

**Table S1: VIGS Vectors, Plant Species, and Their Method of Transmission Used in Gene Silencing**

| Virus Vector                               | Silenced Host  | Group/Genus | Vector Transmission Method  | Gene Silenced   | Nature of Genome                 | References                         |
|--|--|-------------|---|---|----------------------------------|------------------------------------|
| RNA Viruses                                |  |             |   |   |                                  |                                    |
| <b>Tobacco mosaic virus</b>                | <i>Nicotiana benthamiana</i> , <i>Nicotiana tabacum</i>  | Tobamovirus | Rub inoculation   | <i>pds</i> , <i>psy</i> , <i>rbcS</i> , <i>chsA</i>   | Positive-strand RNA, monopartite | [1]; [2]; [3]                      |
| <b>Apple latent spherical virus (ALSV)</b> | <i>Nicotiana</i> spp., <i>Malus domestica</i> , <i>Pyrus communis</i> L, <i>Solanum lycopersicum</i> , <i>N. occidentalis</i> , <i>n. glutinosa</i> , <i>Cucumis</i> spp, cucurbit species, several legume species, pumpkin ( <i>Cucurbita maxima</i> ), <i>Arabidopsis thaliana</i> | Cheravirus  | sap inoculation, and particle bombardment                         | <i>pds</i> , <i>su</i> , <i>pcna</i> , <i>sulfur</i> gene   | Positive-strand RNA, bipartite   | [4]; [5]; [6]                      |
| <b>Brome mosaic virus</b>                  | <i>Oryza sativa</i> , <i>Hordeum vulgare</i> , <i>N. benthamiana</i> , <i>Sorghum bicolor</i> , <i>Zea mays</i> , <i>Triticum aestivum</i> L, <i>Festuca arundinacea</i>   | Bromovirus  | Rub inoculation, vacuum infiltration, and Agro infiltration       | <i>Ubiq</i> , <i>ChlH</i> , <i>PDS</i> <i>actin 1</i> , <i>rubisco</i> <i>activase</i> , <i>HSP70-1</i> , <i>PHYTOENE DESATURASE</i> ( <i>Ta PDS</i> ) and <i>PHOSPHATE 2</i> ( <i>TaPHO2</i> ) | Positive-strand RNA, tripartite  | [7]; [8]; [9]; [10]; [11]          |
| <b>Barley stripe mosaic virus</b>          | <i>Brachypodium distachyum</i> , <i>Hordeum vulgare</i> L, <i>Avena</i> species and <i>Triticum aestivum</i>   | Hordeivirus | Rub inoculation   | <i>pds</i> , <i>Bx1</i> , <i>Ta_PYL4AS_A</i>  | Positive-strand RNA, tripartite  | [12]; [13]; [14]; [15]; [16]; [16] |
| <b>Bean pod mottle virus</b>               | <i>Glycine max</i> , Kefeng 1 and <i>Phaseolus vulgaris</i> ,  | Comovirus   | Rub inoculation, Mechanical inoculation, and particle bombardment | <i>Pds</i> , <i>GmCAL</i>   | Positive-strand RNA, bipartite   | [17]; [18]; [19]; [20]             |

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|--|---|-------------|--|--|--|------------------|
| <b>Cucumber mosaic virus</b>               | <i>Glycine max</i> , <i>Zea mays</i>                        | Cucumovirus | Sap inoculation,<br>Mechanical inoculation | <i>chs</i> , <i>sf3' h1</i> ,<br>isopentenyl/dimethylallyl diphosphate synthase ( <i>ZmIspsH</i> ) | Positive-strand RNA, tripartite          | [21]; [22]       |
| <b>Cymbidium mosaic virus (CymMV)</b>      | <i>Phalaenopsis orchids</i> ,<br><i>Phalaenopsis</i> flower | Potexvirus  | Rub inoculation,<br>Agro infiltration      | <i>PeMADS6</i> ,<br><i>PeUFGT3</i> , <i>PeMA DS5</i> and <i>PeMADS 6</i>                           | Positive Single-stranded (+ssRNA) genome | [23]; [24]       |
| <b>Potato Virus X (PVX)</b>                | <i>N.benthamiana</i> <i>Solanum tuberosum</i> ,             | Potexvirus  | Agro inoculation                           | <i>gus</i> , <i>pds</i> , <i>DWARF</i> , <i>SSU</i> , <i>NFL</i> , <i>LFY</i>                      | Positive-strand RNA, monopartite         | [25]; [26]; [27] |
| <b>Potato Virus A (PVA)</b>                | <i>N.benthamiana</i>  | Potyvirus   | Rub inoculation and particle bombardment   | Systemic <i>gfp</i> transgene silencing  | Single-stranded, RNA viruses             | [28]             |
| <b>Watermelon mosaic virus (WMV)</b>       | <i>Cucumis melo</i>   | Potyvirus   | Agrobacterium-mediated gene transfer       | Melon Phytoene desaturase ( <i>PDS</i> )   | Single-stranded, RNA viruses             | [29]             |
| <b>Zucchini yellow mosaic virus (ZYMV)</b> | <i>Cucurbita pepo</i>                                       | Potyvirus   | Agrobacterium-mediated gene transfer       | Bacterial phytoene synthase ( <i>crtB</i> )  | Single-stranded, RNA viruses             | [29]             |
| <b>Pea early browning virus</b>            | <i>Lathyrus odorata</i> , <i>Medicago truncatula</i>        | Tobravirus  | Agro inoculation                           | <i>pds</i> , <i>uni</i> , <i>kor</i>   | Positive-strand RNA, bipartite           | [30]             |
| <b>Poplar mosaic virus (PopMV)</b>         | <i>N.benthamiana</i>  | Carlavirus  | Agro inoculation                           | <i>gfp</i>   | Positive-strand RNA, monopartite         | [31]             |
| <b>Plum pox virus (PPV)</b>                | <i>N.benthamiana</i>  | Potyvirus   | Agro inoculation                           | IBDV VP3 inhibits PKR-dependent apoptosis  | +ssRNA                                   | [32]             |

|  |  |             |                                     |  |                                  |                              |
|--|--|-------------|-------------------------------------|--|----------------------------------|------------------------------|
| <b>Sunn-hemp mosaic virus (SHMV)</b>     | <i>N.benthamiana</i> , <i>Medicago truncatula</i>  | Tobamovirus | Rub inoculation                     | <i>gfp</i> , <i>PDS</i> , <i>CH42</i>  | Positive-strand RNA virus        | [33]                         |
| <b>Tobacco necrosis virus A (TNV-A)</b>  | <i>N.benthamiana</i>   | Necrovirus  | Agro inoculation                    | Non-putative gene  | +ssRNA                           | [34]                         |
| <b>Tomato bushy stunt virus (TBSV)</b>   | <i>N.benthamiana</i>   | Tombusvirus | Rub inoculation                     | <i>RMJ3</i> , <i>T33</i>   | +ssRNA                           | [35]                         |
| <b>Tobacco rattle virus (TRV)</b>        | Opium or California poppy, <i>N. benthamiana</i> , <i>S. lycopersicum</i> , <i>Aquilegia vulgaris</i> , <i>A. thaliana</i> , <i>Capsicum</i> spp, <i>Petunia hybrid</i> , <i>Solanum</i> spp, <i>Gossypium</i> spp, <i>Thalictrum dioicum</i> , <i>Jatropha curcas</i> L, <i>Nicotiana attenuate</i> , <i>Centaurea cyanus</i> | Tobravirus  | Agro-inoculation, Agro-infiltration | <i>pds</i> , <i>rbcS</i> , <i>FLO/LFY (NFL)</i>  | Positive-strand RNA, bipartite   | [36]; [37]; [38]; [39]; [40] |
| <b>Turnip yellow mosaic virus (TYMV)</b> | <i>Arabidopsis thaliana</i> , <i>Brassica rapa</i> , <i>brassica napus</i> , Radish ( <i>Raphanus sativus</i> L.)  | Tymovirus   | Rub inoculation, Gene Gun           | <i>lfy</i> , <i>pds</i> , <i>RsNHX1</i>  | Positive-strand RNA, monopartite | [41]; [42]; [43]             |
| <b>Foxtail mosaic virus</b>              | <i>Hordeum vulgare</i> , <i>Triticum aestivum</i> and <i>Setaria italica</i> , <i>Zea mays</i>   | Potexvirus  | Agro-infiltration                   | Several different reporter gene and <i>pds</i> , <i>CLAI</i> , <i>IspH</i> , <i>midrib3</i> , <i>iojap</i> , <i>lesion mimic22</i> | +ssRNA, Monopartite              | [44]; [45]                   |
| <b>Chinese wheat mosaic virus</b>        | <i>N. benthamiana</i> and <i>Triticum aestivum</i>   | Furovirus   | Agroinfiltration                    | <i>PDS</i> , miRNAs (miR165/166 and miR3134a)  | +ssRNA                           | [46]                         |
| <b>DNA Viruses</b>                       |  |             |                                     |  |                                  |                              |
| <b>Abutilon mosaic virus (AbMV)</b>      | <i>N. benthamiana</i>  | Begomovirus | Agro inoculation                    | <i>cpHSC70</i>   | Single-stranded (S S)            | [47]                         |

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|  |   |             |   |  |  |                  |
|--|---|-------------|---|--|--|------------------|
|  |   |             |   |  | DNA,<br>Bipartite                          |                  |
| <b>African cassava mosaic virus (ACMV)</b> | <i>Manihot esculenta</i> and <i>N. benthamiana</i>  | Begomovirus | Particle bombardment  | <i>su, cyp79d2</i>                       | ssDNA bipartite                            | [48]             |
| <b>Cassava common mosaic virus (CsCMV)</b> | cassava varieties and <i>Nicotiana benthamiana</i>  | Potexvirus  | Agro inoculation  | <i>PDS</i> and <i>ChII</i>               | Single-stranded RNA, Monopartite           | [49]             |
| <b>Beet curly top virus (BCTV)</b>         | <i>Spinacea oleracea</i> and <i>S. lycopersicum</i>   | Geminivirus | Biolistic techniques, Agro infiltration   | <i>rbcS</i> and <i>ChII</i> ,            | Circular, single-stranded ( <i>ss</i> )DNA | [50]             |
| <b>Cabbage leaf curl virus (CaLCuV)</b>    | <i>A. thaliana</i> , Brassica crop species ( <i>Brassica rapa</i> and <i>Brassica nigra</i> ) and <i>N. benthamiana</i> | Begomovirus | Particle bombardment, Agro inoculation, <i>Agrobacterium</i> syringe infiltration       | <i>gfp, CH42, pds</i>                    | ssDNA, bipartite                           | [51]; [52]; [53] |
| <b>Cotton leaf crumple virus (CLCrV)</b>   | <i>Gossypium</i> spp  | Begomovirus | Particle bombardment, Agro-inoculation, and <i>Agrobacterium</i> -mediated infiltration | <i>ChII, PDS, CHLI</i> and EF-1 $\alpha$ | ( <i>ss</i> )DNA, bipartite                | [54]; [55]       |
| <b>Grapevine virus A (GVA)</b>             | <i>N. benthamiana</i> and <i>Vitis vinifera</i>   | Vitivirus   | Agro inoculation  | <i>PDS</i>                               | Single-stranded RNA                        | [56]             |
| <b>Pepper Huasteco yellow vein</b>         | <i>Capsicum</i> spp   | Begomovirus | Particle bombardment  | <i>Comt, pAmt</i> and <i>Kas</i>         | Circular, ssDNA bipartite                  | [57]             |

|   |   |                        |  |   |  |            |
|---|---|------------------------|--|---|--|------------|
| <b>virus<br/>(PHYV)<br/>Rice tungro<br/>bacilliform<br/>virus<br/>(RTBV)<br/>Tomato<br/>golden<br/>mosaic virus<br/>(TGMV)<br/>Tomato leaf<br/>curl virus<br/>(ToLCV)</b> | <i>O. sativa, Cynodon<br/>dactylon and Zoysia japonica</i>  | Tungrovirus            | Agro-<br>inoculation,<br>Agro-infiltration | <i>Pds</i>  | Circular<br>double-<br>stranded<br>DNA       | [58]; [59] |
| <b>Tomato<br/>golden<br/>mosaic virus<br/>(TGMV)</b>  | <i>N. benthamiana</i>                                       | Begomovirus            | Particle<br>bombardment                    | <i>su, luc</i>  | ssDNA,<br>bipartite                          | [60]       |
| <b>Tomato leaf<br/>curl virus<br/>(ToLCV)</b>   | <i>N.benthamiana</i> and <i>S.<br/>lycopersicum</i>         | Begomovirus            | Agro inoculation                           | <i>PCNA</i>   | Circular,<br>ssDNA                           | [61]       |
| <b>RNA satellite virus</b>  |   |                        |  |   |  |            |
| <b>Satellite<br/>tobacco<br/>mosaic virus<br/>(STMV)<br/>Bamboo<br/>mosaic virus<br/>(BMV)</b>  | <i>N. tabacum</i>   | RNA satellite<br>Virus | Rub inoculation                            | <i>cesA-1a, cesA-2,<br/>als, chsA, rbcS,<br/>rbcL, tk</i> | Single<br>stranded<br>positive-<br>sense RNA | [62]       |
| <b>Bamboo<br/>mosaic virus<br/>(BMV)</b>  | <i>B. distachyon, N. benthamiana</i>                        | Potexvirus             | Rub inoculation<br>and<br>Agroinfiltration | <i>Sul</i> and <i>PDS</i>                                 | RNA<br>satellite<br>Virus                    | [63]       |
| <b>DNA satellite virus</b>  |   |                        |  |   |  |            |
| <b>Tomato<br/>yellow leaf<br/>curl china<br/>virus<br/>(TYLCCNV)<br/>Beta-satellite<br/>Bhendi<br/>yellow vein<br/>mosaic virus<br/>Beta-satellite</b>                    | <i>S.lycopersicu, Nicotina spp, and<br/>Petunia hybrida</i> | DNA beta<br>satellite  | Agro inoculation                           | <i>Pcna, pds, su,<br/>FRO1</i>                            | ssDNA,<br>satellite                          | [64]; [65] |
| <b>Beta-satellite<br/>Bhendi<br/>yellow vein<br/>mosaic virus<br/>Beta-satellite</b>  | <i>N. benthamiana</i>                                       | DNA beta<br>satellite  | Inoculation with<br>needle-less<br>syringe | <i>Su, PDS, PCNA<br/>and AGO1</i>                         | ssDNA,<br>satellite                          | [66]       |

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|   |   |             |                  |   |                                    |            |
|---|---|-------------|------------------|---|------------------------------------|------------|
| <b>Tobacco curly shoot virus (TbCSV) Beta-satellite</b> | <i>N.benthamiana</i>  | Begomovirus | Agro inoculation | <i>gfp, su, chs, pcna</i>                     | DNA, satellite                     | [67]; [68] |
| <b>TbCSV Alpha-satellite</b>                            | <i>S.lycopersicu-m</i> and <i>Nicotina spp</i> ,<br><i>Petunia hybrid</i> | Begomovirus | Agro inoculation | <i>β-glucuronidase (GUS) gene, Su, NtEDS1</i> | <i>Circular, ssDNA monopartite</i> | [68]; [69] |

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