

User Guide: DAS-ELISA Reagent Set

SRA 31505 • Plum pox virus (PPV) • GEB4 / RUB3 • Alkaline Phosphatase

Test Principle, Intended Use and Limitations

This product is intended for the qualitative detection of the target analyte via a direct, double antibody sandwich protocol known as DAS-ELISA. Upon successful completion of the test, samples containing the target analyte will turn yellow, due to the alkaline phosphatase enzyme label, while negatives will remain colorless. Visit the product webpage for information regarding host reactions, cross-reactions, or other limitations.

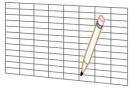
Handling Information

Antibodies should be stored refrigerated (2 - 8 °C) between uses. All test materials should be warmed to room temperature (18 - 30 °C) before use. For materials provided please see the product webpage. The buffers necessary to run this assay can be purchased as buffer pack ACC 00113. Do not store 1X buffers for more than one day.

Safety

Agdia recommends reading all relevant SDS sheets before using assay components: <http://docs.agdia.com/DataSheets.aspx>.

Test Preparation



1. Visit the product webpage to view [buffer formulations](#), [buffer instructions](#), [logsheet](#), and other documents.
2. Record lot numbers of materials to be used in the test using the logsheet.
3. Prepare a humid box by lining an airtight container with a wet paper towel.
4. Mix both concentrated and diluted antibodies thoroughly before each use.

Scan for buffer formulations



Prepare Capture Antibody

1. Prepare the capture antibody (CAB) in a non-binding container, such as Agdia's sample cups (ACC 00960).
2. Dilute the thoroughly-mixed CAB, per the dilution on the label, in 1X carbonate coating buffer (see example). You will need 100 µL of diluted CAB per well; a full plate will need 10 mL.



*Example: (Wells Used 16 x 100 µL) ÷ 200 = 8 µL Capture Antibody
Bottle dilution will be either 100 or 200*

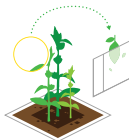
3. Thoroughly mix and pipette 100 µL of diluted CAB into each testwell of the provided high-bind microtiter plate.
4. Incubate plate in the humid box for either 4 hours at room temperature (18 - 30 °C) or overnight at 2 - 8 °C.
5. Coated plates should be used within 24 hours.

Positive and Negative Control Preparation



1. Use General Extract Buffer 4 (GEB4) to hydrate positive control strips according to provided instructions.
2. Use GEB4 to hydrate fresh negative controls, according to label, at least five minutes before use.
3. Recap and mix thoroughly.
4. Use of frozen or aliquoted controls comes with increased stability risks and may not match expected O.D. values.

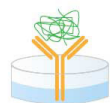
Sample Preparation and Plate Loading



1. Sample symptomatic or asymptomatic leaves, fruit, or flowers of stone fruit (*Prunus* sp.) trees.
2. If composite testing, stack up to 8 leaves with all the petioles to one end.
3. Remove and discard petioles.
4. Use up to 0.5 g of the total basal portion of the stacked leaves.
5. At the time of testing, grind and dilute the samples at a 1:10 ratio with GEB4.

Example: 0.5 g plant tissue, extracted with 5 mL of GEB4.

6. It is recommended to use two testwells per sample.
7. Empty coated plate contents and wash 3 times with 1X PBST.
8. Tap plate dry using lint-free paper towel.
9. Dispense 100 µL of the extracted samples, positive control, negative control, and extraction buffer into the plate following your logsheet.
10. Incubate plate in the humid box for either 2 hours at room temperature or overnight at 2 - 8 °C.



Agdia, Inc.
52642 County Road 1
Elkhart, IN 46514
574-264-2014 / 800-622-4342
www.agdia.com / info@agdia.com

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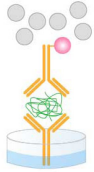


Prepare Enzyme Conjugate

1. Prepare the enzyme conjugate (ECA) in a non-binding container, such as Agdia's sample cups (ACC 00960).
2. Dilute the thoroughly-mixed ECA, per the dilution on the label, in 1X RUB3 buffer (see example). You will need 100 µL of diluted ECA per well; a full plate will need 10 mL.

*Example: (Wells Used 16 x 100 µL) ÷ 200 = 8 µL Enzyme Conjugate
'Bottle dilution will be either 100 or 200*

3. Wash the sample from the plate 8 times using 1X PBST.
4. Tap plate dry using lint-free paper towel.
5. Thoroughly mix and pipette 100 µL of diluted ECA into each testwell.
6. Incubate plate in the humid box for 2 hours at room temperature.



Prepare Substrate

1. Add 1 PNP substrate tablet per 5 mL of 1X PNP substrate buffer into a dedicated container and keep in the dark until use. You will need 100 µL of diluted PNP solution per well; a full plate will need 10 mL. Ensure tablets are dissolved before use.
2. Wash the ECA from the plate 8 times using 1X PBST.
3. Tap plate dry using lint-free paper towel.
4. Pipette 100 µL of dissolved PNP solution into each testwell.
5. Incubate, protected from light, for 1 hour at room temperature.



Interpreting Results

1. Visually inspect wells and remove bubbles, if present. Measure O.D. values with a spectrophotometer at 405 nm or 405 nm with a 650 nm blank.
2. The test is valid if the positive and negative control O.D. results meet expected values (see Certificate of Analysis).
3. Sample interpretations should be performed on a case-by-case basis. Plant tissue interactions with ELISAs can vary greatly between plant species and even varieties. Certain healthy tissues can cause an elevated or higher than normal O.D. value. In this case, a healthy sample(s) of the same species or variety is needed to determine the healthy average.
4. Generally, positive and negative thresholds can be determined by using 2 times the healthy average. Any samples with an O.D. value higher than 2 times the healthy average are positive, and samples with an O.D. value below 2 times the healthy average are negative. An alternative method for threshold calculations is the healthy average plus 3 times the standard deviation of the healthy sample set.

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|-----------------|---------------------|-------------------------|-------------------------|-------------------------|
| <i>Method 1</i> | <i>Healthy Avg.</i> | <i>0.105</i> | <i>2 x Healthy Avg.</i> | <i>0.210</i> |
| | <i>Sample 1</i> | <i>0.355 (Positive)</i> | <i>Sample 2</i> | <i>0.190 (Negative)</i> |

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|-----------------|---------------------|-------------------------|------------------|-------------------------|-------------------------------------|--------------|
| <i>Method 2</i> | <i>Healthy Avg.</i> | <i>0.105</i> | <i>Std. Dev.</i> | <i>0.030</i> | <i>Healthy Avg. + 3 x Std. Dev.</i> | <i>0.195</i> |
| | <i>Sample 1</i> | <i>0.355 (Positive)</i> | <i>Sample 2</i> | <i>0.190 (Negative)</i> | | |

5. Positive O.D. values indicate the presence of the target pathogen (or in some cases, a closely related pathogen). Visit the product webpage to see if any other pathogens are known to cross-react with this test. As with all diagnostic tools, Agdia recommends confirming all results with a secondary detection method before making any economic decisions (ex: discarding plants due to positive test results, etc.).

Warranty

Agdia reagents are warranted for performance issues that arise from manufacturer defect. See product packaging for relevant expiration dates. Agdia's return policy can be found at www.agdia.com/customer-support/return-policy.

Additional Information

If you would like more information on how to run ELISA, please see Agdia's FAQ section, <http://www.agdia.com/customer-support/frequent-questions-and-troubleshooting>. For further documentation, including this user guide, buffer formulations, and a logsheet, please see Agdia's specific product webpages. For answers to your technical questions, please contact us at techsupport@agdia.com.



Agdia, Inc.
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Elkhart, IN 46514
574-264-2014 / 800-622-4342
www.agdia.com / info@agdia.com

User Guide: Positive Control Strip

SPC 31505 • Plum pox virus (PPV) • GEB4 • US patent number: 6,927,062

Test Principle, Intended Use and Limitations

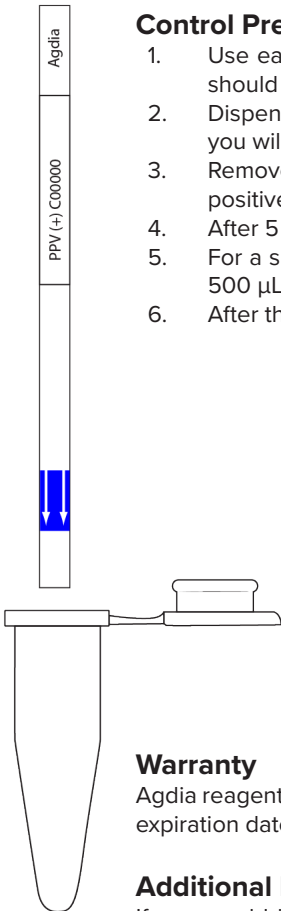
The positive control strip provides a safe and convenient way to store, handle, and prepare a positive control by using a reagent pad attached to a plastic handle. The dry reagent pad contains coat protein control material which is derived from non-infectious bacterial cells. The plastic handle provides a convenient means to handle the control without touching the reagent pad. The coat protein positive control is released from the pad when placed in buffer resulting in a non-infectious solution which does not contain any viral nucleic acid. This positive control solution is then added to a dedicated well during the sample stage for use as a control.

Handling Information

Positive control strips should be stored refrigerated (2 - 8 °C) between uses and be tightly sealed in the desiccated container at all times. Before use, allow the positive control strips to warm to room temperature (18 - 30 °C). General Extract Buffer 4 (GEB4), ACC 00380, and 1.5 mL microcentrifuge tubes, ACC 00340, or similar tubes will be necessary to complete the positive control strips preparation.

Safety

Agdia recommends reading all relevant SDS sheets before using assay components: <http://docs.agdia.com/DataSheets.aspx>.



Control Preparation

1. Use each positive control strip only once. One positive control strip will yield 500 µL of positive control solution that should be used that day and then discarded.
2. Dispense 500 µL of General Extract Buffer 4 (GEB4) into a 1.5 mL microcentrifuge tube for each positive control strip you will be using.
3. Remove a positive control strip by the handle end marked “Agdia” and reseal the container. Insert the pad end of the positive control strip into the GEB4 buffer and let sit for 5 minutes.
4. After 5 minutes, use the positive control strip to stir the solution.
5. For a single run of multiple plates, prepare a bulk control batch by combining multiple strips in a container dispensing 500 µL of GEB4 for each strip used. Mix and incubate according to the instructions above.
6. After the 5 minute incubation, the positive control solution is ready to use.

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