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 2-8℃.

Reagent II: 5 mL×1, storage at 2-8℃.

Standard: 10 mg×1, storage at 2-8℃. Dissolve the standard with 1 mL distilled water at a concentration of 10 mg/mL. The unused reagent can be stored at 4℃ for 2 weeks.

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 0.1 g tissue with 1 mL distilled water. Fully grinding, 100℃ water bath for 10 minutes (cover tightly to prevent moisture loss), after cooling, 8000 g 25℃ 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. The spectrophotometer needs to be zeroed with distilled water.
2. Preparation of standard solution: before use, dilute 10mg/mL standard solution with distilled water to 4、2、1、0.5、0.25、0.125、0 (blank tube) mg/mL standard solution to be measured.
3. Sampling table (add the following regents 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℃ for 10 min, take 200 μL supernatant to detect the absorbance at 655 nm. ΔAt = At - Ab, ΔAs = As - Ab. The standard curve and blank tubes should only be measured 1-2 times.

III. Calculation:

1. A standard curve was created from the concentration of the standard tube (y, mg/mL) and the absorbance A (x, ΔAs). Based on the standard curve, the sample concentration (y, mg/mL) was calculated by bringing the At (x, ΔAt) into the equation.
2. Sample weight

Sorbitol (mg/g fresh weight) =y×V1÷(W×V1÷V2)=y ÷W

3. Protein concentration

Sorbitol (mg/mg prot)=y×V1÷(V1×Cpr)=y÷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

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