# Validation Report: ELISA

SRA 37001 • *Tomato aspermy virus* (TAV)

## Test Characteristics

| | | | |
|---|---|---|---|
| **Test Name** | Tomato aspermy virus | **Capture Antibody** | Polyclonal (Rabbit) |
| **Catalog Number** | 37001 | **Detection Antibody** | Polyclonal (Rabbit) |
| **Acronym** | TAV | **Format** | DAS-ELISA |
| **Genus** | Cucumovirus | **Diluents** | GEB/ECI |
| | | **Sample Dilution** | 1:10 |

## Summary

This ELISA test is a qualitative serological assay for the detection of Tomato aspermy virus (TAV), the causal agent of yellow mosaic and flower deformation of Chrysanthemum, in ornamental and vegetable leaves. TAV is a member of the Cucumovirus genus known for their non-enveloped, spherical virus particles.

## Diagnostic Sensitivity

| | |
|---|---|
| **True Positives** | 87 |
| **Correct Diagnoses** | 81 |
| **Percent** | 93.1% |

## Analytical Specificity

## Analytical Sensitivity

### Inclusivity:

**Isolates and Geographic Regions Detected and Analytical Sensitivity:**

| | |
|---|---|
| TAV-B (Blencowe) (Britain, UK) | 1:1,000,000 dilution of infected tissue (pathogen titer unknown) |
| TAV-C (Chrysanthemum) | 1:100,000 dilution of infected tissue (pathogen titer unknown) |
| TAV-C (Tomato) | 1:1,000 dilution of infected tissue (pathogen titer unknown) |
| TAV-Hamamatsu9 (Japan) (Naro Gene Bank, MAFF# 104038) | >1:10,000 dilution of infected tissue (pathogen titer unknown) |
| TAV-TA-1Keitou (Japan) (Naro Gene Bank, MAFF# 715036) | >1:10,000 dilution of infected tissue (pathogen titer unknown) |
| TAV-TA-Ao1 (Japan) (Naro Gene Bank, MAFF# 260221) | >1:10,000 dilution of infected tissue (pathogen titer unknown) |
| TAV-TA-Go34 (Japan) (Naro Gene Bank, MAFF# 260123) | >1:10,000 dilution of infected tissue (pathogen titer unknown) |
| TAV-TA-Go41 (Japan) (Naro Gene Bank, MAFF# 260124) | >1:10,000 dilution of infected tissue (pathogen titer unknown) |
| TAV-V (Australia) (Chrysanthemum) | 1:500 dilution of infected tissue (pathogen titer unknown) |
| TAV-V (Australia) (Tomato) | 1:10,000 dilution of infected tissue (pathogen titer unknown) |
| TAV PV-0220 (Bulgaria) | 1:1,000,000 dilution of infected tissue (pathogen titer unknown) |
| TAV PV-0312 (Germany) | 1:1,000,000 dilution of infected tissue (pathogen titer unknown) |
| TAV North American isolate | 1:500,000 dilution of infected tissue (pathogen titer unknown) |

### Exclusivity:

**Cross-reacts With:**

| | |
|---|---|
| Peanut stunt virus (PSV) | |

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**Does Not Cross-react With:**

| | |
|---|---|
| Alfalfa mosaic virus (AMV) | Chrysanthemum virus B (CVB) |
| Cucumber mosaic virus (CMV) | Impatiens necrotic spot virus (INSV) |
| Lily symptomless virus (LSV) | Tobacco etch virus (TEV) |
| Tobacco mosaic virus (TMV) | Tobacco ringspot virus (TRSV) |
| Tobacco streak virus (TSV) | Tomato bushy stunt virus (TBSV) |
| Tomato ringspot virus (ToRSV) | Tomato spotted wilt virus (TSWV) |

## Diagnostic Specificity

**True Negatives** 174
**Correct Diagnoses** 172
**Percent** 98.9%

**Selectivity:**

| **No Matrix Effect Observed With:** | | | |
|---|---|---|---|
| African violet leaves | Bean leaves | Black-eyed Susan leaves | Blueberry leaves |
| Calibrachoa leaves | Canna leaves | Cannabis (Hemp) leaves | Chrysanthemum leaves |
| Colocasia gigantea leaves | Cucumber cotyledon | Cucumber leaves | Gerbera leaves |
| Gladiolus leaves[1] | Gypsophilia leaves | Impatiens leaves | Lily leaves |
| Mint leaves | Nierembergia leaves | Osteospermum leaves | Pelargonium leaves |
| Pepper leaves | Perilla fructescens leaves | Petunia leaves[2] | Phlox leaves |
| Potato leaves | Rosemary leaves | Salvia leaves | Snapdragon leaves |
| Squash leaves | Tomato fruit | Tomato leaves | Vinca leaves |
| [1]False postive observed in 1 out 3 samples of gladiolus leaves | | | |
| [2] False postive observed in 1 out 9 varieties of petunia leaves | | | |

## Repeatability

**Number of Samples** 87
**Replicates per Sample** 3
**Average Percent Agreement Between Replicates** 99.2%

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