Validation report

DAS-ELISA ToMV

Article No.: 152677 (ToMV Complete kit 96) / 152675 (ToMV Complete kit 480) / 152672 (ToMV Complete kit 960)

General information:

Target Pathogen	ToMV (Tomato mosaic virus)
Genus	*Tobamovirus*
Method	DAS-ELISA

Technical information:

Antibodies	Polyclonal antibodies developed against a ToMV isolate in tobacco from Germany.
Sampling	Leaf samples: 1:20 (w/v) in extraction buffer "General" Seed samples: 1:25 (w/v) in extraction buffer "General" with soaking the samples at 4°C for 4 hours before homogenization.
Controls	Negative control (NC): lyophilized extracts from healthy plants Positive control (PC): lyophilized ToMV infected plant extracts
Working volume	200 µl / well

Host matrix:

Tested plant material	Leaf, seed Seed transmittable, mechanical transmission, soil, water
Tested species infected	*Capsicum* (Pepper) *Chenopodium quinoa* (Quinoa) *Lactuca sativa* (Lettuce) *Nicotiana tabacum clevelandii* (Tobacco) *Nicotiana tabacum "White Burley"* (Tobacco) *Solanum lycopersicum* (Tomato)

Specificity:

Analytical Specificity	100%
Number of tested samples from target organism (True Positives)	>100 (PT: 100%)
Diagnostic Specificity	100%
Number of tested samples non-target organism (True Negatives)	>100 (PT: 100%)
Detected isolates / geographic regions (Inclusivity)	ToMV 1 (Quinoa, Switzerland) ToMV 1226 Mt-Favet (Tomato, Switzerland) ToMV 1226 (Tobacco, Switzerland) ToMV Rougette du Midi (Lettuce, Switzerland) ToMV 459 (Tomato, Germany) ToMV 619 (Tomato, Germany) ToMV 689 (Pepper, Germany) ToMV 22-18 (Tomato, Switzerland) ToMV 23-18 (Tomato, Switzerland ToMV 30-18 (Tomato, Switzerland) ToMV 31-18 (Tomato, Switzerland) ToMV 32-18 (Tomato, Switzerland) ToMV 14-17 (Tomato, Switzerland) ToMV 15-17 (Tomato, Switzerland)

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	ToMV 16-17 (Tomato, Switzerland) ToMV ZZB-186 (Tomato, Netherlands) ToMV ZZB-132 (Tomato, Netherlands ToMV ZZB-312 (Tomato, Netherlands)
Cross reaction with (Exclusivity)	TMV (Tobacco mosaic virus) TMGMV (Tobacco mild green mosaic virus) ToBRFV (Tomato brown rugose fruit virus) **Cross-reaction with other tobamoviruses cannot be excluded.**
No cross reaction tested with (Exclusivity)	BNYVV (Beet necrotic yellow vein virus) BYDV (Barley yellow dwarf virus) CGMMV (Cucumber green mottle mosaic virus) CMV (Cucumber mosaic virus) LMV (Lettuce mosaic virus) OYDV (Onion yellow dwarf virus) PLCV (Pelargonium leaf curl virus) PMMoV (Pepper mild mottle virus) TSV (Tobacco streak virus)
No matrix effect observed with (Selectivity)	*Cannabis sativa* (Hemp) *Capsicum* (Pepper) *Lactuca sativa* (Lettuce) *Nicotiana tabacum clevelandii* (Tobacco) *Solanum lycopersicum* (Tomato)

Sensitivity:

Diagnostic Sensitivity	100% | PT: 100%
Analytical Sensitivity / LoD	-
Sensitivity on host matrix	100%
Other sensitivity characteristics	PT: 100% of medium and heavily contaminated seed lots detected (70 samples with each 250 seeds).

Validation:

Internal validation	1998, 2001, 2013 (last internal validation)
External validation	1 PT in 2023 with 15 laboratories (Netherlands)
Reproducibility	100%
Repeatability	100%
Validation information	Internally, the reagents have been validated with the BIOREBA isolate collection composed of various samples collected within the last 40 years.

Validation release Date:
June, 28th, 2023

QC manager:

Version: 2 – 15.11.2023 – New validation data from PT was included in the validation report.

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