L-P-G Reagent Kit

for the 600 and ISCUS*flex*
Microdialysis Analyzers

GLUCOSE

Colorimetric method for the quantitative determination of Glucose in Microdialysates.

Measuring principle

Glucose is enzymatically oxidised by glucose oxidase (GOD). The hydrogen peroxide formed reacts with phenol and 4-amino-antipyrine. This reaction is catalyzed by peroxidase (POD) and yields the red-violet colored quinoneimine. The rate of formation is measured photometrically at 530 nm and is proportional to the glucose concentration.

$$\text{Glucose} + O_2 + H_2O \xrightarrow{GOD} \text{Gluconic acid} + H_2O_2$$

$$2\,H_2O_2 + \text{4-Aminoantipyrine} + \text{Phenol} \xrightarrow{POD} \text{Quinoneimine} + 4\,H_2O$$

Linear range: 0.1 - 25 mmol/L

	Component	Concentration in test solution
Glucose reagent	4-Aminoantipyrine	0.77 mmol/L
	Ascorbate oxidase	>3 kU/L
	Glucose oxidase	>1.5 kU/L
	Peroxidase	>1.5 kU/L
Glucose buffer	Phosphate buffer, pH 7.0	0.1 mol/L
	Phenol	11 mmol/L
	Sodium azide	0.4 g/L

Sample material
Microdialysates

For in vitro use only

Symbol declaration:

Last day of use

LOT Lot number

Storage temperature

CE The product meets EU directive for IVD (98/79/EC)

WARNING:

Do not pipette by mouth. Exercise the normal precautions required for handling laboratory reagents.

The buffer contains Sodium Azide. Avoid ingestion or contact with skin or mucous membranes. In case of skin contact, flush affected area with copious amounts of water. In case of contact with eyes or if ingested, seek immediate medical attention.

Sodium Azide may react with lead and copper plumbing, to form potentially explosive azides. When disposing of such reagents, flush with large volumes of water to prevent azide build up. Exposed metal surfaces should be cleaned with 10 % sodium hydroxide

References:
1. Barhem and P. Trinder, Analyst 97(1972)142

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LACTATE

Colorimetric method for the quantitative determination of Lactate in Microdialysates.

Measuring principle

Lactate is enzymatically oxidised by lactate oxidase. The hydrogen peroxide formed reacts with 4-chlorophenol and 4-amino-antipyrine. This reaction is catalyzed by peroxidase (POD) and yields the red-violet colored quinoneimine. The rate of formation is measured photometrically at 530 nm and is proportional to the lactate concentration.

$$\text{Lactate} + O_2 + H_2O \xrightarrow{LOD} \text{Pyruvate} + H_2O_2$$

$$H_2O_2 + \text{4-Chlorophenol} + \text{4-Aminoantipyrine} \xrightarrow{POD} \text{Quinoneimine} + 2\,H_2O + HCl$$

Linear range: 0.1 - 12 mmol/L

	Component	Concentration in test solution
Lactate reagent	4-Aminoantipyrine	0.4 mmol/L
	Lactate oxidase	>0.5 kU/L
	Peroxidase	>0.5 kU/L
	Ascorbate oxidase	>12.0 kU/L
Lactate buffer	PIPES buffer, pH 6.8	100 mmol/L
	4-Chlorophenol	5.4 mmol/L
	Sodium oxalate	7.5 mmol/L
	EDTA-disodium salt	5 mmol/L
	Sodium azide	0.3 g/L

Sample material
Microdialysates

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Last day of use

LOT Lot number

Storage temperature

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WARNING:

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Sodium Azide may react with lead and copper plumbing, to form potentially explosive azides. When disposing of such reagents, flush with large volumes of water to prevent azide build up. Exposed metal surfaces should be cleaned with 10 % sodium hydroxide

References:
1.N.Shimojo et al. Clin Chem 35(1989)1992 2.H.F.Kühnle et al, J.Clin Chem BioChem 15 (1977)171
2.T.O.Kleine et al, Dtsch Med Wscht 104 (1979) 553

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PYRUVATE

Colorimetric method for the quantitative determination of Pyruvate in Microdialysates.

Measuring principle

Pyruvate is enzymatically oxidized by pyruvate oxidase (PyrOx). The hydrogen peroxide formed reacts with N-ethyl-N-(2-hydroxy-3-sulfopropyl)-m-toluidine and 4-amino-antipyrine. This reaction is catalyzed by peroxidase (POD) and yields the red-violet colored quinonediimine. The rate of formation is measured photometrically at 530 nm and is proportional to the pyruvate concentration.

$$\text{Pyruvate} + \text{inorganic phosphate} + O_2 \xrightarrow{PyrOx} \text{Acetylphosphate} + CO_2 + H_2O_2$$

$$H_2O_2 + \text{4-Aminoantipyrine} + \text{TOOS} \xrightarrow{POD} \text{Quinonediimine} + 4\,H_2O.$$

Linear range: 2 - 300 (10 - 1500) µmol/L

	Component	Concentration in test solution
Pyruvate reagent	4-Aminoantipyrine	0.3 mmol/L
	Tiamine pyrophosphate	0.2 mmol/L
	FAD	10 µmol/L
	Pyruvate Oxidase	>0.2 kU/L
	Peroxidase	>0.8 kU/L
	Ascorbate Oxidase	>10 kU/L
Pyruvate buffer	Citrate buffer, pH 6.1	100 mmol/L
	Potassium dihydrogenphosphate	10 mmol/L
	$MgCl_2$	10 mmol/L
	TOOS	1.5 mmol/L
	Sodium azide	0.3 g/L

Sample material
Microdialysates

For in vitro use only

Symbol declaration:

Last day of use

LOT Lot number

Storage temperature

CE The product meets EU directive for IVD (98/79/EC)

WARNING:

Do not pipette by mouth. Exercise the normal precautions required for handling laboratory reagents.

The buffer contains Sodium Azide. Avoid ingestion or contact with skin or mucous membranes. In case of skin contact, flush affected area with copious amounts of water. In case of contact with eyes or if ingested, seek immediate medical attention.

Sodium Azide may react with lead and copper plumbing, to form potentially explosive azides. When disposing of such reagents, flush with large volumes of water to prevent azide build up. Exposed metal surfaces should be cleaned with 10 % sodium hydroxide

References:
1. B. Sedewitz, et al., J. Bacteriol., 160 (1984) 273-278
2. M. Nawata, et al., Anal Biohem., 190 (1990) 84-87
3. H. Araki and M. Yamada, in: H. U. Bergmeyer (Editor), Methods of Enzymatic Analysis, 3rd ed., Vol 6, Verlag Chemie, Weinheim, 1984

Content

REF No 801 0361

1. Reagent: One bottle lyophilized reagent each for glucose, lactate and pyruvate.
2. Buffer: One bottle à 6 mL each for glucose, lactate and pyruvate.
3. Calibrator: One bottle à 6 mL

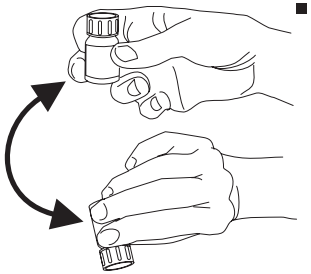
   Reagents are sufficient for 350 determinations.

   Reagents and calibrator are stable up to expiry date when stored at +2 to +8 °C

Preparation and stability of solution

1. Unscrew the cap with the membrane from the reagent bottle. Remove and discard the rubber stopper.
2. Transfer the contents of the buffer bottle to the reagent bottle.
3. Fasten the cap with the membrane on the reagent bottle, without Rubber stopper.
4. Dissolve contents completely by gently turning the bottle upside-down at least ten times. Let the reagent stand and equilibrate in room temperature for at least 30 minutes prior to use.

   Reconstituted reagent is stable for five days in the instrument.



- Dissolve contents completely by gently turning the bottle upside-down at least ten times.

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