AmplifyRP® XRT for TRV
Validation Report
Tobacco rattle virus
Product No. XCS 25000

Test Characteristics

Test Name	Tobacco rattle virus
Catalog Number	25000
Acronym	TRV
Genus	Tobravirus
Test Label	FAM-labeled target probe
Internal Control	ROX-labeled control probe (endogenous)
Format	XRT
Diluents	GEB/PD1
Sample Dilution	1:10

Summary

AmplifyRP® XRT for TRV is a rapid RNA amplification and detection platform designed for testing potato tubers and ornamentals for Tobacco rattle virus. This kit includes lyophilized reaction pellets containing the necessary reagents to amplify TRV RNA and an endogenous RNA control at a single operating temperature (42 °C).

Diagnostic Sensitivity

True Positives	110
Correct Diagnoses	105
Percent	95.5%

Analytical Sensitivity

Limit of Detection: Approximately 100 fg/µL of RNA transcripts

Analytical Specificity

Inclusivity:

Isolates and Geographic Regions Detected:

TRV PV-0043	TRV-M (Oregon mild) (OR, USA) (PV-0351) (ATCC® PV-72™)
TRV-Oregon severe (OR, USA) (PV-0350) (ATCC® PV-64™)	TRV-Oregon yellow (OR, USA) (PV-0352) (ATCC® PV-73™)
TRV-Potato ring necrosis (United Kingdom) (PV-0354) (ATCC® PV-526™)	TRV-SYM (Spinach Yellow Mottle) (ATCC® PV-525™) (England)

Exclusivity:

Cross-reacts With:

None Known	

Does Not Cross-react With:

Barley stripe mosaic virus (BSMV)	Beet soil-borne virus (BSBV)
Cucumber green mottle mosaic virus (CGMMV)	Kyuri green mottle mosaic virus (KGMMV)
Odontoglossum ringspot virus (ORSV)	Pea early-browning virus (PEBV)
Pepper ringspot virus (PepRSV)	Potato mop-top virus (PMTV)
Ribgrass mosaic virus (RMV)	Soil-borne wheat mosaic virus (SBWMV)
Tobacco mild green mosaic virus (TMGMV)	Tobacco mosaic virus (TMV)
Tomato Mosaic Virus (ToMV)	

Diagnostic Specificity

True Negatives 146
Correct Diagnoses 146
Percent 100%

Selectivity:

No Matrix Effect Observed With:			
Abutilon leaves	African violet leaves	Agave leaves	Allium leaves
Almond leaves	Alstroemeria leaves	Alternanthera leaves	Anemone bulbs
Angelonia leaves	Artemisia leaves	Artichoke leaves	Astilbe leaves
Banana leaves	Beet leaves	Begonia leaves	Calibrachoa leaves
Calla lily leaves	Calla lily stems	Chenopodium leaves	Chrysanthemum leaves
Cistus C leaves	Cistus M leaves	Clematis leaves	Coleus leaves
Coresopsis leaves	Corn leaves	Cotton leaves	Cowpea leaves
Cucumber leaves	Daffodil bulbs	Daffodil leaves	Dahlia leaves
Dianthus leaves	Dicentra leaves	Epimedium leaves	Geranium leaves
Gladiolus leaves	Grape leaves	Grapefruit leaves	Gynura leaves
Heuchera leaves	Hops leaves	Hosta leaves	Hyacinth leaves
Hydrangea leaves	Lantana camara leaves	Lilac leaves	Limonium leaves
Lobelia leaves	Dipladenia leaves	Marigold leaves	Nemesia leaves
Oleander leaves	Onion leaves	Orchid leaves	Pansie leaves
Pea leaves	Penstemon leaves	Peony leaves	Peperomia leaves
Pepper leaves	Petunia leaves	Phlox drummondii leaves	Phlox hybrid leaves
Pistachio leaves	Polygala leaves	Portulaca leaves	Potato cores
Potato eyes	Potato peels	Potato tissue culture plantlets	Potato tubers
Pumpkin leaves	Quercus ilex leaves	Quercus rubra leaves	Ranunculus leaves
Rhododendron leaves	Sedum leaves	Snapdragon leaves	Soy leaves
Spinach leaves	Squash leaves	Strawberry leaves	Tobacco leaves
Tomato leaves	Tulip bulbs	Tulip leaves	Verbena leaves
Zucchini leaves			

Glossary

Diagnostic sensitivity[1]:	The percentage of positive samples correctly identified in an experiment with known positive controls.
Diagnostic specificity[1]:	The percentage of negative samples correctly identified in an experiment with known negative controls.
Analytical sensitivity[3]:	The smallest amount of target that can be detected reliably (this is sometimes referred to as the 'limit of detection')
Analytical specificity[3]:	(comprises inclusivity and exclusivity)
Inclusivity[3]:	The performance of a test with a range of target isolates covering genetic diversity, different geographical origin and/or hosts associated with the target organism.
Exclusivity[3]:	The performance of a test with a range of non-targets (e.g. cross-reaction with closely related organisms, contaminants)
Selectivity[2]:	The level of effect that matrices and relevant plant parts have on the performance of the assay.
Repeatability[2]:	The agreement between test replicates of the same sample tested by the same operator.
Reproducibility[3]:	The ability of a test to provide consistent results when applied to aliquots of the same sample tested under different conditions (e.g. time, users, equipment, location)
Robustness[1,3]:	The extent to which varying test conditions (e.g. temperature, volume, change of buffers) affect the established test performance values. May also be referred to as planned deviation analysis.
Stability[1]:	The performance of test reagents or controls over time.

References:

[1]Groth-Helms, D., Rivera, Y., Martin, F. N., Arif, M., Sharma, P., Castlebury, L. A. (in press). Terminology and Guidelines for Diagnostic Assay Development and Validation: Best Practices for Molecular Tests. PhytoFrontiers.
[2]Eads, A., Groth-Helms, D., Davenport, B., Cha, X., Li, R., Walsh, C., Schuetz, K., (in press). The Commercial Validation of Three Tomato Brown Rugose Fruit Virus Assays. PhytoFrontiers.
[3]EPPO (2018) PM 7/76 (5) Use of EPPO Diagnostic Standards, EPPO Bulletin 48, 373– 377.

Questions or Technical Support:

Phone: 800-622-4342 (toll-free) or 574-264-2014
Fax: 574-264-2153
E-mail: info@agdia.com for sales and general product information
techsupport@agdia.com for technical information and troubleshooting

Web: www.agdia.com