CheKine™ Micro Blood Glucose Assay Kit

Cat #: KTB1330 Size: 48 T/96 T

	Micro Blood Glucose Assay Kit		
REF	**Cat #:** KTB1330	LOT	**Lot #:** Refer to product label
	Detection range: 0.0625-4 mmol/L		**Sensitivity:** 0.0156 mmol/L
	Applicable samples: Serum, Plasma		
	Storage: Stored at 4℃ for 12 months, protected from light		

Assay Principle

Blood glucose is the main form of sugar transport in mammalian body. Blood glucose concentration is regulated by nervous system and hormones. Hyperglycemia and hypoglycemia occur when the regulation is out of balance. Diabetes, increased intracranial pressure and dehydration can cause hyperglycemia, and after meals, mental stress can cause physiological hyperglycemia. Patients with pancreatic β-cell hyperplasia or tumors, pituitary gland, adrenal cortex and hypothyroidism, and severe liver disease all cause hypoglycemia. In addition, hunger and strenuous exercise can cause temporary hypoglycemia. Glucose level is a key diagnostic parameter for many metabolic disorders. Measurement of blood glucose can be very important in both disease research and drug discovery processes. CheKine™ Micro Blood Glucose Assay Kit is specially developed for blood sample. Glucose oxidase can catalyze the oxidation of glucose to produce gluconic acid and hydrogen peroxide; peroxidase catalyzes hydrogen peroxide oxidation of 4-aminoantipyrine coupled phenol produce colored compounds which with a characteristic absorption peak at 505 nm. Within a certain concentration range, the glucose concentration has a linear relationship with the absorbance at 505 nm. According to the standard curve, the glucose concentration in the sample can be calculated.

Materials Supplied and Storage Conditions

Kit components	Size		Storage conditions
	48 T	96 T	
Reagent Ⅰ	5 mL	10 mL	4℃, protected from light
Reagent Ⅱ	5 mL	10 mL	4℃, protected from light
Standard	1 mL	2 mL	4℃

Materials Required but Not Supplied

- Microplate reader or visible spectrophotometer capable of measuring absorbance at 505 nm
- 96-well plate or microglass cuvette, precision pipettes, disposable pipette tips
- Incubator

• Deionized water

Reagent Preparation

Reagent Ⅰ: Ready to use as supplied. Equilibrate to room temperature before use. Store at 4℃, protected from light.

Reagent Ⅱ: Ready to use as supplied. Equilibrate to room temperature before use. Store at 4℃, protected from light.

Mixed Reagent: Mix Reagent Ⅰ and Reagent Ⅱ in equal volumes before use.

Standard curve setting: Dilute 4 mmol/L Standard with deionized water to 2, 1, 0.5, 0.25, 0.125, 0.0625 mmol/L standard solution as shown in the table below.

Num.	Volume of Standard	Deionized Water (μL)	Concentration (mmol/L)
Std.1	200 μL 4 mmol/L	0	4
Std.2	100 μL of Std.1 (4 mmol/L)	100	2
Std.3	100 μL of Std.2 (2 mmol/L)	100	1
Std.4	100 μL of Std.3 (1 mm ol/L)	100	0.5
Std.5	100 μL of Std.4 (0.5 mmol/L)	100	0.25
Std.6	100 μL of Std.5 (0.25 mmol/L)	100	0.125
Std.7	100 μL of Std.6 (0.125 mmol/L)	100	0.0625

Sample Preparation

Tested directly by adding samples to the microcentrifuge tubes. However, to find the optimal values and ensure your readings will fall within the standard values, we recommend performing a pre-experiment with 2-3 samples.

Assay Procedure

1. Preheat the microplate reader or visible spectrophotometer for more than 30 min, and adjust the wavelength to 505 nm, visible spectrophotometer was returned to zero with deionized water.

2. Add the following reagents respectively into the 96-well plate or microglass cuvette:

Reagent	Blank Well (μL)	Standard Well (μL)	Test Well (μL)
Sample	0	0	20
Standard	0	20	0
Deionized Water	20	0	0
Mixed Reagent	180	180	180

3. Mix well, incubate in 37℃ 15 min. Then reading the values at 505 nm. Finally, calculate the test well $\Delta A_{Test}=A_{Test}-A_{Blank}$, $\Delta A_{Standard}=A_{Standard}-A_{Blank}$.

Note: Reagent Ⅰ and Reagent Ⅱ has certain toxicity. Please take protective measures when operating.

Data Analysis

1. Drawing of standard curve:

With the concentration of the standard solution as the y-axis and the $\Delta A_{Standard}$ as the x-axis, draw the standard curve. Substitute the ΔA_{Test} into the equation to obtain the y value (mmol/L).

2. Calculate the content of Glucose:

Blood Glucose (mmol/L)**=y×n**

Where: n, dilution factor.

Typical Data

Typical standard curve:

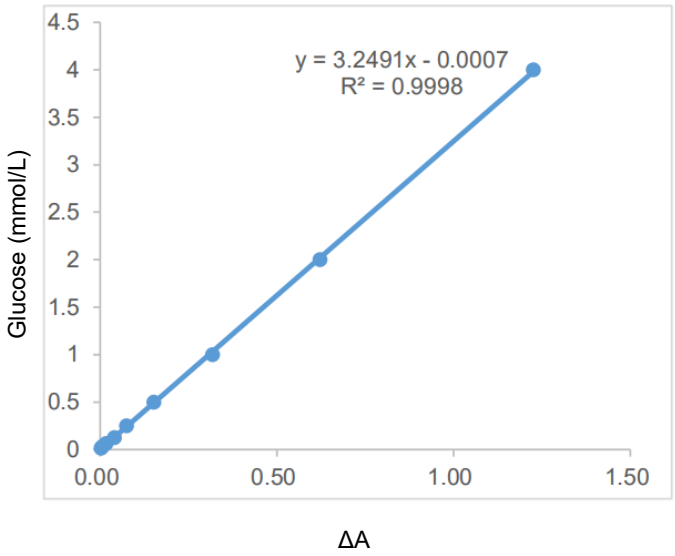

Figure 1. Standard curve for Glucose.

Recommended Products

Catalog No.	Product Name
KTB1320	CheKine™ Micro Plant Soluble Sugar Assay Kit
KTB1340	CheKine™ Micro Glycogen Assay Kit
KTB1350	CheKine™ Micro Total Carbohydrate Assay Kit
KTB1360	CheKine™ Micro Reducing Sugar (RS) Assay Kit

Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes.