**Table S1.** List of reference sequences used for mapping of individual viruses and viroids

| Virus/viroid | abbreviation | GenBank accession number |
|---|---|---|
| *Garlic virus A* | GarV-A | JX997952 |
| *Papaya mosaic virus* | PapMV | MH645156 |
| *Apple stem pitting virus* | ASPV | NC003462 |
| *Grapevine Pinot gris virus* | GPGV | NC015782 |
| *Grapevine virus A* | GVA | DQ855088 |
| *Alfalfa mosaic virus* - RNA1 | AMV | Mk913782 |
| *Cucumber mosaic virus* – RNA2 | CMV | LC604033 |
| *Ambrosia asymptomatic virus 2* | AAV2 | NC055542 |
| *Grapevine leafroll associated virus 1* | GLRaV1 | NC016509 |
| *Grapevine leafroll associated virus 3* | GLRaV3 | KY764333 |
| *Grapevine endophyte endornavirus* | GEEV | JX678977 |
| *Grapevine red blotch virus* | GRBV | NC022002 |
| *Iranian johnsongrass mosaic virus* | IJMV | JQ692088 |
| *Turnip mosaic virus* | TuMV | KJ936089 |
| *Arabis mosaic virus* RNA1 | ArMV | NC006057 |
| RNA2 | | NC006056 |
| *Grapevine deformation virus* RNA1 | GDefV | NC017939 |
| RNA2 | | NC017938 |
| *Grapevine fanleaf virus* RNA1 | GFLV | KU522584 |
| RNA2 | | KU522585 |
| *Physalis rugose mosaic virus* | PhyRMV | MK681145 |
| *Grapevine Red Globe virus* | GRGV | NC030693 |
| *Grapevine fleck virus* | GFKV | AJ309022 |
| *Grapevine satellite virus* | GV-Sat | NC021480 |
| *Citrus exocortis viroid* | CEVd | DQ318794 |
| *Grapevine yellow speckle viroid 1* | GYSVd1 | NC001920 |
| *Grapevine yellow speckle viroid 2* | GYSVd2 | KJ489020 |
| *Australian grapevine viroid* | AGVd | NC003553 |
| *Hop stunt viroid* | HSVd | NC001351 |

**Table S2.** List of primer pairs used for the detection of viruses in grapevine libraries

| Virus | Primer name | amplicon | Annealing temp | | Primer seq | Ref |
|---|---|---|---|---|---|---|
| Australian grapevine viroid | H1(+)<br>C1(-) | 300 | 59 | Forward<br>Reverse | GTCGACGAAGGGTCCTCAGCAGAGCACC<br>CTCGACGACGAGTCGCCAGGTGAGTCTT | [38] |
| Hop stunt viroid | HSV+<br>HSV- | 300 | 59 | Forward<br>Reverse | GGCAACTCTTCTCAGAATCCAGC<br>CCGGGGCTCCTTTCTCAGGTAAGT | [38] |
| Grapevine yellow speckle viroid 1 | GV2(+)<br>GV1(-) | 300 | 60 | Forward<br>Reverse | TAAGAGGTCTCCGGATCTTCTTGC<br>GCGGGGGTTCCGGGGATTGC | [39] |
| Grapevine leafroll-associated virus 1 | LEV1-C447<br>LQV1-H47 | 398 | 56 | Forward<br>Reverse | CGACCCCTTTATTGTTTGAGTATG<br>GTTACGGCCCTTTGTTTATTATGG | [40] |
| Grapevine fanleaf virus | DetF<br>DetR | 1000 | 56 | Forward<br>Reverse | CGGCAGACTGGCAAGCTGT<br>GGTCCAGTTTAATTGCCATCCA | [23] |
| Grapevine deformation virus | GDefV-F<br>GDefV-R | 371 | 55 | Forward<br>Reverse | GCCCAGGATGAGCTCTACTAC<br>TATGGGGAATTGTGTGGCCA | [41] |
| Arabis mosaic virus | ArMV-F<br>ArMV-R | 1518 | 58 | Forward<br>Reverse | AATCCTTTTGGAATGCCAGGCAATCC<br>ACAAGCTAAATATAAATATAATACA | [42] |
| Grapevine red blotch virus | GRBV-V2F<br>GRBV-V1R | 798 | 56 | Forward<br>Reverse | ATGGGTTAGGGGATGAGGCT<br>CGGCAATGACTCCTGCGGCT | [43] |
| GVA | GVA-F<br>GVA-R | 240 | 54 | Forward<br>Reverse | AGGTCCACGTTTGCTAAG<br>CATCGTCTGAGGTTTCTA | [44] |
| Alfalfa mosaic virus | AMV-F<br>AMV-R | 351 | 58 | Forward<br>Reverse | CCATCATGAGTTCTTCACAAAAG<br>TCGTCACGTCATCAGTGAGAC | [45] |
| Garlic virus A | GVA-F<br>GVA-R | 417 | 55 | Forward<br>Reverse | TGGAGACCCTTTCCAAGGCA<br>CTCATCCGCGAATGGTGGTT | [46] |

**Table S3**. Comparison of efficiency of three software packages in reconstruction of viral/viroidal genomes from sRNA sequences of grapevine libraries generated by high-throughput sequencing

| Virus/viroid | Reference GenBank accession No. | Reference genome Size (nt) | CLC workbench | | UGENE package | | VIRUSDETECT pipeline | |
|---|---|---|---|---|---|---|---|---|
| | | | Genome recovery (nt) | Genome coverage (%) | Genome recovery (nt) | Genome coverage (%) | Genome recovery (nt) | Genome coverage (%) |
| Apple stem pitting virus | NC003462 | 9332 | 1697 | 18.18 | 9247 | 99.09 | nf | 0 |
| Physalis rugose mosaic virus | MK681145 | 4175 | 606 | 14.51 | 4152 | 99.45 | nf | 0 |
| Papaya mosaic virus | MH645156 | 6866 | 991 | 14.43 | 6837 | 99.58 | nf | 0 |
| Turnip mosaic virus | KJ936089 | 9834 | 1371 | 13.94 | 9714 | 98.78 | nf | 0 |
| Grapevine virus A | DQ855088 | 7342 | 1013 | 13.80 | 7296 | 99.37 | nf | 0 |
| Cucumber mosaic virus – RNA2 | LC604033 | 3018 | 386 | 12.79 | 3006 | 99.63 | nf | 0 |
| Grapevine fleck virus | AJ309022 | 7564 | 952 | 12.60 | 7552 | 99.84 | 414 | 5.5 |
| Ambrosia asymptomatic virus 2 | NC055542 | 7408 | 901 | 12.16 | 7381 | 99.64 | nf | 0 |
| Grapevine leafroll associated virus 3 | KY764333 | 18449 | 2173 | 11.78 | 18249 | 98.92 | nf | 0 |
| Grapevine endophyte endornavirus | JX678977 | 12154 | 1340 | 11.00 | 12005 | 98.77 | nf | 0 |
| Iranian johnsongrass mosaic virus | JQ692088 | 9544 | 961 | 10 | 9331 | 97.77 | nf | 0 |

**Table S4**. Description and frequency in the virome of viruses and viroids identified in five Iranian grapevine cultivars by sRNA sequencing and confirmed by PCR from composite samples of grapevine leaves collected at the commercial vineyards in northeast of Iran

| Family | Genus | Virus/viroid Species | Cultivar | Peykani | | Askari-Bidaneh | | Peykani | | Rezghi | | Sahebi | | Fakhri | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Library | A4 | | A5 | | A6 | | A7 | | A8 | | A9 | |
| | | | Abbreviation | NGS | PCR | NGS | PCR | NGS | PCR | NGS | PCR | NGS | PCR | NGS | PCR |
| Alphaflexiviridae | Potexvirus | Papaya mosaic virus | PapMV | nf | nt | nf | nt | 0.17 | nt | nf | nt | nf | nt | nf | nt |
| Betaflexiviridae | Foveavirus | Apple stem pitting virus | ASPV | nf | nt | nf | nt | nf | nt | nf | nt | nf | nt | 1.86 | nt |
| | Vitivirus | Grapevine virus A | GVA | nf | nt | nf | nt | nf | nt | nf | nt | nf | nt | 0.53 | nt |
| Bromoviridae | Cucumovirus | Cucumber mosaic virus | CMV | 0.62 | nt | 2.86 | nt | nf | nt | nf | nt | nf | nt | nf | nt |
| Caulimoviridae | Badnavirus | Ambrosia asymptomatic virus 2 | AAV2 | nf | nt | 0.95 | nt | 3.88 | nt | 4.16 | nt | 0.64 | nt | nf | nt |
| Closteroviridae | Ampelovirus | Grapevine leafroll associated virus 3 | GLRaV3 | nf | nt | nf | nt | nf | nt | nf | nt | nf | nt | 2.39 | nt |
| Endornaviridae | Endornavirus | Grapevine endophyte endornavirus | GEEV | 1.26 | nt | nf | nt | nf | nt | nf | nt | nf | nt | nf | nt |
| Potyviridae | Potyvirus | Iranian johnsongrass mosaic virus | IJMV | nf | nt | nf | nt | nf | nt | 0.27 | nt | nf | nt | nf | nt |
| | | Turnip mosaic virus | TuMV | nf | nt | nf | nt | 0.17 | nt | nf | nt | 1.98 | nt | nf | nt |
| Solemoviridae | Sobemovirus | Physalis rugose mosaic virus | PhyRMV | 0.31 | nt | nf | nt | nf | nt | nf | nt | nf | nt | nf | nt |
| Tymoviridae | Maculavirus | Grapevine fleck virus | GFKV | nf | nt | nf | nt | 0.17 | + | nf | nt | nf | nt | nf | nt |

nf: not found; nt: not test