

Histamine measurement

TECHNICAL SHEET

Performance of Histamine Check Swab

Example of measurement of various raw fish

■ Measurement of raw fish

Raw fish samples that were confirmed to be free of histamine (< 10 ppm) using Check Color Histamine were diluted twofold and measured with Histamine Check Swabs (HCS). As a result, no change in the color of the reaction solution of each Histamine Check Swab was observed. This ensured that a HCS can be used to determine if the histamine content in raw fish is below a certain level. The detection limit of a HCS in measurement samples is 20 ppm. Therefore, the histamine content in fish meat samples which are diluted twofold in the measurement can be checked to determine whether it is less than 40 ppm.

Table. Measurement results for each sample

Fish species	Cuts of fish	Storage	Histamine content	Color change in HCS*	Judgement
Pacific bluefin tuna	Red flesh	Frozen	< 10 ppm	Not observed	< 40 ppm
Pacific bluefin tuna		Chilled			
Pacific bluefin tuna	Toro (fatty portion)	Frozen			
Pacific bluefin tuna		Chilled			
Marlin	Flesh	Frozen			
Chub mackerel		Frozen			
Chub mackerel		Chilled			
Skipjack tuna		Frozen			
Jack mackerel		Chilled			
Blue mackerel		Frozen			
Japanese amberjack		Frozen			

*The results may not be the same for all samples. False coloration may occur depending on the storage conditions of the samples and the presence of seasonings or preservatives.

■ Methods for obtaining this data

The following procedure was used to check the effect of each (HCS) on the determination of the blank for each sample.

- (1) For each raw fish sample, about 10 g of the fish meat portion was taken, cut into small pieces with a knife, and pounded into mince.
- (2) Water (2 mL) was added to 2 g of the minced fish meat (1) for two-fold dilution, and the solution was mixed well.
- (3) A cotton swab of Histamine Check Swab was dipped into the liquid part of the sample prepared in (2) for about 10 seconds to soak up the sample solution without soaking up the solid part of the sample.
- (4) The cotton swab was returned to the swab holder and allowed to react with the reagent, then allowed to stand at room temperature (25 °C) for 5 minutes. The color change was checked visually.



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