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Plant Tissue Fructose Content Assay Kit

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

Operation Equipment: Microplate Reader/Spectrophotometer

Catalog Number: AK0227

Size:100T/96S

Components:

Extract reagent: 110 mL×1, storage at 4℃ .

Reagent 1: Powder×1, stored at 4℃; 10 mg fructose is dissolved in 1 mL of distilled water before use, and then diluted to 4 mg/mL fructose standard solution with distilled water.

Reagent 2: solution 25 mL×1, storage at 4℃ .

Reagent 3: solution 6 mL×1, storage at 4℃ .

Reagent 4: powder 0.5 g×1, storage at RT.

Product Description:

Fructose is one kind of ketohexose and an isomeride of glucose, which exists widely in the pμlp of fruits and honey with free state. It can be combined with glucose to form sucrose. Fructose is the sweetest monosaccharide and is used widely in the production of food, medicine and health care products.

In acidic conditions, fructose reacts with resorcinol to form colored substances which has characteristic absorption peaks at 480 nm.

Reagents and Equipments Required but Not Provided:

Spectrophotometer/ microplate reader, water bath, adjustable transferpettor, micro glass cuvette/ 96 well flat-bottom plate, mortar/homogenizer, distilled water.

Sample preparation:

0.05 g of sample at RT is added 0.5 mL of Extract reagent, grind and transfer to centrifuge tube with cap quickly. Keep cap tightly and put it in 80℃ water bath for 10 min, shake 3-5 times, centrifuge at 4000 g for 10 min in RT after cooling. The supernatant is added about 2 mg of Reagent 4, keep cap tightly and decolorize at 80℃ for 30 min, add 0.5 mL Extract reagent, centrifuge at 4000 g for 10 min at RT, supernatant is used for test.

Procedure:

1. Preheat spectrophotometer/ microplate reader for 30 min, adjust the wavelength to 480 nm, set the counter to zero with distilled water.
2. Add these reagent to 1.5 mL EP tube:

Reagent name (μL)	Blank tube (A2)	Standard tube (A1)	Test tube (A3)
Sample			30
Reagent 1		30	

Distilled water	30		
Reagent 2	210	210	210
Reagent 3	60	60	60

Mix thoroughly, keep cap tightly and react 10 min at 80℃ water bath, After cooling, take 200 μL to micro glass cuvette/96 well flat-bottom plate and detect absorbance at 480 nm after cooling, name A2, A1, A3, calculate ΔA(standard) =ΔA(S) =A1-A2, ΔA(test) =ΔA(T) =A3-A2.

Calculation:

1. Protein concentration:

Fructose (mg/mg prot) = C×ΔA(T) ÷ΔA(S) ×Ve÷ (Cpr× Ve) =4×ΔA(T) ÷ΔA(S) ÷Cpr

2. Sample weight:

Fructose (mg/g fresh weight) = C×ΔA(T) ÷ΔA(S) ×Ve÷ W =4×ΔA(T) ÷ΔA(S) ÷W

C: standard concentration, 4 mg/ mL

Cpr: Sample concentration (mg/mL);

W: Sample weight(g);

Ve: Extraction volume, 1 mL.

Note:

If the OD value of the measured tube is greater than 1. 1, dilute the sample with the Extract reagent.

References：

[1] Varandas S, Teixeira M J, Marques J C, et al. Glucose and fructose levels on grape skin: interference in Lobesia botrana behaviour[J]. Analytica chimica acta, 2004, 513(1): 351-355.

Technical Specifications:

The detection limit: 0.065 mg/mL

Linear range: 0.5-35 mg/mL