BIOREBA
A CALIBRE SCIENTIFIC COMPANY

Validation report

DAS-ELISA TuMV

Article No.: 161077 (TuMV Complete kit 96) / 161075 (TuMV Complete kit 480) / 161072 (TuMV Complete kit 960)

General information:

Target Pathogen	TuMV (Turnip mosaic virus / Potyvirus rapae)
Genus	*Potyvirus*
Method	DAS-ELISA

Technical information:

Antibodies	Polyclonal (coat) and monoclonal (conjugate) antibodies developed against TuMV isolates C1 (coat) and CZE1 (conjugate) from turnip.
Sampling	Leaf samples: 1:20 (w/v) in extraction buffer "General". Detection in symptomatic leaves is the best source for testing. The best time for sampling is with actively growing radish, cabbage, cauliflower, ...
Controls	Negative control (NC): lyophilized extracts from healthy plants Positive control (PC): lyophilized TuMV infected plant extracts
Working volume	200 µl / well

Host matrix:

Tested plant material	Leaf Transmission by vectors (aphids) and mechanical transmission by inoculation.
Tested species infected	*Armoracia rusticana* (Horseradish) *Brassica rapa* subsp. *Pekinensis* (Chinese cabbage) *Chenopodium quinoa* (Quinoa) *Nicotiana Benthamiana* (Tobacco) *Nicotiana Glutinosa* (Tobacco) *Sinapis alba* (Mustard)

Specificity:

Analytical Specificity	100%
Number of tested samples from target organism (True Positives)	19
Diagnostic Specificity	100%
Number of tested samples non-target organism (True Negatives)	12
Detected isolates / geographic regions (Inclusivity)	TuMV 1130 (Switzerland, Chinese cabbage) TuMV 1130 (Switzerland, Tobacco) TuMV 1237 (Switzerland, Chinese cabbage) TuMV 1237 (Switzerland, Quinoa) TuMV 1359 (Switzerland, Quinoa) TuMV 50 (Czech Republic, Horseradish) TuMV 50 (Switzerland, Mustard) TuMV 50 (Switzerland, Tobacco) TuMV 48 (Switzerland, Chinese cabbage) TuMV 210709 (Switzerland, Chinese cabbage)

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	TuMV 110505 (Switzerland, Chinese cabbage) TuMV 161001 (Switzerland, Chinese cabbage)
Cross reaction with (Exclusivity)	None known
No cross reaction tested with (Exclusivity)	MiLBVV (Mirafiori lettuce big-vein virus)
No matrix effect observed with (Selectivity)	*Armoracia rusticana* (Horseradish) *Brassica oleracea* L. (Cabbage) *Brassica oleracea var. botrytis* (Cauliflower) *Brassica rapa* subsp. *Pekinensis* (Chinese cabbage) *Chenopodium quinoa* (Quinoa) *Lactuca sativa* (Lettuce) *Nicotiana Glutinosa* (Tobacco) *Sinapis alba* (Mustard)

Sensitivity:

Diagnostic Sensitivity	100%
Analytical Sensitivity / LoD	10^{-3} dilution of infected tissue (pathogen titer unknown).
Sensitivity on host matrix	TuMV on leaves of chinese cabbage: 1:6'250 dilution Pathogen titer unknown
Other sensitivity characteristics	-

Validation:

Internal validation	2001, 2005, 2010
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:
April 17th, 2026

QC manager:

Version: 1 – 17.04.2026.

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