ImmunoStrip® User Guide

On-site Insect Testing

InvictDetect™ Plus

ISK 69800

ImmunoStrip®

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Intended Use:

The InvictDetect Plus ImmunoStrip is used to identify the red imported fire ant, *Solenopsis invicta*, by detection of the *Soli2* protein; the black imported fire ant, *Solenopsis richteri*, by detection of the *Solr2* protein; and *Solenopsis invicta × richteri* hybrids. The test is appropriate for testing a pooled sample containing five (5) worker ants. This protocol is not intended for individual ant testing. ImmunoStrips® are the perfect screening tool for use in the field, greenhouse, and the lab.

Kit Storage:

Kit components should be stored at room temperature (18 - 30 °C), and ImmunoStrips should be tightly sealed in the desiccated container at all times.

Limitations:

Contents of Kit:

- ImmunoStrips
- AEB2 Buffer
- 100 µL exact volume pipette
- Plastic pestle
- 1.5 mL microcentrifuge tube

Not Included but Required:

- Ant collection tools
- Timer

PERFORMING THE ASSAY (*Special Attention Required)

Prepare Sample

1. Fully press the top bulb of the 100 µL exact volume pipette, insert the tip of the pipette in the **AEB2** buffer, release the top bulb, and transfer the AEB2 buffer to the 1.5 mL sample tube by pressing the bottom bulb. (Figure 1)

Figure 1

2. Collect **five (5)** worker ants and place them in the 1.5 mL sample tube filled with 100 µL AEB2 buffer. (Figure 2)

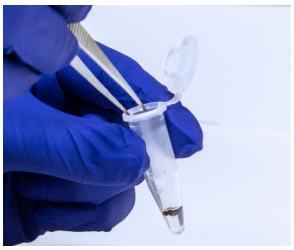


Figure 2

Note: Chilling the ants by placing them on ice or into a freezer briefly may facilitate their transfer.

*** **WARNING** *** While collecting ants for testing, handle with caution. Imported fire ant stings can cause local and systemic allergic reactions.

3. Push the ants into the bottom of the 1.5 mL sample tube with a plastic pestle and macerate the ants thoroughly with the plastic pestle until all ants have been homogenized (about 30 to 45 seconds). (Figure 3)

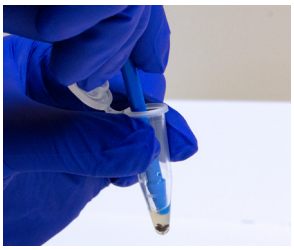


Figure 3

Perform Assay

4. Place the 1.5 mL sample tube in the cutout on the box.

Remove an ImmunoStrip then reclose the container. When handling the ImmunoStrips, always grasp the top of the ImmunoStrip marked with Agdia's name. Do not remove the protective covering. Insert sample end of the ImmunoStrip into the 1.5 mL sample tube. (Figure 4)

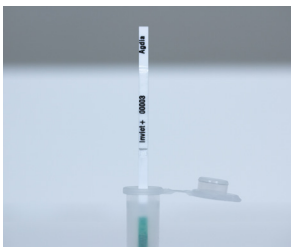


Figure 4

5. Allow the ImmunoStrip test to remain in the 1.5 mL sample tube **for 30 minutes.** Positive results may be visible in as few as 10 minutes. Lower titer samples may take up to 30 minutes.

Interpret Results

6. Remove the ImmunoStrip from the 1.5 mL sample tube and interpret the results. Use the images provided as a guide to determine results. If storing the ImmunoStrips as a permanent record, immediately cut off the sample pad, then press the remaining ImmunoStrip between paper towels to remove any excess liquid.

If only the control line is visible, this indicates a negative result.

If the control line is visible and the test line is also present at any intensity of pink/purple, this indicates the presence of the target protein.

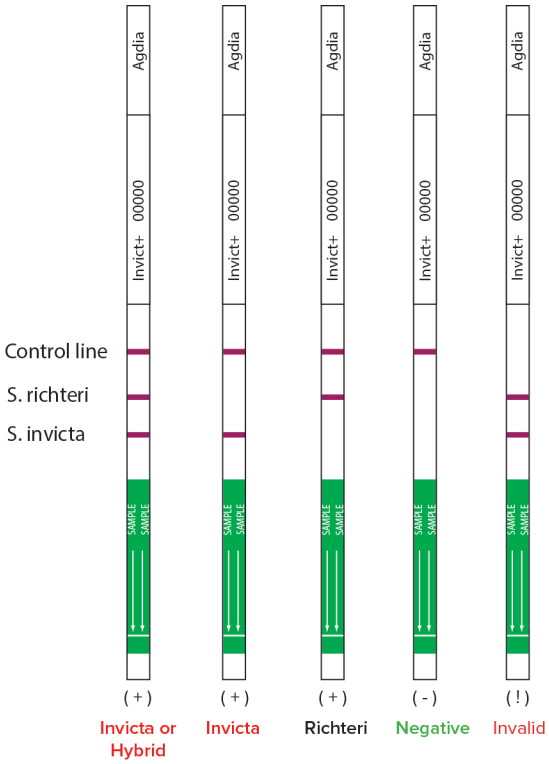
If both the *S. invicta* and *S. richteri* test lines are present, the sample is positive for *S. invicta* or *S. invicta* × *richteri* hybrid.

If only the *S. invicta* test line is present, the sample is positive for *S. invicta*.

If only the *S. richteri* test line is present, the sample is positive for *S. richteri*.

The control line assures that the test is working properly. If the control line does not appear, the test is invalid, even if a test line is visible (see troubleshooting).

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.).



SAFETY

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

*** **WARNING** *** While collecting ants for testing, handle with caution. Imported fire ant stings can cause local and systemic allergic reactions.

TROUBLESHOOTING

Control line did not develop.	• Submerging the ImmunoStrip past the white line in the sample extract. (Step 5)
Test runs very slow or not at all.	• Extracting more ants than is required. (Step 1) Repeat test. • Check kit and components expiration dates.
Test and/or control line is weak.	• Components absorbed moisture. (Kit Storage) Moisture can cause the membrane to wick without test components and fail to produce lines. • Low pathogen titer in the sample. (Step 7) • Check kit and components expiration dates.

QUESTIONS OR TECHNICAL SUPPORT:

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techsupport@agdia.com for technical information and troubleshooting

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Reference: Steven M. Valles, Charles A. Strong & Anne-Marie A. Callcott. Development of a lateral flow immunoassay for rapid field detection of the red imported fire ant, Solenopsis invicta (Hymenoptera: Formicidae). Anal Bioanal Chem (2016) 408:4693–4703.