

Validation report

DAS-ELISA CMV

Article No.: 160677 (CMV Complete kit 96) / 160675 (CMV Complete kit 480) / 160672 (CMV Complete kit 960)

General information:

Target Pathogen	CMV (Cucumber mosaic virus / Cucumovirus CMV)
Genus	<i>Cucumovirus</i>
Method	DAS-ELISA

Technical information:

Antibodies	Complementary polyclonal and monoclonal antibodies developed against different CMV virus isolates of subgroups CMV I and CMV II
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 CMV infected plant extracts
Working volume	200 µl / well

Host matrix:

Tested plant material	Leaf, seed Seed transmittable, transmission by various aphids
Tested species infected	<i>Capsicum</i> (Pepper) <i>Cucurbita</i> (Pumpkin) <i>Cucurbita pepo</i> (Zucchini) <i>Cucumis sativus</i> (Cucumber) <i>Musa</i> (Banana) <i>Nicotiana tabacum benthamiana</i> (Tobacco) <i>Nicotiana tabacum clevelandii</i> (Tobacco) <i>Nicotiana tabacum mégalosiphon</i> (Tobacco) <i>Nicotiana tabacum occidentalis</i> (Tobacco) <i>Nicotiana tabacum "Virginia"</i> (Tobacco) <i>Nicotiana tabacum "Xanthi"</i> (Tobacco) <i>Orthosiphon stamineus</i> (Java Tee) <i>Phaseolus vulgaris</i> (Bean) <i>Solanum lycopersicum</i> (Tomato)

Specificity:

Analytical Specificity	100%
Number of tested samples from target organism (True Positives)	>100
Diagnostic Specificity	100%
Number of tested samples non-target organism (True Negatives)	>100
Detected isolates / geographic regions (Inclusivity)	CMV I 1289 (Banana, France) CMV I 1289 (Tobacco, France) CMV 1H 1036 (Tobacco, Switzerland) CMV 1H 1036 (Tomato, Switzerland)

	CMV 1H 1036 (Cucumber, Switzerland) CMV II 851 (Tobacco, Switzerland) CMV II Nr. 4 (Tobacco, Switzerland) CMV II Nr. 1 (Tobacco, Switzerland) CMV (Tobacco, Switzerland) CMV (Bean, Switzerland) CMV (Pepper, Switzerland) CMV (Zucchini, Switzerland) CMV (Java Tee, Switzerland) CMV 105 (Squash, USA) CMV V 52 (Squash, USA) CMV 111 VR4 (USA) CMV 103A (USA) CMV V 71 (USA) CMV V 59 (USA) CMV 52 GEN80 (USA) CMV 33 (Tomato, USA) CMV V 27 (Squash, USA) CMV V 52 (Squash, USA) CMV 118 (USA) CMV bx40298-210180 (Capsicum, Switzerland) CMV bx40298-210179 (Capsicum, Switzerland) CMV 442 (Capsicum, Germany) CMV TH1 (Cucumber, Switzerland)
Cross reaction with (Exclusivity)	None known
No cross reaction tested with (Exclusivity)	Aac (<i>Acidovorax avenae</i> subsp. <i>citrulli</i>) AMV (Alfalfa mosaic virus) BCMV (Bean common mosaic virus) BCMVN (Bean common mosaic necrosis virus) CGMMV (Cucumber green mottle mosaic virus) ErLV (Erysimum latent virus) GFkV (Grapevine fleck virus) MiLBVV (Mirafiori lettuce big-vein virus) OYDV (Onion yellow dwarf virus) PPV (Plum pox virus) PVY (Potato virus Y) SMV (Soybean mosaic virus) Sss (<i>Spongospora subterranean</i> sp. <i>subterranea</i>) TMV (Tobacco mosaic virus) WMV-2 (Watermelon mosaic virus 2) ZYMV (Zucchini yellow mosaic virus)
No matrix effect observed with (Selectivity)	<i>Cannabis sativa</i> (Hemp) <i>Capsicum</i> (Pepper) <i>Cucurbita</i> (Pumpkin) <i>Cucurbita pepo</i> (Zucchini) <i>Cucumis melo</i> (Melon) <i>Cucumis sativus</i> (Cucumber) <i>Geranium</i> (Geranium) <i>Lactuca sativa</i> (Lettuce) <i>Musa</i> (Banana) <i>Nicotiana tabacum</i> "Xanthi" (Tobacco) <i>Orthosiphon stamineus</i> (Java Tee) <i>Phaseolus vulgaris</i> (Bean) <i>Pisum sativum</i> (Pea) <i>Solanum lycopersicum</i> (Tomato)

Sensitivity:

Diagnostic Sensitivity	100%
Analytical Sensitivity / LoD	10 ⁻³ -10 ⁻⁵ dilution of infected tissue (pathogen titer unknown)
Sensitivity on host matrix	CMV on leaves of tomato: 1: 156'250 dilution CMV on pepper seeds: 1:6'250 dilution Pathogen titer unknown
Other sensitivity characteristics	-

Validation:

Internal validation	2002-2004, 2014 (last internal validation)
External validation	1998 (Italy), 2007 (USA)
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, 22nd, 2023

QC manager:



Version: 2 – 28.04.2025 – Additional validation information on analytical sensitivity and sensitivity on host matrix.