
Wadsworth Center

New York State Department of Health

ERYTHROCYTE PROTOPORPHYRIN

Proficiency Test Report

Event #2A, 2001

October 3, 2001

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TOXICOLOGY - ERYTHROCYTE PROTOPORPHYRIN
Event #2A, 2001

Dear Laboratory Director:

Results of the second ("make-up") 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 August 28, 2001, 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 28 µg/dL to 162 µg/dL. Aliquots of whole blood were transferred into additive-free evacuated glass tubes and shipped to extraction participants on August 29, 2001. The remaining blood was prepared for hematofluorometer (HF) participants with EP levels ranging from 32 µg/dL to 257 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 September 5, 2001.

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 10, 2001. 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 9 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 October 24, 2001. 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, 2001 Event # 2A
PERFORMANCE OF PARTICIPATING LABORATORIES

Lab Code	Method	Results (µg/dL whole blood)					Normalized Mean	Info Only
		HF01-06A	HF01-07A	HF01-08A	HF01-09A	HF01-10A		
Target Values:		257	32	112	64	146		
104	Aviv Hemat.	262	31	112	63	150	1.00	
106	Aviv Hemat.	243	30	105	60	140	0.94	
108	Aviv Hemat.	245	39 ↑	112	65	134	1.02	
109	Aviv Hemat.	244	32	107	62	136	0.96	
112	Aviv Hemat.	290	38	124	69	160	1.12	
114	Aviv Hemat.	265	38	117	64	152	1.06	
123	Aviv Hemat.	216 ↓	25 ↓	90 ↓	52 ↓	118 ↓	0.81	
126	Aviv Hemat.	180 ↓	25 ↓	93 ↓	53 ↓	120 ↓	0.79	
131	Aviv Hemat.	259	27	108	59	140	0.94	
132	Aviv Hemat.	272	35	117	68	149	1.06	
147	Aviv Hemat.	219	29	111	60	139	0.93	
155	Aviv Hemat.	279	33	116	71	152	1.06	
156	Aviv Hemat.	246	30	107	59	137	0.94	
158	Aviv Hemat.	258	29	108	60	141	0.96	
159	Aviv Hemat.	236	26	102	54	129	0.87	
160	Aviv Hemat.	255	31	110	62	142	0.98	
164	Aviv Hemat.	256	30	111	63	150	0.99	
197	Aviv Hemat.	354 ↑	45 ↑	157 ↑	87 ↑	198 ↑	1.38	
199	Aviv Hemat.	286	33	117	71	160	1.08	
221	Aviv Hemat.	254	32	109	62	144	0.98	
251	Aviv Hemat.	248	28	111	57	140	0.94	
272	Aviv Hemat.	270	33	120	50 ↓	155	1.00	
305	Aviv Hemat.	267	28	112	62	146	0.98	
333	Aviv Hemat.	248	30	107	59	142	0.95	
344	Aviv Hemat.	226	28	106	58	139	0.91	

Percent satisfactory results for all participants: 86.4 %

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, 2001 Event # 2A
STATISTICAL SUMMARY

TARGET VALUE ASSIGNMENT AND STATISTICS

Lab Code	Method	Results ($\mu\text{g/dL}$ whole blood)				
		HF01-06A	HF01-07A	HF01-08A	HF01-09A	HF01-10A
104	Aviv Hemat.	262	31	112	63	150
106	Aviv Hemat.	243	30	105	60	140
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114	Aviv Hemat.	265	38	117	64	152
132	Aviv Hemat.	272	35	117	68	149
147	Aviv Hemat.	219	29	111	60	139
155	Aviv Hemat.	279	33	116	71	152
156	Aviv Hemat.	246	30	107	59	137
199	Aviv Hemat.	286	33	117	71	160
Number of Sample Measurements:		9	9	9	9	9
Mean (target value):		257	32	112	64	146
Standard Deviation:		21.1	2.8	4.9	4.7	8.4
RSD (%):		8.2	8.7	4.4	7.3	5.7
Acceptable Range:						
Upper Limit:		296	38	129	74	168
Lower Limit:		218	26	95	54	124

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, 2001 Event # 2A
STATISTICAL SUMMARY BY CLASS

	Results ($\mu\text{g/dL}$ whole blood)				
	HF01-06A	HF01-07A	HF01-08A	HF01-09A	HF01-10A
Evaluated					
Number of Sample Measurements:	16	16	16	16	16
Mean:	253.9	30.9	111.3	60.8	143.6
Standard Deviation:	36.5	5.5	14.8	8.6	18.2
RSD (%):	14.4	17.9	13.3	14.2	12.7
Reference					
Number of Sample Measurements:	9	9	9	9	9
Mean:	257.3	32.3	112.1	64.2	146.1
Standard Deviation:	21.1	2.8	4.9	4.7	8.4
RSD (%):	8.2	8.7	4.4	7.3	5.7
All Laboratories					
Number of Sample Measurements:	25	25	25	25	25
Mean (target value):	255.1	31.4	111.6	62.0	144.5
Standard Deviation:	31.3	4.7	12.0	7.5	15.2
RSD (%):	12.3	15.1	10.8	12.1	10.5

notes: ? Insufficient data for SD calculation.