
Wadsworth Center

New York State Department of Health

ERYTHROCYTE PROTOPORPHYRIN

Proficiency Test Report

Event #3, 2002

November 14, 2002

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TOXICOLOGY - ERYTHROCYTE PROTOPORPHYRIN
Event #3, 2002

Dear Laboratory Director:

Results of the third 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 October 1, 2002, 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 30 µg/dL to 144 µg/dL. Aliquots of whole blood were transferred into additive-free evacuated glass tubes and shipped to extraction participants on October 2, 2002. The remaining blood was prepared for hematofluorometer (HF) participants with EP levels ranging from 32 µg/dL to 147 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 October 16, 2002.

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 March 19, 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 10 referee laboratories 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 April 2, 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 - Hematofluorometer Test Results, 2002 Event #3
PERFORMANCE OF PARTICIPATING LABORATORIES

Lab Code	Method	Results (µg/dL whole blood)					Normalized Mean	Info Only
		HF02-11	HF02-12	HF02-13	HF02-14	HF02-15		
Target Values:		122	147	108	47	32		
106	Aviv Hemat.	121	145	105	45	29	0.96	
109	Aviv Hemat.	130	158	116	48	38	1.08	
110	Aviv Hemat.	123	149	113	47	32	1.01	
112	Aviv Hemat.	120	105 ↓	140 ↑	53	29	1.01	
114	Aviv Hemat.	131	155	114	49	32	1.05	
123	Aviv Hemat.	118	141	106	47	32	0.98	
126	Aviv Hemat.	132	156	119	55 ↑	37	1.11	
132	Aviv Hemat.	123	144	101	47	33	0.99	
147	Aviv Hemat.	126	153	109	52	33	1.04	
155	Aviv Hemat.	107	135	100	43	29	0.91	
156	Aviv Hemat.	120	141	103	46	33	0.98	
158	Aviv Hemat.	121	148	103	47	31	0.98	
159	Aviv Hemat.	138	164	120	49	33	1.09	
160	Aviv Hemat.	122	146	108	49	32	1.01	
164	Aviv Hemat.	132	159	123	53	35	1.10	
197	Aviv Hemat.	122	146	109	47	33	1.01	
199	Aviv Hemat.	143 ↑	171 ↑	126 ↑	53	33	1.13	Info
221	Aviv Hemat.	110	140	103	47	30	0.95	
251	Aviv Hemat.	110	131	96	40	26	0.87	
272	Aviv Hemat.	125	150	110	50	32	1.03	
305	Aviv Hemat.	130	150	117	57 ↑	40 ↑	1.13	
333	Aviv Hemat.	127	150	113	50	33	1.04	
347	Aviv Hemat.	86 ↓	103 ↓	78 ↓	36 ↓	24 ↓	0.73	Info
348	Aviv Hemat.	137	156	112	53	35	1.09	

Percent satisfactory results for all participants: 89.2 %

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 - Hematofluorometer Test Results, 2002 Event #3
STATISTICAL SUMMARY

TARGET VALUE ASSIGNMENT AND STATISTICS

Lab Code	Method	Results ($\mu\text{g/dL}$ whole blood)				
		HF02-11	HF02-12	HF02-13	HF02-14	HF02-15
106	Aviv Hemat.	121	145	105	45	29
109	Aviv Hemat.	130	158	116	48	38
110	Aviv Hemat.	123	149	113	47	32
114	Aviv Hemat.	131	155	114	49	32
132	Aviv Hemat.	123	144	101	47	33
147	Aviv Hemat.	126	153	109	52	33
155	Aviv Hemat.	107	135	100	43	29
156	Aviv Hemat.	120	141	103	46	33
221	Aviv Hemat.	110	140	103	47	30
333	Aviv Hemat.	127	150	113	50	33
Number of Sample Measurements:		10	10	10	10	10
Mean (target value):		122	147	108	47	32
Standard Deviation:		7.9	7.3	6.0	2.5	2.6
RSD (%):		6.5	4.9	5.6	5.4	8.1
Acceptable Range:						
Upper Limit:		140	169	124	54	38
Lower Limit:		104	125	92	40	26

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 Test Results, 2002 Event #3
STATISTICAL SUMMARY BY CLASS

	Results ($\mu\text{g/dL}$ whole blood)				
	HF02-11	HF02-12	HF02-13	HF02-14	HF02-15
Evaluated					
Number of Sample Measurements:	12	12	12	12	12
Mean:	125.6	146.0	113.6	50.0	32.9
Standard Deviation:	8.3	15.6	11.3	4.6	3.6
RSD (%):	6.6	10.7	10.0	9.1	11.0
Info					
Number of Sample Measurements:	2	2	2	2	2
Mean:	114.5	137.0	102.0	44.5	28.5
Standard Deviation:	40.3	48.1	33.9	12.0	6.4
RSD (%):	—	—	—	—	—
Reference					
Number of Sample Measurements:	10	10	10	10	10
Mean:	121.8	147.0	107.7	47.4	32.2
Standard Deviation:	7.9	7.3	6.0	2.5	2.6
RSD (%):	6.5	4.9	5.6	5.4	8.1
All Laboratories					
Number of Sample Measurements:	24	24	24	24	24
Mean:	123.1	145.7	110.2	48.5	32.3
Standard Deviation:	11.8	15.6	11.8	4.7	3.5
RSD (%):	9.6	10.7	10.7	9.7	10.8

notes: ? Insufficient data for SD calculation.