
Wadsworth Center

New York State Department of Health

ERYTHROCYTE PROTOPORPHYRIN

Proficiency Test Report

Event #2, 2004

August 20, 2004

August 20, 2004

TOXICOLOGY - ERYTHROCYTE PROTOPORPHYRIN
Event #2, 2004

Dear Laboratory Director:

Results of the second proficiency test (PT) event for Erythrocyte Protoporphyrin (EP) have been evaluated and graded. The test materials were prepared from whole goat blood. Five animals were dosed with lead acetate prior to the test to generate elevated EP levels. On June 1st, 2004, 400-mL of blood were drawn from each animal into separate plastic blood bags containing 750 mg K₂EDTA. Each animal yielded a separate blood pool with EP levels ranging from 19 µg/dL to 306 µg/dL. Aliquots of whole blood were transferred into additive-free evacuated glass tubes and shipped to extraction participants on June 2nd, 2004. The remaining blood was prepared for hematofluorometer (HF) participants with EP levels ranging from 24 µg/dL to 465 µg/dL. To eliminate fluorescent artifacts, erythrocytes were separated from plasma, washed with normal saline and resuspended in a citrate-glycerol solution. Aliquots of the blood-product were transferred to additive-free evacuated glass tubes and shipped to all HF participants on June 16th, 2004.

To pass the PT for EP, a laboratory must achieve a minimum score of 80% (4 out of 5 correct) on two consecutive testing events, or two out of three consecutive testing events.

EXTRACTION METHOD

Target values are calculated using results from all participants (excluding outliers). **The next PT event for the extraction method is scheduled to be shipped September 22nd, 2004.** Contact Wadsworth laboratory staff at (518) 473-0452 if the PT materials have not arrived within five days of the scheduled mailout date.

HEMATOFLUOROMETRY

Target values for AVIV instruments are calculated using results from all participants (excluding outliers) and are reported as µg/dL, assumed hct 35. Target values for Helena Protofluor-Z instruments are calculated using results from all participants (excluding outliers) and reported as µmol ZPP/mol heme. **The next PT event for the hematofluorometer method is scheduled to be shipped October 6th, 2004.** Contact Wadsworth laboratory staff at (518) 473-0452 if the PT materials have not arrived within five days of the scheduled mailout date.

Thank you for your participation.

Sincerely,

Patrick J. Parsons, Ph.D.
Section Head, Erythrocyte Protoporphyrin Proficiency Testing Program

New York State Department of Health
Erythrocyte Protoporphyrin - Hematofluorometer (ZPP) Test Results, 2004 Event # 2
PERFORMANCE OF PARTICIPATING LABORATORIES

Lab Code	Method	Results ($\mu\text{mol ZPP/mol heme}$)					Normalized Mean	Info Only
		HF04-06	HF04-07	HF04-08	HF04-09	HF04-10		
Target Values:		611	34	105	252	84		
109	Helena Hemat.	634	34	105	254	81	1.00	
110	Helena Hemat.	581	33	101	238	77	0.95	
201	Helena Hemat.	656	39	109	266	96	1.09	
204	Helena Hemat.	561	33	103	253	88	0.98	
206	Helena Hemat.	583	31	100	245	76	0.94	
208	Helena Hemat.	710 \uparrow	31	109	272	85	1.04	
290	Helena Hemat.	>300	35	112	275	88	1.06	
340	Helena Hemat.	651	35	112	257	86	1.04	

Percent satisfactory results for all participants: 97.5 %

notes: \uparrow reported value outside upper limit
 \downarrow reported value outside lower limit

Normalized mean: The average of each reported result divided by the corresponding target value. It measures bias.
Info only: results included for informational purposes only.

New York State Department of Health
Erythrocyte Protoporphyrin - Hematofluorometer (ZPP) Test Results, 2004 Event # 2
STATISTICAL SUMMARY

TARGET VALUE ASSIGNMENT AND STATISTICS

Lab Code	Method	Results ($\mu\text{mol ZPP/mol heme}$)				
		HF04-06	HF04-07	HF04-08	HF04-09	HF04-10
109	Helena Hemat.	634	34	105	254	81
110	Helena Hemat.	581	33	101	238	77
201	Helena Hemat.	656	39	109	266	96
204	Helena Hemat.	561	33	103	253	88
206	Helena Hemat.	583	31	100	245	76
340	Helena Hemat.	651	35	112	257	86
Number of Sample Measurements:		6	6	6	6	6
Mean (target value):		611	34	105	252	84
Standard Deviation:		40.8	2.7	4.7	9.7	7.6
RSD (%):		6.7	7.9	4.5	3.8	9.0
Acceptable Range:						
Upper Limit:		703	40	121	290	97
Lower Limit:		519	28	89	214	71

notes: Results reported as less than the detection limits are treated as zero for statistical and grading purposes.

New York State Department of Health
Erythrocyte Protoporphyrin - Hematofluorometer (ZPP) Test Results, 2004 Event # 2
STATISTICAL SUMMARY BY CLASS

	Results ($\mu\text{mol ZPP/mol heme}$)				
	HF04-06	HF04-07	HF04-08	HF04-09	HF04-10
Evaluated					
Number of Sample Measurements:	1	2	2	2	2
Mean:	710.0	33.0	110.5	273.5	86.5
Standard Deviation:	?	2.8	2.1	2.1	2.1
RSD (%):	—	—	—	—	—
Reference					
Number of Sample Measurements:	6	6	6	6	6
Mean:	611.0	34.2	105.0	252.2	84.0
Standard Deviation:	40.8	2.7	4.7	9.7	7.6
RSD (%):	6.7	7.9	4.5	3.8	9.0
All Laboratories					
Number of Sample Measurements:	7	8	8	8	8
Mean:	625.1	33.9	106.4	257.5	84.6
Standard Deviation:	52.8	2.6	4.8	12.9	6.5
RSD (%):	8.4	7.6	4.5	5.0	7.7

notes: ? Insufficient data for SD calculation.