CALIBRE SCIENTIFIC COMPANY

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 / Tobamovirus tomatotessellati)
Genus	Tobamovirus
Method	DAS-ELISA

Technical information:

Antibodios	Polyclonal antibodies developed against a ToMV isolate in
Antibodies	tobacco from Germany.
	Leaf samples: 1:20 (w/v) in extraction buffer "General"
Sampling	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
rested plant material	Seed transmittable, mechanical transmission, soil, water
	Capsicum (Pepper)
Tested species infected	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%)
	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)
Detected isolates / geographic regions (Inclusivity)	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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CERTIFIED MANAGEMENT SYSTEM

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

Sensitivity:

Diagnostic Sensitivity	100% PT: 100%
Analytical Sensitivity / LoD	10 ⁻⁵ dilution of infected tissue (pathogen titer unknown)
Sensitivity on host matrix	ToMV on leaves of tomato: 1:781'250 dilution ToMV on tomato seeds: 1:156:250 dilution Pathogen titer unknown
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:

In

Version: 3 – 28.04.2025 – Additional validation information on analytical sensitivity and sensitivity on host matrix.

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