N BIO - PYRUVATE

(Enzymatic method)

KIT NAME	KIT SIZE	CAT. NO
N BIO - Pyruvate	2 x 25 ml	DPYR02025M

GENUINE BIOSYSTEM

INTRODUCTION

Pyruvate, mainly used in clinical diagnosis of diabetic ketoacidosis. Pyruvate is the major intermediates for glucose catabolism and anabolism, pyruvate is the product of glycolysis, to oxidize to CO2 and H2O by citric acid cycle, keep the blood of L / P ratio at about 9. When the body is under hypoxic metabolism, pyruvate is reduced to lactate, L / P increased. More severe hypoxia, more obvious of the L / P increasing. According to L / P ratio, the severity of circulatory failure can be speculated. Vitamin B1 deficiency, chronic alcoholism, chronic pulmonary heart disease, diabetes and ketoacidosis can cause pyruvate level elevate in blood.

METHOD PRINCIPLE

PYR + NADH +H+ $\xrightarrow{\text{LDH}}$ LAC + NAD+ + H2O

Measuring the change in absorbance of NADH at 340 nm wavelength, it is proportional to decrease in the content of the absorbance of the sample pyruvate.

KIT CONTENTS

Reagent Name	DPYR02025M
R1 Pyruate Reagent	2 x 20 ml
R2 Pyruate Reagent	2 x 5 ml
R3 Calibrator	1 vial

Refer calibrator value on the vial label.

WORKING REAGENT PREPARATION AND STABILITY

The reagents when stored at 2-8°C are stable up to expiry date printed on the package. Assay can be performed with use of separate R1-PYR and R2-PYR reagents or with use of working reagent. For working reagent preparation mix gently 4 parts of R1-PYR with 1 part of R2-PYR. Avoid foaming.

Stability of working reagent : 1 day at 2-8°C

CONCENTRATIONS IN THE TEST

NADH 0.35 mmol/L

Tris Buffer with preservatives

LDH 300 U/L

SPECIMEN

Serum. Day of fasting serum without hemolysis, because long-term placement of whole blood would reduce the concentration of pyruvate, so the separation of blood plasma were measured promptly.

PROCEDURE

These reagents may be used both for manual assay in several automatic analyzers. Applications for them are available on request.

Wavelength 340 nm

Temperature 37°C

Cuvette 1 cm

Pipette into the cuvette:

Reagent	Calibrator (C)	Test (T)
R1 Pyruvate Reagent	800 µl	800 µl
R3 Calibrator	80 µl	-
Sample	-	80 µl
Mix well and incubate for 5 mins at 37° C, Read A1		
R2 Pyruvate Reagent	200 µl	200 µl

Mix well & incubate for 5 min. at 37°C. Measure the absorbance A2 of calibrator & sample, Calculate ΔA = A2-A1

CALCULATION

PYR concentration = ΔA (T) / ΔA(C) x calibrator concentration

REFERENCE VALUES

20 to 100 µmol/L

It is recommended for each laboratory to establish its own reference ranges for local population.

QUALITY CONTROL

To ensure adequate quality control, each run should include assayed normal and abnormal controls. If commercial controls are not available it is recommended that known value samples be aliquoted, frozen and used as controls

PERFORMANCE CHARACTERISTICS

Linearity: upto 1000 µmol/L ®≥ 0.990)

LITERATURE

1. Zhang Xiuming, Study of clinical and biochemical examination, Beijing: The Military Press,2010.
2. Han Zhijun, Used Items of Clinical Chemistry Automatic Analysis Method, Liaoning Science and Technology Press, 2005

Method	Fixed time (2-point)	End Point
Wavelength	340 mm	340 mm
Zero Setting	Distilled Water	Distilled Water
Temperature Setting	37° C	37° C
Incubation Temperature	37° C	37° C
Incubation Time	----	5 mins. + 5 mins.
Delay Time	300 secs	----
Read Time	300 secs	----
No. of Reading	2	----
Interval Time	----	----
Sample Volume	0.08 ml (80 ul)	0.08 ml (80 ul)
Reagent Volume	1.0 ml (1000 ul)	1.0 ml (1000 ul)
Standard Concentration	Refer Calibrator vial	Refer Calibrator vial
Units	µmol/l	µmol/l
Factor	----	----
Reaction Slope	Decreasing	Decreasing
Linearity	1000 µmol/l	1000 µmol/l

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