**Text summary - Supplementary Figure 1**

Complete 1549 bp long alignment of the COI gene fragment including 26 new sequences (MN699102–MN699127) of *Melolontha melolontha* and *M. hippocastani*, 26 reference sequences of *M. melolontha*, twelve of *M. hippocastani* and two of *M. pectoralis* retrieved from the GenBank and BOLDSYSTEMS databases. SNP sites (S) between *M. melolontha* and *M. hippocastani* and the three SNP primers positions are shown.

**Supplementary Figure 1**

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 5 15 25 35 45 55 65

Ap\_JQ990979.1 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mh\_MN699103 ATTTTCAACA AATCACAAGG ATATCGGAAC ACTCTATTTT CTATTTGGCA GCTGAGCTGG AATAGTCGGA

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Mm\_MH115534 ---------- ---------- ---------- ---------- ---------- ---------- --------GA

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SNP2(30nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

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SNPs\_(Mn & Mm) ---------- ---------- ---S------ --S-----S- -S------S- ---------- --------S-

SNP1(35nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- --------St

SNP2(30nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mh\_MN699112 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mp\_HM120752 ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNPs\_(Mn & Mm) ---------- ---------- --S------- ---------- ---------S ---------- ----------

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SNP2(30nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mh\_MN699111 ATTCGGTAAC TGACTCGTAC CCTTAATACT TGGGGCCCCT GATATAGCAT TTCCTCGAAT AAACAACATA

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Mm\_MN699116 ATTTGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAATATA

Mm\_MN699127 ATTTGGCAAT TGACTTGTCC CTTTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAATATA

Mm\_MN699121 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_MN699122 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_MN699123 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_MN699124 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_MN699119 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_MN699120 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_MN699125 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_MN699126 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_MN699117 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_MN699118 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_AY090505 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_AY734989 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_EF487767 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_GU201597 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295258 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_DQ295259 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295260 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295261 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295262 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295263 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295265 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295267 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120753 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120754 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120755 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_KU906196 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_KU906488 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_KU907482 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_KU908422 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_KU908830 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_KU917860 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_KU914292 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_KU909797 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_KU911750 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mm\_JN033793 ATTTGGTAAT TGGCTTGTCC CCTTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAATATA

Mm\_MH115534 ATTCGGCAAT TGACTTGTCC CTCTAATACT CGGCGCCCCT GATATAGCAT TCCCCCGAAT AAATAACATA

Mp\_HM120751 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mp\_HM120752 ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNPs\_(Mn & Mm) ------S--S -----S--S- -S-------- S--S------ ---------- -S--S----- ---S------

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 285 295 305 315 325 335 345

Ap\_JQ990979.1 TTTGACTACT ACCTCCTTCT TTAACTTTAC TATT----AA TAAGAAGAAT AGTAGAAAGA GGAGCAGGAA

Mh\_MN699102 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_MN699103 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_MN699104 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_MN699105 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_MN699106 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_MN699107 ---------- -------CCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_MN699108 ---------- ---------- -----TAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_MN699109 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_MN699110 AGATTCTGGT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_MN699111 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_MN699112 ---------- ------CCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TATCGAAAAT GGAGCAGGAA

Mh\_MN699113 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGGGCAGGAA

Mh\_MN699114 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_KX087316 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_HM120756 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mh\_HM120757 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mh\_KJ965491 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_KJ962598 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_KJ966254 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_KJ963310 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_KJ962970 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_KJ964490 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTC------ ----------

Mh\_KM448393 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_HQ954313 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

Mh\_HQ954314 AGATTCTGAT TACTCCCCCC ATCACTAAGC CTTCTTCTCA TAAGAAGACT TGTCGAAAAT GGAGCAGGAA

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Mm\_MN699127 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTCA TAAGAAGATT AGTTGAAAAC GGCGCAGGAA

Mm\_MN699121 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

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Mm\_MN699120 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

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Mm\_MN699126 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_MN699117 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_MN699118 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_AY090505 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_AY734989 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_EF487767 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_GU201597 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295258 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_DQ295259 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295260 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295261 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mm\_DQ295265 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295267 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120753 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120754 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120755 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_KU906196 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_KU906488 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_KU907482 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_KU908422 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_KU908830 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_KU917860 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_KU914292 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_KU909797 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_KU911750 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mm\_JN033793 AGATTTTGAC TACTCCCTCC GTCCTTAAGA CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGCGCAGGAA

Mm\_MH115534 AGATTTTGAC TACTCCCCCC ATCCTTAAGC CTTTTACTTA TAAGAAGATT AGTTGAAAAC GGTGCAGGAA

Mp\_HM120751 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mp\_HM120752 ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNPs\_(Mn & Mm) -----S---S ---------- ---SS----- ---S-S---- --------S- S--S-----S ----------

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 355 365 375 385 395 405 415

Ap\_JQ990979.1 CTGGATGAAC TGTTTACCCA CCCCTTTCAT CTAATATTGC TCACGGAGGA TCATCTGTTG ATTTAGCAAT

Mh\_MN699102 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699103 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699104 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699105 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699106 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699107 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699108 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699109 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699110 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699111 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699112 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699113 CAGGCTGAAC AGTCTATCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_MN699114 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_KX087316 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_HM120756 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mh\_HM120757 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mh\_KJ965491 CAGGCTGAAC AGTCTACCCT CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_KJ962598 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_KJ966254 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_KJ963310 CAGGCTGAAC AGTCTACCCT CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_KJ962970 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_KJ964490 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mh\_KM448393 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_HQ954313 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mh\_HQ954314 CAGGCTGAAC AGTCTACCCC CCCCTCTCAT CAAATATCGC CCATAGAGGA GCATCTGTTG ACTTAGCAAT

Mm\_MN699115 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGG GCCTCAGTTG ACTTAGCAAT

Mm\_MN699116 CCGGTTGAAC AGTTTACCCA CCACTCTCAT CAAATATTGC CCATAGAGGG GCCTCAGTTG ACTTAGCAAT

Mm\_MN699127 CCGGTTGAAC AGTTTACCCA CCACTCTCAT CAAATATTGC CCATAGAGGG GCCTCAGTTG ACTTAGCAAT

Mm\_MN699121 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_MN699122 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

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Mm\_MN699124 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

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Mm\_MN699120 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_MN699125 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_MN699126 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_MN699117 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_MN699118 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_AY090505 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_AY734989 ---------- ---------- ---------- ---------- ------AGGA GCCTCAGTTG ACTTAGCAAT

Mm\_EF487767 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_GU201597 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295258 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_DQ295259 ---------- ---------- ---------- ---------- ---------- -----AGTTG ACTTAGCAAT

Mm\_DQ295260 ---------- ---------- ---------- ---------- ---------- GCCTCAGTTG ACTTAGCAAT

Mm\_DQ295261 ---------- ---------- ---------- ---------- -------GGA GCCACAGTTG ACTTAGCAAT

Mm\_DQ295262 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295263 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295265 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295267 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120753 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120754 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120755 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_KU906196 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_KU906488 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_KU907482 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_KU908422 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGG GCCTCAGTTG ACTTAGCAAT

Mm\_KU908830 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_KU917860 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGG GCCTCAGTTG ACTTAGCAAT

Mm\_KU914292 CCGGTTGAAC AGTTTACCCA CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_KU909797 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_KU911750 CCGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_JN033793 CCGGTTGAAC AGTTTACCCA CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mm\_MH115534 CAGGTTGAAC AGTTTACCCG CCACTCTCAT CAAATATTGC CCATAGAGGA GCCTCAGTTG ACTTAGCAAT

Mp\_HM120751 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mp\_HM120752 ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNPs\_(Mn & Mm) -S--S----- ---S------ --S------- -------S-- ---------- --S--S---- ----------

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 425 435 445 455 465 475 485

Ap\_JQ990979.1 TTTTAGCCTT CATCTAGCAG GAATTTCATC AATTTTAGGT GCTGTAAATT TTATTTCTAC AGTAATTAAT

Mh\_MN699102 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_MN699103 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_MN699104 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_MN699105 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_MN699106 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_MN699107 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_MN699108 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_MN699109 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

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Mh\_MN699111 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACCAC AGTAATTAAC

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Mh\_MN699113 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_MN699114 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_KX087316 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_HM120756 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mh\_HM120757 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mh\_KJ965491 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_KJ962598 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_KJ966254 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_KJ963310 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_KJ962970 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TCATTACTAC AGTAATTAAC

Mh\_KJ964490 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mh\_KM448393 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_HQ954313 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mh\_HQ954314 CTTTAGACTA CACTTAGCAG GAATTTCCTC TATTTTAGGA GCAGTAAATT TTATTACTAC AGTAATTAAC

Mm\_MN699115 CTTTAGATTA CATTTAGCCG GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

Mm\_MN699116 CTTTAGATTA CATTTAGCCG GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

Mm\_MN699127 CTTTAGATTA CATTTAGCCG GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

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Mm\_MN699117 CTTTAGATTA CATTTAGCCG GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

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Mm\_AY090505 ---------- ---------- ---------- -----TAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

Mm\_AY734989 CTTTAGATTA CATTTAGCCG GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

Mm\_EF487767 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_GU201597 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295258 CTTTAGATTA CATTTAGCCG GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

Mm\_DQ295259 CTTTAGATTA CATTTAGCCG GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

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Mm\_DQ295261 CTTTAGATTA CATTTAGCCG GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

Mm\_DQ295262 ---------- ---------G GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

Mm\_DQ295263 ---------- ---------G GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

Mm\_DQ295265 ---------- ---------- -AATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

Mm\_DQ295267 ------ATTA CATTTAGCCG GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

Mm\_HM120753 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120754 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120755 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mm\_KU906488 CTTTAGATTA CATTTAGCCG GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

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Mm\_MH115534 CTTTAGATTA CATTTAGCCG GAATCTCTTC CATTCTAGGA GCAGTAAATT TTATTACTAC AGTAATCAAC

Mp\_HM120751 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mp\_HM120752 ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNPs\_(Mn & Mm) -------S-- --S-----S- ----S--S-- S---S----- ---------- ---------- ------S---

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 495 505 515 525 535 545 555

Ap\_JQ990979.1 ATACGATCTA GAGGTATATC ATTTGATAAA ATACCTTTAT TCGTTTGATC TGTAGCTATT ACAGCTCTTC

Mh\_MN699102 ATACGATCTA CGGGAATAAC CTTTGACCGT ATACCCTTAT TTGCCTGATC TGTTGCCCTA ACTGCCCTTC

Mh\_MN699103 ATACGATCTA CGGGAATAAC CTTTGACCGT ATACCCTTAT TTGCCTGATC TGTTGCTCTA ACTGCCCTTC

Mh\_MN699104 ATACGATCTA CGGGAATAAC CTTTGACCGT ATACCCTTAT TTGCCTGATC TGTTGCTCTA ACTGCCCTTC

Mh\_MN699105 ATACGATCTA CGGGAATAAC CTTTGACCGT ATACCCTTAT TTGCCTGATC TGTTGCTCTA ACTGCCCTTC

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Mh\_KX087316 ATACGATCTA CGGGAATAAC CTTTGACCGT ATACCCTTAT TTGCCTGATC TGTTGCTCTA ACTGCCCTTC

Mh\_HM120756 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mh\_HM120757 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mh\_KJ962598 ATACGATCTA CGGGAATAAC CTTTGACCGT ATACCCTTAT TTGCCTGATC TGTTGCTCTA ACTGCCCTTC

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Mh\_KJ962970 ATACGATCTA CGGGAATAAC CTTTGACCGT ATACCCTTAT TTGCCTGATC TGTTGCTCTA ACTGCCCTTC

Mh\_KJ964490 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mh\_HQ954313 ATACGATCTA CGGGAATAAC CTTTGACCGT ATGCCCTTAT TTGCCTGATC TGTTGCTCTA ACTGCCCTTC

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Mm\_AY734989 ATACGTTCCA AAGGAATAAC CTTTGATCGT ATACCCCTTT TTGTCTGATC TGTCGCCTTA ACTGCCCTTC

Mm\_EF487767 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_GU201597 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_DQ295258 ATACGTTCCA AAGGAATAAC CTTTGATCGT ATACCCCTTT TTGTCTGATC TGTCGCCTTA ACTGCCCTTC

Mm\_DQ295259 ATACGTTCCA AAGGAATAAC CTTTGATCGT ATACCCCTTT TTGTCTGATC TGTCGCCTTA ACTGCCCTTC

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Mm\_HM120753 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mm\_MH115534 ATACGTTCCA AAGGAATAAC CTTTGATCGT ATACCCCTTT TTGTCTGATC TGTCGCCTTA ACTGCCCTTC

Mp\_HM120751 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mp\_HM120752 ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNPs\_(Mn & Mm) -----S--S- -S-------- ------S--- ------S-S- ---S------ ---S--SS-- ----------

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 565 575 585 595 605 615 625

Ap\_JQ990979.1 TTCTTCTTTT ATCTCTTCCA GTTTTAGCTG GAGCTATTAC AATACTTTTA ACTGATCGAA ATTTAAATAC

Mh\_MN699102 TTCTCTTACT TTCCCTGCCA GTTCTGGCAG GAGCTATTAC AATACTTTTA ACTGACCGAA ATATTAATAC

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Mh\_HM120756 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mh\_HM120757 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mh\_KJ962598 TTCTCTTACT TTCCCTGCCA GTTCTGGCAG GAGCTATTAC AATACTTTTA ACTGACCGAA ATATTAATAC

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Mh\_KJ962970 TTCTCTTACT TTCCCTACCA GTTCTGGCAG GAGCTATTAC AATACTTTTA ACTGACCGAA ATATTAATAC

Mh\_KJ964490 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mm\_EF487767 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_GU201597 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mm\_DQ295259 TCCTTTTACT TTCCTTACCA GTTTTAGCAG GAGCTATCAC AATACTCTTA ACTGACCGTA ATATTAACAC

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Mm\_HM120753 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120754 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mp\_HM120751 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mp\_HM120752 ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNPs\_(Mn & Mm) -S--S----- ----S----- ---S-S---- -------S-- ------S--- --------S- -------S--

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 635 645 655 665 675 685 695

Ap\_JQ990979.1 TTCATTTTTT GACCCAGCAG GTGGAGGAGA CCCAATTCTA TACCAACATT TATTTTGATT TTTTGGTCAT

Mh\_MN699102 TTCTTTTTTT GATCCAGCAG GTGGTGGAGA CCCAATTCTA TATCAACATT TATTTTGATT TTTTGGTCAC

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Mh\_KJ966254 TTCTTTTTTT GATCCAGCAG GTGGTGGAGA CCCAATTCTA TATCAACATT TATTT----- ----------

Mh\_KJ963310 TTCTTTTTTT GATCCAGCAG GTGGTGGAGA CCCAATTCTA TATCAACATT TATTT..... ..........

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Mh\_KJ964490 ---------- ---------- ---------- ---------- ---------- ---------- ----------

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Mh\_HQ954313 TTCTTTTTTT GATCCAGCAG GTGGTGGAGA CCCAATTCTA TATCAACATT TATTT..... ..........

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Mm\_DQ295265 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTCTGATT TTTTGGCCAT

Mm\_DQ295267 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTCTGATT TTTTGGCCAT

Mm\_HM120753 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120754 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_HM120755 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_KU906196 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTC..... ..........

Mm\_KU906488 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTC..... ..........

Mm\_KU907482 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTC..... ..........

Mm\_KU908422 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTC..... ..........

Mm\_KU908830 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTC..... ..........

Mm\_KU917860 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTC..... ..........

Mm\_KU914292 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTC..... ..........

Mm\_KU909797 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTC..... ..........

Mm\_KU911750 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTC..... ..........

Mm\_JN033793 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACAC- ---------- ----------

Mm\_MH115534 TTCTTTTTTT GACCCAGCAG GAGGGGGAGA TCCAATTTTA TACCAACACT TATTCTGATT TTTTGGTCAC

Mp\_HM120751 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mp\_HM120752 ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNPs\_(Mn & Mm) ---------- --S------- -S-------- S------S-- --S-----S- ----S----- ------S--S

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 705 715 725 735 745 755 765

Ap\_JQ990979.1 CCAGAAGTAT ATATTTTAAT TCTTCCAGGA TTTGGTATAA TTTCACATAT TATTAGACAA GAAAGTGGAA

Mh\_MN699102 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699103 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699104 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699105 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699106 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699107 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699108 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699109 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699110 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699111 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699112 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699113 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_MN699114 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_KX087316 CCAGAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_HM120756 ---GAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_HM120757 ---GAAGTTT ATATTTTAAT TCTCCCAGGA TTTGGAATAA TTTCCCACAT CATTAGACAA GAAAGTAACA

Mh\_KJ965491 ---------- ---------- ---------- ---------- ---------- ------.... ..........

Mh\_KJ962598 ---------- ---------- ---------- ---------- ---------- ------.... ..........

Mh\_KJ966254 ---------- ---------- ---------- ---------- ---------- ------.... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 ---------- ---------- ---------- ---------- ---------- ---------. ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCACAT TATCAGACAA GAAAGTAATA

Mm\_MN699116 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCACAT TATCAGACAA GAAAGTAATA

Mm\_MN699127 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCACAT TATCAGACAA GAAAGTAATA

Mm\_MN699121 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_MN699122 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_MN699123 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_MN699124 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_MN699119 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_MN699120 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_MN699125 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_MN699126 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_MN699117 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_MN699118 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_AY090505 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_AY734989 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_EF487767 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_GU201597 CCCGAAGTTT ATATTTTAAT CCGCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_DQ295258 CCCGAAGTTT ATATTTTAAT ---------- ---------- ---------- ------.... ..........

Mm\_DQ295259 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_DQ295260 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_DQ295261 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_DQ295262 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_DQ295263 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_DQ295265 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_DQ295267 CCCGAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_HM120753 ---GAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_HM120754 ---GAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_HM120755 ---GAAGTTT ATATTTTAAT CCTCCCAGGA TTTGGTATAA TTTCCCATAT TATCAGACAA GAAAGTAATA

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 CC........ .......... .......... .......... .......... .......... ..........

Mp\_HM120751 ---GAAGTTT ATATTTTAAT CCTGCCAGGA TTTGGTATAA TTTCCCATAT TATTAGGCAA GAAAGTAATA

Mp\_HM120752 ---GAAGTTT ATATTCTAAT TCTCCCAGGA TTCGGAATAA TTTCTCACAT TGTTAGGCAA GAAAGCAATA

SNPs\_(Mn & Mm) --S------- ---------- S--------- -----S---- ---------- S--S------ --------S-

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- --------Sa

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 775 785 795 805 815 825 835

Ap\_JQ990979.1 AAAAGGAAAC CTTTGGGACT TTAGGTATAA TTTATGCTAT AATAGCAATT GGTCTTTTAG GATTTGTTGT

Mh\_MN699102 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699103 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699104 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699105 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699106 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699107 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699108 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699109 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699110 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699111 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699112 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699113 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_MN699114 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_KX087316 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_HM120756 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_HM120757 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTATGCCAT AATAGCCATT GGTTTATTAG GCTTTATTGT

Mh\_KJ965491 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962598 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ966254 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 .......... .......... .......... .......... .......... .......... ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699116 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699127 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699121 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699122 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699123 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699124 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699119 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699120 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699125 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699126 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699117 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_MN699118 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_AY090505 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG ----------

Mm\_AY734989 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_EF487767 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_GU201597 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_DQ295258 .......... .......... .......... .......... .......... .......... ..........

Mm\_DQ295259 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_DQ295260 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_DQ295261 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_DQ295262 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_DQ295263 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_DQ295265 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_DQ295267 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_HM120753 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_HM120754 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_HM120755 AAAAGGAAAC ATTTGGCACT TTAGGGATAA TCTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120751 AAAAGGAAAC ATTTGGCACT TTAGGAATAA TTTACGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

Mp\_HM120752 AAAAGGAAAC ATTTGGTACT TTAGGAATAA TTTATGCTAT AATAGCCATT GGACTATTAG GATTTATTGT

SNPs\_(Mn & Mm) ---------- ---------- ---------- -S-----S-- ---------- --SS------ -S--------

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV aaaaggaaac atttggcact ttaggYata. .......... .......... .......... ..........

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 845 855 865 875 885 895 905

Ap\_JQ990979.1 ATGAGCACAC CATATATTTA C-TGTAGGAA TAGATGTTGA TACTCGAGCC TACTTTACTT CAGCAACTAT

Mh\_MN699102 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699103 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699104 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699105 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699106 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699107 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699108 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699109 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699110 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699111 ATGGGCCCAC CATATATTCA CCTGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699112 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699113 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_MN699114 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_KX087316 ATGGGCCCAC CATATATTTA C-TGTAGGTA TAGATGTCGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_HM120756 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_HM120757 ATGGGCCCAC CATATATTCA C-TGTAGGTA TAGATGTTGA TACTCGAGCC TACTTTACCT CAGCAACCAT

Mh\_KJ965491 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962598 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ966254 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 .......... .......... .......... .......... .......... .......... ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699116 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699127 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699121 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699122 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699123 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699124 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699119 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699120 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699125 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699126 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699117 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_MN699118 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_AY090505 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_AY734989 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_EF487767 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_GU201597 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_DQ295258 .......... .......... .......... .......... .......... .......... ..........

Mm\_DQ295259 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_DQ295260 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_DQ295261 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_DQ295262 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_DQ295263 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_DQ295265 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_DQ295267 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_HM120753 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_HM120754 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_HM120755 ATGAGCACAT CACATATTCA C-TGTTGGTA TAGATGTTGA TACACGAGCC TACTTTACCT CAGCAACAAT

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120751 ATGAGCACAT CATATATTCA C-TGTTGGCA TAGATGTCGA TACACGAGCC TACTTTACCT CCGCAACAAT

Mp\_HM120752 ATGAGCGCAT CATATATTCA C-TGTAGGTA TAGATGTGGA TACACGAGCC TATTTTACCT CAGCAACAAT

SNPs\_(Mn & Mm) ---S--S--S --S------- -----S---- ---------- ---S------ ---------- -------S--

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 915 925 935 945 955 965 975

Ap\_JQ990979.1 AATTATTGCT GTTCCTACAG GAATTAAAAT TTTTAGATGA CTAGCAACTC TTCATGGAAC ACAAATTAAT

Mh\_MN699102 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699103 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699104 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699105 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699106 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699107 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699108 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699109 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699110 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699111 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699112 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699113 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_MN699114 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_KX087316 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_HM120756 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCACGGAAC TCAACTAAAT

Mh\_HM120757 AATTATCGCA GTACCTACTG GTATTAAAAT TTTTAGATGA TTAGCTACTC TCCATGGAAC TCAACTAAAT

Mh\_KJ965491 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962598 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ966254 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 .......... .......... .......... .......... .......... .......... ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCCACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699116 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCCACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699127 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCCACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699121 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699122 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699123 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699124 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699119 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699120 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699125 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699126 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699117 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_MN699118 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_AY090505 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_AY734989 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_EF487767 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_GU201597 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_DQ295258 .......... .......... .......... .......... .......... .......... ..........

Mm\_DQ295259 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_DQ295260 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_DQ295261 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_DQ295262 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_DQ295263 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_DQ295265 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_DQ295267 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_HM120753 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_HM120754 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_HM120755 AATTATTGCA GTTCCTACTG GCATTAAAAT TTTTAGCTGA CTAGCTACTC TTCACGGAAC CCAATTAAAT

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120751 AATTATTGCA GTACCTACTG GTATTAAAAT TTTTAGCTGA CTAGCTACTC TTCATGGAAC CCAATTAAAC

Mp\_HM120752 AATTATCGCA GTTCCTACTG GTATTAAAAT TTTTAGCTGA CTAGCTACCC TTCACGGGAC CCAATTAAAC

SNPs\_(Mn & Mm) ------S--- --S------- -S-------- ------S--- S--------- -S-------- S---S-----

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 985 995 1005 1015 1025 1035 1045

Ap\_JQ990979.1 TATTCTCCAT CAATATTATG AGCTTTAGGA TTTGTATTTT TATTTACTGT AGGTGGTTTA ACAGGAGTAA

Mh\_MN699102 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699103 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699104 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699105 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699106 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699107 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699108 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699109 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699110 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699111 TATTCCCCAT CCCTATTATG AACCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699112 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699113 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_MN699114 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_KX087316 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_HM120756 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_HM120757 TATTCCCCAT CCCTATTATG AGCCCTCGGC TTTGTATTTT TATTCACAGT AGGAGGACTA ACAGGAGTTA

Mh\_KJ965491 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962598 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ966254 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 .......... .......... .......... .......... .......... .......... ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 TATTCACCCT CCCTATTATG AGCCCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699116 TATTCACCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699127 TATTCACCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699121 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699122 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699123 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699124 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699119 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699120 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699125 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699126 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699117 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_MN699118 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_AY090505 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_AY734989 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_EF487767 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_GU201597 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT ACGAGGATTA ACTGGAGTAA

Mm\_DQ295258 .......... .......... .......... .......... .......... .......... ..........

Mm\_DQ295259 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_DQ295260 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_DQ295261 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_DQ295262 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_DQ295263 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_DQ295265 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_DQ295267 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_HM120753 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_HM120754 TATTCGCCCT CCCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_HM120755 TATTCGCCCT CTCTATTATG AGCTCTAGGA TTTGTATTTT TATTTACAGT AGGAGGATTA ACTGGAGTAA

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120751 TATTCGCCCT CCCTATTATG ATCCCTAGGA TTTGTATTTT TATTTACAGT AGGGGGATTA ACTGGAGTAA

Mp\_HM120752 TATTCACCCT CCCTATTATG AGCCCTAGGA TTTGTATTCT TATTTACAGT AGGAGGATTA ACTGGAGTAA

SNPs\_(Mn & Mm) --------S- ---------- ---S--S--S ---------- ----S----- -------S-- --S-----S-

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 1055 1065 1075 1085 1095 1105 1115

Ap\_JQ990979.1 TTCTTGCTAA TTCATCAATT GATATTATCT TACATGATAC TTATTATGTA GTAGCTCATT TTCATTATGT

Mh\_MN699102 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699103 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699104 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699105 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699106 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699107 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699108 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699109 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699110 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699111 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699112 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699113 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_MN699114 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_KX087316 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_HM120756 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_HM120757 TTCTCGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTATTATGTC GTAGCTCATT TTCATTATGT

Mh\_KJ965491 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962598 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ966254 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 .......... .......... .......... .......... .......... .......... ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699116 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699127 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699121 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699122 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699123 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699124 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699119 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699120 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699125 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699126 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699117 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_MN699118 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_AY090505 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_AY734989 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_EF487767 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_GU201597 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_DQ295258 .......... .......... .......... .......... .......... .......... ..........

Mm\_DQ295259 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_DQ295260 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_DQ295261 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_DQ295262 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTATGTA GTAGCCCACT TCCACTACGT

Mm\_DQ295263 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_DQ295265 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_DQ295267 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_HM120753 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_HM120754 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTATTACGTA GTAGCCCACT TCCACTACGT

Mm\_HM120755 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC CTACTACGTA GTAGCCCACT TCCACTACGT

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120751 TCCTAGCAAA TTCTTCAATT GACATTATTC TTCATGATAC TTACTACGTG GTAGCCCACT TCCACTATGT

Mp\_HM120752 TCCTAGCAAA TTCCTCAATT GATATTATCC TTCATGACAC CTACTATGTA GTAGCCCACT TTCACTACGT

SNPs\_(Mn & Mm) -S--S----- ---------- ---------- ---------- S--S--S--S -----S--S- -S--S--S--

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 1125 1135 1145 1155 1165 1175 1185

Ap\_JQ990979.1 ATTATCAATA GGAGCTGTAT TTGCAATTAT AGCTGGATTT ATTCAATGAT TCCCTTTATT TACAGGTTTA

Mh\_MN699102 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_MN699103 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_MN699104 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_MN699105 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCC....... ..........

Mh\_MN699106 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_MN699107 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_MN699108 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_MN699109 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_MN699110 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_MN699111 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_MN699112 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_MN699113 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_MN699114 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_KX087316 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_HM120756 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_HM120757 ACTTTCAATG GGTGCAGTAT TTGCAATTAT AGCGGGATTT GTCCATTGAT TCCCTTTATT CACAGGACTA

Mh\_KJ965491 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962598 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ966254 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 .......... .......... .......... .......... .......... .......... ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 ACTCTCAATG GGCGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCGCTATT CACAGGACTA

Mm\_MN699116 ACTCTCAATG GGCGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCGCTATT CACAGGACTA

Mm\_MN699127 ACTCTCAATG GGCGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCGCTATT CACAGGACTA

Mm\_MN699121 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_MN699122 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_MN699123 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_MN699124 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_MN699119 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_MN699120 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_MN699125 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_MN699126 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_MN699117 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_MN699118 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_AY090505 ---------- ----...... .......... .......... .......... .......... ..........

Mm\_AY734989 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_EF487767 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_GU201597 ACTCTCAATG GGTGCAGTAT TTGCTATAAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_DQ295258 .......... .......... .......... .......... .......... .......... ..........

Mm\_DQ295259 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_DQ295260 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_DQ295261 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_DQ295262 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_DQ295263 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_DQ295265 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_DQ295267 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_HM120753 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_HM120754 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_HM120755 ACTCTCAATG GGTGCAGTAT TTGCTATTAT AGCAGGATTT GTCCACTGAT TCCCACTATT CACAGGACTA

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120751 ACTCTCAATA GGAGCAGTAT TTGCTATCAT AGCAGGATTT GTCCACTGAT TCCCCCTATT CACAGGGCTA

Mp\_HM120752 GCTCTCTATA GGAGCAGTAT TTGCTATCAT AGCTGGATTT GTCCACTGAT TCCCGCTATT TACAGGACTA

SNPs\_(Mn & Mm) ---S------ ---------- ----S----- ---S------ -----S---- -----S---- ----------

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 1195 1205 1215 1225 1235 1245 1255

Ap\_JQ990979.1 ACTTTAAATA ATAAACTTCT AAAAATCCAA TTTTTAACTA TATTTATTGG AGTAAATATT ACTTTTTTTC

Mh\_MN699102 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_MN699103 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_MN699104 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_MN699105 .......... .......... .......... .......... .......... .......... ..........

Mh\_MN699106 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_MN699107 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_MN699108 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_MN699109 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_MN699110 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_MN699111 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_MN699112 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_MN699113 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_MN699114 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_KX087316 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_HM120756 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_HM120757 GTATTAAACA GAAAATTATT AAAAATCCAA TTTTTTGCAA TATTTATTGG CGTAAATATA ACCTTCTTTC

Mh\_KJ965491 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962598 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ966254 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 .......... .......... .......... .......... .......... .......... ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 ACACTAAACA GAAAATTATT AAAAATTCAG TTTTTTACTA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699116 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACTA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699127 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACTA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699121 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699122 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699123 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699124 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699119 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699120 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699125 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699126 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699117 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_MN699118 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_AY090505 .......... .......... .......... .......... .......... .......... ..........

Mm\_AY734989 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_EF487767 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_GU201597 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_DQ295258 .......... .......... .......... .......... .......... .......... ..........

Mm\_DQ295259 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_DQ295260 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_DQ295261 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_DQ295262 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_DQ295263 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_DQ295265 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_DQ295267 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_HM120753 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_HM120754 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_HM120755 ACACTAAACA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATCGG TGTAAATATA ACTTTCTTTC

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120751 ACACTAAATA GAAAATTACT AAAAATTCAG TTTTTTACTA TATTTATTGG TGTAAATATA ACTTTCTTTC

Mp\_HM120752 ACATTGAATA GAAAATTACT AAAAATTCAG TTTTTTACCA TATTTATTGG TGTCAATATA ACCTTCTTCC

SNPs\_(Mn & Mm) SS-S------ --------S- ------S--S ------S--- -------S-- S--------- --S-------

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------- ---------- ----------

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 1265 1275 1285 1295 1305 1315 1325

Ap\_JQ990979.1 CTCAACATTT TCTTGGATTA GCAGGAATAC CTCGACGATA TTCTGACTAC CCAGATGCTT ATACAACTTG

Mh\_MN699102 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_MN699103 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_MN699104 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_MN699105 .......... .......... .......... .......... .......... .......... ..........

Mh\_MN699106 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_MN699107 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_MN699108 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_MN699109 CTCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_MN699110 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_MN699111 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_MN699112 CCCAACACTT TTTAGGATTA AGAGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_MN699113 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_MN699114 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_KX087316 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_HM120756 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_HM120757 CCCAACACTT TTTAGGATTA AGGGGTATAC CACGCCGATA CTCAGATTAC CCTGATGCCT ATACAACTTG

Mh\_KJ965491 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962598 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ966254 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 .......... .......... .......... .......... .......... .......... ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 CCCAACATTT TTTAGGATTA AGAGGTATGC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_MN699116 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_MN699127 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_MN699121 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_MN699122 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_MN699123 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_MN699124 CCCAACATTT TTTAGGATTA AGAGGGATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_MN699119 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_MN699120 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_MN699125 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_MN699126 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATATAACTTG

Mm\_MN699117 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_MN699118 CCCAACATTT TTTAGGATTA AGAGGGATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_AY090505 .......... .......... .......... .......... .......... .......... ..........

Mm\_AY734989 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_EF487767 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_GU201597 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_DQ295258 .......... .......... .......... .......... .......... .......... ..........

Mm\_DQ295259 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_DQ295260 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_DQ295261 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_DQ295262 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_DQ295263 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_DQ295265 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_DQ295267 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_HM120753 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_HM120754 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_HM120755 CCCAACATTT TTTAGGATTA AGAGGTATAC CCCGACGATA CTCTGACTAT CCTGATGCCT ATACAACTTG

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120751 CCCAACATTT TTTAGGATTA AGAGGAATAC CCCGACGATA CTCTGACTAC CCCGATGCCT ATACAACTTG

Mp\_HM120752 CCCAACATTT TTTAGGACTA AGGGGAATAC CCCGGCGATA CTCCGATTAC CCTGATGCTT ATTCAACTTG

SNPs\_(Mn & Mm) -------s-- ---------- ---------- -S--S----- ---S--S--S ---------- ----------

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP3(24nt)-REV ---------- ---------- ---------- ---------- ---------S cctgatgcct atacaacttg

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 1335 1345 1355 1365 1375 1385 1395

Ap\_JQ990979.1 AAATATTATT TCATCAATTG GAAGAATAAT TTCCTTAATT AGAATTACTT TTTTCCTTTT TATTATTTGA

Mh\_MN699102 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_MN699103 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_MN699104 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_MN699105 .......... .......... .......... .......... .......... .......... ..........

Mh\_MN699106 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_MN699107 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_MN699108 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_MN699109 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_MN699110 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_MN699111 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_MN699112 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_MN699113 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_MN699114 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_KX087316 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_HM120756 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_HM120757 AAATGTTGTT TCATCTATCG GATCACTAAT TTCCCTAATC AGTATTATTT TATTCTTATT TATTATTTGA

Mh\_KJ965491 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962598 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ966254 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 .......... .......... .......... .......... .......... .......... ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 AAATGTAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699116 AAATGTAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699127 AAATGTAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699121 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699122 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699123 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699124 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699119 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699120 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699125 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699126 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699117 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_MN699118 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_AY090505 .......... .......... .......... .......... .......... .......... ..........

Mm\_AY734989 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_EF487767 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_GU201597 AATTATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_DQ295258 .......... .......... .......... .......... .......... .......... ..........

Mm\_DQ295259 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_DQ295260 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_DQ295261 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_DQ295262 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_DQ295263 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_DQ295265 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_DQ295267 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_HM120753 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_HM120754 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_HM120755 AAATATAATT TCATCTATCG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120751 AAATGTAATC TCATCTATTG GATCACTAAT TTCCCTAATT AGTATTATTT TATTTTTATT TATTATTTGA

Mp\_HM120752 AAATATAATC TCATCTATTG GATCACTAAT TTCCCTAATT AGTATCATTT TATTTCTATT TATTATTTGA

SNPs\_(Mn & Mm) ------SS-- ---------- ---------- ---------S ---------- ----S----- ----------

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP3(24nt)-REV aaat...... .......... .......... .......... .......... .......... ..........

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 1405 1415 1425 1435 1445 1455 1465

Ap\_JQ990979.1 GAAAGATTTT CAAGAATACG TAAAAGAATT TCTCCATTAA ATTTACCTAC TTCTATTGAA TGACTTCAAT

Mh\_MN699102 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_MN699103 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_MN699104 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_MN699105 .......... .......... .......... .......... .......... .......... ..........

Mh\_MN699106 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_MN699107 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_MN699108 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_MN699109 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_MN699110 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_MN699111 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_MN699112 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_MN699113 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_MN699114 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_KX087316 GACAGATTTA TTTCTATACG AAAAAGACTA TCCCCCCTAA ATATGACAAC CTCCATTGAA TGATTTCAAT

Mh\_HM120756 GACAGATTTA TTTC------ ---------- ---------- ---------- ---------- ----------

Mh\_HM120757 GACAGATTTA TTTC------ ---------- ---------- ---------- ---------- ----------

Mh\_KJ965491 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962598 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ966254 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 .......... .......... .......... .......... .......... .......... ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 GATAGGATTA TTTCACTACG AAAAAGACTC TCCCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699116 GATAGGATTA TTTCACTACG AAAAAGACTC TCCCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699127 GATAGGATTA TTTCACTACG AAAAAGACTC TCCCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699121 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699122 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699123 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699124 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699119 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699120 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699125 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699126 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699117 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_MN699118 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_AY090505 .......... .......... .......... .......... .......... .......... ..........

Mm\_AY734989 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_EF487767 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_GU201597 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_DQ295258 .......... .......... .......... .......... .......... .......... ..........

Mm\_DQ295259 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_DQ295260 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_DQ295261 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_DQ295262 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_DQ295263 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_DQ295265 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_DQ295267 GATAGAATTA TTTCACTACG AAAAAGACTC TCTCCCCTAA GAATGACAAC TTCTATTGAA TGATTCCAAA

Mm\_HM120753 GATAGAATTA TTTC------ ---------- ---------- ---------- ---------- ----------

Mm\_HM120754 GATAGAATTA TTTC...... .......... .......... .......... .......... ..........

Mm\_HM120755 GATAGAATTA TTTC...... .......... .......... .......... .......... ..........

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120751 GATAGAATTA TTTC...... .......... .......... .......... .......... ..........

Mp\_HM120752 GATAGTATTA TCTC...... .......... .......... .......... .......... ..........

SNPs\_(Mn & Mm) --S---S--- ----SS---- ---------S ---------- SS-------- S--------- -----S---S

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP3(24nt)-REV .......... .......... .......... .......... .......... .......... ..........

 ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|

 1475 1485 1495 1505 1515 1525 1535

Ap\_JQ990979.1 CTATACCACC TGCTGAACAT AGATATTCAG AATTACCAAT AATATCTAAT TTCTAATATG GCAGATTAGT

Mh\_MN699102 CTATACCACC AGCTGAACAT AGATACTCTG AACTACCAAT ATTAACTAAT TTCTA..... ..........

Mh\_MN699103 CTATACCACC AGCTGAACAT AGATACTCTG AACT...... .......... .......... ..........

Mh\_MN699104 CTATACCACC AGCTGAACAT AGATACTCTG AAC....... .......... .......... ..........

Mh\_MN699105 .......... .......... .......... .......... .......... .......... ..........

Mh\_MN699106 CTATACCACC AGCTGAACAT AGATACTCTG AACTACCAAT ATTAACTAAT TTCTAATATG GCAGATTA..

Mh\_MN699107 CTATACCACC AGCTGAACAT AGATACTCTG AACTACCAAT ATTAACTAAT TTCTAATATG GCAGATTAA.

Mh\_MN699108 CTATACCACC AGCTGAACAT AGATACTCTG A......... .......... .......... ..........

Mh\_MN699109 CTATACCACC AGCTGAACAT AGATACTCTG AACTACCAAT ATTAACTAAT TTCTAATATG GCAGATTAGT

Mh\_MN699110 CTATACCACC AGCTGAACAT AGATACTCTG AACTACCAAT .......... .......... ..........

Mh\_MN699111 CTATACCACC AGCTGAACAT AGATACTCTG AACTACCAAT ATTAACTAAT TTCTAATATG GCAGACTAGT

Mh\_MN699112 CTATACCACC AGCTGAACAT AGATACTCTG AACTACCAAT ATTAACTAAT TTCTAATATG GCAGATTAGG

Mh\_MN699113 CTATACCACC AGCTGAACAT AGATACTCTG AACTACCAAT ATTAACTAAT TTCTAATATG GCAGACTAGT

Mh\_MN699114 CTATACCACC AGCTGAACAT AGATACTCTG AACTACCAAT ATTAACTAAT TTCTAATATG GCAGATTAGG

Mh\_KX087316 CTATACCACC AGCTGAACAT AGATACTCTG AACTACCAAT ATTAACTAAT TTCTAATATG GCAGACTAGT

Mh\_HM120756 ---------- ---------- ---------- ---------- ---------- ---------. ..........

Mh\_HM120757 ---------- ---------- ---------- ---------- ---------- ---------. ..........

Mh\_KJ965491 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962598 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ966254 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ963310 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ962970 .......... .......... .......... .......... .......... .......... ..........

Mh\_KJ964490 .......... .......... .......... .......... .......... .......... ..........

Mh\_KM448393 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954313 .......... .......... .......... .......... .......... .......... ..........

Mh\_HQ954314 .......... .......... .......... .......... .......... .......... ..........

Mm\_MN699115 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT ATTAACTA-- ---------- ----------

Mm\_MN699116 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT ATTAACTAAC TTCTAATATG GCAGATTAGT

Mm\_MN699127 TAATACCACC AGCTGAACAT AGATACTC.. .......... .......... .......... ..........

Mm\_MN699121 TAATACCACC AGCTGAACAT AGATACTCTG AAC....... .......... .......... ..........

Mm\_MN699122 TAATACCACC AGCTGAACAT AGATACT... .......... .......... .......... ..........

Mm\_MN699123 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCC.. .......... .......... ..........

Mm\_MN699124 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCC.. .......... .......... ..........

Mm\_MN699119 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT AT........ .......... ..........

Mm\_MN699120 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT AT........ .......... ..........

Mm\_MN699125 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT .......... .......... ..........

Mm\_MN699126 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT AT........ .......... ..........

Mm\_MN699117 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT ATTAACTAAC TTCTAATATG GCAGATTAGT

Mm\_MN699118 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT A--------- ---------- ----------

Mm\_AY090505 .......... .......... .......... .......... .......... .......... ..........

Mm\_AY734989 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT ATTAACTAAC TTCTAATAT. ..........

Mm\_EF487767 TAATACCACC AGC------- ---------- ---------- ---------- ---------. ..........

Mm\_GU201597 TAATACCACC AGC------- ---------- ---------- ---------- ---------. ..........

Mm\_DQ295258 .......... .......... .......... .......... .......... .......... ..........

Mm\_DQ295259 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT ATTAACTAAC TTC....... ..........

Mm\_DQ295260 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT ATTAACTAAC TTC....... ..........

Mm\_DQ295261 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT ATTAACTAAC TTC....... ..........

Mm\_DQ295262 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT ATTAACTAAC TTC------. ..........

Mm\_DQ295263 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT ATTAACTAAC TTC....... ..........

Mm\_DQ295265 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT ATTAACTAAC TTC....... ..........

Mm\_DQ295267 TAATACCACC AGCTGAACAT AGATACTCTG AACTACCCAT ATTAACTAAC TTC------. ..........

Mm\_HM120753 ---------- ---------- ---------- ---------- ---------- ---------. ..........

Mm\_HM120754 .......... .......... .......... .......... .......... .......... ..........

Mm\_HM120755 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906196 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU906488 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU907482 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908422 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU908830 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU917860 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU914292 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU909797 .......... .......... .......... .......... .......... .......... ..........

Mm\_KU911750 .......... .......... .......... .......... .......... .......... ..........

Mm\_JN033793 ---------- ---------- ---------- ---------- ---------- ---------- ----------

Mm\_MH115534 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120751 .......... .......... .......... .......... .......... .......... ..........

Mp\_HM120752 .......... .......... .......... .......... .......... .......... ..........

SNPs\_(Mn & Mm) SS-------- ---------- ---------- -------S-- ---------S .......... ..........

SNP1(35nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP2(30nt)-REV .......... .......... .......... .......... .......... .......... ..........

SNP3(24nt)-REV .......... .......... .......... .......... .......... .......... ..........

 ....|....

 1545

Ap\_JQ990979.1 GCAATGGAT

Mh\_MN699102 .........

Mh\_MN699103 .........

Mh\_MN699104 .........

Mh\_MN699105 .........

Mh\_MN699106 .........

Mh\_MN699107 .........

Mh\_MN699108 .........

Mh\_MN699109 GCATTGGAA

Mh\_MN699110 .........

Mh\_MN699111 GCAATGGAC

Mh\_MN699112 CATTGGA..

Mh\_MN699113 GCAATGGAC

Mh\_MN699114 GGCATTGGA

Mh\_KX087316 GCAATGGAC

Mh\_HM120756 .........

Mh\_HM120757 .........

Mh\_KJ965491 .........

Mh\_KJ962598 .........

Mh\_KJ966254 .........

Mh\_KJ963310 .........

Mh\_KJ962970 .........

Mh\_KJ964490 .........

Mh\_KM448393 .........

Mh\_HQ954313 .........

Mh\_HQ954314 .........

Mm\_MN699115 ---------

Mm\_MN699116 GCATTGGAA

Mm\_MN699127 .........

Mm\_MN699121 .........

Mm\_MN699122 .........

Mm\_MN699123 .........

Mm\_MN699124 .........

Mm\_MN699119 .........

Mm\_MN699120 .........

Mm\_MN699125 .........

Mm\_MN699126 .........

Mm\_MN699117 GCATTGGA.

Mm\_MN699118 ---------

Mm\_AY090505 .........

Mm\_AY734989 .........

Mm\_EF487767 .........

Mm\_GU201597 .........

Mm\_DQ295258 .........

Mm\_DQ295259 .........

Mm\_DQ295260 .........

Mm\_DQ295261 .........

Mm\_DQ295262 .........

Mm\_DQ295263 .........

Mm\_DQ295265 .........

Mm\_DQ295267 .........

Mm\_HM120753 .........

Mm\_HM120754 .........

Mm\_HM120755 .........

Mm\_KU906196 .........

Mm\_KU906488 .........

Mm\_KU907482 .........

Mm\_KU908422 .........

Mm\_KU908830 .........

Mm\_KU917860 .........

Mm\_KU914292 .........

Mm\_KU909797 .........

Mm\_KU911750 .........

Mm\_JN033793 ---------

Mm\_MH115534 .........

Mp\_HM120751 .........

Mp\_HM120752 .........

SNPs\_(Mn & Mm) .........

SNP1(35nt)-REV .........

SNP2(30nt)-REV .........

SNP3(24nt)-REV .........