

Sorbitol Content Assay Kit

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

Operation Equipment: Spectrophotometer/microplate reader

Catalog Number: BC2525

Size:100T/96S

Components:

Reagent I: 5 mL×1, storage at 4°C.

Reagent II: 5 mL×1, storage at 4°C.

Standard: 10 mg×1, storage at 4°C. Dissolve the standard with 1 mL distilled water at a concentration of 10 mg/mL and dilute to 4, 2, 1, 0.5, 0.25, 0.125, 0 mg/mL.

Product Description

Sorbitol is widely found in animals, plants, microorganisms and cultured cells. It's a form of sugar transport, and also closely related to biological resistance and food flavor. Therefore, it is often necessary to detect the changes of sorbitol content in sugar metabolism, stress resistance and food research.

Sorbitol can form blue complex with copper ions in alkaline solution, which has characteristic absorption peaks at 655 nm.

Reagents and Equipment Required but Not Provided.

Spectrophotometer/microplate reader, micro glass cuvette/96 well flat-bottom plate, mortar/homogenizer, ice and distilled water, desk centrifuge, transferpettor.

Procedure:

I. Sample extraction:

Suggest that weight about 0.2 g tissue with 2 mL distilled water. Fully grinding, 95°C water bath for 10 minutes (cover tightly to prevent moisture loss), after cooling, 8000 g 25°C centrifuge for 10 min. Supernatant is used for test.

II. Determination procedure:

1. Preheat the spectrophotometer/microplate reader 30 min, adjust wavelength to 655 nm, set zero with distilled water.
2. Sampling table (add the following reagents in EP tube)

Reagent (μL)	Standard Tube	Test Tube
Reagent I	35	35
Reagent II	35	35
Sample		230
Standard	230	

Mix well, place at room temperature for 15 min, centrifuge at 8000 g and 25°C for 10 min, take 200 μL

supernatant to detect the absorbance at 655 nm(A).

III. Calculation:

1. According to concentration of standard solution and absorbance create the standard curve, take standard solution as Y-axis, absorbance as X-axis. Calculate the content of sorbitol in sample: y (mg/mL).

2. Sample weight

$$\text{Sorbitol (mg/g fresh weight)} = y \times V1 \div (W \times V1 \div V2) = y \div W$$

3. Protein concentration

$$\text{Sorbitol (mg/mg prot)} = y \times V1 \div (V1 \times Cpr) = y \div Cpr$$

V1: sample volume, 0.23 mL;

V2: extraction volume, 1 mL;

Cpr: sample protein concentration, mg/mL;

W: Sample weight, g

Note:

If the measured absorbance value exceeds the linear range, the sample size can be increased or the sample can be diluted before measurement.

References:

Salvucci M E, Stecher D S, Henneberry T J. Heat shock proteins in whiteflies, an insect that accumulates sorbitol in response to heat stress[J]. Journal of Thermal Biology, 2000, 25(5): 363-371.

Related Products:

BC0340/BC0345 Glucogen Content Assay Kit

BC2540/BC2545 Cellulase(CL) Activity Assay Kit

BC0330/BC0335 Trehalose Content Assay Kit

BC2490/BC2495 Blood Glucose Content Assay Kit

BC2530/BC2535 Sorbitol Dehydrogenase(SDH) Activity Assay Kit

Technical Specification:

The detection limit: 0.0583 mg/mL

Linear range: 0.125-4 mg/mL