89147395-89151395
NM_001359995	Nup54				YES	YES	YES	chr5:92866725-92862725
NM_183392	Nup54				YES	YES	YES	chr5:92866725-92862725
NM_017367	Ccni				YES	YES	YES	chr5:93638021-93634021
NM_029363	2010109A12Rik				YES	YES	YES	chr5:93633043-93637043
NR_049192	Mir5619				YES	YES	YES	chr5:104474521-104478521
NM_001255991	Btbd8				YES	YES	YES	chr5:107864515-107868515
NM_001359835	Hscb				YES	YES	YES	chr5:111271296-111267296
NM_153571	Hscb				YES	YES	YES	chr5:111271296-111267296
NR_153348	Hscb				YES	YES	YES	chr5:111271296-111267296
NM_001363308	Chek2				YES	YES	YES	chr5:111266501-111270501
NM_016681	Chek2				YES	YES	YES	chr5:111266501-111270501
NM_001159650	Crybb3				YES	YES	YES	chr5:113513104-113509104
NM_001359004	Crybb3				YES	YES	YES	chr5:113513104-113509104
NM_001359005	Crybb3				YES	YES	YES	chr5:113513104-113509104
NM_001359006	Crybb3				YES	YES	YES	chr5:113513104-113509104
NM_001359007	Crybb3				YES	YES	YES	chr5:113513104-113509104
NM_001359008	Crybb3				YES	YES	YES	chr5:113513104-113509104
NM_001359009	Crybb3				YES	YES	YES	chr5:113513104-113509104
NM_021352	Crybb3				YES	YES	YES	chr5:113513104-113509104
NM_011677	Ung				YES	YES	YES	chr5:114578664-114582664
NR_027810	1110006O24Rik				YES	YES		chr5:116084325-116080325
NM_001109902	Rnft2				YES	YES	YES	chr5:118697534-118693534
NM_172998	Rnft2				YES	YES	YES	chr5:118697370-118693370
NM_001081236	2410131K14Rik				YES	YES	YES	chr5:118692735-118696735
NM_009656	Aldh2				YES	YES		chr5:122046333-122042333

NM_001308450	Aldh2					YES	YES		chr5:122046333-122042333
NM_009125	Atxn2					YES	YES	YES	chr5:122159117-122163117
NM_009722	Atp2a2					YES	YES		chr5:122954734-122950734
NR_027838	Atp2a2					YES	YES		chr5:122954734-122950734
NM_001110140	Atp2a2					YES	YES		chr5:122954734-122950734
NM_026000	Psmc9					YES	YES		chr5:123675698-123679698
NM_019770	Tmed2					YES	YES	YES	chr5:124988299-124992299
NM_001359408	Zbed5					YES	YES	YES	chr5:130369092-130373092
NM_183088	Zbed5					YES	YES	YES	chr5:130369092-130373092
NM_027854	Tmem248					YES	YES		chr5:130695704-130699704
NM_001359852	Gtf2ird2					YES	YES	YES	chr5:134657407-134661407
NM_053266	Gtf2ird2					YES	YES	YES	chr5:134657407-134661407
NM_001081462	Gtf2ird1					YES	YES		chr5:134935086-134931086
NM_001081463	Gtf2ird1					YES	YES		chr5:134935086-134931086
NM_001081464	Gtf2ird1					YES	YES		chr5:134935086-134931086
NM_001081465	Gtf2ird1					YES	YES		chr5:134934632-134930632
NM_001081466	Gtf2ird1					YES	YES		chr5:134935086-134931086
NM_001081467	Gtf2ird1					YES	YES		chr5:134935086-134931086
NM_001081468	Gtf2ird1					YES	YES		chr5:134935086-134931086
NM_001081469	Gtf2ird1					YES	YES		chr5:134935086-134931086
NM_001081470	Gtf2ird1					YES	YES		chr5:134935086-134931086
NM_001244936	Gtf2ird1					YES	YES		chr5:134935086-134931086
NM_001347488	Gtf2ird1					YES	YES		chr5:134935086-134931086
NM_020331	Gtf2ird1					YES	YES		chr5:134935086-134931086
NM_009902	Cldn3					YES	YES	YES	chr5:135459583-135463583
NR_026907	Wbscr25					YES	YES	YES	chr5:135479720-135475720
NM_001190437	Abhd11					YES	YES	YES	chr5:135482521-135486521
NM_145215	Abhd11					YES	YES	YES	chr5:135482668-135486668
NR_033794	Abhd11					YES	YES	YES	chr5:135482825-135486825
NM_001363307	Tbl2					YES	YES	YES	chr5:135623055-135627055
NM_013763	Tbl2					YES	YES	YES	chr5:135623055-135627055
NM_001039385	Vgf					YES	YES	YES	chr5:137503664-137507664
NM_001359611	Slc12a9					YES	YES	YES	chr5:137780588-137776588
NM_028753	Pop7					YES	YES	YES	chr5:137946157-137942157

NM_001363271	Pdgfa				YES	YES		chr5:139473398-139469398
NM_008808	Pdgfa				YES	YES		chr5:139473398-139469398
NM_181066	Brat1				YES	YES	YES	chr5:141178464-141182464
NR_074085	Brat1				YES	YES	YES	chr5:141178464-141182464
NM_001276287	Brat1				YES	YES	YES	chr5:141178519-141182519
NR_102383	5930430L01Rik				YES	YES	YES	chr5:149809290-149805290
NR_102384	5930430L01Rik				YES	YES	YES	chr5:149809291-149805291
NM_001013378	Uspl1				YES	YES	YES	chr5:149993635-149997635
NM_001115149	Uspl1				YES	YES	YES	chr5:149993635-149997635
NM_001115150	Uspl1				YES	YES	YES	chr5:149993635-149997635
NM_001115151	Uspl1				YES	YES	YES	chr5:149993635-149997635
NM_001115153	Uspl1				YES	YES	YES	chr5:149993635-149997635
NM_001286824	Uspl1				YES	YES	YES	chr5:149993635-149997635
NM_001286825	Uspl1				YES	YES	YES	chr5:149993635-149997635
NM_001359956	Uspl1				YES	YES	YES	chr5:149993635-149997635
NM_001359957	Uspl1				YES	YES	YES	chr5:149993635-149997635
NM_001167750	Vps50				YES	YES	YES	chr6:3445892-3449892
NM_001167751	Vps50				YES	YES	YES	chr6:3445892-3449892
NM_024260	Vps50				YES	YES	YES	chr6:3445892-3449892
NR_110471	Lncpint				YES	YES	YES	chr6:31170974-31166974
NR_110469	Lncpint				YES	YES	YES	chr6:31170974-31166974
NR_110470	Lncpint				YES	YES	YES	chr6:31170974-31166974
NR_040257	2210408F21Rik				YES	YES	YES	chr6:31167850-31171850
NR_040258	2210408F21Rik				YES	YES	YES	chr6:31167850-31171850
NR_040259	2210408F21Rik				YES	YES	YES	chr6:31167850-31171850
NR_040260	2210408F21Rik				YES	YES	YES	chr6:31167850-31171850
NR_040261	2210408F21Rik				YES	YES	YES	chr6:31167850-31171850
NR_040262	2210408F21Rik				YES	YES	YES	chr6:31167850-31171850
NM_001164412	Cnot4				YES	YES	YES	chr6:35086237-35082237
NM_001164413	Cnot4				YES	YES	YES	chr6:35086237-35082237
NM_001164414	Cnot4				YES	YES	YES	chr6:35086237-35082237
NM_001164411	Cnot4				YES	YES	YES	chr6:35086237-35082237
NM_016877	Cnot4				YES	YES	YES	chr6:35086237-35082237
NM_001311112	Ccdc126				YES	YES	YES	chr6:49266772-49270772

NM_175098	Ccdc126				YES	YES	YES	chr6:49266772-49270772
NM_001172216	Fam221a				YES	YES	YES	chr6:49315237-49319237
NM_172727	Fam221a				YES	YES	YES	chr6:49315237-49319237
NR_152256	Gm15050				YES	YES		chr6:52120379-52124379
NM_001362209	Kbtbd2				YES	YES		chr6:56749707-56745707
NM_001362211	Kbtbd2				YES	YES		chr6:56749707-56745707
NM_001362212	Kbtbd2				YES	YES		chr6:56749707-56745707
NM_001081145	Tigd2				YES	YES		chr6:59156363-59160363
NR_106192	Mir8112				YES	YES	YES	chr6:71219164-71223164
NM_001354706	Krcc1				YES	YES	YES	chr6:71219170-71223170
NM_145568	Krcc1				YES	YES	YES	chr6:71219512-71223512
NM_001038695	Kdm3a				YES	YES	YES	chr6:71585411-71581411
NM_001362200	Kdm3a				YES	YES	YES	chr6:71585411-71581411
NM_173001	Kdm3a				YES	YES	YES	chr6:71585180-71581180
NM_001253681	lmmt				YES	YES	YES	chr6:71778813-71782813
NM_001253686	lmmt				YES	YES	YES	chr6:71778813-71782813
NM_001253687	lmmt				YES	YES	YES	chr6:71778813-71782813
NM_001253688	lmmt				YES	YES	YES	chr6:71778813-71782813
NM_001253689	lmmt				YES	YES	YES	chr6:71778813-71782813
NM_001362134	lmmt				YES	YES	YES	chr6:71778813-71782813
NM_001362136	lmmt				YES	YES	YES	chr6:71778813-71782813
NM_001362137	lmmt				YES	YES	YES	chr6:71778813-71782813
NM_001362138	lmmt				YES	YES	YES	chr6:71778813-71782813
NM_029673	lmmt				YES	YES	YES	chr6:71778813-71782813
NM_023160	Nat8f1				YES	YES	YES	chr6:85868171-85864171
NM_001362065	Tprkb				YES	YES	YES	chr6:85863464-85867464
NM_001364555	C87436				YES	YES	YES	chr6:86385869-86389869
NM_001364558	C87436				YES	YES	YES	chr6:86385869-86389869
NM_146170	C87436				YES	YES	YES	chr6:86385891-86389891
NM_001243741	C87436				YES	YES	YES	chr6:86386139-86390139
NM_001243742	C87436				YES	YES	YES	chr6:86386139-86390139
NM_001364556	C87436				YES	YES	YES	chr6:86386167-86390167
NM_001364557	C87436				YES	YES	YES	chr6:86386167-86390167
NR_157222	C87436				YES	YES	YES	chr6:86386167-86390167

NM_011865	Pcbp1				YES	YES	YES	chr6:86478683-86474683
NR_037960	1600020E01Rik				YES	YES	YES	chr6:86474823-86478823
NR_037961	1600020E01Rik				YES	YES	YES	chr6:86474894-86478894
NM_133928	Chchd4				YES	YES	YES	chr6:91425917-91421917
NM_028766	Tmem43				YES	YES	YES	chr6:91421200-91425200
NR_104577	0610040F04Rik				YES	YES		chr6:108613428-108609428
NM_001355266	Thumpd3				YES	YES	YES	chr6:112993795-112997795
NM_008188	Thumpd3				YES	YES	YES	chr6:112993795-112997795
NM_028385	Setd5				YES	YES	YES	chr6:113025132-113029132
NM_001356371	Vgll4				YES	YES	YES	chr6:114921721-114917721
NR_131013	9530062K07Rik				YES	YES	YES	chr6:116160511-116156511
NM_026585	Washc2				YES	YES	YES	chr6:116155550-116159550
NM_001166427	Hnrnpf				YES	YES	YES	chr6:117864811-117868811
NM_001128151	Cecr2				YES	YES	YES	chr6:120613831-120617831
NM_138747	Nop2				YES	YES	YES	chr6:125079400-125083400
NM_008084	Gapdh				YES	YES	YES	chr6:125118291-125114291
NM_001346512	Parp11				YES	YES	YES	chr6:127401144-127405144
NM_001362186	Parp11				YES	YES	YES	chr6:127401144-127405144
NM_001362187	Parp11				YES	YES	YES	chr6:127401144-127405144
NM_181402	Parp11				YES	YES	YES	chr6:127401144-127405144
NR_045270	1700101111Rik				YES	YES	YES	chr6:129485802-129481802
NM_177787	Slc15a5				YES	YES	YES	chr6:138030937-138026937
NM_026281	Tm7sf3				YES	YES		chr6:146585614-146581614
NM_029767	Rps9				YES	YES	YES	chr7:3653142-3657142
NM_198631	Zc3h4				YES	YES	YES	chr7:16984044-16988044
NM_172739	Arhgap35				YES	YES	YES	chr7:17202842-17198842
NM_001127324	Ercc1				YES	YES		chr7:19927919-19931919
NM_007948	Ercc1				YES	YES		chr7:19927919-19931919
NM_010719	Lipe				YES	YES	YES	chr7:26183506-26179506
NM_007533	Bckdha				YES	YES		chr7:26446280-26442280
NM_138586	Exosc5				YES	YES		chr7:26441671-26445671
NR_104358	Exosc5				YES	YES		chr7:26441671-26445671
NM_001357767	Egln2				YES	YES	YES	chr7:27953247-27949247
NM_053208	Egln2				YES	YES	YES	chr7:27954321-27950321

NM_001046637	Snrpa				YES	YES	YES	chr7:27983279-27979279
NM_001285825	Snrpa				YES	YES	YES	chr7:27983790-27979790
NM_015782	Snrpa				YES	YES	YES	chr7:27983790-27979790
NM_027215	Tmem147				YES	YES	YES	chr7:31517053-31513053
NM_011680	Usf2				YES	YES		chr7:31744322-31740322
NM_008820	Pepd				YES	YES	YES	chr7:35694925-35698925
NR_033567	E130304I02Rik				YES	YES		chr7:36585110-36589110
NM_001360674	Zfp788				YES	YES	YES	chr7:48886400-48890400
NM_001360675	Zfp788				YES	YES	YES	chr7:48886400-48890400
NM_001360677	Zfp788				YES	YES	YES	chr7:48886400-48890400
NM_001360678	Zfp788				YES	YES	YES	chr7:48886400-48890400
NM_001360680	Zfp788				YES	YES	YES	chr7:48886400-48890400
NM_001360681	Zfp788				YES	YES	YES	chr7:48886400-48890400
NM_001360683	Zfp788				YES	YES	YES	chr7:48886400-48890400
NM_023363	Zfp788				YES	YES	YES	chr7:48886400-48890400
NM_001360684	Zfp788				YES	YES	YES	chr7:48887659-48891659
NM_001008422	Scaf1				YES	YES		chr7:52274119-52270119
NM_009101	Rras				YES	YES		chr7:52270811-52274811
NM_013725	Rps11				YES	YES	YES	chr7:52382259-52378259
NR_000004	Snord35b				YES	YES	YES	chr7:52380981-52376981
NR_001277	Snord33				YES	YES	YES	chr7:52384815-52380815
NR_039581	Mir5121				YES	YES	YES	chr7:52384861-52380861
NR_000002	Snord32a				YES	YES	YES	chr7:52385333-52381333
NM_025330	Hsd17b14				YES	YES		chr7:52807797-52811797
NM_001013368	E2f8				YES	YES		chr7:56138911-56134911
NM_001360812	E2f8				YES	YES		chr7:56139466-56135466
NR_155436	Gm2788				YES	YES		chr7:56134169-56138169
NM_018752	Trpm1				YES	YES		chr7:71327844-71331844
NM_026483	Mphosph10				YES	YES	YES	chr7:71539622-71535622
NM_001355124	Mcee				YES	YES	YES	chr7:71535007-71539007
NM_028626	Mcee				YES	YES	YES	chr7:71535007-71539007
NM_001360135	Sema4b				YES	YES	YES	chr7:87340826-87344826
NM_001291275	Cib1				YES	YES	YES	chr7:87380191-87376191
NM_001291276	Cib1				YES	YES	YES	chr7:87380191-87376191

NM_011870	Cib1					YES	YES	YES	chr7:87380191-87376191
NM_178752	Gdpgp1					YES	YES	YES	chr7:87375278-87379278
NR_038175	2610206C17Rik					YES	YES	YES	chr7:91835649-91839649
NR_046006	2310010J17Rik					YES	YES	YES	chr7:97280484-97276484
NR_046007	2310010J17Rik					YES	YES	YES	chr7:97280946-97276946
NM_025460	Tmem126a					YES	YES	YES	chr7:97608213-97604213
NR_157050	Tmem126a					YES	YES	YES	chr7:97608213-97604213
NM_001162918	Ccdc90b					YES	YES	YES	chr7:99707158-99711158
NM_025515	Ccdc90b					YES	YES	YES	chr7:99707158-99711158
NM_029078	Pcf11					YES	YES		chr7:99820922-99816922
NM_153591	Nars2					YES	YES	YES	chr7:104097536-104101536
NM_001024619	Tsku					YES	YES	YES	chr7:105512298-105508298
NM_001168539	Tsku					YES	YES	YES	chr7:105512338-105508338
NM_001168540	Tsku					YES	YES	YES	chr7:105512298-105508298
NM_001168541	Tsku					YES	YES	YES	chr7:105512298-105508298
NM_001360748	Rnf121					YES	YES		chr7:109216179-109212179
NM_029211	Rnf121					YES	YES		chr7:109216179-109212179
NM_008905	Ppfbp2					YES	YES	YES	chr7:114736064-114740064
NM_020616	Akip1					YES	YES	YES	chr7:116844691-116848691
NM_001362172	lpo7					YES	YES	YES	chr7:117159264-117163264
NM_181517	lpo7					YES	YES	YES	chr7:117159264-117163264
NM_001355058	Wee1					YES	YES	YES	chr7:117263072-117267072
NM_009516	Wee1					YES	YES	YES	chr7:117263072-117267072
NM_028758	Gga2					YES	YES	YES	chr7:129167212-129163212
NR_045614	4930413G21Rik					YES	YES	YES	chr7:130116473-130112473
NR_030674	Gm4532					YES	YES	YES	chr7:134379144-134375144
NM_001360912	Zfp553					YES	YES	YES	chr7:134374074-134378074
NM_146201	Zfp553					YES	YES	YES	chr7:134374074-134378074
NM_009266	Sephs2					YES	YES	YES	chr7:134420073-134416073
NM_030226	9130019O22Rik					YES	YES	YES	chr7:134533180-134529180
NM_133351	Prss8					YES	YES	YES	chr7:135076127-135072127
NM_001302085	Uros					YES	YES	YES	chr7:140903478-140899478
NM_009479	Uros					YES	YES	YES	chr7:140903478-140899478
NR_153416	Uros					YES	YES	YES	chr7:140903478-140899478

NM_001302086	Uros				YES	YES	YES	chr7:140903478-140899478
NM_025392	Bccip				YES	YES	YES	chr7:140898515-140902515
NM_053119	Echs1				YES	YES	YES	chr7:147304820-147300820
NM_199301	Mtg1				YES	YES	YES	chr7:147320962-147324962
NM_011875	Psmc13				YES	YES		chr7:148065792-148069792
NM_001360657	Rplp2				YES	YES	YES	chr7:148631049-148635049
NM_001360658	Rplp2				YES	YES	YES	chr7:148631049-148635049
NM_026020	Rplp2				YES	YES	YES	chr7:148631049-148635049
NR_034049	Snora52				YES	YES	YES	chr7:148632201-148636201
NM_011288	Mrpl23				YES	YES	YES	chr7:149716436-149720436
NM_001081212	Irs2				YES	YES	YES	chr8:11011429-11007429
NM_011227	Rab20				YES	YES		chr8:11480999-11476999
NR_126558	E230013L22Rik				YES	YES		chr8:11475428-11479428
NM_001281974	Ankrd10				YES	YES	YES	chr8:11638257-11634257
NM_001281975	Ankrd10				YES	YES	YES	chr8:11638257-11634257
NM_133971	Ankrd10				YES	YES	YES	chr8:11638257-11634257
NM_001167967	Ankrd10				YES	YES	YES	chr8:11638257-11634257
NR_030781	Ankrd10				YES	YES	YES	chr8:11637536-11633536
NR_106097	Mir7238				YES	YES	YES	chr8:11638236-11634236
NM_001347316	Fbxo25				YES	YES	YES	chr8:13905238-13909238
NM_001359061	Fbxo25				YES	YES	YES	chr8:13905238-13909238
NM_025785	Fbxo25				YES	YES	YES	chr8:13905238-13909238
NM_012000	Cln8				YES	YES	YES	chr8:14886035-14890035
NM_145592	Dkk4				YES	YES	YES	chr8:23732014-23736014
NM_001080813	Rab11fip1				YES	YES	YES	chr8:28287618-28283618
NM_029423	Rab11fip1				YES	YES	YES	chr8:28287618-28283618
NM_001364450	Ppp1r3b				YES	YES	YES	chr8:36436312-36440312
NM_001364451	Ppp1r3b				YES	YES	YES	chr8:36436312-36440312
NM_177741	Ppp1r3b				YES	YES	YES	chr8:36436312-36440312
NM_001364452	Ppp1r3b				YES	YES	YES	chr8:36437215-36441215
NM_001081150	Lonrf1				YES	YES	YES	chr8:37315070-37311070
NM_021788	Sap30				YES	YES	YES	chr8:59969157-59965157
NR_126553	2500002B13Rik				YES	YES	YES	chr8:59964259-59968259
NR_126555	2500002B13Rik				YES	YES	YES	chr8:59964259-59968259

NM_153054	Slc18a1				YES	YES		chr8:71615621-71611621
NM_001025586	Nr2c2ap				YES	YES	YES	chr8:72652725-72656725
NM_001025587	Nr2c2ap				YES	YES	YES	chr8:72652725-72656725
NR_104434	Nr2c2ap				YES	YES	YES	chr8:72652725-72656725
NM_133972	Armc6				YES	YES	YES	chr8:72760821-72756821
NM_001168290	Sugp2				YES	YES	YES	chr8:72755624-72759624
NM_172755	Sugp2				YES	YES	YES	chr8:72755624-72759624
NM_001357181	Slc27a1				YES	YES	YES	chr8:74090995-74094995
NM_001357182	Slc27a1				YES	YES	YES	chr8:74091992-74095992
NM_027485	Med26				YES	YES	YES	chr8:75074709-75070709
NM_018771	Gipc1				YES	YES	YES	chr8:86174076-86178076
NM_008416	Junb				YES	YES		chr8:87505147-87501147
NM_001167991	Hook2				YES	YES	YES	chr8:87511984-87515984
NM_001363497	Hook2				YES	YES	YES	chr8:87511984-87515984
NM_001363498	Hook2				YES	YES	YES	chr8:87511984-87515984
NM_133255	Hook2				YES	YES	YES	chr8:87511984-87515984
NR_156707	Hook2				YES	YES	YES	chr8:87511984-87515984
NM_026760	Trir				YES	YES		chr8:87548231-87552231
NM_008630	Mt2				YES	YES	YES	chr8:96694017-96698017
NM_001357205	Herpud1					YES	YES	chr8:96907828-96911828
NM_022331	Herpud1					YES	YES	chr8:96907828-96911828
NM_008187	Cfap20				YES	YES	YES	chr8:97961269-97957269
NM_173432	Pskh1				YES	YES		chr8:108421873-108425873
NM_176838	Esrp2				YES	YES	YES	chr8:108663374-108659374
NM_001361562	Ist1				YES	YES	YES	chr8:112219694-112215694
NM_028018	Ist1				YES	YES	YES	chr8:112219694-112215694
NR_155034	Ist1				YES	YES	YES	chr8:112219694-112215694
NM_001363380	Zfp821				YES	YES	YES	chr8:112216651-112220651
NM_001363384	Zfp821				YES	YES	YES	chr8:112216651-112220651
NM_001301211	Ap1g1				YES	YES	YES	chr8:112299982-112303982
NM_009677	Ap1g1				YES	YES	YES	chr8:112299982-112303982
NM_001190786	Ddx19b				YES		YES	chr8:113558151-113554151
NM_146217	Aars				YES	YES	YES	chr8:113555241-113559241
NM_001037665	Zfp1				YES	YES	YES	chr8:114164842-114168842

NM_001358993	Zfp1				YES	YES	YES	chr8:114164842-114168842
NM_011742	Zfp1				YES	YES	YES	chr8:114164842-114168842
NR_156445	Zfp1				YES	YES	YES	chr8:114164842-114168842
NR_156446	Zfp1				YES	YES	YES	chr8:114164842-114168842
NM_028131	Cenpn				YES	YES	YES	chr8:119443139-119447139
NM_021441	Taf1c				YES	YES	YES	chr8:122131640-122127640
NM_028883	Tldc1				YES	YES		chr8:122304816-122300816
NM_198671	Gse1				YES		YES	chr8:123010265-123014265
NM_007428	Agt				YES	YES	YES	chr8:127096107-127092107
NM_025615	2810004N23Rik				YES	YES	YES	chr8:127389429-127385429
NM_010322	Gnpat				YES	YES	YES	chr8:127384432-127388432
NM_001310688	Ntpcr				YES	YES	YES	chr8:128255602-128259602
NM_025636	Ntpcr				YES	YES	YES	chr8:128255602-128259602
NM_027823	Arhgap42				YES	YES		chr9:9241513-9237513
NM_001364533	Med17				YES	YES	YES	chr9:15086850-15082850
NM_144933	Med17				YES	YES	YES	chr9:15086850-15082850
NM_010333	S1pr2				YES	YES	YES	chr9:20783737-20779737
NM_010493	Icam1				YES	YES		chr9:20817883-20821883
NM_172763	Zfp809				YES	YES	YES	chr9:22027646-22031646
NR_028420	Zfp809				YES	YES	YES	chr9:22027646-22031646
NM_001164624	Zfp809				YES	YES	YES	chr9:22027655-22031655
NM_020586	Herpud2				YES	YES	YES	chr9:24958780-24954780
NM_009178	St3gal4				YES	YES	YES	chr9:34926949-34922949
NR_029475	4930581F22Rik				YES	YES	YES	chr9:34921812-34925812
NM_212445	Kdelc2				YES	YES	YES	chr9:53189627-53193627
NM_001025375	Wdr61				YES	YES		chr9:54584856-54580856
NM_001025376	Wdr61				YES	YES		chr9:54584856-54580856
NM_023191	Wdr61				YES	YES		chr9:54584856-54580856
NM_172924	Peak1				YES	YES	YES	chr9:56268357-56264357
NM_025812	Hmg20a				YES	YES	YES	chr9:56263925-56267925
NM_007747	Cox5a				YES	YES	YES	chr9:57366538-57370538
NM_001293673	Nptn				YES	YES	YES	chr9:58427546-58431546
NM_001357751	Nptn				YES	YES	YES	chr9:58427546-58431546
NM_009145	Nptn				YES	YES	YES	chr9:58427546-58431546

NR_151824	Nptn				YES	YES	YES	chr9:58427546-58431546
NM_001083927	Tle3				YES	YES	YES	chr9:61217672-61221672
NM_001083928	Tle3				YES	YES	YES	chr9:61217672-61221672
NM_009389	Tle3				YES	YES	YES	chr9:61217672-61221672
NM_018853	Rplp1				YES	YES	YES	chr9:61764817-61760817
NM_172536	Zfp609				YES	YES		chr9:65677871-65673871
NM_026674	Aph1c				YES	YES		chr9:66685013-66681013
NM_001357494	Rnf111				YES	YES		chr9:70353685-70349685
NM_010357	Gsta4				YES	YES		chr9:78037272-78041272
NM_001168240	Irak1bp1				YES	YES	YES	chr9:82720912-82724912
NM_022986	Irak1bp1				YES	YES	YES	chr9:82720912-82724912
NM_011636	Plscr1				YES	YES	YES	chr9:92142531-92146531
NM_001357445	Nmnat3				YES	YES	YES	chr9:98194488-98198488
NM_001357446	Nmnat3				YES	YES	YES	chr9:98194488-98198488
NM_001357449	Nmnat3				YES	YES	YES	chr9:98194488-98198488
NM_001357451	Nmnat3				YES	YES	YES	chr9:98194488-98198488
NM_001357452	Nmnat3				YES	YES	YES	chr9:98194488-98198488
NM_144533	Nmnat3				YES	YES	YES	chr9:98194488-98198488
NM_001311150	Parp3				YES	YES	YES	chr9:106381780-106377780
NM_145619	Parp3				YES	YES	YES	chr9:106381780-106377780
NM_145620	Rrp9				YES	YES	YES	chr9:106377139-106381139
NM_008138	Gnai2				YES	YES	YES	chr9:107540174-107536174
NM_001199217	Slc38a3				YES	YES	YES	chr9:107572230-107568230
NM_023805	Slc38a3				YES	YES	YES	chr9:107572230-107568230
NM_001311156	Tcta				YES	YES		chr9:108210990-108206990
NM_133986	Tcta				YES	YES		chr9:108210990-108206990
NM_001313961	Rhoa				YES	YES		chr9:108206627-108210627
NM_001313962	Rhoa				YES	YES		chr9:108206627-108210627
NM_053216	1700102P08Rik				YES	YES	YES	chr9:108292664-108296664
NM_023247	Ndutf3				YES	YES	YES	chr9:108472267-108468267
NR_029577	Mir191				YES	YES	YES	chr9:108468149-108472149
NR_029947	Mir425				YES	YES	YES	chr9:108468607-108472607
NR_033215	3000002C10Rik				YES	YES	YES	chr9:109736445-109732445
NM_018757	Nme6				YES	YES	YES	chr9:109732807-109736807

NM_001081043	Ptpn23					YES	YES	YES	chr9:110313214-110309214
NM_175380	Gpd1l					YES	YES		chr9:114845605-114841605
NM_001033209	Xylb					YES	YES	YES	chr9:119263998-119267998
NM_001199568	Xylb					YES	YES	YES	chr9:119263998-119267998
NM_001359699	Xylb					YES	YES	YES	chr9:119263998-119267998
NM_028976	Gorasp1					YES	YES	YES	chr9:119849176-119845176
NM_028735	Ttc21a					YES	YES	YES	chr9:119844223-119848223
NM_028894	Lonrf3					YES	YES	YES	chrX:33865903-33869903
NM_029951	C330007P06Rik					YES	YES	YES	chrX:34406741-34402741
NM_138607	Fam50a					YES	YES	YES	chrX:71555871-71559871
NM_008828	Pgk1					YES	YES		chrX:103379938-103383938
NM_001291865	Sat1					YES	YES	YES	chrX:151653492-151649492
NM_009121	Sat1					YES	YES	YES	chrX:151653492-151649492

Appendix Table 2. Primers used for RT-PCR analysis.

Gene		Sequences (5'->3')
<i>TFEB</i> (Human/mouse)	forward	GGTGCAGTCCTACCTGGAGA
	reverse	GTGGGCAGCAAACCTTGTTCC
<i>Tfe3</i>	forward	AGGATCAAAGAGCTGGGCAC
	reverse	CCGGCTCTCCAGGTCTTTG
<i>Rev-erba</i>	forward	CTACTGGCTCCCTCACCCAGGA
	reverse	GACACTCGGCTGCTGTCTTCCA
<i>Bmal1</i>	forward	GGACTTCGCCTCTACCTGTTCA
	reverse	AACCATGTGCGAGTGCAGGCCGC
<i>Clock</i>	forward	CACTCTCACAGCCCCACTGTAC
	reverse	CCCCACAAGCTACAGGAGCAGT
<i>Per2</i>	forward	TGATCGAGACGCCTGTGCTCGT
	reverse	CTCCACGGGTTGATGAAGCTGG
<i>Lc3B</i>	forward	GCTTGCAGCTCAATGCTAAC
	reverse	CCTGCGAGGCATAAACCATGTA
<i>RragD</i>	forward	GCTGGAGAATCTGCTGAACA
	reverse	CACAGCAGAGCTCGTACGTC
<i>Gabarap</i>	forward	CAAAGAGGAGCATCCGTTGAG
	reverse	TTGTCCAGGTCTCCTATCCGAG
<i>CtsL</i>	forward	GTGGACTGTTCTCACGCTCAAG
	reverse	TCCGTCCTTCGCTTCATAGG
<i>Bnip3</i>	forward	TTCCACTAGCACCTTCTGATGA
	reverse	GAACACCGCATTTACAGAACAA
<i>Atg5</i>	forward	AAGTCTGTCTCCGCAGTC
	reverse	TGAAGAAAGTTATCTGGGTAGCTCA
<i>Atg3</i>	forward	GGGTGTAATCACCCCAGAAG
	reverse	TGTTGGACAGTGGTGGACTAA
<i>Atp6v0c</i>	forward	GACTGATGGCATCACCTCTAC
	reverse	CAGGATCATGCCACGAACAGT
<i>Ulk1</i>	forward	AAGTTCGAGTTCTCTCGCAAG
	reverse	CGATGTTTTTCGTGCTTTAGTTCC
<i>Cyp27a1</i>	forward	GTATCTGGCTACCTGCACTTC
	reverse	TCTGGGCTCTTTGAAAGGTG
<i>Crat</i>	forward	AGAGCCTGTTGGCATCCTAACC
	reverse	TTGTCCAGGCACACGGTGAAGA
<i>Npas2</i>	forward	TGGCCTGAGCCTCACCACGA

	reverse	GCAACAGCCTGAGCTGCCGA
<i>Dbp</i>	forward	CTGGCCCGAGTCTTTTTGC
	reverse	CCAGGTCCACGTATTCCACG
<i>Hprt1</i>	forward	CTGGTGAAAAGGACCTCTCGAAG
	reverse	CCAGTTTCACTAATGACACAAACG
<i>Beta2-microglobulin</i>	forward	GGTCTTTCTGGTGCTTGTCT
	reverse	TATGTTTCGGCTTCCCATTCT
<i>Actin</i>	forward	TGTGACGTTGACATCCGTAA
	reverse	GCTAGGAGCCAGAGCAGTAA
<i>RS16</i>	forward	AGGAGCGATTTGCTGGTGTGG
	reverse	GCTACCAGGGCCTTTGAGATG

Appendix Table 3. Primary antibodies used for immuno-blots.

Antigen	Species in which the Ab was raised	Source
TFEB	Rabbit	Bethyl Laboratories
TFE3	Rabbit	Sigma
Beta-ACTIN	Mouse	Novus Biological
GAPDH	Mouse	Santa Cruz
H3	Rabbit	Cell signaling
P-S6	Rabbit	Cell signaling
S6	Rabbit	Cell signaling
LC3A/B	Rabbit	Cell signaling
P62/SQSTM1	Rabbit	MBL International Corporation
GABARAP	Rabbit	Cell signaling
ATG5	Rabbit	Cell signaling
REV-ERB α	Mouse	Santa Cruz
FLAG	Mouse	Sigma

Appendix Table 4: Primers used for ChIP-RT-PCR analysis.

Gene		Sequences (5'->3')
<i>RragD</i> E-box	forward	AGGCTGAGCTGCCTTTCTC
	reverse	CACGTGCATAAACTTCCTTCA
<i>CtsI</i> E-box	forward	CTCGACAACAAGGGCCTATC
	reverse	AGGGCAGGTAGGGGAATCTA
<i>Gabarap</i> E-box	forward	GTGTTGGCACTCCAGCAGTA
	reverse	AGAAAAGGGCGGAGAATCAC
<i>Rev-erba</i> E-box1	forward	AGGACCTCAGAGCACTTTCC
	reverse	ACTGGCATAGCACGGGGATA
<i>Rev-erba</i> E-box2	forward	TCTCTCCTCCCAGCTTGTCT
	reverse	TACTGCTCCGTGGAAGATCA
<i>Rev-erba</i> E-box3	forward	GCTGCTGGAAAAGTGTGTCA
	reverse	AATCTCAACCGCCTTTTGC