

Citric Acid

(Citrate Lyase - UV-Test, Version II)

Reagent for the Quantitative Photometric
Determination of Citric Acid/Citrate



Cat-No.	Package Size
119 000	R1a = 2 x 19ml / R1b = 2,1ml R2a = 2 x for 4ml / R2b = 2 x 4ml incl. 1 x 10ml Standard

METHOD and PRINCIPLE

Citrate gives, catalyzed through citrate lyase, oxalic acetate and acetic acetate, and through further enzymatic reactions finally pyruvate. Pyruvate reacts with NADH, to lactate and NAD. The decrease of the absorbance of NADH is measured in the UV-range; it is proportional to the concentration of the citrate. The result is calculated with the included standard.

REAGENTS

Constituents :

R1a/b

Glycylglycin-Buffer (pH 7,8)	6 mmol/l
L-MDH	3 kU/l
L-LDH	>2 kU/l
NADH	0,18 mmol/l

R2a/b

Citrate Lyase	>14 U/l
Mg-Acetate	3 mmol/l

Stabilizer

Standard	0.3 g/l
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Storage/Stability

Reagents stored at 2-8 °C are stable until the expiration date printed on the labels.

Keep away from direct light!

Disposal/Waste

Dispose waste according to the local official regulations.

Preparation of Working Reagents

R1 To 1 bottle R1a pipette 1ml R1b.
*Stability : 2 weeks at 2 - 8°C,
if contamination is strictly avoided*

R2 To 1 bottle R2a pipette 4ml R2b.
Stability : 8 hours at 2 - 8°C,
if contamination is strictly avoided*

Standard is ready for use

Warnings

Reagent contains Sodiumazide (0,95 g/l) as preservative. Do not swallow! Do not touch skin and / or mucous membranes!

SAMPLES

Solutions of Citric Acid-/Citrate

Disregard contaminated samples

PROCEDURE

The reagent can be used manually and on most analyzers. Applications are available on request.

Wavelength	340 nm, Hg 334 nm
Temperature	37°C
Cuvette	1 cm light path

Measure against Reagent Blank, decreasing absorbance

	Reagent Blank	Sample or Standard
Reagent R1 Sample or Standard	1000 µl -	1000 µl 75 µl
Mix well, incubate for about 3 min, then read absorbance A ₁ of Sample and of Blank		
Reagent R2	200 µL	200 µL
Mix well, incubate for about 5 min - read A ₂		

$$\Delta A = (A_1 - A_2)_{\text{Sample/Standard}} - (A_1 - A_2)_{\text{Blank}}$$

CALCULATION

$\text{Citrate (g/l)} = \Delta A_{\text{Sample}} / \Delta A_{\text{Standard}} \times 0.3$

QUALITY CONTROL

We recommend Greiner Citrate Controls.

PERFORMANCE DATA

Measuring Range and Linearity

The measurable linear test range is 0,005 g/l till 0,400 g/l. For higher concentrations samples must be diluted (e.g.) 1+1 with phys. NaCl solution. Multiply result (e.g.) by 2.

Specificity/Interferences

The test is specific on Citrate.
No interferences known yet.

NOTE

* Due to low stability of R2 we recommend to use **Batch Mode** for routine analysis

LITERATURE

Möllering, H. und Gruber, W. (1966): Determination of citrate with citratlyase, Anal. Biochem. 17, 369-376

SYMBOLS USED

IVD

For *in vitro* diagnostic medical use

LOT

Batch Code



Use by...



Temperature limitation