

Metanephrines in Urine

Reagent Kit for HPLC Analysis

Automated sample preparation on the GILSON® ASPECT™ available

- > **Reliable separation of interferences**
- > **Reagent kits for combined analysis of metanephrines and catecholamines in urine available**
- > **Only one Clean Up Column required**

Specifications

Linearity:	up to 5000 µg/l (normetanephrine 5-2500 µg/l)
Limit of quantification:	5-11 µg/l
Intraassay:	CV < 3 %
Interassay:	CV < 4.4 %
Recovery:	> 94 %
Analysis time:	< 15 min

Pre-Analytic Treatment

Specimens: 24 h urine is collected in a suitable container with 10 ml 25 % HCl. Stable for at least 5 days at +2 to +8 °C. For longer storage aliquots should be frozen below -18 °C.

Sample Preparation

ACIDIC HYDROLYSIS

→ Add 100 µl Internal Standard to 1 ml urine in a hydrolysis tube and adjust the pH to 0.8-1.0 with 2 M HCl. Incubate the capped vial 30 min at 90-100 °C, then cool down immediately.

EXTRACTION

→ Add 6 ml Neutralisation Buffer. If sample does not turn purple, add 2 M NaOH until colour change occurs.
→ Apply the complete sample to the Sample Clean Up Column, discard the effluent.

WASHING

→ Wash with 10 ml of HPLC water and subsequently with 5 ml of Wash Buffer, discard the effluent.

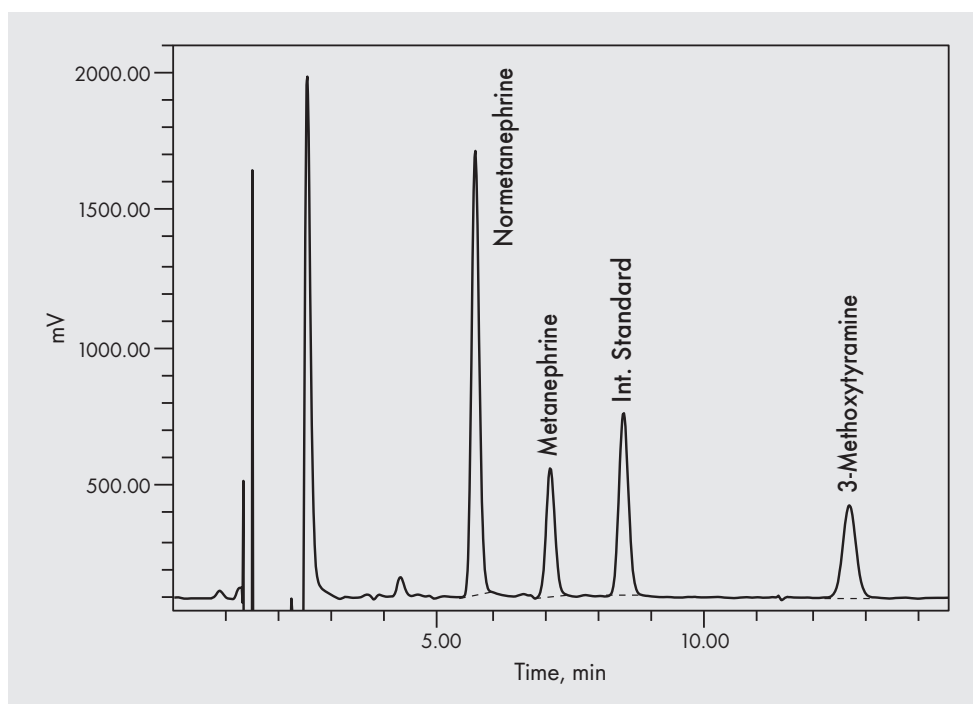
ELUTION

→ Elute metanephrines by applying 5 ml Elution Buffer to the Sample Clean Up Column and collect the eluate.
→ Add 30 µl of conc. acetic acid per ml eluate, inject 20 µl into the HPLC system.

HPLC Parameters

For the HPLC analysis of metanephrines any isocratic HPLC system with electrochemical detector is applicable.

Injection volume:	20 µl
Flow rate:	1.0-1.2 ml/min
Potential:	+780 to +820 mV
Column temperature:	ambient (~ 25 °C)



The biogenic amines normetanephrine, metanephrine and 3-methoxytyramine, major metabolites of catecholamine metabolism, are important parameters in the diagnosis of pheochromocytoma, neuroblastoma, ganglioneuroma and melanoblastoma. Their analysis, in addition to noradrenaline, dopamine, vanillylmandelic acid and homovanillic acid, substantially reduces the risk of false positive results.

The chromatographic determination is run on an isocratic HPLC system with electrochemical detector. An optimised HPLC column and mobile phase ensure the reliable separation of possible interferences.

Ordering Information

Order no.	Product
2020	Reagent kit for the HPLC analysis of Metanephrines in Urine For 100 analyses
	Reagent kits for automated HPLC analysis, application for Gilson® ASPECT™ XL:
2020/A1	For 100 analyses
2020/A5	For 500 analyses
2020/A9	For 1000 analyses

Components available separately:

2021	Mobile Phase, 1000 ml
2022	Mobile Phase, 10 x 1000 ml
2023	Calibration Standard, 10 ml
2024	Internal Standard, 10 ml
2025	Neutralisation Buffer, 300 ml
2026	Wash Buffer, 250 ml
2027	Elution Buffer, 250 ml
2028	Sample Clean Up Columns, 100 pcs.

Accessories:

2120	HPLC column, equilibrated, with test chromatogram, 1 pc.
2009	Metanephrines Urine Calibration Standard (lyoph.), 5 x 5 ml
2010	Tubes with screw caps for hydrolysis, 50 pcs.
2044/HR	Internal Standard/High Resolution, 10 ml
2099	Interference Mix Metanephrines, for identification of possible interferences in metanephrine analysis, 10 ml
15009	PEEK-encased prefilter, 5 µm, 5 pcs.
15010	PEEK prefilter housing, 1 pc.
18001	Precolumn cartridge holder 4/10, 1 pc.
18002	Precolumn cartridge 4/10, 1 pc.

Accessories for electrochemical detectors:

41203	Working electrode, activated and tested, 1 pc.
41211	Reference electrode, 1 pc.
41239	3 M Potassium chloride, 50 ml

Chromsystems controls (lyoph.):

0040	Endocrine Urine Control, Normal Range (lyoph.), 10 x 8 ml
0050	Endocrine Urine Control, Pathological Range (lyoph.), 10 x 8 ml

