

Validation report

DAS-ELISA ApP

Article No.: 151777 (ApP Complete kit 96) / 151775 (ApP Complete kit 480) / 151772 (ApP Complete kit 960)

General information:

Target Pathogen	ApP (Apple proliferation phytoplasma / <i>Candidatus phytoplasma mali</i>)
Genus	<i>Phytoplasma</i>
Method	DAS-ELISA

Technical information:

Antibodies	Monoclonal antibodies developed against an Italian strain of ApP from apple.
Sampling	Vein samples from apple leaves: 1:10 (w/v) in extraction buffer "General". The concentration of ApP varies during the year. The best time for testing is late in the growing season. Cambium from dormant wood in winter is also suited for sampling.
Controls	Negative control (NC): lyophilized extracts from healthy plants Positive control (PC): lyophilized ApP-infected plant extracts
Working volume	200 µl / well

Host matrix:

Tested plant material	Leaf, veins, roots, cambium Transmission by vectors (psyllids).
Tested species infected	<i>Catharanthus</i> (Catharanthine) <i>Malus domestica</i> (Apple) <i>Vinca minor</i> (Periwinkle)

Specificity:

Analytical Specificity	100%
Number of tested samples from target organism (True Positives)	24
Diagnostic Specificity	100%
Number of tested samples non-target organism (True Negatives)	>100
Detected isolates / geographic regions (Inclusivity)	ApP 040107 (Switzerland, Periwinkle) ApP AP15 (Switzerland, Periwinkle) ApP 170111 (Switzerland, Apple) ApP 310511 (Switzerland, Periwinkle) ApP 220513 (Italy, Periwinkle) ApP AT-1 (Switzerland, Periwinkle) ApP AT-1 (Switzerland, Catharanthine) ApP 180618 (Switzerland, Catharanthine) ApP 230718 (Switzerland, Catharanthine) ApP 311019 (Germany, Apple) ApP 080620 (Switzerland, Periwinkle) ApP 241120 (Switzerland, Apple) ApP 019-20-02 (Switzerland, Apple)

	ApP 019-20-49 (Switzerland, Apple) ApP 019-20-55 (Switzerland, Apple) ApP 019-20-81 (Switzerland, Apple) ApP 019-20-82 (Switzerland, Apple)
Cross reaction with (Exclusivity)	None known
No cross reaction tested with (Exclusivity)	ApMV (Apple mosaic virus) BCMNV (Bean common mosaic necrosis virus) CLRV (Cherry leaf roll virus) GLRaV-3 (Grapevine leafroll-associated virus 3) LMV (Lettuce mosaic virus) PLRV (Potato leafroll virus) PMMoV (Pepper mild mottle virus) PMTV (Potato mop-top virus) PVV (Potato virus V) RBDV (Raspberry bushy dwarf virus) RpRSV (Raspberry ringspot virus) TBRV (Tomato black ring virus) TSV (Tobacco streak virus) Xcp (<i>Xanthomonas campestris</i> pv. <i>pelargonii</i>)
No matrix effect observed with (Selectivity)	<i>Chenopodium quinoa</i> (Quinoa) <i>Malus domestica</i> (Apple) <i>Nicotiana benthamiana</i> (Tobacco) <i>Nicotiana tabacum</i> 'Xanthi' (Tobacco) <i>Phaseolus vulgaris</i> (Bean)

Sensitivity:

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

Validation:

Internal validation	2000
External validation	-
Reproducibility	100%
Repeatability	100%
Validation information	Internally, the reagents have been validated with the BIOREBA isolate collection, composed of various samples with diverse plant host range, collected within the last 40 years.

Validation release Date:
July 29th, 2026

QC manager:



Version: 1 – 29.07.2026.