SPECTRUM

The Creative Approach to Bioscience

PYRUVATE
(Quantitative Enzymatic UV–Test)

REF: 335 001 100 test

R1 : 2 x 50 ml
R2 : 1 x 5 ml
R3 : 1 x 5 ml
St : 1 x 20 ml

SYMBOLS IN PRODUCT LABELLING

EC REP	Authorised Representative		Use by/Expiration Date
IVD	For in-vitro diagnostic use		CAUTION. Consult instructions for use
LOT	Batch Code/Lot number		
REF	Catalogue Number		Manufactured by
	Consult instructions for use		(Xi) - Irritant
	Temperature Limitation		

Intended Use

Spectrum Diagnostics liquizyme Pyruvate reagent is intended for the in-vitro quantitative, diagnostic determination of pyruvate in human blood.

Method

Enzymatic UV - Test.

Assay Principle

In the presence of an excess of NADH pyruvate is converted to lactate.The reduction of the absorbance = ΔA,at 340 nm, due to the oxidation of NADH to NAD^+ , is a measure of the amount of pyruvate originally present :

$$\text{Pyruvate} + \text{NADH} + H^+ \xrightarrow{\text{LDH}} \text{L-Lactate} + NAD^+$$

Reagents

Standard (St.)	**4.0 mg/dl**
Reagents:	
R1 Buffer Reagent : (Tris buffer, pH 7.20)	1.50 mol/L
R2 Coenzyme NADH	10.0 mmol/L
R3 Start Reagent LDH	1.50 kU/mL

Additional Reagent *(not provided with the kit)*
Perchloric Acid 0.6m *for deproteinization*

Precautions and Warnings

Do not ingest or inhalate. In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.

Reagent Preparation

Spectrum Pyruvate reagents are supplied ready-to-use.

Reagent Storage and Stability

All reagents are stable until expiration date stated on label when protected from light stored refrigerated at 2 - 8 °C.

Specimen Preparation

Pipet 2,0 mL of **freshly drawn blood** into a centrifugation tube containing 4 mL of cold **0.6 m perchloric acid**. Vortex for about 30 seconds.
Keep the blood precipitate mixture for about 5 min in the cold to assure complete protein precipitation. Centrifuge 10 min at approximately 1500 x g. The protein free supernatant is ready for use.

System Parameters

Wavelength	340 nm (334 - 365)
Optical path	1 cm
Assay type	End point
Temperature	30 °C or 37 °C
Zero adjustment	Against Water

Procedure

	Sample	Standard
R1 Buffer Reagent	1 ml	1 ml
Supernatant Sample	2 ml	.....
Standard	.....	2 ml
Mix and add **R2** Coenzyme	50 µl	50 µl
Mix and incubate for approximately 5 min , pour into cuvette,measure initial absorbance A1		
R3 Start Reagent	50 µl	50 µl
mix, incubate for approximately 5 min and measure absorbance A2		

ΔA = A2 - A1 For Sample and Standard

CALCULATION

with Factor :

Pyruvate (mg/dL) = ΔA x 6,37 (at 340 nm)

with Standard :

$$\textit{Pyruvate (mg/dL)} = \frac{\Delta A_{sample}}{\Delta A_{Standard}} \times 4.0$$

Expected values

0.3 – 0.7 mg/dL

Note*: It is recommended for each laboratory to establish and maintain its own reference values. The given data are only an indication.*

QUALITY CONTROL

For quality control use adequate control materials, available from Spectrum Diagnostics.

Performance Characteristics

Precision

Within run (Repeatability)

	Level 1	Level 2
n	20	20
Mean (mg/dL)	0.62	2.2
SD	0.02	0.05
CV%	3.23	2.27

Run to run (Reproducibility)

	Level 1	Level 2
n	20	20
Mean (mg/dL)	0.57	2.05
SD	0.22	0.062
CV%	3.86	3.02

Methods Comparison

A comparison between Spectrum Diagnostics Pyruvate reagent and a commercial reagent of the same methodology was performed on 20 human sera. A correlation of 0.972 was obtained.

Sensitivity

When run as recommended, the minimum detection limit of the assay is 0.1 mg/dl

Linearity

The reaction is linear up to Pyruvate concentration of 40 mg/dl

Waste Disposal

This product is made to be used in professional laboratories.
Please consult local regulations for a correct waste disposal.
S56: dispose of this material and its container at hazardous or special waste collection point.
S57: use appropriate container to avoid environmental contamination.
S61: avoid release in environment. refer to special instructions/safety data sheets.

Spectrum Diagnostics does not interpret the results of a clinical laboratory procedure; interpretation of the results is considered the responsibility of qualified medical personnel. All indications of clinical significance are supported by literature references.

ORDERING INFORMATION	
CATALOG NO.	**QUANTITY**
335 001	100 Test

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