Urine Specific Gravity: Quality Control Test Procedure for ATAGO Pocket PAL-10S

Purpose:

This procedure provides instructions for how to perform quality control testing in order to check the performance of the ATAGO Pocket PAL-10S digital refractometer.

Quality control testing must be performed

- daily prior to patient use
- weekly if the refractometer is not in use
- after battery replacement
- if the refractometer has been dropped
- if the validity of a patient urine specific gravity result is in question.

All QC levels must pass prior to patient testing.

Materials and Equipment:

Item		Supplied By
Disposable Gloves		Ward
Distilled Water (DH2O), One-month open bottle expiry, Room temperature		Ward (0.5L) PS Order # 00020518 (1.0L) PS Order # 00024769
ATAGO® PAL-10S Pocket Urine Refractometer		POCT Lab
Disposable syringes		Ward PS Order # 00019548
Lint-free Tissues		Ward PS Order # 00021152
Urine Quality Controls (QC) – BIORAD qUAntify Level 1 and Level 2 Three-month open bottle expiry, Room temperature		POCT Lab

Procedure:

	Action		Related Documents Title Number
1.	Put on disposable gloves.		
2.	Obtain the current month's Urine Specific Gravity: Quality Control Record Form. ***Note:*** Start a new form at the beginning of each month and fill in the Month/Yr, Ward, Atago #, S/N #, QC lot #s and open dates sections. Send the previous month's form by email to POCTLab@cw.bc.ca or by pneumatic tube to Lab.		Urine Specific Gravity: Quality Control Record Form
3.	**If the DH2O bottle**	**Then**	
	was opened within the last month	proceed to next step.	
	has been opened for longer than one month	the DH2O needs to be replaced. a) Discard the old DH2O bottle. b) Write today's date on the new DH2O bottle and document lot # and open date on the form. c) Proceed to next step.	
4.	Record today's date and time on the form.		
5.	Place the digital refractometer on a flat, stationary surface for testing.		
6.	Clean the prism surface by adding a few drops of DH2O onto the prism with a disposable syringe. Wipe and dry the prism with tissue carefully to avoid scratching the prism surface.		
7.	Add approximately 0.3mL of DH2O onto the prism. Press the START key.		
8.	**If the display shows a value of**	**Then**	
	1.000	• record result on form • wipe and dry the prism with tissue • proceed to next step.	
	<1.000 or >1.000	• record result on form • write "N" under the "DH2O & both levels within acceptable range?" column and your Operator ID # on form • wipe and dry the prism with tissue • perform Zero Set before proceeding to next step.	Urine Specific Gravity: Zero Set Procedure

9.	Mix QC Level 1 well by gentle inversion several times.		
10.	Discard first QC drop and add approximately 0.3mL (3 to 4 drops) of QC onto the prism. Avoid forming bubbles. Wipe tip with a clean tissue before replacing cap.		
11.	Press the START key. Measurement value will display after approximately 5 seconds and will remain on the screen for 2 minutes.		
12.	Record specific gravity value on form.		
13.	Wipe away residual QC solution from the prism with tissue. Clean the prism surface with a few drops of DH2O. Wipe dry with tissue.		
14.	Repeat step 9 to 13 for QC Level 2.		
15.	**If the QC values are**	**Then**	
	Within the acceptable ranges	• proceed to step 17.	
	Not within the acceptable ranges	• do not proceed to patient testing • troubleshooting is required • proceed to step 16.	
16.	**If**	**Then**	Urine Specific Gravity: Zero Set Procedure
	possible contaminated DH2O	• discard the old DH2O bottle • open and date a new DH2O bottle • repeat step 4 to 15.	
	the QC vials have been opened for > 3 months or were previously left uncapped/loosely capped for an extended period of time	• contact POCT Lab for new QC vials • repeat step 4 to 15.	
	possible insufficient sample volume or bubbles present during measurement	• repeat step 4 to 15 with sufficient sample volume and no bubbles.	
	None of the above applies and QC testing has been repeated once and is still not acceptable	• contact POCT Lab for assistance • do not use refractometer for testing.	
17.	If applicable, document any troubleshooting steps done in the “Troubleshooting Notes” section of the QC record form.		
18.	Write “Y” under “DH2O & both levels within acceptable range” column.		
19.	Write down your Operator ID number.		
20.	The urine refractometer is now ready for patient testing.		

Point of Care Testing Support Contact:
POCT Technologist email POCTLab@cw.bc.ca local 7521 or after hours contact local 7850.

References:

1. ATAGO Instructions of Urine Specific Gravity Refractometer URIVON-Ne
2. Textbook of Clinical Chemistry. Norbert W.Tietz 1986 WB Saunders.

REVISION LOG

Version	Revision Type	Description of Change	Revision Date	Technical Approval	Medical Approval
1.0		New document	Nov 2013	Elvira Kozak	Dr. Cathy Halstead
1.1	Minor	Document title and number change. Upload to QMS document control	28 Dec 2016		Dr. Benjamin Jung
1.2	Minor	Reformatted and reworded, added POCT contact info.	Jan 2, 2020	Diane Sze	

Attention: This document is published on the BCCW ePOPS website.

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