

Validation report

DAS-ELISA GLRaV-1+3

Article No.: 120978 (GLRaV-1+3 Complete kit 96) / 120976 (GLRaV-1+3 Complete kit 480)
/ 120973 (GLRaV-1+3 Complete kit 960)

General information:

Target Pathogen	GLRaV-1 (Grapevine leafroll-associated virus 1) + GLRaV-3 (Grapevine leafroll-associated virus 3)
Genus	<i>Ampelovirus</i>
Method	DAS-ELISA

Technical information:

Antibodies	Complementary monoclonal antibodies developed against different GLRaV-1 isolates and poly- and monoclonal antibodies developed against different GLRaV-3 isolates and recombinant proteins.
Sampling	Leaf samples: 1:10 (w/v) in extraction buffer "Grapevine" Bark scrapings: 1:10 (w/v) in extraction buffer "Grapevine"
Controls	Negative control (NC): lyophilized extracts from healthy plants Positive control (PC): lyophilized GLRaV-1 + GLRaV-3 infected plant extracts
Working volume	200 µl / well

Host matrix:

Tested plant material	Leaf (petiole, vein), bark (phloem) from dormant canes
Tested species infected	<i>Vitis vinifera</i> (Grapevine)

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)	<u>GLRaV-1:</u> Pinot noir 9331 (Switzerland, Grapevine) Y 273 (France, Grapevine) Y 174 (France, Grapevine) Cornalin 10699 (Switzerland, Grapevine) Räuschling 8722 (Switzerland, Grapevine) 9986 Arinto (Grapevine) 102 (France, Grapevine) Lemberger 4/4/5 (Germany, Grapevine) Malvoisie 9232 L49 (Switzerland, Grapevine) 96-29, Lambrusco (Italy, Grapevine) Y233, Houedi (Syria, Grapevine) A94, Servant (France, Grapevine) 95-177 (Italy, Grapevine) Z179, Furmint (Germany, Grapevine) Humagne Rouge (Switzerland, Grapevine)



	<p><u>GLRaV-3:</u> Pinot noir 8024 (Switzerland, Grapevine) Pinot noir 8027 (Switzerland, Grapevine) Malvoisie 8758 (Switzerland, Grapevine) GH24 Cabernet Sauvignon (South Africa, Grapevine) NZ-2, Cabernet Sauvignon N°41033-4 (New Zealand, Grapevine) Group II 623 (South Africa, Grapevine) Group III PL-20 (South Africa, Grapevine) Group VI (South Africa, Grapevine) Cabernet Sauvignon, California, 15403-4 (USA, Grapevine) NZ-1, Cabernet Sauvignon N°41018 (New Zealand, Grapevine) California, 15429-2 (USA, Grapevine) California, 15173-1 (USA, Grapevine) Riparia Gloire, California, 15365-4 (USA, Grapevine) NZ-1 VM, Pinot noir N°42633-4 (New Zealand, Grapevine) 43572, ID45, Cabernet Sauvignon (USA, Grapevine)</p> <p><u>GLRaV-1+3:</u> V29 (France, Grapevine) Y318, Ishouhali (Iran, Grapevine) GRdL 8968-70 (Switzerland, Grapevine) Pinot noir 855-859 (Switzerland, Grapevine) Pinot noir 12014 (Switzerland, Grapevine) GRdL 12290-92 (Switzerland, Grapevine)</p>
Cross reaction with (Exclusivity)	None known
No cross reaction tested with (Exclusivity)	ArMV (Arabis mosaic virus) GLRaV-2 (Grapevine leafroll-associated virus 2) GLRaV-4 (Grapevine leafroll-associated virus 4) GFkV (Grapevine fleck virus) GFLV (Grapevine fanleaf virus) GVA (Grapevine virus A) OYDV (Onion yellow dwarf virus) PVM (Potato virus M) PVX (Potato virus X) SqMV (Squash mosaic virus) TMV (Tobacco mosaic virus) ToANV (Tomato apex necrosis virus) ToMV (Tomato mosaic virus) TYLCV (Tomato yellow leaf curl virus)
No matrix effect observed with (Selectivity)	<i>Vitis vinifera</i> (Grapevine)

Sensitivity:

Diagnostic Sensitivity	100%
Analytical Sensitivity / LoD	10 ⁻² – 10 ⁻³ dilution of infected tissue (pathogen titer unknown)
Sensitivity on host matrix	GLRaV-1 on leaves of grapevine: 1:250 dilution GLRaV-1 on canes of grapevine: 1:250 dilution

	GLRaV-3 on leaves of grapevine: 1:6'250 dilution GLRaV-3 on canes of grapevine: 1:6'250 dilution Pathogen titer unknown
Other sensitivity characteristics	-

Validation:

Internal validation	2022
External validation	PT every 2 years (Germany)
Reproducibility	100%
Repeatability	100%
Validation information	<p>Every two years BIOREBA participates with GLRaV-1+3 reagents on an external proficiency test (PT).</p> <p>Internally, the reagents have been validated with the BIOREBA isolate collection composed of various different samples collected within the last 40 years.</p>

Validation report release Date:
August, 16th, 2022

QC manager:



Version: 2 – 01.09.2023 – Information about sensitivity on host matrix and limit of detection (LoD) added.