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ICS 67.050
CCS X 04

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 5009.96-2016

acing GB/T 23502-2009; GB/T 25220-2010; GB/T 5009.96-2003; SN 0211-1993; SN/T 1746-2006; SN/T 1940-2007

Determination of ochratoxin A in food -- High performance liquid chromatographic method with immunoaffinity column clean-up

食品安全国家标准 食品中赭曲霉毒素A的测定

(English Translation)

Issued on: December 23, 2016 **Implemented on: June 23, 2017**

Issued by: National Health and Family Planning Commission of the People's Republic of China, State Food and Drug Administration

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Foreword

This standard replaces GB/T 23502-2009 "Determination of ochratoxin A in foods Immunoaffinity chromatography Purification High performance liquid chromatography Law ", GB/T 25220-2010" Determination of ochratoxin A in grain and oil inspection food by high performance liquid chromatography and fluorescence spectrophotometry " GB/T 5009.96-2003 "Determination of ochratoxin A in cereals and soybeans", SN/T 1746-2006 "Import and export of soybean, rapeseed and Method for the determination of ochratoxin A in edible vegetable oils ", SN/T 1940-2007" Determination of ochratoxin A in food for import and export Law "and SN0211-1993" Method for the detection of aflatoxin A in export grain ".

This standard compared with GB/T 23502-2009, the main changes are as follows.

--- standard name changed to "food safety national standard food ochratoxin A determination";

- a third method of immunoaffinity chromatography for the purification of liquid chromatography - tandem mass spectrometry and the fourth method of enzyme - linked immunosorbent assay;

--- increase the scope of application and optimize the extraction method;

--- Removal of the immunoaffinity column chromatography purification fluorescence spectrophotometry.

National standards for food safety Determination of ochratoxin A in food

1 Scope

This standard specifies the determination of ochratoxin A in food.

The first method of this standard applies to cereals, oil and its products, alcohol, soy sauce, vinegar, sauce and sauce products, raisins, pepper tablets/powder ochrat Toxin A determination, the second method for corn, rice (brown rice), wheat, wheat flour, soybeans, coffee, wine ochratoxin A test the third method applies to corn, wheat and other food products, pepper and its products, beer and other alcohol, soy sauce and other products, raw coffee, cooked coffee Ochratoxin A determination, the fourth method for corn, wheat, barley, rice, soy and its products in the determination of ochratoxin A, the fifth method is applicable to the determination of ochratoxin A in wheat, maize and soybean.

First method immunoaffinity chromatography purification liquid chromatography

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2 Principle

The ochratoxin A in the sample was extracted with the extract, purified by immunoaffinity column, and then analyzed by high performance liquid chromatography combined with fluorescence detector Determination of ochratoxin A content, external standard method quantitative.

3 Reagents and materials

Unless otherwise stated, the reagents used in this method are of analytical grade and water is a primary water specified in GB/T 6682.

3.1 Reagents

3.1.1
Methanol (CH3OH). Chromatographic Purification.

3.1.2
acetonitrile (CH3CN). pure chromatography.

3.1.3
glacial acetic acid (C2H4O2). pure chromatography.

3.1.4
Sodium chloride (NaCl).

3.1.5
Polyethylene glycol [HOCH2 (CH2O · CH2) nCH2OH].

3.1.6
Tween 20 (C58H114O26).

3.1.7
Sodium bicarbonate (NaHCO3).

3.1.8
Potassium dihydrogen phosphate (KH2PO4).

3.1.9
concentrated hydrochloric acid (HCl).

3.1.10
nitrogen (N2). purity >=99.9%.

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3.2 Reagent preparation

3.2.1
Extract I. Methanol - Water (80 20).

3.2.2
Extract II. Weigh 150.0 g of sodium chloride, 20.0 g of sodium bicarbonate dissolved in about 950 mL of water, add water to volume to 1 L.

3.2.3
Extract III. acetonitrile - water (60 40).

3.2.4
Washing solution. Weigh 25.0 g of sodium chloride, 5.0 g of sodium bicarbonate dissolved in about 950 mL of water, add water to volume to 1 L.

3.2.5
Mycotoxin Wash Buffer. Weigh 25.0 g of sodium chloride, 5.0 g of sodium bicarbonate dissolved in water, add 0.1 mL Tween 20, water Diluted to 1L.

3.2.6
phosphate buffer. Weigh 8.0 g of sodium chloride, 1.2 g of sodium hydrogen phosphate, 0.2 g of potassium dihydrogen phosphate, 0.2 g of potassium chloride was dissolved in about 990 mL Water, with concentrated hydrochloric acid to adjust the pH to 7.0, diluted with water to 1L.

3.2.7
sodium bicarbonate solution (10g/L). Weigh 1.0g sodium bicarbonate, dissolved in water and diluted to 100mL.

3.2.8
Leaching buffer. 1.0 mL Tween 20 was added to 1000 mL of phosphate buffer.

3.3 Standards

Ochratoxin A ($C_{20}H_{18}ClNO_6$, CAS. 303-47-9), purity >=99%. Or by the national certification and awarded the standard material certificate the standard material of the book.

3.4 Standard solution preparation

3.4.1
ochratoxin A standard stock solution. accurately weighed a certain amount of ochratoxin A standard, with methanol - acetonitrile (50 50) dissolved Solution, dubbed 0.1mg/mL

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