

Validation report

DAS-ELISA PepMV

Article No.: 161577 (PepMV Complete kit 96) / 161575 (PepMV Complete kit 480) / 161572 (PepMV Complete kit 960)

General information:

Target Pathogen	PepMV (Pepino mosaic virus)
Genus	<i>Potexvirus</i>
Method	DAS-ELISA

Technical information:

Antibodies	Polyclonal antibodies developed against a selection of PepMV isolates representing all major genotypes and geographic origins.
Sampling	Leaf samples: 1:20 (w/v) in extraction buffer "General" Seed samples: 1:25 (w/v) in extraction buffer "General" One sample/subsample: 250 seeds validated
Controls	Negative control (NC): lyophilized extracts from healthy plants Positive control (PC): lyophilized PepMV infected plant extracts
Working volume	200 µl / well

Host matrix:

Tested plant material	Leaf, seed Seed transmittable / mechanical transmittable
Tested species infected	<i>Nicotiana occidentalis</i> (Tobacco) <i>Nicotiana glutinosa</i> (Tobacco) <i>Nicotiana benthamiana</i> (Tobacco) <i>Solanum lycopersicum</i> (Tomato)

Specificity:

Analytical Specificity	100%
Number of tested samples from target organism (True Positives)	48
Diagnostic Specificity	100%
Number of tested samples non-target organism (True Negatives)	>100
Detected isolates / geographic regions (Inclusivity)	PepMV 7061 AZ-2 (US, Tobacco) PepMV 1297 AZ-2 (US, Tomato) PepMV 1338 TX-1 (US, Tomato) PepMV TX-1 (US, Tobacco) PepMV Ch1/Ch2 (US, Tomato) PepMV Ch1/Ch2 (US, Tobacco) PepMV 1279 (Switzerland, Tomato) PepMV various seed lots mildly or heavily infected (Europe, Tomato)
Cross reaction with (Exclusivity)	None known
No cross reaction tested with (Exclusivity)	CMV (Cucumber mosaic virus) GLRaV-7 (Grapevine leafroll-associated virus 7) LMV (Lettuce mosaic virus) TMV (Tobacco mosaic virus)

	ToMV (Tomato mosaic virus) PVX (Potato virus X)
No matrix effect observed with (Selectivity)	<i>Nicotiana occidentalis</i> (Tobacco) <i>Solanum lycopersicum</i> (Tomato, leaf & seed) <i>Solanum muricatum</i> (Pepino)

Sensitivity:

Diagnostic Sensitivity	100%
Analytical Sensitivity / LoD	-
Sensitivity on host matrix	100%
Other sensitivity characteristics	Mild inf. seed samples: 100% (\emptyset OD ^{15min} = 1.1) Heavy inf. seed samples: 100% (\emptyset OD ^{15min} = 2.3)

Validation:

Internal validation	2010 and 2021 (last internal validation)
External validation	Interlaboratory comparisons in 2021 (The Netherlands) and 1 proficiency test (PT) in 2022 (ongoing, France)
Reproducibility	100% (BIOREBA)
Repeatability	100% (BIOREBA)
Validation information	Internally, the reagents have been validated with the BIOREBA isolate collection (2010). An interlaboratory comparison was conducted on healthy and mild/heavily PepMV-infected tomato seed lots between BIOREBA and two other laboratories (The Netherlands) in 2021. Currently (November 2022) a PepMV proficiency test on seeds is running (France) where BIOREBA is participating. Results of the PT to be expected in January 2023.

Validation release Date:
November, 04th, 2022

QC manager:



Version: 2 – 22.06.2023 – Adaptations to the format of the validation report (Diagnostic sensitivity).