

Validation report

DAS-ELISA PVX

Article No.: 110477 (PVX Complete kit 96) / 110475 (PVX Complete kit 480) / 110472 (PVX Complete kit 960) / 110480 (PVX Complete kit 5000)

General information:

Target Pathogen	PVX (Potato virus X)
Genus	<i>Potexvirus</i>
Method	DAS-ELISA

Technical information:

Antibodies	Polyclonal antibody developed against an PVX isolate.
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 PVX infected plant extracts
Working volume	200 µl / well

Host matrix:

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

Specificity:

Analytical Specificity	100%
Number of tested samples from target organism (True Positives)	58
Diagnostic Specificity	100%
Number of tested samples non-target organism (True Negatives)	>100
Detected isolates / geographic regions (Inclusivity)	PVX 1375 (Switzerland, Tobacco) PVX Charlotte (Switzerland, Potato) PVX Gourmandine (Switzerland, Potato) PVX Moneymaker (Switzerland, Tomato) PVX Président (Switzerland, Quinoa) PVX PV-0017 (Germany, Potato) PVX PV-0015 (Potato) PVX W22-063 (Germany, Potato)
Cross reaction with (Exclusivity)	None known
No cross reaction tested with (Exclusivity)	ACLSV (Apple chlorotic leaf spot virus) APMoV (Andean potato mottle virus) ApMV (Apple mosaic virus) ApP (Apple proliferation phytoplasma) ArMV (Arabis mosaic virus) ASPV (Apple stem pitting virus) BCMNV (Bean common mosaic necrosis virus)

BCMV (Bean common mosaic virus)
 BNYSV (Beet necrotic yellow vein virus)
 BYDV (Barley yellow dwarf virus)
 CaMV (Cauliflower mosaic virus)
 CLRV (Cherry leaf roll virus)
 CMV (Cucumber mosaic virus)
 CYSDV (Cucumber yellow stunt. disorder virus)
 GCLV (Garlic common latent virus)
 GFLV (Grapevine fanleaf virus)
 GLRaV-1 (Grapevine leafroll-associated virus 1)
 GLRaV-1+3 (Grapevine leafroll-assoc. virus 1+3)
 GLRaV-2 (Grapevine leafroll-associated virus 2)
 GLRaV-3 (Grapevine leafroll-associated virus 3)
 GLRaV-4 (Grapevine leafroll-associated virus 4)
 GRSV (Groundnut ringspot virus)
 INSV (Impatiens necrotic spot virus)
 IYSV (Iris yellow spot virus)
 LYSV (Leek yellow stripe virus)
 LMV (Lettuce mosaic virus)
 MCMV (Maize chlorotic mottle virus)
 MDMV (Maize dwarf mosaic virus)
 OYDV (Onion yellow dwarf virus)
 PDV (Prune dwarf virus)
 PeAMV (Petunia asteroid mosaic virus)
 PepMV (Pepino mosaic virus)
 PLCV (Pelargonium leaf curl virus)
 PLPV (Pelargonium line pattern virus)
 PLRV (Potato leafroll virus)
 PMMoV (Pepper mild mottle virus)
 PMTV (Potato mop-top virus)
 PNRSV (Prunus necrotic ringspot virus)
 PPV (Plum pox virus)
 PRSV (Papaya ringspot virus)
 PVA (Potato virus A)
 PVM (Potato virus M)
 PVS (Potato virus S)
 PVV (Potato virus V)
 PVY (Potato virus Y)
 RBDV (Raspberry bushy dwarf virus)
 RpRSV (Raspberry ringspot virus)
 SCMV (Sugarcane mosaic virus)
 SLRSV (Strawberry latent ringspot virus)
 SMYEPV (Strawb. mild yellow edge potexvirus)
 SMV (Soybean mosaic virus)
 SqMV (Squash mosaic virus)
 Sss (*Spongospora subterranea* sp. *Subterranea*)
 TBRV (Tomato black ring virus)
 TBSV (Tomato bushy stunt virus)
 TCSV (Tomato chlorotic spot virus)
 ToANV (Tomato apex necrosis virus)
 ToRSV (Tomato ringspot virus)
 TNV (Tobacco necrosis virus)
 TRSV (Tobacco ringspot virus)
 TSV (Tobacco streak virus)
 TSWV (Tomato spotted wilt virus)
 TYLCV (Tomato yellow leaf curl virus)

	WMV-2 (Watermelon mosaic virus 2) Xfr (<i>Xanthomonas fragariae</i>) ZYMV (Zucchini yellow mosaic virus)
No matrix effect observed with (Selectivity)	<i>Armoracia rusticana</i> (Horseradish) <i>Capsicum</i> spp. (Paprika) <i>Chenopodium quinoa</i> (Quinoa) <i>Cucumis melo</i> (Melon) <i>Cucumis metuliferus</i> (Kiwano) <i>Cucurbita pepo</i> (Zucchini) <i>Lactuca sativa</i> (Lettuce) <i>Nicotiana tabacum</i> (Tobacco) <i>Phaseolus</i> spp. (Bean) <i>Physalis peruviana</i> (Cape gooseberry) <i>Rubus idaeus</i> (Raspberry) <i>Sinapsis alba</i> (Mustard) <i>Solanum tuberosum</i> (Potato Leaf, Tuber)

Sensitivity:

Diagnostic Sensitivity	100%
Analytical Sensitivity / LoD	10 ⁻³ to 10 ⁻⁴ dilution of infected tissue (pathogen titer unknown)
Sensitivity on host matrix	PVX on leaves of potato: 1:56'250 dilution PVX on tubers of potato: 1:6'250 dilution Pathogen titer unknown
Other sensitivity characteristics	-

Validation:

Internal validation	2000 (last internal validation)
External validation	2 proficiency tests (PT) every year (Germany, Ireland).
Reproducibility	100%
Repeatability	100%
Validation information	Every year BIOREBA participates with PVX 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.