

Validation report

DAS-ELISA MCMV

Article No.: 140777 (MCMV Complete kit 96) / 140775 (MCMV Complete kit 480) / 140772 (MCMV Complete kit 960)

General information:

Target Pathogen	MCMV (Maize chlorotic mottle virus / Machlomovirus zeae)
Genus	<i>Machlomovirus</i>
Method	DAS-ELISA

Technical information:

Antibodies	Polyclonal antibody developed against a MCMV isolate from Kenya in maize plants.
Sampling	Leaf samples: 1:20 (w/v) in extraction buffer "General" Seed samples: 1:25 (w/v) in extraction buffer "General" Seed lots testing: 100 corn seeds in 100 ml extraction buffer "General". Dry grinding and then add of 100 ml extraction buffer.
Controls	Negative control (NC): lyophilized extracts from healthy plants Positive control (PC): lyophilized MCMV infected plant extracts
Working volume	200 µl / well

Host matrix:

Tested plant material	Leaf, Seeds (Maize) Seed transmission is possible. Virus can be transmitted by vectors (beetles and thrips) or mechanically as well.
Tested species infected	<i>Zea mays</i> (Maize)

Specificity:

Analytical Specificity	100%
Number of tested samples from target organism (True Positives)	74
Diagnostic Specificity	100%
Number of tested samples non-target organism (True Negatives)	>100
Detected isolates / geographic regions (Inclusivity)	MCMV 11-14 (Kenya, Maize) MCMV 03-15 (Kenya, Maize) MCMV 05-18 (Germany, Maize) MCMV 12-19 (Germany, Maize) MCMV 08-22-1 (Switzerland, Maize) MCMV 08-22-2 (Switzerland, Maize) MCMV 08-22-3 (Switzerland, Maize) MCMV 08-22-4 (Switzerland, Maize) MCMV SI3-13-1054 (Peru, Maize) MCMV SI3-13-1055 (Peru, Maize) MCMV SI3-13-1082 (Peru, Maize) MCMV SI3-13-1084 (Peru, Maize) MCMV SI3-13-1086 (Peru, Maize) MCMV SI3-13-1090 (Peru, Maize) MCMV SI3-13-1117 (Peru, Maize)

	MCMV SI3-13-1124 (Peru, Maize) MCMV SI3-13-1173 (Peru, Maize) MCMV SI3-13-1194 (Peru, Maize) MCMV SI3-13-1210 (Peru, Maize) MCMV SI3-13-1212 (Peru, Maize) MCMV SH14-190-6 (US, Maize) MCMV SH14-190-7 (US, Maize) MCMV SH14-190-8 (US, Maize) MCMV SH14-190-9 (US, Maize) MCMV SH15-18 (Mexico, Maize) MCMV 15-06 (Kenya, Maize seeds)
Cross reaction with (Exclusivity)	None known
No cross reaction tested with (Exclusivity)	BCMV (Bean common mosaic virus) CGMMV (Cucumber green mottle mosaic virus) GLRaV-2 (Grapevine leafroll-associated virus 2) GPGV (Grapevine pinot gris virus) MDMV (Maize dwarf mosaic virus) MiLBVV (Mirafiori lettuce big-vein virus) SCMV (Sugar cane mosaic virus) SMV (Soybean mosaic virus)
No matrix effect observed with (Selectivity)	<i>Hordeum vulgare</i> (Barley) <i>Saccharum officinarum</i> (Sugar cane) <i>Triticum aestivum</i> (Wheat) <i>Zea mays</i> (Maize)

Sensitivity:

Diagnostic Sensitivity	100%
Analytical Sensitivity / LoD	10 ⁻³ -10 ⁻⁴ dilution of infected tissue (pathogen titer unknown)
Sensitivity on host matrix	MCMV on leaves of maize: 1: 31'250 dilution MCMV on maize seeds: 1:6'250 dilution Pathogen titer unknown
Other sensitivity characteristics	-

Validation:

Internal validation	2015, 2022 - 2023 (last internal validation)
External validation	Validation by 1 external research partner (Mexico) in 2015.
Reproducibility	100%
Repeatability	100%
Validation information	Internally, the reagents have been validated with the BIOREBA isolate collection composed of various samples collected within the last 10 years.

Validation release Date:
January, 19th, 2024

QC manager:



Version: 2 – 28.04.2025 – Additional validation information on analytical sensitivity and sensitivity on host matrix.