
Wadsworth Center

New York State Department of Health

ERYTHROCYTE PROTOPORPHYRIN

Proficiency Test Report

Event #2, 2003

July 17, 2003

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**TOXICOLOGY - ERYTHROCYTE PROTOPORPHYRIN
Event #2, 2003**

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 17th, 2003, 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 34 µg/dL to 138 µg/dL. Aliquots of whole blood were transferred into additive-free evacuated glass tubes and shipped to extraction participants on June 18th, 2003. The remaining blood was prepared for hematofluorometer (HF) participants with EP levels ranging from 39 µg/dL to 142 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 25th, 2003.

Each laboratory will receive an individual performance summary for the last three PT test events under separate cover. 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 October 1st, 2003.** 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 given as µg/dL, assumed hct 35. Target values for Helena Protofluor-Z instruments are calculated using results from all participants (excluding outliers) and are given as µmol ZPP/mol heme. **The next PT event for the hematofluorometer method is scheduled to be shipped October 15th, 2003.** 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 - Extraction Test Results, 2003 Event # 2
PERFORMANCE OF PARTICIPATING LABORATORIES

Lab Code	Method	Results (µg/dL whole blood)					Normalized Mean	Info Only
		EP03-06	EP03-07	EP03-08	EP03-09	EP03-10		
Target Values:		70	128	34	138	103		
103	EtOAc Extr.	70	114	34	134	102	0.97	
108	EtOAc Extr.	70	130	33	140	103	1.00	
109	EtOAc Extr.	76	134	33	149	107	1.04	
110	EtOAc Extr.	72	133	36	143	107	1.04	
168	EtOAc Extr.	78	142	38	150	112	1.10	
174	EtOAc Extr.	67	115	34	129	100	0.95	
179	EtOAc Extr.	60	114	29	121	95	0.88	
198	EtOAc Extr.	71	138	33	147	107	1.03	
206	EtOAc Extr.	63	132	34	129	97	0.96	
237	EtOAc Extr.	59 ↓	111	29	116 ↓	87 ↓	0.85	
254	EtOAc Extr.	70	129	34	151	123 ↑	1.06	

Percent satisfactory results for all participants: 92.7 %

notes: ↑ reported value outside upper limit
↓ 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 - Extraction Test Results, 2003 Event # 2
STATISTICAL SUMMARY

TARGET VALUE ASSIGNMENT AND STATISTICS

Lab Code	Method	Results (µg/dL whole blood)				
		EP03-06	EP03-07	EP03-08	EP03-09	EP03-10
103	EtOAc Extr.	70	114	34	134	102
108	EtOAc Extr.	70	130	33	140	103
109	EtOAc Extr.	76	134	33	149	107
110	EtOAc Extr.	72	133	36	143	107
168	EtOAc Extr.	78	142	38	150	112
174	EtOAc Extr.	67	115	34	129	100
179	EtOAc Extr.	60	114	29	121	95
198	EtOAc Extr.	71	138	33	147	107
206	EtOAc Extr.	63	132	34	129	97
Number of Sample Measurements:		9	9	9	9	9
Mean (target value):		70	128	34	138	103
Standard Deviation:		5.7	10.8	2.4	10.3	5.5
RSD (%):		8.2	8.5	7.2	7.4	5.3
Acceptable Range:						
Upper Limit:		81	147	40	159	118
Lower Limit:		60	109	28	117	88

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

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Erythrocyte Protoporphyrin - Extraction Test Results, 2003 Event # 2
STATISTICAL SUMMARY BY CLASS

	Results ($\mu\text{g/dL}$ whole blood)				
	EP03-06	EP03-07	EP03-08	EP03-09	EP03-10
Evaluated					
Number of Sample Measurements:	2	2	2	2	2
Mean:	64.5	120.0	31.5	133.5	105.0
Standard Deviation:	7.8	12.7	3.5	24.7	25.5
RSD (%):	—	—	—	—	—
Reference					
Number of Sample Measurements:	9	9	9	9	9
Mean:	69.7	128.0	33.8	138.0	103.3
Standard Deviation:	5.7	10.8	2.4	10.3	5.5
RSD (%):	8.2	8.5	7.2	7.4	5.3
All Laboratories					
Number of Sample Measurements:	11	11	11	11	11
Mean:	68.7	126.5	33.4	137.2	103.6
Standard Deviation:	6.1	11.0	2.6	12.2	9.4
RSD (%):	8.8	8.7	7.8	8.9	9.1

notes: ? Insufficient data for SD calculation.