Iohexol (Art.nr 024)

New participants can earliest subscribe to round 2024:01, application opens in November 2023.

Iohexol is used for investigation of glomerular filtration. The test material is two samples of plasma with addition of iohexol. The participants can measure the iohexol concentration and calculate the glomerular filtration rate.

Frequency: 4/year

Article number: 024
Advisory group: Protein analysis
Accreditation: Yes

Examinations:

P—Iohexol (mg/L)

Pt—GFR (Iohexol) absolute (mL/(min*1,73m^2))

Pt—GFR (Iohexol) relative (mL/min)

Dispatched	2023-01-16
Last date for analysis	2023-01-30
Closing date	2023-01-31

Scheme coordinator Carolina Kristoffersson
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Test material

Label	Equalis | Art.Nr: 24 | 2023:01/A Equalis | Art.Nr: 24 | 2023:01/B
Description	Pooled plasma with the addition of Iohexol
Storage	After arrival, refrigerator +2 till +8 ˚C
Infectious diseases	HIV-antibodies: Negative HIV-antigen: Negative HBs-antigen: Negative HCV-antibodies: Negative Testing for infectious diseases is performed on pooled patient samples. For safety reasons, the test material should always be handled using the same precautions as an unknown patient sample.

Included components
The table on the last page presents all components included in this scheme. The table also has a field for internal notes.

Instruction for analysis
The material must have reached room temperature before analysis.
Mix the specimen carefully before analysis, at least 20 times manually or 5 minutes on a rocker.

Sample B should be used for estimating 2-point Iohexol-clearance and is also an extra sample for measuring Iohexol.

Additional information to be used for calculation of Iohexol-clearance is presented in table 1.

The test material should be handled in the same manner as a patient sample, when possible.

Tabel 1. Additional information

Sex:	Male
Weight:	114,0 kg
Height:	180,0 cm
Injected volume Omnipaque:	4,95 mL 300g jod/L
Observation time 1:	420 min
Observation time 2 (Sample B):	620 min

Registration of results
Results are registered on Equalis Online with three significant figures, if possible.
Registered results may be changed until closing date.
Report the brand of iohexol standard used in the preparation of your routine calibrators.

Method information
Please check that correct method information is registered. Changes can be made on Equalis Online.

Reports
A summary of the results is sent to the participants within one month from the closing date.

Component*		Notes/ Results** /A	/B
Pt—GFR (Iohexol) relative (mL/(min*1,73m^2))	1-point		x
	2-point		x
Pt—GFR (Iohexol) absolute (mL/min)	1-point		x
	2-point		x
P—Iohexol (mg/L)			

* All components included in the scheme.
** The results are registered on Equalis Online with three significant figures.
Registered results may be changed until the closing date.

Lab code: _____

Instrument: _____

Date of analysis: _____

Round dispatched	2023-01-16
Last date of analysis	2023-01-30
Closing date	2023-01-31

Scheme coordinator	Carolina Kristoffersson
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Summary of results

On the first page of your individual report, the expected result is presented. Expected result is the value your result is compared to. Total mean value is expected result for all components in this EQA scheme. The calculated uncertainty of the expected result is presented on the page of each component in your individual result report.

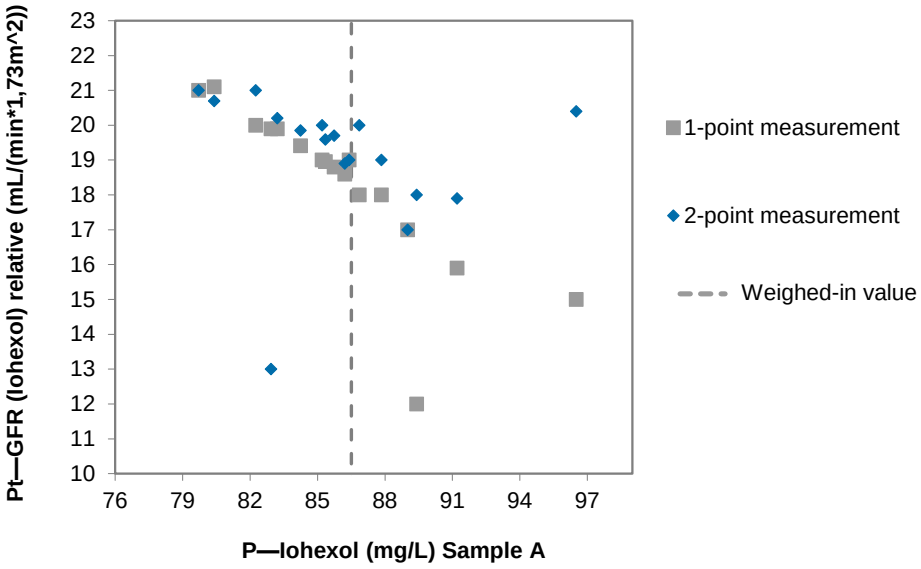
The patient was a male, 180,0 cm tall with a body weight of 114,0 kg. Injected dose of Omnipaque (300 g iodine/L) was 4,95 mL. Sample 1 (A) was drawn after 420 minutes and sample 2 (B) after 620 minutes.

P—Iohexol:
The weighed-in concentration of iohexol was for sample A 86,5 mg/L and for sample B 67,3 mg/L. The observed differences between the total means of this round and the weighed-in concentrations were -0,3 % for sample A and -0,1 % for sample B.

Pt—GFR (Iohexol) relative (mL/(min*1,73m^2)):
22 participants reported results for relative GFR calculated with single-point measurement and 41 participants reported results calculated with two-point measurement.

17 participants submitted results for relative GFR based on both 1- and 2-points, these results are presented in figure 1. A higher measured iohexol concentration for sample A generally results in a larger difference between 1-point and 2-point clearance. The individual participants' difference in relative GFR calculated with 1- and 2-points varies between 0,0–2,0 mL/(min*1,73m^2), except for three participants whose difference is larger (5,4–6,9 mL/(min*1,73m^2)).

Figure 1. Comparison of Pt—GFR (Iohexol) relative based on 1- and 2-point measurement.



Test material
The samples consisted of pooled plasma with addition of iohexol (Omnipaque 300, GE Healthcare, lot 15924012). The samples have been frozen.

Based on the previous tests and the results of this round, the samples are homogeneous, stable and suitable for the external quality assessment scheme.

Sample	Component	Output group	n	Mean value	SD	CV%
A	**Pt—GFR (Iohexol) relative (mL/(min*1,73m^2))**	**All results**	**63**	**18,9**	**1,61**	**8,5**
		Single-point measurement	22	18,4	1,91	10,4
		Two-point measurement	41	19,2	1,35	7,0
	Pt—GFR (Iohexol) absolute (mL/min)	**All results**	**53**	**26,1**	**1,72**	**6,6**
		Single-point measurement	18	24,8	2,40	9,7
		Two-point measurement	35	26,5	1,33	5,0
	P-Iohexol (mg/L)	**All results**	**56**	**86,2**	**4,15**	**4,8**
		HPLC	31	86,0	4,06	4,7
		HPLC/MS/MS	6	86,9	3,29	3,8
		Not available	1	84,1		
		UPLC	5	86,0	6,60	7,7
		UPLC/MS/MS	13	86,3	4,74	5,5
B	**P-Iohexol (mg/L)**	**All results**	**56**	**67,2**	**3,09**	**4,6**
		HPLC	31	66,7	3,09	4,6
		HPLC/MS/MS	6	67,3	2,06	3,1
		Not available	1	65,6		
		UPLC	5	68,6	8,82	12,9
		UPLC/MS/MS	13	68,4	3,60	5,3

Overview

*Expected result: Total mean value (no asterisk), *Output group mean value, **Assigned value. Colour dev: >Quality goal or >|3SD| = Red, >|2SD| = Light blue*

Sample	Component	Quality goal (%)	Expected result	Your result	Dev. (SD)	Dev. (%)
A	Pt—GFR (Iohexol) relative (mL/(min*1,73m^2))		18,9	18,7	-0,14	-1,2
	Pt—GFR (Iohexol) absolute (mL/min)		26,1	27,2	+0,67	+4,4
	P-Iohexol (mg/L)	8	86,2	85,8	-0,09	-0,4
B	P-Iohexol (mg/L)	8	67,2	67,4	+0,08	+0,4

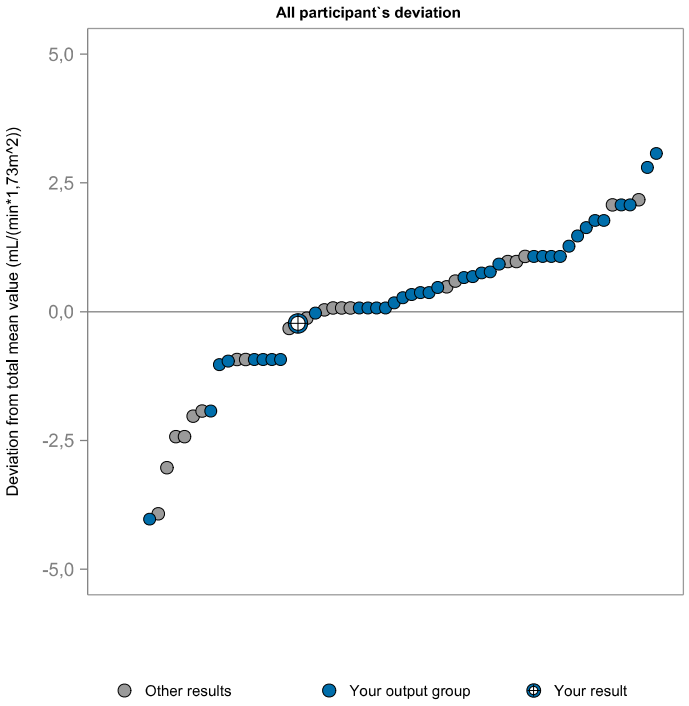
Pt—GFR (Iohexol) relative (mL/(min*1,73m^2))

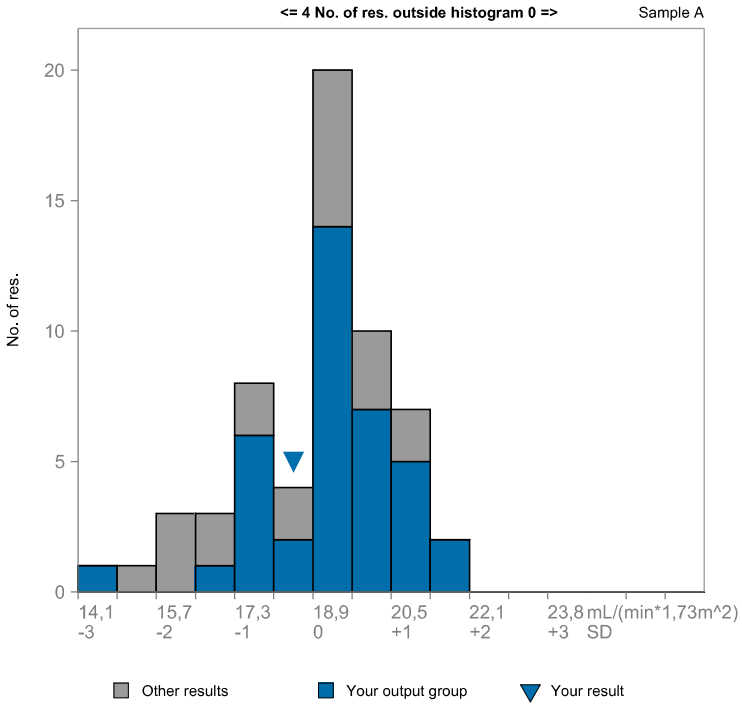
Sample : A

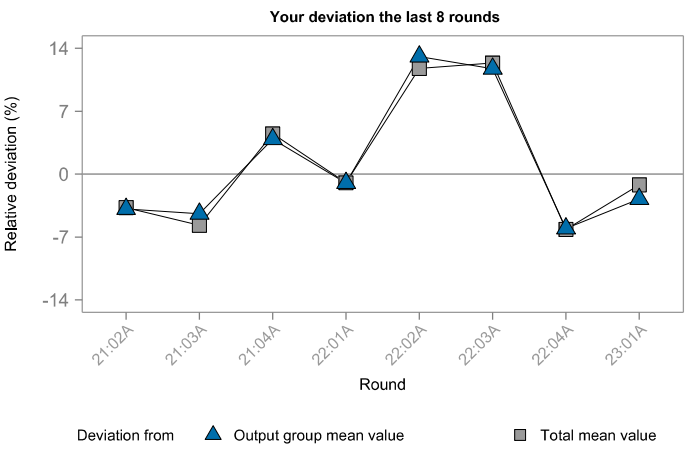
Quality goal (%)	-
Your output group	Two-point measurement

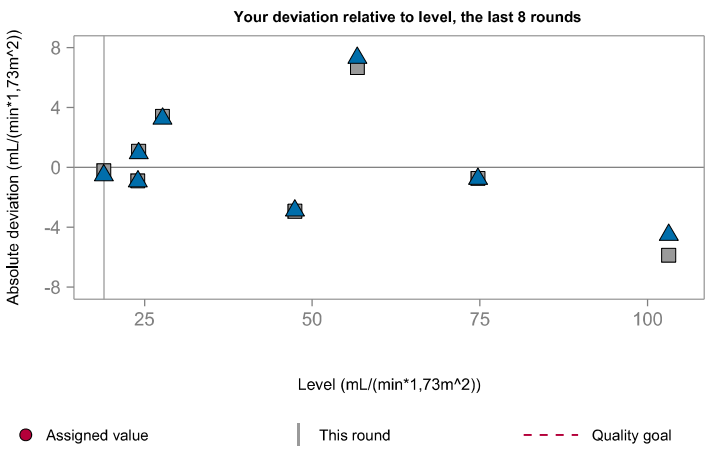
	A
Your result	18,7
Expected result (Total mean value)	18,9 ± 0.5
Your deviation	
Absolute (mL/(min*1,73m^2))	-0,23
Relative (%)	-1,2

Your output group	A (41)	All	A (63)
Mean value	19,2	Mean value	18,9
SD	1,35	SD	1,61
CV%	7,0	CV%	8,5
Your deviation from output group mean value		**Your deviation from total mean value**	
Absolute (mL/(min*1,73m^2))	-0,53	Absolute (mL/(min*1,73m^2))	-0,23
Relative (%)	-2,8	Relative (%)	-1,2
No. of SD	-0,40	No. of SD	-0,14
Mean deviation (%) (last 8 rounds)	+1,3	Mean deviation (%) (last 8 rounds)	+1,4







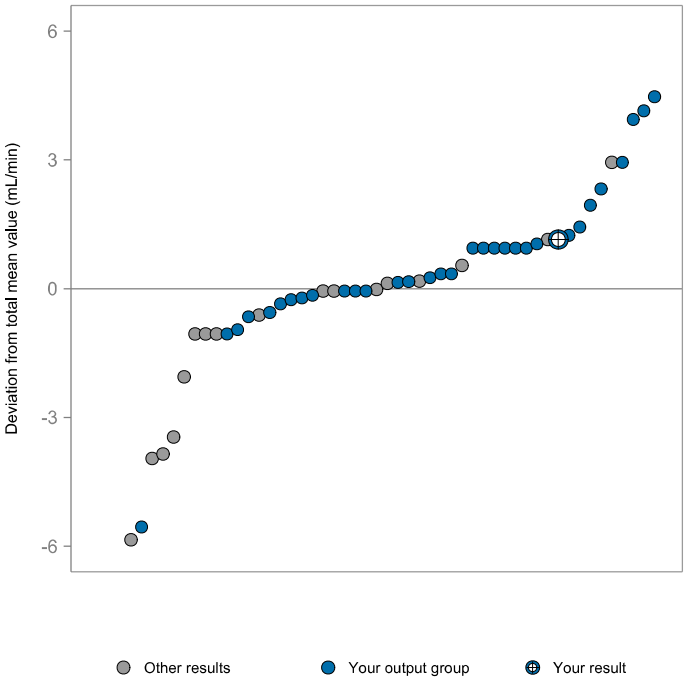


Pt—GFR (Iohexol) absolute (mL/min) Sample : A

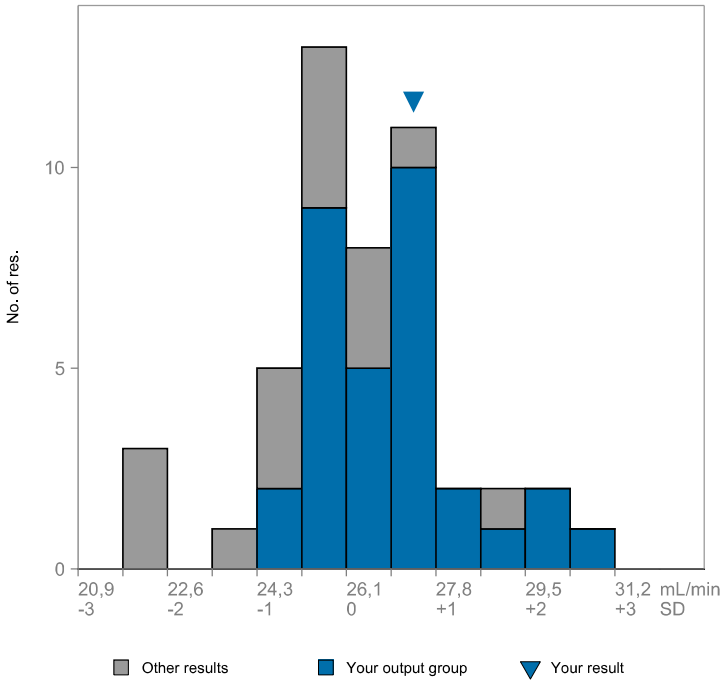
Quality goal (%)	-
Your output group	Two-point measurement
	A
Your result	27,2
Expected result (Total mean value)	26,1 ± 0,6
Your deviation	
Absolute (mL/min)	+1,14
Relative (%)	+4,4

Your output group	A (35)	All	A (53)
Mean value	26,5	Mean value	26,1
SD	1,33	SD	1,72
CV%	5,0	CV%	6,6
Your deviation from output group mean value		**Your deviation from total mean value**	
Absolute (mL/min)	+0,66	Absolute (mL/min)	+1,14
Relative (%)	+2,5	Relative (%)	+4,4
No. of SD	+0,49	No. of SD	+0,67
Mean deviation (%) (last 8 rounds)	+9,4	Mean deviation (%) (last 8 rounds)	+9,6

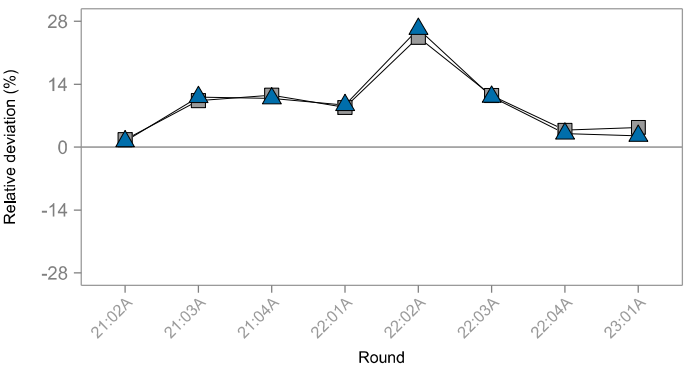
All participant`s deviation



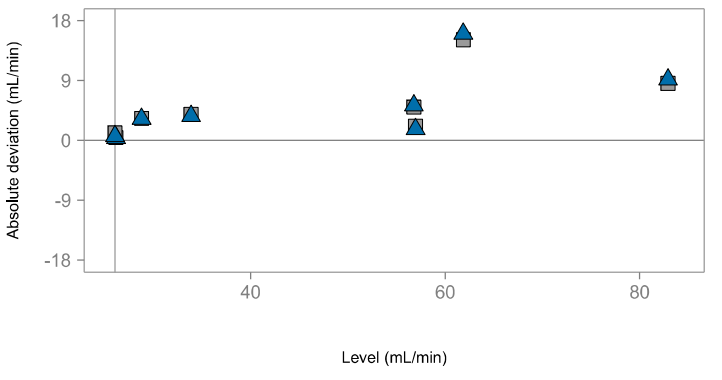
<= 5 No. of res. outside histogram 0 => Sample A



Your deviation the last 8 rounds



Your deviation relative to level, the last 8 rounds



Deviation from Output group mean value | Total mean value | Assigned value | This round | Quality goal

P-Iohexol (mg/L) Sample : A & B

	A	B
Quality goal (%)	± 8	
Your output group	HPLC/MS/MS	
Your result	85,8	67,4
Expected result (Total mean value)	86,2 ± 1,4	67,2 ± 1,0
Your deviation		
Absolute (mg/L)	-0,37	+0,25
Relative (%)	-0,4	+0,4

Your output group	A (6)	B (6)	All	A (56)	B (56)
Mean value	86,9	67,3	Mean value	86,2	67,2
SD	3,29	2,06	SD	4,15	3,09
CV%	3,8	3,1	CV%	4,8	4,6
Your deviation from output group mean value			**Your deviation from total mean value**		
Absolute (mg/L)	-1,09	+0,12	Absolute (mg/L)	-0,37	+0,25
Relative (%)	-1,3	+0,2	Relative (%)	-0,4	+0,4
No. of SD	-0,33	+0,06	No. of SD	-0,09	+0,08
Mean deviation (%) (last 8 rounds)	-3,5		Mean deviation (%) (last 8 rounds)	-2,8