

Glucose Microplate Assay Kit

Basic information:

Catalog No.: UAK1025 Size: 100 Assays

For research use only. Not for diagnostic or therapeutic procedures.

I. INTRODUCTION

Glucose (C₆H₁₂O₆) is a key diagnostic parameter for many metabolic disorders. Increased glucose levels have been associated with diabetes mellitus, hyperactivity of thyroid, pituitary and adrenal glands. Decreased levels are found in insulin secreting tumors, myxedema, hypopituitarism and hypoadrenalism. The assay is initiated with the enzymatic catalysis of glucose by glucose oxidase. The enzyme catalysed reaction products H₂O₂ react with the substrate, and can be measured at a colorimetric readout at 505 nm.

II. KIT COMPONENTS

Component	Volume	Storage
96-Well Microplate	1 plate	
Enzyme	Powder x 1	-20 °C
Enzyme Diluent	10 ml x 1	4 °C
Dye Reagent	Powder x 1	4 °C, keep in dark
Standard	Powder x 1	4 °C
Plate Adhesive Strips	3 Strips	
Technical Manual	1 Manual	

Note:

Enzyme: add 10 ml Enzyme Diluent to dissolve before use.

Dye Reagent: add 10 ml distilled water to dissolve before use.

Standard: add 1 ml distilled water to dissolve before use; then add 0.2 ml into 0.8 ml distilled water, the concentration will be 10 mmol/L.

III. MATERIALS REQUIRED BUT NOT PROVIDED

1. Microplate reader to read absorbance at 505 nm
2. Distilled water
3. Pipettor
4. Pipette tips
5. Mortar
6. Ice
7. Centrifuge
8. Timer

IV. SAMPLE PREPARATION

1. For tissue samples

Weigh out 0.1 g tissue, homogenize with 1 ml distilled water, put it in the boiling water bath for 15 minutes, centrifuged at 8000g 4 °C for 10 minutes, take the supernatant into a new centrifuge tube for detection.

3. For liquid samples

Detect directly.

V. ASSAY PROCEDURE

Add following reagents into the microplate:

Reagent	Sample	Standard	Blank
Sample	20 μ l	--	--
Standard	--	20 μ l	--
Distilled water	--	--	20 μ l

Enzyme	90 µl	90 µl	90 µl
Dye Reagent	90 µl	90 µl	90 µl
Mix, put it in the oven, 37 °C for 15 minutes, record absorbance measured at 505 nm.			

VI. CALCULATION

1. According to the weight of sample

$$\begin{aligned}\text{Glucose } (\mu\text{mol/g}) &= (C_{\text{Standard}} \times V_{\text{Standard}}) \times (\text{OD}_{\text{Sample}} - \text{OD}_{\text{Blank}}) / (\text{OD}_{\text{Standard}} - \text{OD}_{\text{Blank}}) / \\ &\quad (V_{\text{Sample}} \times W / V_{\text{Water}}) \\ &= 10 \times (\text{OD}_{\text{Sample}} - \text{OD}_{\text{Blank}}) / (\text{OD}_{\text{Standard}} - \text{OD}_{\text{Blank}}) / W\end{aligned}$$

2. According to the volume of sample

$$\begin{aligned}\text{Glucose } (\mu\text{mol/ml}) &= (C_{\text{Standard}} \times V_{\text{Standard}}) \times (\text{OD}_{\text{Sample}} - \text{OD}_{\text{Blank}}) / (\text{OD}_{\text{Standard}} - \text{OD}_{\text{Blank}}) / \\ &\quad V_{\text{Sample}} \\ &= 10 \times (\text{OD}_{\text{Sample}} - \text{OD}_{\text{Blank}}) / (\text{OD}_{\text{Standard}} - \text{OD}_{\text{Blank}})\end{aligned}$$

W: the weight of sample, g;

C_{Standard}: the Standard concentration, 10 mmol/L = 10 µmol/ml;

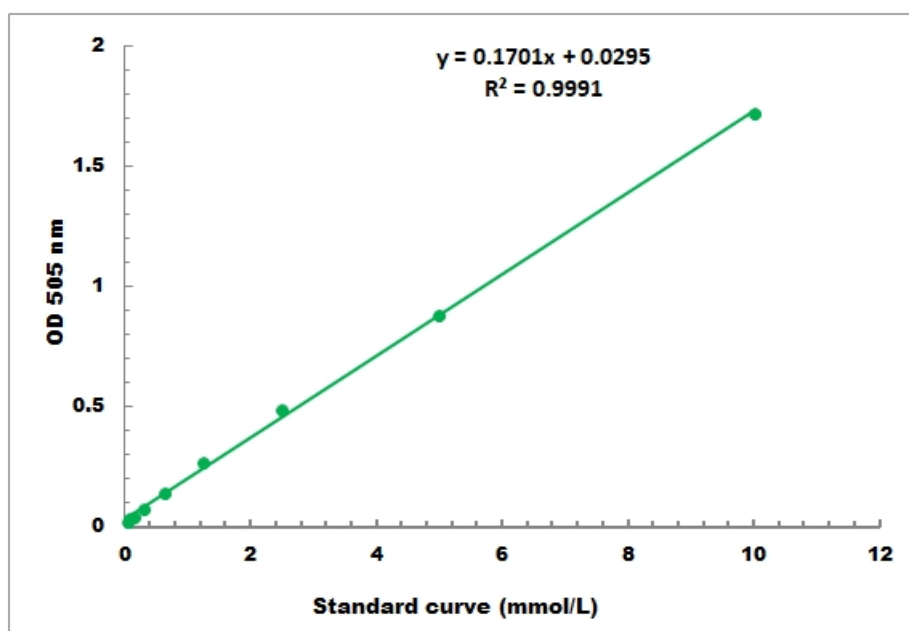
V_{Standard}: the volume of sample, 0.02 ml;

V_{Sample}: the volume of sample, 0.02 ml;

V_{Water}: the volume of distilled water, 1 ml.

VII. TYPICAL DATA

The standard curve is for demonstration only. A standard curve must be run with each assay.



Detection Range: 0.1 mmol/L - 10 mmol/L