results are displayed in the same manner as in figure 5. Data as shown were from 2-3 month old wildtype control and DKO mouse forebrains. Data are presented as means±s.e.m. Unpaired student t-test. \*indicates P<0.05, \*\*indicates P<0.01.

**Supplementary Figure 1** Characterization of cre-recombinase induced gene deletion in DKO mouse brain. **a**, Immunohistochemistry of cre-recombinase staining in cortex (CTX) and hippocampal dentate gyrus (DG) of adult DKO mouse brain showed cre only expressed in NeuN positive mature neurons. Scale bar at bottom right, 100um, applied to all panels. **b**, Southern blot analysis showed functional Dnmt1 2lox allele in control (con) mouse brain of 1 mo, 3 mo, and 4 mo. The deletion happened in the presence of cre-recombinase and led to 1lox recombination null allele as identified in the DKO mutant brain.

**Supplementary Figure 2** Morphology analysis and subgranule zone (SGZ) cell proliferation assay in DKO mouse brain. **a**, Representative dorsal view of one pair of brains from 3 mo control and DKO. Scale bar at bottom right, 3 mm, applied to both panels. **b**, BrdU labeling cell proliferation assay of dentate gyrus subgranule zone showed similar level of cell proliferation between DKO and control mice. Four pairs of 3 month old mice were used. Data are presented as means±s.e.m. P>0.05

**Supplementary Figure 3** Normal basal synaptic transmission in *Dnmt* mutant mice and normal long term plasticity in single *Dnmt* KO mouse brain. **a**, Input-output curves from the DKO, *Dnmt1* SKO as well as wildtype control groups were essentially identical as

shown by plotting the synaptic responses against presynaptic fiber volley amplitudes. **b**, LTP of adult *Dnmt1* SKO was indistinguishable from control mice (P>0.05). fEPSP slopes in control (round mark) versus SKO mice (triangle mark) were recorded 30 min before till 180 min after tetanic stimulation (100Hz, 1sec). Scale bar, 5 msec/1mV. **c**, **d**, No abnormalities of LTD was observed in adult *Dnmt1* SKO (**c**) and *Dnmt3a* SKO (**d**) mice (P>0.05). fEPSP slopes were recorded 12 min before till 60 min after stimulation (1Hz, 15min). Scale bar, 10 msec/0.5mV. Representative recordings are shown in the insets (**b**, **c**, **d**). 28 slices from 9 Con and 11 slices from 4 *Dnmt1* SKO were used in **b**. 10 slices from 5 Con and 6 slices from 3 *Dnmt1* SKO were recorded in **c**. 15 slices from 8 Con and 7 slices from 3 *Dnmt3a* SKO were recorded in **d**. Slice numbers were used for statistical analysis. Data are presented as means±s.e.m. P>0.05

**Supplementary Figure 4** Normal memory formation of *Dnmt1* and *Dnmt3a* SKO mice in Morris water maze test. **a, d,** Escape latency time to find the hidden platform plotted versus training day. Both *Dnmt1* SKO (a) and *Dnmt3a* SKO (d) improved similarly as littermate control mice to find the hidden platform (*Dnmt1* SKO: genotype *F*(1, 253)=0.00, P=0.944; day *F*(11, 253)=17.46, P<0.0001; genotype X day *F*(11, 253)=0.27, P=0.991. *Dnmt3a* SKO: genotype *F*(1, 154)=0.37, P=0.555; day *F*(11, 154)=9.47, P<0.0001; genotype X day *F*(11, 154)=0.23, P=0.995.). **b, e,** Percentage time spent in target quadrant during three individual probe trials. *Dnmt1* SKO (b) and *Dnmt3a* SKO (e) performed as well as the control mice in the target quadrant. **c,** g, The swimming speeds between the groups of *Dnmt1* SKO (b) or *Dnmt3a* SKO (e) with control mice were indistinguishable from each other. 17 control mice and 8 Dnmt1 SKO were used in

figure a-c, 10 control mice and 6 Dnmt3a SKO were used in figure d-f. Data are presented as means±s.e.m. P>0.05

**Supplementary Figure 5** Contextual fear conditioning test in Dnmt single knockouts. **a**, Contexual memory consolidation was normal in Dnmt1 SKO mice when tested immdediately (for 3 min) and 24h later in a conditioning chamber. **b**, Contexual memory consolidation was normal in Dnmt3a SKO mice presentation. 6 mice for Dnmt1 SKO group, 8 mice for Dnmt3a SKO group and 21 control mice were used. Data are presented as means±s.e.m. P>0.05

**Supplementary Figure 6** DKO mouse brain has normal expression of *Reelin*,  $PP1\beta$  and  $PP1\gamma$ . Real time PCR analysis showed no significant expression change of *Reln*,  $PP1\beta$  or  $PP1\gamma$  in DKO hippocampi as compared with control (P>0.05). 7 control and 5 DKO samples were used for this experiment. Data are presented as means±s.e.m. P>0.05

**Supplementary Figure 7** Dnmt single knockout mouse brain did not show significant gene expression change. **a,** Real time PCR analysis showed similar gene expression between Dnmt1 SKO and control (P>0.05). **b,** Real time PCR analysis showed similar gene expression between Dnmt3a SKO and control (P>0.05). 3-4 pairs of samples were used. Data are presented as means±s.e.m.

**Supplementary Figure 8** Stat1 promoter methylation analysis in SKO and proximal region. **a,** No DNA methylation level change was found in Dnmt SKO. The region of interest was shown in Figure 5b. **b,** Bisulfite sequencing of *Stat1* proximal promoter region (-400bp to -750bp) showed no methylation change within DKO as compared with control samples. Data as shown were from 3 pairs of genomic DNAs of 2-3 month old wildtype and DKO mouse forebrains. Schematic gene promoter structure is shown on top with arrow pointing out transcription starting site (+1). 8 CpG site that marked with a vertical slash from -400bp to -750bp were analysed. The results are displayed in the same manner as in Figure 5. Data are presented as means±s.e.m. P>0.05.

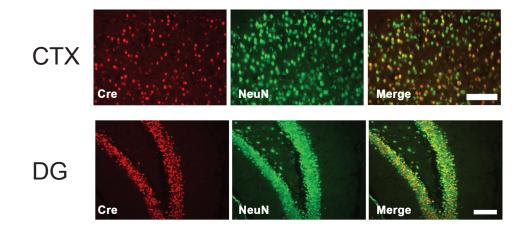
**Supplementary Figure 9** Purity test of FACS sorted NeuN positive and negative nuclei subpopulations. **a,** Representative microscopy picture showed mixed nuclei population before sorting. NeuN positive and negative nuclei populations were separated after FACS sorting. DNA dye Hoechst was used to label all the nuclei. White arrows were used to point out the NeuN positive nuclei or Hoechst positive nuclei in left or right column respectively. **b-e,** Post FACS sorting confirmed the purity of both positive (**d&e**) and negative (**b&c**) populations from either DKO (**c&e**) or Control (**b&d**) samples.

**Supplementary Figure 10** Quantitative analysis of 5-methylcytosine and 5-hydroxymethylcytosine using LC-MS/MS. **a**, No significant difference was found between Dnmt1 or Dnmt3a SKO with control mice. 5-methylcytosine (5mdC) and 5-hydroxymethylcytosine (5hmdC) contents are expressed as the percentage in the total cytosine pool. **b**, Significantly less 5- hydroxymethylcytosine was found in DKO mouse

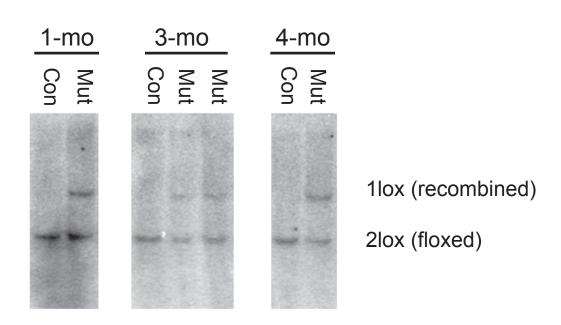
brain. Data are from replicates of 3 separate experiments for Dnmt1 or Dnmt3a SKO and 4 for DKO 3 month old forebrain DNAs. Data are presented as means $\pm$ s.e.m. \* P < 0.05

#### Supplemental Fig1 (Fan et al.)



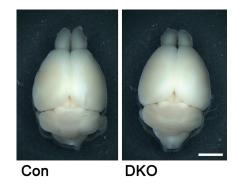


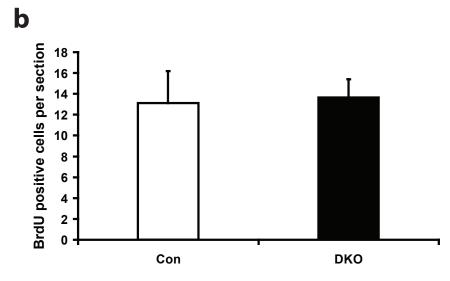




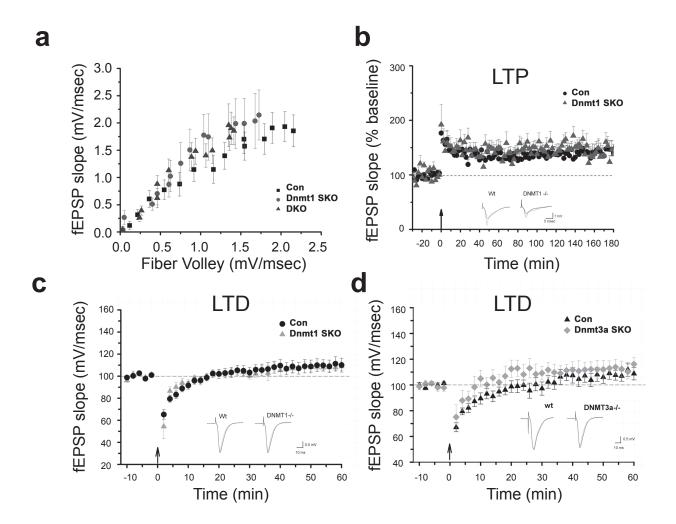
# Supplemental Fig2 (Fan et al.)

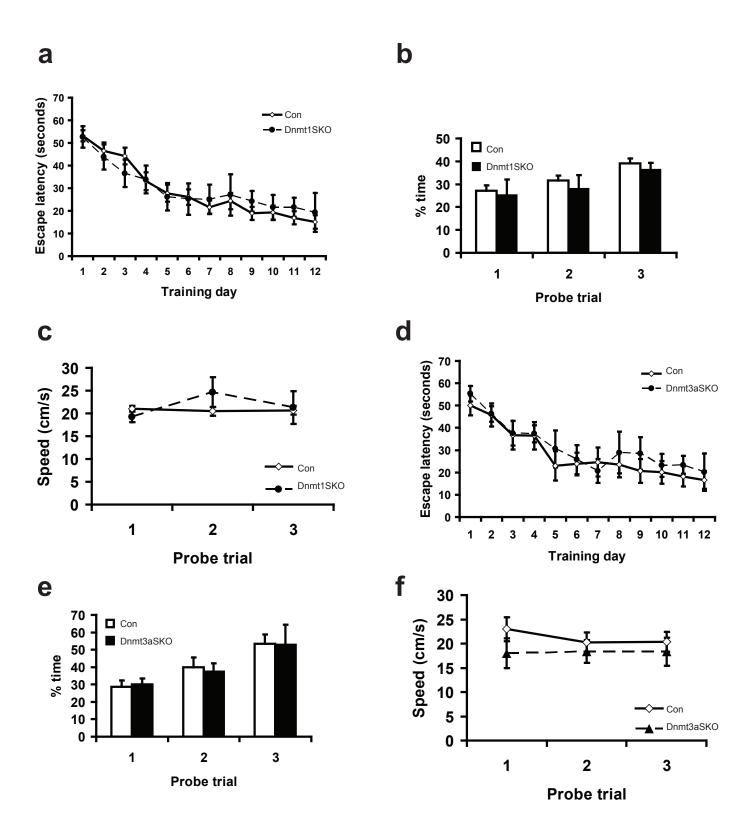
a



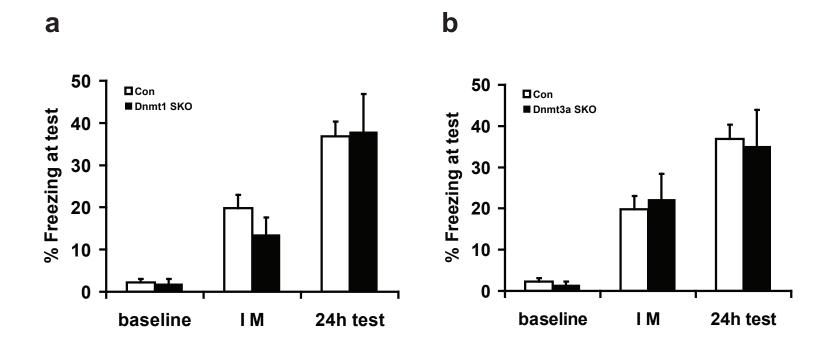


#### Supplemental Fig3 (Fan et al.)

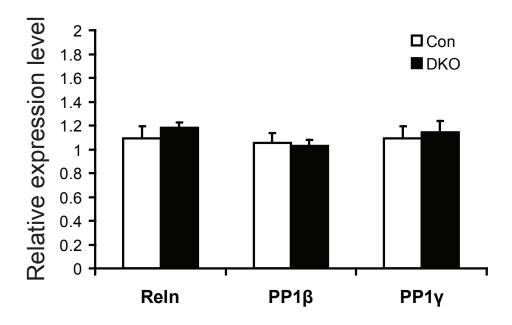




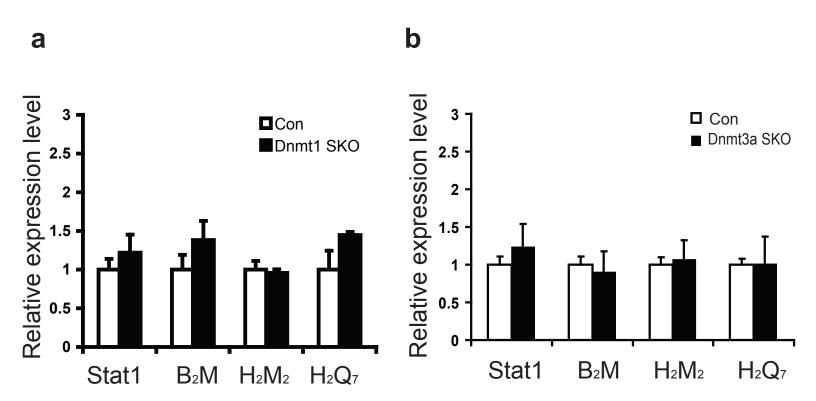
Supplemental Fig5 (Fan et al.)



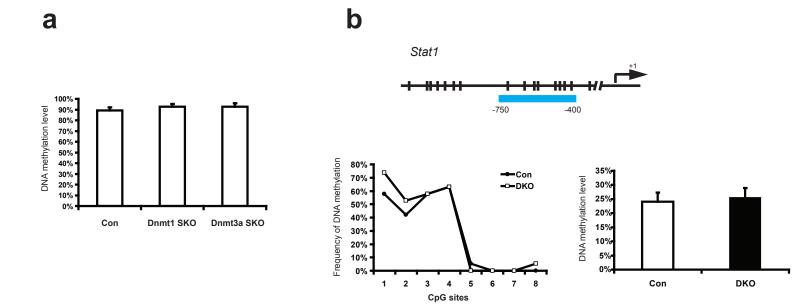
Supplemental Fig6 (Fan et al.)



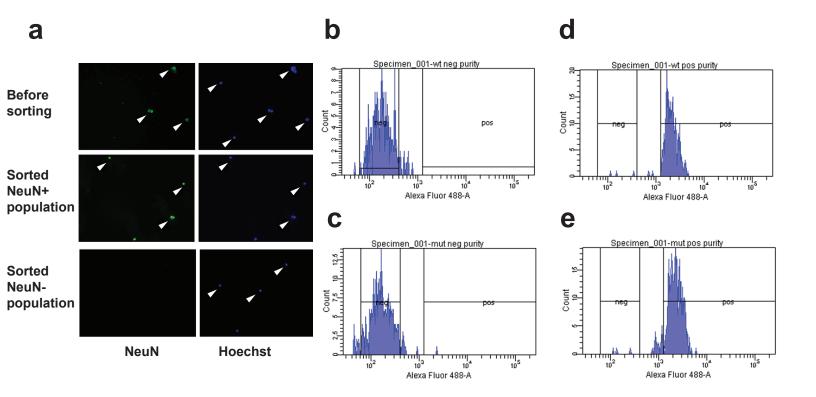
Supplemental Fig7 (Fan et al.)

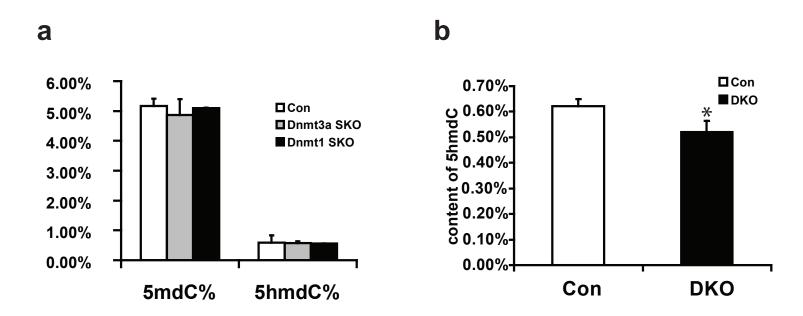


## Supplemental Fig8 (Fan et al.)



### Supplemental Fig9 (Fan et al.)





Supplementary Table 1. List of genes of DKO MeDIP array assay

accessions	GeneName	Description	P value
ref NM_021554 ref 0610012D09Rik-854 ref NM_026701 ref 3110049J22RR-36583 ref 0610038K03Rik-522 ref MM_026701 ref 6101038K03Rik-14*pref 3110049J22RR-37579	0610012D09Rik 0610038K03Rik 0610038K03Rik	PROMOTER PROMOTER	7.936E-03 9.943E-03
ref NM_026701 ref 0610038K03Rik:474 ref 3110049J23Rik:37579	0610038K03Rik	INSIDE	4.698E-03
refiNM_199197irefiNM_025299irefi1110032A13Rik-5267irefiTynl4-965irefiD18Wku98e-1018	1110012J17Rik 1110032A13Rik-Txnl4	PROMOTER DIVERGENT PROMOTER	3.064E-03 5.428E-03
refINM 027880/refi1200003M09Rik:-641	1200003M09Rik 1300017J02Rik	PROMOTER	4.448E-03
ref NM_027918 ref 1300017J02Rik:-397 ref NM_029882tref 1700095N21Rik:-859	1300017J02Rik 1700095N21Rik 2010002N04Rik	PROMOTER PROMOTER	9.476E-03 4.271E-03
ref[NM_029682]ref]1700095N21Rix-659 ref[NM_134133]ref]2010002N04Rix:23	2010002N04Rik	INSIDE	3.907E-03
rel MM_025917 rel 2010315L10Rix:2490 rel Myo9b:97414 rel 9430098E02Rix:-1637 rel M26:11689 rel MM_027930 rel Bclaf1:34562 rel 2610016C23Rix:-727 rel MM_031638 rel MM_008690 rel 2610528M18Rix:-1343 rel Mut:-1149 regcs BC019175:1183	2010315L10Rik 2610016C23Rik	INSIDE PROMOTER	3.565E-03 6.815E-03
ref[NM_031863]ref[NM_008650]ref[2610528M18Rik:-1343]ref[Mut:-1149]mgcs[BC019175:1183	2610528M18Rik-Mut 2810429K17Rik	DIVERGENT_PROMOTER	3.093E-03
	2810441K11Rik	INSIDE PROMOTER	8.355E-03 7.501E-03
ref NM_177307 ref 4732474A20Rik:66			
ref[NM_029061]ref[4930517G15Rik:56]ref[1700008F21Rik:-1716	4833417A11Rik 4930517G15Rik	PROMOTER INSIDE	5.974E-03 2.152E-03
ref NM_027745 ref 4933434G05Rik:-415 ref NM_133680 ref 5730414C17Rik:-446	4933434G05Rik 5730414C17Rik	PROMOTER PROMOTER	3.317E-03 7.790E-03
ref NM_175263 ref 5730993N15Rix-897 ref NM_175204 ref 5830406J20Rix:152 ref Psmb5:-7573 ref Cdh24:15990	5730593N15Rik 5830406J20Rik	PROMOTER INSIDE	5.138E-04 7.198E-03
ref NM_175204 ref 5830406J20Rik:152 ref Psmb5:-7573 ref Cdh24:15990 ref NM_153409 ref A330102K23Rik:298	5830406J20Rik A330102K23Rik	INSIDE	7.198E-03 4.498F-04
ref NM_153409 ref A330102K23Rik:296 ref NM_145969 ref A630054L15Rik:-388	A330102K23Rik A630054L15Rik	INSIDE PROMOTER	4.496E-04 8.673E-03
ref NM_001002771 ref A830005F24Ric:291 ref 1700025J14Rik:-466 ref NM_021370 ref Accn5:-346	A830005F24Rik Accn5	INSIDE PROMOTER	5.418E-03 7.775E-03
ref[NM_178873]ref[Adck2:-606	Adck2	PROMOTER INSIDE	5.133E-03
relijikil, (LC) (21370)peljikocho: 346 relijikil, 1783/206 jadoc 246 relijikil, 1822(28)peljikoda: 249 relijikil, (LC) (2003(28)peljikoda: 248 relijikil, (LC) (2003(28)peljikoda: 248 relijikil, 1727(34)peljikoda: 1783 (10)pecijikod 10277-813	Adm2 Adora2a	INSIDE	5.133E-03 6.181E-04 7.357E-03
ref NM_023328 ref Agtpbp1:-483	Agtpbp1 Al449175	PROMOTER INSIDE	5.924E-03 3.073E-03
Tell Nat 17879 [ref]Alds12:-266	Al452372	PROMOTER	7.729E-03
ref NM_153543 ref Aldh112:-266 ref NM_009660 ref Alox15:-300	Aldh1l2 Alox15	PROMOTER PROMOTER	7.000E-06 1.796E-03
refINM 178058lrefIAmid:-421	Amid	PROMOTER	8 766F-03
ref[NM_009698]ref[Ris2:9522]ref[Aprt:-676]ref[Galns:33667 ref[NM_207260]ref[B230218L05Rik:-63002	Aprt B230218L05Rik	PROMOTER PROMOTER	3.194E-03 6.170E-03
ref NM_15325 ref Bb4:-669 ref NM_145601 ref NM_199455 ref BC016201:-4128 ref 1700055M20Rik:-801	Bbs4	PROMOTER	7.998E-03
ref NM_145601 ref NM_199455 ref BC016201:-4128 ref 1700055M20Rik:-801	BC016201-1700055M20Rik BC016235	DIVERGENT_PROMOTER PROMOTER	9.032E-03 6.705E-03
ref[NM_145343p]ref[NM_026211 mgcs BC025483:16	BC021381-Tmed9		
renjavi_140001/jenijavi_149001/jenijavi_14100000000000000000000000000000000000	BC062951 Bxdc1	PROMOTER PROMOTER	6.499E-03 3.681E-03
ref MM_09777 ref C1q5·348 ref C1q3;6348 ref C1qa:12235 ref MM_178877 ref C80638:-28 ref Dhrs6:26427	C1qb C80638	PROMOTER INSIDE	9.266E-03 5.775E-03
ref NM_178877 ref C80638:-28 ref Dhrs6:26427 ref NM_022021 ref Cables1567	C80638 Cables1	PROMOTER PROMOTER	5.775E-03 2.160F-03
ref NM_022021 ref Cables1:-567 ref NM_009921 ref Nme8:17995 ref Camp:-511	Camp	PROMOTER PROMOTER	2.160E-03 3.437E-03
ref NM_022309 ref Cbfb:-493 ref NM_032465 ref Cd96:-173	Cbfb Cd96	PROMOTER PROMOTER	6.694E-03 7.789F-04
ref wM_09880 ref NM_008809 ref Cdx1-8108 ref Pdgfrb-1133 mgcs BC049719:4	Cdx1-Pdgfrb chr11:30367401-30367341	DIVERGENT_PROMOTER	7.488E-03 2.848E-03
mgcs BC049719:4 ref A830005F24Rik:24332 ref AW456874:87700	cnr11:30367401-30367341 chr13:48033855-48033795	Unknown Unknown	2.848E-03 5.860E-03
	chr13:48033855-48033795 chr16:78005086-78005146 chr3:118777552-118777612	Unknown Unknown	5.860E-03 4.750E-03 4.439E-03
mgcs BC071238:330	chr3:118777552-118777612 chr7:4619247-4619307 chr8:123241969-123242029	Unknown Unknown	5.334E-03
mgcs BC024705:-1954 mgcs BC036300:-1121	chr8:123241969-123242029	Unknown	
imposjecu / 1:28-3:30 mposjellC0247078-1964/imposjellC008300:-1121 mposjellC02470764/jet/Cnkt-397 refijNM_0.09971/jet/Emad3:17799/refijCdd3:-960/jet/[Thrap4:29015 refijNM_133695/jet/[Cyp2d13:264	Crkl Csf3	PROMOTER PROMOTER	9.268E-03 2.519E-03
ref NM_133695 ref Cyp2d13:264	Cyp2d13	INSIDE PROMOTER	3.431E-03 2.677E-03
ref[NM_029653]ref[Dapk1:-1195 ref[NM_021294]ref[Dbil5:136]ref[Gemin4:-251]ref[2700085E05Rii::25893	Dapk1 Dbil5	INSIDE	1.979E-04
ref[NM_019813]ref[Dbn1:-523 ref[NM_199079]ref[Ddx17:-923	Dbn1 Ddx17	PROMOTER PROMOTER	5.492E-03 1.410E-03
rel[viii].1990/9[rel[Dax17:323] rel[NM_01028]rel[Ddx18:1277[mgcs]BC083059:-307 rel[NM_007857[rel]Dhh:-2887[rel]D15Erd735e:16673	Ddx3x	INSIDE	1.585E-03
ref NM_007857 ref Dhh:-2887 ref D15End735e:16673	Dhh Dsc2	PROMOTER INSIDE	1.369E-04 8.275E-04
rei MA_013605 rei Dex2:115 mgcs BC057867:-105 rei NM_177020 rei E030011005Ric-525 rei NM_199307 rei Eco1:-406	E030011O05Rik	PROMOTER PROMOTER	6.565E-03 4.972E-03
ref NM_199307 ref Ece1:-406	Ece1 Eif2c2	PROMOTER PROMOTER	4.972E-03
	Epor	PROMOTER	7.601E-04 8.685E-03
ref NM_028039 ref NM_145944 ref Esco2-3426 ref 2610528H13Rik:-67	Esco2-2610528H13Rik F11	DIVERGENT_PROMOTER INSIDE	9.638E-03 4.007E-03
renjwi_czoucopreni=11.22/enjwico1147508  renjwi_czoucopreni=11.22/enjwico147508  renjwi_12.55573/enji=1800.045F16864-460  renjwi_12.55573/enji=1800.45F16864-1814  renjwi_12.55573/enji=1800.4_1814  renjwi_12.555	F830045P16Rik	PROMOTER PROMOTER	3.645E-03 8.462E-03
ref NM_153573 ref Fkbp14:-1814 ref NM_173430 ref NM_133789 ref Ekro-147 ref Strod-815	Fkbp14 Fkrp-Stm4	PROMOTER DIVERGENT PROMOTER	8.462E-03
ref[NM_008079]ref[NM_008152]ref[Galc:-8279[ref]Gpr65:-1040	Galc-Gpr65	DIVERGENT_PROMOTER DIVERGENT_PROMOTER	6.526E-03 6.492E-03
ref NM_144560 ref 2210403B10Rik:8476 ref Gas2f1:-1752 ref Ewsr1:32474 ref NM_008094 ref Gas=671 ref Mtx1:11837 ref NM_13859 ref Gid=-1172	Gas2l1 Gba	PROMOTER PROMOTER PROMOTER	4.536E-03 9.242E-04 3.681E-04
ref NM_138595 ref Gldc:-1172	Gldc	PROMOTER	3.681E-04
ref NM_008146 ref Chfr:40189 ref Golga3:-652 ref NM_175500 ref Goc5:-966	Golga3 Gpc5	PROMOTER PROMOTER	4.515E-03 6.902E-03
ref NM_130453 ref Gpha2:174 ref Ppp2r5b:9057	Gpha2	INSIDE PROMOTER	3.492E-03 2.346E-03
refinal, Jud. 4-deptil (Jan. 24) (1997) (199	Gpr44 Gprc6a	PROMOTER	7.600E-03
ref NM_026816 ref Gtf2f2:55665 mgcs BC028748:-7291	Gtf2f2 Gtf2f2	INSIDE INSIDE	5.804E-03 5.695E-03
TellyM_08198[rel[Rdp::168]rel[Re]2:10127[rel[Bing4:702]rel[B3galt4:11446	H2	PROMOTER	8.063E-03
	H2 Has1	INSIDE PROMOTER	5.852E-03 4.077E-03
renjvii	Hmga1l4-Rtkn	DIVERGENT_PROMOTER	7.395E-03
ref NM_145856 ref II17f:-262 ref NM_178258 ref Ifror1:27729 ref II22re2:-2790	II17f II22ra2		
ref NM_013565 ref ltga3:-4221	Itga3	PROMOTER PROMOTER	6.002E-03 6.568E-03
ref NM_008424 ref Rcne1:-329	Kcne1 Kcnk7	PROMOTER PROMOTER	3.434E-04 8.261E-03
ref NM_032396 ref Kremen1:-1326	Kremen1	PROMOTER PROMOTER	4.785E-03 6.515E-03
relivini, gosto-in Soliquinipassi 1.1137 rojenikusii 7:390en (2010). 28 relijikul, (2023)997eilikiremen 1:-1232 relijikul, 200474/jerlikirt2-184-080/jerlikirt2-20-17523 relijikul, 201671/jerlikirta 13.384-jerlijikirta 194-703/jerlikirta 1	Krt2 Krtap13	INSIDE	6.515E-03 3.210E-03
ref NM_013707 ref NM_013713 ref Krtap14:-703 ref Krtap15:-2175	Krtap14-Krtap15	INSIDE DIVERGENT_PROMOTER	3.210E-03 4.009E-03
ref NM_133357 ref Krtcap1:202 ref NM_153069 ref Laf4l:72654 ref Leap2:-357 ref 1500040F11Rik:7328 ref Gdf9:-9891	Krtcap1 Leap2	INSIDE PROMOTER	4.529E-03 8.246E-03
relival155009jett_cate_2_2004jett_cet_27501 relival155009jett_cate_2_2004jett_cet_27601 relival146511jet_cate_2801 relival1073501fff-4671jett_cate_2801 relival1073501fff-4671jett_cate_2801 relival1073501	Lect1 LOC13909	PROMOTER PROMOTER PROMOTER	3.163E-03 1.156E-03
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ref NM_011837 ref Ly6h:-461 ref NM_145428 ref Misr3:290 ref 1810073G14B;k-381	Ly6h Mfap3	PROMOTER INSIDE	1.834E-03 9.418E-03
rel \M_148426 rel \frac{1}{2}3:290 rel  1810073G14Rik:-381 rel \M_181549 rel \frac{1}{2}3:290 rel  1810073G14Rik:-381	Mrcl	PROMOTER	1.231E-03
ref NM_025317 ref NM_018758 ref Matk:10042 ref Mrpl54:-660 ref Apba3:-652 ref Tjp3:23602	Mrpl54-Apba3 Mtmr2	DIVERGENT_PROMOTER PROMOTER	5.861E-03 9.936E-03
reflMAL 10.545/epiloMc2-06.075(epilopthat-1.0042)reflMp56-4-600]reflApba3-652/reflTp3.23002 reflMAL (0.0265)reflMpc78-1.025 reflMAL (0.0265)reflMpc78-1.025 reflMAL (0.0265)reflMpc78-1.025 reflMAL (0.0265)reflMpc78-1.025 reflMAL (0.0265)reflMpc2-02-1.11 reflMAL (0.0265)reflMpc3-03-1.035 reflMAL (0.0265)reflMpc3-03-1.035 reflMAL (0.0265)reflMpc3-03-035 reflMAL (0.0265)reflMpc3-035 reflMAL (0.0265)reflMpc3-035 refl	Myo7a Myoz2		2 230F-03
retjNM_021503jrefjMyo22:-311 refiNM_146302irefjOlfr1461:-159	Olfr1461	PROMOTER PROMOTER	8.446E-03 4.615E-03
ref NM_146466 ref Olfr165:-1110	Olfr165	PROMOTER	4.859E-03 2.682E-03
	Olfr183 Olfr550	PROMOTER PROMOTER	3.693E-03
ref NM_146392 ref Offr720:-680 ref NM_207558 ref Offr750:212	Olfr720 Olfr750	PROMOTER INSIDE	5.654E-03 8.895E-03
rel NM_146392 rel Ollr720-680 rel NM_20758  rel Ollr750-212 rel NM_146777 rel Ollr818-130	Olfr818	PROMOTER	2 387F-03
ref NM_146417 ref Olfr877:-820 ref NM_011028 ref P2rxl1:-668	Olfr877 P2rxl1	PROMOTER PROMOTER	7.698E-03 2.361E-03
refINM_011066/macsIRC049699:-81	Per2	PROMOTER	3.595E-03
	Pi16 Pib5pa-Sepm	PROMOTER DIVERGENT_PROMOTER	6.736E-03 8.783E-03
rel NM_172439 rel NM_053267 rel Pla2g3:16697 rel Pib5pa:-174 ref Sepm:-9890 rel NM_207683 rel Pik3c2g:128270 rel Pik3c2g:-551	Pik3c2g	INSIDE	2.028E-03
refINM_001001983irefIPik4ca:70188imgcsiBC034543:-165	Pik4ca Poldip2	INSIDE INSIDE	6.818E-03 7.963E-03
refINM_026389[ref[Poidin2:4359]ref[A1316787-7968[ref[Tr/fein1-19540	Ppil4	INSIDE	4.260E-03
ref[NM_026389[ref]Poldip2:4359[ref]Ål316787:-7968[ref]Tnfaip1:19540 ref[NM_026141[ref]Ppil4:265	Pten	PROMOTER PROMOTER	6.273E-03 3.861E-03
ref NM_026141 ref Ppi4:265	Pval		3.228E-04
rel NM_02614  rel Ppi4:265 rel NM_009860re Ppen:-4084 rel NM_13318 rel Ppj:-489 rel NM_0245 rel Rapt tb-485	Pygl Rap1b	INSIDE	
refilNI_026141 [refl:Ppid:265 refilNI_026800]refi Pen:-4084 refilNI_033199[refl:Ppid:489 refilNI_024457[refilRep1b:48] refilNI_096268[refilMed:17743]refilResdt1-1057[refi Pemt:70847	Pygl	PROMOTER	7.632E-03
relPMA_02664 1   relPpAs 255 relPMA_03860 relPMA_03860 relPMA_03864 relPMA_03860 relPMA_03860 relPMA_03866 relPMA_03860 relPMA_03860 relPMA_03866 relPMA_03860 relPMA_03860 relPMA_0386	Pygl Rap1b Rasd1 Rshl2 Rtl1	PROMOTER INSIDE PROMOTER	7.632E-03 2.115E-03 8.655E-03
relPM. (265 41 yell Ppl4 265 Hern-Guld Hern-Guld Hern-G	Pygl Rap1b Rasd1 Rshl2 Rtl1 Scd3 Sdha	PROMOTER INSIDE PROMOTER PROMOTER INSIDE	7.632E-03 2.115E-03 8.655E-03 2.930E-03 6.003E-03
relPM. (265 141 pel Ppl-42 455  relPM. (265 141 pel Ppl-42 455  relPM. (265 245 pel Ppl-42 455  relPM. (265 245 pel Ppl-42 455  relPM. (265 245 pel Ppl-42 455 pel Ppl-42 4	Pygl Rap1b Rasd1 Rshl2 Ril1 Scd3 Sdha Sfrs3	PROMOTER INSIDE PROMOTER PROMOTER INSIDE PROMOTER	7.632E-03 2.115E-03 8.655E-03 2.930E-03 6.003E-03 3.490E-03
relPMA_0050141pellph4-205 relPMA_0080201pellph4-205 relPMA_0080201pellpha-1054 relPMA_0080201pellpha-1054 relPMA_0080201pellpha-1054 relPMA_0080201pellpha-1054 relPMA_0080201pellpha-1054 relPMA_0080201pellpha-1054 relPMA_0080201pellpha-1054 relPMA_0080201pellpha-1054 relPMA_0080201pellpha-1054 relPMA_00801pellpha-1054 r	Pygl Rap1b Rasd1 Rash12 Rtl1 Scd3 Scha Sfrs3 Sfrs5 Sh3tc2	PROMOTER INSIDE PROMOTER PROMOTER INSIDE PROMOTER PROMOTER PROMOTER PROMOTER PROMOTER	7.632E-03 2.115E-03 8.655E-03 2.930E-03 6.003E-03 3.490E-03 2.839E-03 4.567E-03
relPMA_005614 juel [Pp44-2056 (mp40A_005602) [mp40A_005602] [mp40	Pygl Rap1b Rasd1 Rsht2 Rti1 Scd3 Sdha Sfra3 Sfra5 Sh3tc2 Sts15a4	PROMOTER INSIDE PROMOTER PROMOTER INSIDE PROMOTER PROMOTER PROMOTER PROMOTER PROMOTER PROMOTER PROMOTER	7.632E-03 2.115E-03 8.655E-03 2.930E-03 6.003E-03 3.490E-03 2.839E-03 4.567E-03 2.908E-03
relPMA_005614 style [Psi4-265 erpiMA_00562] bell per - 0.004 erpiMA_00562[ bell per - 0.004 e	Pygl Raptb Rasd1 Rsh12 Rt11 Sod3 Sofha Sirs5 Sh3tc2 Slc15a4 Slc7a4 Slc7a4	PROMOTER INSIDE PROMOTER PROMOTER INSIDE PROMOTER	7.632E-03 2.115E-03 8.655E-03 2.930E-03 6.003E-03 3.490E-03 4.567E-03 2.908E-03 5.564E-03 2.914E-03
reifMAL (2014-1) per [Pal-4-205 (per 14) A. (2005-1) per [Pal-4-20	Pygl Raptb Rasd1 Rabt1 Rsh2 Rth1 Sod3 Sdha Sifrs3 Sifrs5 Sh3ts2 Sic1564 Sic7a4 Sic041 Sicoq4 Sicoq4	PROMOTER INSIDE PROMOTER PROMOTER INSIDE PROMOTER	7.632E-03 2.115E-03 8.655E-03 2.930E-03 6.003E-03 3.490E-03 2.839E-03 4.567E-03 2.908E-03 5.564E-03 2.914E-03 8.414E-03
reifMAL (2015-14) per [Psi-42-205 per [Psi-ML, 2016-2016-2016-2016-2016-2016-2016-2016-	Pygl Raptb Rasd1 Rsh12 Rt11 Sod3 Sofha Sirs5 Sh3tc2 Slc15a4 Slc7a4 Slc7a4	PROMOTER INSIDE PROMOTER PROMOTER PROMOTER INSIDE PROMOTER	7.632E-03 2.115E-03 8.655E-03 2.930E-03 6.003E-03 3.490E-03 2.839E-03 2.908E-03 5.564E-03 2.914E-03 8.414E-03 6.879E-04
reifMAL 00514 juel Ppi44-205 errifMAL 00504 juel Ppi44-205 errifMAL 00504 juel Ppi44-205 errifMAL 00504 juel Ppi44-205 errifMAL 00504 juel Ppi46-205 errifMAL 00504 juel Ppi46-2054 juel Ppi46	Pygl Rapitb Rapitb Rasidi Rapitb Rasidi Rabit2 Ratidi Rabit2 Ratidi Rabit2 Ratidi Ratidi Rabit2 Schia Schi	PROMOTER INSIDE PROMOTER PROMOTER PROMOTER INSIDE PROMOTER	7.632E-03 2.115E-03 8.655E-03 2.930E-03 6.003E-03 3.490E-03 2.839E-03 2.998E-03 5.564E-03 2.914E-03 8.879E-04 2.336E-03 2.834E-03
reiPM. 0.0502 reiPM. 2005 c. 1 (reiPM. 2005 c. 1	Pygl Raptb Ratel R	PROMOTER INSIDE PROMOTER PROMOTER PROMOTER INSIDE PROMOTER INSIDE INSIDE INSIDE	7.632E-03 8.655E-03 2.930E-03 3.490E-03 2.839E-03 4.567E-03 2.908E-03 2.914E-03 8.474E-03 2.336E-03 2.834E-03 7.871E-03 8.255E-03
reifMAL (2014 1) per Park 4:285 errifMAL (2014 1) per Park 4:285 errifMAL (2014 1) per Park 4:286 e	Pygli Raptib Rap	PROMOTER INSIDE PROMOTER PROMOTER INSIDE PROMOTER INSIDE PROMOTER	7.632E-03 2.910E-03 2.930E-03 3.490E-03 2.839E-03 2.908E-03 2.908E-03 2.914E-03 8.414E-03 2.936E
relRMA_025778/iee/iRM2-243802/iei/Rps48a2-1000 relRMA_184100/iei/RelF3-20205	Pygl Raptb Ratel R	PROMOTER INSIDE PROMOTER PROMOTER PROMOTER INSIDE PROMOTER INSIDE INSIDE INSIDE	7.632E-03 2.910E-03 2.930E-03 3.490E-03 3.490E-03 4.587E-03 2.938E-03 2.914E-03 8.879E-04 2.336E-03 2.836E-03 2.836E-03 2.836E-03 2.836E-03 2.836E-03 2.836E-03 2.836E-03 2.855E-03
### ALL ### AL	Pygli Rapth	PROMOTER INSIDE PROMOTER INSIDE PROMOTER INSIDE PROMOTER PROMOTER INSIDE PROMOTER PROMOTER INSIDE PROMOTER PROMOTER PROMOTER INSIDE PROMOTER PROMOTER PROMOTER INSIDE PROMOTER INSIDE INSIDE INSIDE INSIDE	7.632E-03 8.655E-03 2.930E-03 6.003E-03 3.490E-03 2.839E-03 4.567E-03 5.564E-03 2.914E-03 8.414E-03 4.236E-03 7.871E-03 8.255E-03 9.627E-03 4.317E-03 4.317E-03
reifMAL (2014 I) per I) pek-4-286 errifMAL (2014 I) per I) pek-4-286 errifMAL (2014 I) per II pek-4-286 errifMAL (2014 I) per II pek-1-286 errifMAL (2014 I) per II pek-1-286 errifMAL (2014 I) per II pek-1-105 I pel II pek-1-105 I pel II pek-1-2014 errifMAL (2014 I) pel II pek-1-2014 errifMAL (2015 I) pel II pek-1-2014 errifMAL (2015 I) pel II pek-1-2014 errifMAL (2016 I) pel II pek-1-2014 errifMAL (2016 I) pel II pek-1-2014 errifMAL (2017 I) pel II pek-1-216 errifMAL (2017 I) pel III pek-1-216	Prigil   Registration   Registration	PROMOTER INSIDE INSIDE INSIDE PROMOTER INSIDE IN	7.632E-03 8.655E-03 8.655E-03 6.003E-03 9.900E-03 2.839E-03 2.839E-03 2.908E-03 5.564E-03 5.564E-03 6.679E-04 2.338E-03 3.825E-03 9.627E-03 4.317E-03 3.202E-03 3.202E-03 3.202E-03 3.202E-03 3.202E-03
### ALL ### AL	Pygl Reptil Reptil Reptil Reptil Reptil Resid Sods Sods Sods Sods Sods Sods Sods Sod	PROMOTER INSIDE	7.632E-03 8.655E-03 8.655E-03 6.003E-03 6.003E-03 2.909E-03 2.908E-03 2.908E-03 2.914E-03 2.914E-03 2.914E-03 2.634E-03 2.634E-03 3.625E-03 4.748E-03 3.202E-03 3.202E-03 7.778E-03 9.042E-03
### ALL DOS-141 pell-phi-4-235  #### ALL DOS-141 pell-phi-4-235  ##### ALL DOS-141 pell-phi-4-235  ##### ALL DOS-141	Pygl Regular R	PROMOTER NISIGE PROMOTER NISIGE PROMOTER PROMOTE	7.632E-03 2.15E-03 8.655E-03 8.655E-03 8.605E-03 6.003E-03 8.003E-03 8.405E-03 2.908E-03 2.908E-03 2.908E-03 2.908E-03 2.908E-03 2.908E-03 2.908E-03 2.908E-03 3.002E-03 3.002E-03 3.002E-03 3.002E-03 9.002E-03 9.002E-03 9.002E-03 9.002E-03
### AUTO 15-01-15 (1997) PM-2-205 ### AU	Pygl Rept Rept Rept Rept Rept Rept Rept Rept	PROMOTER NASIGE PROMOTER PROMO	7.632E-03 8.655E-03 8.655E-03 8.655E-03 8.600E-03 8.600E-03 8.600E-03 8.400E-03 8.400E
reifMAL (2014 I jue i ju	Pygl Regular R	PROMOTER NISIGE PROMOTER NISIGE PROMOTER PROMOTE	7.632E-03 8.655E-03 8.655E-03 8.655E-03 8.600E-03 8.000E-03 8.000E