

Validation report

DAS-ELISA ToANV

Article No.: 152777 (ToANV Complete kit 96) / 152775 (ToANV Complete kit 480) / 152772 (ToANV Complete kit 960)

General information:

Target Pathogen	ToANV (Tomato apex necrosis virus / <i>Torradovirus marchitezum</i>) Synonym: Tomato marchitez virus (ToMarV)
Genus	<i>Torradovirus</i>
Method	DAS-ELISA

Technical information:

Antibodies	Polyclonal antibodies developed against a ToANV isolate from tomato.
Sampling	Leaf samples: 1:20 (w/v) in extraction buffer "general".
Controls	Negative control (NC): lyophilized extracts from healthy plants Positive control (PC): lyophilized ToANV infected plant extracts
Working volume	200 µl / well

Host matrix:

Tested plant material	Leaf Transmission by vectors (whiteflies) and by mechanical inoculation.
Tested species infected	<i>Nicotiana Benthamiana</i> (Tobacco) <i>Physalis philadelphica</i> (Tomatillo) <i>Solanum lycopersicum</i> (Tomato)

Specificity:

Analytical Specificity	100%
Number of tested samples from target organism (True Positives)	32
Diagnostic Specificity	100%
Number of tested samples non-target organism (True Negatives)	42
Detected isolates / geographic regions (Inclusivity)	ToANV 1298 (Switzerland, Tobacco) ToANV 1298 (Switzerland, Tomato) ToANV 101207 (Switzerland, Tobacco) ToANV M (US, Tomatillo) ToANV M (US, Tomato) ToANV M (US, Tobacco) ToANV 7-4 (US, Tomatillo) ToANV 7-4 (US, Tomato) ToANV 7-4 (US, Tobacco) ToANV C (US, Tomatillo) ToANV C (US, Tobacco)
Cross reaction with (Exclusivity)	Very weak cross reaction observed with: ToChV (Tomato Chocolate virus)

No cross reaction tested with (Exclusivity)	ACLSV (Apple chlorotic leaf spot virus) ASGV (Apple stem grooving virus) ASPV (Apple stem pitting virus) BYDV (Barley yellow dwarf virus) CLRV (Cherry leaf roll virus) GCLV (Garlic common latent virus) GFLV (Grapevine fanleaf virus) GLRaV-3 (Grapevine leafroll-associated virus 3) GLRaV-4 (Grapevine leafroll-associated virus 4) OYDV (Onion yellow dwarf virus) PRSV (Papaya ringspot virus) PVM (Potato virus M) ToTV (Tomato torrado virus) TYLCV (Tomato yellow leaf curl virus) WMV-2 (Watermelon mosaic virus 2)
No matrix effect observed with (Selectivity)	<i>Nicotiana benthamiana</i> (Tobacco) <i>Physalis philadelphica</i> (Tomatillo) <i>Solanum lycopersicum</i> (Tomato)

Sensitivity:

Diagnostic Sensitivity	100%
Analytical Sensitivity / LoD	10 ⁻⁵ dilution of infected tissue (pathogen titer unknown).
Sensitivity on host matrix	ToANV on leaves of tobacco: 1:156'250 dilution Pathogen titer unknown
Other sensitivity characteristics	-

Validation:

Internal validation	2007, 2014 (last internal validation)
External validation	Validation by 1 external research partner (US) in 2014.
Reproducibility	100%
Repeatability	100%
Validation information	Internally, the reagents have been validated with the BIOREBA isolate collection, composed of various samples with diverse plant host range, collected within the last 20 years.

Validation release Date:
August 11th, 2025

QC manager:



Version: 1 – 11.08.2025.