

Catalog Number ES 103 PRO 20



### Highlights:

- Detects both *Stachybotrys chartarum* and *Aspergillus niger*
- Capable of detecting as few as  $1 \times 10^5$  *Stachybotrys chartarum* spores/mL and  $5 \times 10^6$  *Aspergillus niger* spores/mL
- Results in 5 minutes or less
- Faster and more cost effective than current methods
- Easy to use - no special equipment, training, or experience required
- Test “on site”

### Contents of Kit:

- 20 QuickTox Strips packed in a moisture-resistant canister
- 20 Extraction Tubes
- 20 sample swabs
- 5 sample pestles
- 1 bottle of Extraction Buffer

## Intended Use

The EnviroLogix QuickTox Kit for *Stachybotrys chartarum* and *Aspergillus niger* is a rapid screening assay capable of identifying *Stachybotrys chartarum* and *Aspergillus niger* mold spore contamination. It is designed to extract and qualitatively detect the presence of *Stachybotrys chartarum* and *Aspergillus niger* at the levels typically found in contaminated environmental samples such as dry wall, ceiling tiles, carpets, and dust. The QuickTox Strips are capable of detecting as few as  $1 \times 10^5$  *Stachybotrys chartarum* spores/mL and as few as  $5 \times 10^6$  *Aspergillus niger* spores/mL.

## How the Test Works

Spores from suspect mold samples are collected with a swab and transferred into a vial containing Extraction Buffer. The Extraction Buffer releases the spores from the swab and allows the sample to flow up the QuickTox Strip.

Each QuickTox Strip has an absorbent pad at each end. The protective tape with the arrow indicates which end of the strip to insert into the Extraction Tube.

The sample travels up the membrane strip and is absorbed into the larger pad at the top of the strip. The portion of the strip between the protective tape and the absorbent pad at the top of the strip is used to view the reactions as described under “Interpreting the Results”.

Samples containing *Stachybotrys chartarum* and/or *Aspergillus niger* are captured and detected on a Test Line. Above the Test Line is a Control Line which indicates the test is functioning properly. If the sample is negative, only a single pink Control Line will be visible. If the sample is positive, two lines will be visible: the Test Line and the Control Line. Samples positive for *Stachybotrys chartarum* will have a pink Test Line. Samples positive for *Aspergillus niger* will have a black Test Line. Samples positive for both *Stachybotrys chartarum* and *Aspergillus niger* will have a brownish-pink Test Line. If no lines appear or only the Test Line appears, the test is invalid and must be repeated.

## Materials Required but not Provided

- Pipette capable of delivering 500  $\mu$ L (optional)
- Marking pen (indelible)
- Timer or watch (5 minutes)
- Micro-tube rack (optional)
- 1:10 dilution of household bleach to decontaminate samples and supplies
- Additional pestles for sample preparation (optional)



Add 15 drops of Extraction Buffer



Collect sample



Insert the swab and twirl



Insert strip and run for 5 minutes

## Preparation of the Sample

1. Carefully add 15 drops (or pipette 500  $\mu$ L) of Extraction Buffer into the Extraction Tube. Use a separate Extraction Tube for each sample to be tested. Do not reuse Extraction Tubes, swabs, pestles, or QuickTox Strips.
2. **Mold colonies.** If the sample is an obvious mold colony, gently swab the suspect mold until mold is visible on the swab head. Insert the swab into the Extraction Tube containing the Extraction Buffer. Twirl the swab and press against the side of the tube to release the material. Cap the tube and shake to mix the sample. The sample should be clear to light gray.
3. **Dust, particulates, and areas of suspected contamination not readily visible.** Gently swab the area until material is visible on the swab head. Insert the swab into the Extraction Tube containing the Extraction Buffer. Twirl the swab and press against the side of the tube to release the material. Cap the tube and shake to mix the sample.
4. **Contaminated material.** If the sample is contaminated material such as dry wall or ceiling tile, add a thumbtack-sized amount of material to the Extraction Tube containing the Extraction Buffer. Use a pestle to grind the material to ensure efficient extraction. Cap the tube and shake to mix the sample. Allow any particulates to settle for 1 to 2 minutes before inserting the QuickTox Strip. It may be necessary to add more Extraction Buffer and mix if the material has absorbed all the sample liquid.



Add the sample and grind

## How to Run the QuickTox Strip Test

- Observe all safety precautions when working with suspect molds. Wear appropriate personal protection equipment including respirator, gloves, and safety glasses.
  - Use a 1:10 dilution of household bleach to decontaminate all equipment, samples, reagents, and disposables.
  - Read all of these instructions before running the kit.
  - Use caution to prevent sample-to-sample cross-contamination.
1. Allow refrigerated canisters to come to room temperature before opening. Remove the QuickTox Strips to be used. Avoid bending the strips. Reseal the canister immediately.
  2. Place the strip into the Extraction Tube. The sample will travel up the strip. Use a rack to support multiple tubes if needed. *NOTE: Extraction Tubes may be supported in an upright position in a micro-tube rack or by pushing them down into the cutouts of the blue foam from the kit box.*
  3. Allow the strip to develop for 5 minutes before making final assay interpretations. Positive sample results may become obvious much more quickly.
  4. If you wish to retain the strip, cut off the bottom section of the strip covered by the arrow tape. Treat the discarded bottom section with 10% bleach for a minimum of 10 minutes. Seal the retained strips in a resealable plastic bag or other container.
  5. Treat discarded samples, Extraction Tubes, swabs, pestles, and any other contaminated material with 10% bleach for a minimum of 10 minutes.

## Interpreting the Results

Development of the pink Control Line within 5 minutes indicates that the strip has functioned properly. Any strip that does not develop a pink Control Line should be discarded, and the sample re-tested using another strip.

If the extracted sample contains at least  $1 \times 10^5$  *Stachybotrys chartarum* spores/mL, a second clearly discernable pink Test Line will develop on the membrane strip between the Control Line and the protective arrow tape. The results should be interpreted as positive for *Stachybotrys chartarum*.

If the extracted sample contains at least  $5 \times 10^6$  *Aspergillus niger* spores/mL, a second clearly discernable greyish-brown to greyish-black Test Line will develop on the membrane strip between the Control Line and the protective arrow tape. The results should be interpreted as positive for *Aspergillus niger*.

If the extracted sample contains a mixture of *Stachybotrys chartarum* and *Aspergillus niger* at a combined concentration of at least  $1 \times 10^5$  spores/mL, a second clearly discernable brownish-pink Test Line will develop. The results should be interpreted as positive for both *Stachybotrys chartarum* and *Aspergillus niger*.

If the extract is from a negative sample or is below the detectable limit of the kit, the strip will only show the Control Line. The results should be interpreted as negative for *Stachybotrys chartarum* at  $1 \times 10^5$  spores/mL and *Aspergillus niger* at  $5 \times 10^6$  spores/mL.

## Kit Storage

This QuickTox Kit should be stored refrigerated. Avoid exposing the kit to temperatures greater than  $37^\circ\text{C}$  ( $99^\circ\text{F}$ ) or less than  $2^\circ\text{C}$  ( $36^\circ\text{F}$ ). Note the shelf life on the kit box for each storage temperature. The kit may be used in field applications; however, prolonged exposure to high temperatures may adversely affect the test results. Do not open the desiccated canister until ready to use the test strips.

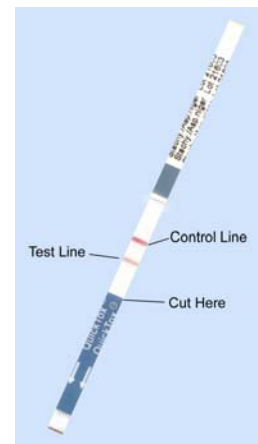
## Cross-Reactivity

The EnviroLogix QuickTox Kit for *Stachybotrys* and *Aspergillus niger* does not distinguish between toxic macrocyclic trichothecenes producing and non-producing *Stachybotrys chartarum* varieties.

The following materials have been tested with this kit using the protocols specified herein and found to cause no false positive results:

- *Alternaria sp.*, *Aspergillus flavus*, *Aspergillus versicolor*, *Bipolaris sp.*, *Chaetomium sp.*, *Cladosporium sp.*, *Curvularia sp.*, *Epicoccum sp.*, *Fusarium sp.*, *Penicillium sp.*, *Rhizopus sp.*, and *Trichoderma sp.*
- Dust, dirt, soot, and particulates collected through vacuuming.
- Paper covered gypsum dry wall, ceiling tiles, carpet, cardboard, joint compound (wet and dry), spackling paste (wet and dry), wood, paint chips, linoleum, and foam pipe insulation.

This test may cross-react with *Memnoniella sp.* at concentrations of  $1 \times 10^7$  spores/mL or higher.





## Precautions and Limitations

- Allow refrigerated reagents and canisters to reach ambient temperature before use.
- Do not use kit components after the expiration date.
- This kit is designed to screen for presence or absence only and is not meant to be quantitative.
- Do not use reagents or QuickTox Strips from different kits.
- The assay has been optimized using the Extraction Buffer and protocol supplied with the kit. Use of other extraction solutions or protocols may invalidate the results of the test.
- Do not dilute or adulterate test reagents or use samples not called for in the test procedure.
- Wear appropriate protective gear when handling suspected toxic macrocyclic trichothecenes, molds, or contaminated materials.
- As with all tests, it is recommended that results be confirmed by an alternate method when necessary.
- The results generated through the proper use of this kit reflect the condition of the working sample directly tested. Extrapolation as to the condition of the originating material, from which the working sample was derived, should be based on sound sampling procedures and statistical calculations which address random sampling effects, non-random sampling effects and assay system uncertainty. A negative result obtained when properly testing the working sample does not necessarily mean the originating material is entirely negative for the analyte in question.
- While this kit does not cross-react with common materials supporting mold growth (ceiling tile, dry wall, etc.) it is impossible to ensure all such materials will not cause false positive results. If in doubt, test a small amount of the material that is not visibly contaminated with mold as a “negative control”. If the results are negative, it can be assumed the material is not cross-reacting with the assay and causing false positive results.
- A strong positive result may safely be interpreted in as little as 2 minutes after sample addition. It is not safe, however, to conclude that a sample is negative before a full 5 minutes has elapsed. A weakly positive sample may require the full 5 minutes for a distinct Test Line to appear.



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## License

EnviroLogix has developed this kit using proprietary reagents and certain licensed reagents.

US Patent Application Serial No. 60/311,458 pending.

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