Food Nitrite Assay Kit

Note: Take two or three different samples for prediction before test.

Operation Equipment: Spectrophotometer

Catalog Number: BC1490

Size:50T/48S

Components:

Extract solution I: Liquid 50 mL×1 bottle, storage at RT.

Extract solution II: Liquid 50 mL×1 bottle, storage at RT.

Extract solution III: Liquid 50 mL×1 bottle, storage at RT.

Extract reagent IV: Powder×1, storage at RT.

Reagent I: Liquid 25 mL×1 bottle, store at 4℃ and protect from light.

Reagent II: Liquid 25 mL×1 bottle, store at 4℃ and protect from light.

Standard: Liquid 1 mL ×1 bottle, 1 μmol/mL sodium nitrite standard solution, dilute to 0.04 μmol/mL when using, storage at 4℃.

Product Description:

Nitrite becomes more stable when bonding with myoglobin in food. It can be used as color preserving reagent to maintain good appearance of meat products and prevent producing clostridium botulinum toxin. It can improve the safety of meat products. It also may cause cancer of digestive system if body intakes too much for long time.

In acidic condition, nitrite can react with P-aminobenzene sulfonic acid and form diazo-compound, which can react with N-1-naphthalene ethylenediamine to form purple-red azoic-compound. It has a characteristic absorption peak at 540 nm.

Reagents and Equipments Required but Not Provided:

Spectrophotometer, homogenizer/mortar, balance, desk centrifuge, 1 mL glass cuvette, distilled water.

Procedure:

I. Sample preparation:

Add 1 mL extract solution I to 1 g broken sample. Stay in the boiling water bath for 15 minutes, then cooling to RT. Add 1 mL extract solution II, shake thoroughly, add 1 mL extract solution III and few extract reagent IV(2 mg) with tweezer, stay for 30 minutes, centrifuge at 10000 rpm for 15 minutes. Take the supernatant for test.

II. Determination procedure:

1. Preheat spectrophotometer for 30 minutes, adjust the wavelength to 540 nm, set the counter to zero with distilled water.
2. Dilute standard with distilled water to 0.04 μmol/mL.
3. Add reagents in 1 mL cuvette as the following:

	Standard tube A1	Blank tube A2	Test tube A3
Sample (μL)			500
Standard solution (μL)	500		
Distilled water (μL)		500	
Reagent I (μL)	500	500	500
Reagent II (μL)	500	500	500
Mix thoroughly and stay for 15 minutes, detect absorbance at 540 nm. Detect once or twice for blank tube.			

III. Calculation:

1. Sample weight:

Nitrite content (μmol/g weight) =(A3-A2)÷[(A1-A2)÷C]×Vs÷(W×Vs÷Ve)=0.12×[(A3-A2) ÷(A1-A2)] ÷W

2. Sample protein concentration:

Nitrite content (μmol/mg prot) =(A3-A2)÷[(A1-A2)÷C]×Vs÷(Cpr×Vs)=0.04×[(A3-A2) ÷(A1-A2)] ÷Cpr

C: Standard solution concentration, 0.04 μmol/mL;
Vs: Sample volume, 0.5 mL;
Ve: Extraction volume, 3 mL;
Cpr: Sample protein concentration, mg/mL;
W: Sample weight, g;

Note:

1. Storage at 2-8℃.
2. Reagents are harmful to human body. Please wear experimental clothes and gloves.
3. Concentrate (A_{540} <0.03) or dilute (A_{540} >1.5) sample if the OD value beyond standard curve.

Technical Specifications:

Minimum Detection Limit: 0.00061 mg/mL
Linear Range: 0.000625-0.1 mg/mL

Related products:

BC0080/BC0085 Nitrate Reductase(NR) Activity Assay Kit
BC1450/BC1455 Glutaminase (GLS) Assay Kit
BC1460/BC1465 Glutamate dehydrogenase (GDH) Activity Assay Kit