Kalium Microplate Assay Kit

Instructions for Use | Cat. No.: ARS6711

Detection and Quantification of Kalium (K^+) Content inSerum, Urine, Saliva and Other biological fluids Samples.

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

1. Introduction

Kaliumis necessary for the function of all living cells. Kalium shifts across nerve cell membranes are necessary for normal nerve transmission: k alium depletion can result in numerous abnormalities, including of heart rhythm. Fresh fruits and vegetables are good dietary sources of k alium.

Kalium can react with sodium tetraphenylborate.The productk alium tetraphenylboroncan be measured at a colorimetric readout at 520 nm.

2. Kit Components

Component	Volume	Storage
96-Well Microplate	1 plate	-
Assay Buffer	25 mlx 2	4 °C
Reaction Buffer	4 mlx 1	4 °C
Dye Reagent	12 mlx 1	4 °C, keep in dark
Standard (2 mmol/L)	1 mlx 1	4 °C
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3. Materials Required But Not Provided

1. Microplate reader to read absorbance at 520 nm
2. Distilled water
3. Pipettor , multi-channel pipettor
4. Pipette tips
5. Mortar
6. Centrifuge
7. Timer

4. Reagent Preparation

Standard: Briefly centrifuge prior to opening.Perform 2 -fold serial dilutions of the top standardsolution using distilled water to make the standard curve.The concentration of standard curve could be 2/1/0.5/0.25/0.125/0.0625/0.0312mmol/ L.

Note: Divide into small aliquots to avoid repeated freeze-thaw cycles.

5. Sample Preparation

For serum sample Add 50 µL serum and 450 µL Assay buffer into the micro centrifuge tube , mix, centrifuged at 8,000g 25°C for 1 0 minutes , take the supernatant into a new centrifuge tube for detection.

6. Assay Procedure

Add following reagents in to the microplate :

Reagent*	Sample**	Standard	Blank
Reaction Buffer	40 µl	40 µl	40 µl
Sample	40 µl	--	--
Standard	--	40 µl	--
Distilled water	--	--	40 µl
Mix, wait for 5 minutes.			
Dye Reagent	120 µl	120 µl	120 µl
Mix, measured at 520 nm and recordthe absorbance.			

Note:

*Reagents must be added sequentially and should not be premixed prior to addition.

**The concentrations can vary over a wide range depending on the different samples. For unknown samples, we recommend doing a pilot experiment & testing several doses to ensure the readings are within the standard curve range.

7. Calculation

1. Calculate the sample c once ntration in ASSAY PROCEDURE according to the slope of

the standard curve

$$C = \frac{(OD_{Sample} - OD_{Blank}) - Intercept}{Slope} \times n \ (mmol/L)$$

Calculate the initial concentration according to sample preparation procedure .

2. According to one point of the standard OD and concentration

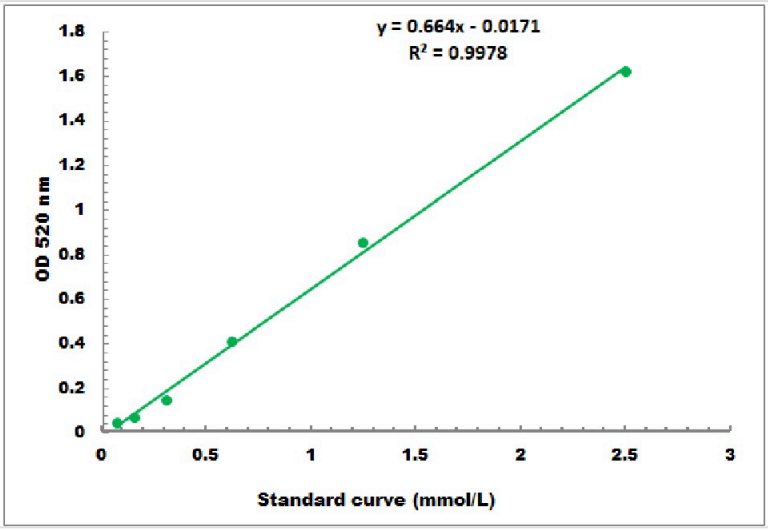
According to the volume of sample

$$C = \frac{(C_{Standard} \times V_{Standard}) \times (OD_{Sample} - OD_{Blank})}{(OD_{Standard} - OD_{Blank}) \times V_{Sample}} \ (\mu mol/ml)$$

Item	Definition
Slope	the absorbance slope of standard curve
n	the dilution factor
$C_{Standard}$	the standard concentration, mmol/L = μmol/ml
$V_{Standard}$	the volume of standard in assay procedure, μl
V_{Sample}	the volume of sample in assay procedure, μl
V_{Assay}	the volume of Assay Buffer, μl
V	the volume of sample in sample preparation, ml

8. Typical Data

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



Detection Range : 0.2mmol/ L -2mmol/ L