

**Supplementary Table 1** Amino acid sequence identities of ORF1+2 fusion protein among AcoAV-1 and other amalgaviruses

| Full name                            | Abbrev. | GenBank acc. no. | ORF1+2 fusion protein sequence identity (%) |
|--------------------------------------|---------|------------------|---------------------------------------------|
| Blueberry latent virus               | BBLV    | NC_014593        | 50.7                                        |
| Festuca pratensis amalgavirus 3      | FpAV3   | BK010350         | 41.6                                        |
| Gevuina avellana amalgavirus 1       | GaAV1   | BK010351         | 41.4                                        |
| Camellia oleifera amalgavirus 1      | CoAV1   | NC_040433        | 40.4                                        |
| Allium cepa amalgavirus 2            | AcAV2   | NC_036581        | 40.3                                        |
| Festuca pratensis amalgavirus 2      | FpAV2   | NC_040778        | 39.8                                        |
| Phalaenopsis equestris amalgavirus 1 | PeAV1   | NC_040590        | 39.3                                        |
| Zostera marina amalgavirus 2         | ZmAV2   | NC_034615        | 39.1                                        |
| Allium cepa amalgavirus 1            | AcAV1   | NC_036580        | 38.9                                        |
| Erigeron breviscapus amalgavirus 1   | EbAV1   | NC_040592        | 38.9                                        |
| Spinach amalgavirus 1                | SpAV1   | NC_035070        | 38.8                                        |
| Salvia hispanica RNA virus 1         | ShRV1   | NC_040690        | 38.8                                        |
| Zostera marina amalgavirus 1         | ZmAV1   | NC_034614        | 38.5                                        |
| Erigeron breviscapus amalgavirus 2   | EbAV2   | NC_040593        | 38.4                                        |
| Rubber dandelion latent virus 1      | RdLV1   | MF197380         | 38.4                                        |
| Rubber dandelion latent virus 2      | RdLV2   | MF197379         | 38.4                                        |
| Medicago sativa amalgavirus 1        | MsAV1   | NC_040591        | 37.4                                        |
| Cleome droserifolia amalgavirus 1    | CdAV1   | NC_040777        | 37.4                                        |
| Rhododendron virus A                 | RHV-A   | NC_014481        | 37                                          |
| Vicia cryptic virus M                | VCV-M   | MN015673         | 36.6                                        |
| Secale cereale amalgavirus 1         | ScAV1   | BK010349         | 36.6                                        |
| Festuca pratensis amalgavirus 1      | FpAV1   | NC_040663        | 36.2                                        |
| Southern tomato virus                | STV     | NC_011591        | 35.9                                        |
| Capsicum annuum amalgavirus 1        | CaAV1   | NC_040662        | 34.9                                        |
| Zygosaccharomyces bailii virus Z     | ZbV-Z   | AF224490         | 17.7                                        |

Note: *Zygosaccharomyces bailii* virus Z (ZbV-Z) in the genus *Zybavirus* of the family *Amalgaviridae* was used as an out-group.