

Fig. 1 Suppl. Amino acid sequence alignment of peptide transporter genes (*PTR*) in sugar beet and *Arabidopsis thaliana*.

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Table 1 Suppl. Information on 234 single nucleotide polymorphism (SNP) markers from sugar beet genome (*RefBeet-1.1*) used in the study.

SNP ID	Chr.	Scaffold	Scaffold length (bp)	Start	End	Sequence
SNP9975	1	Bvchr1.sca001	8261556	6151729	6151660	TGCAGGTAATTAGGAGGAAACAAGTGGGATGT[T/C]ACCCTAATAGTTCGGGAGTGTAGGAGGGGTGACAGT
SNP9976	1	Bvchr1.sca001	8261556	4805926	4805857	TGCAGGCAGCAAGACAGAACTGCTCATATTGTAGAAATCTAGATC[C/A]CCTGGATCGTCAATCCGACAG
SNP9977	1	Bvchr1.sca001	8261556	2966804	2966735	TGCAGCCCCAAACTTTGCTCTCCAACTCGTTGCCAGTGCTTCA[C/G]CTTACAAGCAGCGGAGAAGATCAAACT
SNP9978	1	Bvchr1.sca006	5629954	1851904	1851973	TGCAGT[C/T]TAAAGATCTATGTTCTCACCACTTACTTGTGAAAGAGAAATTCAAAAATGACCTTGAGAAATTT
SNP9979	1	Bvchr1.sca001	8261556	465597	465528	TGCAGTTCCTGAAAAATTTGTCCAAAGATGCTCG[T/G]GACTTTATAAAGCAATGTATACGTGTGAATCCAGAT
SNP9980	1	Bvchr1.sca001	8261556	159921	159990	TGCAGGAAAAACGGAAAAAATAAT[T/C]ATGACTTGTGTGCCAACCAAGAAACAACCTTTGAAGCTTAACAATT
SNP9981	1	Bvchr1.sca001	8261556	1510448	1510517	TGCAGAAAGTTGTGAATTTGCTTAGTTGTGTATCCCTTG[G/T]ACCAATCCCTAAAAATAAATGTTTGCAGCTTGT
SNP9982	1	Bvchr1_un.sca001	1528646	266521	266590	TGCAGACGGAAGACCTATTG[T/C]TTTCAACTTGTGTGGCCTAAAGTGGTGTCAAAATATTTACTGTTATATTGC
SNP9983	1	Bvchr1_un.sca001	1528646	266521	266590	TGCAGACGGAAGACCTATTGTTTCAACTTGTGTGGCCTAAA[G/C]TGGTGTCAAAATATTTACTGTTATATTGC
SNP9984	1	Bvchr1.sca008	2362761	293012	293081	TGCAGATAT[A/G]TATGATTCCAACTCTTCTTGTGCTGCTGTGTCTGTAGATACTGTCCAAGCTTATGCCT
SNP9985	1	Bvchr1.sca007	2288064	1604302	1604233	TGCAGTTTTATACCTATAGAAAAGAGGTTG[T/G/A]TCCAATCGACCCATCATCTGATATACTACAATCATCTAA
SNP9986	1	Bvchr1_un.sca002	4835771	3979942	3980011	TGCAGCTCTTC[A/T]JAAAGTGCATGACCCCTAAATTTCTCTCCAGAACTCTCCTAAATATCACAGTTCTATAAAT
SNP9987	1	Bvchr1_un.sca002	4835771	3979942	3980011	TGCAGCTCTTCAAAAAGTGCATGACCC[T/C]JAAAATTTCTCTCCAGAACTCTCCTAAATATCACAGTTCTATAAAT
SNP9988	1	Bvchr1.sca007	2288064	289374	289443	TGCAGATTTGGGAAT[G/C]CACAAAAGTATTCACCTGACAGGAGCCTTCGGGAAGAACTGAGTCCCTCCAGTCC
SNP9989	1	Bvchr1_un.sca002	4835771	1642929	1642998	TGCAGGCTC[C/T]JAAAGCTCGAAGAGGAGAGAGACATCACCAAGTTGGTTGGAAGTTCCTTTCTGGTTATCTTT
SNP9990	1	Bvchr1_un.sca002	4835771	1642929	1642998	TGCAGGCTCCAAAGACCTCGAAGAGGAGAGAGA[C/A]ATCACCAAGTTGGTTGGAAGTTCCTTTCTGGTTATCTTT
SNP9991	1	Bvchr1.sca001	8261556	1994285	1994216	TGCAGAGCTTCAAAATTGCATTGCA[C/G]TGCTCAGCTGGCTTAATGACGTTATCCCGTGATGATTCACACTGCTT
SNP9992	1	Bvchr1.sca001	8261556	2261523	2261592	TGCAGATATAAATTAT[T/A]ACTCTAGTGAGGAACAAATTCGGTTTTTCTGATAAAATTTCTGCCCTTTAAATC
SNP9993	1	Bvchr1_un.sca002	4835771	3979942	3980011	TGCAGCTCTTC[A/T]JAAAGTGCATGACCCCTAAATTTCTCTCCAGAACTCTCCTAAATATCACAGTTCTATAAAT
SNP9994	1	Bvchr1.sca001	8261556	2261523	2261592	TGCAGATATAAATTAT[T/A]ACTCTAGTGAGGAACAAATTCGGTTTTTCTGATAAAATTTCTGCCCTTTAAATC
SNP9995	2	Bvchr2.sca001	9199598	320826	320895	TGCAGCTG[T/C]JTGATGCTGATGCAAGTTGGTGTGCTGAAAACGTATGTTGTTGTTTCAGAAAACCTGCGATTCTGA
SNP9996	2	Bvchr2.sca001	9199598	406290	406359	TGCAGATGAGCACCATATTTAGCTCTCTATGACTA[C/T]TTTACCATCAGGTTCTGATACTACTGTGGGGATCT
SNP9997	2	Bvchr2.sca001	9199598	5821090	5821021	TGCAGAAATGGAAGGATTT[A/G]JATTTGGTAAATTTTAGTGAGAAAATTTGTGTTAAGGAGGTTGATGAAAGTT
SNP9998	2	Bvchr2.sca014	5716276	1221181	1221250	TGCAGCAGAAAAT[T/G]GGTAAAGGTGGTGAATGCTTGTCATCTGTATGGGATGTTCCCTCAGTTGCAATTTCC
SNP9999	2	Bvchr2.sca010	1608198	455814	455883	TGCAGGACAAAGTATTAATCTGCAATTTCTTAAAGAAAGC[A/T]JAAAGGCTCAAGGTTCAATTAACCTCGAGATGGG
SNP10000	2	Bvchr2.sca011	514719	335422	335353	TGCAGGTGAGGATTTTAAAGAAATTT[C/T]JATGCAATAATTTTCCTTGACTATCTTGAATGTGAAGTTGTACATTA
SNP10001	2	Bvchr2.sca011	514719	335422	335353	TGCAGGTGAGGATTTTAAAGAAATTTCTATGCA[T/G]JAAATTTTCCCTTGACTATCTTGAATGTGAAGTTGTACATTA
SNP10002	2	Bvchr2.sca007	1466479	860194	860263	TGCAGGTGTGATATCTTATTAGAGATTGTGATAGGAACATA[A/T]JAAAGGAAATGTTCTATTGTTTAGATGT
SNP10003	2	Bvchr2.sca007	1466479	1032656	1032587	TGCAGGTTACC[G/A]JTCACCCGGCTTAGTGATAATGTACATCACAAACCACTTTACTTAACACCCGGAATCT
SNP10004	2	Bvchr2.sca007	1466479	1032656	1032587	TGCAGGTTACCGTCCACCGGGCTTAGTGATAATGTACATCAGAA[C/T]JACCCTTTACTAACACCCGGAATCT
SNP10005	2	Bvchr2.sca007	1466479	782391	782322	TGCAGGATTTGTTGGTCTCAGCATCATGCTAAAGTTT[T/C]GCCTTCTTCTATCCCTTTTCTGTAATCTGAT

SNP10006	2	Bvchr2_sca007	1466479	782391	782322	TGCAGGATTGTGGTCTCAGCATCATGTCTAAAGTTTGGCTTCTT[C/T]TATCCCTTTTCTGTATCTGAT
SNP10007	2	Bvchr2_sca007	1466479	258788	258719	TGCAGTGCAAATCAGAGACTTGGCAACCATGATCTGTAT[C/T]GAAAAAGTCCAAGCTCTTTAGAAAAATATGT
SNP10008	2	Bvchr2_sca006	1475577	671975	672044	TGCAGGATCAAAATTAAAGAGGTATTATCA[A/T]CAGGAACTTTAAGACACATTAGTGATATGTATGTCCATC
SNP10009	2	Bvchr2_sca006	1475577	959357	959288	TGCAGTA[C/T]TTATTGCAAAAGAAAATTCAAGAAAAACCCAGAAAATACATCCATTCCGACCTCCAAAAAACTC
SNP10010	2	Bvchr2_sca001	9199598	8472364	8472295	TGCAGACTTGCAGGGTTCAATTGAGTTGCACGTAT[T/G]GAAATTGGAGGATTTGCTCTCCCTCCATAATCCAC
SNP10011	2	Bvchr2_sca001	9199598	8571293	8571224	TGCAG[T/C]TGTGTGCCCATTTAAAAGATTGATGAATTTTGGCTACCAITTAATACAAAGTATATGTTCTCT
SNP10012	2	Bvchr2_sca001	9199598	8477809	8477740	TGCAGAAGTGGTGTCTATTCAATGGTT[C/T]GATTCTGTCTATCTGATTTGATTATTGATGCCATATATTCTAA
SNP10013	2	Bvchr2_sca016	1434204	367109	367040	TGCAGTTGTTGGGGTGGCCCTTGTTTGACATGCT[A/G]ATCTTATAAAGGAGAAAAAGGCTTCATCTGTCT
SNP10014	2	Bvchr2_sca018	2628957	1554200	1554131	TGCAGACCCCGGCGACTGCTGATTCCGAGACGGCA[T/G]CTGCTGAGACATGCTACCAGCTGTACCATGCAAA
SNP10015	2	Bvchr2_sca018	2628957	1637136	1637205	TGCAGGAATTCAGAAAGAGACAAAGTAGAAAATAGTCTGGAGTTACG[T/C]GAACAGCTTAGCAAGTTATTAC
SNP10016	2	Bvchr2_un_sca002	876260	718358	718289	TGCAGGCATGAGCTATGAACTTTAAACA[T/C]GATTGTAAATTGTCTATGAACAAATCTTTTATTGATTGCA
SNP10017	2	Bvchr2_un_sca002	876260	667162	667231	TGCAGATACCC[G/A]CAAAAGACAACTTCCACACCACTAGTTCTATGACTACCTTAAAAACAATTTCTCGAGCC
SNP10018	2	Bvchr2_un_sca002	876260	667162	667231	TGCAGATACCCGA[A/G]AGACAACTTCCACACCACTAGTTCTATGACTACCTTAAAAACAATTTCTCGAGCC
SNP10019	2	Bvchr2_un_sca002	876260	667162	667231	TGCAGATACCCGCAAGACAACTTCCACACCACTAGTTCTATGACTACCT[T/C]AAAAACAATTTCTCGAGCC
SNP10020	2	Bvchr2_sca012	1188469	697113	697182	TGCAGTATTCTACTCTCTCCATCCATCTTCC[C/T]TGGCCAGCGTGATGGGTTAGGTTTGGGGACAGGA
SNP10021	2	Bvchr2_sca012	1188469	888971	889040	TGCAGCATCTATAAGCTTTTGGCCCTTCATCGCCAGATAAAGC[A/G]ATTTCAAAATCAAAATCTGTTTATCTTC
SNP10022	2	Bvchr2_sca005	1507372	651207	651138	TGCAGTCATTGATTCCTTAT[T/G]AAGTGTTAAAGCTATTTTCCCTGTCTTTTGAAAAGTTTGTATGATCC
SNP10023	2	Bvchr2_sca013	3147981	2888824	2888755	TGCAGGAGGTGCTGCTACTGAAAAATAA[C/T]GACTCGACGCTTTCAGTGTAAAAATTGGTTGGTCTTGATTC
SNP10024	2	Bvchr2_sca003	1871621	26648	26717	TGCAGGATACGG[G/T]GATTTTCTCTCTCCGTCTGGTGTGGTGTGAGTCTACATTTTACGCCATTGTGTAT
SNP10025	2	Bvchr2_sca002	704326	574624	574693	TGCAGAGAAATGAGAGTAGCTAAATGACAGAAAAA[G/C/T]AAGAAAGACTGATTTGCTGAGACAGAACACTA
SNP10026	2	Bvchr2_sca002	704326	629322	629391	TGCAGACTATGATTCCTTACAAAC[A/G]GACTCTGGACCTATTCTGAAATTTTCATGGCTAACCAACAGAAA
SNP10027	2	Bvchr2_sca003	1871621	498404	498335	TGCAGTTTATGGACCAAGAGCCGGGACTAAGAAAGAA[C/T]GAAAAACCCGGAGAAAGCTTCAGTTGAAAGTTATT
SNP10028	2	Bvchr2_sca003	1871621	498404	498335	TGCAGTTTATGGACCAAGAGCCGGGACTAAGAAAGAAACGAAAA[C/T]CCGGAGAAAAGCTTCAGTTGAAAGTTATT
SNP10029	2	Bvchr2_sca003	1871621	1675522	1675591	TGCAGCCGTGCAACGCTGTCGAAAG[T/C]TGGGAAATTGCAAGTTCGAAAGTTGGCAGTTGACAGTTGTGGTCTG
SNP10030	2	Bvchr2_sca005	1507372	880994	881063	TGCAGTGGCACAGGATTTGTTTACCAGGTACTCCACGAAAT[T/G]TAACTGTCAGATAAACTTGTGATTGCTTG
SNP10031	2	Bvchr2_sca013	3147981	979080	979149	TGCAGGATGTGCATTCTTCTCTTTGTCCTCTCTTTTCATCAT[A/C]JAATTCATGTCATGTTTCTATTT
SNP10032	2	Bvchr2_un_sca003	217843	189895	189964	TGCAGATAGGCTTGGTTTTCGTGATCC[C/T]GACACAGGTGAATGCCTTCTCGCGGTATGTCGCCATATTGT
SNP10033	2	Bvchr2_un_sca001	351521	314114	314183	TGCAGCAATTATGTCGTCCAAAAGAAC[C/A]ATTAGCTCATCTGCCTCAGAACACCAGTAAAAATTGATACACC
SNP10034	2	Bvchr2_sca001	9199598	8571293	8571224	TGCAG[T/C]TGTGTGCCCATTTAAAAGATTGATGAATTTTGGCTACCAITTAATACAAAGTATATGTTCTCT
SNP10035	3	Bvchr3_sca001	2492101	1795374	1795443	TGCAGTAAAAATTACATAGAGCTCTAGCTTCGTC[A/G]TTATTGCAAAAACATAATACAGCATAAATCCCTA
SNP10036	3	Bvchr3_sca005	4667655	803869	803938	TGCAGAGTGCAGACTTCTGGTGAACCAAAAG[T/G]CAITTTTCTATCAAGCCAGAGTTATCTTTTATCTTTAC
SNP10037	3	Bvchr3_un_sca001	1466214	1417198	1417267	TGCAGGAGC[G/A]TCAGCAACAGGGGCTTTCGCTCAGGAGCTGGTGTCTGGGCGAGCATAGGGGGAATGTCA
SNP10038	3	Bvchr3_un_sca001	1466214	394629	394560	TGCAGTCCATGACACACTGTCTT[T/G]CTCACTCATATCATGAAAAACACTTGCAAATGACTTCTCAACAATCCCGG
SNP10039	3	Bvchr3_sca011	1496778	1218527	1218458	TGCAGAACAGTTTAGGCTCTTGAAAAATTAA[A/C]TAAATAAGTATATTTTATTGAATATAACCTTTTGACG

SNP10040	3	Bvchr3.sca003	5155790	1426080	1426011	TGCAGCTAAGCTTGAAAGCATTTTAAAGC[T/C]GAGTCCCGCAACAGATGCTCTAGACGCAGAGAACATAGAT
SNP10041	3	Bvchr3.sca006	3064983	1658707	1658638	TGCAGTGTCAAAAGGAAACAACAAAAGTG[A/C]TJTAGCAAATAACAAAAGTATTACCAATAAGTAATAAAATCTATA
SNP10042	3	Bvchr3.sca006	3064983	1658707	1658638	TGCAGTGTCAAAAGGAAACAACAAAAGTGACTA[G/A]JCAATAACAAAAGTATTACCATAGTAATAAAATCTATA
SNP10043	3	Bvchr3.sca005	4667655	1871625	1871694	TGCAGGTATATATCTTCTGTTTCTCTTG[T/A/G]JATTCTAGCTACTGACTAGTTAGACCCAAAATCATTTCTCT
SNP10044	3	Bvchr3.sca005	4667655	2246782	2246713	TGCAGCCATGGGTCCTTACTGGAG[T/C]JACCAATGTTTCCGATTACCTCGAGAAAATCATCAGGTTTTTTTCGC
SNP10045	3	Bvchr3.sca008	288670	247795	247864	TGCAGCAGATGCAGAACTTTTATGAGGAGAGTTAAGCAAAGTTC[A/G]JATAAACCAATGGGTGAATTCCTTCA
SNP10046	3	Bvchr3.sca012	758737	663841	663772	TGCAGTCAAGTCCAACCTT[J/A/T]GCTTTTACCTCCAACAACCTGTGCTGTCATTTACTTTTAGCTGTCACCTTT
SNP10047	3	Bvchr3.sca012	758737	663841	663772	TGCAGTCAAGTCCAACCTTAGCTTTTACCTCCAACAACCTGTGCTGTCATTTT[C/J]TACTTTTAGCTGTCACCTTT
SNP10048	3	Bvchr3.sca003	5155790	3373615	3373546	TGCAGTCAAAATGCTCTACCCTGAG[C/T]JATGGACCAATACTATTCTCAAGCCTAACAAAATCATAATTA
SNP10049	3	Bvchr3.sca003	5155790	3373615	3373546	TGCAGTCAAAATGCTCTACCCTGAGCTA[T/A]JGGACCAATACTATTCTCAAGCCTAACAAAATCATAATTA
SNP10050	3	Bvchr3.sca001	2492101	414220	414151	TGCAGAGGAGTACCATGAAAAGATG[T/C]JCACTAAAAAGCCTACAAAATGTCGGTGAAAAATGGTAGAAAT
SNP10051	3	Bvchr3.sca002	695843	60260	60329	TGCAGCAAGACAGCT[T/G]JTTTAGGCTTGAACTCCAGCATAGAAAACCATCTCCTGTTAAGTTAGATACAG
SNP10052	3	Bvchr3.sca003	5155790	2945683	2945614	TGCAGTGTAGTTTCACTTCT[C/G]JTTGGGACTGCTTAACCTTAAAAATGGAAGAGATCCCAGGAATATTCT
SNP10053	4	Bvchr4.sca001	4511834	153100	153169	TGCAGGCAAGGAGGCCAGGATTAATACCCAC[T/C]JCTCAATCGTAACCCAAAAGGAAAGTCACCAAAA
SNP10054	4	Bvchr4.sca014	203210	75032	75101	TGCAGATGAAGTAAATTC[A/G]JCTCAACAACACCTTCTCTCTGTTGCGGTGCGGAGGAGAGAGAAAAATGAG
SNP10055	4	Bvchr4.sca016	3823491	2578532	2578601	TGCAGCAGGAAGCATGTAGATACCACACATGTCTCTCCCTGCTCCCG[C/T]JATGTTATAAGCCAAACAATTGAA
SNP10056	4	Bvchr4.sca003	4348731	636199	636268	TGCAG[C/A]JGGTTCAATCCATGAGCTAACTAATGTCTGTATTTTCTACTCAAAATCATAGCTCTTGGTGCCA
SNP10057	4	Bvchr4.sca003	4348731	632339	632270	TGCAGGAAGAGCATCTGCTTCATGTTCAATTAAAAA[G/T]JCCCTAAAAATATGCTCATTAGTCATATTACAT
SNP10058	4	Bvchr4.sca003	4348731	608928	608997	TGCAGACATGATACTTTGTGACGTTGCTCCTATGGAGAAAAAAGTAT[G/A]JGTACTTGGAAAGACCTCGGCTG
SNP10059	4	Bvchr4.sca003	4348731	608928	608997	TGCAGACATGATACTTTGTGACGTTGCTCCTATGGAGAAAAAAGTAT[G/A]JGTACTTGGAAAGACCTCGGCTG
SNP10060	4	Bvchr4.sca001	4511834	2529016	2529085	TGCAGCTCCACGAGATAAAG[C/A]JATCAGAAACTTCAGGGCTTATTTTGATCAACCCACCTACATTACATTA
SNP10061	4	Bvchr4.sca001	4511834	3125677	3125608	TGCAGAGTGTCTGCTCAAGTGATCGAACT[C/T]JATGGATCTACTCAACCAACATCTGGTGTAGATAAAGGA
SNP10062	4	Bvchr4.sca001	4511834	4044473	4044404	TGCAGAGGATGAAATGCTCTTTGGAGGA[C/G]JATCTCGGCCTTAGAAGGTGTACTCGGGTGAAATACCCCTGTTA
SNP10063	4	Bvchr4.sca009	1212275	159194	159125	TGCAGTAT[T/C]JTAATCTCGAATAATTGAGGCGAGTAGGAAAGCGTGCAATACAGTTGTTGCTGAGCAAAATGA
SNP10064	4	Bvchr4.sca003	4348731	4280938	4281007	TGCAGTCTTG[T/A]JGCAGTCTGATTTCTGTTGGTGAGAGTAGTCGTTTAGCAAGGACTCGAAAATGATTTCTT
SNP10065	4	Bvchr4.sca003	4348731	4280938	4281007	TGCAGTCTTGTCAGCTGATTCGTGTTGGTGAGAAAGTAT[G/T]JGTTTAGCAAGGACTCGAAAATGATTTCTT
SNP10066	4	Bvchr4.sca003	4348731	1913762	1913693	TGCAGGACTAACTATAGCACTTATATA[A/T]JGCCCGCAGTACAGTACTATCAATCCGTCATCAGTGCAGTC
SNP10067	4	Bvchr4.sca012	1340152	332323	332254	TGCAGGTTTCTTTATCCTATCTATCCACTAATTG[T/C]JGTGGCTGCATCTCGCTTTATTGAAAAGTGTGCCTG
SNP10068	4	Bvchr4.sca001	4511834	3601424	3601355	TGCAGAACAAAAACGTGGAATTTTCATCAAAAATCAC[G/C]JCAACAGAAAGAAAAGTAAAAACCCGGTTCCTGTTTC
SNP10069	4	Bvchr4.sca001	4511834	3657205	3657136	TGCAGTTACCAGTGAGCATTCATCGATTAAAAAGAAAG[A/G]JACATATTCCACTGTCTCTCTTTAAAAAATATC
SNP10070	4	Bvchr4.sca001	4511834	3533740	3533809	TGCAGTGTGAAGTGGGAGAGAAAGGATGTCGTAGTTGGGTTTTTGAATAAA[G/C]JACGAGCTTTGAAATGGAATA
SNP10071	4	Bvchr4.sca002	904260	296958	296889	TGCAGTATTCAGAAATCTTAT[A/T]JCATTTATAGAACATGGTGTATGACACTAGATCCATTGTCGGGTATATTA
SNP10072	4	Bvchr4.sca004	2393821	1331410	1331341	TGCAGTTGGCAATTAGCTGTGCTCCGTAAGGC[G/C]JATGACGAGCTCTTGGTCTTGTGATTTTGTAGAGGTAATC
SNP10073	4	Bvchr4.sca003	4348731	163368	163437	TGCAGA[G/A]JCTTATAAGAAAAATCGACGGACITTTGGCCATTTGTTCTATACTTTATCAGTTGTGTAGCAGT

SNP10074	4	Bvchr4.sca017	507444	193127	193058	TGCAGTCCCAATCTCAGCAGGAAGTTCCTCC[C/A/T]TGAGATTCTGATTCCTCCACCTGCTCGAAAAGACTTGCAG
SNP10075	4	Bvchr4.sca012	1340152	48165	48234	TGCAGCAATAA[T/C]CAAGTGCACCTTTATGGAATAAGGCTTAAATTTGCTTTTGATGTGCATGACTGCATGTCTCAT
SNP10076	5	Bvchr5.sca002	8059845	2353438	2353369	TGCAGCAGTAGTTTTCAAGTGTACATTAGTCATTAGGTGCAAGACTTCTTA[A/C]TTACTTAGTCTTAAAAA
SNP10077	5	Bvchr5.sca002	8059845	2194759	2194690	TGCAGCCATCGCCAAAGCTCATGGACTTGGCCCTGAGACAGCAATATTA[T/C]TGACCCCTTGATACAGATGGA
SNP10078	5	Bvchr5.sca002	8059845	1319330	1319399	TGCAGAGCTAA[T/A/C]AGTTCGTACTATACGATAAGTTTAGAACCATATGTTGAGGTAAAGTCAAGCTAAGTA
SNP10079	5	Bvchr5.sca002	8059845	1100102	1100033	TGCAGAAACATATATATCA[C/T]TAGCTTACCAAAATTAATATGAGATGCAAAATGATCCAATGTACTTCACTAC
SNP10080	5	Bvchr5.sca002	8059845	1990086	1990017	TGCAGCGAGAAAGGGAAGGAGAGGGAGGGA[G/A]GAAGATAACAAGGCTCAAGATCACTGCACATAG
SNP10081	5	Bvchr5.sca008	8585805	1717489	1717420	TGCAGATTGACACGAAGATGGATGAACATCC[C/A]ATAGAAATGGTGTAAACATGGGGAAGATGACAATAG
SNP10082	5	Bvchr5.sca024	2772037	390934	390865	TGCAGCAAGAAAAATTAATAAAGTATG[T/C]AAGAACCAAAATAAGCCAAAGACTTGAAGATAATTTCTAAGC
SNP10083	5	Bvchr5.sca023	4458907	1871424	1871493	TGCAGTTTAATATTTCTCTCTCTAGAGAGAGAAATCG[T/G]ACAGCAATCGGCGTTCCTCGGCGCTTTA
SNP10084	5	Bvchr5.sca009	2312028	165298	165229	TGCAGCCTTAAACTCTAA[A/G]TTTTCTGACAAAAAATTGCAGGCAGTTTCCGAGAGCACCGTACACAATC
SNP10085	5	Bvchr5.sca009	2312028	165298	165229	TGCAGCCT[T/G]AAACTCTAAATTTCTGACAAAAAATTGCAGGCAGTTTCCGAGAGCACCGTACACAATC
SNP10086	5	Bvchr5.sca009	2312028	99364	99433	TGCAGTGTCAAGAAATCAATATCTGATATAAATGCAAT[A/G]CTCCAACTGCAAGAAATTAGATCATAGGAAAGT
SNP10087	5	Bvchr5.sca016	3956849	155532	155463	TGCAGTCCTAATTTCTTACAATAATCAATAAACGGTCCGTTTCACATATAGT[G/A]GCAAACTGGCAATGGTAA
SNP10088	5	Bvchr5.sca016	3956849	711750	711819	TGCAGCCAACCAAACTGTCAGCTA[G/C]AAGACTTGTCTCCAAAAACATTAAAGGGGAATAGACCAAGTCTTGCT
SNP10089	5	Bvchr5.sca008	8585805	8130712	8130781	TGCAGCAAGAAGAAAGCTTATGATATCACTGTAATAAGATCCATACAA[C/T]CGATTCAAAAATCAGTCAT
SNP10090	5	Bvchr5.sca016	3956849	2918000	2917931	TGCAGCTTTCCTGCCATGGTATCAGAAAGGTGCCTCTCTCTAG[C/T]CTGATCCAGAAATAATCTCAG
SNP10091	5	Bvchr5.sca025	1616290	1396463	1396394	TGCAGTGTAAAGCATAGATCTAGGTCCGAATGGCT[C/G]AAAAGTTGCAGTCGTAACCTAAACCAAGGGCAA
SNP10092	5	Bvchr5.sca006	589409	305717	305786	TGCAGTACGCTTTTACAGCAAAAACCTAATAATACATA[G/A]JAGACAGTTGTAAAGATAAGCAACTAGAC
SNP10093	5	Bvchr5_un.sca001	518862	219616	219547	TGCAGACCC[T/A]CTCAC'AAAGAGGATCTTGTCAAATATCTTGCATCTGGATGTAAACCTAAACAGAAATGG
SNP10094	5	Bvchr5_un.sca001	518862	219616	219547	TGCAGACCCCTCT[C/A]ACTAAAGAGGATCTTGTCAAATATCTTGCATCTGGATGTAAACCTAAACAGAAATGG
SNP10095	5	Bvchr5.sca023	4458907	4196236	4196305	TGCAGTCATTGCACATTG[A/C]ACTAGTGGATAGCATATGGTGTTCGGGTCTCCAGGCTCCACCTGCC
SNP10096	5	Bvchr5.sca009	2312028	2152805	2152874	TGCAGA[T/A]AAA'TGTTACCAAAACATCAATCTCAAA'AAAGCAGGTAACA'TGAAGATGAAA'TGCTATACATA
SNP10097	5	Bvchr5_un.sca005	792762	483858	483789	TGCAGCAACTCCCTTAGCTCCATGAAGCGATCTCTCT[G/T]CACTATAAGTGCACAAA'TTGTCAATATCCTT
SNP10098	5	Bvchr5_un.sca005	792762	483858	483789	TGCAGCAACTCCCTTAGCTCCATGAAGCGATCTCTCT[G/T]CACTATAAGTGCACAAA'TTGTCAATATCCTT
SNP10099	5	Bvchr5.sca001	941119	20742	20811	TGCAGGAAAATTCGTTATAAAGATGTGA[A/G]TGATGTACTACTAAAGACCAATAAACAGAACTTATATCA
SNP10100	5	Bvchr5.sca001	941119	20742	20811	TGCAGGAAAATTCGTTATAAAGATGTGA[A/G]CACTACTAAGACCAATAAACAGAACTTATATCA
SNP10101	6	Bvchr6.sca003	3572457	888027	888096	TGCAGATG[T/C]CATTCAGGCAATGTTTGGTTGGCTCTATCATCACCGGACGTATCTGACTTATTTCAAAAT
SNP10102	6	Bvchr6.sca005	6744614	1373587	1373518	TGCAGGCTTAAACCAATGCTTATATAGCGTGGATTGCTT[C/G]CTAGCAATAGCATTTGGTTGATAAACACTG
SNP10103	6	Bvchr6.sca028	4666452	2273607	2273538	TGCAGGATAGAGTCTAAGAGTTTCGGTAACAACAGCATGCAAAATAATACAA[C/T]TAGCCAAAGGAGTCATAC
SNP10104	6	Bvchr6.sca028	4666452	3422327	3422396	TGCAGACAACCAAAAGACATTAGCAAT[T/A]TCAATTATAATTTGTTTAACTGGTTTGGAAACTAGTAACCTA
SNP10105	6	Bvchr6.sca028	4666452	3080440	3080371	TGCAGAGAAAGTCCCCAAACTGCAAT[T/C]AAGCAGTAATGAACCTTTAGCAATTCACACTGATATCGGTAA
SNP10106	6	Bvchr6.sca028	4666452	3552491	3552422	TGCAGTCATATGCATTACGACAGGAGTCAATTTGCATACT[C/G]ATATCTACATGATCTTTGAAATTTTGAGGC
SNP10107	6	Bvchr6.sca028	4666452	3920325	3920394	TGCAGTTTTATGAGAGAC[T/A]CTAGTTGCGAGTGTAAATTTTGTGTTGTCATATAGTGGGATACGCA

SNP10108	6	Bvchr6.sca027	4698207	2873185	2873254	TGCAGTAATATAGGTTGGAGATAATTGTGTGCATCAAAATTGGAAAGCTTTT[C/J]GGATGCTACTTATCTTGAATG
SNP10109	6	Bvchr6.sca027	4698207	3013968	3014037	TGCAGCACATAC[A/C]TCAGAAATCAAGAAAGCAACTTGAGGCAGCTGATGCTAAACTTATTGTAAACAAATGCT
SNP10110	6	Bvchr6.sca027	4698207	4006431	4006500	TGCAGGAATGGGAAGAACTTTAAAGT[C/J]TCACTGATGGGGTCGGAATATTGGATCAGTTGGCATCTCTTCTTCT
SNP10111	6	Bvchr6.sca027	4698207	4006431	4006500	TGCAGGAATGGGAAGAACTTTAAAGTTCACTGATGGGGTCGGA[A/C]ATTGGATCAAGTTGGCATCTCTTCTTCT
SNP10112	6	Bvchr6.sca027	4698207	4614337	4614268	TGCAGTTCTCCAGAAATTAACACAGACACTA[C/J]ACAGGATGTGCAACATGTACATGTGATAGACAGAACAT
SNP10113	6	Bvchr6.sca005	6744614	4007419	4007488	TGCAGATTTAGCTTACTTTTGTAGTTTCACTGA[T/C]TAAITCAATTGAATAATAGATATGATAAACCAATTC
SNP10114	6	Bvchr6.sca028	4666452	737570	737501	TGCAGGTAACAAAGAAATTAGAATCATCAGAACATCT[C/J]TAGAAAAGGGCTGTTTTTGTAGCTTATTGAA
SNP10115	6	Bvchr6.sca028	4666452	1932341	1932272	TGCAGCATTCACAAAATTGCTTAGA[T/C]GAAGCAGATTCCCCACATAGCTTTGAGTCTTTGCTCCGGTGTGT
SNP10116	6	Bvchr6.sca028	4666452	809576	809507	TGCAGCATATGATGTCTCATAAACTTTGAACAGAG[G/A]TGGAGAAAAGGCAACGAAATGGAAGAGTTCGGA
SNP10117	6	Bvchr6.sca028	4666452	787287	787218	TGCAGCCATTGTCGTTGATCCCGCAAAAGTGAGCGAC'TGTTCA[T/G]CAGTACTGTATTATCGTCTTGACAATAA
SNP10118	6	Bvchr6.sca028	4666452	787287	787218	TGCAGCCATTGTCGTTGATCCCGCAAAAGTGAGCGAC'TGTTCA[T/G]CAGTACTGTATTATCGTCTTGACAATAA
SNP10119	6	Bvchr6.sca007	2533756	1806687	1806756	TGCAGA[C/G]JAGGTA TCAAGGTTTAAATTACACAT TGAAACTCAAGCTACAGGAGCAACAGCCTAACTCCAAAC
SNP10120	6	Bvchr6.sca007	2533756	1780461	1780530	TGCAGCGAAGATACTCTAACCTCTCTTCTCAGCATC[C/J]TCCAGCTTTTTTATTCTTCTTCCCAATATGCA
SNP10121	6	Bvchr6.sca007	2533756	1780461	1780530	TGCAGG[C/T]JGAAGATACTCTAACCTCTCTTCTCAGCATCTCCAGCTTTTTTATTCTTCTTCCCAATAATGCA
SNP10122	6	Bvchr6.sca019	1143689	851969	852038	TGCAGCAACCTTTGTTTTTAAATAATATGATTTATTTTAGTTAATGC[G/T]JACGTGATGAATGATGATGA
SNP10123	6	Bvchr6.sca005	6744614	6230962	6230893	TGCAGGAAGCATTTGTAGATGTTTAGTACTCTCGTGCAAGGG[T/C]ATCATTTTATATCCAGAGAGGCAGA
SNP10124	6	Bvchr6.sca004	4642748	4347030	4347099	TGCAGGTAAT[T/G/T]CTTGATTTCTTGATGTTTTTATGGAAATTTGCATGATGGTGTGAGATTCCTGTTCAAA
SNP10125	6	Bvchr6.sca003	3572457	888027	888096	TGCAGATGTCATTCAGGCATGTTTGGTTGGCTCCTATCATCACCCG[G/A]JCGTATCTGACTTATTTCAAATT
SNP10126	6	Bvchr6.sca014	2099773	1095775	1095706	TGCAGTTTGTCTAGCACCCAGAAATTTCTCTCATTTGGTGTAA[C/T]JACTGAAACATAAAGAAATCAAATTCAAT
SNP10127	6	Bvchr6.sca003	3572457	2358412	2358481	TGCAGCTGTATAAGACCAATTGAAAACATGATTA[T/G/C]TTGGGCAAGGGCTGTAAACAAAGAGGTATGGTAA
SNP10128	6	Bvchr6.sca003	3572457	2358412	2358481	TGCAGCTGTATAAGACCAATTGAAAACATGATTAATGCTTGGGCAAGGGCT[G/A]TAAACAAAGAGGTATGGTAA
SNP10129	6	Bvchr6.sca003	3572457	1747899	1747968	TGCAGAT[C/T]CATTTCATATTTAATAGCGAATTACAAACCAGTTCAATGAACACCAACAAGATGAACAAAG
SNP10130	6	Bvchr6.sca003	3572457	1897581	1897512	TGCAGCAGAAAAATGTGACCACTTTGTAGAAAAGTGGACTTTTGAGTGAC[A/T]TTGGCA TTAATGCGGGAGATGTT
SNP10131	6	Bvchr6.sca003	3572457	2931482	2931551	TGCAGATAAAATACATGGAAGG[G/A]CTCTCTACTTTTCTCTTACTCTGTCTCAAAAGTAGCGTTGGTGACTTA
SNP10132	6	Bvchr6.sca027	4698207	4006431	4006500	TGCAGGAATGGGAAGAACTTTAAAG[T/C]TCACTGATGGGGTCGGAATTTGGATCAAGTTGGCATCTCTTCTTCT
SNP10133	6	Bvchr6_un.sca001	216451	44223	44154	TGCAGTTTAGTTGTGTACTGTGTGACAAAAAC[C/A]TAGCATGTGAATACTGTTCAGGATTTGGGTAC
SNP10134	6	Bvchr6.sca005	6744614	5360450	5360519	TGCAGGCGAAACCAGATA TTTAAAGTTAAAGGGGTCCGATT[G/A]TTTTAATATACATTTGTTCTGTATGAGGG
SNP10135	6	Bvchr6.sca028	4666452	4401974	4401905	TGCAGGACCCGGTCAATATCTGGCAACTTCGGAATCTG[C/A]AATCAGTAAAGATCATCTTGTGAAGGAAGTTT
SNP10136	6	Bvchr6_un.sca002	1528052	42437	42506	TGCAGGTAATG[C/A]ACCTATCAAAAATCCCTCTCTGTGTAGATGTCAACTAGTTTAAATTGGTTAAAAATCCTTGT
SNP10137	6	Bvchr6.sca019	1143689	851969	852038	TGCAGCAACCTTTGTTTTTAAATAATATTGATTTATTTTAGTTAATGC[G/T]JACGTGATGAATGATGATGA
SNP10138	6	Bvchr6.sca002	3368151	3301234	3301165	TGCAGT[G/A]TTTTTCTTTTCTTATTGTGATGCTTCTGCAAGTGTGTGTGATGTAAGCCCTTTTAAATATTTT
SNP10139	6	Bvchr6.sca002	3368151	3300390	3300321	TGCAGTACTCCACCACAGTACGGAGTATTTCTTTT[G/J]GGCCTCTATCTGATTGCAATTTGGGACTGGAGGG
SNP10140	6	Bvchr6_un.sca001	216451	43956	43887	TGCAGTTGTCTT[T/C]JCTTGATTTTGGGATAACTAATGTCTAAITTGATAGTCTGTGTGCAATGGTGAATTCCT
SNP10141	6	Bvchr6.sca003	3572457	2531717	2531786	TGCAGCGGTTTTTGCACTTCTGCTGGT[G/C/T]JAGGGAAATCTGAAAAATATTCAAATTACTACTTCTGCTAGTAGAGA

SNP10142	7	Bvchr7.sca021	10434285	6947035	6947104	TGCAGTCTCTCTGTCACACAT/T/CJGGAGCAGGCGAGTATGCACCCATTCACCTGTGTGGCCCGGTATCAC
SNP10143	7	Bvchr7.sca021	10434285	6947035	6947104	TGCAGTCTCTCTGTCACACAT/T/CJGGAGCAGGCGAGTATGCACCCATTCACCTGTGTGGCCCGGTATCAC
SNP10144	7	Bvchr7.sca021	10434285	9196410	9196479	TGCAGAATAGAAATGATTTGCAGGTGAGAGAGAAATGATTTTGC[G/A]TTCGTTAGGAAGGTGATCAAGGATTAAG
SNP10145	7	Bvchr7.sca021	10434285	9196410	9196479	TGCAGAATAGAAATGATTTGCAGGTGAGAGAGAAATGATTTTGC[G/A]TTCGTTAGGAAGGTGATCAAGGATTAAG
SNP10146	8	Bvchr8.sca015	1738814	1653994	1653925	TGCAGGCTCACACATTAATCTTATACACA[A/T]AAGTTGATTTACCTTAAGCGAAATTAACACGGAGCGAAAGA
SNP10147	8	Bvchr8.sca018	7393058	1177486	1177555	TGCAGATACAAAACCCACAAGAAAGAGAGATAGAACTTAGAAATTC[G/T]GTCAAATCCATTGAGCAAAAGGA
SNP10148	8	Bvchr8.sca018	7393058	2203921	2203990	TGCAGAAAGAAATTAATCCATCGATTAACTTTAATC[T/C]TCAAGAGAAATATATTTCTCTAGTTACAGAGTTAGG
SNP10149	8	Bvchr8.sca018	7393058	2523270	2523339	TGCAGGAGGGAGTATGTGTCTTATTCAA[A/T]CTAATGGGCACCTTTTGTCTGTAATATTCGCAAAACTAA
SNP10150	8	Bvchr8.sca018	7393058	1050388	1050457	TGCAGATTGTTGA[C/T]GCAAGAGAGACTCTGCTAAAGATGCTTCAAGCCAAAGAGAGTGAAGGAAATGTAAT
SNP10151	8	Bvchr8.sca001	2863587	1683833	1683764	TGCAGTCTAGTCGGCGGACAGAAATATTAGTTGATCTACTTCATAATC[G/T]TCTCTACATCGCCAAAGA
SNP10152	8	Bvchr8.sca001	2863587	268227	268158	TGCAGAAATTCACCTTGCTTCA[T/G]ATTCAAGCTTGCTTTGAAAACATTAATTGGAAAGCATGAATAGAAAACAA
SNP10153	8	Bvchr8.sca001	2863587	579957	579888	TGCAGA[G/T]TTCAGTTGCTATCAATTAATACACATGTCTAAGTTTGTAGGAACTAGGAAGGACATGAATCAT
SNP10154	8	Bvchr8.sca001	2863587	1110145	1110214	TGCAGAAATACACATGCCAAAAGTATTTCCAAGTATCCTTTCT[T/G]GAATCTCGATACAAAGCAATAAGATACCA
SNP10155	8	Bvchr8.sca001	2863587	480703	480634	TGCAGAAAGGCTGGAGAAGAAGTCTC[G/T]CAGGAGTGAGCTTGTGTGACCCCTCTCTTGTAACTGGGATACCAT
SNP10156	8	Bvchr8.sca001	2863587	480703	480634	TGCAGAAAGGCTGGAGAAGAAGTCTGCCAGGAGTGAGCTTGTGACC[C/G]TCTCTTGTAACTGGGATACCAT
SNP10157	8	Bvchr8.sca001	2863587	463015	463084	TGCAGCA[C/T]JGGAAGCAAAAGTAGTAAATTAAGATCTCAAACCTTCACCAAAACAGCCACAAAAGAAAAAGA
SNP10158	8	Bvchr8.sca001	2863587	1570480	1570549	TGCAGTTAAC[A/G]JAATTTGCTTCGAAAACCAGAAAGATGGAGGAAAATGATGAATGTTTGAGTTTATGAGAA
SNP10159	8	Bvchr8.sca001	2863587	1570480	1570549	TGCAGTTAACAAAATTTGCTCTCG[A/T]JAAACCAGAAAGATGGAGGAAAATGATGAATGTTTGAGTTTATGAGAA
SNP10160	8	Bvchr8.sca001	2863587	1722637	1722568	TGCAGTACTTTTGAAGAAATACAAAAATAAACTAAAAAG[A/G]CATGGTTGGGAAAAAGAAAAATGGAGTATATCAT
SNP10161	8	Bvchr8.sca001	2863587	330301	330232	TGCAGCTGTTCTGAAAAGCAACAAG[C/T]JGAGAAGTATGAAGCCACTATTGAAGCAATTCAAAACGAGAGATTGA
SNP10162	8	Bvchr8.sca013	3613092	970950	971019	TGCAGCCAGAAAAAGGGGGCGCACAGAAAAAAGCTCGCGAT[G/A]JTGTCGCTATATATAAAGTCTGCTATAAA
SNP10163	8	Bvchr8.sca013	3613092	2599581	2599650	TGCAGTCTGCAATATTGTAGATTGCCTTTTGTCTGCTTGTGAGTAAATGTT[A/G]JAATTTTCAAAAATAATAA
SNP10164	8	Bvchr8.sca014	2707378	2009379	2009448	TGCAGTC[T/G]TTGCAACAAAGAAAAATGAACCTTTTATTTTCTCATGTGAGTACTCTGGTCCACATGGGTTT
SNP10165	8	Bvchr8.sca014	2707378	2222882	2222951	TGCAGCCAG[T/C]JGTAGAGGTAGGGAAGAAATAGATTATCTAATAGAACCATGGGTATGAGTGAGAAATGCA
SNP10166	8	Bvchr8.sca014	2707378	2222882	2222951	TGCAGCCAGTTGTAGAGGTAGGGAAGAA[A/C]TAGATTATCTAAATAGAACCATGGGTATGAGTGAGAAATGCA
SNP10167	8	Bvchr8_un.sca003	1923525	587455	587386	TGCAGCTTATATTTTCAA[C/G]GCTTTTATGGTTATACAGATGTTTACTGTTATTTTGTAGTATATCAGATA
SNP10168	8	Bvchr8.sca002	2981320	1056038	1056107	TGCAGTACCTGCAAGAAACTTTGAAAATATAAGCTACAG[C/A]TAACGCCTAATACAAAGCCAAAAAAGTGAAAAG
SNP10169	8	Bvchr8.sca002	2981320	1056038	1056107	TGCAGTACCTGCAAGAAACTTTGAAAATATAAGCTACAGCTAACGCCTAAT[A/T]JCAAGCCAAAAAAGTGAAAAG
SNP10170	8	Bvchr8.sca002	2981320	355291	355360	TGCAGTGCCCATAGTACATAAAATACAAATTCAAAACGAA[T/A]GTCCCTCTAGCAATAAAAAATTTGAAAAGACTA
SNP10171	8	Bvchr8.sca002	2981320	355291	355360	TGCAGTGCCCATAGTACATAAAATACAAATTCAAAACGAAATGC[C/A]CTCTAGCAATAAAAAATTTGAAAAGACTA
SNP10172	8	Bvchr8.sca002	2981320	356480	356411	TGCAGAGATTGATCAGTATGGTTCTCTCATTAAGAAAGGCTGAATC[A/T]JGCAATTTGGATCTTTTGGTTGAAAAGT
SNP10173	8	Bvchr8.sca002	2981320	903239	903170	TGCAGCATAAGCACTATGACAAATACAGTAGTAAATATATGTGTAAATTAAGT[A/G]JAATTAGACATACTAAGGG
SNP10174	8	Bvchr8.sca002	2981320	762133	762202	TGCAGATAACTGAATAT[T/A]AGTGAATCCCACTTACAAAGATGATCGTCCTCACATCATAGGCCTAAAACC
SNP10175	8	Bvchr8.sca002	2981320	762133	762202	TGCAGATAACTGAATATTAGTGAATCCCACCTT[C/A]CAAGATGATCGTCCTCACATCATAGGCCTAAAACC

