Kalium Microplate Assay Kit

User Manual

Catalog # CAK1104

(Version 1.2C)

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

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

I. INTRODUCTION

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

The kalium can react with sodium tetraphenylborate. The products kalium tetraphenylboron can be measured at a colorimetric readout at 520 nm.

II. KIT COMPONENTS

Component	Volume	Storage
96-Well Microplate	1 plate	
Assay Buffer	25 ml x 2	4 °C
Reaction Buffer	4 ml x 1	4 °C
Dye Reagent	12 ml x 1	4 °C
Standard (2 mmol/L)	1 ml x 1	4 °C
Technical Manual	1 Manual	

III. 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

IV. SAMPLE PREPARATION

1. For serum sample

Add 50 µl serum and 450 µl Assay buffer into the microcentrifuge tube, mix, centrifuged at 8,000g 25 °C for 10 minutes, take the supernatant into a new centrifuge tube for detection.

V. ASSAY PROCEDURE

Add following reagents into the microplate:

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

Note:

1) Perform 2-fold serial dilutions of the top standards to make the standard curve.

2) 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.

3) Reagents must be added step by step, can not be mixed and added together.

VI. CALCULATION

1. According to the serum sample

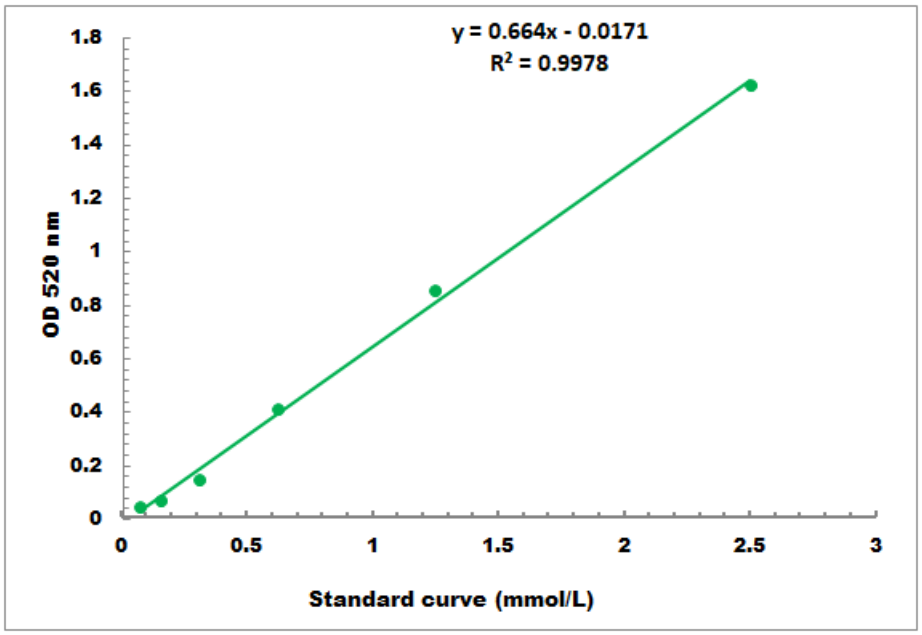
K^+ (mmol/L) = $C_{Standard}$ × (OD_{Sample} - OD_{Blank}) / ($OD_{Standard}$ - OD_{Blank}) × 10

= 20 × (OD_{Sample} - OD_{Blank}) / ($OD_{Standard}$ - OD_{Blank})

$C_{Standard}$: the concentration of Standard, 2 mmol/L.

VII. TYPICAL DATA

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



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

VIII. TECHNICAL SUPPORT

For troubleshooting, information or assistance, please go online to www.cohesionbio.com or contact us at techsupport@cohesionbio.com

IX. NOTES