

(FOR RESEARCH USE ONLY. DO NOT USE IT IN CLINICAL DIAGNOSIS!)

Fructose Content Assay Kit

Catalog No.: BC00140

Size: 50T

Please read the instructions carefully before use. If you have any questions or need further help during experiment, please don't hesitate to contact us through the following methods:

✉ Email (Sale)	order@enkilife.com
✉ Email (Techsupport)	techsupport@enkilife.com
☎ Tel:	0086-27-87002838
🌐 Website:	www.enkilife.com

Shelf life: Please refer to the label on the outer package.

Techsupport: In order to provide you with better service, please inform us the lot number on the label of the outer package.

Basic Information

Product Name	Fructose Content Assay Kit
Detection Method	Colorimetric
Sample Type	Tissue, fluid
Assay Type	Quantitative
Detection Instrument	Ultraviolet spectrophotometer (285 nm)

Product Introduction

Fructose, primarily derived from the secretions of the seminal vesicles, is the main sugar in semen and a crucial nutrient for sperm. The fructose content in seminal vesicles is significantly correlated with sperm motility; its level directly affects sperm motility and is a key factor in sperm performance. Furthermore, fructose is the sweetest natural sugar, equivalent to 1.8 times that of sucrose. Sugar composition is an important indicator of the quality of fruit juice and honey. Establishing appropriate fructose detection methods is of great significance for honey quality control and the detection of fructose content in fruit juice.

Principle

When fructose reacts with the matrix solution, the product has a maximum absorption peak at 285 nm, and its content can be determined by ultraviolet spectrophotometry.

Components

Components	Name	Size	Storage
Reagent 1	Matrix reaction solution	75 mL×2 bottles	2~8℃
Reagent 2	Fructose standard	D-fructose powder×3 tubes	RT

Note: For each vial of D-fructose powder, add 10mL of distilled water immediately before use to prepare a 10mg/10mL fructose standard solution, i.e., a 1mg/mL fructose standard solution.

Storage

This kit is stored under the specified conditions upon receipt and has a shelf life of 6 months.

Preparation before the experiment

Standard curve

Method 1: Liquid nitrogen grinding

1. **Pretreatment:** Dissolve one vial of fructose standard powder in 1 mL of double-distilled water to prepare a 10 mg/mL fructose standard stock solution. Then dilute with double-distilled water to different concentrations: 0.125, 0.25, 0.5, 1, 2, 3, 4, and 5 mg/mL. Take 0.05 mL of the solution for the preparation of the standard curve.

2. **Operation table:**

Reagents	Blank tube	Standard pipe
Double-distilled water (mL)	0.05	--
Fructose standards at different concentrations (mL)	--	0.05
Reagent 1 (mL)	3	3
Mix thoroughly, bathe accurately in a boiling water bath for 8 minutes, cool with running water, and measure the OD value of each tube at 285nm with a 1cm optical path using double-distilled water for zeroing.		

3. **Measurement results:**

Concentration	0	0.125	0.25	0.5	1	2	3	4	5
OD value	0	0.031	0.062	0.128	0.267	0.539	0.815	1.061	1.332

Operation process

Reagents	Blank tube	Standard tube	Test tube
Double-distilled water (mL)	0.05	--	--

1 mg/mL fructose standard solution (mL)	--	0.05	--
Test solution (mL)	--	--	0.05
Reagent 1 (mL)	3	3	3
Mix thoroughly, bathe in a boiling water bath for 8 minutes, cool with running water, measure the absorbance A of each tube at 285nm with a 1cm optical path, zero the blank tube.			

Result calculation

Formula for calculating liquid samples:

$$\text{Fructose Content (mg/mL)} = \frac{A_{\text{determination}}}{A_{\text{standard}}} \times C_{\text{standard}} \times N$$

Tissue sample calculation formula:

$$\text{Fructose Content (mg/gprot)} = \frac{A_{\text{determination}}}{A_{\text{standard}}} \times C_{\text{standard}} \div C_{\text{pr}}$$

$$\text{Fructose Content (mg/g)} = \frac{A_{\text{determination}}}{A_{\text{standard}}} \times C_{\text{standard}} \times V_{\text{sample total}} \div W$$

Annotation

C_{standard} : Standard solution concentration, 1 mg/mL

N : Dilution factor of the sample before testing ;

C_{pr} : Protein concentration in tissue sample, gprot/mL (prot refers to protein) ;

$V_{\text{sample total}}$: Total volume of tissue sample homogenate, mL;

W : Tissue weight, g

Precautions

This product is for research use only and must not be used for clinical diagnosis. Do not take it.