

NEWS *from* NEOGEN



FOR THE SEAFOOD INDUSTRY

NEOGEN CORPORATION
a Leader in Food and Animal Safety Solutions

Neogen adds histamine test to food safety testing products

Neogen has expanded its line of food safety testing solutions with the release of a new rapid test for histamine.

Reveal® for Histamine is a single-step lateral flow assay is intended for the visual screening at 50 ppm of histamine in scombroid species of fish, such as tuna and mahi-mahi. The test is based on a competitive immunoassay format.

“The Reveal method uses a simple water extraction and provides results in just 5 minutes after extraction,” said Ed Bradley, Neogen’s vice president for Food Safety. “These advantages can reduce testing time and eliminate chemical disposal concerns without sacrificing precision or accuracy,”

High levels of histamine may develop in a variety of fish species as they decompose. These species include tuna, mahi-mahi, marlin, blue fish, sardines, bonito, herring and mackerel. Ingestion of histamine may cause scombroid poisoning in humans, which can lead to a variety of symptoms, including rash, nausea, vomiting, diarrhea, hypotension, heart palpitations and muscle weakness. Paralysis and death have also been reported in cases of scombroid poisoning.



Because of its potential for human illness, the U.S. Food and Drug Administration (FDA) has ruled that extensive refrigeration records and/or histamine testing must be included in a Hazard Analysis Critical Control Point (HACCP) program for relevant fish species. The FDA has set an action level of 50 ppm for histamine in domestic and imported fish.

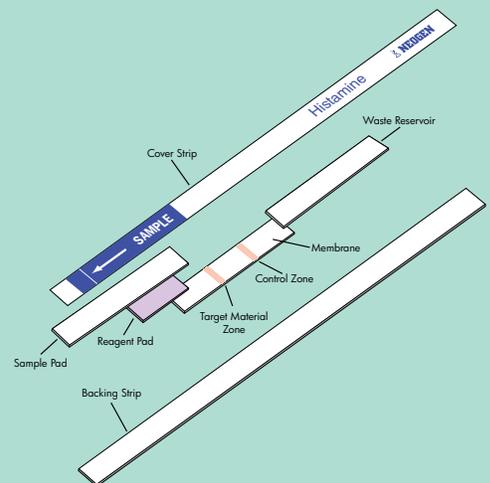
The science behind lateral flow testing devices

The Reveal for Histamine test device works like a pregnancy test, showing two dark lines for a negative result and one dark and one light line for a positive result.

The device is placed in a sample cup holding the extracted sample. The sample is then wicked through a reagent zone, which contains antibodies specific for histamine conjugated to colored particles. If the target substance is present, it will bind to the particle conjugated antibodies.

The histamine-antibody-particle complex then leaves the reagent zone and travels through the membrane into the device’s test zone. The test zone contains anti-histamine antibodies that capture the complex, and display a visible colored line.

Regardless of the presence or absence of histamine, the control line will form in the control zone to ensure the test is working properly. The remainder of the sample migrates to the end of the membrane to a waste reservoir.



Read about the AccuScan III lateral flow reader on pg. 2



To contact Neogen, call 800/234-5333 (USA/Canada) or 517/372-9200 • E-mail: foodsafety@neogen.com
Web: www.neogen.com • Corporate Headquarters: 620 Leshler Place, Lansing, Michigan 48912 USA

AccuScan® III improves consistency with lateral flow testing

AccuScan® III removes subjectivity from reading Reveal and Reveal 2.0 lateral flow devices, and provides consistent interpretation and accurate records to back it up.

The reader works with all of Neogen's lateral flow tests for natural toxins, pathogens, mycotoxins, allergens, dairy antibiotics and GMOs, including Reveal for Histamine.

To use the AccuScan III reader, simply load the Reveal for Histamine device into the reader after your test is complete, and results will be analyzed in seconds.

After all of your readings are complete, transfer the data to your computer for analysis and archiving. The AccuScan III system includes data manager software that allows you to archive and track your testing results. The device records sample information, a digital image of the test results and the testing time and date, eliminating the need for any manual recording.

For more information about the AccuScan III reader, contact your Neogen representative at **800/234-5333**.



AOAC validates performance, accuracy of Reveal® 2.0 for Salmonella

Neogen's enhanced rapid test for *Salmonella* has received approval from AOAC International.

Neogen's new test kit, Reveal 2.0 for *Salmonella*, provides the food industry a quick, accurate and easy method of detecting this pathogen without compromising sensitivity or specificity. The AOAC's process validated the accuracy of the Reveal 2.0 for *Salmonella* system when testing food, rinse water and environmental samples.

"The Reveal 2.0 for *Salmonella* system cuts the wait time for results to just 24 hours, with only 15 minutes of test development time following enrichment," said Neogen's Michael Wendorf. "We are pleased that the AOAC-approval further validates our test as an invaluable tool to food producers."

In the AOAC study, Reveal 2.0 for *Salmonella* was found to be an effective procedure for the detection of *Salmonella enterica* in raw shrimp, chicken carcass rinse water, raw ground turkey and beef, hot dogs, ready-to-eat meal products, dry pet food, ice cream, fresh spinach, cantaloupe, peanut butter and sprout irrigation water, and on stainless steel surfaces.

"The Reveal 2.0 *Salmonella* test system greatly simplifies the *Salmonella* testing protocol by instituting comprehensive



sample enrichment procedures that apply to most sample commodities," said Wendorf. "This is the first AOAC approved kit in a new line of pathogen test kits designed for accurate results with minimal steps for users. Reveal 2.0 for *E. coli* received AOAC approval in January 2011."

The foodborne illness caused by *Salmonella* is generally due to eating raw, incompletely cooked, or cross-contaminated foods. *Salmonella* bacteria is the most frequently reported cause of foodborne illness.

Neogen's comprehensive line of products it offers to the food industry also includes a full line of agricultural cleaners and disinfectants, and rodenticides, to stop the spread of infectious disease from animal to animal, and from production facilities to the consumer.

Reveal® for Salmonella to be phased out by May 31

With the exciting news that the AOAC has validated the accuracy of Reveal 2.0 for *Salmonella*, we will be phasing out our Reveal for *Salmonella* testing system over the upcoming months. The test is planned to be fully discontinued by May 31, 2011.



Wendorf

We developed Reveal 2.0 for *Salmonella* to provide the food industry a quick, accurate and easy method of detecting *Salmonella*, while maintaining and even improving upon the accuracy, specificity and sensitivity you expect from Neogen tests.

Michael Wendorf, marketing manager for Neogen's line of pathogen tests, gives us the scoop on the enhanced testing systems for *Salmonella*, *E. coli* O157:H7 and *Listeria*:

Aside from Reveal 2.0's new naked strip design, what are the biggest improvements with Reveal 2.0?

Reveal 2.0 really demonstrates our ability to listen to our customers' needs and desires. From day one it was designed for better strip-to-strip results and consistency, because that is something we know our customers need. We've also made great progress with our enrichments. For example, we now have single-step enrichments for environmental samples

and our *E. coli* O157:H7 test now requires less media for more manageable samples.

What should someone consider when implementing a pathogen-testing program?

First, you need to make sure that you're using a procedure that matches up well with your workflow. Second, you need to know what you're going to do with the results. What measures are in place if you do get a positive result?

What do I need to do to make the switch from Reveal to Reveal 2.0?

Contact your Neogen sales representative to order your new Reveal 2.0 testing kits. The switch will have no impact on your sample preparation and work flow, and you can continue to use the AccuScan III reader with Reveal 2.0 with the use of a cartridge adapter. If you have any questions or concerns about this change, please do not hesitate to contact Neogen.

With all of these changes, what is next?

Neogen's focus over the years has been antibody based and while we still see great utility in this testing format, as seen with the 2.0 line-up, we continue to explore new options. There is a lot of exciting technology out there right now, so we are focusing on what makes the most ideal tools for our customers.

TRIVIA

What species of fish produces the most eggs?

- a) Ocean sunfish
- b) Squirrelfish
- c) Salmon
- d) Redtooth triggerfish

Answer below.



Trivia Answer: a. The ocean sunfish (Mola mola) produces more eggs than any other species of fish. In fact, it produces more eggs than any other vertebrate on the planet. A single female can produce up to 300 million eggs at a single spawning! Considered a delicacy in Asia, a single mola can fetch prices as high as \$600 (U.S.).

Our Sales Team

Neogen's Meat, Poultry and Seafood sales group is backed by unparalleled teams of experienced technical support and research and development personnel, and we offer the most comprehensive line of food, feed and animal safety and quality testing products.

Please feel free to contact us at any time about anything that you may read in this publication, or about any safety and quality testing issue.

800/234-5333 (USA/Canada)



John Heller
Sales Director
jheller@neogen.com



Rick Kanaby
Territory Manager
rkanaby@neogen.com



Jeremiah Kosto
Territory Manager
jkosto@neogen.com



Nathan Smathers
Inside Sales
nsmathers@neogen.com



Lisa Shepard
Customer Service Rep
lshepard@neogen.com

Neogen's growth continues in 2011

Due to our expanding operations, we are now looking to fill inside sales and territory development positions.

Our team's success has led to Neogen being repeatedly named to Forbes' list of the Best Small Companies in America, and as one of Fortune's 100 Fastest-Growing Companies in the world.

For more information, visit www.neogen.com or contact John Heller at 800/234-5333 or jheller@neogen.com.



Neogen Corporation: a Leader in Food Safety Solutions
620 Leshler Place • Lansing, MI 48912 USA

NEWS from **NEOGEN**