
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 - Hematofluorometer Test Results, 2003 Event #2
PERFORMANCE OF PARTICIPATING LABORATORIES

Lab Code	Method	Results (µg/dL whole blood)					Normalized Mean	Info Only
		HF03-06	HF03-07	HF03-08	HF03-09	HF03-10		
Target Values:		142	75	39	116	140		
104	Aviv Hemat.	142	82	43	120	148	1.06	
106	Aviv Hemat.	136	72	38	110	133	0.96	
108	Aviv Hemat.	134	72	39	110	129	0.95	
109	Aviv Hemat.	136	72	40	118	138	0.99	
110	Aviv Hemat.	146	74	33	114	139	0.97	
112	Aviv Hemat.	148	77	43	122	147	1.05	
114	Aviv Hemat.	138	72	38	112	136	0.97	
123	Aviv Hemat.	136	72	36	111	134	0.95	
126	Aviv Hemat.	150	75	36	119	145	1.01	
131	Aviv Hemat.	139	74	38	115	137	0.98	
132	Aviv Hemat.	137	75	38	115	138	0.98	
147	Aviv Hemat.	160	80	44	124	151	1.09	
155	Aviv Hemat.	152	81	42	125	158	1.09	
156	Aviv Hemat.	159	86	47 ↑	134 ↑	162 ↑	1.16	
158	Aviv Hemat.	138	72	40	116	136	0.99	
159	Aviv Hemat.	134	68	31 ↓	108	133	0.91	
160	Aviv Hemat.	145	76	42	121	138	1.03	
164	Aviv Hemat.	126	58 ↓	26 ↓	86 ↓	112 ↓	0.77	
197	Aviv Hemat.	147	77	38	117	141	1.01	
199	Aviv Hemat.	139	71	37	110	131	0.95	
221	Aviv Hemat.	138	74	39	116	139	0.99	
251	Aviv Hemat.	138	75	41	114	142	1.00	
272	Aviv Hemat.	145	78	39	122	147	1.03	
305	Aviv Hemat.	141	73	38	118	145	1.00	
333	Aviv Hemat.	146	78	38	119	143	1.02	
347	Aviv Hemat.	133	72	38	112	132	0.96	
348	Aviv Hemat.	150	80	39	113	144	1.03	

Percent satisfactory results for all participants: 94.1 %

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, 2003 Event #2
STATISTICAL SUMMARY

TARGET VALUE ASSIGNMENT AND STATISTICS

Lab Code	Method	Results (µg/dL whole blood)				
		HF03-06	HF03-07	HF03-08	HF03-09	HF03-10
104	Aviv Hemat.	142	82	43	120	148
106	Aviv Hemat.	136	72	38	110	133
108	Aviv Hemat.	134	72	39	110	129
109	Aviv Hemat.	136	72	40	118	138
110	Aviv Hemat.	146	74	33	114	139
112	Aviv Hemat.	148	77	43	122	147
114	Aviv Hemat.	138	72	38	112	136
123	Aviv Hemat.	136	72	36	111	134
126	Aviv Hemat.	150	75	36	119	145
131	Aviv Hemat.	139	74	38	115	137
132	Aviv Hemat.	137	75	38	115	138
147	Aviv Hemat.	160	80	44	124	151
155	Aviv Hemat.	152	81	42	125	158
158	Aviv Hemat.	138	72	40	116	136
160	Aviv Hemat.	145	76	42	121	138
197	Aviv Hemat.	147	77	38	117	141
199	Aviv Hemat.	139	71	37	110	131
221	Aviv Hemat.	138	74	39	116	139
251	Aviv Hemat.	138	75	41	114	142
272	Aviv Hemat.	145	78	39	122	147
305	Aviv Hemat.	141	73	38	118	145
333	Aviv Hemat.	146	78	38	119	143
347	Aviv Hemat.	133	72	38	112	132
348	Aviv Hemat.	150	80	39	113	144
Number of Sample Measurements:		24	24	24	24	24
Mean (target value):		142	75	39	116	140
Standard Deviation:		6.7	3.3	2.5	4.5	6.9
RSD (%):		4.7	4.4	6.5	3.9	4.9
Acceptable Range:						
Upper Limit:		163	86	45	133	161
Lower Limit:		121	64	33	99	119

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, 2003 Event #2
STATISTICAL SUMMARY BY CLASS

	Results ($\mu\text{g/dL}$ whole blood)				
	HF03-06	HF03-07	HF03-08	HF03-09	HF03-10
Evaluated					
Number of Sample Measurements:	3	3	3	3	3
Mean:	139.7	70.7	34.7	109.3	135.7
Standard Deviation:	17.2	14.2	11.0	24.0	25.1
RSD (%):	—	—	—	—	—
Reference					
Number of Sample Measurements:	24	24	24	24	24
Mean:	142.3	75.2	39.0	116.4	140.5
Standard Deviation:	6.7	3.3	2.5	4.5	6.9
RSD (%):	4.7	4.4	6.5	3.9	4.9
All Laboratories					
Number of Sample Measurements:	27	27	27	27	27
Mean:	142.0	74.7	38.6	115.6	139.9
Standard Deviation:	7.9	5.2	4.1	8.2	9.6
RSD (%):	5.6	7.0	10.7	7.1	6.9

notes: ? Insufficient data for SD calculation.