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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 5009.213-2016

lacing GB/T 23215-2008; GB/T 5009.213-2008; SC/T 3023-2004; SN 0352-1995; SN/T 1735-2006; SN/T 1773-2006

Determination of paralytic shellfish poison in shellfish

食品安全国家标准 贝类中麻痹性贝类毒素的测定

(English Translation)

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14.2 Reagent preparation

Foreword

This standard replaces GB/T 5009.213-2008 "shellfish paralytic shellfish toxins Determination", GB/T 23215-2008 "shellfish ", SC/T 3023-2004" Determination of paralytic shellfish toxins fluorescence detection - more paralytic shellfish poisoning Determination Liquid Chromatography Biological ", SN0352-1995" export shellfish paralytic shellfish toxin testing methods ", SN/T 1735-2006" Importers and shellfish the paralytic shellfish toxin testing method of high performance liquid chromatography "and SN/T 1773-2006" Importers shellfish paralytic shellfish toxins the method of enzyme-linked immunosorbent assay test method. " this standard compared with GB/T 5009.213-2008, the main changes are as follows.

--- Standard name was changed to "national food safety standards in shellfish paralytic shellfish toxins determination";

--- Increased enzyme linked immunosorbent assay;

--- Increased liquid chromatography - tandem mass spectrometry.

National Food Safety Standard Determination of shellfish paralytic shellfish toxins

1 Scope

This standard specifies the shellfish paralytic shellfish toxin assay mouse bioassay, enzyme-linked immunosorbent assay, liquid chromatography and liquid chromatography Spectrum - tandem mass spectrometry.

This standard applies to oysters, scallops and other shellfish and their products paralytic shellfish toxin testing.

Mouse bioassay

Principle 2

Extraction shellfish paralytic shellfish poisoning (PSP) with hydrochloric acid. Record mice injected liquid extraction after the time of death, according to the paralytic Shellfish toxins cause death time in mice and rats for relations table isolated mouse units (MU), and press the mouse body weight of rats correction unit Corrected mouse unit (CMU), calculated mouse units per 100g sample of the PSP. In saxitoxin as a standard, the rats unit in terms of the number of micrograms of toxin calculated per 100g shellfish meat PSP micrograms. The measurement results in the presence of representatives of a variety of chemical structures shellfish the total amount of PSP toxins.

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3 Reagents and materials

Unless otherwise indicated, the methods used were of analytical grade reagents and water as a water GB/T 6682 regulations.

3.1 Reagents

3.1.1
sodium hydroxide (NaOH).

3.1.2
hydrochloric acid (HCl).

3.1.3
absolute ethanol (CH3CH2OH).

3.2 Reagent preparation

3.2.1
sodium hydroxide solution (0.1mol/L). the 4.0g of sodium hydroxide in 1L of water.

3.2.2
hydrochloric acid solution (0.18mol/L). The 15.5mL hydrochloric acid diluted to 1L with distilled water.

3.2.3
hydrochloric acid (5mol/L). 45mL of hydrochloric acid diluted with water to 100mL.

3.2.4
acidic ethanol solution. the amount of anhydrous ethanol 200mL, diluted with water to 1000mL, and mix, using hydrochloric acid solution (5mol/L) to pH 2.0 to 4.0.

3.3 Standard

Standard saxitoxin (STX, C10H17N7O4 · 2HCl, CAS No. 35554-08-6). purity >=98.0%.

3.4 Preparation of standard solution

3.4.1
saxitoxin standard stock solution (100μg/mL). accurately weighed amount STX standard, with an acidic ethanol solution was dissolved and set the volume, STX is formulated as a concentration of 100μg/mL standard stock solution.

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3.4.2
saxitoxin standard working solution (1μg/mL). Imbibe 1mL saxitoxin standard stock solution (100μg/mL), water Diluted, adjusted with hydrochloric acid solution (5mol/L) pH to 2.0 to 4.0, and water volume to 100mL. The standard working solution at 0 °C ~ 4 °C under Save 30d.

3.5 Material

3.5.1
Mouse. weight healthy ICR male mice of 19g ~ 21g.

3.5.2
pH meter or pH paper.

4 Instruments and equipment

4.1
homogenizer.

4.2
Analysis of balance. a sense of the amount of 0.1g and 0.0001g.

4.3
centrifuge. speed >=2000r/min.

5 Step, Analysis

Note: In order to avoid endangering toxins should wear gloves to operate. Pipette and pipette class used equipment, etc. should be discarded extract in sodium hypochlorite solution Solution (5%) or more in order to make immersed 1h toxin. For the sewage generated in the process of animal waste and animal carcass disposal, reference should be GB 14925 execution.

5.1 Sample Collection

Take adequate number of shellfish samples from more than 2kg, shelled shellfish make up to 200g or more. Not timely submission of fresh shellfish, open the separated shell shellfish meat, 200g of shellfish meat after draining into 200mL of hydrochloric acid solution (0.18mol/L), and at 4 °C, equipment seized.

5.2.1 Oysters, clams and mussels

The appearance of the sample with water shellfish thoroughly washed, cut off the adductor muscle, open the shell, rinsed with distilled water to remove sediment and other foreign matter inside. will Adductor muscle and tissue glue connecting the unit separately, carefully

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