



**HistaStrip™**  
Rapid strip test for the semi-quantitative and fully quantitative detection of histamine in fresh fish, other seafood, fish meal, fish sauce, and milk

Catalog #FOOD-1100-01

ISO 9001 QUALITY ASSURANCE  
This kit is manufactured to the international quality standard ISO 9001:2015.  
ISO CB: NSAI Cert. # 19.8127

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**WARNINGS & PRECAUTIONS**

PerkinElmer recommends that you read the following warnings and precautions. Periodically, optimizations and revisions are made to the kit and manual. Therefore, it is important to follow the protocol included with the kit.

If you need further assistance, you may contact your local distributor, representative, or tech support at [Bioo.Support@PerkinElmer.com](mailto:Bioo.Support@PerkinElmer.com).

- Do not use the kit past the expiration date.
- Do not mix reagents from different kits or different lots.
- Maintain a laboratory temperature of 20–25°C (68–77°F). Avoid running assays under or near air vents, as this may cause excessive cooling, heating and/or evaporation. Avoid performing the tests in direct sunlight.
- Use distilled or deionized water for all dilutions.
- When pipetting samples or reagents into an empty microtiter plate, place the pipette tips in the lower corner of the well, making contact with the plastic.
- After warming the reagents, store unused reagents at 2–8°C to prevent degradation of the kit components.

**KIT CONTENTS, STORAGE, & SHELF LIFE**

The HistaStrip™ Kit contains 24 tests. The kit must be used by the expiration date provided on the kit and component labels.

| Kit Contents                    | Quantity          | Storage |
|---------------------------------|-------------------|---------|
| Microtiter Plate                | 1 x 96-well plate | 2–8°C   |
| Test Strips                     | 24 strips         | 2–8°C   |
| Seafood/Milk Buffer Concentrate | 25 mL             | 2–8°C   |
| Fish Meal Buffer Concentrate    | 25 mL             | 2–8°C   |
| Balance Buffer                  | 5 mL              | 2–8°C   |
| Color Mix                       | 0.75 mL           | 2–8°C   |
| Neutralization Mix              | 0.75 mL           | 2–8°C   |
| Positive Control (50 ppm)       | 2 mL              | 2–8°C   |
| Color Reference Card            | 1                 | RT      |

**Required Materials Not Provided With the Kit**

- 50-mL plastic tubes
- 10, 20, 100 and 1000 µL Pipettes
- Graduated cylinder
- Deionized or distilled water
- Whatman™ #1 Filter Paper (alternative step for Fish Meal samples)
- 2-mL microcentrifuge tubes

**Required Equipment Not Provided With the Kit**

- Centrifuge
- Vortex Mixer
- Balance
- Tissue Homogenizer or Food Processor

**Optional Materials Not Provided With the Kit**

- QuickSTAR™ Strip Reader (Catalog #FOOD-1952-02)

Note: The QuickSTAR™ Strip Reader is required for full quantitative results. For customers already possessing the QuickSTAR™ Strip Reader, please contact [Bioo.Support@PerkinElmer.com](mailto:Bioo.Support@PerkinElmer.com) for instructions on how to program the reader for use with this kit.

**GENERAL INFORMATION**

**Product Description**

The HistaStrip™ combines a rapid visual colorimetric strip test for the determination of histamine in fresh fish, other seafood, fishmeal, fish sauce and milk with a quantitative result. Histamine is a contaminant that can be found in improperly handled seafood. Quality tuna has histamine levels below 50 ppm. High levels of histamine in seafood can cause scombroid poisoning. The amount of histamine can be determined using ELISA or LC-MS. However, these traditional methods require very expensive equipment and time-consuming sample preparation procedures. Using the HistaStrip™ method, histamine concentrations can be interpreted semi-quantitatively by visual comparison to a color reference card or quantitatively using the QuickSTAR™ Strip Reader from PerkinElmer. The kit contains a histamine standard to verify assay performance.

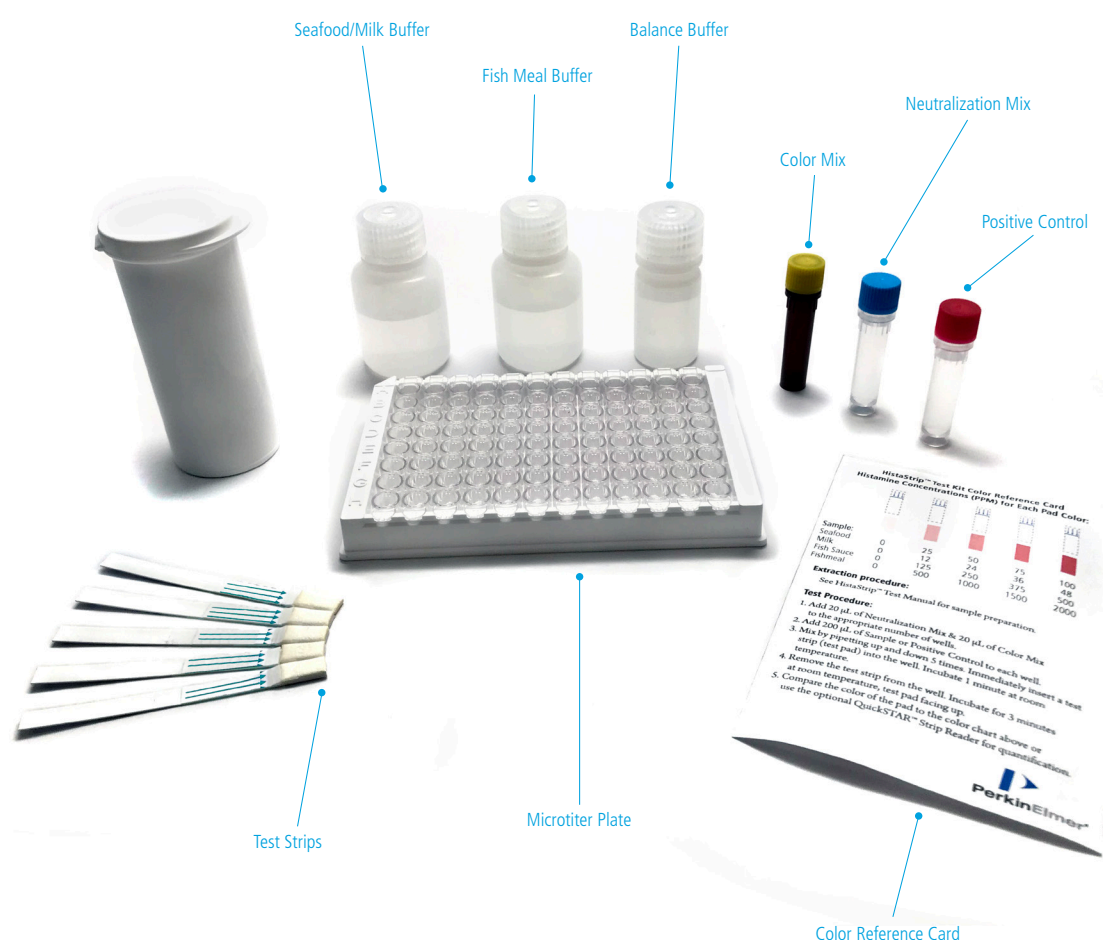
The HistaStrip™ Test Kit uses a colorimetric enzymatic assay to rapidly detect histamine. The unique features of the kit are:

- Rapid, semi-quantitative visual procedure that takes only 4 minutes
- Quantitative results when used with QuickSTAR™ Strip Reader
- Simple aqueous extraction
- High reproducibility

**SENSITIVITY**

| Sample Type | Detection Limit (ppm) |
|-------------|-----------------------|
| Seafood     | 15-25                 |
| Milk        | 6-10                  |
| Fish Sauce  | 60-75                 |
| Fish Meal   | 50                    |

Note: The detection limits above are the lowest limits of detection using the dilution factors described in the sample preparation protocol.



## SAMPLE PREPARATION

Be sure samples are properly stored. In general, samples should be refrigerated at 2–8°C for no more than 1–2 days. Freeze samples to a minimum of -20°C if they need to be stored for a longer period. Frozen samples can be thawed at room temperature (20–25°C) or in a refrigerator before use. Do not use glassware in the sample preparation. Histamine may adhere to glass, which may effect test results.

### 1. Preparation of Seafood/Milk Buffer:

Combine 1 volume of Seafood/Milk Buffer Concentrate with 19 volumes of distilled/deionized water. Mix well. Prepare buffer daily as needed.

### 2. Preparation of Fishmeal Buffer:

Combine 1 volume of Fish Meal Buffer Concentrate with 24 volumes of distilled/deionized water. 40 mL is needed for each sample. Prepare buffer daily as needed.

## Seafood (Fresh/Frozen Tuna, Mahi-Mahi, and Canned Tuna)

1. Thaw sample and homogenize about 40 g of sample.
2. Transfer 4.0 g of sample to a new 50-mL tube. Add 16.0 mL of Seafood/Milk Buffer.
3. Vortex sample at maximum speed, or shake vigorously, for 30 seconds.
4. Incubate sample for 1 minute at room temperature (20–25°C).
5. Vortex sample, or shake vigorously, for an additional 30 seconds.
6. Incubate sample for 5 minutes at room temperature (20–25°C) to allow solid debris to settle to the bottom of the tube.
7. Transfer the top, clear layer for testing.

*Note: Dilution factor = 5*

## Fish Meal

1. Add 40.0 mL of prepared Fishmeal Buffer to 2.0 grams of fish meal in a 50 mL plastic tube. Vortex or shake for 2 minutes.
2. Transfer 1 mL of the sample extract to a microcentrifuge tube centrifuge for 5 minutes at 10,000 x g.
3. Alternately, a portion of the sample can be filtered using Whatman™ #1 filter paper. The filtrate can be collected for testing.
4. Transfer 100 µL of the clear, middle portion of the supernatant, avoiding the fatty top layer, to a new tube.
5. Add 400 µL of Fish Meal Buffer to the sample. Mix.

*Note: Dilution factor = 100*

## Milk

1. Transfer 800 µL of milk to a 2-mL tube containing 800 µL of Seafood/Milk Buffer.
2. Vortex sample for 1 minute at maximum speed.
3. Transfer 500 µL of sample to a new 2-mL tube containing 100 µL of Balance Buffer.
4. Vortex sample for 1 minute at maximum speed.

*Note: Dilution factor = 2.4*

## Fish Sauce

1. Transfer 500 µL of sample to a tube containing 12 mL of distilled/deionized water.
2. Vortex sample manually for 1 minute at maximum speed.
3. Transfer 500 µL of the diluted sample to a new 2-mL tube containing 100 µL of Balance Buffer.
4. Vortex sample for 1 minute at maximum speed.

*Note: Dilution factor = 25*

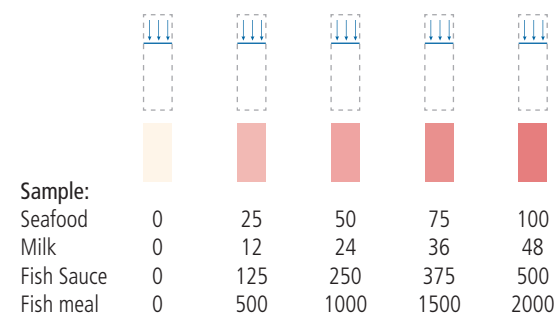
## PROTOCOL

### Reagent Preparation

**IMPORTANT:** All reagents should be warmed up to room temperature (20–25°C). Make sure you read the Warnings & Precautions section. Do not return any reagents to the original stock tubes/bottles. Using disposable reservoirs when handling reagents can minimize the risk of contamination, and is recommended. Note: Avoid performing the assay in direct sunlight. The assay can be performed in a sunlit room as long as the test is performed away from direct sunlight.

### Test Procedure for Visual Interpretation

1. Add 20 µL of Neutralization Mix to the appropriate number of wells for testing.
2. Add 20 µL of Color Mix to the same wells.
3. Add 200 µL of Sample or Positive Control to each well.
4. Mix by carefully pipetting up and down 5 times.
5. Immediately insert the test strip with arrows pointing down into each well. Incubate for one minute.
6. Remove the test strip from the well and place on a surface with the test pad facing up. Incubate for 3 minutes at room temperature (20–25°C). Note: If the room is heavily lit, place a dark cover over the strip without touching the color pad in order to avoid over-development.
7. Immediately (within 1 minute) compare the color of the pad to the color on the Color Reference Card to determine the histamine concentration in the sample. The approximate color changes associated with increasing concentrations of histamine are indicated below:



*Note: The colors shown above are approximate. To determine actual histamine concentrations, refer to the instructions below for using the QuickSTAR™ Strip Reader.*

### Test Procedure for Quantitative Interpretation using QuickSTAR™ Strip Reader

1. Turn on the QuickSTAR™ Strip Reader and choose the  program on the test menu. Click .
2. Enter the sample ID and press .

3. Add 20 µL of Neutralization Mix to the appropriate number of wells for testing.
4. Add 20 µL of Color Mix to the same wells.
5. Add 200 µL of Sample, Positive Control, or Distilled Water as the Negative Control to each well.
6. Immediately insert the test strip with arrows pointing down into each well. Incubate for one minute.
7. Remove the test strip from the well and place on a surface with the test pad facing up. Incubate for 3 minutes at room temperature. Note: If the room is heavily lit, place a dark cover over the strip without touching the color pad in order to avoid over-development.
8. Immediately (within 1 minute), insert the strip into the provided cassette such that the test pad color can be seen from the cassette window. Note: The negative control must be run first to calibrate the reader.
9. Insert the cartridge loaded with negative control strip into the QuickSTAR™ Strip Reader for calibration.
10. Click  under the assay calibration information.
11. Click  to complete the calibration.
12. After calibration, load the test strip from the sample test or positive control into the provided cassette such that the test pad color can be seen from the cassette window.
13. Insert the cartridge into the calibrated QuickSTAR™ Strip Reader.
14. Follow on-screen instructions for performing the reading.
15. After the reading is completed, the diluted concentration of histamine will be displayed. Based on the matrix tested, multiply the diluted concentration given by the QuickSTAR™ Strip Reader by the multiplier found in the table below to obtain the final histamine concentration.

| Sample Type | Multiplier |
|-------------|------------|
| Seafood     | 1          |
| Milk        | 0.48       |
| Fish Sauce  | 4          |
| Fish Meal   | 5          |

*Note: The multipliers are based on seafood as the standard reference.*

## RELATED PRODUCTS

| CATALOG #    | PRODUCT                              | QTY        |
|--------------|--------------------------------------|------------|
| FOOD-1032-09 | MaxSignal® Histamine Enzymatic Assay | 1x96 wells |
| FOOD-1952-02 | QuickSTAR™ Strip Reader              |            |

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For the Better