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莲品种及其实质性派生鉴定 MNP标记法

Identification of lotus varieties and their essentially derived varieties －MNP marker method

**NY/T**

中华人民共和国农业行业标准

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前言

本文件按照GB/T 1.1-2020《标准化工作导则 第1部分：标准化文件的结构和起草规则》的规定起草。

本文件的某些内容可能涉及专利，本文件的发布机构不承担识别专利的责任。

本文件由中华人民共和国农业农村部种业管理司提出。

本文件由全国植物新品种测试标准化技术委员会（SAC/TC277）归口。

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莲品种及其实质性派生鉴定 MNP标记法

1　范围

本文件规范了应用多核苷酸多态性（Multiple Nucleotide Polymorphism, MNP）标记法进行莲（*Nelumbo nucifera* Gaertn.）品种鉴定及~~其~~实质性派生品种鉴定的原理、操作程序、质量控制、遗传相似度计算和结果判定。

本文件适用于的莲品种鉴定及~~其~~实质性派生品种鉴定。

2　规范性引用文件

下列文件对于本文件的应用是必不可少的。凡是注日期的引用文件，仅注日期的版本适用于本文件。凡是不注日期的引用文件，其最新版本（包括所有的修改单）适用于本文件。

GB/T 6682 分析实验室用水规格和试验方法

GB/T 38551 植物品种鉴定 MNP标记法

GB/T 30989 高通量基因测序技术规程

3　缩略语

下列缩略语适用于本文件。

CTAB:十六烷基三甲基溴化铵（Hexadecyltrimethylammonium bromide）

DNA:脱氧核糖核酸（DeoxyriboNucleic Acid）

MNP:多核苷酸多态性(Multiple Nucleotide Polymorphism）

4　试剂或材料

除非另有规定，仅使用分析纯试剂。

4.1　水

实验用水符合GB/T 6682中规定的一级水的要求。

4.2　多重PCR扩增与文库构建试剂盒。

应匹配MNP标记和标记检测引物，符合GB/T 30989中建库试剂盒的要求。

4.3　高通量测序试剂盒。

应符合GB/T 30989中高通量基因测序试剂盒的要求，并匹配高通量测序仪。

4.4　MNP标记引物

应符合附录A的要求。

4.5 溶液配制

溶液配制方法见附录B。

5　仪器设备

5.1　离心机

最大转速度不小于12,000 rpm。

5.2　核酸电泳仪和水平电泳槽

5.3　PCR扩增仪

应符合GB/T 30989中大规模扩增仪器设备的要求。

5.4　高通量测序仪

符合GB/T 30989中高通量基因测序仪的要求，且测序读长不低于300 bp。

5.5　计算机服务器

6　操作程序

6.1　样品准备

送检样品宜为幼苗、叶片、茎尖组织或器官。

送检样品的样本数量宜为30个以上。

抽取的样本可以混合后检测。

6.2　DNA提取

取幼苗或叶片约200 mg～300 mg，置于2.0 mL离心管，加液氮充分研磨，每管加入600 µL 65℃预热的CTAB提取液充分混合，65℃恒温水浴45 min～60 min，每间隔10 min颠倒混匀一次；每管加入600 µL的氯仿-异戊醇（体积比24:1），轻缓混匀后，静置10 min；12 000 rpm离心15 min后，吸取上清液至新的离心管，再加入等体积预冷的异丙醇，颠倒离心管数次，在-20℃放置30 min；4℃，12,000 rpm离心10 min，弃上清液；用70%乙醇洗涤DNA沉淀2次，风干，加入98 µL无菌水或TE缓冲液溶解DNA，然后加入2 µL的RNase A（终浓度为200 μg/mL），37℃水浴30min。检测DNA浓度和质量，-20℃保存。

6.3　多重PCR扩增与产物纯化

6.3.1 多重PCR扩增

PCR扩增反应体系的总体积和组分参照表1进行配制，可依据试验条件不同作相应调整。

**表1 PCR扩增反应体系**

|  |  |  |  |
| --- | --- | --- | --- |
| 反应组分 | 起始浓度 | 反应体积（μL） | 终浓度 |
| ddH2O | - | 12.0 | - |
| 3×Taq Master Mix | 3× | 10.0 | 1× |
| 引物混合物 | 10μM | 4.0 | 1.33μM |
| DNA | 10~50ng/μL | 4.0 | 1.33~6.67ng/μL |
| 总体积 | - | 30.0 | - |

PCR扩增反应程序：

a）95℃预变性3 min

b）95℃变性20 s，60℃退火延伸4 min，15个循环；

c）72℃延伸4 min。

6.3.2 产物纯化

在5.3.1获得的扩增产物中加入12 μL 磁珠(磁珠吸附核酸的最小长度应为100bp)，震荡混匀后，室温静置5 min。将PCR管置于磁力架上吸附磁珠，直至溶液澄清。用移液器吸取上清液至新的1.5 mL离心管中。向上清液中加入18 μL 的磁珠，震荡混匀后，室温静置5 min。用磁力架吸附磁珠，直至溶液澄清。用移液器小心吸取上清液，弃上清，留磁珠。加入40 μL 纯化试剂，悬浮磁珠，室温静置5 min。用磁力架吸附磁珠，直至溶液澄清。用移液器小心吸取上清液，弃上清，留磁珠。加入100 μL 80%乙醇，用移液器去除上清液。室温放置，直至乙醇挥发干净。

6.4　文库构建

6.4.1 测序文库构建

构建文库的反应体系的总体积和组分参照表2进行配制

**表2 构建文库的反应体系**

|  |  |  |  |
| --- | --- | --- | --- |
| 反应组分 | 起始浓度 | 反应体积（μL） | 终浓度 |
| ddH2O | - | 16 | - |
| 3×Taq Master Mix | 3× | 10 | 1× |
| 测序接头引物 | 10μM | 4 | 1.33μM |
| 纯化PCR扩增产物 | - | - | - |
| 总体积 | - | 30 | - |

二次PCR扩增反应程序：

a）95℃预变性3 min；

b）95℃变性15 s，58℃退火15 s，70℃延伸30 s，8个循环；

c）72℃延伸5 min。

6.4.2测序文库纯化

向5.4.1获得的高通量测序文库中加24 μL磁珠，震荡混匀，室温静置5 min。用磁力架吸附磁珠，直至溶液澄清。用移液器小心吸取上清，弃上清，留磁珠。加入40 μL 纯化试剂，涡旋均匀。用磁力架吸附磁珠，直至溶液澄清。用移液器小心去除上清，加入100 μL 80%乙醇，用移液器小心去除上清。室温放置，直至乙醇挥发干净。加入35 μL 10 mM Tris-HCl（pH = 8.0），充分悬浮磁珠，室温静置5 min。将离心管置于磁力架上，吸附磁珠，将上清液转移至另一新的1.5 mL离心管。

6.4.3文库质检

取4 μL步骤5.4.2中纯化的高通量测序文库在3%的琼脂糖凝胶上电泳。条带约为100~300bp，分布较集中，没有引物二聚体残留和非特异性扩增条带，质量合格。

6.5 高通量测序与质量控制

对5.4.2中获得的文库进行高通量测序，应符合GB/T 30989 第9节的要求。高通量测序的覆盖倍数设置为700倍以上，测序长度不小于300 bp。

6.5.1　高通量测序原始数据质量应满足所采用的高通量测序仪的操作手册中所规定的测序质量要求。

6.5.2　将样品的测序数据比对到参考基因组的标记位点上，统计第一次检测的标记位点的平均覆盖倍数C1。

6.5.3　当C1小于500时，判定样品的测序数据量不足，从5.4或之前的步骤开始重新实验至第一次检测的标记位点的平均覆盖倍数C1大于或等于500。

6.5.4　当C1大于或等于500时，进一步计算检出标记位点的比例。

按式（1）计算

………………………………………………………（1）

式中：

——样品检出标记位点的比例；

——样品检出标记位点的数目；

——样品检测标记位点的数目。

6.5.5　当R1大于或等于95%时，判定测序数据合格；否则，从7.2或之前的步骤重新实验至第二次检出的标记位点的平均覆盖倍数C2大于或等于500。

6.5.6　当C2大于或等于500时，进一步计算第一次和第二次共同检出的标记位点的比例。

按式（2）计算

…………………………………………………（2）

式中：

——第一次和第二次共同检出的标记位点的比例；

——第一次和第二次共同检出标记位点的数目；

——第一次检出标记位点的数目；

——第二次检出标记位点的数目。

6.5.7　当R2大于或等于95%时，判定测序数据合格。

7　数据分析

7.1　测序数据比对与记录

7.1.1　将测序数据使用高通量序列比对软件比对到莲参考基因组上的每个MNP标记位点上。莲参考基因组版本为GCA\_003033685.1（https://www.ncbi.nlm.nih.gov/datasets/genome/GCA\_003033685.1/）。

7.1.2　检出标记位点的基因型记录为该位点的所有检出等位基因型，其中，检出等位基因型指从该标记第一个到最后一个碱基构成的检出DNA片段，不同等位基因型用“／”隔开。检出标记位点的基因型记录实例见附录A.1（注2）。

7.2　遗传相似度计算

遗传相似度按式（3）计算

…………………………………………………………（3）

式中：

——送检样品与对照品种的遗传相似度；

——待测品种与对照品种中均检出的无差异的标记位点数目；

——待测品种与对照品种中均检出标记位点的数目。

8　结果判定

8.1　品种鉴定规则

8.1.1　当待测品种与对照品种的遗传相似度（*GS*）小于96%时，判定为“不同品种”；

8.1.2　当待测品种与对照品种的遗传相似度（*GS*）大于或等于96%时，判定为“疑同品种”。

8.2　实质性派生关系判定规则

8.2.1　当待测品种与对照品种的遗传相似度（*GS*）小于90%时，判定为“不存在实质性派生关系”；

8.2.2　当待测品种与对照品种的遗传相似度（*GS*）大于或等于90%时，判定为“可能存在实质性派生关系”。

8.3　结果表述

待测品种 与对照品种 比较位点数为 ，差异位点数为 ，遗传相似度为 ，判定为 。

示例1：待测品种A与对照品种B比较位点数为506，差异位点数为5，遗传相似度为99.01%，判定为疑同品种。

示例2：待测品种A与对照品种B比较位点数为504，差异位点数为56，遗传相似度为88.89%，判定为不存在实质性派生关系。

附 录 A

（规范性）

莲MNP标记检测引物

表A.1中提供了512个MNP标记位点对应的引物序列信息。

**表A.1 莲MNP标记引物**

| 编号 | 染色体 | 扩增片段长度（bp） | 正向引物（5’－3’） | 反向引物（5’－3’） | 变异碱基位置、类型与比例 | 参照品种 | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 鄂莲6号 | 太空36号 |
| 1 | chr1 | 171 | AAGATCACATTCTCACCTACAGAGA | CACAAAGGACTGATATCAAGAACCA | 82(C-99%);83(C-98%);94(A-97%,T-5%);95(A-99%);96(C-98%);98(G-99%);101(G-98%);104(G-98%);112(C-98%);114(G-99%);117(C-98%);129(A-99%);130(A-99%);133(G-98%); | ND | ND |
| 2 | chr1 | 273 | GACCTCATAATAAGGGGCCATATGG | CGTTGGAGTGACTTTCGGGATTATA | 107(C-98%);140(G-66%,A-69%);147(G-33%,A-84%);173(C-84%,T-37%);207(A-13%,G-95%); | C;A/G;A;C;G | C;G;G;T;A/G |
| 3 | chr1 | 262 | AGTATAGAAATGTTCACATGTGCGG | ACTTATCGGTGGTGCATATCTTACA | 70(G-38%,A-81%);77(C-48%,T-71%);151(C-38%,T-81%); | A;T;T | G;C;C |
| 4 | chr1 | 208 | ATCATTCTTCAACTGTCATGTCACC | GAAAATGGACTCATTATTGCCCTGT | 88(A-12%,G-96%);107(C-98%,T-19%);139(G-50%,C-80%);141(A-50%,T-80%);148(C-98%,T-19%); | G;C;C;T;C | A/G;C;G;A;C |
| 5 | chr1 | 201 | TCTGTCTTTGAGAGAAAATGTCCCA | GCATAAGGTCATTGTAAGCATCCAT | 162(G-11%,A-96%);166(C-11%,T-96%); | A;T | A;T |
| 6 | chr1 | 269 | TTGCTGTGATAATGAGTTCTTGCTG | ACTATAGAAGGAAATCGAAGGCCTC | 37(A-10%,G-97%);46(C-19%,T-98%);51(G-99%);55(C-93%,T-28%); | G;T;G;C | G;T;G;C |
| 7 | chr1 | 264 | ATTTATAGAAAATGAACCACCGGCC | AAAGAAAGGAAATAAAGCTTGGGGG | 111(A-53%,G-60%);113(A-54%,G-58%); | G;G | A;A |

| **表A.1（续）** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 编号 | 染色体 | 扩增片段长度（bp） | 正向引物（5’－3’） | 反向引物（5’－3’） | 变异碱基位置、类型与比例 | 参照品种 | | |
| 鄂莲6号 | 太空36号 | |
| 8 | chr1 | 259 | GAGGACTAGGTTTAGGGAATTTGGT | CAAACTAGGACTTTGTTTCCACCTC | 105(G-87%,T-37%);125(A-20%,G-96%);126(A-37%,G-87%);207(A-19%,T-98%) | G;G;G;T | T;G;A;T | |
| 9 | chr1 | 268 | GATTCATTGGTCCTTTGGCTTCAA | TCAACATTTGAGAGCTGGAAGCTAA | 36(C-38%,T-81%);141(G-38%,A-81%);144(C-38%,T-81%);150(C-7%,G-97%);233(G-38%,A-81%); | T;A;T;G;A | C;G;C;G;G | |
| 10 | chr1 | 219 | GGGTAGAGAGGATAGATTGCCAAAA | CAGGAACGGAATCTAGAACATAGGA | 59(C-38%,T-82%);71(C-97%,T-11%);87(A-24%,G-92%);138(C-83%,T-38%);181(A-38%,T-82%); | T;C;G;C;T | C;C;G/A;T;A | |
| 11 | chr1 | 251 | TAATAGAAGAGAAGGGCACTATGGG | CACTGTTTTGGGGTCTAACTTCTTC | 41(A-38%,G-81%);44(C-38%,T-81%);64(C-81%,T-38%);148(G-38%,C-81%);159(A-38%,T-81%); | G;T;C;C;T | A;C;T;G;A | |
| 12 | chr1 | 280 | TCAGTCACTTTATTGTCGCTTTGAA | AGTTGTGTGTGATATAGGACTGCAT | 170(C-84%,T-36%);188(C-37%,A-84%);192(C-84%,T-36%);219(A-37%,G-84%) | C;A;C;G | T;C;T;A | |
| 13 | chr1 | 233 | GTCGATCCTAGTGGAAACCATAGAA | GCATCCTCAAGAAACAATAACACCA | 73(C-49%,T-70%);94(G-62%,T-44%);106(C-95%,T-18%);116(A-31%,G-90%);118(G-18%,A-95%);125(C-95%,T-18%);126(C-98%,T-8%);136(G-18%,A-95%);159(C-95%,T-18%);172(C-70%,T-49%);176(C-18%,T-95%);194(C-18%,T-95%); | T;T;C;G;A;C;C;A;C;C;T;T | C;G;C;G/A;A;C;C;A;C;T;T;T | |
| 14 | chr1 | 223 | TGGAACACTGATTTGTTTTCGTTCA | GCATTTATGGTTTAGACCTAGTGGC | 47(G-41%,A-75%);88(C-41%,G-75%);96(C-75%,T-41%);140(G-41%,C-75%);166(G-41%,A-75%); | A;G;C;C;A | A/G;C/G;C/T;G/C;A/G | |
| 15 | chr1 | 193 | TGTCCCAAGATAAGTATGCTGATGA | TGAACAATATTTGGCCTTGTGTTGA | 104(G-80%,A-58%);109(G-90%,A-41%); | G/A;G/A | G;G | |
| 16 | chr1 | 254 | TCTTAGGTTATGTTTGGGGTGCTTA | AAAGTGCTTTCATAAAATTCAACTAGGG | 48(G-96%);58(A-96%);85(A-96%);111(C-72%,T-46%);117(C-42%,T-76%);118(C-46%,T-72%); | G;A;A;C;T;T | G;A;A;T/C;T/C;C/T | |
| 17 | chr1 | 294 | ACAATAAAAACCTAGCCCCTCATGA | TGCGAATTCTTGTTCTTAATGCATC | 90(A-6%,G-100%);118(C-69%,T-75%);126(G-100%,T-6%);162(C-18%,T-99%);165(A-18%,G-99%); | G;T/C;G;T;G; | G;C/T;G;T;G; | |
| 18 | chr1 | 151 | ACCAACGAAAACTATCTACAGTGGA | AAGTTGGATTTGGAATAACACGACC | 66(G-65%,T-67%);67(G-65%,T-67%);96(C-67%,A-65%); | G/T;T/G;C/A | T/G;G/T;A/C | |
| 19 | chr1 | 272 | CTTGAAGACTCGTCAAAGAAGCAAA | TCTTTAGCTTTTCTCTATCACGGCT | 43(G-90%,C-35%);53(C-96%,T-21%);63(C-50%,T-71%);72(G-53%,C-68%);85(A-21%,C-96%);94(G-20%,T-96%);119(A-96%);147(C-53%,T-68%);171(A-96%,T-21%);184(G-96%,T-21%);220(C-21%,T-96%);237(A-19%,G-96%); | C/G;C;T;C;C;T;A;T;A;G;G;T;G | G;C;T/C;C/G;C;T;A;T/C;A;G;G;T;G | |
| 20 | chr1 | 267 | GATTGATTCAAGGCTTCAACTGGAT | ATCACGCAAAACTACAAGCAATTTG | 78(C-19%,A-96%);136(C-69%,T-75%);171(G-96%,T-20%);173(A-96%,T-20%);190(C-69%,T-75%);194(C-75%,T-68%);195(A-20%,G-96%);206(A-20%,G-96%); | A;T/C;G;A;T/C;T/C;G;G | A;T/C;G;A;C/T;C/T;G;G | |
| 21 | chr1 | 242 | AGAACAAAAATGCTGAAGTAATCATTT | CAGAAAATCCGGGAGATCAAATCAG | 56(G-24%,C-93%);59(A-24%,T-93%);80(G-24%,A-93%);93(C-24%,T-93%);99(C-24%,T-93%);170(C-24%,A-93%);201(G-24%,A-93%); | ND | C;T;A;T;T;A;A | |
| 22 | chr1 | 248 | AAGGAAAGGAGGACTACTACCAAAC | TATAATGGCCATTGGTCAATGTTGG | 55(G-78%,T-60%);74(C-96%,T-21%);86(A-63%,T-74%); | T/G;C;A/T | T/G;C;A/T | |
| 23 | chr1 | 252 | TCTGGGTGAGTTCAGAAGTTGAAAT | TAGGACAAAACAGCAGTAGAGTTGT | 94(A-11%,G-100%);101(G-100%,T-11%);129(A-11%,G-100%);130(C-11%,T-97%);140(A-11%,G-100%);153(A-11%,G-100%);155(G-11%,T-97%); | G;G;A;G;T;G;A;G;T; | G;G;A;G;T;G;A;G;T; | |
| 24 | chr1 | 150 | AGTTGCTTTATCTGATTTCTCCCCT | TTGGTTGCAGTATTAAACTTGGACC | 58(G-71%,A-59%);60(A-64%,G-69%); | A/G;A/G;T | A/G;G;T | |
| 25 | chr1 | 276 | TGAGGAGATGGCTGCAAATAACTAT | TGCCTTTGCAAATTACCAACATAAA | 131(G-52%,T-68%);157(C-68%,T-52%);167(G-68%,A-52%);204(C-52%,T-68%);224(C-52%,T-68%);241(C-68%,T-52%); | ND | ND | |
| 26 | chr1 | 172 | CAACCCAATTATGTTTCCCACTCTC | GGCCTTACTCTCTCTAGGAGGTAAA | 104(A-50%,G-60%);128(G-43%,C-87%); | G;G/C | G;G | |
| 27 | chr1 | 197 | AGTTGGTAGAACAAGAAATGGATGT | AGTGAGTTCATTTATTCTCACCATTTGA | 84(C-80%,G-53%);86(A-53%,T-80%);155(C-80%,T-53%); | G/C;A/T;C/T | C;T;C | |
| 28 | chr1 | 265 | ATTTCACAAAGTCGGACTAGAGTCA | CTAACGCAATGTGATTTCTACCCAT | 84(T-98%);89(C-98%);112(A-98%);119(G-98%);194(C-78%,T-52%);203(T-98%);206(G-80%,A-50%); | T;T;T;C;A;G;C/T;T;G/A | T;T;T;C;A;G;C;T;G | |
| 29 | chr1 | 253 | CAGGTTGATGTTTTCTTGCTTGTTG | ATCTCTCCCGATAAATAGAGGTCCA | 86(A-11%,G-97%);102(C-97%,T-11%);107(G-11%,A-97%);114(C-11%,G-97%);118(G-97%,T-8%);125(C-11%,A-97%);157(A-11%,G-97%);162(C-78%,T-60%);170(A-73%,G-60%); | G;C;A;G;G;A;T;G;G;C/T;A/G; | G;C;A;G;G;A;T;G;G;C;A/G; | |
| 30 | chr1 | 212 | TGGATAACGTGCTAGCCAATAAG | CAAGCCACCTCGTGTATCTCA | 46(A-48%,G-54%);55(G-48%,A-54%);74(A-12%,G-90%);129(C-99%,T-7%);165(A-33%,T-68%); | G;A;G;C;T;A | A;G;G/A;C/T;T;T | |
| 31 | chr1 | 280 | GGGAAATCTAAGGCCAAACTCTAGT | GTTCGTGGCACCAAGGGA | 40(A-8%,G-99%);71(C-83%,T-46%);82(A-83%,G-46%);107(C-83%,T-46%);147(C-69%,T-45%);206(G-83%,A-46%);207(C-83%,T-46%);224(A-36%,G-89%); | G;C/T;A/G;C/T;C;G/A;C/T;A/G | A/G;C;A;C;T/C;G;C;G | |
| 32 | chr1 | 247 | CAAATCATTCCCAAGGCACTAATGA | TCCTTGAACTTTTGGATTCTAGCAC | 156(C-80%,T-53%);162(C-53%,T-80%);186(A-80%,T-53%); | C/T;C/T;A/T | C;T;A | |
| 33 | chr1 | 175 | CATGGGTTTTTAGTAGGCAAAGTGT | GCCCAGACTGCTATCCTACATAAAT | 68(C-81%,T-35%);83(A-72%,G-42%); | C;A | T;G | |
| 34 | chr1 | 175 | GACCCAATCTGACAACAACAATTTAA | GATGGCCAGAACAGTTCCATTTTT | 65(C-86%,T-41%);99(T-99%);120(C-99%); | C;T;C | C;T;C | |
| 35 | chr1 | 210 | CCTAGAGGGAAGTAATGCTTAGTGA | AGATCAGACAAACCCAATCCAAGAG | 142(C-86%,T-42%);158(C-43%,T-85%); | C;C;T | C;C;T | |
| 36 | chr1 | 258 | ACCACCTATTAACACAAAACCCTCT | TGATCTTCTTGTAGAGACTGGCAAA | 52(G-87%,A-39%);85(A-99%); | G;A | G;A | |
| 37 | chr1 | 248 | TATGAACAGTTAAGTGTGGGGTTTA | TTTTGTGTAGGTTAAGGGAAGCAAC | 36(G-85%,A-51%);129(A-85%,G-51%);211(G-85%,A-51%); | G;A;A;A;G;T;G;C | A/G;G/A;A;A;G;T;A/G;C | |
| 38 | chr1 | 240 | AGCCATTAGGATCTCTCATCTCTTAA | GAGGAGATCAATCAGAAGATCGACA | 37(C-69%,T-53%);38(A-19%,G-100%);57(C-19%,T-100%);67(C-19%,T-100%);76(C-100%,T-19%);83(G-69%,A-53%);138(A-19%,G-100%);160(C-68%,T-53%);176(A-19%,G-100%); | C;G;T;T;C;G;G;C;G | T;G;T;T;C;A;G;T;G | |
| 39 | chr1 | 280 | GATCTCACAAGTCAAGTCAATGCTC | TTGGCTTCTTCCTTTTCGCTG | 39(G-26%,A-76%);49(A-26%,T-76%);92(G-76%,T-26%);151(C-26%,T-76%);159(A-8%,G-94%);201(A-5%,G-96%);208(C-76%,T-26%); | ND | A;T;G;T;G;G;C | |
| 40 | chr1 | 255 | ATAACTTCATAAAATGAGAGGCGCG | TTCACATGTTTTGGCATAATCCACA | 132(A-83%,G-52%);183(G-83%,C-52%);185(G-52%,T-83%); | A;G;T | A;G;T | |
| 41 | chr1 | 155 | AACCCCTTAACTATCCCTGAAGTTC | GATGATGGCAAGGACTATAGAACCT | 36(C-49%,T-90%);43(C-63%,T-83%);115(C-20%,G-100%); | T;T;G | T;T;G | |
| 42 | chr1 | 274 | GAATACTCTGCAACAACACACTTCA | TCATGGAGATGAATTCAAGCAAGAC | 44(A-82%,T-53%);46(A-82%,G-53%);87(G-40%,A-79%);187(A-82%,C-53%); | A;A;A;A;A | A;A;G/A;A;A | |
| 43 | chr1 | 211 | GACCATGAACCCAACTAAGCATATG | AAAACGTTTCCTGAAGCATTGGTAT | 88(A-9%,G-100%);131(G-82%,A-50%);139(G-50%,T-82%);142(A-82%,G-50%); | G;G;T;A | A/G;G;T;A | |
| 44 | chr1 | 273 | GGCCTATCCAAGGGGTTATCAATAT | ATATGATATTGGCCGAACTTCCTGA | 105(A-57%,G-79%);112(C-17%,T-100%);113(G-69%,A-57%);120(C-100%,T-17%);121(G-17%,A-100%);126(C-80%,T-41%);127(G-17%,A-100%);129(A-69%,G-57%);151(C-100%,T-17%);153(A-17%,G-100%);176(G-17%,A-100%);180(C-17%,T-100%); | T;A;T;G;C;A;T;A;A;C;G;A;T; | T;G/A;T;G;C;A;C/T;A;A;C;G;A;T; | |
| 45 | chr1 | 163 | AGTAATTAACGTGCCTTTAACGCAA | TCATTTAGCAGGACGTTCCATCTAT | 44(C-20%,T-100%);49(C-20%,A-100%);77(C-78%,T-68%);98(G-89%,A-56%); | T;A;C;G;A | T;A;C;G;A | |
| 46 | chr1 | 295 | CTTCCGACTGACAGACCGTAC | GAGGTCAGAGATTCAAGAAGAAACC | 54(C-58%,T-78%);64(G-78%,T-58%);88(A-78%,G-58%);97(C-74%,T-63%);150(A-78%,G-58%); | T;G;A;C;A | ND | |
| 47 | chr1 | 222 | CACATTCTTAGTGCAGACATTGTCA | ACACTTTTCCTTAATGTGTCTTGGC | 37(G-79%,A-59%);84(G-79%,A-59%);154(A-79%,G-59%);160(G-79%,A-59%);178(C-79%,A-59%); | G;G;A;G;C | G;G;A;G;C | |
| 48 | chr1 | 222 | AGAAACATGTCTCTGAAATGACACT | GCAAAGGTTCATGTTCTGACAAAAC | 43(G-41%,A-85%);44(G-20%,A-100%);53(C-20%,A-100%);62(A-77%,G-68%);68(A-34%,G-92%);83(C-100%,T-20%);86(C-92%,T-36%);90(A-20%,G-100%);98(C-100%,T-20%);102(G-20%,A-100%);139(A-20%,G-100%);145(C-20%,T-100%); | A;A;A;A;G;C;C;G;C;A;G;T | G;A;A;A;G;C;C;G;C;A;G;T | |
| 49 | chr1 | 247 | CTCCCGCGGTAGACAAGAAAG | ATTCGTGCTGCTCACTTCTGTA | 92(C-80%,T-51%);147(C-98%);149(G-80%,A-51%);158(C-51%,T-80%);189(A-78%,G-56%);209(C-99%); | C;C;G;T;A;C;C | C;C;G;T;A;C;C | |
| 50 | chr1 | 272 | CTGTTGCATTTGGGCTTGAATAGG | CTCCAGCAATGCCAGGAAAAATAAT | 41(G-80%,A-57%);52(C-81%,T-53%);54(A-81%,G-53%);111(C-76%,T-48%);154(G-81%,A-53%);163(C-81%,T-53%);165(A-80%,G-57%);231(C-81%,T-53%); | G;C;A;C;T;G;G;G;C;A;C | G;C;A;C;C/T;G;G;G;C;A;C | |
| 51 | chr1 | 275 | AACGGTCCTAGTCGATATGAGTTTA | GGAAGATAGCAGACATCAAGGGAAT | 39(A-82%,G-53%);94(A-82%,G-53%);106(C-53%,T-82%);156(C-82%,T-53%);209(C-53%,T-82%); | A;A;T;C;T | A;A;T;C;T | |
| 52 | chr1 | 234 | ACAGCGCTAGGATATTCATTGATCT | AGAAAGTATACGAGACGTTCACCAA | 53(G-83%,A-44%);148(G-83%,A-44%); | G;T;G | G;T;G | |
| 53 | chr1 | 192 | CTCCAGTTCGTCTCTTTGCTTTATG | TGAATCCTTTGCATCTGAGACTGTA | 60(T-100%140(C-83%,T-44%); | T;A;G;G;A;C;G;A;A;C;T;C;C | T;A;G;G;A;C;G;A;A;C;T;C;C | |
| 54 | chr1 | 237 | CTGTTGCATGAGTTTTGGGTAGG | TCCTGATTTTAATTGCACTCACTCT | 38(C-90%,T-31%);52(C-44%,T-83%);138(C-83%,T-44%);187(A-83%,G-44%); | C;T;C;A | C;T;C;A | |
| 55 | chr1 | 234 | CATCAGCACGAACTAAGTACTTGC | AGAGTTCCTTAATGGTCATCGCG | 84(T-100%)144(A-99%);148(A-83%,G-45%);175(A-99%); | T;A;G;C;G;C;G;C;G;C;C;A;A;T;C;C;C;A; | T;A;G;C;G;C;G;C;G;C;C;A;A;T;C;C;C;A; | |
| 56 | chr1 | 261 | AGAAGATCTTGGTGGATAGTGGTTC | GAAGGGTTGGCCTCCTCGTTATT | 74(G-99%);93(G-84%,A-42%);108(G-99%);119(C-44%,T-82%);126(G-84%,A-42%);128(C-99%);129(A-82%,G-44%);163(C-50%,T-80%);174(G-99%);185(A-8%,G-99%);213(C-82%,G-44%);222(G-99%);223(C-99%); | G;G;G;T;G;C;A;T;G;G;C;C;G;C | G;G;G;T;G;C;A;T;G;G;C;C;G;C | |
| 57 | chr1 | 276 | CTGAAGCTATACCTCGCCTCAC | TAAGGAGCTCATTAGTTAGGACCATG | 85(G-83%,A-42%);95(G-99%);98(C-83%,A-42%);118(A-43%,T-82%);133(A-99%);156(C-99%);159(C-99%);160(G-99%);164(T-99%);166(G-99%);179(C-83%,T-42%); | G;G;C;T;A;C;C;G;T;G;C; | G;G;C;T;A;C;C;G;T;G;C; | |
| 58 | chr1 | 295 | ATTGGCCTTTTTGTTCACATCAAGT | TCATCAACTCTAGGAGCTTGTCTTC | 114(G-35%,A-82%);115(C-90%,T-10%);116(G-47%,A-69%);149(C-82%,T-35%);151(A-10%,G-90%);179(A-35%,G-82%);244(A-35%,G-82%);245(C-72%,T-46%);260(A-10%,G-90%); | ND | ND | |
| 59 | chr1 | 271 | AATGTCACTTAACGGCTGATTAACG | AAACACAGCCTAAGGTCTATAAGCT | 37(A-32%,G-88%52(G-56%,A-56%75(C-88%,T-32%85(A-32%,G-88%);101(G-99%); | G;C;C;A;G;G;C;G;G;G;G;T;T;G | ND | |
| 60 | chr1 | 197 | CAACGAGCTACTTGAAACAGAAAGT | ATTTTTGTCCCTCTCCACCAATTTC | 46(C-45%,T-93%);55(G-82%,A-54%);58(G-93%,A-45%);62(A-20%,G-99%);75(A-39%,G-83%);76(C-93%,T-45%);126(C-99%,T-20%); | T;G;G;G;G;C;C | T;G;G;G;A;C;C | |
| 61 | chr1 | 221 | GCAAAGGTACAGTAGTGCAATTTCT | AACGATACGTATTAGCCGATATGGG | 151(A-83%,G-44%);184(C-83%,T-44%); | A;C | A;C | |
| 62 | chr1 | 257 | TCACTGTGAACAACATCCAGTAGAT | CCTTAGGGAGTTCAACACAGAAGC | 42(C-44%,T-83%);58(C-83%,T-44%);70(A-83%,G-44%);75(A-44%,T-83%);92(G-83%,A-44%);97(A-83%,T-44%);177(G-83%,A-44%);188(A-83%,G-100%); | T;C;A;T;G;A;G;A/G | T;C;A;T;G;A;G;A/G | |
| 63 | chr1 | 275 | CTTTGGATTAGCACGTTGGAATGAT | TCCATTGAGAAGCGTCTAGAATCAA | 108(G-83%,A-44%);125(A-82%,G-44%);159(G-44%,T-83%);167(C-40%,T-85%);204(C-44%,T-83%);215(G-85%,A-40%);237(A-34%,G-82%); | C;G;A;T;T;T;G;G | C;G;A;T;T;T;G;A | |
| 64 | chr1 | 258 | TAGTTGAGGATATGGTTTGTGCAGA | TATGGAACCTATCTCTGCTAATCCC | 95(A-83%,G-44%);132(G-83%,C-44%);146(G-83%,A-44%); | C;A;G;G;T | C;A;G;G;T | |
| 65 | chr1 | 251 | CTCTCAGGAGTCAAGTCTCACTTTG | CGCGAGGTAGCTCTTGGTTT | 76(G-82%,A-43%);88(A-82%,G-43%);92(C-43%,T-82%);127(C-82%,T-43%);146(G-84%,A-41%);165(A-82%,G-43%);206(G-82%,A-43%);217(C-82%,T-43%); | G;A;T;C;A;G;A;C;G;C | G;A;T;C;A;G;A;C;G;C | |
| 66 | chr1 | 247 | CCAGTGGTTGGTTGAGAAAGAAAAT | TGCTAGCCAAATCTCCCAATAAATG | 96(C-44%,T-83%);142(A-53%,G-67%);212(C-83%,T-44%); | T;A;C | T;G;C | |
| 67 | chr1 | 291 | AGCTACATAAATTGATCGCCTACTG | TATCCAAGAACAAGTTCAGGTAGCC | 117(C-83%,A-44%);162(C-83%,T-44%);164(A-34%,G-82%);211(C-83%,G-44%);218(G-99%); | C;C;G;C;G | C;C;A;C;G | |
| 68 | chr1 | 247 | GGGGATCCTCTTTTTGTCAAATCTG | CAGGGACCTGGAAAGCATATACTAT | 137(G-92%,T-46%);158(C-80%,T-56%);178(C-21%,T-99%);189(C-21%,T-99%); | G;C;T;T;T | G;C;T;T;T | |
| 69 | chr1 | 280 | TTTCAAACCGCATGTAGGAGACTT | AGTAGCCAAAGGATACATCCAAGTT | 87(C-69%,T-47%);125(G-46%,T-81%); | T;T | C;T | |
| 70 | chr1 | 272 | TGAGGGTGAGCAAATATAGACTAGT | TAGCACTAGATATGTCGTAGCAAGG | 46(C-20%,T-99%);53(G-18%,C-99%);83(G-40%,C-95%);110(C-83%,T-64%); | T;C;C/G;C/T | T;C;C;C | |
| 71 | chr1 | 242 | CTCTTTGACTGCGTACTTTGTGATG | GTTCATGAAACACCTTAGCTGCAAT | 49(A-72%,G-64%);68(G-26%,A-94%);86(A-72%,G-64%);164(G-72%,A-64%);184(G-72%,A-64%);186(A-22%,G-77%,T-32%);203(C-94%,T-23%); | G/A;A/G;A/G;G/A;G/A;T/G;C | A;A;A;G;G;G;C | |
| 72 | chr1 | 275 | CCAATTGATGTAGAGGGATTTGGTG | CGCATCATGAGGCCTATGGTAG | 50(C-90%,T-22%);81(G-68%,A-72%);98(A-47%,G-82%);166(G-68%,A-72%);209(G-47%,A-82%);217(C-68%,T-72%);218(A-47%,G-82%);224(G-94%,T-16%); | C;G/A;A/G;A/G;A/G;T/C;G/A;G | ND | |
| 73 | chr1 | 256 | TGTGCCTTCAAAAATTCTACCTTGG | CCAAAAGGAATCGAGATGTAGCTG | 84(C-99%)105(G-99%);112(C-99%);113(A-99%);134(G-99%);138(G-72%,A-65%);151(T-99%);168(A-99%);170(C-99%); | C;T;G;C;A;G;G/A;T;A;C; | C;T;G;C;A;G;G;T;A;C; | |
| 74 | chr1 | 182 | CGCTTCTCATAGTCATAGACTTCCA | CAGTGTACAAAGGCTGTGAATTCAT | 76(C-99%);88(G-33%,A-83%);90(G-72%,A-65%);103(T-99%);116(A-99%);118(T-99%); | C;A;A/G;T;A;T | C;G;G;T;A;T | |
| 75 | chr1 | 279 | GTGGAATCAAAATCCCATTCCCATT | TCCACGTTTCCTAGATGTATTTGGA | 136(A-68%,T-70%);166(G-70%,A-68%); | C;A/T;A/G | C;T;G | |
| 76 | chr1 | 250 | AGGCATGCTAACATATTACACTTGC | CTTTGGGAAGTCCGAATCTGTAAAC | 37(C-65%,T-73%);61(C-65%,T-73%);72(G-73%,A-65%);129(A-73%,G-65%);182(C-73%,T-65%); | C/T;T/C;A/G;A/G;C/T | T;T;G;A;C | |
| 77 | chr1 | 279 | GTGACTGGTTGGCAATCATATTCAA | AAGCTGAGAAATCCCAAAGTACTCA | 88(C-72%,T-68%)111(G-99%,T-5%);142(A-5%,G-99%);143(G-5%,A-99%);153(C-5%,T-99%); | T/C;G;T;G;G;A;T;G; | C;G;T;G;G;A;T;G; | |
| 78 | chr1 | 272 | CGGGGTTGGAGCCTTTATATAGTT | TGGAACTAAAAAGTATCAGCTTGGG | 83(C-100%,T-8%);84(C-13%,T-99%);85(G-13%,A-99%)94(A-5%,G-100%103(C-13%,T-100%);105(C-99%,T-13%);135(C-100%,T-8%);141(C-100%,T-10%);144(A-5%,G-100%);145(C-100%,T-13%);146(G-78%,A-67%);148(G-13%,A-99%);161(C-100%,T-5%);165(C-74%,T-72%);168(C-5%,T-100%);176(C-10%,T-100%); | C;T;A;A;G;G;A;T;C;T;A;C;A;C;C;C;C;G;C;A/G;A;C;T/C;T;T;T;A; | C;T;A;A;G;G;A;T;C;T;A;C;A;C;C;C;C;G;C;G;A;C;C;T;T;T;A; | |
| 79 | chr1 | 197 | TACGAACTCGAACCATATTCCACC | TACAGGGAGGAGTCATAGAGGATAG | 63(A-71%,G-67%);67(G-71%,A-67%);106(C-71%,T-67%);147(C-67%,T-71%); | A/G;A/G;T/C;C/T | A;G;C;T | |
| 80 | chr1 | 274 | AAAGAAGTTCTGCACGTTTCGAGTC | TTACTGGCCAACAATGAAGGTAGAT | 123(C-72%,T-67%);156(A-71%,T-68%);157(C-71%,T-68%); | T/C;A/T;T/C;T | C;A;C;T | |
| 81 | chr1 | 179 | ACCCTAATAAAAAGTTTGAAGCCCG | ATGGTTGCTCGTTCAATTTTCTTCT | 53(C-99%);78(G-99%);91(C-99%);93(G-99%);105(A-50%,G-50%);106(C-50%,T-50%); | C;G;C;G;A;T | C;G;C;G;A;T | |
| 82 | chr1 | 229 | GTGGATGAGGTGTAGAGGTTCTTT | AGCAGCTCTTTCAACCGATAAATTT | 35(C-75%,G-60%);58(C-60%,T-75%);84(C-60%,T-75%);145(G-75%,A-60%); | C/G;C/T;T/C;G/A | C;T;T;G | |
| 83 | chr1 | 270 | TTATCCTCATGCCTTTCATCACAAC | GGGACTGGTTCACCTATGAATCTAT | 63(G-63%,T-71%)68(A-100%)134(C-72%,T-62%);163(C-63%,T-71%);180(C-95%,T-17%);216(C-34%,T-91%); | T/G;C;A;G;A;T/C;T;C/T;C;G;G;T/C | T;C;A;G;A;C;T;T;C;G;G;T | |
| 84 | chr1 | 238 | TATGGTAGAAGGTGATTTTGGGAGT | CCAATCATATGGTCTGAAGCCCTAT | 45(T-99%);46(C-68%,T-63%);49(C-99%);63(G-99%);69(G-99%);78(A-99%);95(C-63%,T-67%);118(A-63%,G-67%);170(C-68%,T-63%);181(C-99%); | T;T/C;C;G;G;A;C/T;G/A;C/T;C | T;T;C;G;G;A;C;A;T;C | |
| 85 | chr1 | 250 | GAGAATTCTTTCGGTTGCTTCAAGA | TGTCCTAGATCTGTTACAGGATACA | 66(A-15%,C-100%);69(C-100%,T-45%);89(C-45%,T-100%);104(A-45%,T-100%);120(C-73%,T-66%);124(C-73%,T-66%);127(C-100%,T-16%);129(G-45%,A-100%);206(G-45%,A-100%); | C;C;T;T;T/C;T/C;C;A;C;T;A | C;C;T;T;C;C;C;A;C;T;A | |
| 86 | chr1 | 226 | TTTGCCCGTAGAATGATAATTCAGC | TCTTGAATTGATTACGTGTCATTTCG | 38(C-68%,T-55%);75(G-54%,A-68%);90(C-54%,T-68%);103(C-54%,T-68%);136(C-54%,A-68%);140(A-51%,G-71%);171(G-54%,A-68%); | C/T;A/G;T/C;T/C;C/A;A/G;G/A | T;G;C;C;C;A;G | |
| 87 | chr1 | 274 | TAAAACTAAAACCTGTTGCGATCCC | TGTACGTTTGGAAGAATGCTTTCTG | 111(A-78%,T-69%);141(C-97%,G-24%);178(A-21%,T-99%); | T/A;T;C;T | T;T;C;T | |
| 88 | chr1 | 221 | ATGCCCCATATGCAATTTACAAGAG | TCCAAATGAACCATAACAGTCTTGC | 171(C-70%,G-65%); | C/G | C | |
| 89 | chr1 | 284 | TTTACAATTCTCGATGTTGTGACCG | CCCTCGAGAAAAGAAAAAGGGAAAC | 147(C-97%,T-9%);185(C-74%,T-60%);241(A-65%,G-66%); | C;T/C;A/G | C/T;T/C;A | |
| 90 | chr1 | 163 | AAATTTGTAAGTTTCCTCGGGCAAG | ACCAACAGTTATCATTTCACCTTCG | 59(A-36%,G-85%);117(G-99%,A-6%); | G/A;G;G | G;G;G | |
| 91 | chr1 | 202 | GTTACAACGTACTGCCTGCTTG | ACAAAGTAACTTGCGACTATGATGC | 81(C-100%,T-7%);85(C-100%,T-5%);88(G-6%,T-100%);89(C-100%,T-6%)95(A-6%,G-100%)97(C-100%,T-5%);105(G-50%,A-67%);106(C-10%,T-99%);110(A-22%,G-95%);120(A-10%,G-99%);132(A-6%,G-100%);136(A-5%,G-100%);137(A-10%,T-99%);139(A-5%,G-100%);145(A-6%,G-100%);151(A-7%,G-100%);155(A-5%,G-100%); | C;C;T;C;C;G;G;C;A;T;G;G;A;G;G;C;G;G;T;G;G;C;G;G;C; | C;C;T;C;C;G;G;C;G;T;G;G;A;G;G;C;G;G;T;G;G;C;G;G;C; | |
| 92 | chr1 | 176 | CGTGTTTGAAGGAGAAGTTCTTTCA | ACCTAGTCTCCTCCCGTTTCTATTA | 123(G-70%,A-30%);124(G-70%,A-30%);125(A-30%,T-70%); | ND | G;G;T | |
| 93 | chr1 | 251 | GCTTGATCAATGAATGTCAGAGGAG | TTGCCCATATCTAGGTAAATGGACA | 105(A-99%);149(C-99%);150(T-99%);166(C-99%,A-6%);205(T-99%);210(G-35%,A-77%); | A;A;C;T;C;T;A | A;A;C;T;C;T;G/A | |
| 94 | chr1 | 243 | TCACTTTATCCGCTTTCTGAGAAGA | ACCGATCCAACTGAATAAACAACAC | 109(C-47%,T-89%);134(C-47%,T-89%);201(G-12%,C-99%); | C/T;C/T;C | C/T;T/C;C | |
| 95 | chr1 | 277 | TGGAAATGGTGAGAAGTGTAGATTCT | CATTCAGATTAAGGCTGCACATGAT | 67(A-6%,G-100%);90(G-21%,T-99%);135(C-52%,T-83%);153(G-21%,A-99%);160(A-99%,T-21%);187(A-52%,G-83%);198(G-21%,A-99%); | G;T;T/C;A;A;G/A;A | G;T;C;A;A;A;A | |
| 96 | chr1 | 263 | TGCATTTACCCAAATAACTATTTTCTAGGA | GGTAAGTGCATTTACCCATGTTTTT | 43(G-7%,A-98%);73(C-99%,T-5%);128(A-72%,T-50%);187(A-50%,T-72%); | ND | A;C;T;C;A | |
| 97 | chr1 | 280 | TTTTGATCTCCCCTTCCAAAGTAGA | CTTAAAGGCCGACTTACCTACATGA | 49(C-99%,T-21%);58(G-99%,T-21%);65(C-21%,T-99%);97(C-100%,T-11%);99(G-21%,A-99%);105(A-13%,G-99%);118(C-21%,T-99%);138(A-21%,G-99%);178(G-21%,A-99%);209(A-21%,G-99%);218(A-68%,G-75%); | C;G;T;C;A;G;G;T;G;A;G;A/G | C;G;T;C;A;G;G;T;G;A;G;A | |
| 98 | chr1 | 257 | CTTCTATTAATGTGGCTGAGGCTTG | CTGTAGTGTGAGTTAATTCATCGCC | 64(A-59%,G-72%);68(C-99%78(A-99%);155(C-99%);206(C-99%);209(G-55%,C-75%); | G/A;C;C;G;A;C;C;G/C | A;C;C;G;A;C;C;G | |
| 99 | chr1 | 241 | TATAGGGAATGCAGCTTGCCTACAA | ATCGACAGGTCATTCCTTCTTCCTT | 40(A-84%,T-22%);79(C-53%,T-76%);94(A-53%,G-76%);163(A-76%,T-53%);195(A-26%,C-61%,T-41%); | A;T/C;A/G;A/T;G;A/T | T;C;A;T;G;C | |
| 100 | chr1 | 267 | CCTTGTTCATAGTAGCATACTCCCA | CTACGAGCTGATCTAACACCAACT | 92(C-91%,T-22%);95(C-91%,T-22%);121(C-22%,T-91%);132(C-75%,T-40%);134(A-27%,G-74%);135(C-88%,T-30%);136(A-22%,G-91%);169(A-22%,G-91%); | C;C;G;T;C;G;C;G;G; | C;C;G;T;T;G;C;G;G; | |
| 101 | chr1 | 276 | AGCATCCGTTAATGTTCCATCAAAA | CATGTCTTCAGTGGTCCAATTGG | 100(A-49%,G-77%);174(G-51%,A-75%);177(C-51%,T-75%);179(C-51%,T-75%);221(G-51%,A-75%); | A/G;A/G;C/T;C/T;A/G | G;G;C;C;G | |
| 102 | chr1 | 174 | TGAACAAACCTGAATTTCTAACCGG | ACATAACGAGTCGATCACCTTACTT | 71(C-68%,G-73%);73(G-23%,A-99%);97(A-23%,T-99%); | ND | C;A;T | |
| 103 | chr1 | 265 | CAAGAACACCGACGCCACTTA | CCTATATTTTCTCTGGATTCGCCTT | 68(A-58%,G-74%);162(A-58%,G-74%);189(C-74%,T-58%); | A/G;A/G;C/T | A;A;T | |
| 104 | chr1 | 193 | AAGTGTGTCATGGATGAGCAAAAAT | CAGAGTGGAAAAAGGCTCTAATGAC | 98(C-72%,T-71%);101(A-57%,G-81%);143(G-21%,A-98%); | T;T/C;A/G;G;A | T;T;A;G;A | |
| 105 | chr1 | 277 | CTGTTTCAAGATGTCATGTGTCACA | CTCGAAACTTCAATGCCACTAAGTT | 40(C-57%,T-74%);83(C-91%,T-38%);92(G-57%,A-74%);99(A-57%,G-74%);171(A-57%,T-74%); | T/C;C/T;A/G;G/A;T/A | C;C;G;A;A | |
| 106 | chr1 | 280 | GACATTTCCTGATTTTACCAGCAGG | ATATAGTGGTCATCTTAGCCACAGG | 62(A-22%,C-98%);70(C-83%,T-56%);71(A-22%,G-98%);116(C-70%,T-73%);145(G-22%,A-98%);187(G-22%,T-98%);193(G-75%,A-59%);199(C-83%,T-56%);208(C-98%,T-22%);210(A-56%,G-83%);213(C-70%,T-73%);222(A-22%,G-98%);231(A-17%,G-99%); | C;T/C;G;C/T;A;T;G/A;T/C;C;A/G;T/C;G;G | C;T;G;C;A;T;G;T;C;A;C;G;G | |
| 107 | chr1 | 266 | TTTCTGTTCACCTTTTGCCTTATCC | GGGAGGAAAGTTACAAAACATCTGG | 199(G-86%,A-35%);202(G-25%,A-90%);206(A-38%,G-82%); | G;A;A/G | G;G;G | |
| 108 | chr1 | 190 | GTCAAAATGCCGAAGTAACAGACTC | AAGTAAGGCATAGTAGGGCATATGC | 48(C-5%,T-100%);56(C-71%,T-71%);73(C-5%,T-100%);74(C-99%,T-23%);79(C-79%,T-62%);85(G-35%,A-92%);90(A-23%,G-99%);105(A-66%,G-71%);112(A-71%,G-71%);114(C-100%,T-5%);123(C-99%,T-23%);126(A-23%,C-62%,T-66%);140(C-99%,T-23%);142(A-23%,G-99%); | T;T/C;T;C;C/T;A/G;G;A/G;G/A;C;C;C/T;C;G | T;C;T;C;T;G;G;G;G;C;C;C;C;G | |
| 109 | chr1 | 246 | GTAGTGGTAGTAGCTGATCTGGATG | TTGTAAGAAGCCAAAGCACACTAAG | 38(C-98%,T-22%)133(C-98%,T-22%);134(C-22%,T-98%);188(G-53%,A-59%);189(G-53%,A-59%);204(C-98%,T-22%);206(G-22%,A-98%); | C;G;C;T;A;A;C;A | C;G;C;T;A;A;C;A | |
| 110 | chr1 | 267 | GATGACGATCTCTCCGATGAGTTAG | CAATTTGGGTACGACAACATAGGT | 59(C-62%,T-64%);82(C-87%,T-40%);103(A-62%,G-64%);105(A-64%,T-62%);145(A-62%,G-64%);185(G-62%,A-64%);221(C-62%,T-64%); | T/C;T/C;A/G;A/T;A/G;G/A;T/C | T;T/C;G;A;G;A;T | |
| 111 | chr1 | 273 | ACCAAGTAAAGAGTCACATCTCCAT | GAAAGCTGCTAAGACCAAAAGGTAG | 85(C-99%);88(G-99%);90(G-99%);94(T-99%);102(G-99%);131(A-99%);146(C-99%);173(A-89%,G-25%);179(G-99%); | C;G;G;T;G;A;C;A;G; | C;G;G;T;G;A;C;G/A;G; | |
| 112 | chr1 | 237 | AGTGTAAAATGTCATCGGTGTAAAAA | ACTCCAGTTCAGTTTTAAGTGCATT | 94(A-30%,G-86%);100(G-30%,A-23%);115(G-41%); | G;-;- | A;G;G | |
| 113 | chr1 | 294 | TAATTGACATGGGGTTTGAGCTGAA | GCGCTATCTTGGTAGATTCGAACTA | 36(A-34%,G-84%);81(C-84%,T-34%);90(A-28%,G-88%);95(G-84%,T-34%);103(C-84%,T-34%);111(G-34%,A-84%);148(C-84%,T-34%);168(C-34%,T-84%);181(C-34%,T-84%);251(C-84%,T-34%); | G;C;G;G;C;A;C;T;T;C;G | A;T;A/G;T;T;G;T;C;C;T;G | |
| 114 | chr1 | 231 | GGCGACCTAATACTTCGGAATGTTA | CGTACTTGGACTATTTTCGATGTGG | 38(C-89%,T-24%);50(C-34%,T-84%);56(C-34%,G-84%);128(G-43%,A-84%);147(C-34%,T-84%); | C;T;G;G/A;T | C;C;C;A;C | |
| 115 | chr1 | 289 | AGGCTTTCTTGTGACCCTTAGG | GGGCATGGAATATTGTCAACCTAAG | 116(C-38%,T-81%);130(G-34%,A-84%);151(C-94%,T-15%);237(C-34%,T-84%); | T;A;C;T | C;G;T/C;C | |
| 116 | chr1 | 263 | TTTTGTTTAGATGCAATTCTGGGGA | TTGCTAACTGTTTAAGTGGTTCCAC | 57(G-22%,A-98%);87(G-51%,A-80%);94(G-51%,A-80%);131(C-98%,T-22%);137(C-22%,G-98%);147(G-34%,T-86%);170(A-22%,G-98%);206(A-22%,C-98%);215(A-22%,T-98%); | A;A;A;C;G;T;G;C;T | A;G;G;C;G;G;G;C;T | |
| 117 | chr1 | 203 | CTAACAGTTGACAAGATTGGGCTAC | TACGCTCCAAAATAGGTAGTAGCAA | 45(G-94%,A-32%);123(G-15%,A-99%); | G;A | G;A | |
| 118 | chr1 | 268 | TAGTCCTTCGGAAAGTTATAGTGCC | TTGTCGTAGTGTCGAGGTCTTTTAT | 40(A-5%,G-100%);143(A-64%,G-60%);181(C-99%);188(C-97%,T-14%);197(G-47%,A-81%);201(A-100%,T-5%); | G;C;A;C;C;A;A | A/G;C;G;C;C;G;T/A | |
| 119 | chr1 | 273 | TTCTTGGACGTGTAGAGTAACTAGC | AACAACCACACACTCTAACCAATTG | 116(C-43%,T-82%);165(C-80%,T-44%);180(A-49%,G-75%);182(A-99%); | G;T;T;C;G;A | G;C;T;T;A;A | |
| 120 | chr1 | 225 | ATAAAGGCTGAAGCTATAGTCTGGT | CTTTGAGAAGATCTCCCATGAATGC | 36(A-47%,G-81%);41(G-47%,A-81%);145(C-89%,T-26%); | G;A;C | A;G;C/T | |
| 121 | chr1 | 280 | AAACAAGGGGAATACTGTATCTGCA | AAGAAATCATGATCGAACCGAACTG | 53(A-47%,G-81%);54(A-47%,G-81%);93(A-47%,G-81%);105(G-47%,A-81%);166(C-81%,T-47%);214(G-47%,A-81%); | G;G;G;A;C;C;A | A;A;A;G;T;C;G | |
| 122 | chr1 | 263 | TTACTAGGTTTGTAGGGAAGGAGGA | ACACGTCATTTCATCAGTCTTAATCA | 38(G-46%,A-82%);54(T-99%);68(C-83%,T-45%);70(G-99%);72(C-46%,T-82%);74(G-99%);84(G-99%);173(A-99%);214(A-99%); | A;T;C;G;T;G;G;G;A;A | G;T;T;G;C;G;G;G;A;A | |
| 123 | chr1 | 273 | ACAAGCTTCTAGGTTCGGTTATGT | TGCCAGAGTCACAAATGATCCTATT | 35(C-40%,T-83%)87(C-40%,T-83%)130(A-40%,G-83%);138(G-40%,A-83%);146(C-40%,T-83%); | T;C;T;G;T;G;A;T;C | C;C;C;G;T;A;G;C;C | |
| 124 | chr1 | 186 | AGGTGTATCGGGTTGTATTGGTATT | CAATAGGTATCGGTCCGTATCGATC | 100(G-41%,A-84%);111(G-41%,A-84%);146(C-84%,T-41%); | A;A;C | G;G;T | |
| 125 | chr1 | 233 | CATAAGGATTGTGAGCCCAAGGATA | TTCTATACCTGAAGTTGGGCCATCC | 117(C-44%,T-83%);127(G-43%,C-84%);139(A-43%,C-84%);143(A-44%,G-83%); | T;G;G;G;T;T;G;C;C;G;G;C; | T;G;G;G;C;T;G;G;A;A;G;C; | |
| 126 | chr1 | 230 | TTGTGTCAAATGGGTCAATCTATGA | GAAAACATGGGAAAGGAAAGCAAAC | 44(A-100%)89(G-14%,T-98%);90(G-14%,A-98%);117(A-14%,C-98%);146(C-98%,T-14%);147(A-43%,G-88%);167(C-54%,T-82%);194(C-88%,T-43%); | A;T;A;T;A;C;C;G;T;C | A;T;A;T;A;C;C;A;C;T | |
| 127 | chr1 | 273 | GTTGTCGACATACGCTTCAACATTA | AAAGACAGCTTCCCCCTACCAA | 62(C-82%,T-49%);63(G-49%,A-82%);120(A-75%,G-55%);153(A-49%,G-82%);165(A-49%,G-82%);175(A-54%,C-70%);185(A-31%,C-85%);237(C-27%,T-90%); | C;A;A;C;G;G;A;C;T | T;G;G;C;A;A;C;A;T | |
| 128 | chr1 | 216 | AAACTTTTGTTGTTGGACATCGGTT | CTCAGCTCTCACCTAGTTATCGAAA | 37(G-16%,A-98%);41(A-36%,G-89%);111(C-16%,T-98%);113(G-99%,T-15%);170(G-62%,A-81%); | A;G;T;G;A | A;A;T;G;G | |
| 129 | chr1 | 258 | ATACTTACATCAGACAGTGGGTTCC | AGAAGTTTGGATAAGGCCTATTCCC | 48(G-14%,A-98%);64(A-14%,G-98%);81(A-65%,C-72%);142(A-14%,G-98%);154(G-65%,A-72%);157(A-14%,G-98%);178(A-72%,T-65%);193(C-72%,T-65%);209(C-96%,T-26%); | C;A;G;C;G;A;G;A;C;C | C;A;G;A;G;G;G;T;T;C/T | |
| 130 | chr1 | 254 | ACAAAGAAAGTGGGAGTGGAGATAT | TCTACTTTCCAATCTGGCTTTCTCA | 43(A-57%,G-74%);132(C-74%,T-57%);140(C-74%,T-57%); | G;C;C | A;T;T | |
| 131 | chr1 | 259 | AAACATTTCATGTGGTTGGTCAGTT | TATTGATTGCAATCTCACCACCAAC | 142(G-95%,T-11%);143(C-95%,A-11%);157(C-57%,T-74%);209(A-57%,T-74%);210(C-74%,T-57%); | G;C;T;T;C | G;C;C;A;T | |
| 132 | chr1 | 267 | GGTAGAGTTGGAATTGCTGGAATTG | AGAACGCTTCTGGAGACCAAC | 37(C-57%,G-73%);59(T-98%);74(C-57%,T-73%);87(A-57%,G-73%);103(C-57%,T-73%);152(C-98%,T-10%);185(G-57%,A-73%);212(G-57%,A-73%);213(G-57%,A-73%);234(G-57%,A-73%); | G;T;T;G;T;C;A;A;A;A | C;T;C;A;C;C;G;G;G;G | |
| 133 | chr1 | 272 | CATCGGTCTATGACGCTTCTATCA | AGGGCTCATTTAAATTTGGCTTTGA | 84(C-100%,T-14%)89(C-100%,T-8%);94(C-100%,T-7%)97(G-8%,A-100%);99(A-57%,G-39%,T-47%);100(A-8%,G-100%);103(C-100%,T-7%);113(G-16%,T-100%);114(C-100%,T-15%);118(G-7%,T-100%);134(G-16%,A-100%);149(G-16%,A-100%);153(A-8%,C-100%);167(C-100%,T-7%);169(C-100%,T-9%);171(C-15%,T-100%); | A;C;C;T;C;C;G;A;T;G;C;C;T;C;T;G;C;A;G;A;C;C;C;C;A;G;C;C;T;T;T; | A;C;C;T;C;C;G;A;A;G;C;C;T;C;T;G;C;A;G;A;C;C;C;C;A;G;C;C;T;T;T; | |
| 134 | chr1 | 270 | TTACCTCGCCTTGACCTTGATTATA | CAAATCCATGTCCTCAACCTCAATC | 178(A-63%,C-72%);189(C-72%,T-63%);226(G-63%,A-72%); | ND | A;T;G | |
| 135 | chr1 | 259 | TGAGCTGTCATCCCTTGATTAGATC | GTTTTGACATCTGCACGTAACTCAG | 171(G-55%,A-76%);188(A-21%,G-97%);201(A-57%,G-74%); | A;G;G | G;G;A | |
| 136 | chr1 | 255 | GGATACTGTAAATCCGCAACTTGTT | CCCAAGTTCATCATCTTGAAGGATT | 54(C-56%,T-75%);88(C-75%,T-44%);108(C-56%,T-75%);111(A-56%,G-75%);167(G-56%,A-75%);181(C-56%,T-75%); | T;T;T;G;A;G;T | C;C;C;A;G;G;C | |
| 137 | chr1 | 226 | TATGTAGAGGGTTTAGATTGGCCTG | CTCCCACAGTTTTGGAATTTCTTGA | 52(C-75%,T-56%);55(G-56%,A-75%); | C;A | T;G | |
| 138 | chr1 | 261 | GCCTTCAACACTATCAGATCCAATG | TTATAGCAGTTTTCTTGTGTGTGCC | 39(A-98%);74(C-98%);75(A-98%);79(T-98%);110(G-98%);117(C-75%,T-54%);122(A-75%,T-54%);152(C-98%);180(C-98%);187(G-73%,T-56%);194(C-81%,T-50%);196(G-98%);225(G-56%,A-73%); | A;C;A;T;G;C;A;G;C;C;G;C;G;A | A;C;A;T;G;T;T;G;C;C;T;C/T;G;G | |
| 139 | chr1 | 265 | CTCTTGGTCGGATTACAGGAAGAA | AGTTGCCTAATAAATTCATGTCTCAAAC | 37(G-25%,A-91%);55(G-25%,A-91%);71(C-91%,T-25%);122(C-25%,T-91%);124(A-25%,G-91%);164(G-27%,A-90%);165(A-25%,G-91%);178(C-91%,T-25%);186(A-25%,G-91%);207(C-91%,T-25%);226(C-25%,T-91%); | A;A;C;T;G;A;G;C;G;C;T | ND | |
| 140 | chr1 | 269 | CTACAGGAAATTGAAGTTTGGGTCC | CTGCGGAAAAGATGGTTGATTTTTC | 87(C-15%,T-98%);129(C-52%,T-71%);130(C-52%,T-71%);149(C-15%,T-98%);154(A-15%,G-98%);168(G-15%,A-98%);169(G-15%,A-98%);170(C-98%,T-27%);172(A-45%,G-81%); | T;T;T;T;G;A;A;C;G; | T;C;C;T;G;A;A;C;A; | |
| 141 | chr1 | 241 | TTTTAGCCTATCTGAAAGGATGTCC | TCAAACAATCCATTGAGTCATTGCC | 56(C-47%,T-75%);69(A-14%,G-98%);165(A-40%,G-84%);174(A-47%,T-75%);176(C-47%,T-75%); | T;G;G;T;T | C;G;A;A;C | |
| 142 | chr1 | 266 | TTGCACTCTTTCCAAATTGAACCTT | CAAGGGGTAAATTCCATCCAACAAA | 97(G-99%);116(G-41%,A-60%);117(C-58%,T-43%);132(A-99%); | A;G;A;C;A | A;G;G;T;A | |
| 143 | chr1 | 277 | TGAATAATAGGACCATACCATGCCA | GATAGTTGTTGATTGCTGCCACATA | 70(G-80%,T-40%);125(C-48%,T-66%);149(G-47%,A-73%);238(A-47%,G-73%); | G;C;A;G | T;T;G;A | |
| 144 | chr1 | 279 | AGACTTCATCACGGAATGCACTC | ACTCGAAGCGTAGTAAATACTCCAA | 57(G-38%,A-80%);83(G-38%,T-80%);91(C-80%,T-38%);128(G-38%,A-80%);132(C-7%,T-99%); | G;A;T;C;A;G;T;C;A | G;G;G;T;G;G;T;C;A | |
| 145 | chr1 | 270 | ATCCGTATCAGGTATACATCTCCCT | GTTATTCTTCCCAAGTCATGTTGCA | 67(A-13%,G-99%);108(C-13%,T-99%);140(C-44%,T-80%);141(A-37%,G-87%);142(C-87%,T-37%);184(A-13%,T-99%);196(C-87%,T-37%);226(A-13%,G-99%); | G;T;T;G;C;T;C;G | G;T;C;A;T;T;T;G | |
| 146 | chr1 | 221 | TGTTTTTGAAGCATGTGGAGAAAGT | GGCGGTTACAAGAAACAAACTCTTA | 84(G-50%,T-75%);85(C-50%,G-75%);88(G-50%,A-75%);144(C-50%,T-75%); | ND | G;C;G;C | |
| 147 | chr1 | 280 | CCAGCTTGAATTTATTACAGGCCAA | TGACATTCACTCTTGATTGATTATGTGA | 53(C-7%,G-97%);62(G-35%,A-83%);90(A-11%,C-95%);107(G-99%);118(C-96%,T-8%);121(A-35%,C-83%);136(A-35%,T-83%);169(C-95%,T-11%);233(A-35%,G-83%); | G;A;C;G;C;C;T;C;G | ND | |
| 148 | chr1 | 278 | ATCTTCCTCTTGTTCATCCACCAAG | GAAGTATCAATATAGGGCGGCATGG | 90(C-87%,T-29%);189(G-99%);193(A-85%,G-34%); | C;G;A | ND | |
| 149 | chr1 | 253 | GATCTTCGAACCATTCAAGATGCAT | TCTCATTCACACTATAGAACACCCC | 108(A-9%,T-99%);111(A-16%,G-91%);121(A-9%,G-99%);141(A-16%,G-91%);150(A-9%,C-99%);155(C-99%,T-9%);175(A-5%,G-99%);178(A-22%,G-95%);180(C-99%,T-9%); | T;G;G;G;C;C;G;G;C; | T;A/G;G;A/G;C;C;G;G;C; | |
| 150 | chr1 | 235 | TGGGTTTTTAGAAATTTGCCCTTGA | TGTGCATCACATTGACTAGAAAAAGA | 40(A-99%);48(C-82%,T-36%);55(C-53%,T-55%);87(A-34%,G-84%);90(C-82%,T-36%);91(A-34%,G-84%);93(C-94%,G-22%);114(G-99%);172(A-99%);173(C-84%,T-34%); | A;C;C;G;C;G;C;G;A;C | A;T;T;A;T;A;C;G;A;T | |
| 151 | chr1 | 272 | CCGAAGTAGGATTTTTCGATAGCTG | TAAAACACCGAGCTAACTAGGACC | 149(C-39%,T-78%);153(C-85%,T-34%);176(C-39%,T-78%);177(A-39%,G-78%); | G;G;T;C;T;G | G;G;C;C/T;C;A | |
| 152 | chr1 | 256 | TTGTGGGACTAGTAGAAAACTCTGG | ATTGTTCACAAACTTGCCACCTTTA | 64(C-39%,T-77%);115(C-99%,T-13%);117(G-46%,A-77%);178(A-39%,G-84%);190(A-13%,C-39%,T-77%);206(A-13%,G-99%); | T;C;A;G;T;G | C;C;G;A;C;G | |
| 153 | chr1 | 263 | CATTCAGTTTAGGTCGCTTGTCTTT | ACTTTCACATCAGGACTACAAGGAA | 93(C-80%,T-36%);100(A-36%,G-80%);117(G-36%,T-80%);147(C-100%,T-11%); | C;G;C;T;C;C | T;A;C;G;C;C | |
| 154 | chr1 | 237 | TAGGGTGTAGGAGATGATGAAGAGA | TTCAATGGTCCGAGGTCCCTAGAT | 49(A-36%,G-81%);69(C-36%,T-81%);163(C-36%,T-81%); | G;T;C;T | A;C;C;C | |
| 155 | chr1 | 258 | TAACTGCTTTCTGTTACAGTTCACG | TCCAGCTATGAAAACAGTTGTAGGA | 70(C-11%,T-100%);112(C-12%,A-99%);128(G-34%,A-86%);133(C-34%,A-86%); | G;T;A;A;A | G;T;A;G;C | |
| 156 | chr1 | 269 | CTAGCATTCAAATATTCAGCTCGCA | TTCAGTTTGATGCCCATTCTCATTT | 58(C-34%,T-82%);65(A-34%,G-82%);138(C-53%,T-56%);164(C-97%,T-17%);169(C-34%,T-82%); | T;G;T;C;T | C;A;C;C;C | |
| 157 | chr1 | 280 | TGGGTAAGCGGTTTGTTATTCAAAT | TCAAAACCAAAATCCAAGGCAAGAA | 97(A-16%,G-100%);153(G-14%,A-100%); | G;A | ND | |
| 158 | chr1 | 170 | GATCTTTTTATACTGCTCCGGGTTG | ATAAATTGGACACAGTTGCCAATGT | 49(C-83%,T-32%);57(G-32%,A-83%);72(C-99%);89(G-32%,T-83%);110(C-83%,T-32%); | C;A;C;T;C | T;G;C;G;T | |
| 159 | chr1 | 247 | ACGCACAACTATTGGCTTACTAGTA | ATAGAGGTTGGAATGTCCTTTCGAT | 51(C-83%,T-33%);139(A-33%,G-81%);147(A-33%,G-83%);161(C-72%,T-41%);187(C-83%,T-33%);206(C-33%,T-83%); | C;G;G;T;C;T | T;A;A;C;T;C | |
| 160 | chr1 | 240 | ATACAATGGGGAACACTCAATTTGG | CAGTTAAGACACATTCACCCCAAAA | 82(T-99%);84(C-99%);94(G-82%,T-33%);97(C-82%,T-33%);138(A-99%);139(C-99%);143(T-99%);154(G-32%,T-83%);167(A-99%);177(G-99%);178(C-99%); | C;T;C;G;C;A;C;T;T;A;G;C; | C;T;C;T;T;A;C;T;G;A;G;C; | |
| 161 | chr1 | 280 | GGAGCTTTGGTATCTTTCCTTCTCT | AATGTCTTCAAAGCGATCAGTGATC | 135(A-44%,G-82%);137(G-17%,T-99%);163(A-17%,G-99%);166(A-99%,T-17%);177(A-99%,T-17%);190(G-44%,A-82%);195(A-29%,T-93%); | G;T;G;A;A;A;T | A;T;G;A;A;G;A | |
| 162 | chr1 | 222 | AAAAATGCATGAATCGACAACCAAC | TGATAGTGGTCACATCTCTTCTCAA | 72(C-74%,T-41%)112(A-39%,G-83%);135(G-86%,A-34%);167(G-81%,A-55%); | T;T;G;G;G | C;T;A;G;G | |
| 163 | chr1 | 269 | GTGTTTGTCTGGTCGACTACAAAAA | GTTTAGGTCTGTGTAATCGATGCAC | 89(C-39%,T-86%);92(A-6%,G-99%)96(G-99%,T-6%);112(A-6%,G-100%);129(G-6%,A-99%);130(A-6%,G-99%);142(G-99%,T-6%);143(A-99%,T-6%);149(G-42%,T-82%);156(A-6%,G-99%);159(A-6%,G-99%);161(C-99%,T-6%); | T;G;G;G;G;G;A;G;G;A;T;G;G;C; | C;G;G;G;G;G;A;G;G;A;G;G;G;C; | |
| 164 | chr1 | 256 | CTTAACGGGTTCAACTTGTATACCG | AAAACGCCAAGCTAACAAAGACCTC | 95(A-20%,G-99%);122(C-94%,T-28%);127(G-20%,A-99%);139(A-12%,T-98%);140(C-98%,T-12%);141(G-44%,A-83%);143(C-20%,T-99%); | C;G;C;C;A;T;C;A;T;G; | C;G/A;C;T/C;G/A;T;C;G;C/T;G; | |
| 165 | chr1 | 236 | TGGACCACAAAATTACAAGTCCAAA | GGTGATTGGCTTGATTGATTAGAGG | 108(A-50%,G-81%);123(A-50%,G-81%); | ND | A;A | |
| 166 | chr1 | 207 | ATAGAGTCCCCCTCACGAACTG | TATCAAGGAGGCCTTAAGAGAACAG | 68(C-47%,T-80%);71(A-12%,G-99%);74(C-99%,T-12%);77(A-12%,G-99%);98(G-12%,A-99%);102(C-12%,T-99%);110(G-84%,T-41%);117(A-12%,G-99%);119(C-12%,T-99%);121(G-49%,T-79%);136(A-12%,G-99%);144(C-99%,T-12%);150(A-99%,T-12%);160(C-12%,T-99%);164(C-74%,G-51%); | T;G;C;G;A;T;G;G;T;T;G;C;A;T;C | C;G;C;G;A;T;T;G;T;G;G;C;A;T;G | |
| 167 | chr1 | 244 | CATCAGCAAAATGCCAATAAATGTGT | TAACCACACATAGAAAATCCGGCTA | 48(A-45%,G-77%);65(C-45%,T-77%);80(C-70%,T-65%); | G;T;T | A;C;C | |
| 168 | chr1 | 210 | CAATGATCCATAAGTGGCTAGGGTA | AGAATCAACACAAAGCTTTCCAGAC | 58(C-46%,T-76%);64(A-45%,C-77%);94(C-99%);109(A-75%,T-46%);115(C-99%);154(C-99%);163(C-77%,T-45%); | T;C;C;A;C;C;C;G | C;A;C;T;C;C;T;G | |
| 169 | chr1 | 253 | GACATATCATTGTGGAATGTCCGAC | AATAATCCACATGTGACACAGGGAT | 60(C-99%,T-5%);78(A-5%,G-99%);127(A-99%,T-5%);128(G-5%,A-99%);139(C-48%,A-76%);152(A-5%,C-99%);153(C-99%,T-5%);154(G-94%,A-30%);158(A-48%,G-58%);168(C-99%,T-5%);171(A-5%,G-99%);206(A-45%,G-79%); | G;C;G;A;A;A;C;C;G;A;C;G;G | G;C;G;A;A;C;C;C;G;G;C;G;A | |
| 170 | chr1 | 248 | CACGAAGAGGGAAGAAATTCTGATG | CTTCTCTGGAATGGTCAGTAGGTTG | 40(C-50%,T-75%);49(C-99%,T-9%);86(A-9%,C-99%);87(G-9%,A-99%);103(C-50%,T-75%);116(C-99%,T-9%);117(A-50%,G-75%);126(A-9%,G-99%);158(G-9%,A-99%);163(G-9%,A-99%);169(G-99%,T-9%);186(A-9%,G-99%);196(A-9%,G-99%);199(G-50%,A-75%); | C;T;C;C;A;T;C;G;G;A;A;G;G;G;A | C;C;C;C;A;C;C;A;G;A;A;G;G;G;G | |
| 171 | chr1 | 235 | GGCTCCTTGAATACTGCAGAGAAAT | TCTCCTTGGATGAAATTGACATTGT | 38(A-45%,T-78%);87(C-82%,T-39%);135(C-78%,T-45%);158(C-78%,T-45%); | T;C;C;C | ND | |
| 172 | chr1 | 245 | ATTTGCTCTTTTGGGGTAGGATC | GTATCACAGGAAGATCTCCCCTGA | 36(A-46%,G-76%)84(G-46%,A-76%);124(G-46%,A-76%);169(G-46%,A-76%);210(C-46%,T-76%); | G;C;A;A;A;T | A;C;G;G;G;C | |
| 173 | chr1 | 267 | TAATAAGGTTTTGCAAGCAGCTGAA | TTCAGTGATGAAATCAACAAGACCT | 62(C-59%,T-46%);122(C-46%,A-59%);142(C-46%,T-59%);170(C-59%,T-46%);221(C-47%,T-58%);232(A-46%,G-59%); | C;A;T;C;T;G | T;C;C;T;C;A | |
| 174 | chr1 | 242 | TGCAGCTAACAATCAAAGCCCAAG | CACCTCGCTCAGACTGTATAGTATT | 87(G-99%);98(G-99%);99(G-99%);115(C-99%);123(G-99%);128(G-45%,A-77%);148(A-99%); | G;G;G;C;G;A;A; | G;G;G;C;G;G;A; | |
| 175 | chr1 | 261 | GAAAGACACTGACAACATGCCG | TAGAGGGGGATTGTAGTGACCTAAG | 90(C-99%);91(G-99%);93(C-99%);101(G-44%,A-78%);142(A-44%,G-78%);146(G-44%,A-78%);167(T-99%);171(C-99%);174(C-44%,T-78%);176(G-99%); | C;G;C;A;C;G;A;T;C;T;G; | C;G;C;G;C;A;G;T;C;C;G; | |
| 176 | chr1 | 284 | TTTCTTGGAATGCAGAAGTCCCTT | AGAAACCAGACTCAATTGACTTCTG | 56(A-56%,G-76%);61(C-87%,T-37%);107(C-94%,T-25%);146(G-56%,A-76%);157(C-76%,T-56%);184(C-99%);187(C-94%,T-25%); | G;C;C;A;C;C;C | A;C/T;C/T;G;T;C;C/T | |
| 177 | chr1 | 217 | GGTCTGGGATTTTAAGACTCCCAT | GATCCGCCTCCTCATCCTCTAG | 42(A-46%,G-73%);57(G-99%)126(C-89%,T-52%);128(A-89%,T-52%); | G;G;C;C/T;A/T;C | A;G;C;C;A;C | |
| 178 | chr1 | 211 | TTTCGTGTGTGTGTAGTGGATCTAT | CCAAATTGAGAAGGAACAGAGTGAC | 52(C-49%,T-70%);61(A-43%,G-78%);115(G-43%,A-78%);146(C-78%,T-43%);166(G-43%,A-78%); | T;G;A;C;C;A | C;A;G;T;C;G | |
| 179 | chr1 | 265 | GGATCCCTTGGATACTTGGATACTTA | ATATGTACACCCAAGGTCATCCAAA | 95(A-50%,G-64%);116(A-50%,G-64%);120(C-50%,T-64%);134(A-50%,G-64%);157(C-50%,T-64%); | G;G;T;G;T | A;A;C;A;C | |
| 180 | chr1 | 255 | AAGAAGAAGAAATCTAGCAAGCAGC | ATCATCTGCAATAACCACCATGTTC | 55(A-50%,G-69%);62(C-95%,T-14%);68(G-7%,A-99%);119(G-7%,A-99%);139(C-52%,T-64%);153(C-69%,T-50%);188(G-7%,A-96%); | G;C;A;A;T;C;A | A;T/C;A;A;C;T;G/A | |
| 181 | chr1 | 241 | TGGATTCCTAGAGCAGCTCTTAATC | TAGGTCTCCATCATTTTGGCTAAGG | 39(G-50%,A-70%);41(C-99%,T-11%)80(C-70%,T-50%);83(C-90%,T-40%);132(A-99%,T-11%);140(G-55%,A-63%);141(A-5%,C-96%);202(A-11%,G-99%); | A;C;C;C;T/C;A;A;C;G | G;C;C;T;C;A;G;C;G | |
| 182 | chr1 | 196 | CCCGAATCAGTCTTAGCAAAATCAA | AGCTGATATCATTTGTGCTAACTGC | 55(C-63%,T-47%);59(C-61%,T-53%);63(C-68%,T-41%);64(A-53%,G-61%); | T;C;C;G | C;T;T;A | |
| 183 | chr1 | 204 | TTAAGCTACAGAGTGGACCAGACAA | CCACTTAAACTCGACAGACTTGTTG | 55(A-62%,G-58%);56(A-62%,C-58%);74(C-65%,T-56%);89(C-99%);160(C-58%,T-62%);168(G-63%,A-56%); | G;C;C;C;C;A | ND | |
| 184 | chr1 | 295 | ATGTATCGCAATTGATTGAGGAATCG | TGGAAGCATACATCACAACCCTTAA | 89(A-5%,G-99%);97(C-53%,T-68%);105(C-15%,T-99%);129(A-15%,C-99%);144(A-48%,G-77%);165(A-15%,G-99%);176(A-35%,G-90%); | G;T;G;T;C;G;C;G;G;A;G; | G;C;G;T;C;G;C;A;G;A;A; | |
| 185 | chr1 | 268 | GAGGTCCCTCCAAGATTTGATAACT | AGACGTCTTCAGTTCGATCTATTCA | 38(G-49%,A-69%);122(C-21%,T-95%);140(G-49%,A-69%);152(A-49%,G-69%);154(G-49%,T-69%);212(C-17%,T-97%);220(C-69%,T-49%);222(G-49%,A-69%); | A;T;A;G;T;T;C;A | G;T;G;A;G;T;T;G | |
| 186 | chr1 | 209 | CCTTGATAACGCAACGACCTTTAAT | AAAGATCACGCATTGTCTTATGTCC | 81(A-54%,G-69%);90(A-48%,G-74%);99(G-10%,A-99%);105(C-10%,T-99%);115(G-10%,A-99%);126(G-10%,T-99%); | G;G;A;T;A;T | A;A;A;T;A;T | |
| 187 | chr1 | 240 | AGACTTCATTACACCCGTATAGCTC | TACTAGGTTGGCTTATGATGACCTG | 79(A-10%,T-99%);108(A-10%,G-99%);132(A-48%,G-74%);155(C-48%,A-74%);163(A-48%,T-74%);204(A-10%,G-99%); | T;G;G;A;T;G | T;G;A;C;A;G | |
| 188 | chr1 | 202 | CTCAACTTGGTGTAGTGCGTATG | GTAACAAGACCTCATCAGATGCAAG | 40(A-27%,G-84%);103(G-33%,A-70%);108(A-33%,G-70%);121(C-99%);122(C-70%,T-33%); | G;A;G;C;C | A;G;A;C;T | |
| 189 | chr1 | 271 | AGTGCAATTCTCTTGTAATTGACCG | ACATTTTTGTGTGTATGGGTGTCTC | 190(A-47%,G-60%);192(A-47%,C-75%); | A;C | G;A | |
| 190 | chr1 | 217 | CTTCCCAAGGAGGAAGCACC | CTGGCAAGGGATTAGAACCCTAC | 43(G-48%,A-75%)57(A-48%,T-75%);62(A-48%,G-75%);135(C-75%,T-48%);152(A-48%,G-75%);166(C-75%,T-48%); | A;C;T;G;C;G;C | G;C;A;A;T;A;T | |
| 191 | chr2 | 268 | TAAATGCTTAGTTTCACACACCCAC | CTTGCCTGATAGCTTTGACAATAGG | 38(C-99%,T-14%);40(A-99%,T-14%);59(G-99%,T-14%);61(A-99%,T-14%);62(A-14%,G-99%);84(G-14%,T-99%);96(A-14%,G-99%);167(C-14%,T-99%);194(C-99%,T-14%);209(A-32%,G-87%,T-14%);224(A-75%,C-49%);230(A-14%,G-99%); | C;A;G;A;G;T;G;T;C;G;A;G | C;A;G;A;G;T;G;T;C;A/G;A/C;G | |
| 192 | chr2 | 249 | CTCTTAGCCAACCCATCACAAAAAT | AGATGAAAGGGTAAATGATGTGGGA | 106(A-11%,C-89%);107(G-89%,T-11%); | C;G | C;G | |
| 193 | chr2 | 280 | CATCAGATGGGTCCAACTTGAAAAT | TCAGACAATCTTTGTTCCTTCTTACC | 73(A-5%,G-98%);139(A-32%,G-89%);179(G-32%,C-89%); | G;G;C | G;A/G;G/C | |
| 194 | chr2 | 222 | ACATGTACAACAAAAAGCGAACTCT | TGGAGAGCTTTAGAAATTGGTAGCT | 117(G-11%,T-97%);146(C-11%,T-97%); | T;T | T;T | |
| 195 | chr2 | 218 | CACCTTTGGTCATTTCCCCTTG | GTTTTGTAGCTACTTCACATGTCCC | 81(C-33%,T-87%);130(C-55%,T-63%); | T;T;C | T;T/C;C | |
| 196 | chr2 | 174 | TTCCTCCTTAAATGTATCTTGGCCA | GGTTGAAACTGATGATAAAGATGCG | 43(C-64%,T-59%);48(C-60%,T-61%);75(A-6%,G-98%);95(C-59%,T-64%);98(G-64%,A-59%);130(A-57%,C-64%); | C;T;G;T;G;A | C;T;A/G;T;G;A/C | |
| 197 | chr2 | 272 | CCACTCATTACTGACAGTGGGTAG | CTTTAAAACCTTTGCAGACCCTTCT | 35(G-15%,A-98%);74(C-98%,T-15%);76(G-77%,A-52%);87(G-15%,A-98%);108(C-63%,T-64%);123(G-77%,A-52%);155(C-15%,T-98%);156(C-58%,T-66%);157(A-15%,G-98%);165(C-66%,T-58%);166(A-66%,C-58%);220(C-98%,T-16%);231(G-98%,T-15%); | A;C;G;A;T;G;T;T;G;C;A;C;G | A;C;G;A;T;G;T;T;G;C;A;C;G | |
| 198 | chr2 | 184 | ATTTAAAACCGGATTCAGACACCTG | GCATAATGATGAAGGGCCTAGATCT | 110(C-36%,T-84%);141(C-36%,T-84%); | T;T | T/C;C/T | |
| 199 | chr2 | 263 | TATGAATTGATCAAGCCTTGCCAAA | GATGAATGGGCAGGTTATGGAATTT | 79(C-37%,T-84%);99(C-37%,T-84%);126(G-92%,A-25%);187(C-37%,T-84%);201(A-37%,G-84%);210(G-52%,T-67%);225(A-84%,T-37%); | T;T;G;G;C;A;T;G;T;A | T/C;C/T;G;G;C;A;C/T;A/G;T/G;T/A | |
| 200 | chr2 | 274 | TTTTTGAAATTTCGCCCTACCTTCC | CACCTGTGATCACTATGTCATCAAC | 90(C-42%,T-62%);129(G-42%,A-62%);181(C-68%,T-36%);220(A-42%,G-62%); | G;T;A;C;G | G;C;G;C;A | |
| 201 | chr2 | 247 | TGAGATCCAAGAATGACAAAGAGGT | GTTGTCCTGTGATTCAATGACTACC | 83(A-76%,T-24%);84(C-24%,G-76%); | T;A;G;A;G | T;A;G;A;G | |
| 202 | chr2 | 181 | AAAGTTTCATTTGCCACAAGATGAT | TGGAAATCAAAATGAAAGATACGCTG | 49(C-89%,T-38%);51(G-47%,A-81%);56(G-15%,A-99%);64(G-15%,T-99%);83(C-15%,T-99%);115(C-89%,T-38%);127(C-99%,T-15%); | C;A;A;T;T;C;G;C | C/T;A/G;A;T;T;T/C;G;C | |
| 203 | chr2 | 274 | TTAACAGATACACATGGTGTCTCCC | GTGAGTCCCTTCCACATTAAGTACT | 92(C-14%,T-99%);100(G-14%,A-99%);101(C-38%,T-87%);124(A-7%,G-100%);191(G-38%,A-87%);192(A-14%,G-99%);193(A-81%,T-46%);196(G-14%,A-99%);202(G-14%,C-99%);211(G-14%,A-99%);212(G-14%,C-99%); | T;A;T;G;C;A;G;A;A;C;A;C | T;A;C/T;G;C;G/A;G;A/T;A;C;A;C | |
| 204 | chr2 | 240 | TGTAGAGAAGACAGGTTATTTGAAACA | AGAAAAACAACATACGAATGTGGCA | 51(A-40%,G-84%);78(C-40%,T-82%);84(C-84%,T-40%);159(G-40%,A-84%);164(A-84%,T-40%); | G;T;C;A;A | ND | |
| 205 | chr2 | 227 | ATGTGAATAGCCTACGGTCAACTT | CCACGTCTTTTGATGGGCTATG | 84(C-83%,T-39%);86(T-99%);88(G-99%);93(G-99%);95(A-99%);103(C-82%,T-40%);123(T-99%);129(C-99%);133(C-99%);134(G-99%);136(G-99%);159(G-99%);164(A-39%,G-83%);175(T-99%);179(C-99%); | C;T;G;G;A;C;T;C;C;G;G;C;G;G;T;C; | C/T;T;G;G;A;T/C;T;C;C;G;G;C;G;A/G;T;C; | |
| 206 | chr2 | 178 | ACAAGATCATGAACATTCCCAAACC | ATGGTCTATTCCTCCCACCTATTTG | 129(A-40%,T-83%);131(C-83%,T-39%); | T;C | T/A;C/T | |
| 207 | chr2 | 267 | TCCATATTCCAGCTCTTATTGGGTC | TCAATAAAGAGCCTATCTCATTCCGT | 47(A-38%,G-83%);94(G-22%,A-93%);102(C-38%,T-83%);107(C-38%,T-83%);161(G-38%,A-83%);226(C-38%,T-83%); | G;A;T;T;A;T | A/G;A;T/C;T/C;G/A;T/C | |
| 208 | chr2 | 156 | AATTGGTATTCATTCTGATTCCGCC | GCGAGGGTATTTTAAGAGACAAGTG | 91(C-94%,T-22%);105(A-22%,T-94%); | G;C;T | G;C/T;A/T | |
| 209 | chr2 | 258 | CTGAATGCAAAGACTTGTTAATGCG | GCATCATTAGTAGAGGAGTATGGCA | 52(A-74%,T-54%);56(G-99%);99(C-99%);114(G-99%);115(A-15%,G-96%);139(C-99%);143(C-99%);197(A-74%,G-54%);202(C-75%,T-53%);203(T-99%);205(G-99%);211(C-99%); | A;G;C;G;G;C;C;A;C;T;G;C | A/T;G;C;G;G;C;C;G/A;T/C;T;G;C | |
| 210 | chr2 | 172 | TCCACACCTCTATCAAAGATCCATC | TTGGGAAGACTAAGATCTATGGCTG | 41(G-47%,A-71%);46(C-42%,T-80%); | A;T | G;C | |
| 211 | chr2 | 268 | GCAAAGAGGTCCATGTCTTAAATGT | AAGAGTTAGCATCCTTTTGAATGGC | 49(C-99%);76(C-45%,T-81%);88(G-99%);112(G-45%,A-81%);119(C-96%,T-14%);121(G-99%);132(C-99%);139(C-99%);205(G-99%);222(C-45%,T-82%); | C;T;G;A;C;G;C;C;G;T | C;T/C;G;A/G;C;G;C;C;G;T/C | |
| 212 | chr2 | 279 | GAACCAGTTCAATATCCGCATCAC | GTTCGGGAGATAAAGGAGATGGTAC | 69(G-45%,A-82%);90(A-63%,T-66%);125(A-45%,G-82%);166(A-63%,G-66%);181(C-45%,T-82%); | G;A;A;G;C;C;A;A;T | G;G/A;A/T;G/A;C;C;A/G;A;C/T | |
| 213 | chr2 | 222 | AGGGGAAGAGGTTTAAAAAGGATGT | TCTTCCTCTGTTTCTAAGGACCATC | 92(C-50%,T-74%);110(G-50%,T-74%); | T;T | T/C;T/G | |
| 214 | chr2 | 268 | TGACTGAATGGTACCCCTAACTCTA | ATCTACCTATTTAGAGCAGAGCCAC | 37(C-7%,T-100%);114(C-100%,T-7%); | T;C | T/C;C/T | |
| 215 | chr2 | 200 | GGTCAAATCGGGTCATTTTCACATT | AGGTAAAATTAGTAGCGAGGTGTGT | 71(G-50%,A-72%);75(G-50%,A-72%); | A;A | A/G;G/A | |
| 216 | chr2 | 248 | GTTGATACAATTGCGGTCCATTACT | GTCTATGAGAATTGCTTTAAGGGCC | 49(T-99%);65(A-99%);111(A-99%);149(A-99%);150(C-50%,T-73%);169(C-50%,T-73%);181(C-97%,T-12%);190(C-99%);195(G-99%);196(T-99%);199(C-99%); | T;A;A;A;T;T;C;C;G;T;C | T;A;A;A;T/C;T/C;C;C;G;T;C | |
| 217 | chr2 | 280 | GGTCTCATTTTCAAGAGGTATGCAC | AGTGCGAGTTTAAAATGAGAGTTGA | 37(C-99%);73(T-99%);88(A-51%,G-73%);110(C-95%,T-17%);115(T-99%);183(G-99%);214(G-68%,T-52%);219(C-99%); | C;T;G;C;T;G;A;G;T;C;C | C;T;A/G;C;T;G;A;G;T/G;C;C | |
| 218 | chr2 | 214 | ACAGTTTTCTAAGGGCATATGGGTA | TCTTTTATAATAGGAGTCGCCCAGG | 65(G-50%,A-74%);164(A-50%,G-74%);168(G-74%,T-48%); | A;G;G | G/A;A/G;G/T | |
| 219 | chr2 | 243 | GTCCCAACCTTATAGGGTCTAACTC | CGAATGAAAGGCCCACATTAACAAA | 42(G-55%,A-74%);68(G-10%,A-100%);72(G-10%,A-100%);153(A-50%,G-80%);161(G-55%,A-74%);164(C-100%,T-10%);168(C-10%,T-100%);172(G-55%,A-31%,T-55%); | A;A;A;G;G;G;A;C;G;T;T | A/G;A;A;G;G;G/A;G/A;C;G;T;G/T | |
| 220 | chr2 | 258 | GTTAGAACCATCACATTACGGCATT | CTTCTACGGTTCTACATAGACGGAG | 41(A-10%,G-100%);87(G-55%,A-73%);117(G-55%,A-73%);121(C-100%,T-10%);123(G-6%,C-100%);160(A-50%,G-80%);179(C-100%,T-10%); | G;A;A;C;C;G;C;G | G;A/G;G/A;C;C;A/G;C;G | |
| 221 | chr2 | 277 | AATTTTTGCATGATCAGAACTGCAG | AGTCTGCTTTACCAGTTACAGAAGT | 42(G-57%,A-61%);81(A-100%,T-10%);124(A-55%,G-70%);139(C-77%,T-52%);166(A-10%,G-100%); | A;A;G;C;G | A/G;A;A/G;T/C;G | |
| 222 | chr2 | 232 | CCAGCAGAGCAAGAACTTAAAAGAA | ATCAATGCCACAAAAATTTTGGTGG | 42(C-70%,T-54%);47(C-100%,T-8%);59(A-70%,T-54%);182(A-64%,T-56%); | C;C;A;A | T;C;T;T | |
| 223 | chr2 | 253 | TTTGGTTAGATGGGAACTACTGTGT | AAGGAACTAGGGAAGAATGCTATGT | 96(G-52%,A-66%);97(A-49%,G-68%);127(G-52%,A-66%); | A;G;A;C | G;A;G;C | |
| 224 | chr2 | 228 | CCATCTGAATCAACGACAGTTCAAA | ACCGATGTGTTTTCTATGTATACGA | 58(A-73%,C-34%);151(A-37%,T-72%); | A;T | ND | |
| 225 | chr2 | 279 | CTCAGTGGTGGAAAATGAGTTCTAA | TACTAAGTACTGGGCAATAGTTCGG | 70(C-52%,T-64%);81(A-52%,G-64%);243(A-52%,C-64%); | T;G;C | C;A;A | |
| 226 | chr2 | 276 | TTTTATTGAAGTCGCCATAGGGGTA | TCTACTACTGATCCCTTTCTCTTCA | 38(G-68%,T-49%);58(G-7%,A-100%);105(G-92%,A-33%);120(C-100%,T-7%);127(G-7%,A-100%);132(G-68%,T-49%);142(C-72%,T-49%);144(G-94%,A-28%);192(G-28%,T-94%);231(C-92%,G-33%); | T;A;G;C;A;T;C;G;T;C | G;A;G;C;A;G;T;G;T;C | |
| 227 | chr2 | 259 | TTGACCTTCTTGTCCCAATCAAATG | AACCAACCTGCTATTGTTGACAAAT | 44(A-16%,T-100%);94(G-16%,A-100%);161(A-51%,T-78%);163(G-56%,A-67%);201(G-16%,C-100%);209(A-85%,T-43%); | T;A;T;A;C;A | T;A;A;G;C;T/A | |
| 228 | chr2 | 237 | CATTGTCATTTCTCAGTTTCTCCCC | GAGAGAGAGAAGAGAACGAGGAATC | 111(A-28%,G-92%);135(C-98%,T-9%);150(A-50%,G-68%); | C;G;C;G | C;A/G;C;G/A | |
| 229 | chr2 | 213 | AATTCTATAGTATGGGGACTGGGGA | TCTCAATACAAGAAATGGGCAATCC | 38(C-16%,T-100%);55(G-41%,A-85%);66(A-79%,T-51%);69(C-51%,T-79%);158(A-41%,G-85%); | T;A;A;T;G | T;A/G;A/T;T/C;G/A | |
| 230 | chr2 | 247 | CAGCAAAGGCACCTTAATAACTCAA | AGTGTAGCTTTTAGTACCCAATTCA | 141(G-80%,T-40%);173(A-88%,G-43%);178(A-59%,C-70%); | G;A;C | T/G;G/A;C/A | |
| 231 | chr2 | 175 | GGTTTGATTTCGGTTTTCACACATG | GGAATTGATTTGTCATAGGGCTGTT | 122(C-82%,T-39%); | C | T/C | |
| 232 | chr2 | 272 | CAGAGTTACTCGGGTAGATCGTAAC | TAGAGTGCCTGGATGTCTTTTACTT | 48(A-39%,G-84%);51(A-39%,C-84%);59(C-84%,T-39%);67(A-39%,G-84%);134(C-39%,G-84%);158(A-39%,T-84%);165(C-39%,T-84%);180(A-84%,T-39%);226(A-39%,G-84%); | G;C;C;G;G;T;T;A;G | G/A;C/A;T/C;G/A;C/G;A/T;C/T;A/T;G/A | |
| 233 | chr2 | 267 | GCTCACCTCCTTTTCTTCTTGTTTC | CAGAACACCGACCAAAATCAGAAC | 111(C-99%);119(A-30%,C-95%);139(C-82%,T-40%);169(C-82%,T-40%);182(A-24%,T-93%); | C;C;A/C;C;C;T | C;C;C/A;C/T;T/C;T/A | |
| 234 | chr2 | 214 | TGTAGCGAGCTGAGATAACTTTCAA | GGGCGGAATTGATAAGCCTTATTAG | 62(C-97%,T-10%);65(G-38%,A-82%)128(G-43%,A-82%);132(C-43%,T-82%);154(A-5%,T-100%);155(C-100%,T-5%); | C;A;T;G;A;T;T;C | ND | |
| 235 | chr2 | 261 | CATGATGGATGAGTCATTGTTTCGT | ATGTGTGTTGTTGCTACAAGTGTTC | 102(C-37%,T-81%);130(T-99%);161(G-37%,A-81%);190(C-81%,T-36%);199(C-64%,A-64%);212(A-26%,G-89%); | T;T;A;C;A;G | C;T;G;T;C;G | |
| 236 | chr3 | 278 | TTCTTCACATGGATTGAGACCATCT | AAATATCACCGTGGATTGATGGTTG | 89(G-10%,A-100%);107(A-10%,G-100%);116(C-100%,T-10%);126(G-10%,A-100%);159(A-100%,T-10%);165(G-10%,A-100%);168(A-10%,G-100%);187(C-49%,G-68%);195(A-57%,T-70%);221(C-10%,T-100%);231(C-100%,T-10%); | A;G;C;A;A;A;G;G;A;T;C | A;G;C;A;A;A;G;C;T;T;C | |
| 237 | chr3 | 267 | TCTACCCTATCACTATCCGTCTACC | TCCAAGACTGAAGAATCGATTCGTA | 60(C-71%,T-55%);92(A-50%,G-77%);94(G-10%,C-100%);120(C-71%,T-55%);167(C-10%,G-100%);168(A-10%,T-100%);178(C-100%,T-7%); | C;G;C;C;C;G;T;C | T;A;C;C;T;G;T;C | |
| 238 | chr3 | 247 | TTGTTAGAGCCTTGTGATTTTCCAC | TTGCAGCCGAATCATTTACACTATC | 58(G-51%,T-60%);66(C-99%,T-5%); | G;C | T;C | |
| 239 | chr3 | 273 | CATGTGTCTAGTTACATATCCGGGT | CTGGGATGATAAATTTGCCTTACCC | 118(A-45%,G-77%);119(A-45%,G-77%);163(A-12%,G-99%);210(A-5%,G-97%);211(A-45%,G-77%);212(A-49%,G-74%);222(A-45%,G-77%);224(A-45%,G-77%); | G;G;G;G;G;G;G;G;G | A;A;G;G;G;A;A;A;A | |
| 240 | chr3 | 250 | CTATCCACTGCTTGCATATGAAAGG | GGAAATATGTCATCGATTTGCTTCG | 80(C-49%,G-70%);93(A-49%,C-70%);96(G-49%,A-70%);186(C-68%,T-49%); | C;G;C;A;C | C;C;A;G;T | |
| 241 | chr3 | 205 | ACTACTACTACAAGGTAAAGCCACC | GGAAACATAAATCAACGGCCTGTTA | 41(T-99%);136(G-99%);152(G-99%); | T;G;G | T;G;G | |
| 242 | chr3 | 274 | GGTCGGTAAATGCATCATTTTGTCT | CGAAGAAGGGGAAGAACAAAAAGAT | 71(G-6%,A-98%);79(A-49%,G-72%);97(A-56%,G-69%);187(C-65%,T-56%);192(G-56%,A-69%);237(C-56%,T-69%); | A;G;G;T;A;T | A;A;A;C;G;C | |
| 243 | chr3 | 271 | ATTCAAGTGTTCTATTGTGTGGTGG | ATAACCCTATTAAGCCACTCAAGGG | 55(A-54%,C-70%);57(G-99%,T-8%);66(G-8%,A-99%);76(G-50%,A-70%)104(A-8%,G-99%);115(A-8%,G-99%);116(G-8%,A-99%);128(C-60%,T-67%);132(C-70%,T-54%);163(G-8%,A-99%);164(C-99%,T-8%);169(C-8%,G-99%);217(C-99%,T-8%); | C;G;A;A;C;G;G;A;T;C;A;C;G;C | A;G;A;G;C;G;G;A;C;T;A;C;G;C | |
| 244 | chr3 | 257 | TCAGGTCAGTTTTCTAACAATGGTG | CTGTATTCTGACCGGTTCTGGATAT | 48(C-76%,T-51%);102(C-51%,T-76%);104(A-46%,G-78%);110(A-99%);153(G-46%,A-76%,T-6%);191(C-76%,T-51%);219(C-51%,T-76%);221(G-51%,A-76%); | C;T;G;A;A;C;T;A | T;C;A;A;G;T;C;G | |
| 245 | chr3 | 200 | AGTCAAAGCATATCGAAGTGAGGTA | ACAAATCTCCCTCTTTCTCGACTAG | 94(A-99%);95(T-99%);97(T-99%);98(T-99%);118(C-99%);156(G-30%,A-71%);157(A-27%,G-73%); | G;A;T;T;T;C;G;G;T;A;G;A | G;A;T;T;T;C;G;G;T;G;A;A | |
| 246 | chr3 | 258 | CATGGTTATTACTGCGATGGGTAAC | CCACTTGGGAAGACTGGAAAATTAC | 48(G-48%,A-80%);53(C-98%,T-10%);62(G-10%,T-98%);74(C-82%,T-39%);75(G-39%,A-82%);77(G-98%,T-10%);85(C-98%,T-10%);116(C-39%,T-82%);139(C-96%,T-13%);152(A-10%,G-98%);164(A-10%,G-98%);170(C-10%,T-98%);178(A-10%,C-98%); | A;C;T;C;A;G;C;T;C;G;G;T;C;G | G;C;T;T;G;G;C;C;T;G;G;T;C;G | |
| 247 | chr3 | 254 | CTCCATTAGAGTGAAAGCATTCTGC | AGCCTTATTTGCCTTACAGTTTGAC | 66(C-23%,G-94%);71(G-94%,T-23%);81(C-7%,T-100%);98(A-7%,G-100%);171(G-7%,A-100%);172(C-30%,T-94%);192(C-100%,T-7%);193(G-100%,T-7%);200(C-7%,T-100%);203(C-7%,T-100%);205(C-95%,T-23%);211(C-100%,T-7%); | G;G;T;G;A;T;C;G;T;T;C;C | G/C;T/G;T;G;A;C/T;C;G;T;T;C/T;C | |
| 248 | chr3 | 228 | TGCCAACTTGATCTAGTATCACACA | AGCTCTAGCAATGTAAGTAGGATGC | 66(G-50%,A-65%);113(A-50%,G-65%);126(A-50%,G-66%); | A;G;A;A | A;A;G;G | |
| 249 | chr3 | 260 | GGTTGAATGAACACTCCTAAACCAG | GGTGTTATATCGGTCTAGAGGCATT | 86(C-13%,T-92%);95(G-13%,A-92%);116(G-55%,T-46%);117(C-55%,T-46%);120(G-13%,A-92%);224(C-13%,T-92%); | T;A;G;C;A;T | T;A;T;T;A;T | |
| 250 | chr3 | 271 | CAACCAAGTAGGAGTAGAGAAGTGT | TATAATAACAGGTTGGGCCCACTAG | 106(C-80%,T-60%);206(A-60%,G-80%);211(C-60%,T-80%);213(A-60%,G-80%); | G;T/C;A/G;T/C;G/A | G;T;A;C;A | |
| 251 | chr3 | 293 | ATTATGCGAACCATGATGGATGCTA | GCATTAAAGACAAGGAAATCGAAGG | 53(C-60%,T-79%);82(A-38%,G-85%);125(A-36%,C-60%,T-50%);129(C-93%,T-33%);181(C-60%,T-79%);198(A-60%,G-79%); | T/C;G;T/C;C/T;C/T;G/A | C;G;C;C;C;A | |
| 252 | chr3 | 244 | GCAAGCACTTAGGAAAGAAGTAGAC | CTTGGAAGAGATCACAAGGCAAAAA | 81(G-60%,A-79%)85(A-60%,G-79%);161(A-7%,G-99%); | A/G;C;A/G;G | G;C;A;G | |
| 253 | chr3 | 227 | CTTAGGGTGAGAACAAAACCTCAAG | ACAACCAGTCCTTAGTTGTCAGTTA | 51(G-60%,T-79%);64(A-60%,G-79%);135(A-81%,T-30%);136(C-81%,G-30%); | G/T;G/A;A;C | G;A;A;C | |
| 254 | chr3 | 191 | CTGTCTAACAACTCGGTCATTTTCC | TTGGCTTAGGTCCTTACAAACTGAT | 36(C-59%,T-79%);37(G-99%);83(C-79%,T-59%);128(C-59%,A-79%);140(G-59%,T-79%);155(C-59%,T-79%); | T/C;G;T/C;A/C;G/T;C/T | C;G;T;C;G;C | |
| 255 | chr3 | 196 | AGGGTGATGGTATCTGATAATCTGA | CTACTTGTCATGCTTTTGTCCCAAA | 46(A-60%,G-80%);68(C-80%,T-60%);70(A-60%,G-80%);133(C-57%,G-84%);152(C-99%,T-7%); | G/A;C/T;G/A;C/G;C | A;T;A;C;C | |
| 256 | chr3 | 236 | CTTGATCAAGTCATGACCGTTGAAT | GAGTATAAAGACTTGTTGCAGTGCA | 101(A-60%,G-78%);105(C-88%,T-50%); | G/A;T/C;G | A;T;G | |
| 257 | chr3 | 280 | CTTACACTCCAGAGAGAAGAGAAGA | CCCAAAGAGGACACCAAGATCC | 145(A-60%,T-79%);148(G-60%,A-79%);157(C-79%,T-60%);230(C-60%,T-79%);233(A-60%,T-79%); | C;A/T;G/A;T/C;C;C/T;A/T | C;A;G;T;C;C;A | |
| 258 | chr3 | 231 | ATCTTCCAAGCCAAATTGTCTTGTT | AGAGGTTCAATAAGTTGGAGAGCTT | 65(G-78%,T-60%);131(C-60%,T-78%);137(G-60%,T-78%);146(C-78%,T-60%);161(C-78%,T-60%);190(G-78%,T-60%);191(C-78%,T-60%); | G/T;C/T;G/T;T/C;C/T;T/G;T/C | T;C;G;T;T;T;T | |
| 259 | chr3 | 295 | GAATATGTTGCACATCATGGAGGAG | GAAATTGGGTCACAAAGAAGTGGAT | 60(G-83%,T-61%);75(C-78%,T-62%);143(C-70%,T-52%);148(C-95%,T-27%);155(C-78%,T-62%);156(G-62%,A-78%);255(C-6%,T-98%);258(A-62%,G-78%); | T/G;T/C;C;T/C;C/T;A/G;T;G/A | T;T;C;C;T;G;T;A | |
| 260 | chr3 | 255 | GCAAGCATAGGTGAAGACATTAGTC | TCCATATAAGGCTGAGAAAAGACCA | 67(T-99%);125(C-64%,T-75%);167(C-77%,T-63%);171(C-78%,T-62%);176(C-99%); | T;C/T;C/T;C/T;C | T;C;T;T;C | |
| 261 | chr3 | 215 | GGAGGCCTACTAGTTCTTTATTCGT | GCTGTAAGAATCAGAGAGAGATCGA | 38(C-63%,T-78%);45(A-71%,T-70%);84(G-63%,A-78%);112(C-63%,A-78%); | C/T;A/T;G/A;A/C;C | C;A;G;C;C | |
| 262 | chr3 | 273 | GCTGAAGCTAGAAGAAATGCATACC | TCCACCATTCCAAAGCATTAAACTC | 61(C-99%);113(C-98%);127(C-98%);129(G-99%);164(A-98%);169(T-97%);173(A-98%);196(A-98%);225(T-98%); | C;C;C;G;A;T;A;A;T | ND | |
| 263 | chr3 | 231 | GAGGGTTCCTTTGATTGACAAACAT | TAGGTGCACTCTACTATGAAATCGG | 126(A-63%,C-77%);127(G-63%,A-77%);141(C-77%,T-63%); | C/A;G/A;C/T | A;G;T | |
| 264 | chr3 | 256 | TTTCCTCTACTTCCCTCAAGAGAAG | TGTTTTGAGTTTTGATAGATACGGACT | 95(A-11%,G-99%)135(C-62%,T-78%);153(C-72%,T-76%);157(C-99%,T-11%);166(G-99%,T-11%); | G;T;C/T;C/T;C;G; | G;T;C;C;C;G; | |
| 265 | chr3 | 279 | AAATCCAACGGAGACATAACAATGG | CATTTATGGCCAAAAGTACCCCAAT | 98(C-70%,T-70%);184(A-63%,G-77%);189(C-70%,T-70%);195(C-90%,T-26%); | T/C;G/A;T/C;C | T;A;C;C | |
| 266 | chr3 | 198 | GATGCAGTGTTGAAGGTACATTCTG | GTATTTTCAAGCTCACACAGTCGTA | 65(A-6%,G-98%);72(A-66%,G-77%);118(C-77%,T-66%);132(A-66%,G-77%);163(A-77%,T-66%); | G;G/A;T/C;G;A/G;T/A | G;A;T;G;A;T | |
| 267 | chr3 | 236 | ATTCTCATCAGTCACCCGTACACAT | AATGCATAAAAGCCAAGAACAGAGG | 87(T-100%)109(A-5%,G-100%);112(A-5%,C-100%);123(C-99%,T-8%);124(A-99%,T-5%);126(A-5%,T-99%);132(C-100%,T-5%);133(A-5%,C-99%);149(A-5%,T-100%);151(C-5%,A-99%);174(C-77%,T-62%);175(G-68%,A-76%); | T;C;C;G;C;C;C;A;T;C;C;T;A;C/T;A/G; | T;C;C;G;C;C;C;A;T;C;C;T;A;T;G; | |
| 268 | chr3 | 275 | CAAGCCTCCCAAATTGCTAACTTAA | CAAAGTTTGCTTGCGATCAAATGAA | 83(G-99%);86(G-99%);100(A-30%,G-94%);102(G-99%);105(C-99%);107(A-99%);118(G-99%);133(G-63%,A-77%);155(A-99%);164(A-99%);170(C-99%);171(G-99%);174(G-99%); | G;G;A/G;G;C;A;G;A/G;A;A;C;G;G; | G;G;G;G;C;A;G;G;A;A;C;G;G; | |
| 269 | chr3 | 156 | TGAATGGTGCAAACTACCATACTTG | GCCTTATATACCCACAAACCTGTTG | 47(C-52%,T-76%);51(G-51%,T-77%);59(A-99%);60(C-99%);73(C-52%,T-76%);81(T-99%);85(C-99%);87(A-45%,G-80%);88(A-99%);89(G-99%);92(G-99%);101(C-11%,T-96%);108(G-99%); | ND | C;G;A;C;C;T;C;G;A;G;G;T;G | |
| 270 | chr3 | 267 | GCCTATGACCTTTTCTTGGTTTCAG | TGGAAAGTAAGATGGAAGGAGTCAC | 61(C-99%,T-13%);63(G-47%,A-82%);68(A-13%,G-99%);83(C-58%,T-79%);87(C-13%,G-47%,A-79%);124(G-95%,A-44%);128(C-82%,T-47%);138(C-99%,T-13%);140(G-13%,A-99%);154(A-13%,T-99%);155(A-13%,G-99%);165(G-13%,A-99%);195(G-85%,T-56%);207(C-79%,T-58%); | C;A;G;T;A;G/A;C;C;A;T;G;A;G/T;C | C;G;G;C;G;G;T;C;A;T;G;A;G;T | |
| 271 | chr3 | 166 | GGTGGTTGATCATCTCTCCAAGTAT | GCGCCAAAAGAAACTCATAAAGACT | 47(C-76%,T-63%);95(G-78%,A-56%);129(C-92%,T-23%); | C/T;A/G;C | T;G;T | |
| 272 | chr3 | 269 | ATTTTCCGCATGAGAAAATTCCCAT | AGGTCTCTCTCTAATAATGTGCAACT | 111(G-61%,A-78%);114(A-60%,G-78%); | G/A;A/G | G;A | |
| 273 | chr3 | 273 | TGAAGCTGGTCTATGGTGAAGTTAA | GTAGCTCGTCATTATTTGCTTCCTC | 44(C-62%,T-79%);70(C-62%,T-79%);92(C-79%,T-62%);123(C-85%,T-40%);126(G-62%,A-79%);163(A-62%,G-79%);225(C-79%,T-62%); | C/T;C/T;C/T;C;A/G;A/G;C;C/T | C;C;T;C;G;A;C;T | |
| 274 | chr3 | 274 | ACTCGTGTCCTTGTATCTTCATCTT | TGGACAAAGGAATACCCGAAAGTAT | 81(C-64%,G-79%);83(A-60%,G-80%);86(G-10%,T-100%)103(C-100%,T-5%);109(C-8%,T-100%);122(G-63%,A-80%);139(C-100%,T-10%);152(G-80%,T-60%); | C/G;G/A;T;C;C;C;T;A/G;C;T;T/G;C;T;G;C;C; | C;A;T;C;C;C;T;G;C;T;T;C;T;G;C;C; | |
| 275 | chr3 | 278 | GTGAGAACTTAGCTTTTGTGTTGGT | TTTGACTTAAGCATCAGAGTTCCCT | 39(C-63%,T-83%);77(A-8%,G-99%);90(G-63%,A-83%);127(A-7%,T-99%);155(C-63%,G-83%);193(C-63%,T-83%); | T/C;G;G/A;T;C;C/G;T/C | C;A/G;G;T;C;C;C | |
| 276 | chr3 | 258 | CAGTGTGGAAACCCGATATACAAAC | CTACACTCTGCCAAGAAGTCAGTC | 74(C-98%);93(A-69%,G-69%);108(C-69%,T-69%);141(C-94%,T-30%);143(A-40%,G-74%,T-23%);214(C-69%,A-69%); | C;A;C;C;G;C | C;A;C;C;T/G;C | |
| 277 | chr3 | 275 | GATCCGCTACCTAGTATGAGTCATG | AACCGTCAGCTTGATCAATTCTTTT | 81(C-99%,T-12%);88(A-12%,G-99%);93(G-99%,T-12%);101(C-80%,G-67%);104(C-67%,T-80%);133(A-12%,G-99%);135(A-70%,T-71%);173(C-100%,T-6%);174(A-71%,G-70%); | C;G;G;C;T;G;T;C;A;T; | C;G;G;C;T;G;T;C;A;T; | |
| 278 | chr3 | 278 | TCCCTCTAATCTCCAAGTCTGTACT | GATTCAGTCAAGAACACTCAATGGG | 46(C-70%,T-71%);58(G-80%,A-67%);62(C-100%,T-5%);104(G-12%,A-99%);126(A-12%,G-99%);198(A-12%,G-99%); | T;G;C;A;G;G | T;G;C;A;G;G | |
| 279 | chr3 | 266 | GTCAGTTCACCATACCGCTTATTG | TAGAGGAGGGAATTGCTGCTAGTA | 88(C-38%,T-91%);95(C-67%,T-70%);100(C-99%,T-10%);118(C-10%,T-99%);130(C-99%,T-10%);147(C-99%,T-10%);167(C-95%,T-23%);169(A-9%,G-100%);174(C-99%,T-10%); | T;C;C;G;T;C;C;C;G;C; | C;C;C;G;T;C;C;C/T;G;C; | |
| 280 | chr3 | 252 | TCCATGCAACATTAATTGAGCCTTT | AATGAGATTCGAGAACTACGACAGT | 86(C-99%);126(C-72%,T-61%);144(C-56%,T-73%);204(C-73%,T-56%);210(G-61%,A-72%); | C;C;C;T;C;A | C;C;C;T;C;A | |
| 281 | chr3 | 249 | GTAGGGGTGAACATGAGTTGATTTG | TCACCCCTACCAAATAGAACCAAAT | 42(A-66%,G-69%);63(C-96%,T-30%);64(G-12%,A-99%);66(A-66%,G-69%);68(C-66%,T-69%);101(C-99%,T-12%);120(G-12%,A-99%);142(A-12%,G-99%);153(G-12%,A-99%);157(A-12%,C-99%);158(C-99%,T-12%);160(G-12%,T-99%); | A;C;A;A;C;C;A;G;G;A;C;C;T | A;C;A;A;C;C;A;G;G;A;C;C;T | |
| 282 | chr3 | 278 | ATGTGCATATTAGGTATGTGTTTGAT | TGCCAAATCAGCATTTTCGTATCAT | 88(C-64%,T-65%);127(C-64%,T-64%);135(C-64%,T-65%);164(A-64%,G-65%);170(G-65%,T-64%);195(G-64%,A-65%);242(G-64%,A-65%); | C;C;C;A;T;G;G | C;C;C;A;T;G;G | |
| 283 | chr3 | 249 | CAATCAGATAATCCTGCCAACTGAG | TCCGATCAGGACACAGATCTATAGT | 80(A-67%,G-71%);83(C-98%,T-16%);106(G-68%,A-69%);128(C-69%,T-68%);181(G-68%,A-69%); | A;C;G;T;G | A/G;C;G;T;G | |
| 284 | chr3 | 226 | ATGGAAGCTCAGGATATGTTCAAGT | ACCAATGGAAAGTTAATAGACCATGT | 72(C-48%,A-62%);106(A-12%,T-95%);125(A-6%,G-95%);155(C-95%,T-12%);171(C-12%,T-95%);188(G-12%,C-95%); | ND | ND | |
| 285 | chr3 | 276 | TGTTTGCTTCAAAGTTAGTGATGGT | GTGAATCTTTTCTTTCCACCTCAGG | 51(A-12%,C-99%);164(G-99%,T-12%);214(A-12%,G-99%);216(A-27%,G-93%);231(C-75%,T-66%); | C;G;G;G;C | C;G;G;G/A;C | |
| 286 | chr3 | 247 | TGAAAGTAGTGAGAGAGCTTGAGAG | GATGCCAATACTTCGACCGTTAGA | 89(G-83%,T-55%);131(A-55%,G-83%);137(C-83%,T-55%);150(A-55%,G-83%);170(G-55%,A-83%);186(G-55%,A-83%); | T/G;G/A;T/C;G/A;G/A;A/G | T;A;T;A;G;G | |
| 287 | chr3 | 286 | TATGTTGAAACGGTTATCTCACCCC | CGAATTAAGTACTTGCAGCACCTC | 48(G-55%,A-83%);61(G-56%,A-82%);81(A-11%,G-97%);87(C-55%,A-83%);99(G-83%,T-55%);100(C-83%,T-55%);120(A-83%,T-55%);208(C-83%,T-55%);219(A-55%,G-83%); | A/G;A/G;G;C/A;T/G;T/C;T/A;A;T/C;G/A | G;G;A/G;C;T;T;T;A;T;A | |
| 288 | chr3 | 235 | GAAGTCGAGCTTTGAATTTGCTTTC | CAGGACTCCGCCATATTAACAAAAA | 75(A-53%,C-86%);147(A-53%,T-86%);148(A-53%,C-86%); | A/C;T/A;A/C | A;A;A | |
| 289 | chr3 | 170 | TATACAAATTGGCTTCCTTCTCCCA | TTTGCCAAATTAGCCTAGAGTTGTG | 44(C-63%,T-83%)90(C-63%,T-83%);92(G-43%,A-83%);128(C-99%,T-10%); | C/T;G;T;C/T;A;C | C;G;T;C;G;C | |
| 290 | chr3 | 277 | CATCAAAAGACATCGGCTTCAGTTA | TATTGATCCCAATGGAGGCATATTG | 87(G-65%,C-72%);114(A-65%,G-72%);133(A-44%,G-88%);192(C-19%,T-94%); | T;G/C;G/A;A;A/G;T | T;G;A;A;G;C/T | |
| 291 | chr3 | 206 | TCAACTAAGAAGAACGTCAAAGTGT | ATGTCTATCTTGTGGATCATGCTCA | 42(C-12%,T-99%);45(C-11%,T-100%);92(G-12%,T-99%);93(C-12%,T-99%);103(C-69%,T-73%);105(A-59%,G-81%);109(G-69%,A-73%);150(G-82%,C-55%);152(C-99%,T-12%);154(A-12%,G-99%);156(A-12%,G-99%);164(G-12%,A-99%); | T;T;T;T;T/C;G/A;C;A/G;G/C;C;G;G;A | T;T;T;T;C;A;C;G;G;C;G;G;A | |
| 292 | chr3 | 265 | TCTAAGCACCAATAGTTTAACAATGGA | TTTTTAAATCATGCTTCCCACAGCC | 62(G-70%,C-72%);86(A-35%,G-97%);96(A-12%,G-99%);107(C-12%,A-99%);121(G-12%,A-99%);126(C-99%,T-12%);147(C-99%,T-12%);157(C-12%,T-99%);185(G-63%,A-78%);197(A-29%,G-92%);206(C-78%,T-63%);207(A-12%,G-99%);226(G-70%,A-72%); | C/G;G/A;G;A;A;C;C;T;A/G;G;C/T;G;G/A | G;G;G;A;A;C;C;T;G;G;T;G;G | |
| 293 | chr3 | 262 | TCAAGCAGATGTGAACTGTGTTTTT | ACTGAATGACTTATTGCGTTGTCTT | 103(C-88%,T-47%);190(A-95%,G-19%);213(A-8%,T-99%); | ND | T/C;A/G;T | |
| 294 | chr3 | 233 | TTTTGAAATTTGCCCCCTTATTCCG | TGTTTTGGTGAAAGTCTTTGAAGCT | 159(C-57%,T-79%);176(A-57%,C-79%); | C/T;C/A | C;A | |
| 295 | chr3 | 288 | AGAATGCTACCCTTTCAAAGAGGAA | ACTTTCTAAACATGGCTGCAAAGAA | 57(T-100%)63(C-99%,T-13%);75(C-68%,T-79%);83(C-27%,A-99%);195(C-13%,T-99%);196(G-13%,A-99%);204(G-13%,T-99%);219(A-27%,T-99%);246(A-18%,G-100%); | T;C;C;T/C;A;C;A;C;T;A;T;T;G | T;C;C;C;A/C;C;A;C;T;A;T;A/T;G/A | |
| 296 | chr3 | 210 | TTGAGATGAAGGGCAGATTTGAAAC | CGTATCGATATTTTGAACCTTGGGG | 97(C-64%,T-79%);116(C-56%,T-83%);133(A-11%,G-99%);136(C-100%,T-5%);137(A-74%,G-66%);139(C-11%,T-99%);140(A-11%,G-99%);165(C-11%,T-99%);167(C-99%,T-11%);175(C-83%,T-56%); | T/C;C/T;G;C;G/A;T;G;T;C;C/T | C;C;G;C;G;T;G;T;C;T | |
| 297 | chr3 | 278 | ACTTACGTCTCAACCATGCAATAAC | ATCATCACTCTTGGTATTGGGTCAA | 53(C-79%,T-56%);73(G-56%,A-79%);117(C-56%,T-79%);126(A-79%,T-56%);212(G-56%,A-79%); | T/C;A/G;T/C;T/A;G/A | T;G;C;T;G | |
| 298 | chr3 | 248 | ACCAACATGACTGAAAACTTCACTC | TGTATTTGGAGCTAGACACTATCGG | 70(C-75%,T-66%); | T/C | T | |
| 299 | chr3 | 222 | GAAGGTGAAGGCTCTATGGTTGAAT | ATGATGTAATGGGGAAGGATGTCAA | 86(C-99%,T-13%);95(C-88%,T-51%)112(A-13%,G-99%);116(A-13%,G-99%);128(G-13%,A-99%);132(A-13%,G-99%);135(C-13%,T-99%);138(C-99%,T-13%);156(A-13%,C-99%); | T;C;C/T;G;G;G;A;G;C;T;G;C;G;T;C;T;G;T;G;A; | T;C;T;G;G;G;A;G;C;T;G;C;G;T;C;T;G;T;G;A; | |
| 300 | chr3 | 276 | GGTTCTTCACAGTGTACCTGATTTG | AAATATCGCGTAACTGAGAAGGAGA | 202(A-63%,C-79%);203(C-79%,T-63%);226(G-72%,A-78%); | C/A;C/T;A/G | A;T;G | |
| 301 | chr3 | 279 | ATCCAGGGATTTAATAAGAGGACGG | AAATAGAGAGGAAGGTTAGCCAAGG | 106(G-99%); | G | ND | |
| 302 | chr3 | 278 | CTGATAATGGTCCAACTCCTTCCAT | GTGAGATGGTTGAACACGATAGGT | 48(A-53%,G-79%);115(A-21%,G-93%);130(A-53%,G-79%);137(A-53%,G-79%);167(G-53%,A-79%);176(G-52%,A-80%); | A/G;G;A/G;A/G;G/A;G/A | A;A;A;A;G;G | |
| 303 | chr3 | 190 | CCCCTTCCACTTGCAAAATTAATCT | TGGATGAGAGAGATTTCATTGAGCA | 130(C-54%,T-79%);153(C-79%,T-54%); | T/C;C/T | C;T | |
| 304 | chr3 | 275 | ACAAAAATGGCCTGGCTTAATCTAC | GCCTCAAAATGTATATTGATGCCCA | 53(C-7%,A-100%);131(C-100%,T-7%);187(G-59%,T-82%);192(C-62%,T-79%);197(A-7%,G-100%);201(A-7%,G-100%); | A;C;T/G;T/C;G;G | A;C;G;C;G;G | |
| 305 | chr3 | 223 | CCTCATTTAGGTCTTATATTTAGTGTCGT | ACAAGGGCACATGCTTTATTTAACA | 75(A-19%,G-97%);83(G-58%,A-78%); | G/A;A/G | G;G | |
| 306 | chr3 | 184 | TTTAAAATAGAGGACGTTGAGGGGA | ACACCCAATTTGTGTTTGTGATTTA | 63(C-93%,T-17%);89(C-98%,T-7%);102(C-58%,T-80%);105(G-58%,A-80%); | C;C;C/T;G/A | C;C/T;C;G | |
| 307 | chr3 | 241 | TGGCACCATTTCACACCTATATATCT | AAACATGAGAAAACACACCAAGGTT | 107(A-57%,T-84%);164(G-63%,A-79%);165(C-63%,A-79%);172(C-10%,G-100%); | A/T;G/A;C/A;G | A;G;C;G | |
| 308 | chr3 | 246 | AAAACAGTGCAACGAGAAATGAAGA | CGTTTTCTCACACATTTATCCGAGT | 58(G-10%,A-100%);101(G-63%,C-80%);124(C-56%,T-84%);136(C-100%,T-10%);154(A-10%,G-100%);170(A-56%,T-84%);191(C-10%,A-100%);196(C-63%,G-80%);206(A-56%,G-84%);207(A-56%,C-84%); | A;C/G;T/C;C;G;T/A;G;A;C/G;A/G;A/C | A;G;C;C;G;A;G;A;C;A;A | |
| 309 | chr3 | 272 | AACTCTGAGGACTACACTCATTGTC | CTTTGGCGAGGATGGCTACTT | 98(A-20%,G-99%);101(G-57%,A-81%);176(A-19%,G-92%);201(A-57%,G-81%);206(A-57%,G-81%);229(C-57%,T-81%);235(C-57%,T-81%); | A/G;G/A;G;C;A/G;A/G;C/T;T/C | G;G;G;C;A;A;C;C | |
| 310 | chr3 | 279 | CAACTCAAACCTGATCCATTGACAA | AGTGTTGGACTTCTTACCCATAAGT | 154(G-58%,A-79%);160(C-58%,T-79%); | G/A;T/C | G;C | |
| 311 | chr3 | 265 | TTTCTGCAACATACCTGTACTCTGA | GCCTAGCTATAGACACAACTCACAT | 60(A-11%,T-100%);106(C-100%,T-11%);167(C-64%,T-77%); | T;C;C/T | T;C;C | |
| 312 | chr3 | 240 | TTCAAAGCATCTCTTGGCCTTAAAG | CAGAAACGGTTACATCAGAAAGGTT | 102(A-9%,G-100%);107(C-10%,G-99%);109(C-85%,T-38%);116(C-10%,T-99%);118(C-20%,T-95%);126(A-60%,T-62%);127(G-10%,A-99%);181(A-10%,G-99%);186(A-9%,G-100%);201(G-10%,A-99%); | C;G;G;C;T;T;T;A;G;G;A | C;G;G;T;T;C/T;A;A;G;G;A | |
| 313 | chr3 | 248 | GTGGAGTGATGTTGCAATTAGAGAG | TAAACTCACCACACAGTTACATTGC | 121(C-43%,T-78%);125(C-78%,T-43%);151(A-8%,G-98%);159(A-78%,T-43%); | T;C;G;A | C;T;G;T | |
| 314 | chr3 | 237 | TGGTCAACAGTCACTTTTTAGTCTT | TTGATCAAAACATGTCCTTCTGTCA | 37(C-78%,T-54%);43(C-32%,T-78%);55(G-78%,A-54%);152(A-82%,G-45%);153(A-82%,C-45%);170(C-78%,G-54%); | C;C;G;A;A;C | C;T;G;A;A;C | |
| 315 | chr3 | 202 | CTAAGTGGGATGTGAGCCATTGTTA | TGCTTTTCACAGATTAGATCAGTACG | 41(C-78%,T-57%);44(G-57%,T-78%);47(T-99%);49(G-79%,A-55%);53(A-99%);58(A-99%);73(C-99%);134(G-99%);145(C-79%,T-55%);146(C-78%,G-55%);148(C-99%);150(G-99%); | C;T;T;G;A;A;C;G;C;C;C;G | C;T;T;G;A;A;C;G;C;C;C;G | |
| 316 | chr3 | 238 | ACCAAACACAGCCTAAATTGCTTTA | AGCCCTAAAGCAAAGTTTACAATGT | 50(A-13%,T-99%);73(G-13%,C-99%);89(A-13%,T-99%);97(A-13%,T-99%);163(G-13%,C-99%);185(C-99%,T-13%);186(C-99%,T-13%); | T;C;T;T;C;C;C | T;C;T;T;C;C;C | |
| 317 | chr3 | 263 | ATTTCTTCCTTTCTAGCTCTCCGAT | ATCCATGAAACAACCAAGAAGCAAT | 44(C-78%,T-58%);51(A-78%,G-58%);95(C-78%,T-58%);131(C-78%,T-58%); | C;A;C;C | C;A;C;C | |
| 318 | chr3 | 276 | TTTCATTGCCAAAACCAAGAAGCTA | TCCCAAACGGGCATTAAGAAAAATT | 162(C-72%,G-68%);169(G-73%,A-65%);176(C-95%,T-21%); | ND | ND | |
| 319 | chr3 | 231 | TTGCAAATGGTGGAACTTCATCTAC | CGTGGAATCTCAGGCATAGAAATTG | 41(G-7%,A-99%);56(C-99%,T-7%);84(A-7%,C-99%);91(C-76%,A-64%);97(A-76%,G-57%,T-7%);135(C-7%,A-99%);161(A-57%,T-81%); | A;C;C;C;A;A;T | A;C;C;C;A;A;T | |
| 320 | chr3 | 223 | ATACTGTACCATCCATTGACTGGTC | AGTCTGTTATTGGCATCCATATCGA | 69(C-97%,T-22%);89(C-99%,T-12%);102(G-45%,A-77%);149(C-57%,G-76%);163(A-12%,G-99%);170(A-45%,C-77%); | C;C;G;C;G;A | T/C;C;A;G;G;C | |
| 321 | chr3 | 252 | AAAAAGGCACATTGAACAGTCATAA | TCCTTAGAAATATAAGAGGAGAGTAGGG | 68(G-99%);70(T-99%);102(C-78%,T-57%);104(G-77%,C-58%);115(T-99%);145(C-99%);174(C-78%,A-57%);183(A-77%,G-58%);191(C-99%);195(C-77%,T-57%);202(A-99%);206(A-99%);214(A-77%,G-58%); | G;T;C;G;T;C;C;A;C;C;A;A;A | G;T;C;G;T;C;C;A;C;C;A;A;A | |
| 322 | chr3 | 238 | AAACCTCCCTTGTCAGATCCATAAA | CAGTTCTGATTTTCCCGTACGATTT | 127(G-78%,A-58%);132(G-78%,A-58%);189(G-78%,T-58%); | G;G;G | G;G;G | |
| 323 | chr3 | 174 | AACCTTCCCTTTTTCGCTTCTAAAG | GCTTTTGGTTCAGTGGAGGAAATTA | 62(G-42%,T-76%);63(C-42%,T-76%);82(C-37%,T-87%); | T;T;T | G;C;C | |
| 324 | chr3 | 179 | GGTCAACGTATTGATCAACCATTCA | GCAGTTGGATAGATGTTATGTTGCA | 41(G-77%,T-57%);54(A-77%,G-57%);126(C-77%,T-57%);135(C-77%,A-57%); | G;A;C;C | G;A;C;C | |
| 325 | chr3 | 276 | ATTTATGGAGTGAGGTGCGATCATA | TTGAGGGTTCAATACAGCATTTAGC | 69(A-73%,C-59%);74(C-59%,T-73%);75(A-11%,G-97%);82(C-73%,T-59%); | A;T;G;C | A;T;G;C | |
| 326 | chr3 | 267 | CATAGAGGATTAGCCCAGCTCTG | TTGGTGTTAGCAACCCGTAAACTAT | 36(C-71%,T-61%);45(C-98%,T-15%);56(A-71%,G-61%);69(C-73%,T-55%);109(C-99%);117(G-71%,A-61%);164(A-67%,G-69%);178(C-71%,T-61%);210(A-71%,G-61%);226(A-89%,T-28%);230(C-61%,T-71%); | C;C;A;T;C;G;A;C;A;A;T | C;T/C;A;T/C;C;G;A;C;A;A;T | |
| 327 | chr3 | 247 | CCTGGCTCTGATACACTCTAGTTTT | AAGAAACCAGCTGTTGAAACTATGG | 57(G-72%,A-60%);122(G-89%,A-32%);189(C-34%,G-89%);190(C-34%,A-89%); | G;G;G;A | G;G;G;A | |
| 328 | chr4 | 191 | GCAAAAGCAACAAAGAGAAGAACAG | TCCATTATTTGGTGAAGGGACGTAT | 53(A-11%,G-99%);78(G-40%,T-88%);83(A-32%,C-92%);92(G-11%,A-99%);101(C-11%,A-99%); | G;T;C;A;A | G;T/G;C/A;A;A | |
| 329 | chr4 | 268 | TACATGTCGAGATGTCCTTATCTGG | TTGCACTTAATCACATGCATCTTGT | 41(A-10%,G-99%);73(C-10%,T-99%);74(G-93%,T-32%);75(A-10%,G-99%);86(A-25%,C-95%);106(A-10%,G-99%);114(G-10%,A-99%);141(C-39%,T-89%);147(C-32%,G-93%);148(G-32%,C-93%);177(C-93%,T-32%);183(C-99%,T-10%);196(C-99%,T-10%); | G;T;G;G;C;G;A;C;T;G;C;C;C;C | G;T;G/T;G;C;G;A;C;T/C;C/G;C/G;C/T;C;C | |
| 330 | chr4 | 267 | AATGGCCTGTTGTGTCTCTTTTAAG | GTGGGTGGTACAATTGAAGAACTG | 73(G-99%,T-5%);104(G-5%,A-99%);164(G-5%,A-99%);196(C-31%,T-91%);204(A-69%,G-56%); | G;A;A;T;A | G;A;A;T/C;G/A | |
| 331 | chr4 | 184 | GACAAAAGAGGGAGATTTGCTAGAC | TAATGCATGATGGTGTGTCTATTCG | 37(A-9%,G-99%);42(G-30%,A-90%);53(C-37%,T-87%);55(A-9%,G-99%);65(C-99%,T-9%);76(C-99%,T-9%);91(G-90%,T-30%);114(C-99%,T-9%);125(C-90%,T-30%);127(A-9%,G-99%);129(C-99%,T-9%);142(G-99%,T-9%); | G;A;T;G;C;C;G;C;C;G;C;G | G;G/A;T/C;G;C;C;G/T;C;T/C;G;C;G | |
| 332 | chr4 | 274 | AAATAGAAGCTTCCTGAGGAATGCT | CTAACTGATAGGCCCATAAAGCAGC | 49(C-98%);59(G-98%);60(C-98%);63(C-87%,T-30%);82(C-32%,T-85%);83(G-98%);88(G-98%);98(C-32%,A-85%);126(C-98%);130(C-98%);136(G-98%);216(C-98%);219(T-98%);235(G-98%); | C;G;C;C;T;G;G;A;C;C;G;C;T;G | C;G;C;T;C;G;G;C;C;C;G;C;T;G | |
| 333 | chr4 | 259 | TCAGACAAGTATGTACATGTGTCCT | GACTAGATCGGTTTGGCCTATCAA | 98(G-98%); | G | ND | |
| 334 | chr4 | 265 | GATCAATTTTGGGCTCTGGAGAAAA | CCACTTGTAATTGGTCTCACAAGTC | 50(G-36%,A-88%);69(A-20%,G-98%);144(C-98%,T-20%);167(A-50%,G-79%);181(G-20%,A-98%);185(A-20%,T-98%);193(G-88%,T-36%);223(C-20%,T-98%); | A;G;C;G;A;T;G;T | G;G;C;A;A;T;T;T | |
| 335 | chr4 | 229 | GCCTTGGTCTAACATCAAATGGATT | ACTCCTACATTCCACAACATCTGAA | 41(C-7%,T-98%);60(A-98%,T-7%);65(G-98%,T-7%)108(G-15%,A-95%);122(C-66%,T-57%);146(C-79%,T-42%);177(A-57%,G-66%);188(A-7%,G-98%); | T;A;G;C;A;T;C;T;A;G | T;A;G;C;G;C;T;T;G;G | |
| 336 | chr4 | 277 | TCCATTCTAGCCCATATTCTGATGG | GGAGATCAGCCAAACCTACTAATCA | 81(C-50%,T-79%);120(A-67%,T-56%);131(A-20%,G-98%);139(C-98%,T-20%);154(C-37%,T-88%);158(A-20%,G-98%);170(A-37%,T-88%);194(A-20%,T-98%); | T;A;G;C;T;G;T;T | C;T;G;C;C;G;A;T | |
| 337 | chr4 | 278 | GTCTGAACCATCCAATCTGTTCAAA | AGGAGAGGTCACACAAGTTTAACAA | 59(C-67%,T-59%);68(C-59%,T-67%);217(C-95%,T-19%); | T;C;C | C;T;C | |
| 338 | chr4 | 280 | CTGGGTTCTTCATTGATTTCTTGGT | CGAAACCAGCTTTAAACTTGTCACG | 83(A-18%,C-98%);102(A-16%,G-93%);105(G-73%,A-59%);106(C-87%,T-45%);128(A-100%,T-6%);137(A-18%,G-98%);146(C-59%,T-73%);160(C-18%,T-98%); | C;G;G;C;A;G;T;T; | C;A/G;A;T/C;A;G;C;T; | |
| 339 | chr4 | 280 | CGTACGAGGTCATTCACTAGTTTAG | TCCCAATTACCATTCTCAATTGTCT | 176(A-76%,C-29%); | A | ND | |
| 340 | chr4 | 212 | ATTTATCCATCCAAACAAACCGCTT | TTGAGCGATAGTGTTGTAGCAAAAG | 53(G-34%,A-89%);66(A-14%,G-98%);74(A-99%,T-12%);133(C-81%,T-41%);137(A-34%,T-89%);170(C-33%,T-83%); | A;G;A;C;T;T | A/G;G;A;C/T;T/A;C/T | |
| 341 | chr4 | 280 | TACCAACTCCTTCTTCATCGAAACC | GGTTTTGGACTTTATTGACTTTTATGTG | 199(A-76%,G-32%);216(C-99%); | A;C | ND | |
| 342 | chr4 | 223 | CGAGGGAGAGCTCGATTGAAG | TAGCCCGAAATCTTAAGCCTTACTT | 34(G-19%,A-98%);41(C-98%,T-19%);45(A-19%,G-98%);48(A-42%,G-82%);50(C-98%,T-19%);142(C-98%,T-19%);147(A-19%,G-98%);149(G-98%,T-20%);154(A-19%,G-98%);159(A-19%,G-98%);165(C-98%,T-19%);167(A-42%,G-82%);187(A-52%,G-72%); | A;C;G;G;C;C;G;G;G;G;C;G;G | A;C;G;A;C;C;G;G;G;G;C;A;A | |
| 343 | chr4 | 190 | CATTCCCTTACCCCTCGTTCC | AGGATGAGAGGGAAAGGACTACTTA | 48(A-44%,G-73%);68(A-25%,G-90%);82(C-73%,T-44%);88(A-44%,G-73%); | G;G;C;G | A;A/G;T;A | |
| 344 | chr4 | 278 | ACAACCAAAAACAAAAGGCCTCTAT | TAGCCACATCTATAACAGTGGAAGG | 44(G-22%,T-98%);106(C-55%,T-72%);139(G-22%,C-72%,T-44%);151(A-55%,G-72%);228(C-22%,G-98%); | T;T;C;G;G | T;C;T;A;G | |
| 345 | chr4 | 223 | ATTGGATGGAGACGATGAGCTTTAT | AGTATTGTGATCTAGTAGCGAGCTG | 36(G-100%)55(G-100%)74(C-73%,T-44%);103(A-48%,G-75%);111(C-73%,T-44%); | G;C;G;C;C;A;C | G;C;G;C;T;G;T | |
| 346 | chr4 | 284 | CAATGGTTGCGCAGATCCTATAAG | TTTAGCGATCTTGGTTTGAACATCC | 89(C-25%,T-98%);91(G-100%,T-10%)102(C-100%,T-10%);112(G-25%,A-98%);130(C-25%,T-98%);131(G-10%,A-100%);135(G-26%,A-94%);138(C-98%,T-10%);141(C-94%,T-29%);148(A-45%,G-87%);176(G-10%,A-100%);180(C-25%,T-98%); | T;G;A;C;C;A;T;A;A;C;C;G;C;T;C;T;A;T; | T;G;A;C;C;A;T;A;G/A;C;T/C;A;C;T;C;T;A;T; | |
| 347 | chr4 | 207 | ACTAGGAGAACTACCAAAGCTGTTT | CATGGCAAGCTATCTGTAGAAGGTA | 43(G-9%,A-92%);69(G-24%,C-87%);72(G-9%,A-92%);105(G-24%,T-87%);111(G-24%,A-87%);119(G-33%,A-79%);131(C-92%,T-9%);144(C-9%,T-92%);159(C-9%,A-92%);161(C-92%,T-9%);170(C-92%,T-9%); | A;C;A;T;A;A;C;T;A;C;C | A;G;A;G;G;G;C;T;A;C;C | |
| 348 | chr4 | 279 | TCGAGGTACGTATTCCTTATCATTCA | TGCGCGAGTTGAGTTAACGAG | 72(G-29%,A-83%);84(C-29%,T-55%);104(C-29%,T-83%);146(C-83%,T-29%);210(C-95%,T-8%);214(G-62%,A-55%);240(A-8%,C-95%); | A;T;T;G;C;C;A;C | G/A;-/C;T/C;G;T/C;C;G;C | |
| 349 | chr4 | 160 | CTTTGAAGACAGGGAAAGAAGTCAG | TTCTTTGTTTTCTGGAGGATGAAGC | 52(A-90%,T-23%);59(A-27%,G-98%);90(C-48%,T-85%); | ND | A;G;T | |
| 350 | chr4 | 265 | GAATGATTCCCGCCTCTCAGTG | TAAGAAAAGCAAACCAGAAAAGCTCT | 83(C-100%,T-9%);89(C-16%,T-99%);90(A-9%,G-100%);104(A-50%,G-77%);106(G-51%,A-72%);107(A-13%,G-100%);111(C-16%,T-99%);113(A-13%,G-100%);120(C-100%,T-13%);123(C-13%,T-100%);124(C-100%,T-13%);130(C-99%,T-16%);134(A-13%,C-100%);136(A-72%,T-51%);140(G-100%,T-9%);143(C-13%,T-100%);170(C-9%,T-100%);171(C-16%,T-99%);178(G-48%,A-79%); | C;T;G;G;A;G;T;C;G;T;C;C;T;C;C;C;G;A;G;T;T;T;T;C;A; | C;T;G;A;G;G;T;C;G;T;C;C;T;C;C;C;G;T;G;T;T;T;T;C;G; | |
| 351 | chr4 | 291 | AGTTGGGGAGATAAATTAAAGCCCT | CCTCATATGGAGTCTTAGTAACGGG | 42(G-45%,C-73%);44(C-45%,T-73%);55(C-94%,T-21%);57(G-45%,A-73%);88(A-45%,G-73%); | C;T;C;A;G | G;C;C/T;G;A | |
| 352 | chr4 | 289 | AATGGGATTAGGAGATCCTCTCTTT | TTCTTCAGCATGAACCGAATTCTTC | 85(C-44%,T-81%);87(G-98%,T-18%);92(G-18%,A-98%);100(C-18%,T-98%);111(C-98%,T-18%);113(C-18%,A-98%);118(G-18%,C-98%);129(G-18%,A-98%);132(C-98%,T-18%);139(A-18%,G-98%); | T;G;A;T;C;C;A;C;A;C;G; | C;G;A;T;C;C;A;C;A;C;G; | |
| 353 | chr4 | 211 | AGATTTGGGATGTTTGAAAATGCCT | TAATGAAATTTGGGTGTGTTGGGTT | 82(C-99%);83(T-99%);90(A-99%);99(A-99%);107(A-99%);113(T-99%);117(G-99%);123(G-99%);143(C-99%);145(C-99%);150(C-45%,T-72%);152(A-58%,G-57%);155(T-99%);161(T-99%);164(C-99%);167(C-99%);175(T-99%); | C;T;A;A;A;T;G;G;C;C;T;A;T;T;C;C;T; | C;T;A;A;A;T;G;G;C;C;C;G;T;T;C;C;T; | |
| 354 | chr4 | 245 | CACCAAGTTTCTCAGCATCACTATC | TGTGACCCTCCCAACCTGA | 84(C-99%,T-12%);85(A-12%,G-99%);97(C-12%,T-99%);101(C-12%,A-99%);104(A-44%,G-79%);109(C-99%,T-12%);114(C-99%,T-12%);127(C-99%,T-12%);130(C-99%,T-12%);131(G-12%,A-99%);147(G-12%,A-99%);177(G-12%,A-99%); | C;G;T;A;G;C;C;C;C;A;A;A; | C;G;T;A;A;C;C;C;C;A;A;A; | |
| 355 | chr4 | 240 | CACATCTAGGAAAACCAAGGTTGTG | GTGGTGACAATTAATGCGTTGTTTA | 73(C-73%,T-44%);77(C-44%,T-73%);101(C-73%,T-44%);160(C-44%,T-73%);193(C-73%,T-44%);199(C-88%,T-27%); | C;T;C;T;C;C | T;C;T;C;T;C/T | |
| 356 | chr4 | 265 | CCTTGAAGTAGCCAACGATTTCATT | CCTCCTGGTGTTTAGTAGGGTAAAA | 155(C-73%,T-43%);189(C-73%,T-43%);220(G-43%,A-73%); | A;A;C;C;A | A;A;T;T;G | |
| 357 | chr4 | 271 | CAGTCAAGACTCCTCGAAGTGTTAT | CCTTGCACTCATCTTCCCCTAA | 64(C-17%,T-85%);82(C-88%,T-12%);91(C-94%,T-8%);98(C-12%,T-88%);125(C-12%,T-88%);148(C-12%,T-88%);204(C-97%);214(A-6%,G-96%); | T;C;C;T;T;T;C;G | ND | |
| 358 | chr4 | 195 | ATTTACTTGATCCCATGCTTTGGTG | TTTGCTCAAAACCTTCATGCCTTAT | 50(A-22%,G-98%);86(A-50%,G-79%);103(C-79%,T-50%);115(A-22%,T-98%);138(A-98%,T-22%);150(G-22%,A-98%); | G;G;C;T;A;A | G;A;T;T;A;A | |
| 359 | chr4 | 272 | AGCTACTCGTGCCATTATGGATTAT | TCACTGGTGACTCGGACCT | 65(A-6%,G-99%);119(A-45%,G-70%);150(A-47%,G-68%);212(C-68%,T-47%);234(C-47%,T-68%); | G;G;G;T;T | G;A;A;C;C | |
| 360 | chr4 | 222 | CTTGTGCATAGTTAGTTTCCAAGGG | GTATTCCAAGTAAGTCACCCATCCT | 98(T-98%); | T | T | |
| 361 | chr4 | 174 | GTCTAATGCATAATGCTGTGGAACA | CCGATTCCAGAAGCTTCAAAGAAAG | 41(A-53%,T-62%);63(C-98%,T-13%);82(C-25%,T-98%); | ND | T;C;T | |
| 362 | chr4 | 288 | GACCATCTTGTACTTGGCGTTG | ACCCTTGGGAATTTAATCCGTAGTA | 61(C-99%);105(G-96%,A-10%);114(G-96%,A-10%);164(G-99%);177(C-96%,T-10%);192(G-96%,T-10%);218(A-73%,G-43%); | C;G;G;G;C;G;A;G | C;G;G;G;C;G;G;G | |
| 363 | chr4 | 162 | GGAGAAAGTATCTAAGACATATGGCC | CAATCCAAAATCAAGTGATGGAGCT | 43(C-96%); | C | ND | |
| 364 | chr4 | 205 | GACATCCATCTTATGCAATTCCCAA | CGGGTGTAAATGGGTCTACAAAATC | 91(C-10%,T-98%);93(C-82%,T-38%)100(G-9%,A-100%);108(A-9%,C-100%);117(A-9%,G-100%);134(G-9%,A-100%);141(A-9%,G-100%);144(C-10%,T-99%);162(G-9%,A-100%); | T;C;G;A;C;G;C;A;A;C;G;T;A;A;T; | T;T;G;A;C;G;C;A;A;C;G;T;A;A;T; | |
| 365 | chr4 | 208 | GTTGACAACCACATGCCACTTGAA | CTCCCACTTTGTCACCAATAAAAGG | 82(G-41%,A-75%)93(G-100%)98(G-100%)124(C-75%,T-41%);131(C-41%,G-75%);159(A-10%,G-97%); | A;A;G;A;G;T;G;A;C;C;G;G;G;C;A;G;G;G;G; | G;A;G;A;G;T;G;A;T;C;G;C;G;C;A;G;A/G;G;G; | |
| 366 | chr4 | 176 | CCCTAATGTTTGCCATGTTTTACCT | AAGTTAGGTCTGAGGATGAGGTCTA | 78(A-66%,G-51%);82(G-43%,A-75%);123(C-100%,T-7%);125(G-7%,A-100%); | A;A;A;C;A | A;G;G;C;A | |
| 367 | chr4 | 231 | AAAAAGAGAGAGAGAAAGTGCGACC | AGCGGGATTATTTTGTAGTTTGCAA | 43(G-42%,A-82%);54(G-42%,A-82%);61(C-82%,T-42%);179(A-42%,G-82%);188(A-21%,G-98%); | A;A;C;G;G | G;G;T;A;A/G | |
| 368 | chr4 | 198 | GGGTGTAAGAGGAGATTATGTTCGA | AGGTGAAAAAGAGAAGAAGAGCCTA | 91(C-81%,T-42%);130(A-42%,G-81%); | C;G | T;A | |
| 369 | chr4 | 266 | AAATCTGACAAGTTCCTAGGGTTCA | CTTAGGTACTGCTTCAACACCTAGA | 166(A-39%,G-78%);199(C-39%,T-78%);216(C-94%,T-12%);217(G-39%,T-78%); | G;T;C;T | A;C;T;G | |
| 370 | chr4 | 246 | TTTCCAGTCTCTCTCTCTCTCTCTT | TGTATTTAGCCCAACTTCCATACCA | 144(A-39%,T-72%);179(G-83%,A-27%);184(C-91%,T-9%); | T;G;C | ND | |
| 371 | chr4 | 278 | TGGAATTGGACCTAGTAGAAGAAGC | TTTTCGAGCTCTCATCATTGGTCTT | 103(A-10%,G-95%);115(C-95%,T-8%);148(C-24%,T-92%);155(C-24%,T-92%);163(A-24%,G-92%); | G;C;T;T;G;C | A/G;C;T/C;C/T;G/A;C | |
| 372 | chr4 | 258 | GGACCAGGTTTGAGTTGAAATCAAT | AGCAAGACCAGAATTTTGGACAAAT | 67(C-83%,T-22%);68(C-41%,T-77%);69(A-24%,G-99%);97(A-24%,G-99%);142(C-99%,T-24%);173(G-24%,A-99%);189(C-24%,A-99%); | C;T;G;G;C;A;A | ND | |
| 373 | chr4 | 259 | GACAAGGTGTCGAGCAATCCTAG | TTTGTACACACTTCACTCCTACCAA | 82(A-26%,G-95%)100(C-99%,T-15%);108(C-99%,T-15%);168(C-99%,T-15%);172(C-99%,T-15%);178(C-99%,T-15%); | G;A;C;C;C;C;C; | G/A;A;C;C;C;C;C; | |
| 374 | chr4 | 230 | TAGTCTCCACCCTTTCAATTTGACG | ACTGCCCTTATTAAATGCATTTGCT | 53(C-99%,T-7%);63(C-75%,T-37%)119(C-75%,T-37%); | G;C;C;G;C | G;C;T;G;T | |
| 375 | chr4 | 278 | GCAGAAAACGAAGGGATTGACATAA | AATTCTCCATAGGCATGCTGCTATA | 100(T-98%);110(G-98%);157(C-47%,T-64%);162(T-98%);176(A-98%);183(C-98%);188(C-46%,G-73%);189(T-98%); | T;G;C;T;A;C;G;T | T;G;T;T;A;C;C;T | |
| 376 | chr4 | 202 | TACTGAAATGCTGAATGCCACATTT | AGGAGGTAAAAGTGTTAAGCCTAGG | 62(C-66%,A-37%);63(C-66%,A-37%);143(A-14%,G-99%); | ND | C;C;G | |
| 377 | chr4 | 210 | TGATCTACTCCTTTCCCCTTTTAGC | TGGTGATAGTAGGGACCTTCTTAGT | 68(A-9%,T-100%);82(C-100%,T-9%);118(A-100%,T-9%);140(C-100%,T-8%);145(A-9%,T-97%);151(C-52%,T-72%);160(C-49%,A-75%); | T;C;A;C;T;T;A | T;C;A;C;A/T;C;C | |
| 378 | chr4 | 249 | TACATGACACACAGCTGCTAAGTAT | TCTGCAAATGGACAAATGACGTAAA | 46(A-51%,C-68%);115(A-66%,T-52%); | C;A | A;T | |
| 379 | chr4 | 180 | TCAAGACATGTTGGATTCAGGTAGG | AGCCATATCCTCCATTTTTCCCTTA | 61(G-82%,A-47%);136(C-69%,T-50%); | G/A;C | G;T/C | |
| 380 | chr4 | 270 | AGGACACTACAACTTGTACATTGGA | AACAAGAACTATCTCGTAACAGGGT | 101(C-38%,T-70%); | ND | ND | |
| 381 | chr4 | 161 | AGAAAAGAAAAGATGGAAGATGGCG | ACTGCAAGGACATGTTATCTCTTCT | 41(C-60%,T-73%)71(A-27%,C-90%); | T;A;C | T;A;C | |
| 382 | chr4 | 195 | CGAACAAGATGTTAGCTGAACTACC | TACGCGAACTAGAACAGGAAGATAA | 62(A-72%,G-61%);71(A-72%,T-61%);89(G-72%,A-61%); | ND | A;A;G | |
| 383 | chr4 | 271 | TTCACTGCATCAAGTAACACAAACA | AAGTCACTTCTCAGCCGATTTAGAT | 36(G-99%);118(C-60%,T-73%);159(A-73%,T-60%);204(C-99%);229(G-73%,T-60%);231(G-73%,A-60%); | ND | G;T;G;C;A;C;G;G | |
| 384 | chr4 | 208 | CAAAGTGGTGGCTTCATACCTTATC | TGAGAATTTACCAATGCACAAAGCT | 46(A-54%,G-53%);47(A-54%,C-53%);130(A-12%,G-100%); | A;A;G | A;A;G | |
| 385 | chr5 | 189 | GAAGCACACTTAAAACAATGAAGGC | GGATAGTTTGTAGTCAGGATGGGAT | 57(A-20%,T-96%);120(A-52%,G-89%);126(A-48%,G-81%);136(G-92%,T-38%); | T;G/A;G;G/T | T;A/G;G/A;G | |
| 386 | chr5 | 245 | AAACCAAACAAGATTTTTGCCCATG | TGAGATGGCTTAAATTTTGGTCCAG | 102(G-47%,A-85%); | A | A/G | |
| 387 | chr5 | 195 | AGTGTTCAATGTAGGGGGTTATGAA | CATAGAGGATATTGAACCAGCCTCA | 92(G-23%,T-95%);155(C-76%,T-54%); | T;C | ND | |
| 388 | chr5 | 271 | TTTCAGACATGGTACTGATATGGCA | ACAAGGGTCATGCCTAGTATTCTTT | 109(C-99%,T-9%);119(G-9%,A-99%);130(C-9%,T-99%);158(T-99%);159(G-60%,T-79%);165(G-79%,T-60%);187(C-9%,T-99%);223(C-64%,G-74%); | C;A;T;T;T;G;T;G | ND | |
| 389 | chr5 | 264 | TACGACACTCATGCCAAAAAGTTAG | TGAACTTAATTTCTGTAGCATGGCA | 44(A-67%,G-72%);71(C-99%);75(A-67%,G-72%);112(C-99%);128(A-99%);149(C-99%);151(C-99%);155(A-47%,G-79%);162(C-72%,T-67%);202(C-99%);209(C-69%,T-71%); | ND | ND | |
| 390 | chr5 | 175 | GCCCTAGCAAATCATAGAAAATGCT | CACAAACCTATCTTGGTACACATGC | 50(A-42%,T-62%);51(A-62%,T-42%);108(A-100%,T-9%); | T;A;A | T;A;A | |
| 391 | chr5 | 278 | TGCTTGAAACCCTAGAGCAGATTAT | TTTTATTTCACACAACAGCATCCGA | 179(G-35%,C-89%);221(G-35%,A-89%);225(C-35%,T-89%); | C;C;A;T | C;C;A;T | |
| 392 | chr5 | 242 | TAAGCTACTTGAGATGACGTGTAGG | CAGGATTTTGTTGCAAGTTGTTCTG | 51(A-10%,G-100%);75(C-10%,A-100%);98(C-100%,T-10%);105(A-59%,G-71%);124(C-55%,T-78%);125(C-81%,T-50%); | G;A;C;G;T;T/C | G;A;C;A;C;C | |
| 393 | chr5 | 213 | GACATGGATATCAATCATGCCCAAA | TTGCTATCAACATTGTTGCTAACCT | 40(C-60%,T-62%)108(G-57%,A-64%);121(C-56%,T-64%); | C;G;A;T | T;G;G;C | |
| 394 | chr5 | 254 | GCTAGAGTGTTCAAAGCACTCTTTT | TGTTGAAAGACGGATCAGTTACAGT | 55(A-63%,G-62%);82(A-40%,G-73%);102(G-99%);112(C-63%,T-62%);209(C-52%,T-74%); | G;A;G;T;T | ND | |
| 395 | chr5 | 251 | GATTTGGCCCTCTAGAAACATTGTG | ACCTAGTCCTAAGATGGTTGACCTA | 97(G-55%,A-65%);124(G-65%,T-55%);125(A-65%,T-55%);147(C-55%,T-65%); | A;G;A;C;T;T | G;T;T;C;C;T | |
| 396 | chr5 | 218 | GATTTGCACTGATCAAGAGTGTTCA | GAGTTTGGAAGGAGTACAAAAGCAA | 44(C-70%,T-71%);53(C-14%,T-99%);79(C-99%,T-14%);109(G-8%,A-100%);148(G-14%,A-99%);176(G-14%,A-99%);179(G-99%,T-14%);181(A-14%,G-99%); | ND | ND | |
| 397 | chr5 | 249 | GGCCACATCTGAAGAAAAGTTTGTA | GATTCATTATCCTCGTAGCACTCCT | 52(A-13%,G-99%);70(G-46%,T-81%);79(C-79%,T-46%);198(A-46%,G-81%); | ND | ND | |
| 398 | chr5 | 259 | GTTGAACGGTCCATCATATTTGTCC | GAAGACTGTTCCTAACAACACAGAA | 85(G-47%,A-69%);88(C-74%,T-50%);102(A-5%,G-99%);103(C-99%,T-5%);111(A-38%,C-99%);125(A-50%,G-74%);216(C-97%,T-42%); | G;C;G;C;G;A;C;G;G;C | A;T;A/G;T/C;G;A;A/C;A;G;T/C | |
| 399 | chr5 | 167 | CACCAAACCATCACACATGACTTAA | AACTTGTACCATCTCATCAACTCCA | 64(A-8%,G-100%);70(C-86%,T-43%);82(C-88%,T-37%)117(G-43%,T-86%); | G;C;C;G;T | G;T;T;G;G | |
| 400 | chr5 | 238 | CATCAAATGAGGCACATTACATCGA | AGAACACAAGCACACTTAAATGGAC | 102(C-82%,T-44%);104(A-44%,G-82%); | C;G;A;T;C;A | T;A;A;T;C;A | |
| 401 | chr5 | 260 | GCTGGATTGTTAGTTGCTAGATTCG | CATGGTTGAGATAGAACAAGTTCGG | 85(C-15%,T-86%);140(C-86%,T-15%);147(G-15%,A-86%);170(C-15%,A-86%);178(A-15%,G-86%); | T;C;C;A;A;G | ND | |
| 402 | chr5 | 211 | GTACTGATTCACCGGTTACCAATTC | AAGTATACTGTACCACACTGCAGAA | 51(A-5%,G-99%);83(C-5%,T-99%)109(A-5%,G-99%);125(G-25%,A-95%);139(A-5%,G-99%);162(A-5%,G-99%);174(C-5%,T-99%);175(G-25%,A-95%); | G;T;A;G;A;G;G;T;A | G;T;A;G;A;G;G;T;A | |
| 403 | chr5 | 270 | CAATCCTGAGTTGAGCCTACTCTTA | TAGAAAGATTGAAGACCAGGCTTGA | 45(A-58%,C-75%);90(A-67%,T-62%);121(C-75%,T-58%);154(C-58%,T-75%);163(C-75%,T-58%);208(C-75%,T-58%);210(C-58%,T-75%); | C;A;C;T;C;C;T | A;T;T;C;T;T;C | |
| 404 | chr5 | 266 | TTCCAAGAAGGGCATTTTTCTTACC | CTAGATGGGGTTGACAAGGATCATC | 112(G-50%,A-69%);162(A-43%,G-78%);191(A-46%,C-73%);231(C-78%,T-43%); | A;G;C;C | G;A;A;T | |
| 405 | chr5 | 279 | AAATAAGAGACAAAGGTCATTCACC | ATTCTTCCATAACATAACGGGGCT | 60(A-100%) | A;G | A;G | |
| 406 | chr5 | 215 | CTATTGATTGAGCCTTTGAGTCGTC | TATTTCTGTTACGATGGGTCCTTCA | 43(G-80%,T-39%);62(C-91%,T-29%);79(G-84%,T-54%);150(A-39%,G-80%); | G;C;T;G | T;T/C;G;A | |
| 407 | chr5 | 233 | ACGGGAAAAGTGGAAATGCAAATAA | GAAGCATGATTCGTAGTAGCACAAA | 42(A-42%,G-86%);49(C-75%,T-55%);92(C-55%,T-75%);146(A-75%,T-55%);173(C-55%,T-75%);195(A-55%,T-75%); | ND | ND | |
| 408 | chr5 | 290 | CTTCTGCTTAACTGTCATTAGCGAG | TACCCCCAAATTTTAAAGCTTCCAC | 138(C-7%,T-100%);140(G-100%,T-7%);174(C-40%,T-81%); | G;T;G;T; | G;T;G;C; | |
| 409 | chr5 | 189 | TTGCTTCAATCCTCCTCTGTGTC | ATGTAGAAGCGTACGTCGATGATAT | 45(C-87%,T-35%);52(C-49%,T-77%);128(A-43%,G-85%);140(C-63%,T-55%); | C;T;G;T | ND | |
| 410 | chr5 | 225 | TAGTTGCCTTATGTTTTGGTTGAGC | ATGGCTCTACCCCTCACCTTATATA | 51(G-58%,C-83%);53(A-58%,G-83%); | G;A | C/G;G/A | |
| 411 | chr5 | 276 | GAGTGTCTCCGGATCCGCTAG | CCTATCATTCAAGAGGTCCCGG | 35(A-50%,T-84%);74(C-84%,T-50%);94(C-84%,T-50%);154(C-87%,T-39%);215(A-50%,T-84%); | T;C;C;G;C;T | T;C;C;G;C/T;T | |
| 412 | chr5 | 223 | TCCCCAACAAAACCATTGAAAAATG | TCTATAAGATTAAATGGCGGGCTGA | 90(G-87%,C-42%);115(A-53%,C-82%);125(C-42%,T-86%); | ND | ND | |
| 413 | chr5 | 266 | GAAGAAACAGGAAGATGAAACCGTT | ATATAAGAAGATACGCCGAGTTGCT | 82(C-49%,T-70%);84(A-11%,G-95%);85(C-99%);106(G-49%,A-70%);180(C-73%,T-48%);213(A-49%,C-29%,G-59%); | T;G;C;A;C;G | C;G/A;C;G;T;A | |
| 414 | chr5 | 224 | GAGCTCCCTTTTTCTGTTTCTTTCA | AAGCAGTGCAGATGATAAGAAACTG | 95(A-65%,T-42%);101(A-53%,G-69%); | T;G;G | A;A;G | |
| 415 | chr5 | 278 | TACGTCAACATAACCTCTGAGATGG | CAAAGGCGATTACCAACAGTGATG | 162(A-50%,G-71%);197(C-50%,T-71%);232(G-58%,T-53%); | G;T;T | A;C;G | |
| 416 | chr6 | 164 | AACAAGTGTCTTTTTGGGATATGCT | ACAATGCAAACAACTCCTCTGAAAG | 43(C-62%,T-65%);63(A-78%,T-44%); | ND | ND | |
| 417 | chr6 | 262 | CCTCTATTTCTTCTTGCCTCCCAAA | CTGCACCAGATTTTCTTGTAAGGAA | 81(A-77%,G-100%);83(A-90%,G-100%);100(C-97%,T-100%);117(G-97%,A-100%);126(G-100%,T-97%);147(A-82%,G-100%);157(A-77%,T-100%);166(C-17%,T-100%);179(C-100%,T-97%);180(G-97%,A-100%); | G;G/A;C/T;G/A;G/T;G;G;T;T;C;C/T;A/G; | G/A;A/G;C/T;A/G;G/T;G;G;T/A;T;C;T/C;A/G; | |
| 418 | chr6 | 192 | TTCATGTGCTTGAAGATCCGATCTC | GGTCGATTGTAGTTTCAAGGACTTC | 99(C-9%,G-100%);103(A-10%,G-100%);109(A-9%,T-100%);130(G-13%,A-99%);133(G-42%,C-83%);142(G-12%,A-99%);157(C-13%,T-99%); | G;G;C;G;T;T;A;C;A;T; | G;G;C;G;T;T;A;G;A;T; | |
| 419 | chr6 | 239 | CATAAAACCCCCAACTATGCATTGT | CCACCCCCTATCTAACAACTAACAT | 81(C-84%,T-38%);111(G-8%,A-100%);125(A-38%,C-84%);149(A-8%,G-100%);169(G-8%,A-100%); | C;A;C;G;A | T;A;A;G;A | |
| 420 | chr6 | 266 | TGGGCACAAAGCTATTTTCAATCTT | TTGTCTTTGTTTTCCTCTTCTTGCA | 129(G-72%,T-53%);211(G-16%,C-99%);214(C-65%,T-65%); | A;T;C;A;A;C;C | ND | |
| 421 | chr6 | 215 | GAAACTACCAAGACCAGAACCGA | ACGTTGGGATCCAATAACTAATGGA | 41(C-71%,T-46%);145(C-76%,T-42%); | C;C | T;C/T | |
| 422 | chr6 | 238 | TTTGTTCATCTAGATTAATTGGTTTTGG | CAGGTAGGAAAGTTCTCAAGGCTTA | 59(C-47%,T-73%);129(A-73%,T-47%);130(C-47%,A-73%);173(C-73%,T-47%);183(A-47%,G-73%);189(G-47%,A-73%); | ND | C;T;C;T;A;G | |
| 423 | chr6 | 239 | GTCCATAACATCATGGGCCTAGATA | AAATGGAGAAGTTGAATGGGGAATG | 51(C-85%,T-39%);56(A-15%,G-100%);61(A-45%,G-78%);79(A-15%,G-100%);103(A-38%,G-86%);112(A-38%,G-86%);120(A-33%,T-91%);148(A-100%,T-11%);165(A-16%,G-100%);187(G-45%,A-78%);188(G-45%,A-78%);194(A-15%,G-100%); | C;G;G;G;G;G;T;A;G;A;A;G | T;G;A;G;A;A;A/T;A;G;G;G;G | |
| 424 | chr6 | 244 | TGTTCAATGTTGATGATGTTCGGTT | TGGAAAATACCACCCTTGTGACTAT | 58(C-78%,T-38%);62(C-78%,T-38%); | C;C | T;T | |
| 425 | chr6 | 255 | ATAGACGCCTTCTCCAACTATTACC | TATCCAAGGTCATATTGAAGGTGCA | 124(G-37%,A-77%);131(C-37%,T-77%);172(A-36%,G-77%);176(G-77%,T-36%); | G;A;T;G;G | G;G;C;A;T | |
| 426 | chr6 | 262 | TGAGTTGTTCTCTTTCGTAGATGCT | CTCCTACACATTCGTTGACTTAAGC | 77(G-38%,A-76%);132(C-44%,G-80%);133(C-83%,T-32%);146(C-38%,T-76%);170(A-99%); | A;C;C;T;A | G;G;T;C;A | |
| 427 | chr6 | 275 | TTCTGTTGCAGGTTACTTGTTATGC | CTTATCTTTGGACGTCTTCAGCTTC | 107(G-42%,A-74%);108(G-42%,T-74%);146(A-40%,G-75%);154(G-99%);165(A-40%,G-75%); | C;A;T;G;G;C;G;C;G;G; | C;G;G;G;A;C;G;C;A;G; | |
| 428 | chr6 | 290 | CGACCTCTAGTTCTTGGACTGATAG | CGATCCGTACCAGATCTAAAACCAA | 120(A-14%,G-95%);148(T-99%);162(G-48%,T-68%);163(C-48%,T-68%);239(C-71%,T-50%); | G;T;T;T;C | ND | |
| 429 | chr6 | 225 | AAAAACCTTATCGGGTTGCTACATG | CCACATCAAACTCAGAAGCAATAGG | 76(C-78%,T-44%);79(C-70%,T-48%); | C;C | ND | |
| 430 | chr6 | 202 | AAGGGAATCTACCAATCAAGTGTTT | CTTTAGACCCTTCCATGTGATCTCT | 51(A-47%,G-76%);97(G-39%,A-74%); | A;A | G;G | |
| 431 | chr6 | 295 | ATGTGAGTCCTTGAAGTCCCAGA | AGTGGTCTTTTCTCTTTCTTCTCGT | 81(C-35%,G-86%);103(C-84%,T-39%);127(C-100%,T-15%);128(A-15%,G-100%);141(A-15%,G-100%);143(A-15%,G-100%);152(C-100%,T-15%);159(A-45%,G-75%);160(C-100%,T-15%);161(A-39%,G-84%);163(A-15%,T-100%);174(A-15%,T-100%); | G;C;C;G;G;G;C;G;C;G;T;C;T; | C;T;C;G;G;G;C;A;C;A;T;C;T; | |
| 432 | chr6 | 195 | AAGCTGCTAAAGAAGTCATTGGATG | TCCTCACTACCAACTATTTTCTGCA | 101(A-12%,G-88%);102(A-12%,C-88%); | G;C | ND | |
| 433 | chr6 | 248 | ATCCTGAGTGAATGACTAAAGCCTT | CTCAGAAGACCACTTTGCTAGTAGA | 64(C-68%,T-52%);105(C-68%,T-52%);106(A-5%,G-99%);174(A-52%,G-68%);199(C-99%,T-5%);211(C-96%,T-6%);213(A-52%,G-68%); | ND | T;T;G;A;C;C;A | |
| 434 | chr6 | 274 | GGGTGACTTATTCTCTTAGGGACTG | TGCTAACTGATGGAGGATGATTTGA | 37(C-81%,T-37%);102(G-37%,A-81%);175(G-98%,T-12%);195(C-37%,A-81%);197(G-81%,T-37%);226(C-81%,T-37%); | C;A;G;A;G;C | T;G;G;C;T;T | |
| 435 | chr6 | 247 | ACCTCCACTTCAAGAATCTTTGAGA | TGTGTAGTGCAGCTGCGT | 63(A-39%,G-80%);104(G-39%,A-80%);158(C-39%,T-80%);166(G-39%,C-80%);175(G-39%,C-80%);205(G-39%,A-80%);211(A-12%,G-100%);214(A-39%,T-80%);219(G-39%,A-80%); | ND | A;G;C;C;G;G;G;G;A;G | |
| 436 | chr6 | 259 | TTAAGTGCCAAACAGTTAAACCGC | AACAATGAGAAATGGAAAATCAGCA | 36(C-40%,T-86%);73(C-86%,T-40%);116(G-40%,A-86%);138(A-40%,C-86%);152(A-40%,T-86%);181(A-40%,G-86%);203(C-40%,T-86%); | ND | ND | |
| 437 | chr6 | 271 | TTGACACTACCTCTAAAGTTCAGGG | AAGTTGTTCAAACAGTCACTCGATC | 67(G-100%)124(C-51%,T-70%);126(C-78%,T-37%); | ND | G;G;C;C;C;C;G;A;A | |
| 438 | chr6 | 249 | TGACGAGTGAAAACAAATAAAAGCA | GCATCTCATTCAAATGGACTCTGAG | 82(G-71%,T-29%);83(G-29%,A-71%); | ND | ND | |
| 439 | chr6 | 268 | CAGTCTCTGAGATCACACAGTGTTA | AATTTGAATGATGTCATCCTTCGGG | 116(G-35%,A-85%);119(A-35%,T-85%); | A;T;T | G;A;T | |
| 440 | chr6 | 201 | GTCTTTCTTCCTGCATAGTGCTTTT | CCCATCCAACCACTAGAATCAAGAA | 36(A-40%,G-86%);48(A-8%,G-100%);57(C-40%,T-86%);86(A-8%,G-100%);100(C-100%,T-8%);111(C-100%,T-8%);116(C-8%,T-100%);118(A-8%,G-100%);132(G-8%,A-100%);149(A-8%,T-100%);153(A-8%,G-100%);155(G-8%,A-100%);161(G-45%,A-83%); | ND | A;G;C;G;C;C;T;G;A;T;G;A;G | |
| 441 | chr6 | 191 | AACATAGTGCATCAAGTAGTCCACT | AGACTTGTTGAGTGTTCAAATGGTC | 37(A-34%,G-91%);64(C-99%,T-9%)89(C-91%,T-34%);148(C-67%,G-64%); | G;T/C;G;C;C;T;C;C/G | G/A;C;G;C;C/T;T;C;G | |
| 442 | chr6 | 258 | GATATGTGGTCCCGGCATTTTTAAG | GGGAAGTGGCGGATTTGTATTAATT | 69(C-88%,T-61%);82(C-83%,T-62%);167(C-83%,T-62%); | C/T;C/T;C/T | T/C;C;C | |
| 443 | chr6 | 273 | ATCTCACATCAGCTGCCTTGAATAT | ACTTGATAATGGATGAAGTGGCTGA | 132(A-9%,G-98%);140(A-9%,T-98%);155(G-9%,C-98%);168(G-9%,A-98%);191(A-99%);199(C-9%,T-98%);200(A-9%,C-98%);214(C-9%,T-98%);218(C-9%,T-98%); | G;T;C;A;A;T;C;T;T | ND | |
| 444 | chr6 | 224 | GATGACTCTATCTACGAACATGCCT | ACACAATCAGATCTCTCTCATCGAG | 37(G-30%,A-94%)95(A-30%,G-94%);97(C-32%,T-93%);127(A-53%,G-80%); | A;T;C;G;T;G | G/A;T;C;G/A;C/T;A/G | |
| 445 | chr6 | 257 | CCAATCTTCCTCGGTGATCACAA | CTGGTTGTTCTGAGCCGAAGTA | 34(G-74%,A-59%);35(C-74%,A-59%)109(A-96%,T-18%);120(C-87%,T-34%);133(A-45%,T-83%);142(C-45%,G-83%);161(A-16%,G-97%);181(G-45%,A-83%);192(A-45%,G-83%); | ND | ND | |
| 446 | chr6 | 276 | TACAAGACGATCTGCTTCACCATAT | TTCCTCCACATCATCCCCTAATATG | 57(C-89%,T-37%);58(G-37%,A-89%);73(C-37%,G-89%);78(C-94%,G-25%)106(C-89%,T-37%);164(G-94%,A-25%);232(G-37%,A-89%); | C;A;G;C/G;A;C;G/A;A;G | T/C;G/A;G/C;C;A;C/T;G;A/G;G | |
| 447 | chr6 | 277 | AAAAATAAATCGTGGTCGGTCTCAC | GCCTTAATCCATGTGACCATGTATC | 78(A-7%,G-99%);104(C-7%,A-99%);106(A-7%,C-99%);126(A-7%,C-99%);138(A-90%,T-22%);180(A-16%,G-93%);198(G-48%,A-75%); | ND | C;G;A;C;C;A;G;A | |
| 448 | chr6 | 173 | CACACACCTTATGATCCCTCCTATC | GTGATTGCTAGGTCAAATCAGCTTT | 36(C-90%,T-36%);51(C-36%,T-90%)54(G-100%)61(A-100%)76(T-100%)83(C-36%,T-89%) | C;T;A;G;A;A;C;T;A;T;C;A;C;C;A | C/T;C/T;A;G;A;A;C;T;A;T/C;C;A;C;C;A | |
| 449 | chr7 | 264 | AGGTGAATGATCTGGGTCCATTAAA | AAGCAATGTCTAGACAAGTCATGGA | 112(C-34%,T-84%);127(C-34%,T-84%);138(A-11%,G-97%); | ND | C;C;G | |
| 450 | chr7 | 216 | TCTCTAATGATTTGAGGTCTGTGCA | TCCAAATTTGTAGTGCACCTGTAAC | 59(G-72%,A-53%);82(A-16%,G-100%); | G;G | A;G | |
| 451 | chr7 | 268 | AGGCAAAAGTAGGAAGAATCTCCTT | TTGTTTTGTAACCTGTCCAAATCCC | 56(G-30%,A-85%);97(A-30%,T-85%);149(G-30%,A-85%); | A;T;A | G;A;G | |
| 452 | chr7 | 226 | CCAAACAACAAAAACAGGAAACGTT | AGGTTGCATGACTATTGATCTCTCA | 49(C-87%,T-31%);52(A-31%,T-87%);164(C-7%,A-100%);187(G-7%,T-100%); | C;T;A;T | T;A;A;T | |
| 453 | chr7 | 219 | CAGATATTGCGTATGCTGTCAGTTG | TAATGGTCCCTTAGGAAGAAGTTGG | 122(A-31%,T-84%); | T | A | |
| 454 | chr7 | 255 | GATTCGATCTTTGCAGCAATAGGAA | TTCGGGCAAAGAAGAAATTAGCTTT | 51(G-35%,A-84%);128(G-75%,A-50%);135(A-35%,G-84%);138(G-35%,A-84%);171(A-35%,G-84%);178(C-35%,T-84%);215(A-31%,G-84%); | ND | G;G;A;G;A;C;A | |
| 455 | chr7 | 240 | TGCTTCATATGAACTATCGCCCATA | CCTCAGAAGTACGGTCCATACAAAA | 128(G-99%);147(C-35%,T-80%); | G;T | G;C | |
| 456 | chr7 | 275 | CATATGCACAGATATGTGGCCATTT | TTGTTGAAGTTGTTTAGGTGCCTTG | 49(A-60%,T-51%);100(A-51%,T-60%);157(G-51%,A-60%);183(G-96%);205(C-60%,T-51%); | A;T;A;G;C | T;A;G;G;T | |
| 457 | chr7 | 223 | CGAGCTATCCTCTATTGATAGGCTG | CATACCAGATGACACCTCGGATAG | 103(C-66%,T-71%);148(G-98%,A-8%);187(A-59%,G-76%); | G;T;G;G;G | G;C/T;G;G;G/A | |
| 458 | chr7 | 248 | TCAAGAGAGGGAAGAGTAGATTTGC | ACAGTGTACCAACTTTATCAGGAGT | 107(G-74%,A-61%); | G/A | G | |
| 459 | chr7 | 255 | AATGCAAGGGCTTGAGAATTTGTAA | ACCCTTGAATTAATGCCCTTAAAGC | 84(A-64%,G-72%);92(G-64%,C-72%);96(C-64%,T-72%);219(C-65%,T-71%); | A/G;G/C;T/C;T/C | G/A;G/C;T/C;C/T | |
| 460 | chr7 | 270 | ATTGATTTTGTGCTATGCCCAAAGA | AAATCATCAAAATCTCTTGCTCCGT | 88(G-95%,A-14%);89(C-38%,T-65%);208(C-95%,T-14%); | G;T;C | G;C;C | |
| 461 | chr7 | 150 | AGTCTGACAGGTACGACTCATTAAA | TACCCCGAGCTACCTAAAGGGATAT | 62(G-28%,A-85%)94(C-46%,T-75%); | A;C;T | ND | |
| 462 | chr7 | 266 | TGCATGTTTGATTCATGTTGTTTGG | TATCTGCAAGGTCCATGGCAATATT | 121(C-42%,A-80%);135(T-99%);180(A-42%,G-80%); | A;T;G | C;T;A | |
| 463 | chr7 | 260 | TTCTAGGAGTTGGAAAATCTGGCTT | AAACCAAGAATAAGGAGAGGCTTCT | 41(A-75%,C-42%);70(A-37%,G-82%); | A;G | C;A | |
| 464 | chr7 | 248 | TTCATTTCTCCCAAGATCCAACTCT | AGAAACGGGTGTGTCATCTTTTATG | 53(C-100%,T-11%);71(C-100%,T-11%);90(C-99%);100(A-30%,T-95%);105(G-95%,T-30%);186(C-96%,T-19%); | C;C;C;T;G;C | ND | |
| 465 | chr7 | 207 | ATACATCATTCGGTACCTCCAAACC | ATTGTCAATCAAGGGGCTTTTATGG | 41(G-51%,A-83%);80(C-83%,T-51%);122(C-83%,T-51%);146(A-83%,T-51%); | A/G;C/T;C/T;T/A | A/G;T/C;T/C;A/T | |
| 466 | chr7 | 247 | CCCTCTTCTTTTCCTTCCCATATCT | TAAATCAAGCCCTTCCCAAAACAAA | 133(A-75%,G-63%);205(A-64%,T-74%);210(G-75%,A-63%); | G;A/G;C;T/A;G/A | G;A;C;T;G | |
| 467 | chr7 | 195 | ACCAGATCAGTACCAGATCAAACAT | AAAACTACACCAGACCTTCTTCCTT | 91(A-37%,T-64%); | T | ND | |
| 468 | chr7 | 237 | CCCGAATTAGGATTTTTGGTAGTTGT | GAAAGACCCAACCGCTTCATTAG | 88(C-41%,T-87%);136(C-41%,T-87%);156(C-97%,T-7%);177(G-87%,A-41%);178(G-85%,A-43%);201(G-27%,A-88%); | C/T;C/T;C;G/A;A/G;A | T;T;C/T;G;G;A | |
| 469 | chr7 | 188 | GTGTAGTGCTGCTTTATTCTAAGGC | TTCACCAAATGGATCAAAGTTGAGC | 76(A-26%,G-89%);99(G-76%,A-68%);112(A-37%,G-82%); | G;G/A;G;C | G;G;A;C | |
| 470 | chr7 | 235 | CAATTGGCTATTGGTGGGCTTATAT | CTTTCTTTAGTTGACACACCTTCCC | 65(A-14%,C-99%);66(A-68%,T-78%)94(C-99%,T-14%);123(C-78%,A-58%);146(A-78%,G-68%);160(C-84%,G-51%);167(C-14%,T-99%);190(C-58%,T-83%); | C;A/T;G;C;C/A;A/G;C;G/C;T;C/T | C;T;G;C;C;A;C;C;T;T | |
| 471 | chr7 | 222 | GTTTTAGAAGGGCCCTTAGAAACTC | GAATTGGTTTACCCCAGACTTTCAG | 87(G-14%,A-100%);119(C-14%,T-100%); | A;T | A;T | |
| 472 | chr7 | 240 | AAGAATTTCAGACAGCAGGAAGAGA | GGTTTTCCCTTCATTTTCTAGCTCG | 53(A-40%,G-80%)108(A-40%,G-80%);142(A-40%,G-80%); | ND | A;C;A;A | |
| 473 | chr7 | 245 | TGTTTACCATTTCGCAAGGCAAATA | TAAATGGCTGAGTAGGGATATGGTG | 75(G-99%);173(C-77%,T-42%); | G;C | ND | |
| 474 | chr7 | 279 | GGCACATCTATTACCTTCACTGACT | GTCGCCATCTCCAATCAAGAGG | 54(C-95%,T-23%);61(A-23%,G-95%);111(G-23%,A-95%);214(C-23%,T-95%);234(G-23%,A-95%);241(A-23%,G-95%); | C;G;A;T;A;G | T/C;G/A;G/A;C/T;A/G;A/G | |
| 475 | chr7 | 237 | ACTTCTAACCATGCTTCAACCAATG | ATATCGACGTGTACTTACAACCCAT | 100(C-87%,T-40%);129(G-87%,T-30%);199(C-68%,T-67%); | T/C;G;T;C/T | C;T;T;T | |
| 476 | chr7 | 280 | CTTCTCAAATCTCTCTACTACCGGG | TGCAGACGACATCATTAGTTTTTGT | 92(C-100%)101(A-52%,G-57%);159(C-57%,T-52%); | C;T;A;A;T;T;C;T;G;T; | C;T;A;G;T;T;C;T;G;C; | |
| 477 | chr7 | 269 | CTACTCTTCCTCCTGGTAAGCATG | CTCCTCTATAAGGTCACCATGAAGG | 81(C-100%,T-48%);82(A-90%,G-100%);83(C-30%,T-100%);84(A-95%,C-100%,T-95%);85(C-15%,T-100%);86(A-90%,G-100%)89(G-21%,A-100%);90(A-55%,G-100%);91(A-95%,C-100%,T-15%);92(C-100%,T-80%);93(C-11%,A-100%);94(A-96%,G-100%,T-90%);95(A-100%,C-92%);96(G-25%,C-100%,T-89%);98(C-49%,T-100%);99(A-95%,G-100%,T-90%);102(A-32%,G-100%);103(G-53%,C-100%,T-95%);104(A-70%,T-100%);108(A-93%,G-100%);109(G-100%,T-12%);110(A-14%,G-100%,T-97%);112(A-100%,T-35%);113(C-88%,G-53%,T-100%);117(A-11%,C-100%,T-95%);119(A-30%,G-100%);121(C-13%,T-100%);122(A-92%,G-100%);125(A-13%,T-100%);126(A-18%,G-100%);127(A-23%,G-100%,T-93%);128(G-15%,A-100%,T-5%);129(A-71%,G-100%,T-7%);130(C-19%,T-100%);132(A-51%,G-100%);134(A-14%,C-100%,T-48%);135(C-16%,T-100%);137(C-10%,T-100%);140(A-95%,G-100%);141(A-51%,G-100%);143(A-13%,G-100%);144(G-25%,A-100%,T-58%);145(A-12%,G-63%,C-100%);146(A-77%,C-100%,T-16%);150(A-9%,T-100%);151(A-9%,C-100%,T-64%);153(A-56%,C-100%);154(C-100%,T-97%);155(G-14%,A-100%);156(C-10%,G-100%,A-97%);159(A-63%,G-100%);160(G-92%,C-100%,T-95%);161(A-9%,T-100%);163(G-15%,A-100%);164(A-96%,G-100%);168(G-12%,A-100%);169(G-100%,T-92%);172(A-94%,C-100%,T-97%);174(A-92%,G-100%);175(C-17%,T-100%);176(C-100%,T-77%);177(C-100%,T-97%);178(A-95%,G-100%);180(A-38%,G-100%); | C;G/A;T;C/T/A;T;A/G;A;A;G;A/C;C;A;G/T/A;A/C;T/C;T;A/G/T;-/G;-/T/C;T/-;A/-;A/-/G;G/-;-/G/T;-/A;C/T/-;-/T;-/C;-/A;C/-;G/-;T/-;-/T;G/-/A;T/-;T/-;-/G;G/T/-;A/-;-/G;-/T;G/-;-/G;-/A;-/C;T/-;-/A;T/-;-/A/G;-/G;G/-;-/A/T;-/C/G;C/-/A;C/-;-/T;C/T/-;-/T;-/C;T/C/-;A/-;A/-/G;-/T;G;T/C/G;T;A;A/G;T;A;T/G;C;A/C/T;A/G;T;C;T/C;G/A;T;G; | C;G;T;C;T;G;A;A;G;C;C;A;G;A;C;T;G;G;C;T;A;G;G;G;A;T;T;C;A;C;G;T;T;G;T;T;G;G;A;G;T;G;G;A;C;T;A;T;G;G;G;A;C;C;C;T;C;T;C;C;A;G;T;G;C;T;A;G;T;A;G;C;C;G;T;C;C;G;T;G; | |
| 478 | chr7 | 267 | TATCAGAAGGCATCATCTCAACTCC | GAAAGCGTTATGGGGTGGTGTATTA | 84(G-7%,A-94%);85(C-7%,A-94%); | A;A;A;C | A;A;A;C | |
| 479 | chr7 | 203 | ACGTCTCCTATGACATGCTTGATTA | AGAAGATACTAACTTGAGCTTCGGA | 52(C-87%,T-34%);62(A-53%,G-60%);79(C-93%,T-11%);96(C-83%,T-38%);133(C-93%,T-11%); | C;A;C;C;C | ND | |
| 480 | chr7 | 249 | TTCTTCTTTGCTTTCTTCTTCCCAC | AGTAGATGGATGGTAGTTTTGGACC | 138(A-45%,T-85%);151(C-77%,T-42%); | T;C | T;T | |
| 481 | chr7 | 273 | AAGTCCATTCCTCTGCTTTTCGATT | TTCAAGGGAAGATCAGTTGGGTC | 92(A-51%,G-75%)102(C-99%);103(C-81%,T-43%);111(C-13%,T-100%);132(C-13%,T-100%);142(C-13%,T-100%); | G;C;C;C;T;T;T; | A;C;C;T;T;T;T; | |
| 482 | chr7 | 172 | ATTATGTACTCATCAATCGCTGGTC | GAAAACACAAACCCTACTTCTAGGC | 44(C-37%,T-81%);53(T-99%);74(C-37%,T-81%);77(G-82%,T-36%);79(C-99%);110(A-36%,G-82%); | ND | A;C;T;C;T;C;T/C;A | |
| 483 | chr8 | 266 | GAACAACTCACCAGAAAATCTAGGC | ACCGATGACCGATCCTAATTTATGT | 40(A-53%,G-61%);73(G-72%,T-45%); | G;G | A;T | |
| 484 | chr8 | 277 | TGTTTGGCATATCTTTTTGTGTGGA | TATTTCCAATACAAGGTGGGATGGG | 230(A-42%,G-62%); | ND | ND | |
| 485 | chr8 | 207 | AATGTTTAAGGTATTGATGAGGGGC | TAGAAGGTTACTACGTGTCACTTCG | 38(C-83%,T-59%);50(C-50%,T-67%)57(G-100%)103(C-88%,T-46%);106(C-59%,T-82%);114(A-82%,G-59%);131(G-83%,A-59%); | C/T;T;T;G;A;C;C/T;T/C;A/G;G;G/A;G;C;T;A | C;C;T;G;A;C;C;T;A;G;G;G;C;T;A | |
| 486 | chr8 | 273 | TGGGGTTTTTATTGTTCAGTTCACC | CTTTAGGACTGTGGTAGGCTTATGT | 36(C-60%,T-80%);40(C-97%);46(C-80%,G-60%);73(G-80%,A-60%);75(A-80%,C-60%)183(C-80%,T-60%); | C/T;C;G/C;G/A;A/C;G;C/T | T;C;C;G;A;G;C | |
| 487 | chr8 | 245 | CACTTTATGTGTCAGTGGCTTAGTT | TGAAGAAGTTCATTCACGAATTGGG | 96(A-80%,G-62%);97(C-82%,T-60%);112(C-81%,T-62%); | C;G/A;T/C;T/C;C;C;G;C;G;G;A;G;G;C;A;T; | C;A;C;C;C;C;G;C;G;G;A;G;G;C;A;T; | |
| 488 | chr8 | 170 | ACCAGACATACTATGGGGATAGACT | ACTGAAAATGGTAAATTGGTGACCA | 54(G-91%,A-42%);68(C-40%,T-92%) | G/A;T/C;C | G;T;C | |
| 489 | chr8 | 253 | GATCTTGGTGTGAATCAGGTTGTTC | ATGGGCCAACCTATAATTGCATTTT | 45(G-98%); | G | G | |
| 490 | chr8 | 235 | TAACTGCTTTGGCGTTAAATCCTTT | CGATGAAGAAGATGAAATGGGTGAG | 115(A-49%,G-91%);136(C-84%,T-68%);150(C-16%,A-99%); | A/G;C/T;A | G;C;A/C | |
| 491 | chr8 | 237 | GAAAGAGAAAGGCCCTCCAAAAATA | AAAAGTGTGAACTGTGAACCATACC | 45(G-96%);51(C-76%,T-49%)94(G-96%);102(C-96%,T-14%);110(G-96%);112(A-96%);131(T-96%); | ND | ND | |
| 492 | chr8 | 208 | CTTCGAATCACCTTCCAGAATCAAG | TAGAATAAATGGCAGCAGCGTAAAG | 66(G-54%,A-75%);72(C-75%,T-54%) | ND | A;C;C | |
| 493 | chr8 | 253 | TAGATTTGGTCCAATCCAATCCAGT | AGATGAGTGTAGAGAAAACAGGTTA | 133(A-69%,G-64%);176(A-71%,G-62%); | ND | A;A | |
| 494 | chr8 | 251 | CATTGATTCTGATCTTCACGACGAG | TAATAAAACAGGATGACAGCCACTG | 157(C-79%,T-41%);171(A-8%,G-98%);172(C-68%,T-45%); | G;G;C;G;T | G;G;C/T;G/A;C | |
| 495 | chr8 | 247 | ATGCTTCACATGATGGAGTTTGATC | CCTAAGATGGGTAATTGGTGTTAGC | 40(G-45%,A-85%);57(G-6%,A-100%);59(G-6%,A-100%);87(A-45%,G-85%);101(A-6%,G-100%);112(A-6%,C-100%);118(G-59%,T-62%);126(A-34%,T-90%);165(G-45%,A-85%);170(G-45%,A-85%);178(A-6%,G-100%);200(G-42%,A-88%); | A;A;A;G;G;C;G;T;A;A;G;A | A;A;A;G;G;C;T;A;A;A;G;A | |
| 496 | chr8 | 278 | TAGAGTTTCACCACGTGTCTTATGA | CTTTTAGGCTAGGCTGAGGATTTTG | 39(C-87%,T-38%);40(A-39%,G-75%)170(C-38%,A-87%); | C;A;G;T;A | ND | |
| 497 | chr8 | 279 | CCACTTCTTCATCTTCATCCATTGT | TTCCTCTCCATCAAATTCTAGGCAA | 78(G-6%,C-99%,T-5%);91(G-43%,A-87%);98(A-39%,T-90%);99(G-39%,A-90%);130(C-100%,T-6%);144(A-43%,G-87%);147(C-100%,T-6%);174(C-100%,T-6%);176(G-6%,A-100%); | C;A;T;A;G;C;G;C;C;A | C/T;G;A;G;G;C;A;C;C;A | |
| 498 | chr8 | 264 | AGGTGTATTTTCGGCCTTAGAGTAG | AGGGGAGCATGGTAAATTGGTAATA | 54(C-85%,T-42%);119(G-42%,A-85%);163(G-42%,A-85%);185(G-42%,A-85%);209(C-85%,T-42%);216(C-85%,T-42%); | C;A;A;A;C;C | T;G;G;G;T;T | |
| 499 | chr8 | 270 | AAAAACTCAGAGATGGGTGAGGAG | CACCGAAAAGGAGATCTTAGCAATT | 39(C-46%,A-84%);63(C-86%,T-27%);126(C-46%,T-84%);139(A-75%,G-61%);185(C-56%,T-77%);224(A-46%,G-84%); | ND | C;C;C;G;C;C;C;A | |
| 500 | chr8 | 262 | ATATACAACAAGAGACAGTCGAGGG | GTCTGGATCCTTATTATACGCCCTT | 45(A-5%,G-99%)62(G-40%,A-87%);90(C-99%,T-5%);167(A-41%,G-86%);175(C-87%,T-40%);216(C-99%); | G;C;A;C;G;G;C;C | G/A;C;G;C/T;G;A;T;C | |
| 501 | chr8 | 280 | AGAAGGTTGGGGATTAGATAAGAGA | AGTTTTGACATCCATCTGCCAAATT | 119(G-81%,T-41%);179(G-41%,C-81%);180(C-41%,T-81%); | G;C;C;T | T;C;G;C | |
| 502 | chr8 | 238 | TGTAATCAACCTTAGAGCAATGGGA | ATTGTTCTGTTCTTCATCGTAGAGC | 126(C-6%,T-98%); | A;C;A;T;G;C; | A;C;A;T;G;C; | |
| 503 | chr8 | 265 | TACAACTTTTTGGTAGTCGCAACTC | TCTTCTATAGGTGCAATTCGCTCTT | 116(C-79%,T-44%);149(G-44%,A-79%);154(G-44%,A-79%); | C;A;A;C | C/T;A/G;G/A;C | |
| 504 | chr8 | 295 | GGGATTATCTACCGGACAATCAGAA | AATCGCTCCATTATTGATGCAGTTG | 86(G-49%,A-74%);143(A-41%,G-75%);177(C-100%,T-7%);183(G-49%,A-74%);233(G-93%,T-31%);243(A-49%,G-74%); | A;G;A;C;C;A;G;G;G;C | G;G;G;T/C;C;G;G;G;A;C | |
| 505 | chr8 | 280 | TCATCCGTATGAGCTAAGTCTTTTT | CCACTATAAGCTGGGAAAAATGCAA | 36(A-51%,G-72%);90(A-51%,G-72%);127(C-72%,T-51%);129(G-51%,A-72%);206(G-51%,A-72%);224(G-51%,C-72%); | G;G;C;A;A;C | A;A;T;G;G;G | |
| 506 | chr8 | 203 | TAAAGGTATTTCCCCACCAGTAGTG | TGGAATTGATTATGTGTCACTTCGG | 37(C-100%)81(C-85%,T-38%);94(A-71%,G-61%);109(C-55%,T-77%);167(A-38%,G-85%); | C;T;G;C;G;G;T;C;A;A;G | C;T;G;T;A;G;C;C;A;A;A | |
| 507 | chr8 | 246 | GCACTTCTTTCCACTTTCTTAGCAT | AAGCTTGTTTTCCACTTCACGTATT | 98(C-100%,T-7%);158(G-7%,T-100%);183(A-7%,G-100%); | G;C;T;G | G;C;T;G | |
| 508 | chr8 | 272 | GATGAAGCCATTGTAGAGAAAGCC | CTTCTTGTCGGGATGATGTACCAAG | 55(C-8%,G-100%);88(G-8%,A-100%);94(C-100%,T-7%);131(C-8%,T-100%);173(A-7%,G-100%);185(A-7%,G-100%);188(G-8%,A-100%); | T;G;A;C;T;G;G;C;G;G;A | T;G;A;C;T;G;G;C;G;G;A | |
| 509 | chr8 | 279 | CATTACAGCCCGTATTCTTGCTAAG | ATTGATCAACGCAATTCCATAAGGG | 178(C-73%,T-67%); | T;A | T;A | |
| 510 | chr8 | 268 | CTTGAAACTTGATTCCCAAAGAGCT | TAAGGGTACTCATAGTCCAGTTTGG | 133(A-57%,T-75%); | ND | ND | |
| 511 | chr8 | 240 | TAGGTGTACGGTACAAGGTTAGTTG | GCATCCATATCCACAATATCGCAAT | 170(C-96%); | C | C | |
| 512 | chr8 | 231 | CTCCCTCCTAAGACTAACTGACTTG | AAAAGTGAGAACTAAATCGTGTGGG | 46(C-92%,T-29%);49(C-81%,T-48%);97(C-98%,T-11%);111(C-74%,T-58%);137(C-71%,T-61%);190(A-94%,T-25%); | T/C;C/T;C;T/C;T/C;A | C;C/T;T/C;C;T;T/A | |

注1：本表第7列（变异碱基位置、类型与比例）中，以编号2标记为例，“107(C-98%);140(G-66%,A-69%);147(G-33%,A-84%);173(C-84%,T-37%);207(A-13%,G-95%)”表示该标记第107、140、147、173和207位碱基位置存在等位变异，且在第107位碱基位置中，有98%的品种（总数为200个）为C；第140位等位变异为G、A的品种比例分别为66%和69%；第147位等位变异为G、A的品种比例分别为33%和84%；第173位等位变异为C、T的品种比例分别为84%和37%；173(C-84%,T-37%);第207位等位变异为A、G的品种比例分别为13%和95%；未列出比例小于或等于5%的等位变异。

注2：本表的第8列（参照品种）中，以编号2标记为例，“C;A/G;A;C;G”表示鄂莲6号在第7列所示的107、140、147、173和207位等位变异的碱基分别为C、A/G、A、C、G，太空36号对应位置的碱基分别为C、G、G、T、A/G。

ND表示在测试样品中未检测到。

附 录 B

**（资料性）**

**溶液配制**

**B.1 DNA提取**

1. 0.5 mol/L乙二胺四乙酸二钠（EDTA）溶液

称取186.1 g EDTA，溶于800 mL水中，再加入20 g氢氧化钠，搅拌。待EDTA完全溶解后，冷却至室温。再用氢氧化钠溶液（1 mol/L）调pH至8.0，定容至1 L，在103.4 kPa（121℃）条件下灭菌20 min。

1. 1 moI/L三羟甲基氨基甲烷盐酸（Tris-HCl）（pH=8.0）溶液

称取60.55 g Tris碱溶于约400 mL水中，加盐酸溶液（0.5 mol/L）调整pH至8.0，加水定容至500 mL，在103.4 kPa（121℃）条件下灭菌20 min。

1. 2 %十六烷基三甲基溴化铵（CTAB）溶液

分别称取20 g十六烷基三甲基溴化铵、81.7 g氯化钠和20 g聚乙烯吡咯烷酮溶于约700 mL水中，加入100 mL Tris-HCl溶液（1 mol/L，pH 8.0）溶液和40 mL EDTA溶液（0.5 mol/L，pH 8.0），加水定容至1 L，在103.4 kPa（121℃）条件下灭菌20 min。

1. TE缓冲液

分别量取5 mL Tris-HCl溶液（1 mol/L，pH 8.0）和1 mL EDTA溶液（0.5 mol/L，pH 8.0），定容至500 mL，在103.4 kPa（121℃）条件下灭菌20 min，于4℃保存。

**B.2 3×Taq Master Mix**

先配置3×PCR缓冲液，各组分的浓度应符合以下要求： KCl 30 mmol/L、(NH4)2SO4 48 mmol/L、Tris-HCl 60mmol/L、MgSO4 6mmol/L充分混匀后调整pH至8.0；加入dNTPs（终浓度0.6mmol/L），然后加入Taq酶（终浓度0.1U/μL）。充分混匀后于-20℃保存。