

Validation report

DAS-ELISA PVY monoclonal cocktail (mc)

Article No.: 112977 (PVY monoclonal cocktail Complete kit 96) / 112975 (PVY monoclonal cocktail Complete kit 480) / 112972 (PVY monoclonal cocktail Complete kit 960) / 112980 (PVY monoclonal cocktail Complete kit 5000)

General information:

Target Pathogen	PVY (Potato virus Y) monoclonal cocktail
Genus	<i>Potyvirus</i>
Method	DAS-ELISA

Technical information:

Antibodies	Different complementary monoclonal antibodies (Mab) mixed in a controlled manner to broaden the serological range to detect all described PVY strains (PVY ^N , PVY ^O , PVY ^C , PVY ^{Ob} , PVY ^{NTN} , PVY ^N Wi).
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 PVY infected plant extracts
Working volume	200 µl / well

Host matrix:

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

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)	PVY ^N 605 (Switzerland, Potato & Tobacco) PVY ^N 605 (France, Tobacco) PVY ^N 605 GFP (France, Tobacco) PVY ^N 605 (UK, Potato) PVY ^N 110/4 (UK, Potato) PVY ^N 2/009 (UK, Potato) PVY ^N 2/029 (UK, Potato) PVY ^N 2/036 (UK, Potato) PVY ^{NTN} 59 1317 (Switzerland, Potato) PVY ^{NTN} 59 1317 (Switzerland, Tobacco) PVY ^{NTN} 59 1214 (Switzerland, Potato) PVY ^{NTN} NIB V001 (Slovenia, Potato) PVY ^{NTN} D678/18 (Slovenia, Tobacco)

	PVY ^{NTN} KUS (UK, Potato) PVY ^{NTN} 55/1 (UK, Potato) PVY ^{NTN} 2/189 (UK, Potato) PVY ^{NTN} 2/190 (UK, Potato) PVY ^{NTN} 2/192 (UK, Potato) PVY ^N Wilga 1333 (Switzerland, Potato) PVY ^N Wilga 1333 (Switzerland, Tobacco) PVY ^N Wilga (Poland, Potato) PVY ^N Wilga 2/193 (UK, Potato) PVY ^N Wilga 2/194 (UK, Potato) PVY ^N Wilga 2/195 (UK, Potato) PVY ^O 803 (Switzerland, Tobacco) PVY ^O 768 1118 (Switzerland, Tobacco) PVY ^O 2/186 (UK, Potato) PVY ^O 2/187 (UK, Potato) PVY ^C 632 (Switzerland, Tobacco) PVY ^C 509 (Netherlands, Tobacco) PVY W19-094 (Germany, Potato) PVY W19-095 (Germany, Potato) PVY PV-0343 / ON604831 (Germany, Potato) PVY W22-069 (Germany, Potato) PVY W22-063 (Germany, Potato)
Cross reaction with (Exclusivity)	None known
No cross reaction tested with (Exclusivity)	BYDV (Barley yellow dwarf virus) PLRV (Potato leafroll virus) PVA (Potato virus A) PVM (Potato virus M) PVS (Potato virus S) PVV (Potato virus V) PVX (Potato virus X) Rs (<i>Ralstonia solanacearum</i>) TBSV (Tomato bushy stunt virus) WMV-2 (Watermelon mosaic virus 2)
No matrix effect observed with (Selectivity)	<i>Chenopodium quinoa</i> (Quinoa) <i>Physalis peruviana</i> (Cape gooseberry) <i>Solanum muricatum</i> (Pepino) <i>Solanum tuberosum</i> (Potato Leaf, Tuber) <i>Nicotiana tabacum</i> "Xanthi" (Tobacco)

Sensitivity:

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

Validation:

Internal validation	2002 (last internal validation)
External validation	2 proficiency tests (PT) every year (Germany, Ireland).
Reproducibility	100%
Repeatability	100%

Validation information

Every year BIOREBA participates with PVY reagents on two external proficiency tests (PT). Internally, the reagents have been validated with the BIOREBA isolate collection composed of various samples collected within the last 40 years.

Validation release Date:
October, 09th, 2023

QC manager:




Version: 2 – 16.05.2024 – Adaptations to inclusivity information.