Appendix 1: Sequences of primers used in this project.

STS Name	Primer 1	Primer 2	Product size (genomic)	Product size (cDNA)
st105046C1A10snp	ATGCCGATGTGAGTCGTGTA	TTTCATTGTGTTCGTCAGGC	380	
st105047B5snp	AGCTGTGTCTCTGGCTGTGA	TCTGCTAGACTCGCCTCCTC	396	
st118609D5snp	CCCATTTCGTAGGTGAGCAG	GGATCTCTGCTGGCAGGTTA	400	
st118622E3snp	CTCCTGGGGAAGAAAGACAA	GACCTGGTTGGAGGCTAGAA	393	
st118626E9B5asnp	AAAATAGAATGAACCTTCAGATTGCT	ACCCAAAACATATTATCACCAATTC	390	
st118626E9B5bsnp	TCCAATCCAAAGTTCTCATTCC	AACAGTGATTAGAACTTGCACACA	395	
st118626E9B5csnp	CTTCTTCCCCTTCTCCCTCT	CACTGTGGACACCCCATCT	399	
st118626E10B6snp	TCCTTCTGTTTTTATGAAAGTCCC	CAGACTTAACACTACGCCCG	404	
st118634F4snp	TCACAGAGGGCAGAGACCAC	CCCAGGACTCTATGCCAGAA	398	
stAA000919	ATGACAAGGGCTTTGTGGAC	CCTGGTAGACCAGTAGCCCA	156	
stAA000919.2	TATCTGCTCTTTGCCAACCA	TGTACCAGAGCTTGAAGCGA	100	
stAA017949.2	GCTATTGCCGACGAGGTTAC	AACAGTTATGGATGCCGGTC	222	
stAA020167	AGAACCAGCTGCTCACGAAG	GGCAGCACATCACTGAAGAA	121	
stAA020167	AGAACCAGCTGCTCACGAAG	AGACCGCGACTACTCCGTTA	121	
stAA020167	CTCAGTGACCTGGGCAAGAT	AGACCGCGACTACTCCGTTA	121	
stAA020167	CTCAGTGACCTGGGCAAGAT	GGCAGCACATCACTGAAGAA	121	
stAA020167.1	ACGCCACCTGGAACAGTATC	TCAGTGAAGAAGGACCCCAG	136	
stAA020167.2	AGAACCAGCTGCTCACGAAG	GGCAGCACATCACTGAAGAA	121	
stAA020167.2	GAAGCTGCTGGACTCATTGG	GAAGATGGCCTGCAGGGTT	121	
stAA020167.2	AGAACCAGCTGCTCACGAAG	GAAGATGGCCTGCAGGGTT	121	
stAA020167.2	GAAGCTGCTGGACTCATTGG	GGCAGCACATCACTGAAGAA	121	
stAA034567.2	ACATCCTGGAAGTACGGCAG	TTCAGTTTGGGCTGGTTTTC	134	
stAA036311.2	CTCTCACACAGCGAGGGACT	CACCAGCAGGCATTTTCTCT	102	
stAA038856	AGAAAAAGGATGCCTGAGCA	AGGAAGGGAGAAGAGCTTCG	215	
stAA073404.2	CTGGATCATGAAGCCATGTG	CCGATGAGCAACGGATTATT	171	
stAA103214.2	AAAGGAACTTCATGGCCCTC	AACCCTGGAGCACTCAGCTA	155	
stAA104556.2	CACAGAGACCGCTGATGCTA	TCTGCTTTACCGTCGACCTC	174	
stAA209454	AATAGCCTAGCCCCCTGCTA	AAGCACTTTCTGCTTTTGGC	123	
stAA284306	TCTCACAAGCTGGAATGTGC	CAGGATAAAGTCCAGGCAGC	122	
stAA308620.2	GCTTCTGCCTTTCACCAAGA	CTACTGGCAGCCCAACAAGT	106	
stAA316228	CATGGATTTTTCATCTTCTACCG	ATGCACGTTCTATCCAGGG	202	
stAA316829.1	GGCAGGGAAAGTAAAATGGG	TCACTTGGACCCATCCTCTC	83	
stAA316829.2	GCTCTGAGCCCACAGGGA	CATAGGCACTGACAGAGCACC	100	
stAA316883.2	AGGAGATGGAAGACCTGCG	TCCTCCTCCTCCTCCAGTT	108	
stAA316883.3	TGCAGAAGGACTGTGACCTG	TTATTTTTGCAGAGGAGCCC	103	
stAA390181.2	TGGAGCAGCACATTCAGAAC	CTCTTGCCCACTGAAGAACC	193	
stAA390181.2	GTGTTTGACAGCTTGGAGCA	CTCTTGCCCACTGAAGAACC	193	
stAA451754.1	CATCTCATTCGTCTGATTGGAA	TGATGTTGCAGTTGTCCAGG	106	
stAA451754.2	CGTGAGAGCAGAAGGTGACA	CCATCCAGCTCATTTACCTTG	123	
stAA474253.2	CCCTGTGGAAGACCAGTCAC	GAGTGTCCACTTTCCTTCCG	106	
stAA474253.2	CCTGTGGAAGACCAGTCACA	ACTTTGAACAAGGCCCCTCT	106	
stAA474253.2	CCCTGTGGAAGACCAGTCAC	ACTTTGAACAAGGCCCCTCT	106	
stAA474253.2	CCTGTGGAAGACCAGTCACA	GAGTGTCCACTTTCCTTCCG	106	

stAA482326	TGGTGTCTCTCAGGCTTTCC	TGCCCACGATATGCTAAGTG	210	
stAA535365	AGCTGCCTCTATCCCTGACA	TGGGTCTGTTAAGTCCTGGG	132	
stAA726210.2	AGAGGTGACGCAGTCGAGAT	ATGCTCAGGAAGGTGAATGG	198	
stAA889354	GGGTTTGGGTCCATTTGTTA	GCTCATGTTCATGGAGTCCC	122	
stAA911743	CATCAACATGGGTGTTCCAC	CTTCCGTGTTGCTTGAGAGG	108	
stAA913461	GGTTTCAGTTGGTCTCTTTTGC	CTGCATATCCCTCATCCACC	83	
stAF009246	TGGTCATTTGCGGTAACAAA	GGTCCAAGCTGCTGTTCTTC	138	
stAF048838	TTACTGGCTAAGTGCCCCTG	ACTCTCCACCCCAAAGGACT	174	
stAF059257	CAGATTCCTGGGTGTGTCCT	AACGTGAGGTCACACTTCCC	207	
stAF059257.2	GAAGAGTTGGGCTGTGGAAG	CTAGTAGAGCGTTGGGACCG	161	
stAF070556	TACTCTTCGGGGGTTTCCTT	CCATTTCAATTTGTGACCCC	143	
stAF086048	ACCACGTCTTTCAGTGGTCC	TGGTGGTATTGCTTGGTGTG	151	
stAI168007	CAGGACTGCTGAAGCACAAG	GCAAATTCCGACCCTACTGA	239	
stAI208666	CCAGATGAGTAGAGAGGCGG	AGCGGCTTTGGGAGAGTAAT	238	
stAI225490.2	CATCAAGGTTGTGTCTCCCA	CAATCTTCACCTCCTCAGGC	116	
stAI333015	CAAGCCACTGGGTAGCATTT	GCGACGTGTGTCTTTTCAGA	151	
stAI538474	AGCTCTCCTCTTGATGCCAA	GCTCACTGTTGCAAGGGTTT	101	
stAI623320	GAAGGGATGGATCCTGAGGT	GGTGTCCAGGATGCTCTCAT	159	
stAI647249.2	GGTATTGCTCCTGCGACATT	CTACCAGAGAACTGCCCAGC	296	
stAI904287	TGCAAACCTACTCCCAAAGG	CCTGAGACATGGCTTCTGTG	454	
stAJ006972	AGACCCAGGAGAAGGACGAT	TAATACCAAGGGAGGGAGGG	117	
stAJ006972.2	CCCTTACGGTCTTGGAAACA	ATGGTCCTCACCAGCACATT	100	
stAL050282.1	GCACCCAGGACTATCTTCCA	TCAACAGCAACACCAATCGT	215	
stAL050282.2	TGTGAAATTGCAAGTGTTTGAA	AATGCACGTTCTATCCAGGG	177	
stAL050282.3	TCCTACTCCTCCCTCCTCGT	GGTGCTGTTTCTCGGTTCC	216	
stARFGAP1.3tag	GGCCGATATCCTGACGATGGGGGACCCCAGC	GGCCGCTAGCAGAACCGTATCGATC CTG		1584
stARFGAP1.5tag	GGCCGCGGCCGCGATGGGGGACCCCAGC	GGCCTCTAGATTAAGAACCGTATCG ATCCTG		1584
stARFGAP1na	CCGCTTTTCGTCGACTCTTA	CCGCCTGAGATGTGGTTACT		1686
stARFGAP1nb	CACAGCTGACGATGGG	CTCCAGGAAATACACATC		1592
stARFGAP1r	TGCTGGAAAACTCTCCGTCT	CCGCCTGAGATGTGGTTACT		138
stARHGAP8	CTACCCTACCTCCGAGTCCC	AAGTGCACAGACAGGTGTGG	101	
stARHGAP8.2	ATGAGGACTCTCCGCAGGTT	TCTGAATTCATCTAATGGCTGG		2042
stARHGAP8.nest1	GCTCGGCTTCCTGCTCTC	TCTGAATTCATCTAATGGCTGGT		2171
stARHGAP8.nest2	GTCACCATGAGGACTCTCCG	GCTCGAAATATACAGAGTGTTCG		1966
stARHGAP8b	AAGTTCATGAGTTCGCCCAG	CTGTTCCAGGTGGCGTTG	113	
stARHGAP8c	CAGCAGCTCACAGGACTCAG	GGGAACAAGGCTAGGACACA	114	
stARHGAP8n	CTCCGTGCAATGATTAACCC	AAGTGCACAGACAGGTGTGG		2255
stARHGAP8r	AGCCTCCCAGAGCACAACTA	ATGGCCAGATCAAATTCAGC		136
stAW006377	AGAAATTCTCAGCCTCGGG	GGCAAGGGGATGGTTCTC	872	
stAZ039089	AACACCCAAGCAGTAATATCCC	AAGGAGTGGGGAGAAAGAATG	122	
stAZ053629	GTGTCAGCAAACCAAGCAGA	CGATCCTAAATGTGAGATGCTG	135	
stAZ053645	TTCCTGGAGCTTGAGAAATAGC	AGGGCTTCAAGTCCCCTG	132	
stAZ069460	CATGAGCACCTGAAATGGG	TGCACTTTACAGCTGAGAGCA	139	
stAZ122996	ACCAGGGAAAGGAGGAACAT	GCTGCTTAGCAAAATCAGTCG	128	
stAZ122997	AATGTTACCCCCTTTCCTGG	GTGGGTGAGTGGGTGGAG	97	

stAZ223795	CAGACAGTGCTAGAAGGGGC	GAGACTCCATCACGAGCTCC	162	
stAZ223797	GGATCTGAGTCCGCCTCC	ATCGCTAAATGGCTCTTACTCG	90	
stAZ224850	CAGACCAGAGAAACCCTACCC	AACTGGTAAAGCTAGTGCTGCC	133	
stAZ224853	GATGGTGGCAATATTTTGGG	GAGGCAGAGAGAGCCAGCTA	137	
stAZ235760	CTGACCACAGCCATGCTG	TTGCCTCTCCTGTCAGGG	138	
stAZ259729	GCCAGTCAATCACCACACC	ATCTCGTGTTTATGGGGCTG	167	
stAZ259730	ACAGAATACCAGTGGCCTGG	TACCCAGGCTGTGTATCTTGG	165	
stAZ273863	CTGAGCGCTTTATGGTCACA	TATCTATGAGGGTGCAGGGG	175	
stAZ280505	ATGAAGAGCCCAGGGTCC	AAGACCCTCAGAGTCTCCTGTG	172	
stAZ280507	TGGTTTCCTGACTTCCGATC	CTAGGCACCCCTAATACCTGC	140	
stAZ287193	CACCACCACACCTGGTGATA	GAGATGAGGCATGTGTCCAA	166	
stAZ287194	TGGTAGATGGGTTTAGCATGC	GTTATGGGCTTTGCCTTAAGG	156	
stAZ297741	AGAGGCAGGCAGATTTCTGA	GGGTTTCTCTGTGTAGTCCTGG	83	
stAZ297742	TTCTTCTCTTTGAAGTCCAGCC	GATTCCTGACCCACAGAAACA	161	
stAZ696681	AGTCTTAGGGGTTGGAGACTCC	GAGGGCTGCAATTCTGAAAG	180	
stAZ696682	CCTGGACGTCCAGTCCCT	AGCCCTGGGTCTCCAGAC	122	
stBIK.3tag	GGCCGATATCGGAGAAATGTCTGAAGTAAGACCC	GGCCGCTAGCCTTGAGCAGCAGGTGCAGGCC		560
stBIK.5tag	GGCCGCGGCCGCAATGTCTGAAGTAAGACCC	GGCCTCTAGATCACTTGAGCAGCAGGTGCAGGCC		562
stBIKna	GTGGCTTACAGACGCTGCC	AACCTCAGCAGTGTTCCAGC		674
stBIKnb	GAGAAATGTCTGAAGTAAGAC	GATAACAGCAGCAGG		565
stBIKr	GAAGTTTCATGGACGGTTTCA	AGCAGCACCTGTTCGCAG		100
stbK116F5mus1	AGTGACCTGGGCAAGAGAGA	AAGAAGGACCCCAGCTCTGT		124
stbK217C2mus1	AAATGCCGAGAAGGAACTGA	GCGCTTTGCTTTCTTTATGG		434
stbK268H5.C22.1	GCGCACATAGAAAAGCATGT	GCTTCAAGGATGACCGCAT	101	
stbK268H5.C22.1cds	CACATGCTGCGTGCCATAG	GGTGGACAGGTAGGCACTTG		
stbK268H5.C22.1n	GAGGCCGAGGAGCGCTC	CGGCATCTCTAGTCCTCTTTG		1529
stbK268H5.C22.1r	GAAGTTTCATGGACGGTTTCA	AGCAGCACCTGTTCGCAG		132
stbK268H5.C22.4	CAGATATGCTTCTGCACGGA	TGTTTGCAGATCTGAGTGGC	100	
stbK268H5.C22.4r	CGTGGACAGCACCACATTAT	CAGTATCTGATTGTGTGCGTTTT		107
stbK268H5.C22.7	GCAAAAAGAACCTATGGCAA	GCCTCTCTGGTCCTTAGCCT	104	
stbK268H5.C22.9a	GGCCCACAACTAGCTCTGAC	GTTGTATTTATGCCCCGACG	107	
stbK268H5.C22.9b	AACCCACTCGTCCTCACATC	CTGCCACAGCTACCATCTCA	129	
stbK268H5.C22.10	GCAGTAGCAGACTCGGAAGG	ACGGAAGATGAGGTGTTTGC	134	
stbK268H5.C22.11	CCTGCTGAAGCCCAATATGT	CAAGCTCTATGCCACGATGA	151	
stbK268H5mus1	TTCAGAGTAGCATAAAATTTGGC	CTGTGTGGACTGGGGTCTTT		107
stbK268H5mus2	GGATGGGGAGAAGAAGGC	CCTGTGGGACTGAAGAGGAC		116
stbK414D7.C22.1	TGCAGACGTGGTTAACTTGG	CAACACAGCTTGGACCAGAA	196	
stbK414D7.C22.1a	CCACATAAAGAAAGTGGCCC	GGGACCAAAAACCCCAGTAA	84	
stbK414D7.C22.1B	GCCTGGAGGAAGTGAGCA	ACTGAGTGCAAAGGGTGGTC	80	
stbK414D7.C22.1c	GGTCGCCCTTTCAGTAAAGC	TCCTAGAAGGGAGGTTGCAG	81	
stbK414D7.C22.1d	AGCACCAAAAGTGGTCTGAA	CATGGGCCCTCATCCTTC	80	
stbK414D7.C22.1e	TGAATTATTTAAGCTGGCTCCG	CAGATTCTGCACAGACAGGC	239	106
stbK414D7.C22.1f	CTCTCCAGATGAGAGACGGTG	GTAGGGGCACTCAGAAGGCT	80	
stbK414D7.C22.1na	CGCGGCCCATGTCC	GATGCCGCCTTTCTTGCT		1154
stbK414D7.C22.1nb	CGCGGCCCATGTCC	GCCACCATCCACAGC		1125

stbK414D7.C22.1r	ATGTGTCCTTCGCCTTTGAG	CTCAGGGTGGATTTGAGGTC		100
stbK941F9.C22.2	CAAGATGGCGGCGCCCAGGC	ACACTTGCAATTTCACATACGG		1516
stbK941F9.C22.3	CATTTCCATTCACGTTTCCC	CCTTCAAGAGTGAGTTCCCG	108	
stbK941F9.C22.4	TTGTCCGTGCTGATTGATGT	CTTGTCTCCACTGGAATCGG	123	
stbK941F9.C22.5	ACAGGTTCCCTAAGGCAAGG	CATTCCTGGGAAAAGGAGTGT	101	
stbK941F9.C22.6	TTCCTTGTGACTTGGCTTCA	TTCCTTGTGACTTGGCTTCA	101	
stbK941F9mus1	CATCATCTTCGACATCACGG	ACAACATTTCGGTGGGAGAC		183
stbK941F9mus2	CCAATTTTTCAACAATGTCTCCA	AAGCTCAGGTTACTCCCTTGAA		68
stbK1191B2.C22.3	CTACGACCTGCTGGAACTGA	GGGCTGCAGGTGATGTAGTT	86	
stbK1191B2.C22.3A	TGACCATGCTCCGTGCTGCTCTTCCCG	GATCTTCGTGGCATCGCT	200	
stbK1191B2.C22.3a.3tag	GGCCGATATCCCGACCATGAGCGTCC	GGCCGCTAGCTCTCGGGGGCTCC		1173
stbK1191B2.C22.3a.5tag	GGCCGCGGCCGCCATGAGCGTCC	GGCCTCTAGATCATCTCGGGGGCTCC		1173
stbK1191B2.C22.3B	TGACCATGGCTCACGTTCTGCATCTGTC	CTTCAGCAAATTCCATGGCT	126	
stbK1191B2.C22.3b.5tag	GGCCGCGGCCGCCATGAGCGTCCGGGTCGC	GGCCTCTAGATTAGAGGAATTCTTCTGGAG		543
stbK1191B2.C22.3C	TGACCATGTATGCAGTGAAAATCCGAGC	GAAATCACCCTGCAATCTGG	200	
stbK1191B2.C22.3D	TGACCATGCGCAAGCTTTAAAGGCAGTC	TACTTCGAAAGTTTGGGGGA	200	
stbK1191B2.C22.3r	TTGCAGCCCTAGTGTTTGC	TCCTCAGGAGGACAGA		749
stbK1191B2.C22.5	TCCGAAACGTACCCTCTCTG	CAGAGGGACCACCCCATT	112	
stbK1191B2.C22.6	TCAGCCCCACTCACACTG	GGAGCATCAGACTGGAGCG	102	
stbK1191B2.mus1	CAGCAGTGGCCATCACTGTA	CAGGAATCCAGGGTCAGAAA	100	
stbK1191B2_4600	GCTGCACTCTACTTCCAGGG	AGGTATGGAGCCCAAAGGAG	109	
stbK1191B2_48486	CTGCATGTTACAGCTCTTCAGG	CGGTTTCTCCAGAAGAATTCC	357	
stbK1191B2_58212	CTACGACCTGCTGGAACTGA	GGGCTGCAGGTGATGTAGTT	86	
stBZRP	GCGGCTGCCAGAGTGAGTGC	TCCATGTTCCAAGAACATGC	231	
stBZRP.3tag	GGCCGATATCGCAGCCATGGCCCCGCCCTGG	GGCCGCTAGCCTCTGGCAGCCGCCGTCCCCC		515
stBZRP.5tag	GGCCGCGGCCGCCATGGCCCCGCCCTGG	GGCCTCTAGATCACTCTGGCAGCCGCCGTCCCCC		510
stBZRPna	CCTGGCTAACTCCTGCCA	AAGGCCCTGACAGACTAGCA		702
stBZRPnb	GCAGCAGCCATGGC	CCAGTGGTCATGAAAGC		606
stBZRPr	TACGGCTCCTACCTGGTCTG	CGCCATACGCAGTAGTTGAG		284
stC22orf1r	ACTTCACTGAGCTGGGGCT	GTCAAAGGTCAGCTCGTGGT		113
stcB13C9mus1	GAAGTTCAACGAGTGGCTGG	TTCAGCTTCGACACAGATGG		144
stcB20F6_4357	CAAAGAGGCTTTCCCTTGAA	CTCTGCAGACCAGCACAGC	79	
stcB33B7.C22.1	ATCCACATAGGCTGAGGGTG	TACCAGCCAGTGACATCAGC	106	
stcB33B7.C22.1.3tag	GGCCGATATCGATACCATGTCCAAGCCC	GGCCGCTAGCCAAGTACATTTTCATGGCC		1062
stcB33B7.C22.1.5tag	GGCCGCGGCCGCCATGTCCAAGCCC	GGCCTCTAGATCACAAGTACATTTTCATGGCC		1062
stcB33B7.C22.1na	CCAGCCGGTTCCTG	CAGCTCCTCAACAGCC		1241
stcB33B7.C22.1nb	GATACCATGTCCAAGCCC	CAGGTTGGGGAGGTG		1097
stcB33B7.C22.1r	GTTCGTGTTGGCAAAGAAGG	TGGACATGGTATCCCCAGAT		156
stcB33B7.C22.3	CCACAACCTCCACGCTCT	TGCAGGGCTCCCCGTAG	82	
stcB33B7_3867	AGCCCTGAGCATCACTGACT	AACTGGCATGGTGCTTATCC	358	
stcB33B7_3867	AGCCCTGAGCATCACTGACT	GCCTCGCAGTAAAAGATTTTAA	358	
stcB33B7_3867	CCTGACGATTTCCTGCAAGT	AACTGGCATGGTGCTTATCC	358	
stcB33B7_3867	CCTGACGATTTCCTGCAAGT	GCCTCGCAGTAAAAGATTTTAA	358	
stcB79B4.C22.1	CTCAAGCTCAGAGAAGGGGC	ACCTGATTCTCTCCGGCTTT	181	

stcN75B3.C22.2	AGGACGATGGATGAAACAGG	AGGCAGACGAACTCTGGAAG	185	
stcN75B3.C22.3	GGTATGTGACCAAGGCGTGT	CAGCTCATCAGCCCACAGTA	122	
stcN75B3.C22.4	TGGGGGAGATGAGATCTGAAG	GGCTGTCCCTGGCATCTCT	75	
stcN75B3_28674	CGTGAAGCAGGAAAGAAAGG	AAGGGCAGCTCTTGGATGT	67	
stcN128A12.C22.2	AGACACAAGGAAGGCCACAC	ATGGCAGAGCTGACC	246	
stcN128A12.C22.3a	GGAGTCCAGGGGAACCTAAA	CAAGGACATTCAGTGGTTGC	123	
stcN128A12.C22.3b	CTACAGCACAGATGAGGCCC	GCTCTGGACAGAAAGATGCC	141	
stcN128A12.C22.4	AAGTGGCTGCTGAGGAGGTA	TCCAGGAATTGCTCTTCCAC	158	
stcN128A12A	TACAGGCTGGAACTGCCAG	TGGGAGTTAGTGAAGGGGTG	260	
stD22S1012E.1	AAGGGAGTGTGATGATTC	AATACGGGGTTGAAAAGG	170	
stD22S1015E.1	CACGCACCCCTCTTAATTGAAC	GAAGCCGCACCAAGGAAC	85	
stD21207	CTTCTGCTTGTCAGTGGGGT	TAGTAGTTGAGCACGGTGGC	125	
stD26090.3	ACAAGATGCGGGAAGATGAC	AGAGCAGCGAGAGTTCAAGG	107	
stDIA1	AAACACTGAGGCAGCCTTGG	AAAGCCAATACGCAAGAGGC	272	
stDIA1na	GACAGAGCGAGCGCGG	GGGCAGGCCAGGCTG		1048
stDIA1nb	GCCACCATGGGGGCC	CGTGTGACCGTGCCC		932
stDIA1r	ACCTGAGCTGGAGGAACTCA	ATCTCCTCATTCACGAAGCC		114
stdJ32I10.C22.1	AGGGTGCTATTGAAGGGATG	CTGCAAGCAATAGGTCCCTC	90	
stdJ32I10.C22.1b	AGACCTGGAGTGGGAGGAAG	TCATCTTCTCCAGGCCCC	111	
stdJ32I10.C22.5a	AAACCTGCTACAGCCCCC	AGGACAGGGTGCAGGTGTCT	122	
stdJ32I10.C22.5b	AGGCCATCTCAGGCTGTTAC	CAGCTAGCACACGTTTCCAC	111	
stdJ32I10.C22.6	CTGTCAGGCCGCTCAGATA	TCTCCATGGAAACCACAAGC	103	
stdJ32I10.C22.7	CACATGGTCTTGATTGCTTGA	TCCACCATCTCCTTGAGACC	109	
stdJ32I10.C22.8a	GCTCTTTAGGCAGAAAGCCA	CCCGATGGACTCAAGGTAGA	103	
stdJ32I10.C22.8b	GTGAAGACGCCAGACTCACA	TTGCTCTGTTAGCTCCAGCA	118	
stdJ37M3.C22.2	CTCTGAGAACACCCAGCTCC	CAGAGGGAGTGGTCCAGG	122	
stdJ37M3.C22.3	TGTATGGGAAGGAATGCTGTC	CTGGGATATGGGAAGAGCC	79	
stdJ37M3.C22.4	TCTGTCTCCTGCCTGAAGGT	CCAGTGGGATCTTTGCTGAT	101	
stdJ37M3mus1	CGTGAGAGCAGAAGGTGACA	GATCAACGGGATACCATCCA		136
stdJ41A17.C22.1A	TGACCATGCCGCTTTTCGTCGACTCTTA	CTTGTTAGTGGGCACCGAG	130	
stdJ41A17.C22.1B	TGACCATGCAGGTGTGTTTTGATTGTGG	CGAATAAAACTCAAGTGAACACCA	85	
stdJ41A17.C22.1C	TGACCATGTTCTTTCCATTTAGATCTACAGAG TTG	CACTAGCGTTTCCTCCGACT	85	
stdJ41A17.C22.1D	TGACCATGTTCATCAACATGGGTGTTCC	ATCAGTGCCATGCTTCCG	122	
stdJ41A17.C22.1E	TGACCATGGCTCAGCCCTGTGTTGTTTT	CTCAGGAGAAACGTGAGAGG	114	
stdJ41A17.C22.1F	TGACCATGTGACTTTTCTCGCCTTGTTTC	TCCAAAGTGGTTTCCACAGG	100	
stdJ41A17.C22.1G	TGACCATGTGCGCTAATATCAATGTTTTGAA	AAGTAGCCTTTGTTGGTACATTAAG AC	87	
stdJ41A17.C22.1I	TGACCATGAAAAAGGAAGTTTGGGAGCTCAG	ATTGATTCTTCTTTAGATACCACCTT G	130	
stdJ41A17.C22.1J	TGACCATGTGTTTCATCATTACGATTAGCCT	CTTCTGCAATTTCCAAATCC	129	
stdJ41A17.C22.1K	TGACCATGTGTTATTTCACATTCAGTGACTTC AG	GAGCTGGAAGTAAAATATGAATCG	120	
stdJ41A17.C22.1L	TGACCATGACTTTGACGAGCCAGTGGAG	CTGTCTGAATAGCCTGTGGTTTT	130	
stdJ41A17.C22.1M	TGACCATGCGCCGCAAGCCAGATTAT	ATCAGCCTGGGATTGTCTTC	114	
stdJ41A17.C22.1N	TGACCATGACATTTCCTTTTCCTTGTCTTCTC	CTGCTTCCTCGGCTCCTC	111	
stdJ41A17.C22.1O	TGACCATGCTACAGCCTGTCCAGTGTGC	CGACTCCATTAGCAAAGACG	104	
stdJ41A17.C22.1P	TGACCATGCAAGTAACCACATCTCAGGCGG	GCAAGGATATACACAGAGACGC	200	
stdJ47A17.C22.2	AGACGCAGGAAGAGGAGAGG	CTCCAGCTCGTGGTTCTAGG	148	

stdJ47A17.C22.2b	GCCCAAAGACCATGCTGC	GAGGTGCCGCCATGCTAC	101	
stdJ47A17.C22.2c	GGGGGAGCAGGTGAAGG	CTCCAGCTCGTGGTTCTAGG	97	
stdJ47A17.C22.3	CAGGGTGTACAACAGAGGCA	CAAGCCCTTCGACCTCTAAA	207	
stdJ47A17.C22.4	TAAGGGCCCATAGCACAGAT	AATGCCATTGAGGAGGAGG	117	
stdJ47A17.C22.4b	CCAGGGTGTCACAGTGCTC	GTGTGCAGAGGCAGAGTGTG	75	
stdJ47A17.C22.6a	CAGGAGAGCCAGAGGCTATT	TCCTGGAGTTCCAGTTCCTG	108	
stdJ47A17.C22.6b	GCAGGCCCTGGCTATAACTC	TGTTGTCATTGTTCAGTATATCTCCC	100	
stdJ47A17.C22.7	GCAGGATGGAGGCCTGAG	GTTCTCACACACACGCCC		
stdJ100N22.1	AGGACAATAATGGTGGCTGC	GCAGGTATGCTGGTTGTCAC	104	
stdJ100N22.C22.1	AGGACAATAATGGTGGCTGC	GCAGGTATGCTGGTTGTCAC	104	
stdJ100N22.C22.3	CGGCAGCTGCTCTAAAGTTC	CTGTGTTGTCACGGGTCTTG	120	
stdJ100N22.C22.4	GAACAAGCTGGAATCTTCGG	TCAACTCCCTTCACCCTGTT	120	
stdJ100N22mus1	TTGTTTATGGAGTGGGAGGC	TTATGGTGCTACCGGAGGAG	139	
stdJ102D24.C22.2	TTCCTTATTTTCGTCGCCTG	CCTCCTCTTTGCCAGGTTG	134	
stdJ102D24.C22.2.5tag	GGCCGCGGCCGCAATGAGGCAAAATGAC	GGCCTCTAGATTATCGACTTCCTG		
stdJ102D24.C22.2b	CCATCGAGTCAGTGGAAAGG	TTCTCCTGGATTTGCTGCTT	223	
stdJ102D24.C22.2r	GAGCTCTGGACAGCAGCAAC	TGAAATAGTCTCCCGTGGGT		102
stdJ102D24.C22.4	CTCGGAACCTGCAGAAAGAG	CACAGACGGTGCTCAGTGAC	122	
stdJ102D24.C22.5	CAATTAGAGGTTTGTGGGGC	AAAAAGGAAACACAGCTCCAA	101	
stdJ102D24mus1	GAGGGCTGCTGCAATACTTC	ATTTCCAGTCATTTCCACCG		129
stdJ127B20.C22.3	GATGAGCACTGTGCCGC	AGGCAGCTGAGGTGGTAGG		
stdJ127B20.C22.3b	GCCGGTCTTCCTTCTTCTTT	TCATTCAGCCTCAAGTGCAG	111	
stdJ127B20.C22.3r	CCTACCACCTCAGCTGCCT	GCACACCCTCGTCTTTCTTT		105
stdJ127B20.C22.4	ATGCCTTATGTTCCTGCACC	AGGTGGAGATGATGGCGTAG	134	
stdJ127B20.C22.4	ATGCCTTATGTTCCTGCACC	ACCTTTTTGCTGGAAACCCT	134	
stdJ127B20.C22.4	GGCCAAAGACTCTGATTCCA	AGGTGGAGATGATGGCGTAG	134	
stdJ127B20.C22.4	GGCCAAAGACTCTGATTCCA	ACCTTTTTGCTGGAAACCCT	134	
stdJ127B20.C22.5	AGGAAGCCCATGAGGTAGC	CTTCCAGGTGTGGAGAGCAG	102	
stdJ127B20.C22.6	GGGAGAAGACCCTGATTTCC	ATGATTTCAAAGCCCTGTGG	111	
stdJ127B20.C22.7	GAGACCTTCCAGGAGCGTG	ATATCAAAGGCCCTGGGAAC	104	
stdJ127B20mus1	TTCCAAATGTTCCGTGGTAA	CTCAGGCCACCAAAAAGAAG		107
stdJ127B20mus2	AACCTCTGCAAGGAGCTGAC	GAGACTCTGGCCACAGGAAG		147
stdJ127B20mus3	GCAGCTTGGAGAGAGAATCC	GCTTCCTTTAAAATGTTTATTGCC		106
stdJ181C9.C22.2.b	AGTGACCTGGGCAAGAGAGA	GAGGCTGAAGAGCTCCTGGT		156
stdJ181C9.C22.2.c	AGCTACAACACGCCTCTGCT	GACGTCATCTCCGACACAGA	104	
stdJ181C9.C22.2.d	GGACCAATACGTTGAGAACGA	ACTCCTTGTATGCGCTCTGG	104	
stdJ181C9.C22.2.e	AGAAGCTCCAGAGCCTGCAC	TATTGCAGACTGACGCCAAA	103	
stdJ181C9.C22.4	ATCTCCGTCTCATCCTCTGG	GGTATGGAGGGCAGAGAGACT	82	
stdJ181C9.C22.5a	CCTTCCCCAATTCAATGCT	ACGCACTGACAACTCGATCA	100	
stdJ181C9.C22.5b	ACCTGGCCAGTTCCTTCTGT	ACCCTATGCAGGGAAGCC	136	
stdJ185D5.C22.1	GTTTTCAACCAAAGGGATG	GAAAATTCATGAAACCCCCA		1196
stdJ185D5mus1	TGGCAAACTCTTCTTGCTCA	CTGGGGAACATTTGCCTG	83	
stdJ185D5T7	TCCATTTTGTTTGTTTGTTTGC	GGACAGAAATCACAGCTGCA	180	
stdJ222E13.3.1	CCCATGCCTCTATGTTACCC	AATAACAAATGTTTATTCAGAAATGGA	115	
stdJ222E13.3.2	CCCTCTCACCAAAGTGGTTC	GGGTTCTTCCTTGTTCACCA	180	
stdJ222E13.3.nest1	GTAGTTCGTCGCTCCCTAGC	CACAGGGCAGAACACAACAC		1523

stdJ222E13.3.nest2	GACTGCTTTCGGCTTGCTC	GAAACAGAGCCACCCTCCTC		1348
stdJ222E13.C22.1	TTCCAGTTTGTGGAAGTCCC	GGAGCATGTGTGTGCACTGT	103	
stdJ222E13.C22.1.c.3tag	GGCCGAATTCAGAGCGATGAGTGAGAACGCC	GGCCGCTAGCACAGGACATGGGCCTGC		610
stdJ222E13.C22.1.c.5tag	GGCCGCGGCCGCGATGAGTGAGAACGCC	GGCCTCTAGATCAACAGGACATGGGCCTGC		610
stdJ222E13.C22.1.e.3tag	GGCCGAATTCAGAGCGATGAGTGAGAACGC	GGCCGCTAGCCAGCTGGGCTGGGAGC		753
stdJ222E13.C22.1.e.5tag	GGCCGCGGCCGCGATGAGTGAGAACGC	GGCCTCTAGACTACAGCTGGGCTGGGAGC		753
stdJ222E13.C22.1b	AGCAGTCCACGGATATTTTGA	GGGTGGATTTCATCGTGTCT	86	
stdJ222E13.C22.1n	GACGAGAGCGATGAGTGAGA	CAGACTCTGTCTCCCCCTTG		1151
stdJ222E13.C22.1r	CTTCATCAGCAGGGAGCTGT	CATGAACGACAGGGACTCCT		130
stdJ222E13.C22.3	TGACAGCCCATCAATGAAAA	GAGTGCCTTCAGGATGGTGT	109	
stdJ222E13.C22.3n	GTAGTTCGTCGCTCCCTAGC	AAACAGAGCCACCCTCCTCT		1413
stdJ222E13.C22.3r	TGGTGAACAAGGAAGAACCC	AGTGACTCGAGGGTGCAGAT		107
stdJ222E13.C22.6	CTTGGTTTAGGAAGTGGGGG	AGTCTTAAAGCCCCTGCACC	126	
stdJ222E13.C22.7	GGAAAATAACGATTCGGGGT	CAAAGTAGGCGGGTCACCT	100	
stdJ222E13mus1	AGGGGGCTTCAGTGTTCAG	CTGCCTGCTGGGATGAATAG	81	
stdJ323M22.C22.2.b	GACCACATTGACCAGTGGAA	CTTCAGGATGGCACCTTCTC	117	
stdJ323M22.C22.2B	TGACCATGATTTCATCTGTGTGTTAACTTTTAGGG	CATAGGCACTGACAGAGCACC	200	
stdJ323M22.C22.2C	TGACCATGTATTTTGATCTCTTCCAGGATTATG	CAGTAAAAATTCCAGTCCTCGT	135	
stdJ323M22.C22.2D	TGACCATGAAATAACCCCTGTGATTTTGTTTT	CAGACTCTGAAGTCAGGAAACTCA	95	
stdJ323M22.C22.2E	TGACCATGGCAAACCATCCGAAATGTGT	CCAGATAGAGGTATTTTCCATTTTCA	200	
stdJ323M22.C22.2F	TGACCATGAGTCACCTATATGCTGCCCG	GAAGATGTCTTGCTGTCCCG	171	
stdJ323M22.C22.2G	TGACCATGTGTGTCTCAATCTAATAAGGAAGCC	GTAACAGCGCAGTGGACG	130	
stdJ323M22.C22.2H	TGACCATGAATCTACATTCCCTCCTAGGTACAAG	GTGTTTCTGGATGGCGACG	125	
stdJ323M22.C22.2I	TGACCATGACATCCATGGGGGCAAGT	GCCACAGCCTTCAGGGACT	130	
stdJ323M22.C22.2J	TGACCATGCATGTCACCCACTGGTCACT	GATCAGCCAGGGCTTCAG	114	
stdJ323M22.C22.2K	TGACCATGGTGAATGCGTCCCCGTCT	TCTCGTAATTGCCGAGGACT	160	
stdJ323M22.C22.2L	TGACCATGATGATGAAGAATTGGCCCAG	GGGAAATTTCAAAATAGGGCTT	200	
stdJ323M22.C22.5	AAGGAAACAAGCTGATGACCA	GCTGCTGATTCTGATAGCCC	96	
stdJ323M22mus1	CTGACCAGTCGGTGGGATAG	ATGACCTGGAGCAGAGCATC		105
stdJ323M22mus2	TTTTTCAAAGGCTGAGGGAG	GCAGCCTGAACGGAGTGT		110
stdJ323M22_103421	ACCCAGACATCACTTCCCTG	ACAGATACTGTGGCTTGGGG	149	
stdJ345P10.C22.3r	TTGGCATGCATAGGAATTGA	TGGTTTTATCCTCCGTGAGC		145
stdJ345P10.C22.4	CAGCGTTGCAAAATTGATTG	AGCCGGCATGATAATGCTAT	120	
stdJ345P10.C22.4r	CTGCGTATTCAGCCCAAAAT	CGGAGGAAGTCGTTGTAGGA		215
stdJ345P10.C22.6	ACTATTCGCCTGCTGTCCAT	CCTTCTCTGTGCTCTGCTGC	120	
stdJ345P10.C22.7	CGCTCATATGACCTTGGAGA	TTATGAAATGTGCATTCGTTAAAAA	145	
stdJ345P10.C22.7b	AAGGGATGGAAGTGTTGCAG	ATGTGCAGATGGCACAGAAC	145	
stdJ345P10.C22.9	CACACTTTCGTGGTACGCAG	CATCCTCCAGCAATGTCCTT	201	
stdJ345P10mus1	CAGCGTTGCAAAATTGATTG	GGCAATGGCATTCTTCGACG		576
stdJ345P10_6233	GCATCATTGCTTACCTGCAA	CGGAATGATGCCTGTGTGTA	271	
stdJ345P10_7536	AATGACTGCAACCCAGCTCT	CCAAACATACGGCACACAAC	205	
stdJ345P10_8395	TGGGCTCAAGTGTCAACGTA	CTGTGGGTTGGAAAAGCTCA	123	
stdJ345P10_124665	TCCAGAGTCCCCCTCAGTTA	GACAGAGGCAAAGGGACTGA	69	
stdJ388M5.C22.2	GATTATCAGCGTGTCAGGCA	ACCCAAGCATGACTTTCAGG	147	

stdJ388M5.C22.3	TCTGACCTCCACAATGGAGAC	CTTGAAAGGTGCCTCGGTAG	1024	
stdJ388M5.C22.4	TGAAGAAAGCATGTACGAGGG	TGTACTCGAAGGGCAGTGTG	111	
stdJ388M5.C22.4r	GAGGTTTTCTCCAGGACCAAG	TGAGGAGCTATCTGGGGTTG		101
stdJ388M5.C22.6	TTCGTTAGGGTGAGCAGTCA	AGGTTACAGCCTGGGCAAAG	131	
stdJ388M5.C22.8	TAAAGTGGGGATAGGGAGGC	CTGGCTGTCTTCCTGGATGT	134	
stdJ388M5.C22.8b	CGGGATAGGAACCAGATTCA	GGACGTGGAAGGTCCAGAT	111	
stdJ388M5_56861	GATTATCAGCGTGTCAGGCA	ACCCAAGCATGACTTTCAGG	147	
stdJ398C22mus1	TCTTCAAAGAGCAGCGGAAC	AGTTCTGGGAAAGCATGCAC		388
stdJ437M21.C22.1	GCCAGATTATGAGCCAGTTGA	CCTGGGATTGTCTTCCAAAA	101	
stdJ437M21.c22.1b	AGTAACCACATCTCAGGCGG	GAGGGTGTGACAGGAAGGAA	171	
stdJ437M21.C22.2	CATCAACATGGGTGTTCCAC	CTTCCGTGTTGCTTGAGAGG	108	
stdJ437M21.C22.3	GCTTCCCACTCAATCCTTCA	TGTGAAACGCTTCTGGTGAG	116	
stdJ437M21mus1	TCCTTAACTCCACTGGCTCG	ACCCATTATGGCAAAACCAA		101
stdJ474I12.C22.2	CCAGGGCTCTACCCTCCTAC	TTGCCACGAAACATCCAATA	102	
stdJ474I12.C22.2r	TATGGACCTCAAAGGGCAAG	TTGACTTCTGGAAACCTGGG		180
stdJ474I12.C22.3	CAACCTCCAAACTGTGGCTG	TGCCTTGAAATTTTTAGCTCTG	74	
stdJ474I12.C22.3b	CTGAGCTGGGTGTGTCCTC	AACAGGACAAAGCGGAAGTG	116	
stdJ474I12.C22.3c	AACCTTCTGCAGAGCCTGA	AAGTGTTGCTTCCAGCCCT	80	
stdJ474I12.C22.4	GCTAACAATAGCCAAGCACGA	TCTTCCCTGATGAGGCTTTG	81	
stdJ474I12.C22.5	TGGTTACACATCCTGCTTGG	TTCTGTGTCATGCTGTACTGACC	100	
stdJ474I12.C22.5r	TCACTGAACCAGAGGGGAAC	GATGAGGCTTTGGAATGAGC		129
stdJ474I12.C22.6a	GTTACCTGGCAACTAAGCCG	TGGGTTTTCTGAGACAAGGG	115	
stdJ474I12.C22.6b	ATGCGATTTGCCTTTTGAAT	CCTGTGCACAAGGTAATGAAGA	100	
stdJ526I14.C22.2	AGCGGTGTCTCCTCTTTGAA	TATTGCAGCACGAACTGAGG	239	
stdJ526I14.C22.2na	CGGGTGCTGGCG	CAGGGCCGGTGT		2051
stdJ526I14.C22.2nb	GCCATGGAGGCCGAG	CCTGCCCCAAGCACAG		1966
stdJ526I14.C22.2r	ACCTCATGCTGAAGTGGGAC	AGACAAGGCAGGTAACGTGG		183
stdJ526I14.C22.3	TGGTGACTACACCGGCTACA	ATCTCAGGGACCACGATGAG	123	
stdJ526I14.C22.3b	AAGCTGATCAAGGCCCTCTT	AGTTTGATGAAGGACCGTGG	104	
stdJ526I14.C22.3na	CGCCCGCACGCCCAG	CTCGGTCTCCATGGGCTG		3016
stdJ526I14.C22.3nb	GAGCATGGGCGCG	CGGCTTCCCTGAAGGGC		2935
stdJ526I14.C22.3r	CTCATCGTGGTCCCTGAGAT	GCTGTTGCCTTCATTGGATT		189
stdJ526I14mus1	AAAGAGCAATATTTAGGTTCATTTCC	TGCATGTAATGAAACATTTGTGA	70	
stdJ526I14mus2	CCCAACTCATGACTTCTGCTG	CCCCATATGCATGTAATGAAA	107	
stdJ549K18.C22.1	GCTTCCTGGGCTTCTACCAC	GGGATACCGGAGAGGACG	100	
stdJ549K18.C22.1.3tag	GGCCGAATTCGCCGCCATGTACGACGCAGAGC	GGCCGCTAGCCAGACTCTTCTCTAGTG		1446
stdJ549K18.C22.1.5tag	GGCCGCGGCCGCCATGTACGACGCAGAGC	GGCCTCTAGATCACAGACTCTTCTCTAGTG		1446
stdJ549K18.C22.1b	TGGAGGAGTGAGTGACAACG	GAGGCGTAGACTGAGCTTGG	145	
stdJ549K18.C22.1cds	CATGTACGACGCAGAGCG	ACACAGCAATGCGGAGGTAG		
stdJ549K18.C22.1n	ATCCCGACCCAGATCCTAAC	CCATTAATAGGGCCACGAAA		1784
stdJ549K18.C22.1r	GATGTCCTGTGGTTGCAGTG	TGAAAAACTGGGAAAGGTGG		285
stdJ549K18_14129	GCTTCCTGGGCTTCTACCAC	GGGATACCGGAGAGGACG	100	
stdJ549K19.C22.1snp	AGACTGGTGACATGGCTTCC	TGGGAAACTTTAGCACCTCTG	390	
stdJ671O14.2.nest1	CCTTCTCGAACCCTGCTATG	AATCCAACGATGGAGACAGG		1415
stdJ671O14.2.nest2	TGCACTCAGTAGGCCTTTGTT	CACGAATGCACAGGAAACAG		1154

stdJ671O14.C22.2	TTGCAGATGGCGTGTACCT	CTTCTGATCGAAGCTTTCCG	102	
stdJ671O14.C22.2.3atag	GGCCCTCGAGGAGGCGATGGAGCCGGAGTTC	GGCCGCTAGCATTCGGGGCTCCATGGGGCG		996
stdJ671O14.C22.2.3btag	GGCCCTCGAGGAGGCGATGGAGCCGGAGTTC	GGCCGCTAGCCGATATCTGCGGGCCAAAGG		820
stdJ671O14.C22.2.5atag	GGCCGCGGCCGCGATGGAGCCGGAGTTC	GGCCTCTAGATCAATTCGGGGCTCCATGGGGCG		996
stdJ671O14.C22.2.5btag	GGCCGCGGCCGCGATGGAGCCGGAGTTC	GGCCTCTAGATCACGATATCTGCGGGCCAAAGG		820
stdJ671O14.C22.2b	GGCGATGGAGCCGGAGTT	GCAGGAGAGTTGGGAGTGAG		810
stdJ671O14.C22.2na	GGACCACCCTTTGCACTCAG	GAGCAAGGCCAGGCGG		1014
stdJ671O14.C22.2nb	GCGTGGAAAGCGGTTGGG	GGGTCACGAATGCACAGG		1000
stdJ671O14.C22.2r	CTGCACAACGTCACCCTG	AGTGTGCTCTTGGCATCCTT		104
stdJ671O14.C22.4	TTCTGGTCCAAGCTGTGTTG	GCATTTTCAAAGGCTCTTGC	136	
stdJ671O14.C22.7	TATCGTGAACAAGGATGCCA	CTGTCCCTGTGTGCCTTCTG	84	
stdJ671O14.C22.8	CATCCTCATCACCTCCACTG	TGGTGATGATGTCATGGTGA	170	
stdJ671O14.C22.9	CGTTCATGTCACGTCTTGCT	AGCGGCACATGCTCTTTTA	145	
stdJ671O14T7	TGGACAGCCAGGCAGAAT	TGATAGTGCCCAGCTCTGG	122	
stdJ753M9.C22.1	GAGCCAAGGCTCAGAGATGT	TCTCAGGCCAGTTGTCAGTG	103	
stdJ753M9.C22.2	CATGCAGGTCTGCTGATTCT	CAGGCTGCTGATTACGATGA	139	
stdJ753M9.C22.4	AGAGAACAAAGCTTGGGACTTATT	AGACTTGCTAATCAAATCAAACCA	100	
stdJ753M9mus1	AATCAAATCAAACCATTCCACC	CTTGGGACTTATTTATTTCCCGT	80	
stdJ753M9mus2	TTAAAAACACAAGTTCCAATGGC	TTTTTCTCCGGCCTTTTAGA	100	
stdJ754E20A.C22.2a	CTCAGCAGGGATGGAAGAAG	CTCCCTGCTCATCATAACCG	106	
stdJ754E20A.C22.2b	TCTTCCTCCTCTTCACCAGG	GAAAGATCCCTGGGCACTG	101	
stdJ754E20A.C22.3	ATGGCAAAACCCCAATATCA	CTAGAGGGCTGTGGTTGCTC	161	
stdJ786D3.C22.1	TGAAAAGGTTGAAAAGGCCC	TTGGTATACAAAAGTGTCGAGGAC	100	
stdJ786D3.C22.1r	CGCAGGAGCTAAGAAGGGTT	CTGCAGTATCCTTGTGGATGTT		102
stdJ786D3mus1	GGTCGAACCAGTCCAGTCTT	GGAGGTGGGAATGAAATGAA		140
stdJ786D3_34803	TGAAAAGGTTGAAAAGGCCC	TTGGTATACAAAAGTGTCGAGGAC	100	
stdJ796I17.C22.1	AGCAGAGACCAAAGCAGAGG	TGAAAAACTGGGAAAGGTGG	118	
stdJ796I17.C22.1b	ACATGGCTTCCAGATATGCC	GGTCACTACACAGCAATGCG		419
stdJ796I17.C22.2.3tag	GGCCCTCGAGGGAACCATGGGGACTGTGC	GGCCGCTAGCCAGGAACCTTATCCCAGC		1410
stdJ796I17.C22.2.5tag	GGCCGCGGCCGCCATGGGGACTGTGC	GGCCTCTAGACTACAGGAACCTTATCCCAGC		1410
stdJ796I17.C22.2na	CTTCTGCCCTCAGCAGCA	ATTTATTGACGGGGTTTCCC		1612
stdJ796I17.C22.2nb	GGAGAGGGAACCATGGGGAC	GACGGGGTTTCCCACAGGG		1546
stdJ796I17.C22.2r	TCTCAACGCAGGAAACCTCT	ATTAAGTTCCAACCGAGCGA		142
stdJ796I17.C22.4	GGCTGCTCCTCCACAGGT	CTGAGGATGAACAGAACCCG	72	
stdJ796I17.C22.5a	GCACGAGTCAACCATAACCA	GAGGGCAGTCCTTTCCATC	89	
stdJ796I17.C22.5b	GCTCAAAAGGGTCCTCACTG	TTTGCCAAAGACATCACAGC	144	
stdJ1033E15.C22.1	TGTTCAGCTTGGTGTCCAGA	AGAACAGGATGAGGAAGGGG	106	
stE46L.nest1	CGGTTAGGGCTGTGTAGGG	CACTTGCAATTTCACATACGG		1642
stE46L.nest2	CTCCTCGCCTTCCTCCTC	TCCATGAAACAGATTCCAAAAA		1525
stE46La	TCCTACTCCTCCCTCCTCGT	GACAAGTTTGTGCGATTCCA		3092
stE46Lb	CAAGATGGCGGCG	TGCACACATCCATTGAGACA		3050
stE46Lr	TAGGCTTCTCGACGTCCTGT	TACATGAATCACCCGCAAAA		115
stFBLN1na	GTTGGCTGCCGAGGCTC	GGCAGCAATGATTTGGCCTG		2220
stFBLN1nb	GCCGCCCATGGAGCG	CCTGCGGCTGTGCGGCA		2150

stFBLN1r	ATCTCCCACACCGTCATCTC	CCTTCCGTGATGTCGAAGAT		131
stH55062	CACTGCCATGTGACTTTCGT	TTCCATCTTTGTCTCGATCTCA	126	
stH55082	CCTCTGCACTTCTGGTCTCC	AGGTGACTCCGGCAGAAAC	96	
stH55089	TCAGATACTGGTAATGCATGCC	CAACGGAGAATCCCATGC	147	
stH55091	AGTGTTTGAGTATCAGTGCCCC	CCCTCCTCGTTGAGATGGTA	121	
stH55092	TTGCAGCCCTAGTGTTTGC	GTTGAACTTGGACTGAGGCTG	146	
stH55095	AAGCAGCAGTGCCGAGAC	GGAGACACCATCAGACAGCA	81	
stH55162	AAGAGGATGTCAATGGGCAG	TCTCTAGGCCATGGAGCAGT	126	
stH55193	GATGGTGCAGGAGCAGTG	ACAAATGTGGCCTCCAGG	132	
stH55194	ATGCACTTAGCTTTGTAATGGG	CGCCACTTTCCTCCACATAT	141	
stH55200	GATGGCGTGTACCTGGTTCT	CGAAGCTTTCTGGACTCAGG	190	
stH55206	CAGAAGTCATGAGTTGGGGG	CAGTCCTCAATAGCGTCATGA	87	
stH55220	CTACAACCAAGGGAAGCCC	CAAGAATCTGCTCGTAGGCC	130	
stH55227	ACCTGGGACTTCTTCTTCAGTG	ACTGAAGGGTGATGGCATTC	127	
stH55235	GCCTTGCTGTCCTCCTGG	GCTTCAGGTCAGAGAACCATG	120	
stH55238	AGGGTATGAACTGCATGAACA	TGCAGTCCTTCTGGTTTTGG	120	
stH55275	AGCCTCCAAAGGACGTCTTT	AGATTCTGCACAGACAGGCC	126	
stH55328	GATGAACTATGTGGTCGGGG	CAGTCACTGGCAGCAATGAT	144	
stH55333	CTCTGGATGGTCCTCAGCTC	TTACTGTCCTGAGTGATGGGC	187	
stH55345	GATGAGGCTGCAATTGAGC	GAGTAGCCGCCGTTTCAC	81	
stH55366	GATGGGGTCATCTTACTCTTGC	GCAGGAGAGTTGGGAGTGAG	89	
stH55370	CCGGACAAAAAAATTGTTGC	TGTCTCCTAGGGGAGGGG	160	
stH55390	TACGATGAGAAGCTCCAGAGC	TATTGCAGACTGACGCCAAA	110	
stH55405	AACCTGGACATAAGCAAAGAGG	CATCAGTGAGCTTTCCTTTGC	134	
stH55431	ATTTGGACGCGGCGATTA	AAAGCAGTGACTTCCCATTACC	120	
stL11804.2	ATGCCACACCCAGTGGTATC	CCCAAATCAAGTGACCACAGT	87	
stL17306	GCTTCCCAGAAGAGCAGTTG	TGAATACAGTGTGCCCCAGA	202	
stL17306.2	TTGCTGTACCCTTACCTGGC	GGCCCAATAGTCATGAAAGC	187	
stM21019.2	CTCACAAGCTGGTGGTCGTA	ATGGCACCAAATTCCTCTTG	193	
stM21019.3	CTCACAAGCTGGTGGTCGTA	CATGGCACCAAATTCCTCTT	194	
stM57470.2	AGGCTGACCTGACCATCAAG	GCAGCTGCCTTTTATTGAGG	166	
stNUP50na	GCGTTTCTTTCCTCCCTTTT	CAGCAGCAACTTGGCAATAA		1800
stNUP50nb	GTTACAAAATGGCCGCCCGGAGC	GCAGCCGACTTTGCGTGTTC		1722
stNUP50r	AGAATGATGAGCCACCCAAA	CGCACCAAAAGCTGTGTCT		169
stPACSIN2.3tag	GGCCGATATCAAAATGTCTGTCACATATG	GGCCGCTAGCCTGGATCGCCTCCAC		
stPACSIN2.5tag	GGCCGCGGCCGCAATGTCTGTCACATATGATG	GGCCTCTAGATCACTGGATCGCCTC CAC		
stPACSIN2na	GCAGCCTGAACGGAGTGT	AGGAACACCATGAAGCCAAG		1699
stPACSIN2nb	GAAAAAATGTCTGTCACATATGATG	GGAACCATCATCTCTTGCAGG		1569
stPACSIN2r	CGTCAGTGAGAAGGACGACA	TGAAGCTCAGCTCATCATGC		224
stpryM746A3a.C22.1	CTGCTGGTAGCCAGGACTTT	ACGTCATGTCACCTTCCCAC	103	
stpryR7CC1.C22.1	TTCCTGCTCAAGAAAGCCAG	CAGAAACGCACACAGCTCAC	104	
stpryR7CC1.C22.2	AAGGACGTTGCGAGTTCAAT	ATGGACGATGACAGGGTTTG	122	
str14750	GCTCTTGAATGGGTTTTGGA	CTGTCTCCTCCCTCACTTGG	148	
stR45869	AGTCCCGCTACGTCCTCAAC	CACCACTTCTTGAAGACCCG	153	
stR75496.2	AGAGAGCCACAGAGGTGTGC	GTTGTTGTTGGCTCCTGGTT	150	
stRPCI232D12SP6	AAGGTGTGAGGACTTGGGG	AGCATTGGAAATGTAAATGAGC	145	

stRPCI232D12T7	CTGGTTCTAGCGTCCCTGAG	CAATTGCTGGGTAGAAGGGA	144
stRPCI237M16SP6	TCTGGGCTGTTTTGAGTTCC	CCGCCTGCCCTTTTAAAG	83
stRPCI237M16T7	CTTTTATTCATCAAGGCAGCG	AGTGGCACCGAATATTTTGC	124
stRPCI2310A16SP6	AATACAACACCAGCTGAGTCCA	CTGGACCAAGGCAGTGTTTT	190
stRPCI2310A16T7	TGTAAGCCAGCATTGGTGAG	CTACCACCTCCAACAGCCAT	181
stRPCI2313J12SP6	CAAGAGAAGACCGAGCGAAC	CTCTCTGCTTCCTGGTTTGG	127
stRPCI2314N23T7	TATGTGTTGGCATGCATGTG	GTTGAAGTGCTTGTGTAGCAGC	131
stRPCI2318M22T7	TGGCTATGACTGGGGCAT	CTGTCAGAACCCAGCAGTCA	157
stRPCI2322C11SP6	TCTGCACCTGAGATTCGATG	ACACAACCAAACAGGTGAAGG	149
stRPCI2322C11T7	TGTCTCACTTTGTCATGTTCCC	TCCTCTGGCCTTTGACTGAG	186
stRPCI2322L12SP6	TCCTCTGAGGCTCAACCTGT	TCGGAAAACATAAAAATGACCC	152
stRPCI2328O9SP6	CTCCCCATCCTTAGCTGTCA	TTAGCCCCCTCCTCTGAAAT	136
stRPCI2328O9T7	GGCTGGGGGAAGTAATTATAGG	TGGCCTTTAACTCACAGGCT	123
stRPCI2329O14SP6	AGGAAGATAAGCCTTTTGAGGG	GGCAGAAAATCACCTTGGAA	187
stRPCI2332M11SP6	CCTGCTCCCTTCCTCTCTG	TTGAACTTGCCTGCAAACAC	156
stRPCI2333H22T7	GTCTGTTTGGAATTAAGCGTCC	TCCACCTTGTCCATTGTTCA	125
stRPCI2339A17SP6	GTTCAAGCAGGAGAATAGGGG	TGTTGGTTGTACATTGCTTTCC	88
stRPCI2339A17T7	CCTGCCGCTGATAGCACT	ACACATGATTTTCACATCGCA	126
stRPCI2341K23SP6	AGCCTCTGATTCAGAAATCTGC	AGCGTCAGCAACCCAGAC	177
stRPCI2342N24SP6	TTGAGCTCTCAAGCCTCCTC	AAAGAGCAGCACGTGTCCTT	132
stRPCI2342N24T7	TGGGCTGCTGGAGACTAAGT	GACATATGGCAGGCAGGG	165
stRPCI2347E17SP6	GTGGTTACAGCTGACTGTGAGC	CTCAGGCACACAAGGAGACA	137
stRPCI2347E17T7	AACAACGAAATAAAAACAGGGG	AGGATAGTATCGAGGGCGGG	120
stRPCI2347F18SP6	ATCCCAGAATTGATATCAAGCA	GCAGGCAAAACACTCACTGA	162
stRPCI2351J16SP6	GCACAGGTATGAAGAACTCCTG	TTTTGTGCTAAATCTGGTGACA	121
stRPCI2351J16T7	AAGCTCTGCGGCTCTAGAGA	TTGAAACCGAGCAGGCTC	120
stRPCI2352G7SP6	AACCCAGCAGGAGGTATGG	CCAACTATGCCCACGGAG	149
stRPCI2352G7T7	ATGACCAACACACAGAATGCA	CTACTCCTGCCTGGTGTTTTG	160
stRPCI2357E6SP6	AGAGGTTCCTTCCTGTTTAGGG	TCCTTGCTTTCTGTGCACAC	162
stRPCI2357E6T7	CACAAGCCCTGAAATGGG	AAAAAAAAGCCAGCTCAGAGG	159
stRPCI2359G3SP6	GAACCTGTTATCTCTGGCATCC	AAACTTTCACGTGGACCCC	133
stRPCI2363B24SP6	CACAAATGAAGCTCCACGAA	GCTTGGGCTACATGTAAGTTCC	167
stRPCI2363B24T7	AAGAGGGCATCAGATCCCTT	AGCAAGGATGTTGCAGGC	162
stRPCI2364L3SP6	CTGAGTTCAATTCCCAGAAACC	ACCACCAAACGAAAGTGGAG	173
stRPCI2364L3T7	ACTGCCCTACTTGGGGATCT	GCTCAGTCCAATGGTTGGAT	169
stRPCI2367K8SP6	GCCAACTCCACGGGTAACTA	GAGAGCCTGAGTTCTCCCCT	128
stRPCI2367K8T7	CATTTTCCCACAGGTGCC	TAAGTGCTGCCCTTTGGC	121
stRPCI2378B22SP6	GCAGAGGAGGAGTGTCAAGG	TTTCCCCTAGCACCAAAGG	133
stRPCI2378B22T7	CTGTGTGAGATGCACGTCG	GGAAACCCCCACTCAATTTT	121
stRPCI2378M10SP6	ACAAACCCCCCAGAGCTC	CAGAACCAAGGGCTTCTCTG	131
stRPCI2380L7SP6	AATATCACCAAACACCAGGTCC	AAGTAGCCAAGGATGGCCTT	153
stRPCI2382C5SP6	AAACAAATGCCAAACTGATGC	TAGCAAGGACACGGAGCAC	176
stRPCI2382C5T7	ACAGACCAAGCACCACAGC	AGGAAGTCCCTGGGCAAC	146
stRPCI2382M1SP6	TACATCTGGAGCCACCAACA	CTCATAGTGGCCTTATTGGAGG	134
stRPCI2382M1T7	AGATGGAGGAACCCAGGC	CACCCATCTCTATAGGTCAGGG	140
stRPCI2383D12SP6	CAATTCACAATTGCACTGGG	TGACAGAGCCCAGATGAGC	145

stRPCI2383D12T7	AGTCCAGCTTCTGGGTCAGA	GGTCTTCATCTTGCACAGCA	150
stRPCI2389D3SP6	CTGGGGTTATCACAGAGAAAGG	CTTGCTCAGCCTGCTCTCTT	164
stRPCI2389D3T7	TCTTTCAGAACAAGCCATTGG	AGTGGATTGAGGAACTCCACA	131
stRPCI2389E20SP6	CCAACTTCAGAGCTCATGACC	CAGCACACCATATATTTGGGC	189
stRPCI2389E20T7	AAGGGATGGCCAAGTCTCTT	CTGGATGTCCTATGGCTCTACC	181
stRPCI2397J3SP6	GGACAGCAAATCTCTAACACCC	TTTCCCAACAAGATCATCAGG	142
stRPCI2397J3T7	TGTCTCACTTTGTCATGTTCCC	TCCTCTGGCCTTTGACTGAG	186
stRPCI23156C24SP6	AGCAGACTCACCTCCTGGAA	GAAATGATCCGGCCTCACTA	149
stRPCI23156C24T7	CTCCCCCATCCCCTAACTAC	TAAAGCCACCAACCCTGC	81
stRPCI23245E19SP6	GCAGATTGTAGACACCATTTGC	TGGAATAAAGAGGAACTGGACA	125
stRPCI23245E19T7	GGCAGTCCTTGCTTTGTCTC	CGGAACCACCTCAAATGC	123
stRPCI23246J11SP6	GTCTACGGCCAGACTTGGAG	GCCCTCGCAGAACTAACTTG	152
stRPCI23246J11T7	CAGGGCGTCACAGAGAAATT	TGACATGTCTGAGGCTGAGG	124
stRPCI23251B23T7	GTGAAGGAATGTGGACCTTCA	AGATGACACAGCACAGTCACG	129
stRPCI23255A15SP6	TTATTCTCCCTGGCAGCACT	ATTGTCCCGTGCTTTGAAAC	125
stRPCI23255P22T7	TTGTTTGGAAAAGCACAAACC	TTGCTGGACAGAACAAATTCC	190
stRPCI23260D9SP6	ATGGTCCTCCTGTCAACAGG	ATACCTCCAAGGGGAGACTAGC	132
stRPCI23260D9T7	ATTCAAAGGGAGGGCCAG	AGGCCTCAGTGTGTGTGATG	149
stRPCI23267E10SP6	ACATCATCAGGTTCGGGAAG	AATGAAAAGGTTGCGGGAG	131
stRPCI23267E10T7	TTCCAGGTGTCACTCAGCAG	CCAACAGTGCAGCAAGAAAA	148
stRPCI23267H21SP6	ATTCCATCAGGGGGAAAAAG	AAAGGTCCACAGCAGTTTGG	156
stRPCI23267H21T7	CTAATAAAATCCCCAGTGCTGG	TTGGGCAAAATCTTAATGAAGA	135
stRPCI23268I1SP6	TGGTGTGTGGTCCTCCAGTA	GCTGCAGAAGATATCTGGGC	170
stRPCI23274I12SP6	GGCAGAACTCAGCCAATAGC	AGGCAGGTGGAGCAACAG	172
stRPCI23274I12T7	TCTTTGGGTAAAGGTGCGTC	CTAACAGCTGCGAATCCACA	135
stRPCI23275O16SP6	CCTTTCCTTCTGGCCTTTG	AAAGACACGCATGCTCAGG	84
stRPCI23275O16T7	CACATCTCTGCTGCGGTCT	TGTGTGGTGCTGGGTTTTTA	153
stRPCI23277E6SP6	GCTTTTGACCAGCCTGAGAC	CATATTCAATTCTGGGACCACA	177
stRPCI23278I10SP6	ATGTCCTTGCAAAGAATGCC	TGGAAGCTCTTTAACCAACTTG	131
stRPCI23278I10T7	ATCAATGTAAGGTGGAGATCCA	AGATACATGTACACCTGCGCA	82
stRPCI23280B14T7	AAACTTGTGCAGGCTCCTGT	GAGATCTGACACCCTTTTCTGG	122
stRPCI23281D22T7	CAGAGGAGGGCATCAGAAAG	TATATGGGGAGCAAAGTGGC	145
stRPCI23283A19SP6	ATAATGCTTGCCACTCCTGG	TCAGGAGCTAACAGGTTCACG	150
stRPCI23283A19T7	CACGTGTGCTCCTTCACG	CCAGGTAGAGGATGCAGAGC	178
stRPCI23284G6T7	ACCTTTGGGCCATAGCAAG	CGTGTACACACAGATGGTTGTG	136
stRPCI23284H5SP6	AGCCTCTGAGATGACAATGACA	ATGTGGGGAACTCAAGATGC	176
stRPCI23284H5T7	ATTCAAAGCACACAAACAATGC	CAGGTTCGACCTTAGCCTTG	136
stRPCI23290L7SP6	AACATGTCACCAAGCACTTCC	AGCTCTGAAAAGTCTCCAGGG	161
stRPCI23290L7T7	GTGGCTATTCATCGTCCTTAGG	GAATCTCTGCAGTGACAAGGC	143
stRPCI23290M7SP6	TCTGACCATAGATGTGCCCA	CCAAACAACCAAGGAGGAAA	139
stRPCI23290M7T7	ATTGTAAAGCTTTCTTGCCTCG	GTACCATCTTTTAGGCACTCGG	176
stRPCI23292J15SP6	AGCAGAAAGTGGTTAATTGTGG	AAGTCTGGAGTCTACTCCTCGC	126
stRPCI23292J15T7	GAACCTGTTATCTCTGGCATCC	GTACTGCTGCAAACTTTCAACG	144
stRPCI23292L2SP6	GAGCATTAAGGAACAGGGCA	GGCAGCAGCACAGATCATAA	188
stRPCI23309F10SP6	CTTAATCACTGAGCCATCTCCC	ACAAAGCAAACAAACCCCAG	153
stRPCI23323K24SP6	TTTCCAAGTGCAGGGTTTCT	CAATTTGGTTAAGCTGAGTGAA	121

stRPCI23327F21SP6	GTGAAGGAATGTGGACCTTCA	AGATGACACAGCACAGTCACG	129
stRPCI23336I22SP6	GGTGGTTGTGCCTTTGTTG	AAGCCAGAATTCAGGCTCAA	139
stRPCI23336I22T7	CTGCTGGTTGTTGCTGTTGT	AGAAGTGTTAGAGGGGAAAGGG	170
stRPCI23341G1SP6	CTTTGCTCAAGGTCACAAAGG	GAACGACAGGAGAGAGACGG	171
stRPCI23341G1T7	GGCACTTCCTTGTGTTGGTT	GCACAGGTAAGTGCTCCACA	172
stRPCI23341G2SP6	CCTGCCCAGCAAGTACTAGG	CAGTAAAACAGCTGGTGTGCA	175
stRPCI23341G2T7	ACCTAGTGTGTTCCATGGTCG	GGGCAGAACTCCATTAGCAG	131
stRPCI23349K11SP6	GGCTTTTCTTCCTTGATCCC	AGCTGCTGATGGTGCTTTTT	163
stRPCI23349K11T7	CTGGGTCTTGGCTTTGTTTC	CTTTTAAAAAAGGCTGGGGC	127
stRPCI23351H18SP6	TTTTTGGTTACATTGGATGAGG	ATCCTACTCTGCAGAAAATGGC	172
stRPCI23351H18T7	GGATGTGAGTTTCAGCAGAGC	CTTTGCAGGTAACACAGTGCA	177
stRPCI23352H8SP6	ACTTCTGAACCCTCCCCG	GGGTTAGGGGTTGGAAAAGA	88
stRPCI23352H8T7	ACTGAACCCAGCCTGCTG	GACATCAAAGAGTCAGAGGCG	178
stRPCI23360I20SP6	GTCTATCCCCACTTCTGCCA	CAGAGAATGGCCTGGAAGG	84
stRPCI23360I20T7	TTCATAAAAGGCTCTCCTCAGC	GACCCCAGAGATGCCATG	128
stRPCI23364K6SP6	CTGGCACATCGCTGAATAAA	ACAGCTTTCCACCCCCTC	124
stRPCI23364K6T7	TTCCTGTCAGAGCTGTGGTG	GGCAGCGTTCCTGTCAGT	146
stRPCI23367C4SP6	TTTTCCGCAGTTACCTGGTC	TGTAAACTGCCCAAAGTGACC	154
stRPCI23367C4T7	GATCTCACTGCCATTGGCTT	TGGCCCAAGTGGAGTTATG	125
stRPCI23367D23SP6	AACACCCAAGCAGTAATATCCC	AAGGAGTGGGGAGAAAGAATG	122
stRPCI23368B15SP6	TCCCTGTCTTGGGATCTGAG	TTCATCTGGGCAGCAACTC	131
stRPCI23368B15T7	CGTGGATGGGAACTGAGAGT	TGGCCAGGAAGAACGAAG	161
stRPCI23373J12SP6	GTTCTGCCCTGCCCTTTC	AGGTTCATAAAGCTCCTTTCCC	185
stRPCI23373J12T7	CAATCTGCCCTCGAAATGAT	GAATGGAAGCTGTAAAAGGGG	126
stRPCI23373P4SP6	TGTGGTGCTAGTGGGCATAA	CAGCACAGACACTTGAGGACA	174
stRPCI23373P4T7	CTTTCTTTGCTTCCTGGCAG	GCTCTGACAAAAGCATCTTGC	131
stRPCI23379E23SP6	TACATCTGGAGCCACCAACA	CTCATAGTGGCCTTATTGGAGG	134
stRPCI23379E23T7	GAACATGCTTGACAGAGCCA	GGTGGAACACACACAAGCC	130
stRPCI23381K9SP6	TGCCATTCTCACATTTCCAA	ATCTGCCTGCTTACACCCC	150
stRPCI23381K9T7	CTGGCCTGGCTGTGAGAT	TTAAAAGCCATACCAACCGC	169
stRPCI23390H1SP6	AGGGCTGTCAGTTCTCTGGA	GGGACTAAACTCCCAAGAAAGA	127
stRPCI23390H1T7	GAAGTGGGCTCAGGACAGAG	AGGCTAAGGTTGCCCTGC	80
stRPCI23397G15SP6	GTGATGGAGACGCCACCTAT	CTTTTGGGTTGTGCTTACTTCC	137
stRPCI23402G11SP6	CTCAGAGCACATTCCAAAAGG	CATCACCTGTCTGAGCTCCA	186
stRPCI23402G11T7	TGTCAGTGTTGCCATATTCCA	ATCCTCGATGACTGGAGGG	157
stRPCI23402I10SP6	TTCAGTGCAATTGATGCAGA	CATCTCAATATGACTGCCTTCG	127
stRPCI23402I10T7	TGTGCTGTACCTGGCATTTT	ATCATTGGGATTTGAAAGTGC	190
stRPCI23403B19T7	AGGGCTCAGTGGGTAGAGGT	ACAAGGCCTCAGTGTGTGTG	130
stRPCI23405F6SP6	TCCCTGTCCTCTTGGGTTC	CAAATGAGGCAGAACTTCAGC	138
stRPCI23405F6T7	TAGTGAATGGTTTCCCCAGTG	TGTAACAGAAGTGGGAGGTGG	138
stRPCI23407C24SP6	TGCCAAACTTCCCAGAATTC	GACAGAATGGCAGAAGCCTC	153
stRPCI23407C24T7	GCAGAGCCTATGAAACCAGC	GCAAAACATTCATGGCTGC	133
stRPCI23412D17SP6	GGATTTCACCTCTGACTTCACC	ACAGCAAGATCACCCAATCC	146
stRPCI23412D17T7	CTAGTGGGAAAGTACCAGCCC	TCTGGGTAATGCATCTGTTCC	183
stRPCI23415K6SP6	ACAGCAGGTTCAGAGATTGACA	AAAGGGGATTTCCAAGCG	167
stRPCI23415K6T7	CTATCCAGCTTGTGTATCTGCG	CTTCTCCTCTTTGCCCCAG	138

stRPCI23437H2SP6	TCGGGACTATGATATTCTTGCC	GGACCCGCTGAACACATC	127	
stRPCI23437H2T7	GCAGGATGACTTCATCTGCA	TGTGCCCCAGTAATCTACTTCC	139	
stRPCI23452B7SP6	AAAGTGTGGACACTTTGCCC	ATCCCTGGATATGGCAATCA	125	
stRPCI23452B7T7	CTGAATACTCCCAGCCTCATG	TCCAGTGGTTCAGCTAAAAATG	88	
stRPCI23452L15SP6	TTCAGCAATCTGCTGTCCTG	GCTCCTTCTGGACAGGTCTG	137	
stRPCI23452L15T7	GGGGAATGTTGTCAGCAAGT	CAGGGTCATGGGGGTTATC	151	
stRPCI23453H13SP6	AATATCACCAAACACCAGGTCC	CCTCTTTCTCCATCTTGTTTGG	122	
stRPCI23454M13T7	GGACAGCAAGAACACAGCAA	CTGCCTCTTCCTCCTGTTTG	153	
stRPCI23458I23T7	CCACCAACCACAAGGACAG	TGTTCCTCTTTTGCCTGCTT	140	
stRPCI23458I24T7	ATCTTGCCTCCTGGGATCTT	GCTATGTAGACCAGGCTGCC	141	
stRPCI23466A19SP6	ACCAACAAGGCAGACAAACC	CTTGTTGTTTCGTCCCGG	129	
stRPCI23466A19T7	TTCTTTTTACCGTGCGTTCC	TCGCTTTCGTGGTTTTCTG	184	
stRPCI23470C10SP6	TCCTCTACTGGGGGCTCC	TTGACTCTGAAGAGGCTTTTCC	176	
stRPCI23470C10T7	GGGATCTGACACCCTCACAC	CCTCAGCCTCTTGAGGTCC	178	
stRPCI23476C13SP6	GTTTCTCAGACCCTCACCCA	AGATAGGAAGGTGGGCCCTA	130	
stRPCI23476C13T7	ACATCAAGATGGTCCTTCGTG	TTTCAGGACCGTCATAGTTGC	124	
stRPCI23478N15SP6	TTGAGCAAACATTTTTGAGAGG	TTTCTCTTCTTCCCTGCTTCC	133	
stSG1759	TCACAGAAATGCAGCCTCC	TCTTGGTGCTGTATTTGAAACG	153	
stSG28458	GGTAGACCTTGCTGTGGAGC	TAAGGAGACATGACTGGGTGG	121	
stSG30720	TGTTGGGTGTATGCATAAGAGC	TGTCAATCACTCTGTTGAGCG	177	
stSG34947	AATGTAACTGTGTGGTTTGCC	TTTGTCAAATAAGGGTTGTGC	124	
stSG35345	AAAGCACGTTGCAAACAAA	GCTTAAATGCAATGACCCC	122	
stSG35376	GTGCGATTCCACTGGTGT	AGGAGTCATTCTCTCCTGGG	168	
stSG41672	CTGAGCTATCCAGTGGAGGC	CCCCAGGCAGTTTAGGTGTA	176	
stSG43419	TCATTCAAAACCACATTTTTGG	CTTGCTTTTCAGAAATTACCGA	142	
stSG45455	TCATTCAAAACCACATTTTTGG	CTTGCTTTTCAGAAATTACCGA	142	
stSG46763	GGGTGGGGGTTTCTTTAAAA	CCCACCCCATCCTTCTTC	128	
stSG49686	AATCCCTGCCCTTTGCTCGTGG	GACATCTTCCGGATCAGATCATG	163	
stSG50904	ACATCAGCCTTTTGTGGGAG	CTTCCTATTTTTCCCATTTCCC	165	
stSG52068	TTCTCAGCTCCCGGTCAG	GACACCCTCAACATCGCC	145	
stSG52305	AAAGAACCCATTTCTTTCTCCC	TCAGGATTTCGCTGCTCC	103	
stSG58518	CAATGGGGAGTGTCACAGG	GGGGAGCTTCTCTGACTGTG	166	
stSG58579	GATGTGCCTGAGAACAGCAA	CCCAGTCTGTTTCCACCAGT	132	
stSG60712	TTAGCTCCCAGCCAGTGTG	TCATTGGTTGCTGTGCTCTC	137	
stSG63111	AGAGAGTCGCTTAGGGAAACG	GCGTACTGCTAACAGACCTGG	168	
stSG64851	TCAGCAATTTCAGCATCAGG	GGCAGGGATGATGAAGAAGA	102	
stSG66348	GTCTGAATGCAGATCACCTCTG	CACAGGACTCAGTGGGGG	135	
stSG88706	GCTCACAGCTGACGATGG	GCCTGAGATGTGGTTACTTGTTC		1634
stSG88707	CAGGTGTCCGACCATGAGC	TCCTCAGGAGGACAGAGGG		1231
stSG88708	CCCCGCAGGATGAAGAAG	GATGCCGCCTTTCTTGCT		1113
stSG88709	GATGGCGGACATCTCCCT	ATAAGCTTTGCCTTGGGGAA		1249
stSG88710	TCCCTCAGCCTTTGAAAAA	AGCTGCACTCGGAAAGGTG		1665
stSG88711	GCCGCCAGAGGAGAAATGT	TAAAAAGGCATCATGAGAAAACA		632
stSG88712	GATGCCTCCGCTCTGGGC	AGGGTTTTCCTGCAGTTGG		995
stSG88713	AATGTCTGTCACATATGATGAT	AGGAACACCATGAAGCCAAG		1590
stSG88714	ATGGCCCACCTGGAGCTGCT	CGACTAAGGTTTCTCTTAAAGGGT		3689

stSG88715	ATGGAGGCCGAGCGGGGTCCCGAG	AATTCTCCATGCCAGGAACA		2257
stSHGC13585	GGTGGGCCTGACAAACAG	AATCCTTTCCCCCTGTTTTG	132	
stSMC1L2	CATGTTCAGCCGAGTTTTGA	GGACTCTCCGTGTCTCTTGC	85	
stSMC1L2b	CCGATGATGCAGGTGAAC	AGCTGCTGCTTGTGGAAAAT	82	
stSMC1L2na	CCGCGGGCGCTTGATAAC	AGTGAGCCACAGCCTCTTTGG		1397
stSMC1L2r	GAAGTGGATGCAGCCCTAGA	CGTCGGCTCTGGAATAGAAC		127
stSULTX3.3btag	GGCCGATATCGGCGGCATGGCGGAGAGCGAGGCC	GGCCGCTAGCTAAATAAAAGTCAAACGTGAGG		781
stSULTX3.3tag	GGCCGATATCGGCGGCATGGCGGAGAGC	GGCCGCTAGCCCAACTCAAGAAGATC		855
stSULTX3.5btag	GGCCGCGGCCGCCATGGCGGAGAGCGAGGCC	GGCCTCTAGATTATAAATAAAAGTCAAACGTGAGG		781
stSULTX3.5tag	GGCCGCGGCCGCCATGGCGGAGAGC	GGCCTCTAGATCACCTACTCAAGAAGATC		855
stSULTX3na	GGCTGCGAGCCGGG	CTCCCTCCGCTCACGC		1050
stSULTX3nb	CATGGCGGAGAGCGAGG	GACTGTCTGGGTATTGTGAGC		899
stSULTX3r	AGATTCCTGGGGGTGTCCT	ACGTGAGGTCACACTTTCCC		205
stT81609	ACGTACCCTTCATTGATGCC	CTGAGCTTGGTGATGTCCAC	159	
stTTLL1.3tag	GGCCGAATTCTGGATTATGGCAGGGAAAG	GGCCGCTAGCCTTCCAGGTGGTGAGG		1272
stTTLL1.5tag	GGCCGCGGCCGCTATGGCAGGGAAAG	GGCCTCTAGATCACTTCCAGGTGGTGAGG		1272
stTTLL1n	CAGTGACGTCAGCGAGACC	CCAAAGAAGTGCCTTCG		1612
stTTLL1r	TCATCGACGACAAGCTGAAG	GCAGTCTGGGATTTCACCAT		149
stU73200	GAGCAGAGCCAGAAAGAAGC	TGTAGCCTGCAGCACATAGC	120	
stUPK3.nest1	GGGCGATGCCTCCGCTCT	AAGATTTTATTAAGGGTTTTCCTGC		1011
stUPK3na	CTGCTCGCTGGACCGC	GATTTTATTAAGGGTTTTCCTGC		1052
stUPK3nb	CGATGCCTCCGCTCTG	GGGACAAGCCCTGTTTCACCTTC		976
stUPK3r	GCCTCTCTGCATGTTTGACA	TGTCTTGCACTGAGGCATTC		107
stW57231.2	GGCCTGGATAGCTGTCATGT	TTAAGCCTCCCATCATCTGC	143	
stW61968	CTGTAAGCAGCAGTGCCGT	CAGTTATTGGCTGCCTGTGA	127	
stW77006	ATGACAAGGGCTTTGTGGAC	CCTGGTAGACCAGTAGCCCA	156	
stW77006	CCTGGTAGACCAGTAGCCCA	CCTGGTAGACCAGTAGCCCA	156	
stWI13406	CTGTTTCAGACTTTTATTACGTTGC	GCCGAAAATACACACTCTGTTT	150	
stWI14034	TACCGAGCTCATACAAATTTATCTG	AAAAATAGCATCGTGTTTCAGTT	150	
stWI16313	AGGTCCATGTGGCGCTCTAG	CACGTGGGACTGGGAGAAT	101	
stWI17470	CTGACACGTCCCTGTGTGC	GGAAGGCTGATGGTATTTCC	150	
stWI17858	CCCTGCAATCTGGAAAGAGG	AAGCTGTCCCCAGTGGGAT	150	
stX04405.2	GCCCACACTCTCTCCTTTTG	GGGTCTCTTCCTCTTACCCG	150	
stX12944	ACCATGCCCAAAAGAAAGG	TTCCCCTTCTTCCCCTTG	179	
stX53247	ACTCAGCCAATGTGATGGTG	TCTGTGGGTAGGAGAGTGGC	105	
stX56826.2	CACGCATATACCCGCTACCT	CCAGAGTGTTCATTCGAGCA	175	
stX61506	TTCTCTTCGCTCTGCTCTCC	GGTTACGCTGCTCCTTGAAG	171	
stX70854	ACATGCATCAATACAGAGGGC	AAATAGAAGCCAGCCTTGCA	200	
stX85124	CACAGTACATGGAGGGCATG	CCTGCTCCAGTTCTCGGTAG	159	
stX85124.2	AAATATGCCTGCTCAGGTGG	CTGTCTCTGAAATGAGGCCC	131	
stX87671.2	AAATATGCCTGCTCAGGTGG	CTGTCTCTGAAATGAGGCCC	131	
stX89986	ATGACCACTGCCCTGGAG	CTAAACACAGGCCACAGTTAACC	218	

Appendix 2a: Sequence databases (including latest dates/versions) used during the course of this project

Sequence type	Database	Description	Version/ date	Reference	URL
Nucleotide	22ace	cDNA data resulting from this project	-	-	-
	Incyte	Human ESTs	16.11.00	J. Seilhamer, Incyte, personal communication	http://www.incyte.com/index.shtml
	Unigene	Clustered EST sequences	6.11.01	Bogusket *et al.*, 1993	http://www.ncbi.nlm.nih.gov/UniGene/
	human_MGC	cDNA clones	21.03.01	Strausberg *et al.*, 1999	http://mgc.nci.nih.gov
	Trofatter_exons	Exon trap sequence		Trofatter *et al.*, 1995	
	eos	Predicted exon sequences that have been tested for expression by microarray hybridisation	29.05.01	R. Glynne, Eosbiotech, personal communication	
	embl_vertrna	EMBL 68 vertebrate RNA	68	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	embl_htg	EMBL 68 HTG entries	68	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	embl_htg2	EMBL 68 HTG entries, part 2	68	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	embl_other	EMBL 68 (except EST, STS, GSS, HTG, vertrna)	68	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	emnew_vertrna	EMBL 68 new/changed vertebrate RNA	68.9	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	emnew_htg	EMBL 68 new/changed (HTG)	68.9	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	emnew_htg2	EMBL 68 new/changed (HTG)	68.9	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	emnew_other	EMBL 68 new/changed (except EST,STS,GSS,HTG,vertrna)	68.9	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	EMBL_hum	EMBL 44 human entries (in pri.dat) only	44	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	vertrna	vertebrate RNA (non-EST) in EMBL 51 (Jun-97	51	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	worm34	worm34 C. elegans entries in EMBL 34	34	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	dbEST	dbEST EST database	102701	Boguski *et al.*, 1993	http://www.ncbi.nlm.nih.gov/dbEST/
	dbSTS	dbSTS STS database	102701	Olson *et al.*, 1989	http://www.ncbi.nlm.nih.gov/dbSTS/
	dbGSS	dbGSS Genome Survey database	102701	-	http://www.ncbi.nlm.nih.gov/dbGSS/
	fugu	Fugu sequence from HGMP	2	Elgar *et al.*, 1999	http://fugu.hgmp.mrc.ac.uk/
	non_C.elegans_nematode_ESTs	nematode ESTs (excluding C.elegans) from EMBL	46	Baker *et al.*, 2000	http://www.ebi.ac.uk/
	fantom	Mouse full length cDNAs		Kawai *et al.*, 2001	http://genome.rtc.riken.go.jp/
	blastn_mus	Mouse genomic sequence resulting from this project		-	
	WGS mouse	Whole genome shotgun mouse sequence		MSC, unpublished	http://www.ncbi.nlm.nih.gov/genome/seq/MmHome.html
	nr_RNA	NCBI structural RNA database			http://www.ncbi.nlm.nih.gov
	gbrna	Structural RNA in Genbank 94	108		

PROTEIN	swir	Non-redundant Swissprot39+, SPTREMBL15, Wormpep24	23	Rice, P and Sonnhammer, E (unpublished)	
	swiss	Swissprot 39	39	Bairoch *et al.*, 2000	http://www.expasy.ch/sprot/sprot-top.html http://www.ebi.ac.uk/ebi_docs/swissprot_db/swisshome.html
	swnew	Swissprot 40 new/changed entries	40.6	Bairoch *et al.*, 2000	http://www.expasy.ch/sprot/sprot-top.html http://www.ebi.ac.uk/ebi_docs/swissprot_db/swisshome.html
	wormpep_current	Translated inhouse worm genes, rel. 25 (Nov 00)	25		http://www.sanger.ac.uk/Projects/C_elegans/wormpep/
	prodom	Clustered Swissprot 28	28	Corpet *et al.*, 2000	http://protein.toulouse.inra.fr/prodom/doc/prodom.html
	sbase	SBASE protein domain library (S.Pongor, ICGEB)	3	Murvail *et al.*, unpublished	http://www3.icgeb.trieste.it/~sbasesrv/
	hum24	hum24 Human proteins in Swissprot 24	24	Bairoch *et al.*, 2000	http://www.ebi.ac.uk/swissprot/Information/information.html
	sptrembl	Swissprot translated EMBL	15.0	Bairoch *et al.*, 2000	http://www.ebi.ac.uk/swissprot/Information/information.html
	trnew	Translated EMBL new entries listed by PID	15.9	Bairoch *et al.*, 2000	http://www.ebi.ac.uk/swissprot/Information/information.html
	swall	sp_tr_nrdb	110201		http://www.ebi.ac.uk/swissprot/

Appendix 2b: sequence analysis programs

Type of Analysis	Analysis	Reference	URL
Search	BLAST suite of programs	Altshul *et al*., 1990	
	Exonerate	Slater, unpublished	http://www.ensembl.org/Docs/wiki/html/EnsemblDocs/Exonerate.html
	BLAT	Kent, unpublished	http://genome.ucsc.edu/cgi-bin/hgBlat?db=hg7
Sequence content	RepeatMasker	Smit & Green, unpublished	http://ftp.genome.washington.edu/RM/RepeatMasker.html
	GC-profile	Durham, unpublished	
	CPGFIND	Micklem, unpublished	
	TRNASCAN	Finchant and Burks, 1991	
Exon prediction	XGRAIL	Uberbacher and Mural, 1991	http://compbio.ornl.gov/Grail-bin/EmptyGrailForm
	exofish	Crollius *et al*., 2000	http://www.genoscope.cns.fr/proxy/cgi-bin/exofish.cgi
	Hexon	Solovyev *et al*., 1994	http://dot.imgen/bcm/tmc.edu:9331/seq-search/gene-search.html
	xpound	Kamb *et al*., 1995	
	fexh	Solovyev *et al*., 1994	http://dot.imgen.bcm.tmc.edu:9331/seq-search/gene-search.html
Gene prediction	genscan	Burge and Karlin, 1997	http://genomic.stanford.edu/GENSCANW.html
	genewise	Birney, unpublished	http://www.sanger.ac.uk/Software/Wise2/genewiseform.shtml
	fgenes	Solovyev, unpublished	http://dot.imgen.bcm.tmc.edu:9331/seq-search/gene-search.html
	fgenesh	Solovyev, unpublished	http://dot.imgen.bcm.tmc.edu:9331/seq-search/gene-search.html
U12 intron prediction		Levine and Durbin, 2001	
Promoter prediction	Eponine	Down, unpublished	
	PromoterInspector	Scherf *et al*., 2000	http://genomatix.gsf.de/cgi-bin/promoterinspector/promoterinspector.pl

Appendix 4: Gene data

Locus name	Alternative names	Gene structure (22ace)	Genomic size(bp)	Transcript size (bp)	Coding sequence	5' UTR	3' UTR	No. exons	Type	Accession number
dJ222E13.C22.1		dJ222E13.C22.1.mRNA	20489	1399	942	127	330	12	Full gene	AL589866, AL590118, AL590120
dJ222E13.C22.2		dJ222E13.C22.2.mRNA	7936					7	Pseudogene	
dJ222E13.C22.3		dJ222E13.C22.3a.mRNA	31241	3440	1263	104	2073	9	Full gene	AL160111, Al160112
dJ222E13.C22.5		dJ222E13.C22.5	312					1	Pseudogene	
dJ222E13.C22.7		dJ222E13.C22.7	149	149				1	snRNA	J04119
DIA1		dJ222E13.C22.4.mRNA	30591	1954	903	82	969	9	Full gene	M16462
cB33B7.C22.1	A14GALT	cB33B7.C22.1.mRNA	3513	2020	1059	239	772	2	Full gene	AB037883
dJ47A17.C22.1		dJ47A17.C22.1	894					1	Pseudogene	
dJ47A17.C22.2		dJ47A17.C22.2.mRNA	2626					7	Pseudogene	
ARFGAP1		dJ437M21.C22.1.mRNA	60743	2699	1548	84	1067	16	Full gene	AL159143, AF111847
dJ437M21.C22.4		dJ437M21.C22.4	684					1	Pseudogene	
PACSIN2		dJ323M22.C22.1.mRNA	145373	3247	1458	192	1597	11	Full gene	AAD41781, AL136845
TTLL1		dJ323M22.C22.2.b.mRNA	145373	1618	1182	301	135	12	Full gene	AL589867, AL096886, AL096886, AF104927
bK1191B2.C22.1		bK1191B2.C22.1	365					1	Pseudogene	
BIK	NBK	bK1191B2.C22.2.mRNA	19111	1099	480	209	410	5	Full gene	X89986, U34584
bK1191B2.C22.3		bK1191B2.C22.3a.mRNA	11181	2048	1170	38	840	4	Full gene	AL359401, AL359403
BZRP		dJ526I14.C22.1b.mRNA	11698	850	507	89	254	4	Full gene	M36035
dJ526I14.C22.2		dJ526I14.C22.2.mRNA	20480	3353	1932	32	1389	14	Full gene	AL590888, D63487
dJ526I14.C22.3		dJ526I14.C22.3.mRNA	139477	3179	2802	60	317	22	Unpub. partial gene	
dJ100N22.C22.5		dJ100N22.C22.5.mRNA	2848					1	Rejected (PolyA)	AL442096
dJ754E20A.C22.4		dJ745E20A.C22.4	8897	951	189	217	545	3	Unpub. partial gene	

C22orf1	239AB	cB13C9.C22.1.mRNA	63348	2323	903	120	1300	4	Full gene	U84894
dJ345P10.C22.4		dJ345P10.C22.4.mRNA	283450	4866	4575	198	133	33	Pub. partial gene	AB051459
dJ345P10.C22.1		dJ345P10.C22.1	1035					1	Pseudogene	
dJ388M5.C22.1		dJ388M5.C22.1	607					1	Pseudogene	
HMG17L-1		dJ388M5.C22.2.mRNA	1460	1159	219	146	794	2	Unpub. partial gene	
SULTX3	SULT4A1	dJ388M5.C22.3.mRNA	37874	2347	852	0	1495	7	Full gene	AF188698, AF115311
dJ388M5.C22.4		dJ388M5.C22.4.mRNA	15878	1837	1218	230		11	Unpub. partial gene	
dJ549K18.C22.1		dJ549K18.C22.1.mRNA	23830	2805	1443	173	1189	9	Full gene	AK025665
CGI-51		dJ796I17.C22.2.mRNA	41112	1716	1410	156	150	15	Full gene	AF151809
dJ796I17.C22.3		dJ796I17.C22.3	322					1	Pseudogene	
bK414D7.C22.1	beta-parvin	bK414D7.C22.1.mRNA	144894	1650	1092	3	555	13	Full gene	AL159142, AF237769
dJ671O14.C22.2	gamma-parvin	dJ671O14.C22.2.mRNA	25679	1503	993	278	232	14	Full gene	AL590887, AL55092, AF237772
dJ671O14.C22.1		dJ671O14.C22.1	353					1	Pseudogene	
dJ671O14.C22.6		dJ671O14.C22.6.mRNA	42074	6440	396		6044	2	Pub. partial gene	AB051431
dJ32I10.C22.9		dJ32I10.C22.9	753					1	Pseudogene	
bK397C4.C22.1		bK397C4.C22.1.mRNA	289					1	Pseudogene	
dJ1033E15.C22.1		dJ1033E15.C22.1.mRNA	618					1	Pub. partial gene	AF086048
dJ1033E15.C22.2		dJ1033E15.C22.2.mRNA	1563	2677	339	195	2143	1	Full gene	AL136553
dJ474I12.C22.5		dJ474I12.C22.5.mRNA	3111	720	339	67	314	4	Unpub. partial gene	
dJ474I12.C22.2		dJ474I12.C22.2.mRNA	19083	817	354		463	5	Unpub. partial gene	
dJ474I12.C22.1		dJ474I12.C22.1	1285					1	Pseudogene	
dJ181C9.C22.1		dJ181C9.C22.1	692					1	Pseudogene	

ARHGAP8		dJ181C9.C22.2.mRNA	160453	2264	1929	224	111	17	Full gene	AL355192
dJ127B20.C22.2		dJ127B20.C22.2	833					1	Pseudogene	
dJ127B20.C22.3		dJ127B20.C22.3.mRNA	91484	3282	1296	63	1923	13	Full gene	BC012187
dJ753M9.C22.4		dJ753M9.C22.4.mRNA	6412					1	Rejected (PolyA)	AB051448
NUP50	NPAP60L	bK217C2.C22.1.mRNA	24114	5172	1404	403	3365	8	Full gene	AF107840
bK268H5.C22.1		bK268H5.C22.1.mRNA	48619	6306	1212	90	5004	10	Full gene	AB023147
UPK3		bK268H5.C22.2.mRNA	10893	1051	861	32	158	6	Full gene	AF085808
bK268H5.C22.3		bK268H5.C22.3	483					1	Pseudogene	
bK268H5.C22.4		bK268H5.C22.4.mRNA	32018	2879	1071	259	1549	9	Full gene	AK000642
SMC1L2		bK268H5.C22.5.mRNA	69557	4253	3705	52	496	25	Unpub. partial gene	
dJ102D24.C22.2		dJ102D24.C22.2.mRNA	18719	1392	927	399	66	7	Full gene	AL442116
FBLN1		bK941F9.C22.1.mRNA	98481	2112	2109			17	Full gene	AF126110, U01244, X53741, X53742, X53743
bK941F9.C22.6		bK941F9.C22.6.mRNA	21982	376	312		64	2	Unpub. partial gene	
E46L	SCA10	bK941F9.C22.2.mRNA	173511	3331	1425	265	1641	12	Full gene	AF119662
dJ37M3.C22.5		dJ37M3.C22.5	1226					1	Pseudogene	

Appendix 5: Mouse sequence clones.

Clone name	Sequenced by	Mapped to genomic location	EMBL accession and version number	Orthologous human region	Status of available sequence (5-10-01)
RP-10K12	Sanger Institute	MMU 15	AL583889.8	22q13.31	Unfinished
RP-121M7	Sanger Institute	MMU 15	AL583887.9	22q13.31	Finished
RP-85M21	Sanger Institute	MMU 15	Al591964.5	22q13.31	Unfinished
RP-150J22	Sanger Institute	MMU 15	AL513354.14	22q13.31	Finished
RP-237G11	Sanger Institute	MMU 15	AL603867.2	22q13.31	Unfinished
RP-23A6	Sanger Institute	MMU 15	AL626769.11	22q13.31	Unfinished
RP-95H5	Sanger Institute	MMU 15	AL603714.4	22q13.31	Unfinished
RP-74I9	Sanger Institute	MMU 15	AL611986.8	22q13.31	Unfinished
RP-320B4	Sanger Institute	MMU 15	AL611987.9	22q13.31	Unfinished
RP-180L12	Sanger Institute	MMU 15	AL513352.11	22q13.31	Finished
RP-98L10	Sanger Institute	MMU 15	AL626761.6	22q13.31	Unfinished
RP-451I21	Sanger Institute	MMU 15	-	22q13.31	-
RP-292L2	Sanger Institute	MMU 15	AL583891.15	22q13.31	Finished
RP-290M7	Sanger Institute	MMU 15	AL591946.9	22q13.1	Unfinished
RP-79F10	Sanger Institute	MMU 15	AL590144.5	22q13.1	Unfinished
RP-189A18	Sanger Institute	MMU 15	AL583893.17	22q13.1	Finished
RP-385C21	Sanger Institute	MMU 15	AL589692.9	22q13.1	Finished
RP-81H23	Sanger Institute	MMU 15	AL589650.13	22q13.1	Unfinished
RP-402G11	Sanger Institute	MMU 15	AL583886.11	22q13.1	Finished
RP-188D8	Sanger Institute	MMU 15	AL592187.4	22q13.1	Unfinished
RP-21H23	Sanger Institute	MMU 15	AL591864.6	22q13.1	Unfinished
RP-89G22	Sanger Institute	MMU 15	-	22q13.1	-
RP-422F22	Sanger Institute	MMU 15	AL591892.2	22q13.1	Unfinished
RP-412D17	Sanger Institute	MMU 15	AL603843.2	22q13.1	Unfinished
RP-175A3	Sanger Institute	MMU 15	-	22q13.1	-
RP-55O11	Sanger Institute	MMU 15	-	22q13.1	-
RP-359D20	Sanger Institute	MMU 15	-	22q13.1	-
RP-77D8	Sanger Institute	MMU 15	-	22q13.1	-
RP-267J18	UOKNOR	MMU 8	AC076974.23	22q13.1	Unfinished
RP-254F2	Sanger Institute	MMU8	AL603837.2	22q13.1	Unfinished
RP-290L7	AECOM	MMU8	AC084823.10	22q13.1	Finished
RP-478N15	Sanger Institute	MMU8	AL603864.3	22q13.1	Unfinished
RP-480M4	Sanger Institute	MMU8	AL603782.5	22q13.1	Finished
RP-477E1	Sanger Institute	MMU8	-	22q13.1	-

Appendix 6: DBA output (Jareborg *et al*., 1999) showing alignments of conserved mouse-human sequences within regions up to 3 kb upstream of four annotated gene transcription start sites.

The alignment is show below as a series of blocks. Each block is in one of four classes, A (65%), B (75%),C (85%),D(95%). Small gaps are permitted in the blocks.

```
Alignments upstream of Gene : TTLL1 (human) bM121M7.1 (mouse).


bM121M7      507     CAGCCCCGATCCTTCTCTTCGCTTTTTCCTTCTCTTCATTGCTTCTTT
                 B   CAGC  CGA CC T TCTTC CT   TC C TC CTTC TT CTTCTT
GoldenPath22262      CAGCAGCGAACCCTTTCTTCCCTCCCTCCCCTCCCTTCCTTCCTTCT-


bM121M7      555     TTCTTG-CTTCTTCT
                 B   TTCTT  CTTCTTCT
GoldenPath22310      TTCTTTCCTTCTTCT


bM121M7      1857    TCTTTTTTTTTTTTTT
                 D   TCTTTTTTTTTTTTTT
GoldenPath22327      TCTTTTTTTTTTTTTT


bM121M7      2286    TTTTTTTG-TT-GTTG-TTTTTTTT
                 D   TTTTTTTG TT GTTG TTTTTTTT
GoldenPath221510     TTTTTTTGTTTGGTTGTTTTTTTTT


bM121M7      2322    TTTTTTGTTTTTTTTTTCGAGACAGGGTTTCTCTGTGTAGCCCTGGCT
                 B   TTTTTT TTTTT TTTTT GA A  GGGT T  CT T T G CCGGCT
GoldenPath221705   TTTTTTCTTTTTTTTTTTAGAAATGGGGTCTTGCTATATTGGCCAGGCT


bM121M7      2371    GTCCCGGAACTC
                 B   G  C GGAACTC
GoldenPath221753     GGTCTGGAACTC


bM121M7      2418   CCGCCTGCTTCTGCCTCCCAAAGTGCTGGGATTAAAGGCATGCGCCACC
                 C   CC CC GC TCTGCCTCCC AAGTGCTGGGATTA AGGC TGGCCACC
GoldenPath222480     CCACCCGCCTCTGCCTCCCAAGTGCTGGGATTACAGGCGTGAGCCACC


bM121M7      2647   CTTTATCCGCTGGCCCTGGCCCTTACAACTCTCATTTCTGGCCCCTGAA
                 B   CTT ATCC  TG  CC G CCCTT   A TCTC TTTCTGG CCC GA
GoldenPath222768     CTTAATCCCGTGCTCCAGACCCTTCTCAATCTCCTTTCTGGCCCCGA-


bM121M7      2694    AGGGTGCGCGG
                 B   AGGGTG  CGG
GoldenPath222817     AGGGTGGACGG


bM121M7      2809   TCAGGAAGCAGTAGCGCCAGCGGTTTTCGCGTTCTCGGTTGCTAGGACA
                 B   TC GGAA  AGT GC  C  CGG   TCGCGT CT GGTTGC AGG C
GoldenPath222910   TCCGGAAATAGTCGCAGCGCCGGCGGTCGCGTCCTGGGTTGCCAGGGCG


bM121M7      2858    CCTCTCCGGAAGTGGAGTGAAGC
                 B   CC C C GGAAGT GAGTG AGC
GoldenPath222959     CCGCCCTGGAAGTAGAGTG-AGC
```

Alignments upstream of Gene: BIK (human) Biklk (mouse)

```
bK1191B2    981      GGGGTTTCTCCATGTTGGTCAGGCTGG-CTCAAACTC
                C    GGGGTTTC C ATGT    CAGGCTGG CT AAACTC
bM121M7     790      GGGGTTTCACTATGTACCCCAGGCTGGCCTGAAACTC

bK1191B2    1238   CCTTTTGATCAGCATATTGTCTTGGGGATTTTGCAAAGTAAATAAGTAC
                A    CC TTTGATCAGC T TTG CTT GGGAT TTGCA   TAAATA  TC
bM121M7     1819     CCATTTGATCAGCCTGTTGCCTTGGGATCTTGCAGGCTAAATATTTTC

bK1191B2    1286   TGTATTTGCACCCACTCTGCCCTTGAATCATCCAGTGTCCCCAAACGGT
                A     T      C  CC CT  GCCC T A TC  C    TG CC CAAAC G
bM121M7     1868   ACTCACCCCCTCCCCTGGGCCCCTAAGTCCCCATCTGACCTCAAACTGG

bK1191B2    1335     CCTTCTTTCTCCATCTTTTCTGCT
                A    CCT CTT CTCCA CTT TCT CT
bM121M7     1917     CCTCCTTCCTCCACCTTGTCTACT

bK1191B2    1437     TCAGGTCTTTCGGGACCCTGAGACCCCGTGTCATTGCTTTACCTCCCT
                C    TCAGGTCTTTC GGAC   TGAGACCCC TGTCA TGC T  C TCCT
bM121M7     1967     TCAGGTCTTTCGGACTGTTGAGACCCCTTGTCACTGCCTCTCTTCTCT

bK1191B2    1485     GAGTCTCAATTT
                C     AGTCTCAATTT
bM121M7     2015     CAGTCTCAATTT

bK1191B2    1498     TTCATCTGCAAAATGCATTCCCAGAG
                D    TTCATCTGCAAAATG ATT  CAGAG
bM121M7     2035     TTCATCTGCAAAATGTATT--CAGAG

bK1191B2    2233   TAAACAAGCTTTGCCGTGCCCAGGACAATTGTTACTTTGTTATTCCAGG
                A    TAAACAAG TTTG  GT      GA A T GTTACTTTGT ATTC
bM121M7     2419   TAAACAAGTTTTGTTGTTGTATAGATAGTGGTTACTTTGTAATTCGGCC

bK1191B2    2282     AGCGCTCTGCCTTCTCCCACC
                A    AG GCTC   CTT  C CACC
bM121M7     2468     AGTGCTCCATCTTTACTCACC
```

Alignments upstream of Gene BZRP (human) Bzrp (mouse)

```
dJ526I14    685      TTTTTTTTTTTAAA
                D    TTTTTTTTTTTAAA
bM121M7     21       TTTTTTTTTTTAAA

dJ526I14    978      CATGTGTGTCTT-TTTTTATTTATTTTATTTTTTGTTTTGTTTTTTTG
                B    CAT TGT T TT T TTT TT T TTT  TT TTTGTTT  TTTTTTG
bM121M7     1031   CATCTGTTTGTTTTGTTTGTTTTGTTTGTTTGTTTGTTTGTTTTTG

dJ526I14    1027     AGAAAGAGTCTCACTGTGTCACCCAAGCTG
                B    AGA AG GT TC CTGTGT  CCC  GCTG
bM121M7     1078     AGACAGGGTTTCTCTGTGTAGCCCTGGCTG
```

```
dJ526I14     1246    ATCCACCGGCCTCGGCCTCACAAGTGCTGGGATTACAGGTGTGAGCCA
                 C   AT CACC  CCTC GCCTC C AAGTGCTGGGATTA AGGTGTGGCCA
bM121M7      1152   ATTCACCTACCTCTGCCTCCCAAAGTGCTGGGATTAAAGGTGTGCGCCA

dJ526I14     1295    CCACGCCCGGCT
                 C   CCACGCCC GCT
bM121M7      1200    CCACGCCCAGCT

dJ526I14     1623    TTAAAAAAGAAAAAAAAAAAAAAAAACAAA
                 B   TTAAAA A A AAA AAA AAA AAACAAA
bM121M7      2664    TTAAAACAAACAAACAAATAAACAAACAAA
```

Alignments upstream of Gene C22orf1 (human) bM150J22.1 (mouse)

```
GoldenPath221006    TCT-CTGCCTCACCCTCTC-AGT-GCTGGGATTACAGGTG
                 C  TCT CT CCTC CCCTCTC AGT GCT GG TTACAGGTG
bM150J22     1378   TCTCCTCCCTCTCCCTCTCAAGTGGCTTGGCTTACAGGTG

GoldenPath221618   AAGGAGGATATTGCTAATTTATTTCACCTTCTAGGGAGATGATCAAGAT
                 B  AA GAG  TA TGCT  TTTATTT ACCTT TA GG GATGAT  AGA
bM150J22     1600   AAAGAGATTACTGCTTTTTATTTTACCTTGTATGGGGATGATTGAGAA

GoldenPath221666    TT
                 B  TT
bM150J22     1649   TT

GoldenPath221670    AAAAATTAATAACCCATTTCTCCTTGCACATAATTAAAATGTTCTCCA
                 C  AA AATTAATAACCC TTTCTCCTTGCACATAATTAAAATGTTCTCCA
bM150J22     1659   AAGAATTAATAACCCGTTTCTCCTTGGCACATAATTAAAATGTTCTCCA

GoldenPath221719   GTCTCTAATTTTTGTCTTTTTCCTAATCTAATTTGTTTTCTGACTGTGT
                 C  GTCTCTAATTTTTGTC TTTT  TAATCTAATTTGTTTT  GATGTGT
bM150J22     1707   GTCTCTAATTTTTGTCATTTTTATAATCTAATTTGTTTTTGGAGTGTGT

GoldenPath221768   CGATTCTTCTTCCAAGCGCAAAGCAAAGGGGATTTTTCTTCATTTAATG
                 C  CGATTC   TTCC AGC  A A CAA GGG ATTTTTCTTC TTTA T
bM150J22     1756   CGATTCCCTTTCCGAGCATAGAACAAGGGGAATTTTTCTTCCTTTAGTA

GoldenPath221817   TGATTGCGATATGAGTGTCCAGGAATAGTTTAAATGATGTTATTTTCTC
                 C  TG TTG GAT   AGTGTCCAGGAA   TTTAAA A TATTTTCTC
bM150J22     1805   TGTTTGGGATCCCAGTGTCCAGGAACCATTTAAACTACATGATTTTCTC

GoldenPath221866    CTTGGTTAAATACAGCGCAAAAGGAATCGTTGGAGGGTTCTTAA
                 C  CTTGGTTAAATACAG GCAAA GG   C TTG AGGG TCTTAA
bM150J22     1854   CTTGGTTAAATACAGTGCAAATGGGGCCATTGAAGGG-TCTTAA

GoldenPath221939   CTTCAAGGCATTTCCCATTTACACAGTTTAAAAAAATAATTATGAAAAG
                 B  CTTCAAG CA T CC   T ACACAGTT A AAAAAT A TATGAAAG
bM150J22     1989   CTTCAAGTCACTGCCTGCTCACACAGTTAAAAAAATTACTATGAACAG

GoldenPath221987    G
                 B  G
bM150J22     2038   G
```

```
GoldenPath222376    CTGGGAAAATCCCTTCCTCAGGGCACCACTAAAAGATATCTTTAGATGA
                 B  CT GGAAA  CCCTT CTC GGG  C  CTAAAAGAT TCTT A   A
bM150J22    2410    CTTGGAAATCCCCTTCTCTGGGTGCATCTAAAAGATGTCTTGAAGCTA

GoldenPath222424    AATCGATGTCGAGGGAGGAATTTTCGCCCGGCTGTCTCCACCTGCTCA
                 B  AAT  ATGT GA GGAGGAATTTTC  CC  GC GTC CCACCTGC
bM150J22    2459   AATTTATGTTGAAGGAGGAATTTTCATCCCGGCAGTCCCCACCTGCATG

GoldenPath222473    GGCTTGCAGGGGTGTGGGCGTGGGGCCATGTGGGTGTGT
                 B  GGCTTGC GGGGTG GG  GTG GGC  TGTGG T TGT
bM150J22    2507    GGCTTGCTGGGGTGCGGCTGTGTGGCTGTGTGGCTATGT

GoldenPath222541    TGTAGGGAATCCTTCCTGTTCCCCAATTCTGAAAAAGGTAAAACTTAA
                 C  TG AGG GAATCCTTCCTGTTCCCCA  TCTG AAAA   AAAATTAA
bM150J22    2568    TGGAGGGGAATCCTTCCTGTTCCCCATATCTG-AAAAAAAAAATTTAA

GoldenPath222588   CTCACCTGTTTACAAAATACCAGCCATTGTCTTTACCCCAGCTCACCTG
                 C  CT  CCTGTTTACAAAATACCAGCCATTGTCT   CCC AGCTCACTG
bM150J22    2616    CTTCCCTGTTTACAAAATACCAGCCATTGTCT-GTCCCTAGCTCACTG

GoldenPath222635    ---CCCTGTAGGCTC-GGAGGATTTTGTTGAAGGAAAAAAAAATGTCT
                 ??    C CTGTAG CTC  GAG AT TTGTTG AGG  AAAAAAATGTCT
bM150J22    2665   CCCCTCTGTAGACTCCCGAGAATCTTGTTGGAGGGGGAAAAAAATGTCT

GoldenPath222684    TAAGTATTTAAACACGTTGAGCCATGCATGCATCCGTCCA
                 C   AAGTATTTAAACA GTTG  CCATGCA GCATCCGTCCA
bM150J22    2709    GAAGTATTTAAACATGTTGGACCATGCACGCATCCGTCCA

GoldenPath222761   GTCCCCTCCCTCCCTTCCCTTTTCTTTTTTACCAAAGTATATTCATCAA
                 D  GTCCCCTCCCTCC TTC CT TTC TTTTTACAAAGTATATTCATCAA
bM150J22    2777    GTCCCCTCCCTCCGTTCTCTCTTCTTTTTACTAAAGTATATTCATCAA

GoldenPath222809   ACTGCTGAGTTGGAAAGATTTGTAATGAGTTTTTGAGCTTTGTACGACT
                 D  ACTGCTGAG TGGAAAGATTTGTAATGAGTTTTTGAGC  TGTCGACT
bM150J22    2826    ACTGCTGAGATGGAAAGATTTGTAATGAGTTTTTGAGC-TGTGCGACT

GoldenPath222856    GTGTTT
                 D  GTGTTT
bM150J22    2875    GTGTTT

GoldenPath222873   CCCCCCCGCCCTCTCCCTCTTTCTAAATCTTCATCTGACATTAAATAAA
                 D  CCC CCCCCCTCTCCCTCTTTCTAAATCTTCATCTGACATTAAATAAA
bM150J22    2902    CCCCCCTCCCTCTCCCTCTTTCTAAATCTTCATCTGACATTAAATAAA

GoldenPath222921   GCAAATCCCAAACAGATTAACTGTCGCACGGTTCTGCTCCGTCTCCTCA
                 D   CAAATCCCAAACAGATTAACTGTCGCA GGTTCTGCTCCGTCTCTCA
bM150J22    2951   ACAAATCCCAAACAGATTAACTGTCGCATGGTTCTGCTCCGTCTCTTCA
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