

Validation report

DAS-ELISA PVA

Article No.: 112177 (PVA Complete kit 96) / 112175 (PVA Complete kit 480) / 112172 (PVA Complete kit 960) / 112180 (PVA Complete kit 5000)

General information:

Target Pathogen	PVA (Potato virus A)
Genus	<i>Potyvirus</i>
Method	DAS-ELISA

Technical information:

Antibodies	Monoclonal antibodies developed against PVA isolates from potato plants.
Sampling	Leaf samples: 1:20 (w/v) in extraction buffer "General" Sprouts/tuber samples: 1:10-1:20 (w/v) in extraction buffer "Bulbs & Tubers"
Controls	Negative control (NC): lyophilized extracts from healthy plants Positive control (PC): lyophilized PVA infected plant extracts
Working volume	200 µl / well

Host matrix:

Tested plant material	Leaf, sprouts, tubers
Tested species infected	<i>Nicotiana tabacum Xanthi</i> (Tobacco) <i>Solanum lycopersicum</i> (Tomato) <i>Solanum tuberosum</i> (Potato)

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)	PVA 1307 Claustar Nr. 6 (France, Potato) PVA 775 Charlotte (Switzerland, Potato) PVA 775 (Switzerland, Tobacco) PVA 775 Mt-Favet (Switzerland, Tomato) PVA 775 Désirée (Switzerland, Potato) PVA Asterix 7778 (UK, Potato) PVA Hermes 91 (UK, Potato) PVA-PEI (Canada, Tobacco) PVA PV-1266 (Germany, Potato) PVA PV19-159 (Germany, Potato) PVA PV-0535 (Germany, Potato) PVA W22-069 (Germany, Potato)
Cross reaction with (Exclusivity)	None known
No cross reaction tested with (Exclusivity)	ArMV (Arabis mosaic virus) ASPV (Apple stem pitting virus) CaMV (Cauliflower mosaic virus) CLR (Cherry leaf roll virus)

	GLRaV-1+3 (Grapevine leafroll-assoc. virus 1+3) PLRV (Potato leafroll virus) PVM (Potato virus M) PVS (Potato virus S) PVX (Potato virus X) PVY (Potato virus Y) TBSV (Tomato bushy stunt virus) Xfr (<i>Xanthomonas fragariae</i>)
No matrix effect observed with (Selectivity)	<i>Nicotiana tabacum</i> (Tobacco) <i>Physalis peruviana</i> (Cape gooseberry) <i>Solanum tuberosum</i> (Potato Leaf, Tuber)

Sensitivity:

Diagnostic Sensitivity	100%
Analytical Sensitivity / LoD	10 ⁻³ dilution of infected tissue (pathogen titer unknown)
Sensitivity on host matrix	PVA on leaves of potato: 1:6'250 dilution PVA on tubers of potato: 1:6'250 dilution Pathogen titer unknown
Other sensitivity characteristics	-

Validation:

Internal validation	2017 (last internal validation)
External validation	2 proficiency tests (PT) every year (Germany, Ireland).
Reproducibility	100%
Repeatability	100%
Validation information	Every year BIOREBA participates with PVA reagents on two external proficiency tests (PT). Internally, the reagents have been validated with the BIOREBA isolate collection.

Validation release Date:
November, 1st, 2022

QC manager:



Version: 2 – 16.05.2024 – Adaptations to inclusivity and sensitivity information.