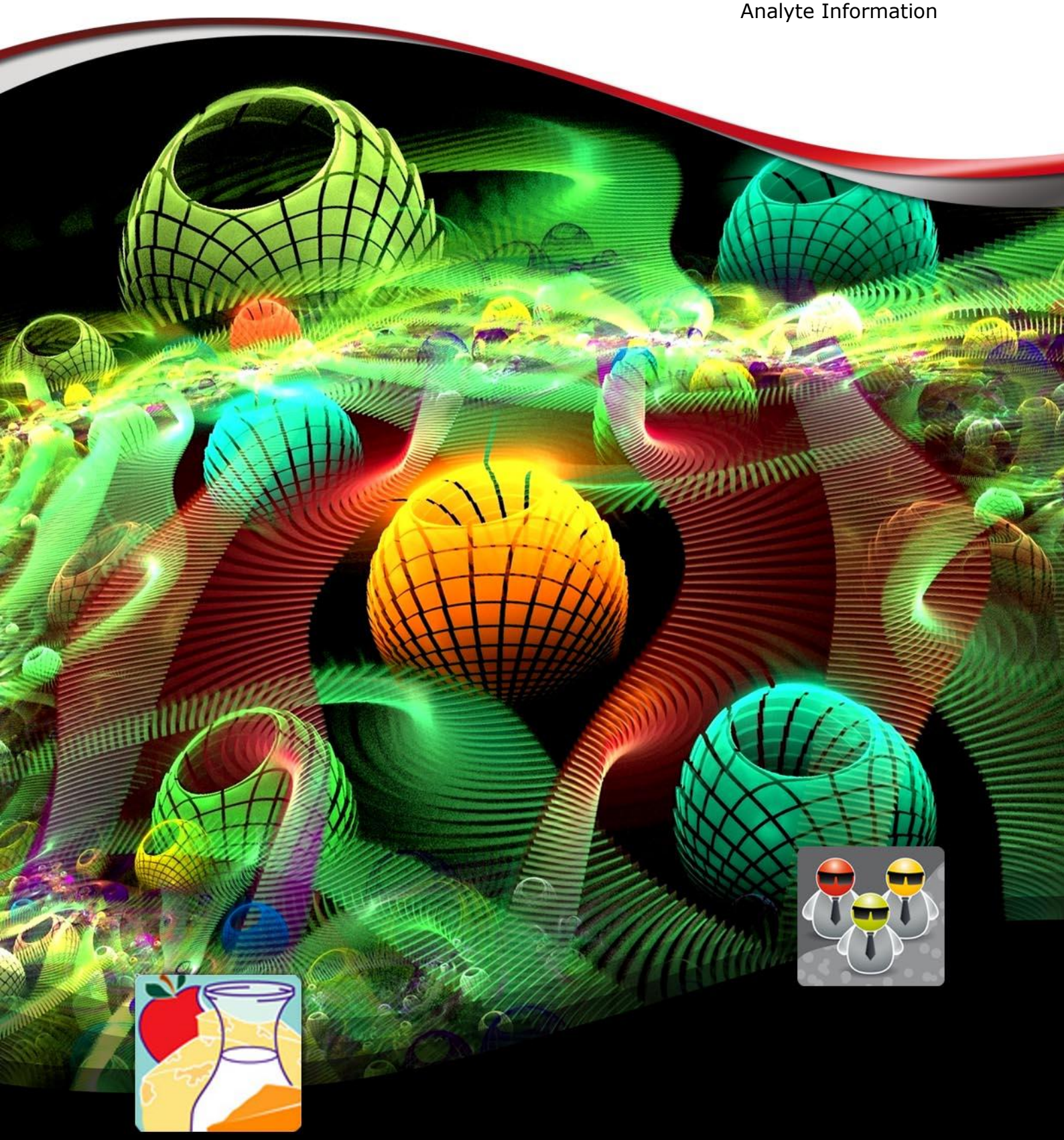
# Specialty - nutrition

## Histamarine

Analyte Information




# Histamarine

## Introduction

Determination of histamine is a useful tool to verify the quality of fish. Histamine is a key factor in allergy. The mechanism of allergy reaction and mechanism of food poisoning, especially fish poisoning, is presented.

## Histamine in food

Histamine fish poisoning (HFP) is a foodborne chemical intoxication caused by the consumption of spoiled or bacterially contaminated fish

(Scheme 1). Histamine is the main toxin involved in HFP. Although HFP is the histamine poisoning, the disease (also called a scombroid food poisoning) is generally associated with high levels of histamine (>500 ppm - more than 500 mg/kg of food) in spoiled fish. Fresh fish normally contains histamine levels of <10 ppm (less than 0.1 mg/100 g of fish).

Testing food for histamine levels helps to prevent undesirable events caused by high histamine content.

More information can be found in the brochure: Lehane, L. and Olley J.: Histamine (Scombroid) Fish Poisoning: a review in a risk-assessment framework. National Office of Animal and Plant Health, Canberra, 1999.


**Scheme 1: Mechanism of fish poisoning**

**Fish**
**(mackerel, tuna, bluefish,mahi-mahi, bonito, sardines, anchovies etc.)**
**+**
**naturally occurring bacteria**
**+**
**higher temperature**
↓ ↓ ↓ ↓ ↓
**increasing histamine levels**

**(Histamine fish poisoning)**

**Scombroid food poisoning** – the syndrome derived its name from early descriptions of the illness in relationship with Scombroidea fish (marine tuna, mackerel etc.)

### Diagnostic utility of the kit

Enzyme immunoassay is a tool for the quantitative determination of histamine concentration in fresh, frozen or canned fish in quality control laboratories by fish processors or quality control authorities.

### Expected values

Depending on local legislation, histamine levels have to be below 50-200 ppm (50-200 mg/kg).

## AOAC Certificate

Our Histamarine kit is certified by AOAC Research Institute. This certificate guarantees the long-term stability of the declared parameters.

AOAC RESEARCH INSTITUTE

*LEADING THE WORLD IN PERFORMANCE-BASED VALIDATION*

**Certificate of**
***Performance Tested*SM**
**Status**

Certificate No.

**980802**

The AOAC Research Institute hereby certifies that the performance of the test kit designated as:

**Histamarine**

manufactured by

**Immunotech s.a.**
**130 av Tassigny**
**BP 177 13276 Marseille**
**Cedex 9, France**

has been reviewed under the AOAC Research Institute's *Performance Tested Methods*SM Program, and found to perform as stated by the manufacturer contingent to the comments contained in the Certification Report. This certificate authorizes the manufacturer to display the AOAC *Performance Tested*SM certification mark along with the statement - "THIS TEST KIT'S PERFORMANCE WAS REVIEWED BY AOAC RESEARCH INSTITUTE AND WAS FOUND TO PERFORM TO THE MANUFACTURER'S SPECIFICATIONS" - on the above mentioned test kit for a period of one year from the date of this certificate (December 20, 2011 – December 31, 2012. Renewal may be granted at the end of one year under the rules stated in the licensing agreement.

Signed for AOAC Research Institute: Deborah McKenzie

Deborah McKenzie
Managing Director

Date: December 20, 2011


**Characteristics**

**Sample Type / Size:** acylated extracted food (especially fish and seafood) samples / 50 µL

**Calibrator Range:** 0 – 50 µM (first calibrator at 0.1 µM), corresponds to 0 – 500 ppm (first calibrator at 1 ppm) in fish meet

**Sensitivity:** 0.1 µM (1 ppm)

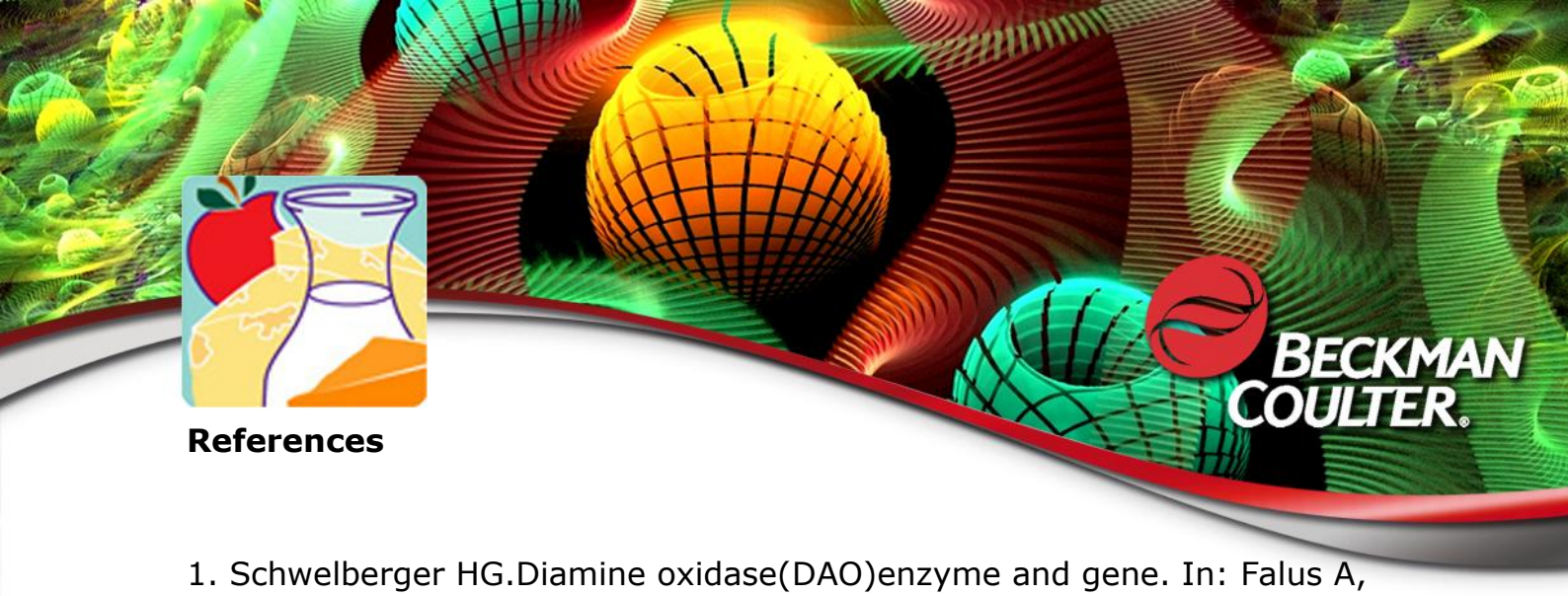
**Specificity:** < 0.05% at the 1 µM concentration for 1-methyl histamine, 3-methyl histamine, putrescine and histidine

**Acceptance Limit:** acceptance limits vary between 50 and 200 mg/kg according to the individual country's requirement

**HIGHLIGHT** results are expressed in mg/kg covering a range including the legal acceptance limit in individuale country

**Protocol** Histamarine ELISA kit (Cat. number IM2369)

| EXTRACTION | SAMPLES | IMMUNOASSAY | RESULTS |
|---|---|---|---|
| Weigh the fish sample (1 to 10 grams).<br><br>Homogenize in 8 mL of water per gram of fish in a blender.<br><br>Centrifuge (10000 g/5 min) or filter or decant. | 20 µL of supernatant + 180 µL of acylation buffer IN PLASTIC TUBE.<br><br>Add 50 µL of acylation reagent.<br><br>Store up to 48 hours at 2-8°C. | Add 50 µL of calibrator or sample into coated well.<br><br>Add 200 µL of conjugate.<br>Incubate 30 min at 18-25°C.<br><br>Wash carefully. | Add 200 µL of substrate and incubate 30 min at 18-25°C.<br><br>Add 50 µL of stop solution.<br><br>Read plate at 405 - 414 nm. |




**References**

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