

Validation report

DAS-ELISA TYLCV

Article No.: 161477 (TYLCV Complete kit 96) / 161475 (TYLCV Complete kit 480) / 161472 (TYLCV Complete kit 960)

General information:

Target Pathogen	TYLCV (Tomato yellow leaf curl virus / Begomovirus coheni)
Genus	<i>Begomovirus</i>
Method	DAS-ELISA

Technical information:

Antibodies	Polyclonal and monoclonal antibodies developed against a TYLCV isolate from Jemen.
Sampling	Leaf samples: 1:20 (w/v) in extraction buffer "General" Young leaves from different parts of the plant.
Controls	Negative control (NC): lyophilized extracts from healthy plants Positive control (PC): lyophilized TYLCV infected plant extracts
Working volume	200 µl / well

Host matrix:

Tested plant material	Leaf Transmission by whitefly <i>Bemisia tabaci</i> .
Tested species infected	<i>Nicotiana benthamiana</i> (Tobacco) <i>Solanum lycopersicum</i> (Tomato)

Specificity:

Analytical Specificity	100%
Number of tested samples from target organism (True Positives)	87
Diagnostic Specificity	100%
Number of tested samples non-target organism (True Negatives)	91
Detected isolates / geographic regions (Inclusivity)	TYLCV 1120 (Tobacco, Switzerland) TYLCV 7-1 (Tomato, Switzerland) TYLCV 7-2 (Tomato, Switzerland) TYLCV 7-5 (Tomato, Switzerland) TYLCV 7-6 (Tomato, Switzerland) TYLCV 7-7 (Tomato, Switzerland) TYLCV 7-9 (Tomato, Switzerland) TYLCV 7 (Tomato, Switzerland) TYLCV 2280 (Tomato, Egypt) TYLCV 2010 (Tomato, Lebanon) TYLCV 1999 (Tomato, USA) TYLCV 0010749b (Tomato, Brasil) TYLCV 01/0754 (Tomato, La Réunion) TYLCV 01/0738 (Tomato, La Réunion) TYLCV L2010/RE5/021/3 (Tomato, La Réunion) TYLCV L2010/RE5/021/2 (Tomato, La Réunion) TYLCV L2010/RE5/021/1 (Tomato, La Réunion) TYLCV L2006/RE5/0247/8 (Tomato, La Réunion) TYLCV L2009/RE5/043/4 (Tomato, La Réunion)

	<p>TYLCV L2009/RE5/058/9 (Tomato, La Réunion) TYLCV L2009/RE5/058/8 (Tomato, La Réunion) TYLCV L2009/RE5/058/6 (Tomato, La Réunion) TYLCV L2009/RE5/058/5 (Tomato, La Réunion) TYLCV L2009/RE5/058/3 (Tomato, La Réunion) TYLCV L2009/RE5/058/2 (Tomato, La Réunion) TYLCV Florida 93 (Tomato, La Réunion) TYLCV LR 0210149B (Tomato, France)</p> <p><u>Other begomoviruses:</u> ACMV 1272 (Tobacco, Switzerland) ACMV 1349 (Tobacco, Switzerland) ICMV 1349 (Tobacco, Switzerland)</p>
Cross reaction with (Exclusivity)	<p>ACMV (African cassava mosaic virus) BGMV (Bean golden mosaic virus) ICMV (Indian cassava mosaic virus) SLCV (Squash leaf curl virus) ToMoV (Tomato mottle virus)</p> <p>Cross-reaction with other begomoviruses cannot be excluded. Reagents can be considered as broad-spectrum reagents for begomoviruses.</p>
No cross reaction tested with (Exclusivity)	<p>BCMNV (Bean common mosaic necrosis virus) BCMV (Bean common mosaic virus) BYDV (Barley yellow dwarf virus) CGMMV (Cucumber green mottle mosaic virus) CMV (Cucumber mosaic virus) CTV (Citrus tristeza virus) GCLV (Garlic common latent virus) GLRaV-1 (Grapevine leafroll-associated virus 1) GLRaV-3 (Grapevine leafroll-associated virus 3) GLRaV-4 strain 6 (Grapevine leafroll-associated virus 4 strain 6) LYSV (Leek yellow stripe virus) OYDV (Onion yellow dwarf virus) PepMV (Pepino mosaic virus) PVA (Potato virus A) PVM (Potato virus M) SMV (Soybean mosaic virus) TMV (Tobacco mosaic virus) ToANV (Tomato apex necrosis virus) WMV-2 (Watermelon mosaic virus 2) ZYMV (Zucchini yellow mosaic virus)</p>
No matrix effect observed with (Selectivity)	<p><i>Allium cepa</i> (Onion) <i>Allium sativum</i> (Garlic) <i>Cucurbita pepo</i> (Zucchini) <i>Cucumis sativa</i> (Cucumber) <i>Phaseolus vulgaris</i> (Bean) <i>Solanum lycopersicum</i> (Tomato)</p>

Sensitivity:

Diagnostic Sensitivity	100%
Analytical Sensitivity / LoD	10 ⁻⁴ dilution of infected tissue (pathogen titer unknown)

Sensitivity on host matrix	TYLCV on leaves of tobacco: 1: 31'250 dilution Pathogen titer unknown
Other sensitivity characteristics	-

Validation:

Internal validation	2004, 2010 (last internal validation)
External validation	-
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 – 28.04.2025 - Additional validation information on analytical sensitivity and sensitivity on host matrix.