

**Supplementary Table 1: Polymorphisms in odorant receptor loci.**

Locus	Location	Polymorphism <sup>1</sup>	Amino acid change	Frequency <sup>2</sup>
<i>Or22a</i>	Upstream Genomic	T-240A		0.342
<i>Or22a</i>	Upstream Genomic	T-154A		0.368
<i>Or22a</i>	Upstream Genomic	A-140G		0.368
<i>Or22a</i>	Upstream Genomic	T-111A		0.368
<i>Or22a</i>	Upstream Genomic	C-4T		0.105
<i>Or22a</i>	Exon 1	C22T		0.105
<i>Or22a</i>	Exon 1	A27T	H8Y	0.342
<i>Or22a</i>	Exon 1	C60G		0.342
<i>Or22a</i>	Exon 1	C61A		0.342
<i>Or22a</i>	Exon 1	G87C		0.289
<i>Or22a</i>	Exon 1	G88T	V30L	0.289
<i>Or22a</i>	Exon 1	A113T	E38V	0.053
<i>Or22a</i>	Intron 1	A140G		0.053
<i>Or22a</i>	Intron 1	G143C		0.053
<i>Or22a</i>	Intron 1	169 Del 2090 bp		0.395
<i>Or22a</i>	Exon 2	G212T	W51L	0.053
<i>Or22a</i>	Exon 2	G237A	M59I	0.053
<i>Or22a</i>	Exon 2	A261G	I67M	0.105
<i>Or22a</i>	Exon 2	A337G	M93V	0.079
<i>Or22a</i>	Exon 2	A358T	S100C	0.237
<i>Or22a</i>	Exon 2	C647A	A196E	0.211
<i>Or22a</i>	Exon 2	T663G	D201E	0.132
<i>Or22a</i>	Intron 2	C929G		0.105
<i>Or22a</i>	Exon 4	A1398G	T382A	0.105
<i>Or22a</i>	Exon 4 UTR	T1486A		0.053
<i>Or22a</i>	Downstream Genomic	C1614T		0.053
<i>Or22b</i>	Exon 1	G73A	I25L	0.105
<i>Or22b</i>	Exon 1	A81G		0.105
<i>Or22b</i>	Intron 1	A181G		0.316
<i>Or22b</i>	Intron 1	G183A		0.316
<i>Or22b</i>	Intron 1	A184C		0.316
<i>Or22b</i>	Intron 1	T185C		0.316
<i>Or22b</i>	Exon 2	T240C		0.053
<i>Or22b</i>	Exon 2	G282A		0.316

<i>Or22b</i>	Exon 2	A334G	N92D	0.316
<i>Or22b</i>	Exon 2	C591T		0.132
<i>Or22b</i>	Exon 2	T639C		0.316
<i>Or22b</i>	Exon 2	G641T	R194M	0.447
<i>Or22b</i>	Exon 2	C654A		0.132
<i>Or22b</i>	Exon 2	A662C	D201A	0.316
<i>Or22b</i>	Exon 2	G697T	V213L	0.263
<i>Or22b</i>	Exon 2	T723C		0.447
<i>Or22b</i>	Exon 2	A765G		0.447
<i>Or22b</i>	Intron 2	T834A		0.053
<i>Or22b</i>	Intron 2	G835T		0.053
<i>Or22b</i>	Intron 2	837 Ins 10bp		0.132
<i>Or22b</i>	Intron 2	G843C		0.132
<i>Or22b</i>	Intron 2	T860A		0.105
<i>Or22b</i>	Intron 2	907 Del 9bp		0.105
<i>Or22b</i>	Intron 2	935 Del 1bp		0.105
<i>Or22b</i>	Intron 2	C955A		0.053
<i>Or22b</i>	Intron 2	T960C		0.053
<i>Or22b</i>	Exon 3	C1022T		0.421
<i>Or22b</i>	Exon 3	G1046C		0.421
<i>Or22b</i>	Exon 3	T1103C		0.079
<i>Or22b</i>	Exon 3	C1154T		0.421
<i>Or22b</i>	Exon 3	C1260A	L354I	0.421
<i>Or22b</i>	Exon 3	C1295T		0.447
<i>Or22b</i>	Exon 4 UTR	A1480T		0.395
<i>Or22b</i>	Exon 4 UTR	C1509T		0.395
<i>Or22b</i>	Exon 4 UTR	A1515C		0.342
<i>Or22b</i>	Exon 4 UTR	1541 Ins 16bp		0.105
<i>Or22b</i>	Downstream genomic	G1559T		0.053
<i>Or22b</i>	Downstream genomic	T1561C		0.053
<i>Or22b</i>	Downstream genomic	A1577G		0.053
<i>Or22b</i>	Downstream genomic	T1638G		0.105
<i>Or22b</i>	Downstream genomic	C1742T		0.079
<i>Or22b</i>	Downstream genomic	G1953A		0.079
<i>Or35a</i>	Upstream genomic	G-455A		0.211
<i>Or35a</i>	Upstream genomic	A-387T		0.395
<i>Or35a</i>	Upstream genomic	A-333T		0.368
<i>Or35a</i>	Upstream genomic	C-279G		0.395

<i>Or35a</i>	Upstream genomic	-276 Del 12bp		0.395
<i>Or35a</i>	Upstream genomic	T-45C		0.211
<i>Or35a</i>	Exon 1	A113T	K38I	0.105
<i>Or35a</i>	Exon 1	G129A		0.132
<i>Or35a</i>	Exon 1	C139G	L47V	0.105
<i>Or35a</i>	Exon 1	C201T		0.132
<i>Or35a</i>	Exon 1	C372G		0.184
<i>Or35a</i>	Exon 1	G422C		0.132
<i>Or35a</i>	Exon 1	C534T		0.105
<i>Or35a</i>	Exon 1	G612T		0.132
<i>Or35a</i>	Exon 1	T619C		0.132
<i>Or35a</i>	Exon 1	A630T		0.132
<i>Or35a</i>	Exon 1	G660A		0.132
<i>Or35a</i>	Exon 1	C749T	T250I	0.105
<i>Or35a</i>	Intron 1	G900A		0.132
<i>Or35a</i>	Intron 1	A908T		0.132
<i>Or35a</i>	Intron 1	A920T		0.132
<i>Or35a</i>	Intron 1	A930T		0.132
<i>Or35a</i>	Intron 1	A937C		0.132
<i>Or35a</i>	Intron 1	C942T		0.132
<i>Or35a</i>	Intron 1	A968C		0.132
<i>Or35a</i>	Exon 2	T993C		0.158
<i>Or35a</i>	Exon 2	G1026A		0.132
<i>Or35a</i>	Intron 2	G1101T		0.132
<i>Or35a</i>	Intron 2	T1102C		0.132
<i>Or35a</i>	Intron 2	A1105C		0.132
<i>Or35a</i>	Intron 2	T1106A		0.132
<i>Or35a</i>	Intron 2	1116 Ins 3 bp		0.105
<i>Or35a</i>	Intron 2	1116 Ins 2 bp		0.132
<i>Or35a</i>	Intron 2	T1118A		0.132
<i>Or35a</i>	Intron 2	T1123C		0.132
<i>Or35a</i>	Intron 2	A1127G		0.132
<i>Or35a</i>	Exon 3	A1195G	N348S	0.053
<i>Or35a</i>	Intron 3	C1345T		0.053
<i>Or35a</i>	Downstream genomic	1449 Del 1bp		0.263
<i>Or35a</i>	Downstream genomic	1456 Del 1bp		0.053
<i>Or35a</i>	Downstream genomic	G1591C		0.289
<i>Or35a</i>	Downstream genomic	1620 Ins 2bp		0.053
<i>Or35a</i>	Downstream genomic	1624 Ins 2bp		0.289

<i>Or35a</i>	Downstream genomic	A1787G		0.053
<i>Or35a</i>	Downstream genomic	G1872A		0.263
<i>Or35a</i>	Downstream genomic	G1934A		0.053
<i>Or35a</i>	Downstream genomic	A1993T		0.079
<i>Or35a</i>	Downstream genomic	1993 Ins 1bp		0.079
<i>Or35a</i>	Downstream genomic	2035 Del 1bp		0.053
<i>Or35a</i>	Downstream genomic	C2048T		0.184
<i>Or47a</i>	Upstream genomic	T-497C		0.158
<i>Or47a</i>	Upstream genomic	T-485A		0.105
<i>Or47a</i>	Upstream genomic	G-469A		0.105
<i>Or47a</i>	Upstream genomic	G-438T		0.421
<i>Or47a</i>	Upstream genomic	A-425G		0.395
<i>Or47a</i>	Upstream genomic	A-399C		0.289
<i>Or47a</i>	Upstream genomic	A-377G		0.211
<i>Or47a</i>	Upstream genomic	G-362A		0.105
<i>Or47a</i>	Upstream genomic	-360 Del 15bp		0.184
<i>Or47a</i>	Upstream genomic	C-338G		0.342
<i>Or47a</i>	Upstream genomic	C-330G		0.342
<i>Or47a</i>	Upstream genomic	C-329T		0.342
<i>Or47a</i>	Upstream genomic	C-328A		0.342
<i>Or47a</i>	Upstream genomic	T-327C		0.342
<i>Or47a</i>	Upstream genomic	-325 Ins 2bp		0.211
<i>Or47a</i>	Upstream genomic	-325 Ins 2bp		0.132
<i>Or47a</i>	Upstream genomic	C-323A		0.342
<i>Or47a</i>	Upstream genomic	C-320A		0.237
<i>Or47a</i>	Upstream genomic	C-320G		0.105
<i>Or47a</i>	Upstream genomic	G-319C		0.342
<i>Or47a</i>	Upstream genomic	T-317A		0.342
<i>Or47a</i>	Upstream genomic	T-314C		0.342
<i>Or47a</i>	Upstream genomic	-314 Ins 1bp		0.342
<i>Or47a</i>	Upstream genomic	G-308T		0.342
<i>Or47a</i>	Upstream genomic	-307 Ins 2bp		0.342
<i>Or47a</i>	Upstream genomic	G-303T		0.342
<i>Or47a</i>	Upstream genomic	A-302C		0.342
<i>Or47a</i>	Upstream genomic	C-300A		0.132
<i>Or47a</i>	Upstream genomic	C-299T		0.342
<i>Or47a</i>	Upstream genomic	C-299A		0.105
<i>Or47a</i>	Upstream genomic	-298 Ins 2bp		0.342

<i>Or47a</i>	Upstream genomic	A-294T		0.342
<i>Or47a</i>	Upstream genomic	T-293C		0.342
<i>Or47a</i>	Upstream genomic	G-292C		0.342
<i>Or47a</i>	Upstream genomic	G-288C		0.342
<i>Or47a</i>	Upstream genomic	T-287A		0.342
<i>Or47a</i>	Upstream genomic	G-286C		0.342
<i>Or47a</i>	Upstream genomic	-286 Ins 11bp		0.237
<i>Or47a</i>	Upstream genomic	-286 Del 21bp		0.105
<i>Or47a</i>	Upstream genomic	T-276A		0.342
<i>Or47a</i>	Upstream genomic	A-265C		0.237
<i>Or47a</i>	Upstream genomic	G-261C		0.342
<i>Or47a</i>	Upstream genomic	G-253A		0.342
<i>Or47a</i>	Upstream genomic	-251 Ins 1bp		0.342
<i>Or47a</i>	Upstream genomic	-249 Ins 10 bp		0.237
<i>Or47a</i>	Upstream genomic	-249 Ins 4 bp		0.105
<i>Or47a</i>	Upstream genomic	A-248T		0.342
<i>Or47a</i>	Upstream genomic	A-246T		0.342
<i>Or47a</i>	Upstream genomic	T-245A		0.105
<i>Or47a</i>	Upstream genomic	A-244T		0.342
<i>Or47a</i>	Upstream genomic	G-242T		0.342
<i>Or47a</i>	Upstream genomic	G-239T		0.342
<i>Or47a</i>	Upstream genomic	T-237G		0.342
<i>Or47a</i>	Upstream genomic	-237 Del 104 bp		0.105
<i>Or47a</i>	Upstream genomic	T-235A		0.342
<i>Or47a</i>	Upstream genomic	- 235 Ins 9 bp		0.342
<i>Or47a</i>	Upstream genomic	T-233C		0.105
<i>Or47a</i>	Upstream genomic	-231 Ins 9 bp		0.342
<i>Or47a</i>	Upstream genomic	A-227T		0.342
<i>Or47a</i>	Upstream genomic	C-220A		0.237
<i>Or47a</i>	Upstream genomic	T-218C		0.105
<i>Or47a</i>	Upstream genomic	T-212A		0.263
<i>Or47a</i>	Upstream genomic	C-210A		0.368
<i>Or47a</i>	Upstream genomic	G-195A		0.105
<i>Or47a</i>	Upstream genomic	A-190C		0.237
<i>Or47a</i>	Upstream genomic	A-190T		0.105
<i>Or47a</i>	Upstream genomic	A-188G		0.237
<i>Or47a</i>	Upstream genomic	A-188C		0.105
<i>Or47a</i>	Upstream genomic	-183 Del 2 bp		0.342
<i>Or47a</i>	Upstream genomic	A-181T		0.105

<i>Or47a</i>	Upstream genomic	T-180G		0.342
<i>Or47a</i>	Upstream genomic	A-178C		0.342
<i>Or47a</i>	Upstream genomic	T-176A		0.342
<i>Or47a</i>	Upstream genomic	C-175T		0.342
<i>Or47a</i>	Upstream genomic	T-173A		0.368
<i>Or47a</i>	Upstream genomic	T-169A		0.368
<i>Or47a</i>	Upstream genomic	-162 Ins 1bp		0.105
<i>Or47a</i>	Upstream genomic	T-155A		0.105
<i>Or47a</i>	Upstream genomic	-154 Ins 2bp		0.105
<i>Or47a</i>	Upstream genomic	T-152C		0.368
<i>Or47a</i>	Upstream genomic	G-150A		0.368
<i>Or47a</i>	Upstream genomic	A-147C		0.237
<i>Or47a</i>	Upstream genomic	T-144C		0.368
<i>Or47a</i>	Upstream genomic	T-142G		0.105
<i>Or47a</i>	Upstream genomic	T-136G		0.263
<i>Or47a</i>	Upstream genomic	A-132G		0.263
<i>Or47a</i>	Upstream genomic	A-131G		0.105
<i>Or47a</i>	Upstream genomic	A-130G		0.105
<i>Or47a</i>	Upstream genomic	C-129G		0.105
<i>Or47a</i>	Upstream genomic	C-129A		0.263
<i>Or47a</i>	Upstream genomic	A-128T		0.105
<i>Or47a</i>	Upstream genomic	A-128G		0.263
<i>Or47a</i>	Upstream genomic	A-126T		0.105
<i>Or47a</i>	Upstream genomic	G-125T		0.105
<i>Or47a</i>	Upstream genomic	G-124A		0.105
<i>Or47a</i>	Upstream genomic	-94 Del 6 bp		0.237
<i>Or47a</i>	Upstream genomic	T-91C		0.368
<i>Or47a</i>	Upstream genomic	C-74G		0.237
<i>Or47a</i>	Upstream genomic	T-73C		0.237
<i>Or47a</i>	Upstream genomic	C-72A		0.105
<i>Or47a</i>	Upstream genomic	T-68G		0.237
<i>Or47a</i>	Upstream genomic	G-63A		0.237
<i>Or47a</i>	Upstream genomic	C-52T		0.105
<i>Or47a</i>	Exon 1	T39C		0.342
<i>Or47a</i>	Exon 1	C123A		0.053
<i>Or47a</i>	Exon 1	T168C		0.158
<i>Or47a</i>	Exon 1	G195T		0.158
<i>Or47a</i>	Exon 1	C198G		0.079
<i>Or47a</i>	Exon 1	T231C		0.342

<i>Or47a</i>	Exon 1	A240T		0.079
<i>Or47a</i>	Exon 1	T243G		0.342
<i>Or47a</i>	Exon 1	C276T		0.316
<i>Or47a</i>	Intron 1	T313C		0.316
<i>Or47a</i>	Intron 1	C320T		0.316
<i>Or47a</i>	Intron 1	C322G		0.368
<i>Or47a</i>	Intron 1	C323T		0.316
<i>Or47a</i>	Intron 1	T340C		0.211
<i>Or47a</i>	Exon 2	T440C		0.316
<i>Or47a</i>	Exon 3	G642A	V176I	0.158
<i>Or47a</i>	Exon 3	T653C		0.289
<i>Or47a</i>	Exon 3	C668T		0.158
<i>Or47a</i>	Exon 3	C831T		0.158
<i>Or47a</i>	Exon 3	C845T		0.158
<i>Or47a</i>	Exon 3	G881A		0.474
<i>Or47a</i>	Exon 3	C887T		0.447
<i>Or47a</i>	Exon 3	C902T		0.447
<i>Or47a</i>	Exon 3	C947T		0.132
<i>Or47a</i>	Exon 3	G974C		0.079
<i>Or47a</i>	Exon 3	A986T		0.316
<i>Or47a</i>	Exon 3	C998A		0.079
<i>Or47a</i>	Exon 3	T1181C		0.237
<i>Or47a</i>	Exon 3	T1193C		0.289
<i>Or47a</i>	Intron 3	C1234A		0.421
<i>Or47a</i>	Intron 3	C1236T		0.421
<i>Or47a</i>	Intron 3	1256 Del 10 bp		0.132
<i>Or47a</i>	Intron 3	C1274T		0.368
<i>Or47a</i>	Intron 3	C1285G		0.368
<i>Or47a</i>	Intron 3	C1285T		0.237
<i>Or47a</i>	Intron 3	C1286G		0.368
<i>Or47a</i>	Intron 3	T1292C		0.368
<i>Or47a</i>	Exon 4	T1300C		0.105
<i>Or47a</i>	Exon 4	G1309T		0.053
<i>Or47a</i>	Exon 4	C1321T		0.105
<i>Or47a</i>	Exon 4	A1324G		0.105
<i>Or47a</i>	Exon 4	A1336C		0.158
<i>Or47a</i>	Exon 4 UTR	1349 Del 2 bp		0.158
<i>Or47a</i>	Exon 4 UTR	C1357T		0.158
<i>Or47a</i>	Exon 4 UTR	G1502T		0.447

<i>Or47a</i>	Exon 4 UTR	T1514C		0.079
<i>Or47a</i>	Downstream genomic	T1541G		0.184
<i>Or47a</i>	Downstream genomic	C1582A		0.342
<i>Or47a</i>	Downstream genomic	1633 Del 2 bp		0.158
<i>Or47a</i>	Downstream genomic	1635 Ins 2bp		0.395
<i>Or47a</i>	Downstream genomic	1637 Ins 2bp		0.368
<i>Or47a</i>	Downstream genomic	C1670T		0.342
<i>Or47a</i>	Downstream genomic	T1706G		0.342
<i>Or47a</i>	Downstream genomic	G1731A		0.447
<i>Or47a</i>	Downstream genomic	T1736G		0.211
<i>Or47a</i>	Downstream genomic	C1864A		0.211
<i>Or47a</i>	Downstream genomic	G1877T		0.184
<i>Or47a</i>	Downstream genomic	A1925G		0.395
<i>Or47a</i>	Downstream genomic	A1944T		0.368
<i>Or47a</i>	Downstream genomic	G1982T		0.079
<i>Or47a</i>	Downstream genomic	A1984G		0.237

<sup>1</sup>The first base of the initiation codon corresponds to position 1. Insertion (Ins) position is listed by the position number of the base located before the insertion and the deletions (Del) listed by the position of the first deleted base. The size of the Ins or Del (base pairs, bp) is indicated after the position number. The most common allele is listed first.

<sup>2</sup>Allele frequencies of the rare allele.