Supplementary Material

***Vitis vinifera* genotyping toolbox to highlight diversity and germplasm identification**

**Stylianos Tympakianakis1,†,** **Emmanouil Trantas1,2,†,\*, Evangelia V. Avramidou3,** **Filippos Ververidis1,2\***

1Laboratory of Biological and Biotechnological Applications, Department of Agriculture, School of Agricultural Sciences, Hellenic Mediterranean University, Heraklion, Greece

2Institute of Agri-Food and Life Sciences, Research Center of the Hellenic Mediterranean University, Heraklion, Greece

3Institute of Mediterranean Forest Ecosystems, Hellenic Agricultural Organisation “DIMITRA”, Athens, Greece

**\* Correspondence:**Emmanouil A. Trantas, [mtrantas@hmu.gr](mailto:mtrantas@hmu.gr)

Filippos Ververidis, [ververidis@hmu.gr](mailto:ververidis@hmu.gr)

† These authors contributed equally to this work and share first authorship

# Supplementary Table 1. Up to date collection of SSR markers used for Vitis genetic analyses. Nine microsatellite markers that are proposed by the OIV for the identification of vine (OIV-VITI\_609 2019) have been marked. Column 3 present the Genbank genomic locus in *Vitis vinifera* (1, PN40024) and *V. riparia* (2, cv Riparia Gloire de Montpellier isolate 1030). *V. vinifera* or *V. riparia* chromosome refers to the chromosome where the SSR locus is located. PCR product size refers to the size of amplicon on the *V. vinifera* or *V. riparia* DNA estimated with the NCBI Primer-Blast tool (Ye, et al. 2012). F, forward primer sequence; R, reverse primer sequence; G, genomic, N/A, not available.

| **SSR marker (OIV code)** | **SSR locus primer pair** | **GenBank record** | **SSR locus coordinates** | ***Vitis vinifera***  **Chromosome #** | ***V. riparia* Chromosome** | **SSR Repeat motif** | **Allele Size (bp) in *Vitis* sp.** | **Number of Alleles**  **(No)** | **Observed Heterozygosity**  **[HO]** | **Expected Heterozygosity**  **[HE]** | **Probability of identity**  **[Pi]** | **References** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VVS2 (801)** | F: CAGCCCGTAAATGTATCCATC  R: AAATTCAAAATTCTAATTCAACTGG | 1: NC\_012017.3  2: NC\_048441.1 | 1: F3909894-3909914  R3910030-3910006  2: F15841543-15841523  R 15841399-15841423 | **11** | **11** | (GA)22 | **123–161** | **10-13** | **0,723** | **0,815** | **0.093** | (Thomas and Scott 1993, Hvarleva, et al. 2004, Merkouropoulos, et al. 2015, Guo, et al. 2016, Stavrakaki, et al. 2020) |
| **VVMD5 (802)** | F: CTAGAGCTACGCCAATCCAA  R: TATACCAAAAATCATATTCCTAAA | 1: NC\_012022.3  2: NC\_048446.1 | 1: F 20785556-20785575  R 20785782-20785759  2: F 22785066-22785085  R 22785330-22785307 | **16** | **16** | (CT)3, AT(CT)11, ATAG(AT)3 | **226-246** | **8** | **0,745** | **0,845** | **0.075** | (Bowers, et al. 1996, Schuck, et al. 2009, Carimi, et al. 2010, Karatas, et al. 2014, Merkouropoulos, et al. 2015, Guo, et al. 2016) |
| **VVMD7 (803)** | F: AGAGTTGCGGAGAACAGGAT  R: CGAACCTTCACACGCTTGAT | 1: NC\_012013.3  2: NC\_048447.1 | 1: F 1178552-1178571  R 1178797-1178778  2: F 17261888-17261869  R 17261625-17261644 | **7** | **17** | (CT)14.5 | **233-263** | **14** | **0,806** | **0,819** | **0.069** | (Bowers, et al. 1996, Schuck, et al. 2009, Merkouropoulos, et al. 2015, Guo, et al. 2016) |
| **VVMD27 (804)** | F: GTACCAGATCTGAATACATCCGTAAGT  R: ACGGGTATAGAGCAAACGGTGT | 1: NC\_012011.3  2: NC\_048435.1 | 1: F 4472201-4472175  R 4472022-4472043  2: F 4125679-4125653  R 4125474-4125495 | **5** | **5** | (CT)n | **173-194** | **11** | **0,840** | **0,812** | **0.072** | (Bowers, et al. 1999, Schuck, et al. 2009, Merkouropoulos, et al. 2015, Guo, et al. 2016, Marques da Silva, Figueiredo et al. 2020) |
| **VrZAG62 (805)** | F: GGTGAAATGGGCACCGAACACACGC  R: CCATGTCTCTCCTCAGCTTCTCAGC | 1:NC\_012013.3  2:NC\_048437.1 | N/A | **7** | **7** | (GA)19 | **180-207** | **8-10** | **0.8514** | **0,839** | **0.124** | (Sefc, et al. 1999, Hvarleva, et al. 2004, Galbács, et al. 2009, Carimi, et al. 2010, Karatas, et al. 2014, Merkouropoulos, et al. 2015, Guo, et al. 2016, Rustioni, et al. 2016) |
| **VrZAG79 (806)** | F: AGATTGTGGAGGAGGGAACAAACCG  R: TGCCCCCATTTTCAAACTCCCTTCC | 1: NC\_012011.3  2: NC\_048435.1 | 1: F5692717-5692693  R 5692460-5692484  2: F 5338631-5338607  R 5338374-5338398 | **5** | **5** | (GA)19 | **240-264** | **10** | **0.7027** | **0,818** | **0.065** | (Sefc, et al. 1999, Hvarleva, et al. 2004, Halasz, et al. 2005, Galbács, et al. 2009, Carimi, et al. 2010, Merkouropoulos, et al. 2015, Guo, et al. 2016, Rustioni, et al. 2016) |
| **VVMD32 (807)** | F: TATGATTTTTTAGGGGGGTGAGG  R: GGAAAGATGGGATGACTCGC | 1: NC\_012010.3  2: NC\_048434.1 | 1: F 18035848-18035826  R 18035578-18035597  2: F 18639366-18639344  R 18639131-18639150 | **4** | **4** | (CT)n | **239-273** | **15** | **0,734** | **0,818** | **0.073** | (Bowers, et al. 1999, Schuck, et al. 2009, Laucou, et al. 2011, Merkouropoulos, et al. 2015, Guo, et al. 2016, Marques da Silva, et al. 2020) |
| **VVMD25 (808)** | F: TTCCGTTAAAGCAAAAGAAAAAGG  R: TTGGATTTGAAATTTATTGAGGGG | 1: NC\_012017.3  2: NC\_048441.1 | 1: F 2971933-2971910  R 2971693-2971716  2: F 16798603-16798626  R 16798843-16798820 | **11** | **11** | (CT)n | **241-259** | **10** | **0,883** | **0,784** | **0.107** | (Galbács, et al. 2009, Schuck, et al. 2009, Laucou, et al. 2011, Merkouropoulos, et al. 2015, Guo, et al. 2016, Marques da Silva, et al. 2020) |
| **VVMD28 (809)** | F: ACAATTCAATGAAAAGAGAGAGAGAGA  R: TCATCAATTTCGTATCTCTATTTGCTG | 1: NC\_012009.3  2: NC\_048433.1 | 1: F 11617504-11617531  R 11617740-11617714  2: F 11553155-11553128  R 11552939-11552965 | **3** | **3** | (CT)n | **218-278** | **15** | **0,860** | **0,869** | **0.044** | (Galbács, et al. 2009, Schuck, et al. 2009, Laucou, et al. 2011, Merkouropoulos, et al. 2015, Guo, et al. 2016, Marques da Silva, et al. 2020) |
| **ccSSR-14 a** | F: GGGTATAATGGTAGATGCCC  R: GCCGTAGTAAATAGGAGAGAAA | 1:NC\_007957.1  2:NC\_039680.1 | 1: F 89061- 89080  R 89262- 89241  2: F 89088- 89107  R 89290- 89269 | **N/A** | **N/A** | (T)14 | **201-204** | **N/A** | **N/A** | **N/A** | **N/A** | (Sefc, et al. 2009) |
| **Scu04vv** | F: TGTCCTCTTTCCCTCTCCCAAC  R: CAGTCTGTCATCTGACCATGTAGCC | 1:NC\_012007.3  2:NC\_048431.1 | 1: F 4261254-4261275  R 4261428-4261404  2: F 4354617-4354638  R 4354789-4354765 | **1** | **1** | (CT)8 | **167-177** | **3** | **0.896** | **0.574** | **0.459** | (Scott, et al. 2000, Ekhvaia, et al. 2014) |
| **Scu05vv** | F: CAAGCAGTTATTGAAGCTGCAAGG  R: TCATCCATCACACAGGAAACAGTG | 2:NC\_048442.1 | 2: F 15237440-15237417  R 15237277-15237301 | **N/A** | **12** | (AT)13 | **134-214** | **15** | **0.30** | **0.67** | **N/A** | (Scott, et al. 2000, Drábek, et al. 2016, Italian\_Vitis\_Database 2022) |
| **Scu06vv** | F: CCCTAGTCTCTCTACCTATCCATG  R: CCTAATGCCAGGAAGGTTGC | 1:NC\_012023.3  2:NC\_048447.1 | 1: F 3158905-3158882  R 3158735-3158754  2: F 17721673-17721696  R 17721876-17721857 | **17** | **17** | (AT)8 | **131-211** | **2** | **0.250** | **N/A** | **0.212** | (Scott, et al. 2000, Jahnke, et al. 2011, Italian\_Vitis\_Database 2022) |
| **Scu07vv** | F: CCGAAGAGGAATATGGGTTTGAG  R: CCTAACTTGAAACGAAAGGACTGC | 1:NC\_012021.3  2:NC\_048445.1 | 1: F 16971038-16971016  R 16970836-16970859  2: F 3760003-3760025  R 3760208-3760185 | **15** | **15** | (ACC)5 | **163-243** | **4** | **N/A** | **N/A** | **N/A** | (Scott, et al. 2000, Wang, et al. 2015, Italian\_Vitis\_Database 2022) |
| **Scu08vv** | F: CGAGACCCAGCATCGTTTCAAG  R: GCAAAATCCCCGTACAAGTC | 1:NC\_012017.3  2:NC\_048441.1 | 1: F 2579555-2579534  R 2579373-2579392  2: F 17193768-17193789  R 17193944-17193925 | **11** | **11** | (GGT)5 | **185-197** | **4** | **0.182** | **0.197** | **0.685** | (Scott, et al. 2000, Halasz, et al. 2005, Galbács, et al. 2009) |
| **Scu09vv** | F: AAGCAGCAGTTATTGGCG  R: CAGATACTGAGGGTTTAAGCTC | 1: NC\_012020.3  2: NC\_048444.1 | 1: F 24477739-24477722  R 24474623-24474644  2: F 5860287-5860304  R 5863386-5863365 | **14** | **14** | (GGT)5 | **82-162** | **N/A** | **N/A** | **N/A** | **N/A** | (Scott, et al. 2000, Italian\_Vitis\_Database 2022) |
| **Scu10vv** | F: TACCCCCACAACCCTTTT  R: TTCTCCGCCACCTCCTTTTCAC | 1:NC\_012024.3  2:NC\_048448.1 | 1: F 4520661- 4520678  R 4520877- 4520856  2: F 4606282- 4606299  R 4606489- 4606468 | **18** | **18** | (CAA)6 | **202-217** | **6** | **0.182** | **0.722** | **0.124** | (Scott, et al. 2000, Halasz, et al. 2005, Galbács, et al. 2009) |
| **Scu11vv** | F: AATTGATAGTGCCACGTTCTCGCC  R: AACGCCGACAAGAATCCCAAGG | 1:NC\_012025.3  2:NC\_048449.1 | 1: F 6614205- 7003606  R 7003391- 7003412  2: F 6614205- 6614182  R 6613961- 6613982 | **19** | **19** | (CTT)8 | **213-293** | **25** | **0.874** | **N/A** | **0.630** | (Scott, et al. 2000), |
| **Scu14vv** | F: CTGCACTTGAATACGAGCAGGTC  R: TGTTATATGATCCTCCCCCTCCTC | 1:NC\_012022.3  2:NC\_048446.1 | N/A | **16** | **16** | (GAA)6 | **168-188** | **4** | **N/A** | **N/A** | **N/A** | (Scott, et al. 2000, Dauob, et al. 2018) |
| **Scu15vv** | F: GCCTATGTGCCAGACCAAAAAC  R: TTGGAAGTAGCCAGCCCAACCTTC | 1:NC\_012020.3  2: NC\_048444.1 | N/A | **14** | **14** | (GAA)6 | **155-235** | **N/A** | **N/A** | **N/A** | **N/A** | (Scott, et al. 2000, Italian\_Vitis\_Database 2022) |
| **Scu16vv** | F: CAAAGACAAAGAAGCCACCGAC  R: ACCCTCTAAAGCACACACAGGAAC | 1:NC\_012024.3  2:NC\_048448.1 | N/A | **18** | **18** | (GAA)5 | **130-210** | **N/A** | **N/A** | **N/A** | **N/A** | (Scott, et al. 2000, Italian\_Vitis\_Database 2022) |
| **UCH11** | F: ATGCCCGAGAAGAGTCGAGAA  R: CTGCCGTTTGGGTAAGATGCT | 1:NC\_012011.3  2: NC\_048435.1 | N/A | **5** | **5** | (GA)15 | **220–262** | **21** | **0.7977** | **0.7968** | **0.191** | (Lefort and Roubelakis-Aggelakis 2000, Lefort, et al. 2002, Hvarleva, et al. 2004) |
| **UCH12** | F: TTTTCATTGAAAAGAAGGA  R: TGTGCTTTGTGCTAGATAA | 1:NC\_012020.3  2:NC\_048444.1 | N/A | **14** | **14** | (CT)17(CA)13 | **135–234** | **21** | **0.9315** | **0.9047** | **N/A** | (Lefort, et al. 2002) |
| **UCH19** | F: GATTTGAAAGTCGAAAGCCAGG  R: TGCAAAGACTGTGAGATGAGGG | 1:NC\_012007.3  2:NC\_048431.1 | N/A | **1** | **1** | (CT)23 | **174–212** | **12** | **0.8630** | **0.8646** | **N/A** | (Lefort, et al. 2002) |
| **UCH2** | F: AGCTCGGCTAGCTGCAAAATC  R: ACCCTTCCCTCTTCAAAACCC | 1:NC\_012025.3  2:NC\_048449.1 | N/A | **19** | **19** | (AG)15 | **146–200** | **19** | **0.7638** | **0.9023** | **N/A** | (Lefort, et al. 2002), |
| **UCH29** | F: AAACATGATCTGATGCAGGTGA  R: CAACCTGTTGATGAAAGGGAAA | 1:NC\_012007.3  2:[NC\_048431.1](https://www.ncbi.nlm.nih.gov/nucleotide/1847502376?from=21451094&to=21451382&report=gbwithparts) | N/A | **1** | **1** | (CT)18 | **207–315** | **26** | **0.7932** | **0.8458** | **0.116** | (Lefort, et al. 2002, Hvarleva, et al. 2004) |
| **UCH35** | F: AAATGTGCAAGTTGAAGAGGGA  R: AGACCGTTCAAACAAGCAAATG | N/A | N/A | **N/A** | **N/A** | (CT)17 | **133–181** | **15** | **0.7313** | **0.8567** | **N/A** | (Lefort, et al. 2002) |
| **UCH40** | F: GCAGTTGATGCAAAACAACAGT  R: CACATCATTCATTGATGAGGCT | 1:NC\_012019.3  2:NC\_048443.1 | N/A | **13** | **13** | Imperfect run of  (GCA)n(ACA)m | **237–312** | **17** | **0.8636** | **0.8846** | **N/A** | (Lefort, et al. 2002) |
| **VChr10a** | F: AAATGTTTAGTAGCCTCATTTTGTTT  R: TTTGTTCGGAACTACTCTTCTTCA | 1:NC\_012016.3  2:NC\_048440.1 | N/A | **10** | **10** | ACT | **98-137** | **8** | **0.271** | **0.647** | **0.618** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr10b** | F: CCATGTCCAACCGAAACAAC  R: CAGAAATCTCGTGTCGCTCA | 1:NC\_012016.3  2:NC\_048440.1 | N/A | **10** | **10** | AAC | **116-136** | **5** | **0.813** | **0.703** | **0.635** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr11a** | F: GGGATAAGGTGAAAGCCTCA  R: ATGCTTGGTATCTGGCAACC | 1:NC\_012017.3  2:NC\_048441.1 | N/A | **11** | **11** | AAAG | **178-207** | **6** | **0.542** | **0.558** | **0.506** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr11b** | F: TGAGTTGAGCTATTGGCTTTGA  R: AGCAACTCTGTCCATCCATGT | 1:NC\_012017.3 | N/A | **11** | **N/A** | AGAT | **151-163** | **5** | **0.690** | **0.770** | **0.720** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr12a** | F: GCTTTAAATGTTAGATTAGGGCACTC  R: TCCATGTTGTTTGCTCTTTCC | 1:NC\_012018.3  2:NC\_048442.1 | N/A | **12** | **12** | AATT | **126-146** | **7** | **0.542** | **0.695** | **0.640** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr12b** | F: AAACACAAGGTTGCATTGGA  R: GGCTTTCTTGTGGACTTAAATGA | 1:NC\_012018.3  1:NC\_012014.3  2:NC\_048438.1 | N/A | **12, 8** | **8** | AATT | **161-169** | **2** | **0.250** | **0.449** | **0.346** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr13a** | F: TGGCAGAGCAAATGAATCAA  R: TTGGATGGATTGGAATGACC | 1:NC\_012019.3  2:NC\_048443.1 | N/A | **13** | **13** | AAAAG | **135-165** | **7** | **0.625** | **0.698** | **0.652** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr13b** | F: TAAGCATTCTGGGCTTTTCC  R: TCGTCTATATGCGACCTTGG | 1:NW\_003724181.1  2:NC\_048443.1 | N/A | **13** | **13** | AAAT | **145-170** | **8** | **0.500** | **0.643** | **0.613** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr13c** | F: AGACCCAAGGGCAAGGTACT  R: AACACCGTTAGGCATACTCCA | 1:NC\_012019.3  2:NC\_048443.1 | N/A | **13** | **13** | AAT | **114-135** | **5** | **0.750** | **0.744** | **0.689** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr13d** | F: AATCTGACGCCATGAGGAAG  R: TCGTCTATATGCGACCTTGG | N/A | N/A | **N/A** | **N/A** | AATC | **174-191** | **4** | **0.250** | **0.248** | **0.234** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr14a** | F: AACCTGGGATGCTGAGAATG  R: TGCATGCATATGGATCTTGT | 1:NC\_012020.3  2:NC\_048444.1  2:NC\_048447.1 | N/A | **14** | **14, 17** | AATC | **128-189** | **3** | **0.500** | **0.541** | **0.444** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr14b** | F: CAATTGAACACTTACACTCACAATCA  R: TGTGACTAAAGGTTATTAGCAGGA | 1:NC\_012020.3  2:NC\_048444.1 | N/A | **14** | **14** | ATC | **176-243** | **15** | **0.234** | **0.811** | **0.786** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr15a** | F: CAATCCCAACAGTTCCATGA  R: CGTTTTCTCCTTCGGACAAG | 1:NC\_012021.3 | N/A | **15** | **N/A** | ATCC | **127-165** | **8** | **0.717** | **0.728** | **0.677** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr15b** | F: GGGTCCAATTCCTTTTGGTT  R: CGAAAGACTCAATTGCCACA | 1:NC\_012021.3  2:NC\_048445.1 | N/A | **15** | **15** | AAT | **90-151** | **10** | **0.292** | **0.830** | **0.799** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr16a** | F: TTCATGTGTGACACCCCTTT  R: AATGTCCATGCTTCAAAATACC | 1:NC\_012022.3 | N/A | **16** | **N/A** | AAAT | **100-167** | **8** | **0.604** | **0.632** | **0.602** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr16b** | F: ATAAGGCGCTGACTTTGTGA  R: CCAGGAGATCAACCACCATT | 1:NC\_012022.3 | N/A | **16** | **N/A** | AATT | **165-193** | **7** | **0.500** | **0.558** | **0.526** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr16c** | F: TTTCAATATTCCAAATGTGACCT  R: CATTTCTTTGCTCTTCCTGCT | 1:NC\_012022.3  2:NC\_048446.1 | N/A | **16** | **16** | AATT | **151-161** | **4** | **0.638** | **0.582** | **0.516** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr17a** | F: AGGAAGAGGATTGATCACCA  R: GTGCCAACCCTTGCACTATT | 1:NC\_012023.3 | N/A | **17** | **N/A** | AACC | **170-184** | **3** | **0.178** | **0.463** | **0.372** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr17b** | F: CCAAAGCCGACAACTTCTTC  R: CCGCCATAAACCCTAAACCT | 1:NC\_012023.3 | N/A | **17** | **N/A** | ACTC | **154-162** | **3** | **0.021** | **0.142** | **0.134** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr17c** | F: CCATGTTCCATCCCACTTCT  R: CGTACGTACAAAATCTTGGGATAC | 1:NC\_012023.3 | N/A | **17** | **N/A** | AAT | **94-120** | **8** | **0.333** | **0.548** | **0.519** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr18a** | F: TTCCCACCCGGTAAATATGA  R: CATCCAAACATCACGCTGAG | 1:NC\_012024.3  2:NC\_048448.1 | N/A | **18** | **18** | AAGG | **151-191** | **8** | **0.542** | **0.705** | **0.659** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr18b** | F: ATACGCAAATGATCACAGCA  R: CATTTTCTCCATGGCCTCAT | 1:NC\_012024.3  2:NC\_048448.1 | N/A | **18** | **18** | AGGC | **137-154** | **5** | **0.521** | **0.730** | **0.672** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr18c** | F: TGAAGCCCATTACAACCAAA  R: TGCAAATTAAAGCCAAGTGTG | 1:NC\_012024.3 | N/A | **18** | **N/A** | AATC | **125-134** | **4** | **0.208** | **0.196** | **0.187** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr18d** | F: TAGGTACGGTCCCAATGACC  R: TCGATCGATCATCTTCATCTCT | 1:NW\_003724189.1 | N/A | **18** | **N/A** | AAACT | **195-205** | **3** | **0.364** | **0.411** | **0.370** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr19a** | F: TTTGTTAGGTGTTGTTACCCGTTA  R: ATCTTCTGGCCATGTGGTTC | 1:NC\_012025.3 | N/A | **19** | **N/A** | AAG | **121-150** | **10** | **0.792** | **0.784** | **0.748** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr19b** | F: TGGATTCACCATTGTCCTCA  R: CGAGGATACCAACAAGAATGAA | 1:NC\_012025.3  2:NC\_048449.1 | N/A | **19** | **19** | AGAT | **157-171** | **5** | **0.500** | **0.711** | **0.652** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr1a** | F: TTCATACCTTGCAGGGAGCTA  R: TGATTTCCATTCCCAAATTCA | 1:NC\_012007.3 | N/A | **1** | **N/A** | ATCC | **175-244** | **9** | **0.458** | **0.545** | **0.525** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr1b** | F: AGATGGGTGGCATTAGCAAG  R: TTATTTCCCTCCCTCGCTGT | 1:NC\_012007.3  2:NC\_048431.1 | N/A | **1** | **1** | ATCC | **90-111** | **6** | **0.771** | **0.689** | **0.635** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr1c** | F: CTGGCCTTATGCACAAAGTG  R: GATGAACACATCAATCAAATACCC | 1:NC\_012007.3  2:NC\_048431.1 | N/A | **1** | **1** | AGCC | **87-100** | **3** | **0.521** | **0.476** | **0.369** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr2a** | F: GGTCCGCTTTTGAGAAGAAA  R: CATGTGAACGCGCTAAACAC | 1:NC\_012008.3  2:NC\_048432.1 | N/A | **2** | **2** | AGGC | **137-155** | **3** | **0.542** | **0.405** | **0.328** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr2b** | F: CCTCCTGCGAACAAGTCTGT  R: GTTGCTGGATTTGTGGAAGG | 1:NC\_012008.3  2:NC\_048432.1 | N/A | **2** | **2** | AGCT | **112-128** | **6** | **0.563** | **0.508** | **0.467** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr2c** | F: CTCAAAGCCCTCCAATTCAA  R: GGGCTCATGTGTCTGGAGTT | 1:NC\_012008.3  2:NC\_048432.1 | N/A | **2** | **2** | AGCC | **147-158** | **5** | **0.521** | **0.490** | **0.443** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr3a** | F: CAATCATATGAGCAAGGCATGT  R: GCTTCCTGAAATTTGTGTCCA | 1:NC\_012009.3  2:NC\_048433.1 | N/A | **3** | **3** | AAT | **175-249** | **14** | **0.688** | **0.836** | **0.810** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr4a** | F: CAACTGGGATCCAAGACCTC  R: CAGCTTCACAGGTAACCACA | 1:NC\_012010.3  2:NC\_048434.1 | N/A | **4** | **4** | AAAG | **173-203** | **7** | **0.563** | **0.644** | **0.585** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr5a** | F: ACTTGGCGAGTATTTGTTCTAAA  R: CCGCTTTGTGAAGGTATCCA | 1:NC\_012011.3  2:NC\_048435.1 | N/A | **5** | **5** | AGATG | **183-259** | **11** | **0.750** | **0.772** | **0.745** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr5b** | F: CTTCTCGGTCATGGTCATTG  R:CTCCTTCCACCTCTGGTTCA | 1:NC\_012011.3  2:NC\_048435.1 | N/A | **5** | **5** | AAAG | **179-219** | **10** | **0.750** | **0.792** | **0.754** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr5c** | F: CCCATCAGTTTGCCTATGAA  R: TTTGATCTTGTTATTGTGCTGTTAC | 1:NC\_012011.3  2:NC\_048435.1 | N/A | **5** | **5** | ACAT | **83-123** | **7** | **0.729** | **0.747** | **0.704** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr6a** | F: AATGTTGAGCTTTGGGCTTG  R: CCAATTCTTCCATACCTCAAAA | 1:NC\_012012.3 | N/A | **6** | **N/A** | AATC | **173-180** | **4** | **0.532** | **0.572** | **0.502** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr7a** | F: TCCGTGTCACAAAGAACATGA  R: ATTAGGGCACTGCCTCTTCC | 1:NC\_012013.3 | N/A | **7** | **N/A** | AAAAG | **126-140** | **3** | **0.417** | **0.506** | **0.386** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr7b** | F: AAAGGGCCTAAACTCTTAATAACTTG  R: TGCTTTATAGACACTAACCCACAAA | 1:NW\_003724159.1  2:NC\_048437.1 | N/A | **7** | **7** | ACAT | **172-195** | **6** | **0.688** | **0.703** | **0.651** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr7c** | F: CACTTCTCTGCCACCCATTT  R: GGTTGGAAATTCTAGGGCATT | 1:NC\_012013.3 | N/A | **7** | **N/A** | ATGC | **101-108** | **3** | **0.688** | **0.620** | **0.532** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr8a** | F: ACCCACTGCCACTCTCTCAT  R: AAATCTCCGGGATCCTTTTG | 1:NC\_012014.3  2:NC\_048438.1 | N/A | **8** | **8** | AAT | **172-206** | **12** | **0.596** | **0.835** | **0.805** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr8b** | F: TGTGTGATGTTTTGTCGATGG  R: TGAACCAAGTTCTAATTTACATTTCC | 1:NC\_012014.3 | N/A | **8** | **N/A** | AAG | **58-156** | **16** | **0.646** | **0.889** | **0.870** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr9a** | F: GCGACAGCATCACTTCAATC  R: GAATTGCCAAGGACAAGGAG | 1:NC\_012015.3  2:NC\_048439.1 | N/A | **9** | **9** | AAG | **87-117** | **8** | **0.787** | **0.809** | **0.776** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VChr9b** | F: AGCGTCATGACAGGTATCAGAA  R: AAAGAATTAATCATTACCATTTCACG | 1:NC\_012015.3 | N/A | **9** | **N/A** | AAT | **102-160** | **10** | **0.313** | **0.865** | **0.840** | (Cipriani, et al. 2008, Italian\_Vitis\_Database 2022) |
| **VMC1b11** | F: CTTTGAAAATTCCTTCCGGGTT  R: TATTCAAAGCCACCCGTTCTCT | N/A | N/A | **N/A** | **N/A** | (AG)17 | **167-196** | **8** | **0.947** | **0.809** | **0.771** | (Cipriani, et al. 2008, Laucou, et al. 2011, Dos Anjos 2013; Karatas, et al. 2014, Zarouri 2016, Nebish, et al. 2017) |
| **VMC1C10** | F: ATATTCACAGCTGTTCCAAGTCCCA  R: GAGAGTGGCGGAAGGCTTGTTGACC | N/A | N/A | **N/A** | **N/A** | (TGC)6 | **129-185** | **16** | **0.841** | **0.863** | **0.033** | (Jahnke, et al. 2011, Dos Anjos 2013; Zarouri 2016) |
| **VMC1E8** | F: CAGCGAGCTCTTGATTTATTGT R: GATCATAGCTTCAACGGCTTTT | N/A | N/A | **N/A** | **N/A** | (GA)21 | **206-231** | **10** | **0.773** | **0.805** | **0.063** | (Dos Anjos 2013; Guo, et al. 2016, Zarouri 2016) |
| **VMC1F10** | F: CATACAAGGAATTTACCCCCA  R: ACCTCTTGTGCTGTCTAACCA | N/A | N/A | **N/A** | **N/A** | (AG)18 | **190-208** | **10** | **0.643** | **0.816** | **0.056** | (Dos Anjos 2013; Zarouri 2016) |
| **VMC2H4** | F: AGTACCAGGTGTGCCTATAAGAATC  R: GTTGATTGGATGTTCCAGAGAGGAT | N/A | N/A | **N/A** | **N/A** | N/A | **118-237** | **15** | **0.816** | **0.86** | **0.033** | (Dos Anjos 2013; Zarouri 2016) |
| **VMC3B12** | F: ATAAGGCAGGTTGATTACAGGA  R: CATCACAGGTTGATTCGACACT | N/A | N/A | **N/A** | **N/A** | (AG)24 | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | (Dos Anjos 2013; Guo, et al. 2016) |
| **VMC3C9** | F: ATAAAATGGAATTAAGGGGGGA R: CAAACGCTAGATACCATGGAGA | N/A | N/A | **N/A** | **N/A** | N/A | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | (Gaspero, et al. 2000, Guo, et al. 2016) |
| **VMC3D12** | F: TGTCACTGTGGACATAGGGAG  R: ATCACCAAAGGGAAGCAAAAG | 1: NC\_012019.3  2: NC\_048443.1 | 1:F 083896- 8083876  R 8083693- 8083713  2:F 20214024- 20214044  R 20214226- 20214206 | **13** | **13** | (TC)21 | **197-251** | **23** | **0.841** | **0.871** | **0.856** | (Dos Anjos 2013; Zarouri 2016) |
| **VMC4A1** | 5′ATGCGACCTTAATAAATTGGGAA  5′AAGCTAGGCTTGTATGAGGGAGA | N/A | N/A | **N/A** | **N/A** | (AG)20 | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | (Gaspero, et al. 2000) |
| **VMC4A5** | 5′ATTTTCCACAGGCAAACCACAT  5′TGTGGTTGTTGTAGCCTATCGG | 2:NC\_048439.1 | N/A | **N/A** | **9** | (AGAC)5N31(AG)14 | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | (Gaspero, et al. 2000) |
| **VMC4C6** | 5′CTCCATCCCTATCTCATCAG  5′CTCTAACACCCAATCTCACA | 1:NC\_012011.3 | N/A | **5** | **N/A** | (GCT)11 | **153-177** | **7** | **0.696** | **0.676** | **0.153** | (Gaspero, et al. 2000, Zarouri 2016) |
| **VMC4D2** | 5′TGCAGATACCACATACCCACCT  5′AACAGCAAACATCCCAACTCAG | 1:NC\_012007.3  2:NC\_048431.1 | N/A | **1** | **1** | (AG)16 | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | (Gaspero, et al. 2000) |
| **VMC4D4** | 5′GTCTTGTAATGGAACCAACTGC  5′AGATTGACCTGGACCTGAAACT | 1:NC\_012010.3  2:NC\_048434.1 | N/A | **4** | **4** | (GCT)9 | **152-176** | **7** | **0.594** | **0.558** | **0.238** | (Gaspero, et al. 2000, Zarouri 2016) |
| **VMC4f3** | F: AAAGCACTATGGTGGGTGTAAA  R: TAACCAATACATGCATCAAGGA | 1:NC\_012018.3  2:NC\_048442.1 | N/A | **12** | **12** | (AG)20AA(AG)9 | **165–208** | **12** | **0.868** | **0.874** | **0.848** | (Gaspero, et al. 2000, Laucou, et al. 2011, Nebish, et al. 2017) |
| **VMC4G6** | 5′CCTTGAAGAGATGAGTTTGCTA  5′TATTTAACTTTGTGCCTCTGCT | 1:NC\_012012.3  2:NC\_048436.1 | N/A | **6** | **6** | (AG)17 | **119-139** | **11** | **0.657** | **0.794** | **0.07** | (Gaspero, et al. 2000, Zarouri 2016) |
| **VMC4H5** | 5′GATTTGTGACACTTGTGTAGCG  5′CAAGTGGAAAGCAATCTAGGAA | N/A | N/A | **N/A** | **N/A** | (AG)5TG(AG)33 | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | (Gaspero, et al. 2000) |
| **VMC4H6** | 5′GTATAGAACCACGCATCCAACA  5′CCCTTAGTTTCCTCGTGCTTTT | 1:NC\_012015.3  2:NC\_048439.1 | N/A | **9** | **9** | (AG)23 | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | (Gaspero, et al. 2000) |
| **VMC5E9** | F: ATCCAGAGCCATAACAGATTCA  R: TCACAGCTTTCTCATTACCCTT | 1: NC\_012025.3  2: NC\_048449.1 | 1:F 4183347- 4183326  R 4183125- 4183146  2:F 4486656- 4486677  R 4486860- 4486839 | **19** | **19** | (AG)22(CAC)6 | **282-314** | **19** | **0.816** | **0.894** | **0.076** | (Jahnke, et al. 2011; Dos Anjos 2013) |
| **VMC5G8** | F: GCACATGCACATCTTGTTTCACTCT  R: GAGACTTTTGGAAGCAATGATGGCA | N/A | N/A | **N/A** | **N/A** | (CTG)7(AG)11 | **281-319** | **11** | **0.739** | **0.778** | **0.085** | (Jahnke, et al. 2011, Dos Anjos 2013; Zarouri 2016) |
| **VMC6B11** | F: TGATTATGGCAATAATCACACC  R: TTGCTTACCCATCAAAAAGAAA | 1:NC\_012008.3  2:NC\_048432.1 | N/A | **2** | **2** | (TC)20 | **83-116** | **N/A** | **N/A** | **N/A** | **N/A** | (Arroyo-García and Martínez-Zapater 2004) |
| **VMC6C10** | F: TTCCTGCGAATTCTAACCCCTT  R: CCACTTCCATTCCCTCTCCTGT | 1:NC\_012020.3  2:NC\_048444.1 | N/A | **14** | **14** | (GA)17 | **105-143** | **N/A** | **N/A** | **N/A** | **N/A** | (Arroyo-García and Martínez-Zapater 2004) |
| **VMC6C7** | F: ACATATATCCGAAAGTGTGGGGC  R: CTTAAAGCTTGAAGCTTTTGGTGC | N/A | N/A | **N/A** | **N/A** | (GA)10 | **114-161** | **N/A** | **N/A** | **N/A** | **N/A** | (Arroyo-García and Martínez-Zapater 2004) |
| **VMC6D12** | F: CTCTCTTTTCCGAAATTGGGGT  R: ATTTTCCCTGGAAACAAAGTGG | 1:NC\_012015.3  2:NC\_048439.1 | 1: F 3792236- 3792257  R 3792401- 3792380  2: F 4056320- 4056341  R 4056487- 4056466 | **9** | **9** | (TC)18 | **131-181** | **13** | **0.826** | **0.827** | **0.046** | (Arroyo-García and Martínez-Zapater 2004, Zarouri 2016) |
| **VMC6E10** | F: CTAGGTGTGCCAAGAGATCAGA  R: CATTTGTGGGTAGTTGTGAGGA | 1:NC\_012011.3  2:NC\_048435.1 | 1: F 14299510- 14299531  R 14299606- 14299585  2: F 14323591- 14323612  R 14323699- 14323678 | **5** | **5** | (GA)13 | **90-122** | **N/A** | **N/A** | **N/A** | **N/A** | (Arroyo-García and Martínez-Zapater 2004) |
| **VMC6G10** | F: CATCATTCATCCAAATTATGTAG  R: TTTAGTAGGTTAGGGATACCAGT | 1: NC\_012010.3 | 1: F 23105311- 23105333  R 23105488-23105466 | **4** | **N/A** | (GA)14 | **121-195** | **12** | **0.614** | **0.618** | **0.582** | (Arroyo-García and Martínez-Zapater 2004, Zarouri 2016) |
| **VMC6G8** | F: GAGTGTCAGTCTCAAAATAAGGA  R: CCCCTCATCTCTTCTCTATCTAA | N/A | N/A | **N/A** | **N/A** | (GA)15 | **88-109** | **N/A** | **N/A** | **N/A** | **N/A** | (Arroyo-García and Martínez-Zapater 2004) |
| **VMC7G3** | F: ATATTACTAGTGCTGTCCTGCTCCA  R: TGAAAGTTGAAAGAGAGGAAGCAAA | N/A | N/A | **19** | **N/A** | (TC)16 | **115-161** | **17** | **0.585** | **0.587** | **0.186** | (Jahnke, et al. 2011, Zarouri 2016) |
| **VMC7h3** | F: TCAGATATTGAAGAACACCACA  R: ACTAGAAAATGCACAATCTCCC | 1: NC\_012010.3  2: NC\_048434.1 | 1: F 4719044- 4719065  R 4719178- 4719157  2: F 4968212- 4968233  R 4968352- 4968331 | **4** | **4** | (TC)16 | **119-175** | **21** | **0.749** | **0.783** | **0.075** | (Dos Anjos 2013; Jing, et al. 2013, Zarouri 2016) |
| **VMC8F10** | F: TATGAAAGATGAATGGCTGCTC  R: AAGGGTGCTTGAAGGTTTATGT | 1: NC\_012009.3 | 1: F 3324131- 3324152  R 3324340- 3324319 | **3** | **N/A** | (TC)19 | **199-237** | **14** | **0.787** | **0.808** | **0.06** | (Dos Anjos 2013; Guo, et al. 2016, Zarouri 2016) |
| **VMC9a2.1** | F: AGCTCGGCTAGCTGCAAAATC  R: ACCCTTCCCTCTTCAAAACCC | 1: NC\_012025.3  2: NC\_048449.1 | 1:F 854676- 854656  R 854511- 854531  2:F 765199- 765179  R 765048- 765068 | **19** | **19** | (AG)15 | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | (Dos Anjos 2013; Jing, et al. 2013) |
| **VMCNG1E1** | F: TGTGTTACGCCATTGCTTGCATTTT  R: AACTGCCCTACAAGAGGGGAAAAGC | N/A | N/A | **14** | **N/A** | N/A | **91-129** | **16** | **0.807** | **0.842** | **0.043** | (Jahnke, et al. 2011, Zarouri 2016) |
| **VMCNG2B7.2** | F: TTTTGGAGTGAATAGAGACCCCT  R: CAGAATTTGGCTCCATATTTGAA | N/A | N/A | **14** | **N/A** | (GA)13 | **134-156** | **N/A** | **N/A** | **N/A** | **N/A** | (Arroyo-García and Martínez-Zapater 2004) |
| **VMCNG2E8** | F: CAGAGACAAAGGAAACGAGGCT  R: TGCCTACCTAGTGCCATTCAAA | N/A | N/A | **13** | **N/A** | (GA)29 | **190-208** | **N/A** | **N/A** | **N/A** | **N/A** | (Arroyo-García and Martínez-Zapater 2004) |
| **VMCNG2G7** | F: CAACAGAATTCAAATGAAATGGA  R: CAAACAGCATAAATACACAAGGA | 1:NC\_012007.3 | 1:F 6993233- 6993255  R 6993332- 6993310 | **1** | **N/A** | (TC)18(TC)7 | **102-150** | **13** | **0.826** | **0.802** | **0.058** | (Arroyo-García and Martínez-Zapater 2004, Zarouri 2016) |
| **VMCNG2H7** | F: ACGTTAAATAGAACATGGTCCC  R: CAACCTCTTTTTTTGAGGTAGC | 1:NC\_012018.3  2:NC\_048442.1 | 1: F 15917119 -15917140  R 15917287 - 15917266  2: F 7448476- 7448455  R 7448305- 7448326 | **12** | **12** | (GA)16 | **150-178** | **N/A** | **N/A** | **N/A** | **N/A** | (Arroyo-García and Martínez-Zapater 2004) |
| **VrZAG12** | F: CTGCAAATAAATATTAAAAAATTCG  R: AAATCCTCGGTCTCTAGCCAAAAGG | N/A | Ν/Α | **15** | **Ν/Α** | (GA)24 | **140–172** | **N/A** | **>0.26** | **0.77** | **N/A** | (Sefc, Regner et al. 1999) |
| **VrZAG14** | F: ATCAAAGGCCTCCTTTATTGCCATC  R: TAGTACCAACTACCAACAACCAAAG | 1:NW\_003724191.1 | 1: F 897819- 897843  R 897956- 897932 | **18** | **Ν/Α** | (A)12(GA)16 | **137–162** | **N/A** | **>0.21** | **0.52** | **N/A** | (Sefc, et al. 1999) |
| **VrZAG15** | F: GGATTTTGGCTGTAGTTTTGTGAAG  R: ATCTCAAGCTGGGCTGTATTACAAT | 1:NC\_012023.3  2:NC\_048447.1 | 1: F 6457122- 6457098  R 6456959- 6456982  2: F 13126445- 13126469  R 13126626- 13126603 | **17** | **17** | (GA)19 | **163–193** | **11** | **0.46** | **0.44** | **0.36** | (Sefc, et al. 1999, Zarouri 2016) |
| **VrZag21** | F: TCATTCACTCACTGCATTCATCGGC  R: GGGGCTACTCCAAAGTCAGTTCTTG | 1:NC\_012010.3  2:NC\_048434.1 | 1: F 13648595- 13648619  R 13648800- 13648776  2: F 13667960- 13667984  R 13668169- 13668145 | **4** | **4** | (GA)16 | **190–214** | **8** | **0.7162** | **0.7300** | **0.205** | (Sefc, et al. 1999, Hvarleva, et al. 2004, Jahnke, et al. 2011) |
| **VrZag25** | F: CTCCACTTCACATCACATGGCATGC  R: CGGCCAACATTTACTCATCTCTCCC | N/A | Ν/Α | **Ν/Α** | **Ν/Α** | (GA)11C(AG)3GG(AG)3 | **225–245** | **N/A** | **N/A** | **N/A** | **0.24** | (Sefc, et al. 1999, Jahnke, et al. 2011) |
| **VrZAG29** | F: ATAACCAGGACAAGTTATTCAAGCC  R: ACCCAATTGACCATCTTTTATGCTG | 1:NC\_012007.3  2:NC\_048431.1 | 1: F 5286106- 5286130  R 5286217- 5286193  2: F 5403151- 5403175  R 5403282- 5403258 | **1** | **1** | (GA)19 | **105-119** | **5** | **0.338** | **0.359** | **0.439** | (Sefc, et al. 1999, Zarouri 2016) |
| **VrZAG47** | F: GGTCTGAATACATCCGTAAGTATAT  R: ACGGTGTGCTCTCATTGTCATTGAC | 1: NC\_012011.3  2: NC\_048435.1 | 1: F 4472195-4472171  R 4472037-4472061  2: F 4125673-4125649  R 4125489-4125513 | **5** | **5** | (GA)15(AA)(GA)5 | **155-174** | **8** | **0.8243** | **0.8023** | **0.122** | (Sefc, et al. 1999, Hvarleva, et al. 2004, Galbács, et al. 2009) |
| **VrZAG64** | F: TATGAAAGAAACCCAACYCGGCACG  R: TGCAATGTGGTCAGCCTTTGATGGG | N/A | N/A | **10** | **N/A** | (TC)27 | **112-197** | **10** | **0.8919** | **0.8074** | **0.111** | (Hvarleva, et al. 2004, Veres, et al. 2004, Halasz, et al. 2005, Dos Anjos 2013) |
| **VrZag67** | F: ACCTGGCCCGACTCCTCTTGTATGC  R: TCCTGCCGGCGATAACCAAGCTATG | 1:NC\_012016.3  2:NC\_048440.1 | 1: F 1447885-1447861  R 1447733-1447757  2: F 17288150-17288174  R 17288306-17288282 | **10** | **10** | (GA)18(TA)10 | **126–159** | **17** | **0,796** | **0,829** | **0.09** | (Sefc, et al. 1999, Merkouropoulos, et al. 2015) |
| **VrZAG7** | F: GTGGTAGTGGGTGTGAACGGAGTGG  R: AACAGCATGACATCCACCTCAACGG | 2:NC\_048440.1 | 2: F 498496-498472  R 498301-498325 | **N/A** | **10** | (AG)4T(AG)21 | **106–158** |  | **0.39** | **0.37** | **0.48** | (Sefc, et al. 1999) |
| **VrZAG83** | F: GGCGGAGGCGGTAGATGAGAGGGCG  R: ACGCAACGGCTAGTAAATACAACGG | 2:NC\_048434.1 | 2: F 20847826-20847802  R 20847643-20847667 | **N/A** | **4** | (GA)5C(AG)2T(GA)3GG(GA)2T(AG)7 | **191-214** | **6** | **0.6081** | **0.7047** | **0.253** | (Sefc, et al. 1999, Hvarleva, et al. 2004, Galbács, et al. 2009, Bibi, et al. 2020) |
| **VVIb01** | F: TGACCCTCGACCTTAAAATCTT  R: TGGTGAGTGCAATGATAGTAGA | 1: NC\_012008.3  2: NC\_048432.1 | 1: F2349171-2349192  R2349460-2349439  2: F 17441702-17441681  R17441405-17441426 | **2** | **2** | (CT)12 | **250-300** | **4** | **0.80** | **0.70** | **0.575** | (Laucou, et al. 2011, Nebish, et al. 2017) |
| **VVIb09** | F: ATGTTTTGATTCCTTAGGTGAC  R: CCTAAGAGCCATTCAAGATTAA | 1:NC\_012023.3  2:NC\_048447.1 | 1: F 9295347-9295368  R 9295626-9295605  2: F 10473528-10473507  R 10473259-10473280 | **17** | **17** | (GT)10/(TC)11 | **250-300** | **5** | **0.80** | **0.78** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb10** | F: CAAATCCTGAAAATGGCCTCAT  R: GAGCCCTTAAAACACTTTGACT | 1: NC\_012018.3  2: NC\_048442.1 | 1: F 18063282-18063261  R 18063207-18063228  F 18063282-18063261  R 18062999-18063020  2: F 5852597-5852618  R 5852668-5852647 | **12** | **12** | (GA)12 | **50-100** | **3** | **0.40** | **0.34** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb18** | F: TTTTGTTTGCGAGGTTGGGATT  R: AATCAATCAACCACGCATGCTT | 1: NC\_012012.3  2: NC\_048436. | 1: F 6330751-6330730  R 6330570-6330591  2: F 16606767-16606788  R 16606948-16606927 | **6** | **6** | (GGT-GT)3-GG-(GT)5-CT-(GT)3 | **150-200** | **1** | **0.00** | **0.00** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb19** | F: TGGATGTTCCTAAACCTTAAGT  R: GCATAAGGGCATTTTGGTAAAT | 1: NC\_012017.3 | 1: F 5848909-5848930  R 5849300-5849279 | **11** | **N/A** | (CT)6-CG-(CT)4 | **350-400** | **2** | **0.00** | **0.18** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb22** | F: CCCTCCAATCTACATCCATGAA  R: CAGTGTGTTTCTTGATGGTCCA | 1: NC\_012013.3  2: NC\_048437.1 | 1: F 3139481-3139502  R 3139640-3139619  2: F 27274422-27274401  R 27274277-27274298 | **7** | **7** | (CT)8-CA-(6CA-TA)3 | **150-200** | **3** | **0.60** | **0.46** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb23** | F: GGTCACGTAGATATTGAAGTTG  R: TTTGTATTTTGGGCATTTGCAG | 1: NC\_012008.3  2: NC\_048432.1 | 1: F 4864625-4864604  R 4864334-4864355  2: F 14679430-14679451  R 14679740-14679719 | **2** | **2** | (GA)12 | **300-305** | **4** | **0.60** | **0.72** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb31** | F: GGTTGGTACCAATGAAATCAAT  R: ACGTTCTCACAGTATTTCTCAA | 1: NC\_012024.3  2: NC\_048448.1 | 1: F 2913110-2913089  R 2912731-2912752  2: F 2940815-2940794  R 2940451-2940472 | **18** | **18** | (GA)3/(GA)4-AA-(GA)9-(GGA)5 | **350-400** | **3** | **0.40** | **0.46** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb32** | F: GTAACCATCTCTAACCATTTCA  R: TGAGAACACTTCACAGAGATTT | 1: NC\_012018.3  2: NC\_048442.1 | 1: F 10307595-10307616  R 10307763-10307742  2: F 13864770-13864749  R 13864618-13864639 | **12** | **12** | (TG)16-(TA)2 | **150-200** | **6** | **0.60** | **0.82** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb54** | F: GTCAAACATACATGCACCAACA  R: ACCAATGAAACCTAAAAGAGGG | 1: NC\_012025.3  2: NC\_048449.1 | 1: F 20082012-20081991  R 20081815-20081836  2: F 20472639-20472618  R 20472437-20472458 | **19** | **19** | (CA)4/(CA)5 | **150-200** | **1** | **0.00** | **0.00** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb59** | F: ATCATTCTGATCCAGCTAATCC  R: TTCCTGAGTTGCTTTCATTAGC | 1: NC\_012009.3  2:N/A | 1: F 8121467-8121446  R 8121111-8121132 | **3** | **N/A** | (GA)30 | **350-400** | **4** | **0.60** | **0.64** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb63** | F: ACCACCAACATATATAGTCCAA  R: GAGAGAAATGTGGAGGAGTAAA | 1: NC\_012021.3  2: NC\_048445.1 | 1: F 11597299-11597278  R 11597153-11597174  2: F 9459483-9459504  R 9459637-9459616 | **15** | **15** | (GA)13/(TA)2-(GA)4 | **150-200** | **4** | **0.80** | **0.66** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb66** | F: CCACTAGTGGTCAGAAAAGAAG  R: TTGTATTGTGTGCCTCTTCTCA | 1: NC\_012014.3  2: NC\_048438.1 | 1: F 18270347-18270326  R 18270246-18270267  2: F 18444409-18444388  R 18444322-18444343 | **8** | **8** | (GA)13 | **50-100** | **8** | **1.00** | **0.86** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb68** | F: AATACATACATCCCATAAGGAG  R: TTGTGATGCAATACTCGTTGAT | 1: NC\_012022.3  2: NC\_048446.1 | 1: F 15787960-15787939  R 15787783-15787804  2: F 16377363-16377342  R 16377190-16377211 | **16** | **16** | (GA)4/(GA)9 | **150-200** | **3** | **0.80** | **0.54** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb72** | F: TCAACTTAATTTCCTGATCCGA  R: CCAATTGATGGAGTATACTCAT | 1: NC\_012011.3  2: NC\_048435.1 | 1: F 2848403-2848424  R 2848585-2848564  2: F 2354282-2354303  R 2354464-2354443 | **5** | **5** | (CA)3/(CA)6 | **150-200** | **2** | **0.20** | **0.18** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIb94** | F: AGAAATCACATGAGAAAGCTGT  R: ATTCACTTCTCCAAACGCTTTT | 1: NC\_012007.3  2: NC\_048431.1 | 1: F 6835061-6835040  R 6834767-6834788  2: F 6880258-6880237  R 6879970-6879991 | **1** | **1** | (CT)12 | **300-350** | **4** | **0.80** | **0.66** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIc05** | F: GCGATTAAGCAAGTTGAAGAAC  R: AATGATTGCAAATAGATAGGGC | 1: NC\_012017.3  2:N/A | 1: F 13520289-13520310  R 13520468-13520447 | **11** | **N/A** | (CT)12 | **150-200** | **2** | **0.00** | **0.32** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIc35** | F: GGAAAAATGATGAGGTAAAGCC  R: GGCAGATATGGAGAAACAAATG | 1: NC\_012021.3  2: NC\_048445.1 | 1: F9660794-9660815  R9661165-9661144  2: F11458399-11458378  R11458039-11458060 | **15** | **15** | (TC)25 | **350-400** | **4** | **0.40** | **0.56** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIc46** | F: TTGCAACATGGATTCCCTTTTT  R: AAATGGATTTTTGTGGGGGAAT | 1: NC\_012014.3  2: NC\_048438.1 | 1: F 15047468-15047447  R 15047378-15047399  2: F 15103858-15103837  R 15103768-15103789 | **8** | **8** | (TCA)5 | **50-100** | **2** | **0.20** | **0.18** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIc50** | F: TTGTTAGCCACAATTCAAGAGG  R: TGTTATGGACAAGATGAAAGGC | 1: NC\_012012.3  2: NC\_048436.1 | 1: F 8450955-8450976  R 8451033-8451012  2: F 14311014-14310993  R 14310928-14310949 | **6** | **6** | (GA)12 | **50-100** | **4** | **0.20** | **0.58** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIc51** | F: CTTTGAAGCACAAAATCGAGCT  R: ACCAAAGGGAAGCAAAAGAAAA | 1: NC\_012019.3  2: NC\_048443.1 | 1: F 8083860-8083839  R 8083696-8083717  2: F 20214060-20214081  R 20214223-20214202 | **13** | **13** | (CTTCT)3-(CT)11 | **150-200** | **3** | **0.60** | **0.46** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIc72** | F: GTATTGTGTAAGCATTGTGTGG  R: GGACAAGGAGTTAGATATGAAC | 1: NC\_012007.3  2: NC\_048431.1 | 1: F 3255985-3255964  R 3255733-3255754  2: F 3261527-3261506  R 3261273-3261294 | **1** | **1** | (AG)5-GGAA-(AG)3-GG-(AG)8 | **300-350** | **3** | **0.80** | **0.54** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIf52** | F: AGGGAATTGAAGAGAAACTGTT  R: TCTGCCAAGCAAATGAAAGAAA | 1: NC\_012007.3  2: NC\_048431.1 | 1: F 22273039-22273060  R 22273297-22273276  2: F 23238182-23238203  R 23238432-23238411 | **1** | **1** | (AG)3-GAG-(GGA)2-(GA)2-(GG-3AG)3-(AG)3-(GGAA)2/(TG)4 | **300-350** | **5** | **0.80** | **0.83** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIh01** | F: GGGCTTTGCTGCGATATTTATT  R: ACACAGAATACGCAACTTTGCA | 1: NC\_012016.3  2: NC\_048440.1 | 1: F 1181498-1181477  R 1181256-1181277  2: F 21645480-21645501  R 21645719-21645698 | **10** | **10** | (CT)20 | **300-350** | **5** | **0.80** | **0.76** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIh02** | F: AGAACACTTTGGTAAGAGGCAA  R: TTCTATACGACGTAGCCCAAAA | 1: NC\_012009.3  1: NC\_012015.3  2: NC\_048439.1 | 1: F 9073477-9073456  R 9073342-9073363  F 703090-703069  R 702969-702990  2: F 710088-710067  R 709965-709986 | **3, 9** | **9** | (TC)12 | **50-100** | **4** | **1.00** | **0.70** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIh54** | F: CCGCACTTGTGTTGAATTTCAG  R: CAAACCGTTTTTACACCAGCAG | 1: NC\_012019.3  2: NC\_048443.1 | 1: F 3333487-3333508  R 3333652-3333631  2: F 25894227-25894206  R 25894062-25894083 | **13** | **13** | (GA)18 | **150-200** | **4** | **0.80** | **0.66** | **0.828** | (Merdinoglu, et al. 2005; Laucou, et al., 2011; Nebish, et al. 2017) |
| **VVIi51** | F: ATCCCAAGAGAACCAAGAAACT  R: GCTGATCTCAGTGCATATGTTG | 1: NC\_012020.3  2: NC\_048444.1 | 1: F 28772163-28772184  R 28772424-28772403  2: F 1550482-1550461  R 1550235-1550256 | **14** | **14** | (GA)17 | **300-350** | **5** | **1.00** | **0.76** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIi52** | F: AGATTTAGAGACGAAAAAGGGT  R: CTTGATCTTTAGTTGCAGTCTG | 1: NC\_012011.3  2: NC\_048435.1 | 1: F 4629717-4629696  R 4629620-4629641  2: F 4247694-4247673  R 4247605-4247626 | **5** | **5** | (GT)12 | **50-100** | **3** | **0.40** | **0.58** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm01** | F: GAAGAATTTTAGGAGTTGGTCA  R: GAAGAGAAGCAAGAAGTGATAA | 1: NC\_012019.3  2: N/A | 1: F 6508124-6508145  R 6508306-6508285  2: F N/A  R N/A | **13** | **N/A** | (CA)3-GA-(CA)9 | **150-200** | **2** | **0.40** | **0.32** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm03** | F: ACTTTGCACTTCCCCTTAAAAA  R: ATGGATATGCTGATAGTGATGT | 1: NC\_012025.3  2: NC\_048449.1 | 1: F 7078556-7078577  R 7078930-7078909  2: F 7515415-7515436  R 7515787-7515766 | **19** | **19** | (GA)12 | **350-400** | **4** | **0.40** | **0.58** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm04** | F: AAAAATCTGATATCAACCGGCT  R: TATATTGATCACCACACTCGAT | 1: NC\_012017.3  2: NC\_048441.1 | 1: F 558439-558460  R 558521-558500  2: F 19307340-19307319  R 19307250-19307271 | **11** | **11** | (GA)14 | **50-100** | **5** | **0.60** | **0.68** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm07** | F: TGGTGTCAACATTCCTTACAAG  R: TTATTACATGGATAGGCACTCA | 1: NC\_012014.3  2: NC\_048438.1 | 1: F 10702981-10703002  R 10703329-10703308  2: F 10787839-10787860  R 10788195-10788174 | **8** | **8** | (TC)5-TA-(TC)14 | **350-400** | **3** | **0.80** | **0.64** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm10** | F: AGGTGAACTCTGTAAATATACG  R: GCTCAAAGTTGAAGATTTATCC | 1: NC\_012024.3  2: NC\_048448.1 | 1: F 10439563-10439542  R 10439196-10439217  2: F 10689192-10689171  R 10688827-10688848 | **18** | **18** | (GT)8-(GA)8 | **350-400** | **4** | **0.80** | **0.58** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIM10** | F: AAAAGGTGAACTCTGTAAATATACG  R: GGATAAATCTTCAACTTTGAGCAGC | 1: N/A  2: N/A | 1: N/A  2: N/A | **18** | **N/A** | (GT)8-(GA)8 | **350-400** | **4** | **0.80** | **0.58** | **N/A** | (Merdinoglu, et al. 2005, Jahnke, et al. 2011) |
| **VVIm11** | F: AAAAGCCCATTAAGTGCCAATG  R: CCTATGAACTTATTGGGCTCTT | 1: NC\_012018.3  2: NC\_048442.1 | 1: F8350835-8350856  R8351130-8351109  2: F12338916-12338895  R12338637-12338658 | **12** | **12** | (CT)8-(TC)8 | **300-350** | **4** | **0.80** | **0.74** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm25** | F: TGTTTTAACAGAAGCCTACACG  R: GAGAGTGATGTGGGATTTGTTA | 1: NC\_012007.3  2: NC\_048431.1 | 1: F 12224157-12224178  R 12224323-12224302  2: F 13237272-13237293  R 13237440-13237419 | **1** | **1** | (CT)12 | **150-200** | **5** | **0.80** | **0.68** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm26** | F: CTCACCCTTGGTGTTGAAGTTG  R: CGTCACTCACCTCCAAAGCTTC | 1:NW\_003724290.1  2: NC\_048437.1 | 1: F 21599-21620  R 21765-21744  2: F 7574793-7574772  R 7574627-7574648 | **N/A** | **7** | (AG)5/(AG)3 | **150-200** | **1** | **0.00** | **0.00** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm33** | F: CTGAACCTGAAACTGATGAAGT  R: ATGAATGGACAGTGCAACTTTG | 1: NC\_012013.3  2: NC\_048448.1 | 1: F 5667762-5667783,  R 5667881-5667860  2: F 38950751-38950730, R 38950475-38950496 | **18** | **18** | (GA)10-(CA)7-(CA)6 | **300-350** | **1** | **0.00** | **0.00** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm42a** | F: AATGGTGGTAAAGTCTTTGCTG  R: TCTTCCAATAATACCAGCACTG | 1: NC\_012021.3  2: NC\_048445.1 | 1:F 15943609-15943630  R 15943863-15943842  2:F 4747445-4747424  R 4747173-4747194 | **15** | **15** | (ACC)13-(AAC)6/(AG)3 | **300-350** | **4** | **0.40** | **0.48** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm42b** | F: CCCTCAAGACCTTGAAAATTGT  R: ACACAAATATGCATACACACGC | 1: NC\_012021.3  2: NC\_048445.1 | 1:F 15943274-15943295  R 15943358-15943337  2:F 4747783-4747762  R 4747699-4747720 | **15** | **15** | (GT)7 | **50-100** | **3** | **0.60** | **0.46** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm43** | F: GGTGTTGTTTTCTTGTGTTTGT  R: AGGATACATGCTGAAGAATATG | 1: NC\_012012.3  2: NC\_048436.1 | 1:F 19003995-19003974  R 19003918-19003939  2:F 2854868-2854889  R 2854953-2854932 | **6** | **6** | (TC)17 | **50-100** | **5** | **0.80** | **0.76** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm58** | F: ACAATTAGTATCAAAGCCAACC  R: TTGGGTTGATCAACACTTGTTT | 1: NC\_012012.3  2: NC\_048443.1 | 1:F 8025477- 8025498  R 8025863 - 8025842  2:F 769723- 769702  R 769360- 769381 | **6** | **13** | (AT)4/(AT)3-(GT)5-AC-(GT)6 | **350-400** | **1** | **0.00** | **0.00** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm63** | F: AAGCCTTCTACTTGTTTGATGA  R: ATTTGTTCTCAAACAGGCACAT | 1: NC\_012019.3  2: NC\_048443.1 | 1:F 4808159-4808138  R 4807861-4807882  2:F 24394214-24394235  R 24394520-24394499 | **13** | **13** | (TC)4-TATC-(TG)3 | **300-350** | **2** | **0.20** | **0.18** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm72** | F: AATGTCTTACAGCACTATTTGG  R: TGAAGATGATATACAGAGTAGC | 1: NC\_012024.3  2: NC\_048448.1 | 1:F 6009889-6009868  R 6009558-6009579  2:F 6048058-6048037  R 6047737-6047758 | **18** | **18** | (CAA)3-AT-(GA)18 | **350-400** | **1** | **0.00** | **0.00** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm79a** | F: ATTATGTTTGAAGACTTGTGCC  R: GTGAGATCTCTAGAGAAGTTTG | 1: NC\_012024.3  2: NC\_048448.1 | 1: F 13555077-13555056  R 13554857-13554878  2: 13759781-13759760  R 13759561-13759582 | **18** | **18** | (TTTTC)2 | **150-200** | **1** | **0.00** | **0.00** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm79b** | F: AAACTTCTCTAGAGATCTCACC  R: AGTGTGTTTGACTCCAGAAAAG | 1: N/A  2: N/A | 1: N/A  2: N/A | **N/A** | **N/A** | (TC)9-TT-(TC)10-(T)13-C-(T)6 | **300-350** | **5** | **0.20** | **0.74** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIm93** | F: CAACGTTTATTGTAAGAGCCTC  R: GCTTAGCTTGCTAGAAACTTGA | 1: NC\_012024.3  2: NC\_048448.1 | 1: F 6962396-6962375  R 6962288-6962309  2: F 6934454-6934433  R 6934344-6934365 | **18** | **18** | (CCCT)4-CCC-(CCCT)2-(CT)3 | **150-200** | **4** | **0.40** | **0.56** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIn03** | F: ACTCAAATTTGTTCCCTACTCT  R: TGAGAAAATCTGAACCAGACTA | 1: NC\_012022.3  2: NC\_048446.1 | 1: F 388101-388122  R 388445-388424  2: F 342239-342260  R 342585-342564 | **16** | **16** | (AC)3-(TAA)2/(TG)3-GG-TT-(TG)2 | **350-400** | **1** | **0.00** | **0.00** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIn04** | F: GTGAAGGTGGTGTTTGTAGATT  R: CCTAATTGGCTGAATGTGATCT | 1: NC\_012025.3  2: NC\_048449.1 | 1: F 6696956-6696977  R 6697317-6697296  2: F 7087084-7087105  R 7087444-7087423 | **19** | **19** | TT-(CT)5/(TA)2-(GA)2 | **350-400** | **4** | **0.60** | **0.64** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIn16** | F: ACCTCTATAAGATCCTAACCTG  R: AAGGGAGTGTGACTGATATTTC | 1: NC\_012024.3  2: NC\_048448.1 | 1: F 23389846-23389825,  R 23389686-23389707  2: F 29558337- 29558316,  R 29558187-29558208 | **18** | **18** | (AC)3-G-(CA)6 | **150-200** | **3** | **0.80** | **0.62** | **0.628** | (Merdinoglu, et al. 2005, Laucou, et al. 2011, Nebish, et al. 2017) |
| **VVIn31** | F: GTTGAATAGTGTCCATGTTGTG  R: GGATAGAATCACATTTGTAGCG | 1: NC\_012012.3 | 1: F 17800616- 17800595,  R 17800420- 17800441 | **6** | **N/A** | (AGAT)4-(3(AG)-AT)4-(AG)14-(AT)2 | **150-200** | **6** | **0.80** | **0.76** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIn33** | F: TGCCAAAGCAAGTATCAACATG  R: ATTTTGATCCCACCTAACTCTG | 1: NC\_012011.3  2: NC\_048435.1 | 1: F 11299447-11299468  R 11299723- 11299702  2: F 11510823-11510844  R 11511081- 11511060 | **5** | **5** | (TC)4-CC-AC-(TC)10-AC-(TC)8-AC-GC-(AC)5-(TC)2 | **300-350** | **4** | **0.80** | **0.74** | **N/A** | (Merdinoglu, et al. 2005) |
| **VVIn73** | F: TACTTCACCTAACAATACAGCT  R: AATACATAAGGTGAAGATGCCT | 1: NC\_012023.3  2: NC\_048447.1 | 1: F 5504674 - 5504653  R 5504409 - 5504430  2: F 14035715- 14035736  R 14035970- 14035949 | **17** | **17** | (AC)10 | **260–272** | **5** | **0.595** | **0.514** | **0.459** | (Merdinoglu, et al. 2005, Laucou, et al. 2011, Nebish, et al. 2017) |
| **VVIp31** | F: TATCCAAGAGACAAATTCCCAC  R: TTCTCTTGTTTCCTGCAAATGG | 1: NC\_012025.3  2: N/A | 1: F 6697524 - 6697545  R 6697705 - 6697684  2: N/A | **19** | **N/A** | (GA)20 | **173–196** | **11** | **0.895** | **0.847** | **0.818** | (Merdinoglu, et al. 2005, Laucou, et al. 2011, Nebish, et al. 2017) |
| **VVIp60** | F: GGGGAATAACTAAATTGAGGAT  R: GTATGAATGCGGATAGTTTGTG | 1: NC\_012007.3  2: NC\_048431.1 | 1: F 8803413-8803434  R 8803728-8803707  2 F 9853301-9853322  R: 9853622-9853601 | **1** | **1** | (TG)8-AG-(TG)10-(AG)12 | **306–332** | **9** | **0.789** | **0.755** | **0.710** | (Merdinoglu, et al. 2005, Laucou, et al. 2011, Nebish, et al. 2017) |
| **VVIQ52** | F: TAAAAGGATGGTAGATGACAGA  R: ACAGGAAAGTGTTCAATGGTTA | 1: NC\_012015.3  2: NC\_048439.1 | 1: F 21558125-21558104  R 21558043-21558064  2: F 22143424-22143403  R 22143332-22143353 | **9** | **9** | (AC)2-TC)11 | **82-93** | **5** | **0.686** | **0.667** | **0.173** | (Merdinoglu, et al. 2005, Zarouri 2016) |
| **VVIV37** | F: TTTTCTCCCTACTCTTAACTTC  R: GGTAGACCTTGAAATGAAGTAA | 1: NC\_012016.3  2: NC\_048440.1 | 1:F 11032502-11032481  R 11032334-11032355  2:F 8762741-8762762  R 8762899-8762878 | **10** | **10** | (TC)16-(TG)3 | **150-200** | **4** | **0.80** | **0.64** | **0.760** | (Merdinoglu, et al. 2005, Nebish, et al. 2017) |
| **VVIV67** | F: TATAACTTCTCATAGGGTTTCC  R: TTGGAGTCCATCAAATTCATCT | 1: NC\_012021.3  2: NC\_048445.1 | 1: F 10897758-10897737  R 10897392-10897413  2: F 17911479-17911500  R 17911867-17911846 | **15** | **15** | (CA)3-AT-(CA)2-(GA)4-TT-(GA)2/(AG)15 | **350-400** | **5** | **1.00** | **0.74** | **0.777** | (Merdinoglu, et al. 2005, Nebish, et al. 2017) |
| **VVMD15** | F: CTGCAGTGCACTCAAAGTTGG  R: TGAAACACCAAGGGAAACCTC | 1: N/A  2: N/A | 1: N/A  2: N/A | **N/A** | **N/A** | (GA)19 | **192–216** | **12** | **0.95** | **0.86** | **0.845** | (Sefc, et al. 1999, Jing, et al. 2013, Žulj , Maletić et al. 2020) |
| **VVMD19** | F: TGAAATATCATCAATGCTCTCTCTCC  R: GGTTGATATTGCTTCCTTTTCCC | 1:NW\_003724213.1  2: NC\_048440.1 | 1:F 194851-194876  R195046 -195024  2:F 21094485-21094460  R: 21094290-21094312 | **N/A** | **10** | N/A | **N/A** | **N/A** | **N/A** | **N/A** | **N/A** | (Jing, et al. 2013) |
| **VVMD21** | F: GGTTGTCTATGGAGTTGATGTTGC  R: GCTTCAGTAAAAAGGGATTGCG | 1: NC\_012012.3  2: NC\_048436.1 | 1:F 13758808-13758831  R 13759052-13759032  2: F 7531145-7531122  R 7530928-7530948 | **6** | **6** | (A)13(A)21(T)18(C)9(T)22(AT)6 | **230-267** | **7** | **0.678** | **0.707** | **0.219** | (Galbács, et al. 2009, Dos Anjos 2013) |
| **VVMD24** | F: GTGGATGATGGAGTAGTCACGC  R: GATTTTAGGTTCATGTTGGTGAAGG | 1:NC\_012020.3  2:NC\_048444.1 | 1: F 24252077-24252056  R 24251864-24251888  2:F 6056744-6056765  R 6056947-6056923 | **14** | **14** | (CT)11(T)10(A)10 | **206–219** | **7** | **0.868** | **0.809** | **0.770** | (Laucou, et al. 2011, Dos Anjos 2013, Nebish, et al. 2017) |
| **VVMD36** | F: GAAAATTAATAGGGGGACACGGG  R: GCAACTGTAAAGGTAAGACACAGTCC | 1:NC\_012009.3  2:NC\_048433.1 | 1: F 7904163-7904185  R 7904412-7904387  2: F 7525800-7525822  R 7526047-7526022 | **3** | **3** | N/A | **244-296** | **17** | **0.817** | **0.838** | **0.082** | (Halasz, et al. 2005, Galbács, et al. 2009) |
| **VVMD6** | F: ATCTCTAACCCTAAAACCAT  R: CTGTGCTAAGACGAAGAAGA | 1:NC\_012013.3  2:NC\_048437.1 | 1: F 4186801-4186820  R 4187000-4186981  2: F 26216152-26216133  R 26215948-26215967 | **7** | **7** | (CT)C(CT)TTAG(CT)TAAT-(CT)6C(CT)2C(CT)2 | **194-214** | **5** | **N/A** | **N/A** | **N/A** | (Bowers, et al. 1996) |
| **VVMD8** | F: TAACAAACAAGAAGAGGAAT  R: AGCACATCCACAACATAATG | 1:NC\_012017.3  2:NC\_048441.1 | 1: F 19674992-19675011  R 19675145-19675126  2: F 159556-159537  R 159376-159395 | **11** | **11** | (TC)12.5(TA)8 | **131-215** | **23** | **0.754** | **0.798** | **0.066** | (Bowers, et al. 1996, Zarouri 2016) |
| **VVS1** | F: ACAATTGGAAACCGCGTGGAG  R: CTTCTCAATGATATCTAAAACCATG | 1: NC\_012019.3  2: NC\_048443.1 | 1:F 6563366 - 6563346  R 6563177 - 6563201  2:F 22468337-22468357  R 22468519 - 22468495 | **13** | **13** | (AG)15 | **160-205** | **5** | **N/A** | **N/A** | **N/A** | (Thomas and Scott 1993, Lefort and Roubelakis-Aggelakis 2000, Dos Anjos 2013; Dauob, et al. 2018) |
| **VvUCH29** | F: AAACATGATCTGATGCAGGTGA  R: CAACCTGTTGATGAAAGGGAAA | 1: AF143277 | N/A | **N/A** | **N/A** | (CT)18 | **207-315** | **26** | **0.793** | **0.845** | **N/A** | (Lefort, et al. 2002) |

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