MEDICAL LABORATORY EVALUATION

INTERNATIONAL PARTICIPANT SUMMARY

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Hematology, Coagulation,
Blood Bank, Urinalysis,
Microbiology
MLE – A1

Total Commitment to Education and Service
Provided by ACP-ASIM Services, Inc.

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Microbiology

2003 Evaluation Criteria

Qualitative

For qualitative procedures, evaluation is based on 80% participant consensus

Blood Cell Identification	80% Consensus
Urine Dipstick	80% Consensus
Urine hCG	80% Consensus
Microalbumin (Semi-Quantitative)	80% Consensus
Urine Sediment Identification	80% Consensus
KOH Skin Preparation	80% Consensus
ABO/Rh	80% Consensus
Unexpected Antibody Detection	80% Consensus
Compatibility Testing	80% Consensus
Bacterial Identification	80% Consensus
Parasite Identification	Vendor Assay
Strep A Antigen Detection	80% Consensus
Antimicrobial Susceptibility Testing	80% Consensus
Gram Stain	80% Consensus
Gram Stain Morphology	Not Graded

Quantitative

For quantitative procedures, a mean and standard deviation (SD) are calculated for each analyte's "All Method" group. Acceptable performance is established on a target value ± the intervals below. An explanation on how to calculate the range of acceptability based upon these limits is also provided in your MLE Program Guide on pages 44-95 under the heading "Acceptable Ranges for Quantitative Results."

Hemoglobin	± 2 SD
Hematocrit	± 2 SD
White Blood Cell Count	± 2 SD
Red Blood Cell Count	± 2 SD
Platelet Count	± 3 SD
Automated Differential	± 3 SD
Prothrombin Time	± 2 SD
Activated Partial Thromboplastin Time	± 2 SD
Fibrinogen	± 3 SD
International Normalized Ratio (All other samples)	Not Evaluated
Specific Gravity	± 0.010

BASIC HEMATOLOGY W/ 3-PART DIFFERENTIAL - WHITE BLOOD CELL COUNT (x 10^9/L)

	Specimen HD-1					Specimen HD-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
Abbott Cell-Dyn 1700	1	-	-	-	11.7	1	-	-	-	3.2
	Specimen HD-3					**Specimen HD-4**				
Abbott Cell-Dyn 1700	1	-	-	-	27.4	-	-	-	-	-
	Specimen HD-5									
Abbott Cell-Dyn 1700	1	-	-	-	5.8					

BASIC HEMATOLOGY W/3-PART DIFFERENTIAL - RED BLOOD CELL COUNT (x 10^{12}/L)

	Specimen HD-1					Specimen HD-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
Abbott Cell-Dyn 1700	1	-	-	-	3.89	1	-	-	-	2.57
	Specimen HD-3					**Specimen HD-4**				
Abbott Cell-Dyn 1700	1	-	-	-	5.20	-	-	-	-	-
	Specimen HD-5									
Abbott Cell-Dyn 1700	1	-	-	-	3.34					

BASIC HEMATOLOGY W/3-PART DIFFERENTIAL - HEMOGLOBIN (g/dL)

	Specimen HD-1					Specimen HD-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
Abbott Cell-Dyn 1700	1	-	-	-	11.7	1	-	-	-	8.2
	Specimen HD-3					**Specimen HD-4**				
Abbott Cell-Dyn 1700	1	-	-	-	16.8	-	-	-	-	-
	Specimen HD-5									
Abbott Cell-Dyn 1700	1	-	-	-	9.9					

BASIC HEMATOLOGY W/3-PART DIFFERENTIAL - HEMATOCRIT (percent)

	Specimen HD-1					Specimen HD-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
Abbott Cell-Dyn 1700	1	-	-	-	41.7	1	-	-	-	26.4
	Specimen HD-3					**Specimen HD-4**				
Abbott Cell-Dyn 1700	1	-	-	-	58.1	-	-	-	-	-
	Specimen HD-5									
Abbott Cell-Dyn 1700	1	-	-	-	30.1					

BASIC HEMATOLOGY W/3-PART DIFFERENTIAL - PLATELET COUNT (x 10^9/L)

	Specimen HD-1					Specimen HD-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
Abbott Cell-Dyn 1700	1	-	-	-	151	1	-	-	-	85
	Specimen HD-3					**Specimen HD-4**				
Abbott Cell-Dyn 1700	1	-	-	-	487	-	-	-	-	-
	Specimen HD-5									
Abbott Cell-Dyn 1700	1	-	-	-	359					

BASIC HEMATOLOGY W/3-PART DIFFERENTIAL - LYMPHOCYTES (percent)

	Specimen HD-1					Specimen HD-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
Abbott Cell-Dyn 1700	1	-	-	-	33.5	1	-	-	-	45.8
	Specimen HD-3					**Specimen HD-4**				
Abbott Cell-Dyn 1700	1	-	-	-	44.2	-	-	-	-	-
	Specimen HD-5									
Abbott Cell-Dyn 1700	1	-	-	-	37.2					

BASIC HEMATOLOGY W/3-PART DIFFERENTIAL - MONO/MID/MIXED/MCR (percent)

	Specimen HD-1					Specimen HD-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
Abbott Cell-Dyn 1700	1	-	-	-	3.9	1	-	-	-	4.4
	Specimen HD-3					**Specimen HD-4**				
Abbott Cell-Dyn 1700	1	-	-	-	6.3	-	-	-	-	-
	Specimen HD-5									
Abbott Cell-Dyn 1700	1	-	-	-	6.5					

BASIC HEMATOLOGY W/3-PART DIFFERENTIAL - GRANULOCYTES/NEUT (percent)

	Specimen HD-1					Specimen HD-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
Abbott Cell-Dyn 1700	1	-	-	-	62.6	1	-	-	-	49.8
	Specimen HD-3					**Specimen HD-4**				
Abbott Cell-Dyn 1700	1	-	-	-	49.5	-	-	-	-	-
	Specimen HD-5									
Abbott Cell-Dyn 1700	1	-	-	-	56.3					

HEMATOLOGY W/ 5-PART DIFFERENTIAL - WHITE BLOOD CELL COUNT (x 10^9/L)

	Specimen DIF-1					Specimen DIF-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	4	-	-	-	5.9	4	-	-	-	3.0
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	5.9	2	-	-	-	2.8
COULTER GEN-S	1	-	-	-	5.9	1	-	-	-	3.2
COULTER MAXM, MAXM A/L	1	-	-	-	6.2	1	-	-	-	3.0

	Specimen DIF-3					Specimen DIF-4				
All Methods	4	-	-	-	24.8	4	-	-	-	15.2
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	23.1	2	-	-	-	14.1
COULTER GEN-S	1	-	-	-	24.5	1	-	-	-	15.3
COULTER MAXM, MAXM A/L	1	-	-	-	25.1	1	-	-	-	15.4

	Specimen DIF-5				
All Methods	3	-	-	-	19.6
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	18.7
COULTER GEN-S	-	-	-	-	-
COULTER MAXM, MAXM A/L	1	-	-	-	20.4

HEMATOLOGY W/ 5-PART DIFFERENTIAL - RED BLOOD CELL COUNT (x 10^{12}/L)

	Specimen DIF-1					Specimen DIF-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	4	-	-	-	3.48	4	-	-	-	2.95
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	3.48	2	-	-	-	2.96
COULTER GEN-S	1	-	-	-	3.49	1	-	-	-	2.97
COULTER MAXM, MAXM A/L	1	-	-	-	3.47	1	-	-	-	2.93

	Specimen DIF-3					Specimen DIF-4				
All Methods	4	-	-	-	5.75	4	-	-	-	3.41
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	5.67	2	-	-	-	3.39
COULTER GEN-S	1	-	-	-	5.68	1	-	-	-	3.45
COULTER MAXM, MAXM A/L	1	-	-	-	5.83	1	-	-	-	3.43

	Specimen DIF-5				
All Methods	3	-	-	-	5.14
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	5.06
COULTER GEN-S	-	-	-	-	-
COULTER MAXM, MAXM A/L	1	-	-	-	5.15

HEMATOLOGY W/ 5-PART DIFFERENTIAL - HEMOGLOBIN (g/dL)

	Specimen DIF-1					Specimen DIF-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	4	-	-	-	10.6	4	-	-	-	8.3
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	10.8	2	-	-	-	8.6
COULTER GEN-S	1	-	-	-	10.4	1	-	-	-	8.1
COULTER MAXM, MAXM A/L	1	-	-	-	10.5	1	-	-	-	8.1

	Specimen DIF-3					Specimen DIF-4				
All Methods	4	-	-	-	17.4	4	-	-	-	10.5
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	17.6	2	-	-	-	10.6
COULTER GEN-S	1	-	-	-	17.0	1	-	-	-	10.2
COULTER MAXM, MAXM A/L	1	-	-	-	17.3	1	-	-	-	10.4

	Specimen DIF-5				
All Methods	3	-	-	-	16.9
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	17.0
COULTER GEN-S	-	-	-	-	-
COULTER MAXM, MAXM A/L	1	-	-	-	16.7

HEMATOLOGY W/ 5-PART DIFFERENTIAL - HEMATOCRIT (percent)

	Specimen DIF-1					Specimen DIF-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	4	-	-	-	30.5	4	-	-	-	24.2
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	31.2	2	-	-	-	25.0
COULTER GEN-S	1	-	-	-	29.9	1	-	-	-	24.0
COULTER MAXM, MAXM A/L	1	-	-	-	30.3	1	-	-	-	24.1

	Specimen DIF-3					Specimen DIF-4				
All Methods	4	-	-	-	49.9	4	-	-	-	29.3
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	51.3	2	-	-	-	29.9
COULTER GEN-S	1	-	-	-	49.0	1	-	-	-	29.2
COULTER MAXM, MAXM A/L	1	-	-	-	50.7	1	-	-	-	29.4

	Specimen DIF-5				
All Methods	3	-	-	-	47.3
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	47.9
COULTER GEN-S	-	-	-	-	-
COULTER MAXM, MAXM A/L	1	-	-	-	47.3

HEMATOLOGY W/ 5-PART DIFFERENTIAL - PLATELET COUNT (x 10^9/L))

	Specimen DIF-1					Specimen DIF-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	4	-	-	-	127	4	-	-	-	90
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	162	2	-	-	-	101
COULTER GEN-S	1	-	-	-	100	1	-	-	-	89
COULTER MAXM, MAXM A/L	1	-	-	-	115	1	-	-	-	88

	Specimen DIF-3					Specimen DIF-4				
All Methods	4	-	-	-	485	4	-	-	-	489
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	555	2	-	-	-	538
COULTER GEN-S	1	-	-	-	434	1	-	-	-	440
COULTER MAXM, MAXM A/L	1	-	-	-	449	1	-	-	-	464

	Specimen DIF-5				
All Methods	3	-	-	-	682
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	734
COULTER GEN-S	-	-	-	-	-
COULTER MAXM, MAXM A/L	1	-	-	-	603

HEMATOLOGY W/ 5-PART DIFFERENTIAL - NEUTROPHILS (percent)

	Specimen DIF-1					Specimen DIF-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	4	-	-	-	60.5	4	-	-	-	58.9
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	66.3	2	-	-	-	62.0
COULTER GEN-S	1	-	-	-	59.6	1	-	-	-	60.2
COULTER MAXM, MAXM A/L	1	-	-	-	56.5	1	-	-	-	55.7

	Specimen DIF-3					Specimen DIF-4				
All Methods	4	-	-	-	67.2	4	-	-	-	68.2
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	70.7	2	-	-	-	73.0
COULTER GEN-S	1	-	-	-	63.8	1	-	-	-	4.1
COULTER MAXM, MAXM A/L	1	-	-	-	63.7	1	-	-	-	64.0

	Specimen DIF-5				
All Methods	3	-	-	-	69.9
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	71.7
COULTER GEN-S	-	-	-	-	-
COULTER MAXM, MAXM A/L	1	-	-	-	67.6

HEMATOLOGY W/ 5-PART DIFFERENTIAL - LYMPHOCYTES (percent)

	Specimen DIF-1					Specimen DIF-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	4	-	-	-	31.4	4	-	-	-	32.2
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	30.8	2	-	-	-	34.9
COULTER GEN-S	1	-	-	-	32.8	1	-	-	-	32.6
COULTER MAXM, MAXM A/L	1	-	-	-	30.0	1	-	-	-	31.7

	Specimen DIF-3					Specimen DIF-4				
All Methods	4	-	-	-	21.3	4	-	-	-	21.2
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	23.4	2	-	-	-	22.6
COULTER GEN-S	1	-	-	-	20.1	1	-	-	-	19.9
COULTER MAXM, MAXM A/L	1	-	-	-	18.9	1	-	-	-	15.6

	Specimen DIF-5				
All Methods	3	-	-	-	23.5
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	23.7
COULTER GEN-S	-	-	-	-	-
COULTER MAXM, MAXM A/L	1	-	-	-	16.7

HEMATOLOGY W/ 5-PART DIFFERENTIAL - MONOCYTES (percent)

	Specimen DIF-1					Specimen DIF-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	4	-	-	-	3.5	4	-	-	-	3.7
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	0.9	2	-	-	-	1.5
COULTER GEN-S	1	-	-	-	5.3	1	-	-	-	5.8
COULTER MAXM, MAXM A/L	1	-	-	-	11.1	1	-	-	-	10.1

	Specimen DIF-3					Specimen DIF-4				
All Methods	4	-	-	-	3.0	4	-	-	-	4.3
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	1.2	2	-	-	-	0.4
COULTER GEN-S	1	-	-	-	4.4	1	-	-	-	64.6
COULTER MAXM, MAXM A/L	1	-	-	-	6.1	1	-	-	-	8.1

	Specimen DIF-5				
All Methods	3	-	-	-	0.7
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	0.5
COULTER GEN-S	-	-	-	-	-
COULTER MAXM, MAXM A/L	1	-	-	-	3.1

HEMATOLOGY W/ 5-PART DIFFERENTIAL - EOSINOPHILS (percent)

	Specimen DIF-1					Specimen DIF-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	4	-	-	-	1.7	4	-	-	-	0.6
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	0.9	2	-	-	-	0.2
COULTER GEN-S	1	-	-	-	2.0	1	-	-	-	0.9
COULTER MAXM, MAXM A/L	1	-	-	-	2.3	1	-	-	-	1.4

	Specimen DIF-3					Specimen DIF-4				
All Methods	4	-	-	-	8.2	4	-	-	-	7.6
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	3.8	2	-	-	-	3.6
COULTER GEN-S	1	-	-	-	11.7	1	-	-	-	11.3
COULTER MAXM, MAXM A/L	1	-	-	-	11.3	1	-	-	-	11.9

	Specimen DIF-5				
All Methods	3	-	-	-	4.7
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	3.6
COULTER GEN-S	-	-	-	-	-
COULTER MAXM, MAXM A/L	1	-	-	-	11.7

HEMATOLOGY W/ 5-PART DIFFERENTIAL - BASOPHILS (percent)

	Specimen DIF-1					Specimen DIF-2				
Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	4	-	-	-	0.6	4	-	-	-	1.3
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	1.3	2	-	-	-	1.6
COULTER GEN-S	1	-	-	-	0.3	1	-	-	-	0.5
COULTER MAXM, MAXM A/L	1	-	-	-	0.1	1	-	-	-	1.1
	Specimen DIF-3					**Specimen DIF-4**				
All Methods	3	-	-	-	0.8	4	-	-	-	0.5
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	1.0	2	-	-	-	0.5
COULTER GEN-S	-	-	-	-	-	1	-	-	-	0.1
COULTER MAXM, MAXM A/L	1	-	-	-	0.6	1	-	-	-	0.4
	Specimen DIF-5									
All Methods	3	-	-	-	0.9					
Abbott Cell-Dyn 3500 / 3700	2	-	-	-	0.6					
COULTER GEN-S	-	-	-	-	-					
COULTER MAXM, MAXM A/L	1	-	-	-	0.9					

BLOOD CELL IDENTIFICATION

BLOOD CELL CASE HISTORY, 2003-A1

A 40-year-old female visited her internist after three months of extreme fatigue. Each of the months of fatigue was accompanied by loss of appetite and a weight loss of 10 pounds. She had also been bothered by a non-productive cough and a persistent fever of 99ºF. The physician performed a careful physical examination during which she noticed numerous bruises on the patient. The patient was visibly uncomfortable when the abdominal area was palpated during the physical examination. A battery of laboratory tests was ordered that included CBC, CMP, PT and APTT. The significant results are listed below. The following blood cells were noticed on the differential.

Total WBC	30.0 x 10^9/L
RBC	3.10 x 10^{12}/L
Hgb	9.3 g/dL
Hct	27%
MCV	88 fL
Plt	10 x 10^9/ L
Granulocytes	90 %
Lymphocytes	5 %
Monocytes	5%
PT	15 seconds
APTT	50 seconds
Uric acid	8.5 mg/dL
AST	75 IU/L
ALT	65 IU/L
ALP	175 IU/L

This patient was diagnosed with Acute Myelogenous Leukemia

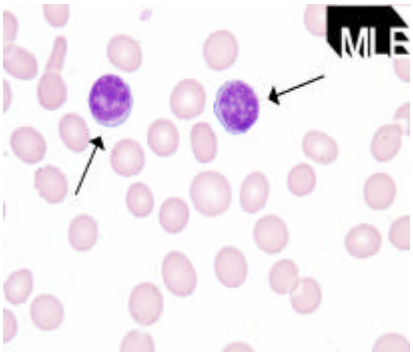
References:

E. Anne Steine-Martin et al, *Clinical Hematology: Principles, Procedures, Correlations*, Lippincott, Philadelphia, PA, 1992.

Handin, Robert I, Disorders Of The Platelet And Vessel Wall, *Harrison's Principles of Internal Medicine*, New York, NY, McGraw-Hill, 1998.

BLOOD CELL IDENTIFICATION

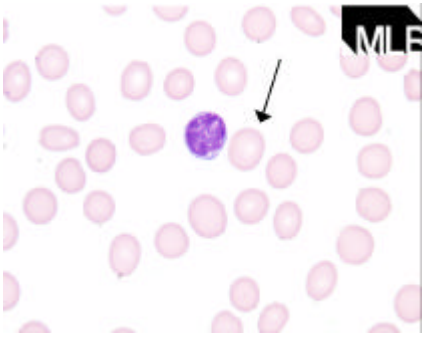
Specimen BC-1



Identification	Labs	Percent	Performance
Lymphocyte	16	94.1%	Acceptable
Lymphocyte, reactive	1	5.9%	

The arrows in this photograph point to two normal lymphocytes. A nucleus with scant cytoplasm is a distinctive characteristic for the lymphocyte. The 94.1% agreement, by our participants that this cell was a normal lymphocyte, demonstrates a solid understanding of the identification factors for this blood cell.

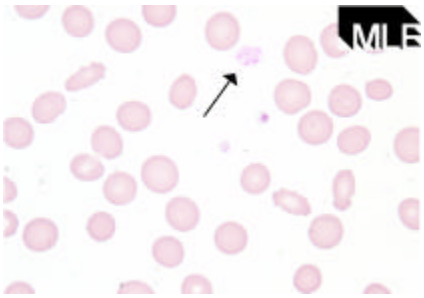
Specimen BC-2



Identification	Labs	Percent	Performance
Macrocyte	12	70.6%	Not graded
Erythrocyte	5	29.4%	

The arrow in this photograph points to a normal erythrocyte. This red blood cell has a nice central pallor. The nucleus in the normal small lymphocyte sharing this field of view provides a visual size comparison. You can almost mentally superimpose the erythrocyte over the nucleus of the lymph for a flush match in size. Normal red blood cells and the nucleus of small lymphocytes are almost equal in size. This is an ungraded challenge due to less than 80% participant consensus.

Specimen BC-3

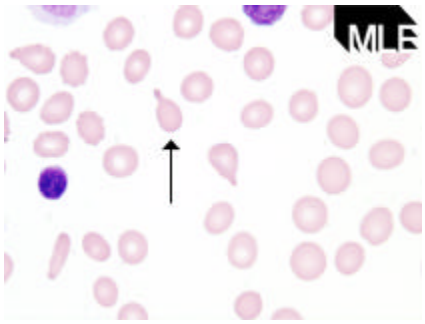


Identification	Labs	Percent	Performance
Platelet, giant	10	58.8%	Not graded
Platelet, abnormal	3	17.7%	
Platelet, normal	3	17.7%	
Fragmented cell	1	5.9%	

The arrow in this photograph points to a giant platelet. This platelet is approximately half the size of the red blood cells in this field of view. This is not a normal platelet. Notice that the other platelets in the field are approximately one fifth to one sixth of the size of this platelet. This is an ungraded challenge due to less than 80% participant consensus.

BLOOD CELL IDENTIFICATION

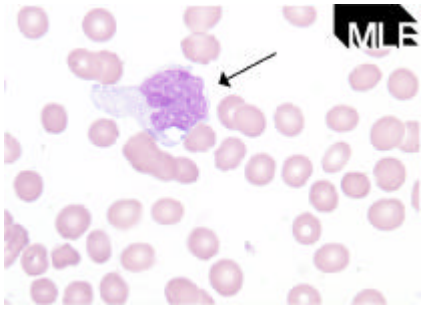
Specimen BC-4



Identification	Labs	Percent	Performance
Tear-drop cell	15	88.2%	Acceptable
Acanthocyte	1	5.9%	
Echinocyte	1	5.9%	

The arrow in this photograph points to a teardrop red cell. The name teardrop cell recognizes that the generalized shape of this cell resembles a teardrop. The more technical name for these blood cells, dacryocyte from the Greek word *dakry, "tear."* These cells have blunt shaped projections, which set them apart from other cells that have pointed projections like fragmented cells and sickle cells. The 88.2% agreement among our participants demonstrates that they were comfortable with this cell.

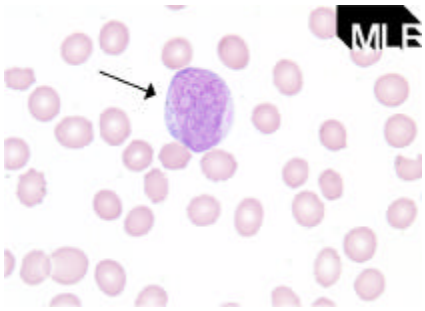
Specimen BC-5



Identification	Labs	Percent	Performance
Monocyte	13	76.5%	Not graded
Promonocyte	3	17.7%	
Lymphocyte, reactive	1	5.9%	

The arrow in this photograph points to a monocyte. On peripheral smear this cell will range in size from 12-20µ. The nuclei are both indented and somewhat lobulated with a sponge like appearance. The cytoplasm is blue-gray; ground glass in appearance and this cell has a pronounced pseudopod. There are vacuoles present in the cytoplasm. This is an ungraded challenge due to less than 80% participant consensus.

Specimen BC-6



Identification	Labs	Percent	Performance
Auer rod	7	41.2%	Not graded
Blast cell	4	23.5%	
Prolymphocyte	4	23.5%	
Leukocyte w/phago bacteria	1	5.9%	
Promonocyte	1	5.9%	

The arrow in this educational challenge points to a blast cell. Notice the two nucleoli peeping through the lacy nuclear chromatin, while a beautiful, distinct Auer rod rests on the right side of the nucleus.

ABO GROUP

Specimen	Identification	Labs	Percent	Performance
BB-1	Group B	1	100%	Acceptable
BB-2	Group O	1	100%	Acceptable
BB-3	Group A	1	100%	Acceptable
BB-4	Group AB	1	100%	Acceptable
BB-5	Group O	1	100%	Acceptable

RH FACTOR (D TYPE)

Specimen	Identification	Labs	Percent	Performance
BB-1	Rh Positive	1	100%	Acceptable
BB-2	Rh Negative	1	100%	Acceptable
BB-3	Rh Positive	1	100%	Acceptable
BB-4	Rh Positive	1	100%	Acceptable
BB-5	Rh Positive	1	100%	Acceptable

UNEXPECTED ANTIBODY DETECTION

Specimen	Identification	Labs	Percent	Performance
AB-1	No unexpected antibody detected	1	100%	Acceptable
AB-2	Unexpected antibody detected	1	100%	Acceptable
AB-3	No unexpected antibody detected	1	100%	Acceptable
AB-4	No unexpected antibody detected	1	100%	Acceptable
AB-5	Unexpected antibody detected	1	100%	Acceptable

PROTHROMBIN TIME (seconds)

	Specimen CG-1					Specimen CG-2				
Reagent/Instruments	Labs	Mean	SD	CV	Median	Labs	Mean	SD	CV	Median
All Methods	33	34.03	7.47	22.0	35.1	33	13.61	1.81	13.3	13.3
Dade Innovin										
Sysmex CA-1000	2	-	-	-	33.6	2	-	-	-	11.0
Dade Thrombo-C Plus										
Sysmex CA-1000	3	-	-	-	21.5	3	-	-	-	12.0
Diag Stago STA Neoplastine CL+										
Diagnostica Stago STart 4/8	1	-	-	-	39.1	1	-	-	-	13.1
Helena Thromboplastin – LI										
Helena Cascade 480	-	-	-	-	-	-	-	-	-	-
Tilt Tube	2	-	-	-	40.0	3	-	-	-	15.0
Helena Thromboplastin										
Tilt Tube	1	-	-	-	51.4	1	-	-	-	16.9
IL TEST PT-FIB HS										
IL ACL, all models	6	-	-	-	30.4	5	-	-	-	12.8
IL TEST PT-FIB Recombinant										
IL ACL, all models	2	-	-	-	41.1	2	-	-	-	12.6
OTC Simplastin Excel S										
BehnK Electronik Chrom	1	-	-	-	41.5	1	-	-	-	14.8
BehnK Electronik Compact X	2	-	-	-	37.0	2	-	-	-	14.8
OTC Coag-A-Mate MTX / II	3	-	-	-	35.4	3	-	-	-	14.7
OTC Coag-A-Mate Single Channel	2	-	-	-	42.4	2	-	-	-	13.5
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	36.5	1	-	-	-	16.6
All Coagulation Instruments	11	37.73	3.26	8.7	37.7	11	14.93	1.52	10.2	15.5
OTC Simplastin Excel										
BehnK Electronik Compact X	1	-	-	-	27.2	1	-	-	-	14.0
All Coagulation Instruments	2	-	-	-	24.4	2	-	-	-	12.6

	Specimen CG-3					Specimen CG-4				
All Methods	34	16.74	2.59	15.5	16.8	33	21.18	4.09	19.3	21.8
Dade Innovin										
Sysmex CA-1000	2	-	-	-	13.7	2	-	-	-	18.9
Dade Thrombo-C Plus										
Sysmex CA-1000	3	-	-	-	13.3	3	-	-	-	14.9
Diag Stago STA Neoplastine CL+										
Diagnostica Stago STart 4/8	1	-	-	-	17.3	1	-	-	-	24.1
Helena Thromboplastin - LI										
Tilt Tube	3	-	-	-	18.1	2	-	-	-	23.8
Helena Thromboplastin										
Helena Cascade 480	1	-	-	-	20.4	1	-	-	-	29.1
Tilt Tube	-	-	-	-	-	1	-	-	-	27.0
All Coagulation Instruments	1	-	-	-	20.4	2	-	-	-	28.1
IL TEST PT-FIB HS										
IL ACL, all models	6	-	-	-	15.9	5	-	-	-	18.4
IL TEST PT-FIB Recombinant										
IL ACL, all models	2	-	-	-	15.9	2	-	-	-	23.1

PROTHROMBIN TIME (seconds)

	Specimen CG-3 (cont'd)					Specimen CG-4 (cont'd)				
Reagent/Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
OTC Simplastin Excel S										
BehnK Electronik Chrom	1	-	-	-	19.0	1	-	-	-	24.7
BehnK Electronik Compact X	2	-	-	-	18.8	2	-	-	-	22.4
OTC Coag-A-Mate MTX / II	3	-	-	-	17.8	3	-	-	-	22.6
OTC Coag-A-Mate Single Channel	2	-	-	-	18.5	2	-	-	-	22.2
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	21.1	1	-	-	-	27.9
All Coagulation Instruments	11	18.86	1.99	10.6	19.0	11	23.37	2.47	10.6	23.4
OTC Simplastin Excel										
BehnK Electronik Compact X	1	-	-	-	18.1	1	-	-	-	22.0
All Coagulation Instruments	2	-	-	-	16.1	2	-	-	-	18.6

	Specimen CG-5				
All Methods	34	13.36	1.73	13.0	12.9
Dade Innovin					
Sysmex CA-1000	2	-	-	-	10.8
Dade Thrombo-C Plus					
Sysmex CA-1000	3	-	-	-	11.5
Diag Stago STA Neoplastine CL+					
Diagnostica Stago STart 4/8	1	-	-	-	12.4
Helena Thromboplastin - LI					
Tilt Tube	2	-	-	-	13.5
Helena Thromboplastin					
Helena Cascade 480	1	-	-	-	16.0
Tilt Tube	1	-	-	-	15.2
All Coagulation Instruments	2	-	-	-	15.6
IL TEST PT-FIB HS					
IL ACL, all models	6	-	-	-	12.3
IL TEST PT-FIB Recombinant					
IL ACL, all models	2	-	-	-	11.8
OTC Simplastin Excel S					
BehnK Electronik Chrom	1	-	-	-	15.6
BehnK Electronik Compact X	2	-	-	-	14.4
OTC Coag-A-Mate MTX / II	3	-	-	-	14.5
OTC Coag-A-Mate Single Channel	2	-	-	-	15.2
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	16.3
All Coagulation Instruments	11	15.07	0.82	5.4	15.4
OTC Simplastin Excel					
BehnK Electronik Compact X	1	-	-	-	13.6
All Coagulation Instruments	2	-	-	-	12.0

PROTHROMBIN TIME - INTERNATIONAL NORMALIZED RATIO (INR)

	Specimen CG-1					Specimen CG-2				
Reagent/Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	31	3.35	0.46	13.9	3.4	32	1.05	0.12	11.9	1.0
Dade Innovin										
Sysmex CA-1000	2	-	-	-	3.3	2	-	-	-	1.0
Dade Thrombo-C Plus										
Sysmex CA-1000	3	-	-	-	3.0	3	-	-	-	1.0
Diag Stago STA Neoplastine CL+										
Diagnostica Stago STart 4/8	1	-	-	-	4.2	1	-	-	-	1.0
Helena Thromboplastin - LI										
Tilt Tube	2	-	-	-	3.4	3	-	-	-	1.2
Helena Thromboplastin										
Helena Cascade 480	-	-	-	-	-	-	-	-	-	-
Tilt Tube	1	-	-	-	5.3	1	-	-	-	1.1
IL TEST PT-FIB HS										
IL ACL, all models	6	-	-	-	3.4	5	-	-	-	1.0
IL TEST PT-FIB Recombinant										
IL ACL, all models	2	-	-	-	18.6	2	-	-	-	1.0
OTC Simplastin Excel S										
BehnK Electronik Chrom	1	-	-	-	3.9	1	-	-	-	1.1
BehnK Electronik Compact X	2	-	-	-	3.2	2	-	-	-	1.0
OTC Coag-A-Mate MTX / II	3	-	-	-	3.5	3	-	-	-	1.0
OTC Coag-A-Mate Single Channel	2	-	-	-	3.9	2	-	-	-	1.1
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	4.0	1	-	-	-	1.3
All Coagulation Instruments	11	3.57	0.43	12.0	3.5	11	1.15	0.24	20.8	1.1
OTC Simplastin Excel										
BehnK Electronik Compact X	1	-	-	-	2.9	1	-	-	-	1.0
All Coagulation Instruments	2	-	-	-	2.6	2	-	-	-	0.9

	Specimen CG-3					Specimen CG-4				
All Methods	33	1.34	0.13	9.9	1.3	33	1.83	0.33	17.9	1.9
Dade Innovin										
Sysmex CA-1000	2	-	-	-	1.3	2	-	-	-	1.8
Dade Thrombo-C Plus										
Sysmex CA-1000	3	-	-	-	1.2	3	-	-	-	1.5
Diag Stago STA Neoplastine CL+										
Diagnostica Stago STart 4/8	1	-	-	-	1.4	1	-	-	-	2.2
Helena Thromboplastin – LI										
Tilt Tube	3	-	-	-	1.5	2	-	-	-	2.1
Helena Thromboplastin										
Helena Cascade 480	1	-	-	-	1.5	1	-	-	-	2.3
Tilt Tube	-	-	-	-	-	1	-	-	-	2.0
All Coagulation Instruments	1	-	-	-	1.5	2	-	-	-	2.2
IL TEST PT-FIB HS										
IL ACL, all models	6	-	-	-	1.3	5	-	-	-	1.7
IL TEST PT-FIB Recombinant										
IL ACL, all models	2	-	-	-	1.3	2	-	-	-	2.0
OTC Simplastin Excel S										
BehnK Electronik Chrom	1	-	-	-	1.5	1	-	-	-	2.0
BehnK Electronik Compact X	2	-	-	-	1.4	2	-	-	-	1.7
OTC Coag-A-Mate MTX / II	3	-	-	-	1.4	3	-	-	-	1.9
OTC Coag-A-Mate Single Channel	2	-	-	-	1.3	2	-	-	-	2.0
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	1.9	1	-	-	-	2.8
All Coagulation Instruments	11	1.44	0.19	12.9	1.4	11	1.96	0.32	16.2	1.9
OTC Simplastin Excel										
BehnK Electronik Compact X	1	-	-	-	1.4	1	-	-	-	1.8
All Coagulation Instruments	2	-	-	-	1.3	2	-	-	-	1.5

PROTHROMBIN TIME - INTERNATIONAL NORMALIZED RATIO (INR)

Specimen CG-5

Reagent/Instruments	*Labs*	*Mean*	*SD*	*CV*	*Median*
All Methods	32	1.01	0.09	9.3	1.0
Dade Innovin					
Sysmex CA-1000	2	-	-	-	1.0
Dade Thrombo-C Plus					
Sysmex CA-1000	3	-	-	-	0.9
Diag Stago STA Neoplastine CL+					
Diagnostica Stago STart 4/8	1	-	-	-	0.9
Helena Thromboplastin – LI					
Tilt Tube	2	-	-	-	1.1
Helena Thromboplastin					
Helena Cascade 480	1	-	-	-	1.1
Tilt Tube	1	-	-	-	1.0
All Coagulation Instruments	2	-	-	-	1.1
IL TEST PT-FIB HS					
IL ACL, all models	6	-	-	-	0.9
IL TEST PT-FIB Recombinant					
IL ACL, all models	2	-	-	-	1.0
OTC Simplastin Excel S					
BehnK Electronik Chrom	1	-	-	-	1.1
BehnK Electronik Compact X	2	-	-	-	1.0
OTC Coag-A-Mate MTX / II	3	-	-	-	1.0
OTC Coag-A-Mate Single Channel	2	-	-	-	1.2
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	1.3
All Coagulation Instruments	11	1.08	0.10	9.1	1.1
OTC Simplastin Excel					
BehnK Electronik Compact X	1	-	-	-	1.0
All Coagulation Instruments	2	-	-	-	0.8

ACTIVATED PARTIAL THROMBOPLASTIN (seconds)

	Specimen CG-1					**Specimen CG-2**				
Reagent/Instruments	*Labs*	*Mean*	*SD*	*CV*	*Median*	*Labs*	*Mean*	*SD*	*CV*	*Median*
All Methods	30	53.6	6.4	11.9	54	29	32.6	3.3	10.2	32
Dade Actin FS										
Sysmex CA-1000	1	-	-	-	54	1	-	-	-	31
Dade Actin										
Sysmex CA-1000	4	-	-	-	46	4	-	-	-	29
Diagnostica Stago STA-PTT										
Diagnostica Stago STart 4/8	1	-	-	-	48	1	-	-	-	30
IL TEST APTT-SP										
IL ACL, all models	8	-	-	-	48	7	-	-	-	32
OTC APTT Reagent										
BehnK Electronik Chrom	1	-	-	-	60	1	-	-	-	32
BehnK Electronik Compact X	3	-	-	-	59	3	-	-	-	33
OTC Coag-A-Mate MTX / II	4	-	-	-	58	4	-	-	-	31
OTC Coag-A-Mate Single Channel	2	-	-	-	61	2	-	-	-	30
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	56	1	-	-	-	36
All Coagulation Instruments	16	58.6	4.1	7.0	58	16	32.9	3.3	9.9	33

ACTIVATED PARTIAL THROMBOPLASTIN (seconds)

	Specimen CG-3					Specimen CG-4				
Reagent/Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	29	56.4	12.3	21.9	59	29	39.4	5.9	15.0	39
Dade Actin FS										
Sysmex CA-1000	1	-	-	-	40	1	-	-	-	40
Dade Actin										
Sysmex CA-1000	4	-	-	-	41	4	-	-	-	36
Diagnostica Stago STA-PTT										
Diagnostica Stago STart 4/8	1	-	-	-	40	1	-	-	-	37
IL TEST APTT-SP										
IL ACL, all models	8	-	-	-	67	7	-	-	-	36
OTC APTT Reagent										
BehnK Electronik Chrom	1	-	-	-	60	1	-	-	-	42
BehnK Electronik Compact X	3	-	-	-	63	3	-	-	-	42
OTC Coag-A-Mate MTX / II	4	-	-	-	55	4	-	-	-	41
OTC Coag-A-Mate Single Channel	1	-	-	-	52	2	-	-	-	40
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	66	1	-	-	-	57
All Coagulation Instruments	15	58.1	7.8	13.4	59	16	42.1	6.3	15.1	42

	Specimen CG-5				
All Methods	30	28.6	2.7	9.4	29
Dade Actin FS					
Sysmex CA-1000	1	-	-	-	29
Dade Actin					
Sysmex CA-1000	4	-	-	-	26
Diagnostica Stago STA-PTT					
Diagnostica Stago STart 4/8	1	-	-	-	32
IL TEST APTT-SP					
IL ACL, all models	8	-	-	-	29
OTC APTT Reagent					
BehnK Electronik Chrom	1	-	-	-	30
BehnK Electronik Compact X	3	-	-	-	32
OTC Coag-A-Mate MTX / II	4	-	-	-	26
OTC Coag-A-Mate Single Channel	2	-	-	-	30
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	28
All Coagulation Instruments	16	28.9	2.8	9.6	29

FIBRINOGEN (mg/dL)

	Specimen CG-1					Specimen CG-2				
Reagent/Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	19	349.7	75.1	21.5	337	18	258.4	51.0	19.7	249
Dade Fibrinogen Set										
Sysmex CA-1000	4	-	-	-	339	4	-	-	-	249
IL TEST APTT-SP										
IL ACL, all models	1	-	-	-	303	1	-	-	-	234
IL TEST PT-FIB HS										
IL ACL, all models	6	-	-	-	391	5	-	-	-	243
IL TEST PT-FIB Recombinant										
IL ACL, all models	1	-	-	-	333	1	-	-	-	254
OTC Fibriquik Fibrinogen										
BehnK Electronik Chrom	1	-	-	-	269	1	-	-	-	216
OTC Coag-A-Mate MTX / II	3	-	-	-	287	3	-	-	-	242
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	290	1	-	-	-	269
All Coagulation Instruments	7	-	-	-	287	7	-	-	-	269

FIBRINOGEN (mg/dL)

	Specimen CG-3					Specimen CG-4				
Reagent/Instruments	***Labs***	***Mean***	***SD***	***CV***	***Median***	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	17	139.5	22.2	15.9	139	17	311.2	43.7	14.1	314
Dade Fibrinogen Set										
Sysmex CA-1000	4	-	-	-	161	4	-	-	-	303
IL TEST APTT-SP										
IL ACL, all models	1	-	-	-	139	1	-	-	-	265
IL TEST PT-FIB HS										
IL ACL, all models	6	-	-	-	134	5	-	-	-	350
IL TEST PT-FIB Recombinant										
IL ACL, all models	1	-	-	-	150	1	-	-	-	249
OTC Fibriquik Fibrinogen										
BehnK Electronik Chrom	1	-	-	-	127	1	-	-	-	247
OTC Coag-A-Mate MTX / II	3	-	-	-	136	3	-	-	-	295
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	141	1	-	-	-	319
All Coagulation Instruments	7	-	-	-	141	7	-	-	-	319

Specimen CG-5

All Methods	18	342.4	42.1	12.3	345
Dade Fibrinogen Set					
Sysmex CA-1000	4	-	-	-	357
IL TEST APTT-SP					
IL ACL, all models	1	-	-	-	280
IL TEST PT-FIB HS					
IL ACL, all models	6	-	-	-	340
IL TEST PT-FIB Recombinant					
IL ACL, all models	1	-	-	-	282
OTC Fibriquik Fibrinogen					
BehnK Electronik Chrom	1	-	-	-	372
OTC Coag-A-Mate MTX / II	3	-	-	-	359
OTC Coag-A-Mate XC/XCPlus/RA	1	-	-	-	382
All Coagulation Instruments	7	-	-	-	372

URINALYSIS – URINE hCG

Specimen U-3

Participant Results

Method	***Negative***	***Positive***
All Methods	-	6
Organon Teknika Prenospia Plus	-	6

URINALYSIS DIPSTICK – SPECIFIC GRAVITY

Specimen UA-1

Method	***Labs***	***Mean***	***SD***	***CV***	***Median***
All Methods	45	1.0088	0.0042	0.4	1.010
Aution Jet	2	-	-	-	1.018
Bayer Clinitek 50	8	-	-	-	1.005
Bayer Clinitek 500	16	1.0084	0.0030	0.3	1.010
Bayer Clinitek Atlas	2	-	-	-	1.010
Bayer Reagent Strips	1	-	-	-	1.005
Quidel QuickVue UrinChek	1	-	-	-	1.000
Roche (BMC) Chemstrips	4	-	-	-	1.010
Roche (BMC) Criterion Analyzer	3	-	-	-	1.010
Roche (BMC) Mini UA	3	-	-	-	1.010
Roche(BMC) SuperUA/ChemstripUA	2	-	-	-	1.013

URINALYSIS DIPSTICK - pH

Specimen UA-1

	Participant Results									
Method	***4.0***	***5.0***	***5.5***	***6.0***	***6.5***	***7.0***	***7.5***	***8.0***	***8.5***	***9.0***
All Methods	-	-	-	-	-	20	23	4	-	-
Aution Jet	-	-	-	-	-	1	-	1	-	-
Bayer Clinitek 50	-	-	-	-	-	4	5	-	-	-
Bayer Clinitek 500	-	-	-	-	-	3	15	-	-	-
Bayer Clinitek Atlas	-	-	-	-	-	-	1	-	-	-
Bayer Reagent Strips	-	-	-	-	-	-	1	-	-	-
Quidel QuickVue UrinChek	-	-	-	-	-	-	-	1	-	-
Roche (BMC) Chemstrips	-	-	-	-	-	4	-	-	-	-
Roche (BMC) Criterion Analyzer	-	-	-	-	-	3	-	-	-	-
Roche (BMC) Mini UA	-	-	-	-	-	2	-	1	-	-
Roche (BMC) Super UA/ChemstripUA	-	-	-	-	-	2	-	-	-	-

URINALYSIS DIPSTICK - PROTEIN QUALITATIVE

Specimen UA-1

			Participant Results			
Method	***Negative***	***Trace***	***30mg/dL (1+)***	***100 mg/dL (2+)***	***300-500mg/dL (3+)***	***≥1000mg/dL (4+)***
All Methods	-	2	28	17	-	-
Aution Jet	-	-	1	1	-	-
Bayer Clinitek 50	-	-	1	8	-	-
Bayer Clinitek 500	-	1	16	1	-	-
Bayer Clinitek Atlas	-	-	1	-	-	-
Bayer Reagent Strips	-	-	1	-	-	-
Quidel QuickVue UrinChek	-	-	-	1	-	-
Roche (BMC) Chemstrips	-	-	2	2	-	-
Roche (BMC) Criterion Analyzer	-	-	2	1	-	-
Roche (BMC) Mini UA	-	1	1	1	-	-
Roche (BMC) Super UA/ChemstripUA	-	-	1	1	-	-

URINALYSIS DIPSTICK - GLUCOSE OR REDUCING SUBSTANCE

Specimen UA-1

				Participant Results				
Method	***Negative***	***50-100 mg/dL (Trace)***	***150 mg/dL***	***250 mg/dL***	***500 mg/dL***	***1000 mg/dL***	***>1000 mg/dL***	***≥2000 mg/dL***
All Methods	-	-	-	1	17	17	12	-
Aution Jet	-	-	-	1	1	-	-	-
Bayer Clinitek 50	-	-	-	-	3	1	5	-
Bayer Clinitek 500	-	-	-	-	10	2	6	-
Bayer Clinitek Atlas	-	-	-	-	1	-	-	-
Bayer Reagent Strips	-	-	-	-	1	-	-	-
Quidel QucikVue UrinChek	-	-	-	-	1	-	-	-
Roche (BMC) Chemstrips	-	-	-	-	-	4	-	-
Roche (BMC) Criterion Analyzer	-	-	-	-	-	3	-	-
Roche (BMC) Mini UA	-	-	-	-	-	3	-	-
Roche (BMC) Super UA/ChemstripUA	-	-	-	-	-	2	-	-

URINALYSIS DIPSTICK - KETONES

Specimen UA-1

		Participant Results			
Method	***Negative***	***Trace (5 mg/dL)***	***Small (1+, 15 mg/dL)***	***Moderate (2+, 40 mg/dL)***	***Large (3+, 80 mg/dL)***
All Methods	46	-	-	-	-
Aution Jet	2	-	-	-	-
Bayer Clinitek 50	8	-	-	-	-
Bayer Clinitek 500	18	-	-	-	-
Bayer Clinitek Atlas	1	-	-	-	-
Bayer Reagent Strips	1	-	-	-	-
Quidel QuickVue UrinChek	1	-	-	-	-
Roche (BMC) Chemstrips	4	-	-	-	-
Roche (BMC) Criterion Analyzer	3	-	-	-	-
Roche (BMC) Mini UA	3	-	-	-	-
Roche (BMC) Super UA/ChemstripUA	2	-	-	-	-

URINALYSIS DIPSTICK - BILIRUBIN

Specimen UA-1

		Participant Results		
Method	***Negative***	***Small (1+)***	***Moderate (2+)***	***Large (3+)***
All Methods	46	-	-	1
Aution Jet	2	-	-	-
Bayer Clinitek 50	9	-	-	-
Bayer Clinitek 500	17	-	-	1
Bayer Clinitek Atlas	1	-	-	-
Bayer Reagent Strips	1	-	-	-
Quidel QuickVue UrinChek	1	-	-	-
Roche (BMC) Chemstrips	4	-	-	-
Roche (BMC) Criterion Analyzer	3	-	-	-
Roche (BMC) Mini UA	3	-	-	-
Roche (BMC) Super UA/ChemstripUA	2	-	-	-

URINALYSIS DIPSTICK - BLOOD/HEMOGLOBIN

Specimen UA-1

		Participant Results			
Method	***Negative***	***Trace***	***Small (1+)***	***Moderate (2+)***	***Large (3+)***
All Methods	-	-	1	2	44
Aution Jet	-	-	-	-	2
Bayer Clinitek 50	-	-	-	1	8
Bayer Clinitek 500	-	-	1	1	16
Bayer Clinitek Atlas	-	-	-	-	1
Bayer Reagent Strips	-	-	-	-	1
Quidel QuickVue UrinChek	-	-	-	-	1
Roche (BMC) Chemstrips	-	-	-	-	4
Roche (BMC) Criterion Analyzer	-	-	-	-	3
Roche (BMC) Mini UA	-	-	-	-	3
Roche (BMC) Super UA/ChemstripUA	-	-	-	-	2

URINALYSIS DIPSTICK - LEUKOCYTE ESTERASE

Specimen UA-1

	Participant Results				
Method	***Negative***	***Trace***	***Small (1+)***	***Moderate (2+)***	***Large (3+)***
All Methods	46	-	-	-	-
Aution Jet	2	-	-	-	-
Bayer Clinitek 50	8	-	-	-	-
Bayer Clinitek 500	18	-	-	-	-
Bayer Clinitek Atlas	1	-	-	-	-
Bayer Reagent Strips	1	-	-	-	-
Quidel QuickVue UrinChek	1	-	-	-	-
Roche (BMC) Chemstrips	4	-	-	-	-
Roche (BMC) Criterion Analyzer	3	-	-	-	-
Roche (BMC) Mini UA	3	-	-	-	-
Roche (BMC) Super UA/ChemstripUA	2	-	-	-	-

URINALYSIS DIPSTICK - NITRITE

Specimen UA-1

	Participant Results	
Method	***Negative***	***Positive***
All Methods	47	-
Aution Jet	2	-
Bayer Clinitek 50	9	-
Bayer Clinitek 500	17	-
Bayer Clinitek Atlas	1	-
Bayer Reagent Strips	1	-
Quidel QuickVue UrinChek	1	-
Roche (BMC) Chemstrips	4	-
Roche (BMC) Criterion Analyzer	3	-
Roche (BMC) Mini UA	3	-
Roche (BMC) Super UA/ChemstripUA	2	-

URINALYSIS DIPSTICK – MICROALBUMIN

Specimen UA-1

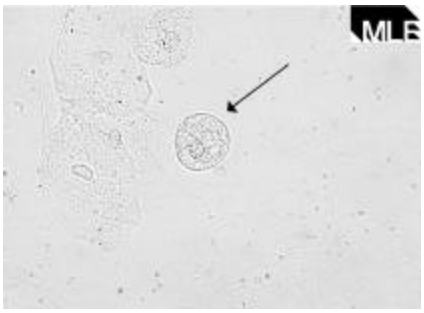
	Participant Results						
Method	***Negative***	***10 mg/L***	***20/30 mg/L***	***50 mg/L (+)***	***80 mg/L***	***100 mg/L (++)***	***150 mg/L***
All Methods	-	-	1	-	-	2	1
Roche (BMC) Micral – 1 minute	-	-	-	-	-	2	-

KOH SKIN PREPARATION

Specimen	***Identification***	***Labs***	***Percent***	***Performance***
K-1	Yeast/fungal element present	6	100%	Acceptable
K-2	Yeast/fungal element present	6	100%	Acceptable

URINE SEDIMENT IDENTIFICATION

Specimen US-1

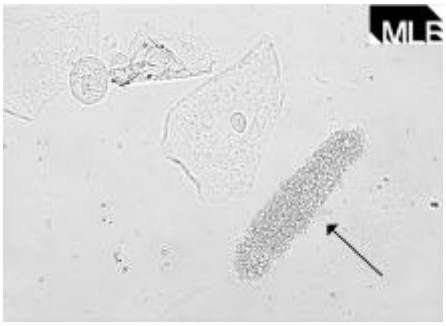


Identification	Labs	Percent	Performance
Renal tubular epithelial (RTE)	33	70.2%	Not graded
Transitional epithelial cell	11	23.4%	
White blood cell (WBC)	1	2.1%	
RTE with fat globules	1	2.1%	
Bacteria	1	2.1%	

The arrow in this photograph points to a Renal Tubular Epithelial (RTE) cell. Large numbers of these cells, present in kidney disease and considered clinically significant findings, originate at the epithelium lining of the renal tubules. An occasional RTE can be found in urine from healthy patients when these cells undergo the normal sloughing and regenerating process of epithelial cells.

The RTE cells can be easily confused with the transitional epithelial cells since they are approximately the same size, shape, and nuclear dimension. The RTE cells usually have an eccentric nucleus, whereas the transitional epithelial cells have a large, central nucleus. The nucleus of the RTE has a clearly defined perimeter, while the nucleus of the transitional cell often blends with the cytoplasm of the cell. This is an ungraded challenge due to less than 80% participant consensus.

Specimen US-2



Identification	Labs	Percent	Performance
Granular cast	46	97.9%	Acceptable
RBC/blood/hgb cast	1	2.1%	

The arrow in this photograph points to a granular cast. A few of these casts may be found in the urine of healthy patients after vigorous exercise. The presence of large numbers of granular casts may indicate a serious condition. The granules, formed through the degeneration of cells within the renal tubules or protein aggregates, have no distinct identification characteristics. The granules become smaller as they degenerate to a waxy cast. Although granular casts appear as both coarse and fine granular, reporting the cast based upon this difference in granule size becomes an unnecessary subjective exercise.

THROAT CULTURE

Specimen TC-1

Identification	*Labs*	*Percent*	*Performance*
Pos. Group A Strep	17	81.0%	Acceptable
Neg. Group A Strep	4	19.1%	

Organism present in specimen TC-1: *Sreptococcus pyogenes.*

Specimen TC-2

Identification	*Labs*	*Percent*	*Performance*
Neg. Group A Strep	20	100%	Acceptable

Organism present in specimen TC-2: *Staphylococcus aureus* and *Corynebacterium sp.*

STREP A ANTIGEN DETECTION

Specimen RS-1

				Strength of Reaction		
Method	***Labs***	***Positive***	***Negative***	***Strong***	***Moderate***	***Weak***
All Methods	9	8	1	3	3	-
BD LINK 2	5	5	-	2	2	-

GENERAL BACTERIOLOGY

Specimen UC-1 - Urine Culture

Identification	***Labs***	***Percent***	***Performance***
Escherichia coli	1	50.0%	Not graded
Klebsiella oxytoca	1	50.0%	

Gram Stain

Gram negative	2	100%	Acceptable

Gram Stain Morphology

Rods/bacilli	2	100%

Organism present in specimen UC-1: *Klebsiella oxytoca*. This is an ungraded challenge due to less than 80% participant consensus.

Specimen TC-1 – Throat Culture

Identification	***Labs***	***Percent***	***Performance***
Streptococcus pyogenes	2	100%	Acceptable

Organism present in specimen TC-1: *Streptococcus pyogenes.*

Specimen BA-1 - Wound Culture

Identification	***Labs***	***Percent***	***Performance***
Staphylococcus sp.	1	100%	Acceptable

Organisms present in specimen BA-1: *Staphylococcus aureus* and *Staphylococcus epidermidis.*

Specimen BA-2 – Respiratory Culture (Sputum)

Identification	***Labs***	***Percent***	***Performance***
Streptococcus non-hemolytic	1	100%	Acceptable

Organisms present in specimen BA-2: *Haemophilus influenzae* and *Streptococcus gordonii.*

GENERAL BACTERIOLOGY

Specimen BA-3 – Respiratory Culture (Ear)

Identification	***Labs***	***Percent***	***Performance***
Streptococcus non-hemolytic	1	50.0%	Not graded
Gram negative bacilli	1	50.0%	

Organism present in specimen BA-3: *Neisseria mucosa.* This is an ungraded challenge due to less than 80% participant consensus.

URINE CULTURE

Specimen UC-1

Identification	***Labs***	***Percent***	***Performance***
Klebsiella oxytoca	15	71.4%	Acceptable
Klebsiella sp.	2	9.5%	Acceptable
Klebsiella pneumoniae	4	19.1%	

Gram Stain

Gram Negative	18	100%	Acceptable

Gram Stain Morphology

Rods/bacilli	15	88.2%	
Cocco-bacilli	2	11.8%	

Organism present in specimen UC-1: *Klebsiella oxytoca.*

Specimen UC-2

Identification	***Labs***	***Percent***	***Performance***
Staphylococcus aureus	21	91.3%	Acceptable
Corynebacterium sp.	1	4.4%	Acceptable
Staphylococcus epidermidis	1	4.4%	

Organisms present in specimen UC-2: *Staphylococcus aureus* and *Corynebacterium sp.*

ANTIMICROBIAL SUSCEPTIBILIY TESTING

Specimen UC-1

	------Agar Diffusion------ Interpretative category data				------MIC------ Interpretative category data				
Antimicrobial	***Labs***	***S***	***I***	***R***	***Labs***	***S***	***I***	***R***	***Acceptable (%)***
Amikacin	3	1	2	-	5	5	-	-	87.5%
Amoxicillin/Clavulanate	1	1	-	-	1	1	-	-	100%
Ampicillin	1	-	-	1	4	-	-	4	100%
Ampicillin/Sublactam	1	1	-	-	5	5	-	-	90.9%
Aztreonam	1	1	-	-	2	2	-	-	100%
Cefazolin	1	1	-	-	3	3	-	-	100%
Cefotaxime	-	-	-	-	4	4	-	-	100%
Ceftazidime	-	-	-	-	3	3	-	-	100%
Ceftriaxone	1	1	-	-	2	2	-	-	100%
Cefuroxime	2	2	-	-	1	1	-	-	100%
Cephalothin	1	-	-	1	2	2	-	-	88.9%
Ciprofloxacin	2	2	-	-	5	5	-	-	100%
Gentamicin	2	1	1	-	4	4	-	-	93.3%
Imipenem	1	1	-	-	5	5	-	-	100%
Levofloxacin	-	-	-	-	2	2	-	-	100%
Meropenem	-	-	-	-	2	2	-	-	100%
Nalidixic Acid	2	2	-	-	1	1	-	-	100%
Nitrofurantoin	4	4	-	-	1	1	-	-	90.0%
Norfloxacin	2	2	-	-	-	-	-	-	100%
Ofloxacin	1	1	-	-	3	3	-	-	100%
Piperacillin	-	-	-	-	2	1	-	1	Not graded[1]
Piperacillin/Tazobactam	1	1	-	-	3	3	-	-	100%
Ticarcillin/Clavulnate	-	-	-	-	1	1	-	-	100%
Tobramycin	-	-	-	-	2	2	-	-	100%
Trimethoprim/Sulfamethoxazole	4	3	1	-	7	7	-	-	93.3%

Organism present in specimen UC-1: *Klebsiella oxytoca.*

GC CULTURE

Specimen GC-1

Identification	***Labs***	***Percent***	***Performance***
Pos. for N. gonorrhoeae	10	52.6%	Acceptable
Presp. N. gonorrhoeae, refer	5	26.3%	Acceptable
Growth select. Media, referred	1	5.3%	Acceptable
No growth	2	10.5%	
Neg. for N. gonorrhoeae	1	5.3%	

Beta-lactamase Testing			
Negative	6	100%	
Positive	-	-	

Gram Stain	***Labs***	***Percent***	***Performance***
Gram negative	13	92.9%	Acceptable
Gram positive	1	7.1%	

[1] This is an ungraded challenge due to less than 80% participant consensus.

GC CULTURE

Gram Stain Morphology	***Labs***	***Percent***
Diplococci	12	85.7%
Cocci	1	7.1%
Cocci in pairs	1	7.1%

Organism present in specimen GC-1: *Neisseria gonnorhoeae.*

GRAM STAIN

Specimen GS-1

Identification	***Labs***	***Percent***	***Performance***
Gram negative	6	85.7%	Acceptable
Gram positive	1	14.3%	

Gram Stain Morphology		
Rods/bacilli	7	100%

Organism present in specimen GS-1: *Proteus mirabilis.*

Specimen GS-2

Identification	***Labs***	***Percent***	***Performance***
Gram negative	6	85.7%	Acceptable
Gram positive	1	14.3%	

Gram Stain Morphology		
Cocco-bacilli	4	57.1%
Rods/bacilli	2	28.6%
Cocci	1	14.3%

Organism present in specimen GS-2: *Haemophilius influenzae.*

Specimen GS-3

Identification	***Labs***	***Percent***	***Performance***
Gram positive	5	71.4%	Not graded
Gram negative	2	28.6%	

Gram Stain Morphology		
Rods/bacilli	7	100%

Organism present in specimen GS-3: *Lactobacillus species*. This is an ungraded challenge due to less than 80% participant consensus.

GRAM STAIN

Specimen GS-4

Identification	***Labs***	***Percent***	***Performance***
Gram positive	7	100%	Acceptable
Gram negative	-	-	

Gram Stain Morphology

Cocci	6	85.7%
Rods/bacilli	1	14.3%

Organism present in specimen GS-4: *Staphylococcus saprophyticus.*

Specimen GS-5

Identification	***Labs***	***Percent***	***Performance***
Gram negative	6	85.7%	Acceptable
Gram positive	1	14.3%	

Gram Stain Morphology

Cocco-bacilli	3	42.9%
Cocci in pairs	2	28.6%
Rods/bacilli	2	28.6%

Organism present in specimen GS-5: *Klebsiella pneumoniae.*

PARASITOLOGY

Specimen PA-1

Identification	***Labs***	***Percent***	***Performance***
Giardia lamblia	1	50.0%	Acceptable
Protozoan seen but no ID	1	50.0%	Acceptable

Parasite present in specimen PA-1: *Giardia lamblia.*

Specimen PA-2

One participant reported results for this specimen. Parasite present in specimen PA-2: *Entamoeba histolytica.*

PARASITOLOGY

Specimen PA-3

Identification	***Labs***	***Percent***	***Performance***
Ascaris lumbricoides eggs	18	64.3%	Acceptable
Parasite egg seen but no ID	1	3.6%	Acceptable
Blastocystis hominis	2	7.1%	
Endolimax nana	2	7.1%	
Enterobius vermicularis eggs	1	3.6%	
Hymenolepis nana eggs	1	3.6%	
Strongyloides sterco. larvae	1	3.6%	
Trichuris trichiura eggs	1	3.6%	
No parasite seen	1	3.6%	

Parasite present in specimen PA-3: *Ascaris lumbricoides* eggs.

Specimen PA-4

Identification	***Labs***	***Percent***	***Performance***
Taenia sp. eggs	15	65.2%	Acceptable
No parasite seen	4	17.4%	
Strongyloides sterco. Larvae	2	8.7%	
Ascaris lumbricoides eggs	1	4.4%	
Hymenolepis diminuta eggs	1	4.4%	

Parasite present in specimen PA-4: *Taenia sp.* eggs.

Specimen PA-5

Identification	***Labs***	***Percent***	***Performance***
Babesia sp.	2	10.0%	Acceptable
Plasmodium falciparum	7	35.0%	
Plasmodium vivax	5	25.0%	
No parasite seen	5	25.0%	
Plasmodium sp., not falciparum	1	5.0%	

Parasite present in specimen PA-5: *Babesia sp.*

SUMMARY OF ISOLATES FOUND IN THE 2003 MLE-A1 CULTURE SPECIMENS

Organism	ATCC Strain
Branhamella catarrhalis	25238
Corynebacterium sp.	49528
Gardnerella vaginalis	14018
Haemophilus influenzae	10211
Klebsiella oxytoca	8724
Lactobacillus casei	393
Neisseria gonorrhoeae	19424
Neisseria mucosa	19695
Pseudomonas aeruginosa	27853
Serratia marcescens	8100
Staphylococcus aureus	25923
Staphylococcus epidermidis	14990
Streptococcus gordonii	35557
Streptococcus pyogenes	19615
Streptococcus sp. Group B	12386

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