

Verein für  
Association pour le  
Associazione per il



medizinische Qualitätskontrolle  
contrôle de qualité médical  
controllo di qualità medico

Report

# Differential Blood Smear H3

MQ 2017-3

## Acknowledgements

The Mythic 18 analyzer was provided by the company Polymed, the ABX Microsemi CRP analyzer by the company Axonlab and the XP-300 analyzer by the Firma Sysmex. MQ employees conducted the measurements.

The findings of the XE-5000 and ADVA 2120 devices and of the microscopic blood counts were generated by the Central Laboratory of Medical Diagnostic HAD of the University Hospital Zurich Hematology Clinic. The lab is ISO/IEC 17025 certified (STS 445). Dr. J-D. Studt is the responsible manager; Prof. MG Manz, M.D., the clinic director.

[www.haematologie.usz.ch](http://www.haematologie.usz.ch)

For information regarding all analyses offered by the University Hospital of Zurich, see:

[www.uzl.usz.ch](http://www.uzl.usz.ch)

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# 1 Sample A

## 1.1 ABX Microsemi CRP



### Findings MQ 2017-3 H3A

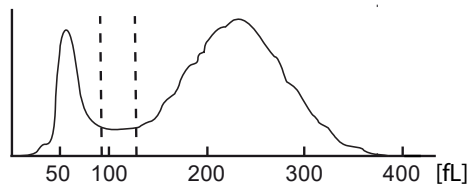
30 year old woman

WBC :	10.4	H	10 <sup>9</sup> /L	MCV :	88.2	fL
RBC :	4.01		10 <sup>12</sup> /L	MCH :	30.2	pg
HGB :	12.1		g/L	MCHC:	34.3	g/L
HCT :	35.4		L/L	RDW :	12.9	%
PLT :	248		10 <sup>9</sup> /L	MPV :	6.6	fL
PCT :	0.164		10 <sup>-2</sup> L/L	PDW :	13.6	%

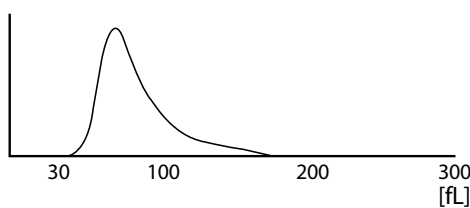
WBC Flags:

DIFF:						
%LYM:	16.7	L	%	#LYM:	1.7	10 <sup>9</sup> /L
%MON:	4.5		%	#MON:	0.5	10 <sup>9</sup> /L
%GRA:	78.8	H	%	#GRA:	8.2	H 10 <sup>9</sup> /L

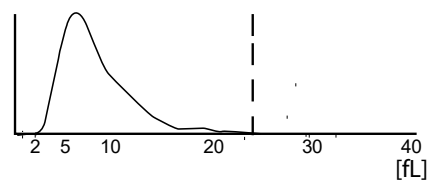
WBC



RBC



PLT

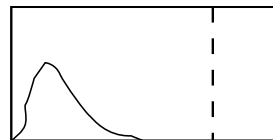
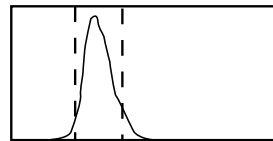
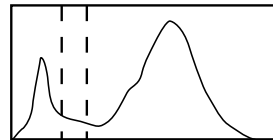


## 1.2 Mythic



### Findings MQ 2017-3 H3A 30 year old woman

WBC	11.0	h	10 <sup>9</sup> /l	3.5 / 10.0
LYM	1.7		10 <sup>9</sup> /l	1.2 / 3.2
MON	0.6		10 <sup>9</sup> /l	0.1 / 1.0
GRA	8.8	h	10 <sup>9</sup> /l	1.2 / 6.8
LYM%	15.3	l	%	17.0 / 48.0
MON%	5.1		%	2.0 / 10.0
GRA%	79.6	h	%	43.0 / 76.0
RBC	4.12		10 <sup>12</sup> /l	4.00 / 5.70
HGB	118	l	g/l	140 / 180
HCT	0.362		l/l	0.420 / 0.540
MCV	87.9		fl	80.0 / 100.0
MCH	28.6		pg	26.0 / 34.0
MCHC	326		g/l	310 / 365
RDW	15.0		%	10.0 / 16.0
PLT	266		10 <sup>9</sup> /l	150 / 400
MPV	7.1		fl	7.0 / 11.0
PCT	0189		cl/l	0.100 / 0.500
PDW	12.5		%	10.0 / 18.0

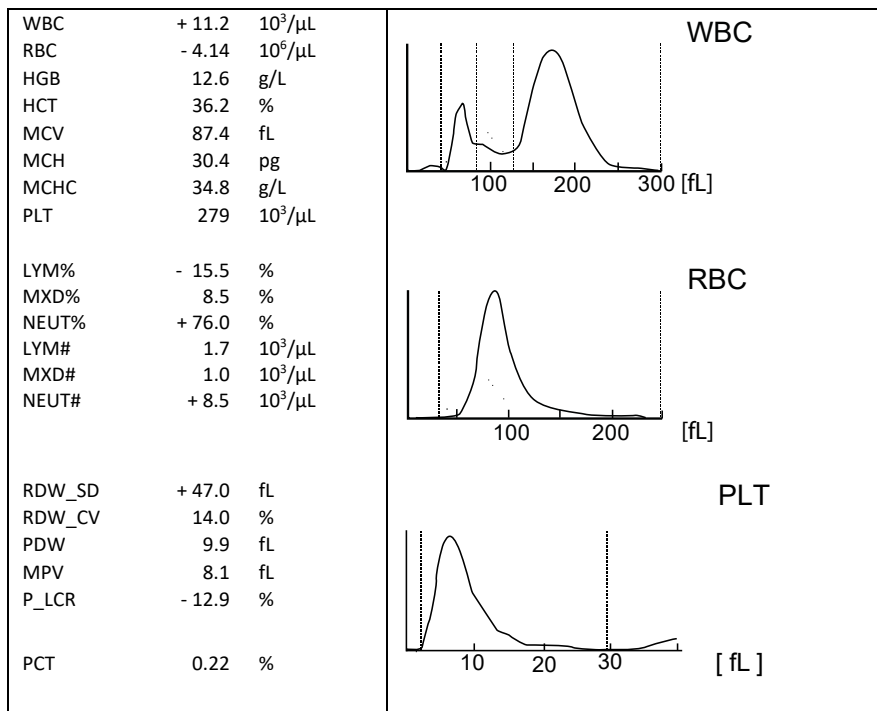


FLAGS : LEUCOCYTOSIS LYMPHOPENIA GRANULOCYTOSIS ANEMIA

### 1.3 Sysmex XP300



#### Findings MQ 2017-3 H3A 30 year old woman

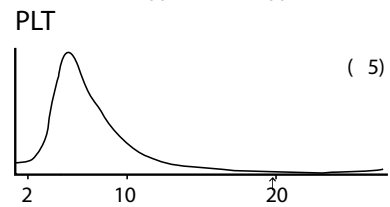
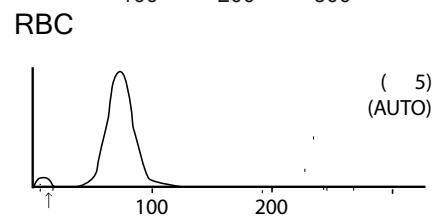
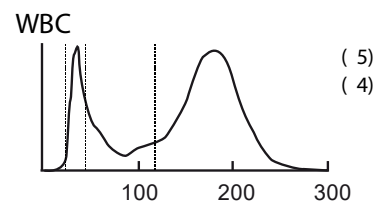


### 1.4 Nihon Coden



#### Findings MQ 2017-3 H3A 30 year old woman

WBC :	10.9	H	$10^3/uL$
RBC :	4.26		$10^6/uL$
HGB :	12.8		g/dL
HCT :	38.0		%
MCV :	89.2		fL
MCH:	30.0		Pg
MCHC :	33.7		$10^9/L$
PLT:	241		$10^{12}/L$
LY:	2.3		[20.8 %]
MO:	0.4		[3.6 %]
GR :	8.2	H	[75.6H %]
RDWCV:	12.9		%
RDWSD:	46.0		fL
PCT:	0.18		%
MPV:	7.5		fL
PDW:	16.8		%



## 1.5 Sysmex XE-5000



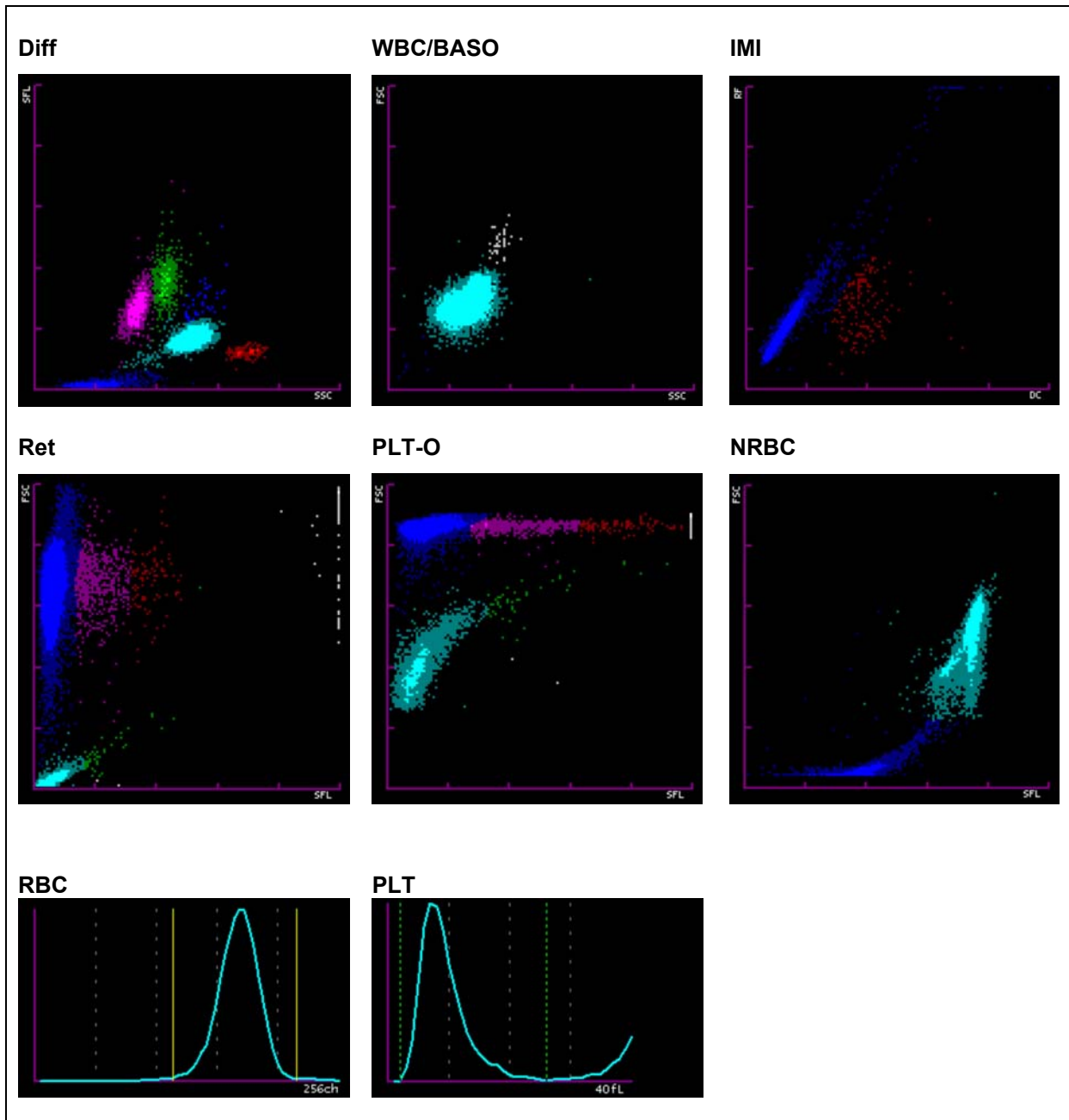
### Findings MQ 2017-3 H3A

30 year old woman

Analysis	Result	Unit	Reference value
<b>Blood Count</b>			
<u>Hemoglobin</u>	125	g/l	
<u>Hematocrit</u>	0.372	l/l	
Erythrocytes	4.22	T/l	
MCV	88.2	fl	80-100
MCH	29.6	pg	26-34
MCHC	336	g/l	310-360
Mikrocytes	14.3	%	11.0-14.8
<u>Thrombocytes</u>	247	G/l	143-400
<u>Leucocytes</u>	* 11.27	G/l	3.0-9.6
<b>Leucocyte Differentiation</b>			
Neutrophils	* 8.60	G/l	1.40 – 8.00
Monocytes	0.78	G/l	0.16 – 0.95
Eosinophils	0.25	G/l	0.00 – 0.70
Basophils	0.03	G/l	0.00-0.15
Lymphocytes	1.61	G/l	1.50 - 4.00
IG abs.	* 0.06	G/l	0.00 – 0.03
IG %	0.5	%	0.0 – 0.05
NRBC abs.	0.00	G/l	
NRBC	0.0	/100 Lc	



Findings HAD MQ 2017-3 H3A

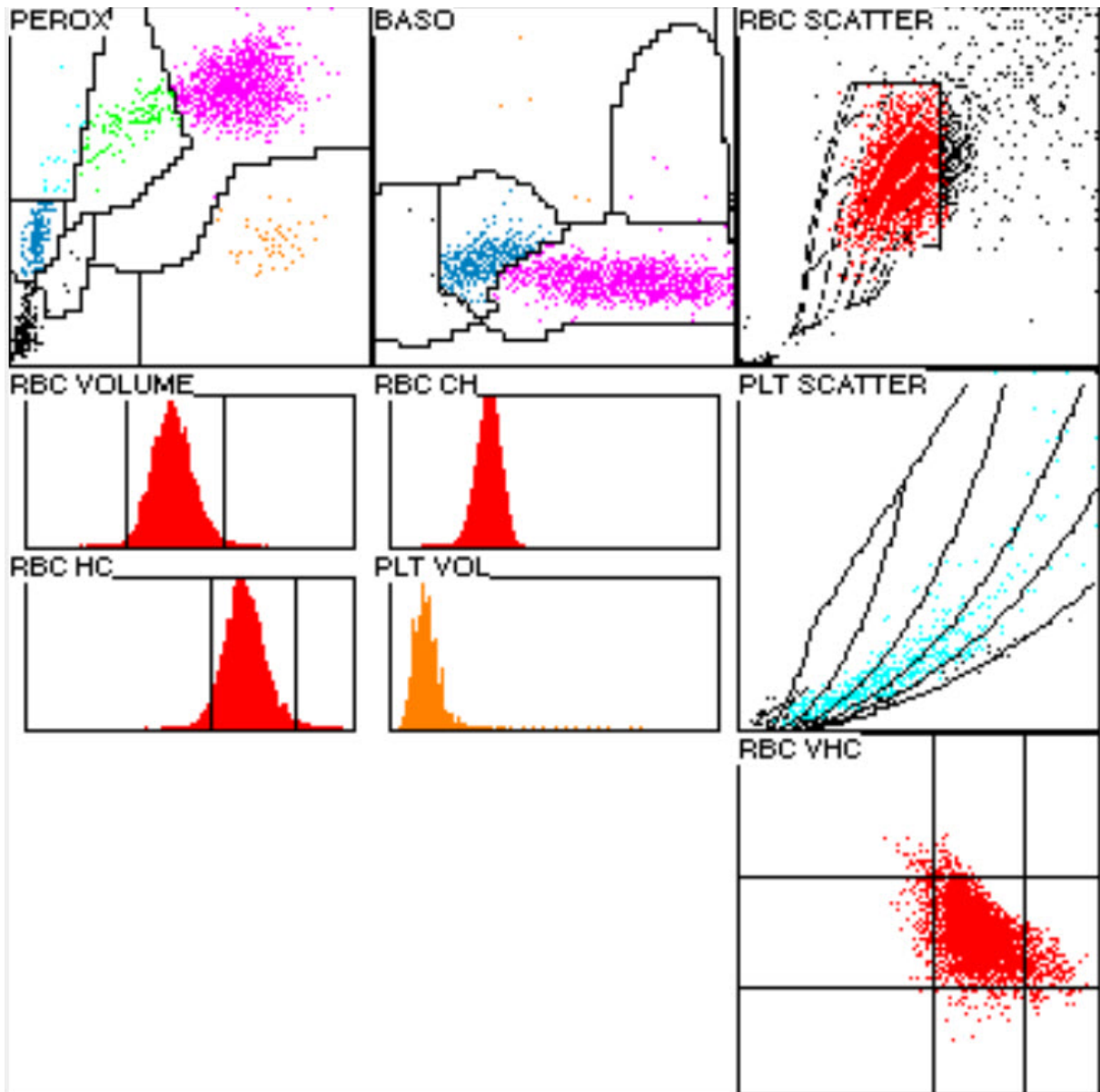


## 1.6 ADVIA 2120



### Findings HAD MQ 2017-3 H3A 30 year old woman

Analysis	Result	Unit	Reference value
<b>Blood Count</b>			
<u>Hemoglobin</u>	128	g/l	134-170
<u>Hematocrit</u>	0.374	l/l	0.400-0,500
Erythrocytes	4.81	T/l	4.2-5.7
MCV	89.4	fl	80-100
MCH	30.6	pg	26-34
MCHC	343	g/l	310-360
Mikrocytes	0.6	%	0-2.0
Macrocytes	1.0	%	0-2.0
Hypochromic Ec	* 3.4	%	0-2.0
Hyperchromic Ec	1.5	%	0-2.0
RDW	14.0	%	11.0-14.8
<u>Thrombocytes</u>	264	G/l	143-400
Vd. L-SHIFT	0	+	None (0)
<u>Leucocytes</u>	* 11.28	G/l	3.0-9.6
<b>Leucocyte Differentiation</b>			
Neutrophils	* 8.84	G/l	1.40-8.00
Monocytes	0.50	G/l	0.16-0.95
Eosinophils	0.24	G/l	0.00-0.70
Basophile	0.03	G/l	0.00-0.15
Lymphocytes	1.57	G/l	1.50-4.00
LUC	0.8	%	0.0-4.0



## 1.7 Differential Blood Smear

### Findings HAD MQ 2017-3 H3A

30 year old woman

Analysis		Result	Unit	Reference value
Neutrophils total	*	8.84	G/l	1.40-8.00
Monocytes		0.50	G/l	0.16-0.95
Eosinophils		0.24	G/l	0.00-0.70
Basophils		0.03	G/l	0.00-0.15
Lymphocytes		1.57	G/l	1.50-4.00
Neutrophils total	*	76.0	%	40.0-74.0
Neutrophils Band		12.0	%	0.0-20.0
Neutrophils Segmented	*	64.0	%	30.0-50.0
Monocytes		4.5	%	3.4-9.0
Eosinophils		1.5	%	0.0-7.0
Basophils		0.5	%	0.0-1.5
Lymphocytes	*	16.5	%	19.0-48.0
Plasmacells		0.0	%	0-0.5
Blasts		0.0	%	0
Promyelocytes		0.0	%	0
Myelocytes	*	0.5	%	0
Metamyelocytes	*	0.5	%	0
Nucleated Red Cells		0.0	/100 Lc	

### Commentary

The red blood picture is normochromic and normocytic. Mild poikilocytosis with a few acanthocytes and ovalocytes. No erythrocyte inclusions seen. Neutrophil granulocytes with fine cytoplasmic granulation. Outpouring of 0.5% myelocytes and metamyelocytes. Lymphocytes polymorphous in size and nuclear shape. The thrombocytes are markedly anisocytic, rare giant forms on perusal.

K. Schreiber / PD. Dr. St. Balabanov

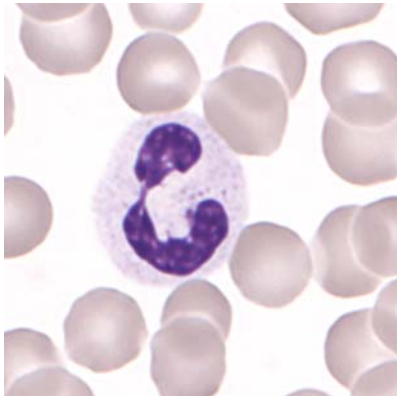


Abb 1. Neutrophil (Seg)

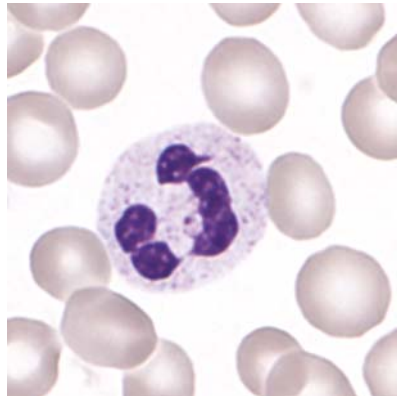


Abb 2. Neutrophil (Seg)

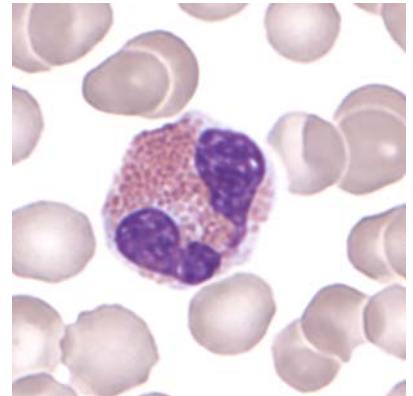


Abb 3. Eosinophil

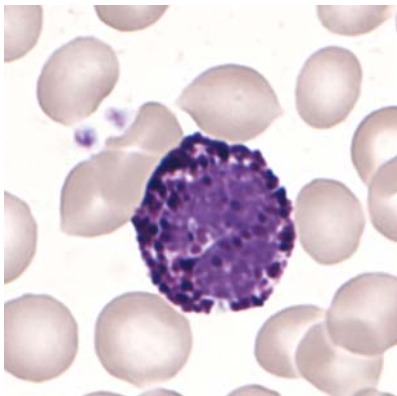


Abb 4. Basophil

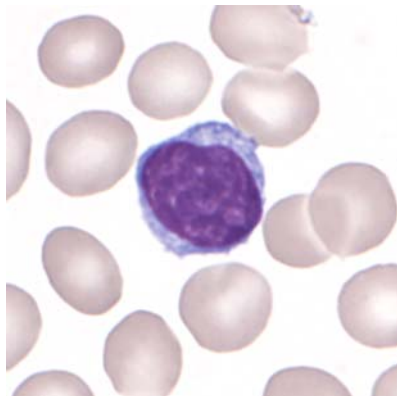


Abb 5. Lymphocyte

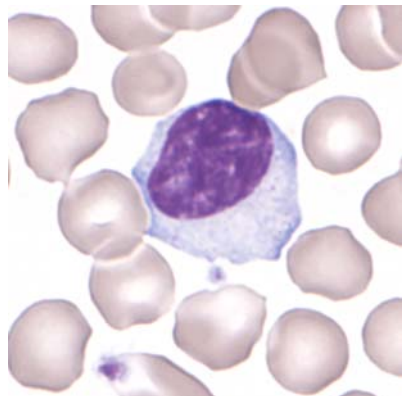


Abb 6. Lymphocyte (LGL)

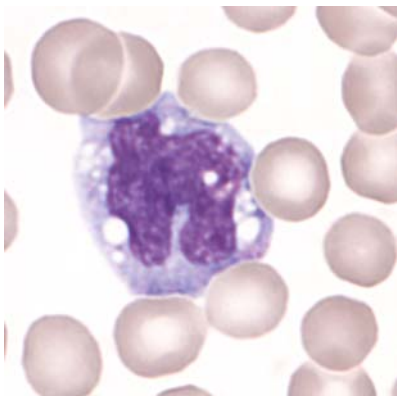


Abb 7. Monocyte

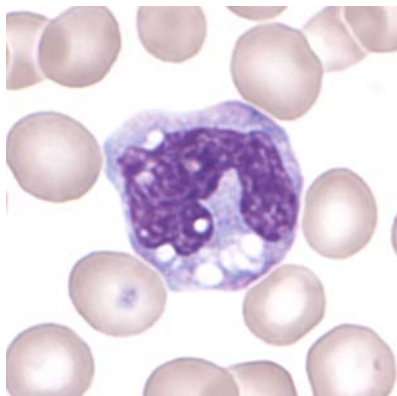


Abb 8. Monocyte

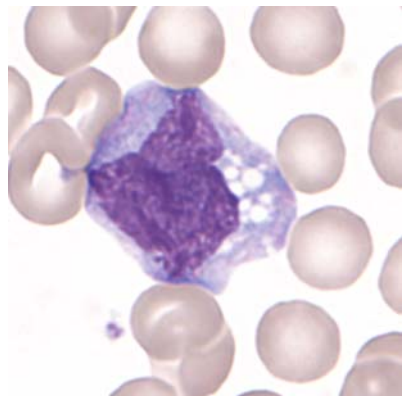


Abb 9. Monocyte

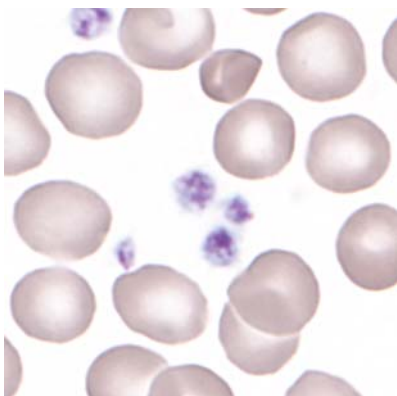


Abb 10. Thrombocytes

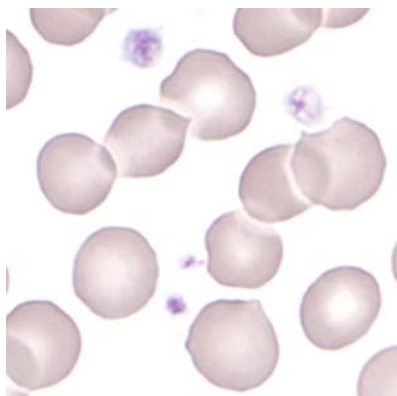


Abb 11. Thrombocytes

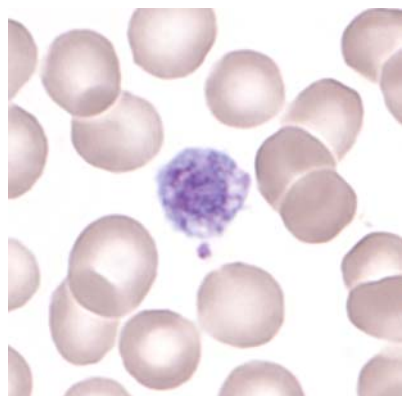


Abb 12. Giant Thrombocyte

## 1.8 Summary of participant results

### Leukocyte Differenzial H3-A

	0	1-4	5-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	>79
<i>Neutrophils Band</i>	3			1	4	19	48	103	100	31	2
<i>Neutrophils Segmented.</i>	28	265	13	2	2					1	
<i>Eosinophils</i>	188	123									
<i>Basophile</i>	15	198	91	6	1						
<i>Monocytes</i>	3	0	8	242	55	3					
<i>Lymphocytes</i>	304	6		1							
<i>Plasmacells</i>	309	2									
<i>Blasts</i>	309	1	1								
<i>Promyelocytes</i>	302	9	0								
<i>Myelocytes</i>	294	16	1								
<i>Metamyelozyten</i>	310	1									
<i>Erythrocytes Nucleated</i>	304	5	1	1							
<i>Unknown</i>	276	18	11	5	1						
<i>Smudge cells</i>	3			1	4	19	48	103	100	31	2

### Evaluation H3-A

	light	medium	strong		light	medium	strong
<i>Hypersegmentation</i>	22			<i>Hypochromic Ec</i>	36	5	1
<i>Pelger-Hüet Anomaly</i>	7			<i>Polychromatic Ec</i>	95	12	1
<i>Coarse Granulation</i>	95	108	19	<i>Anisocytes</i>	151	25	2
<i>Basophilic Strippling</i>	28	5		<i>Mikrocytes</i>	66	7	0
<i>Vacuoles</i>	50	8	1	<i>Makrocytes</i>	49	3	3
<i>Reaktive Lymphocytes</i>	30	7		<i>Megalocytes</i>	12		
<i>Atypical Lymphocytes</i>	7		1	<i>Poikilocytosis</i>	87	10	1
<i>Others</i>	6			<i>Ovalocytes</i>	43	1	
				<i>Target Cells</i>	16	2	
				<i>Akanthocytes</i>	24		
<i>Anisocytosis</i>	113	25	4	<i>Echinocytes</i>	37	2	
<i>Megakaryocyte Nucleaus</i>	14	3		<i>Sickle Cells</i>	7	1	
<i>Granulation</i>	19	3	2	<i>Fragmentocytes</i>	9		
<i>Others</i>				<i>Spherocytes</i>	11	3	2
				<i>Stomatocytes</i>	12	2	
				<i>Basophilic Strippling</i>	10		
				<i>Howell-Jolly Bodies</i>	8		
				<i>Pappenheim Bodies</i>	6		
				<i>Others</i>	8		1

### Commentary

Smear H3-A is from a pregnant woman.

## 1.9 Qualab Codes

Summary of the participant codes  
(Bold printed: expected codes)

Code	Text	Number
<b>29</b>	<b>Normal findings</b>	<b>139</b>
<b>4</b>	<b>Neutrophils, Toxic Changes</b>	<b>107</b>
<b>2</b>	<b>Neutrophils, left shift</b>	<b>103</b>
<b>31</b>	<b>Pathologic findings</b>	<b>78</b>
<b>30</b>	<b>Pathologic findings, refer to expert</b>	<b>49</b>
15	Polychromatophilic Red Cells	37
16	Poikilocytosis	37
9	Macrothrombocytes	26
5	Atypical lymphocytes, probably reactive	20
12	Microcytes	19
26	Teardrops	13
14	Hypochromic Erythrocytes	12
13	Macrocytes	11
22	Rouleaux	10
17	Elliptocytes/Ovalocytes	7
27	Erythrocytes, other	7
1	Neutrophils, hypersegmentation of nucleus	6
11	Thrombocytes, others	6
8	Leucocytes other:	5
10	Thrombocyte aggregates	4
21	Spherocytes	4
19	Targetcells	3
25	Basophilic strippling	3
3	Pelger Hüet Anomaly	2
6	Atypical lymphocytes, probably neoplastic	1
18	Stomatocytes	1
99	Total	307

## 2 Sample B

### 2.1 ABX Microsemi CRP



#### Findings MQ 2017-3 H3B

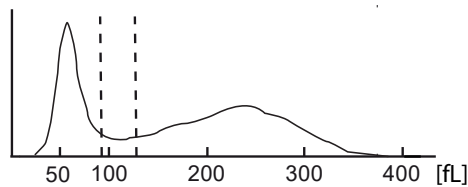
30 year old woman

WBC :	16.5	H	10 <sup>9</sup> /L	MCV :	87.4	fL
RBC :	2.53	L	10 <sup>12</sup> /L	MCH :	30.0	pg
HGB :	7.6	L	g/L	MCHC:	34.3	g/L
HCT :	22.1	L	L/L	RDW :	16.1	H %
PLT :	442	H	10 <sup>9</sup> /L	MPV :	7.4	fL
PCT :	0.326		10 <sup>-2</sup> L/L	PDW :	14.2	%

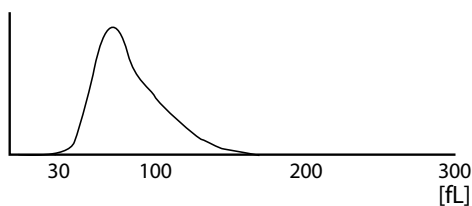
#### WBC Flags: G1

DIFF:						
%LYM:	32.1	%	#LYM:	5.3	H	10 <sup>9</sup> /L
%MON:	5.9	%	#MON:	1.0	H	10 <sup>9</sup> /L
%GRA:	62.0	%	#GRA:	10.2	H	10 <sup>9</sup> /L

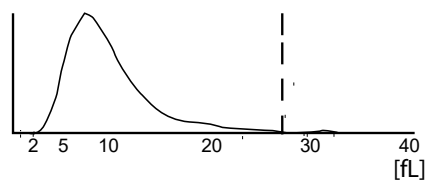
#### WBC



#### RBC



#### PLT





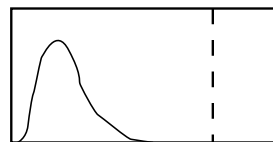
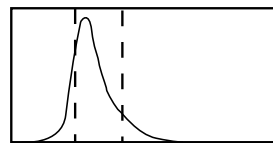
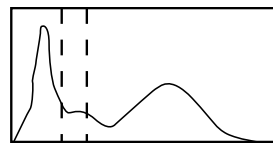
## 2.2 Mythic



### Findings MQ 2017-3 H3B

30 year old woman

WBC	17.0	H	10 <sup>9</sup> /l	3.5	/	10.0
LYM	5.3	h	10 <sup>9</sup> /l	1.2	/	3.2
MON	1.6	H	10 <sup>9</sup> /l	0.1	/	1.0
GRA	10.9	H	10 <sup>9</sup> /l	1.2	/	6.8
LYM%	29.6		%	17.0	/	48.0
MON%	9.2		%	2.0	/	10.0
GRA%	61.2		%	43.0	/	76.0
RBC	2.64	l	10 <sup>12</sup> /l	4.00	/	5.70
HGB	74	L	g/l	140	/	180
HCT	0.220	L	l/l	0.420	/	0.540
MCV	83.3		fl	80.0	/	100.0
MCH	28.0		pg	26.0	/	34.0
MCHC	336		g/l	310	/	365
RDW	17.4	h	%	10.0	/	16.0
PLT	392		10 <sup>9</sup> /l	150	/	400
MPV	8.2		fl	7.0	/	11.0
PCT	0.321		cl/l	0.100	/	0.500
PDW	15.0		%	10.0	/	18.0



FLAGS: FR1 LEUCOCYTOSIS LYMPHOCYTOSIS MONOCYTOSIS GRANULOCYTOSIS ANEMIA MICROCYTES ANISOCYTOSIS

### 2.3 Sysmex XP300



#### Findings MQ 2017-3 H3B 30 year old woman

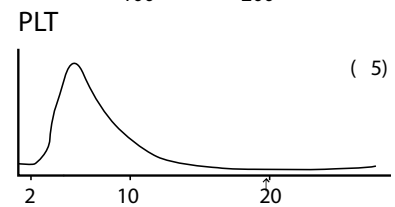
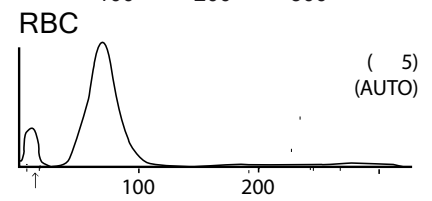
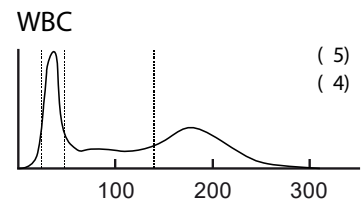
WBC	+ 16.3	$10^3/\mu\text{L}$	<p>WBC</p>
RBC	- 2.55	$10^6/\mu\text{L}$	
HGB	- 7.4	g/dL	
HCT	- 22.4	%	
MCV	88.6	fL	
MCH	29.0	pg	
MCHC	32.7	g/dL	
PLT	+ 414	$10^3/\mu\text{L}$	<p>RBC</p>
LYM%	31.2	%	
MXD%	+ 14.6	%	
NEUT%	54.2	%	
LYM#	+ 5.1	$10^3/\mu\text{L}$	
MXD#	+ 2.4	$10^3/\mu\text{L}$	<p>PLT</p>
NEUT#	+ 8.8	$10^3/\mu\text{L}$	
RDW_SD	+ 59.1	fL	
RDW_CV	+ 18.8	%	
PDW	10.1	fL	
MPV	9.2	fL	
P_LCR	18.1	%	
PCT	+ 0.38	%	

## 2.4 Nihon Coden



### Findings MQ 2017-3 H3B 30 year old woman

WBC :	17.3	H	10 <sup>3</sup> /uL
RBC :	2.58	L	10 <sup>6</sup> /uL
HGB :	7.8	L	g/dL
HCT :	22.7	L	%
MCV :	88.0		fL
MCH:	30.2		Pg
MCHC :	34.4		10 <sup>9</sup> /L
PLT:	404	H	10 <sup>12</sup> /L
LY:	7.4	H	[20.8 %]
MO:	0.6		[3.6 %]
GR :	9.3	H	[75.6H %]
RDWCV:	15.6		%
RDWSD:	54.9		fL
PCT:	0.32		%
MPV:	8.0		fL
PDW:	16.5		%



## 2.5 Sysmex XE-5000

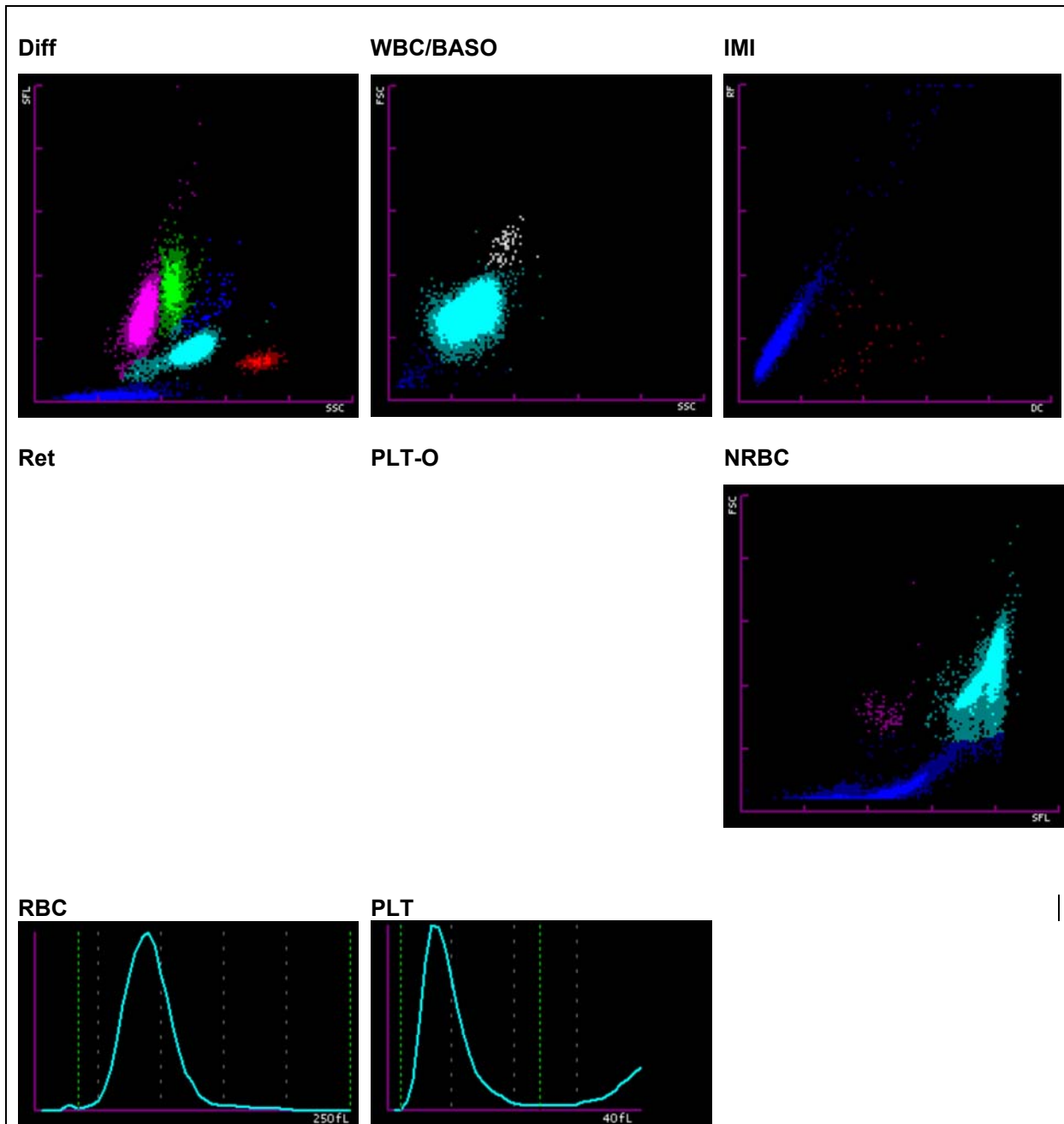


### Findings MQ 2017-3 H3B

30 year old woman

Analysis	Result	Unit	Reference value
<b>Blood Count</b>			
Hemoglobin	* 72	g/l	117-153
Hematocrit	* 0.227	l/l	0.350-0.460
Erythrocytes	* 2.54	T/l	3.9-5.2
MCV	89.4	fl	80-100
MCH	28.3	pg	26-34
MCHC	317	g/l	310-360
Mikrocytes	* 19.9	%	11.0-14.8
Thrombocytes	399	G/l	143-400
Leucocytes	* 16.76	G/l	3.0-9.6
<b>Leucocyte Differentiation</b>			
Neutrophils	* 9.02	G/l	1.40-8.00
Monocytes	* 2.30	G/l	0.16-0.95
Eosinophils	0.44	G/l	0.00-0.70
Basophils	0.07	G/l	0.00-0.15
Lymphocytes	* 29.4	G/l	1.50-4.00
IG abs.	* 0.10	G/l	0.00-0.03
IG %	* 0.6	%	0.0-0.5
NRBC abs.	0.13	G/l	
NRBC	0.8	/100 Lc	

Findings HAD MQ 2017-3 H3B

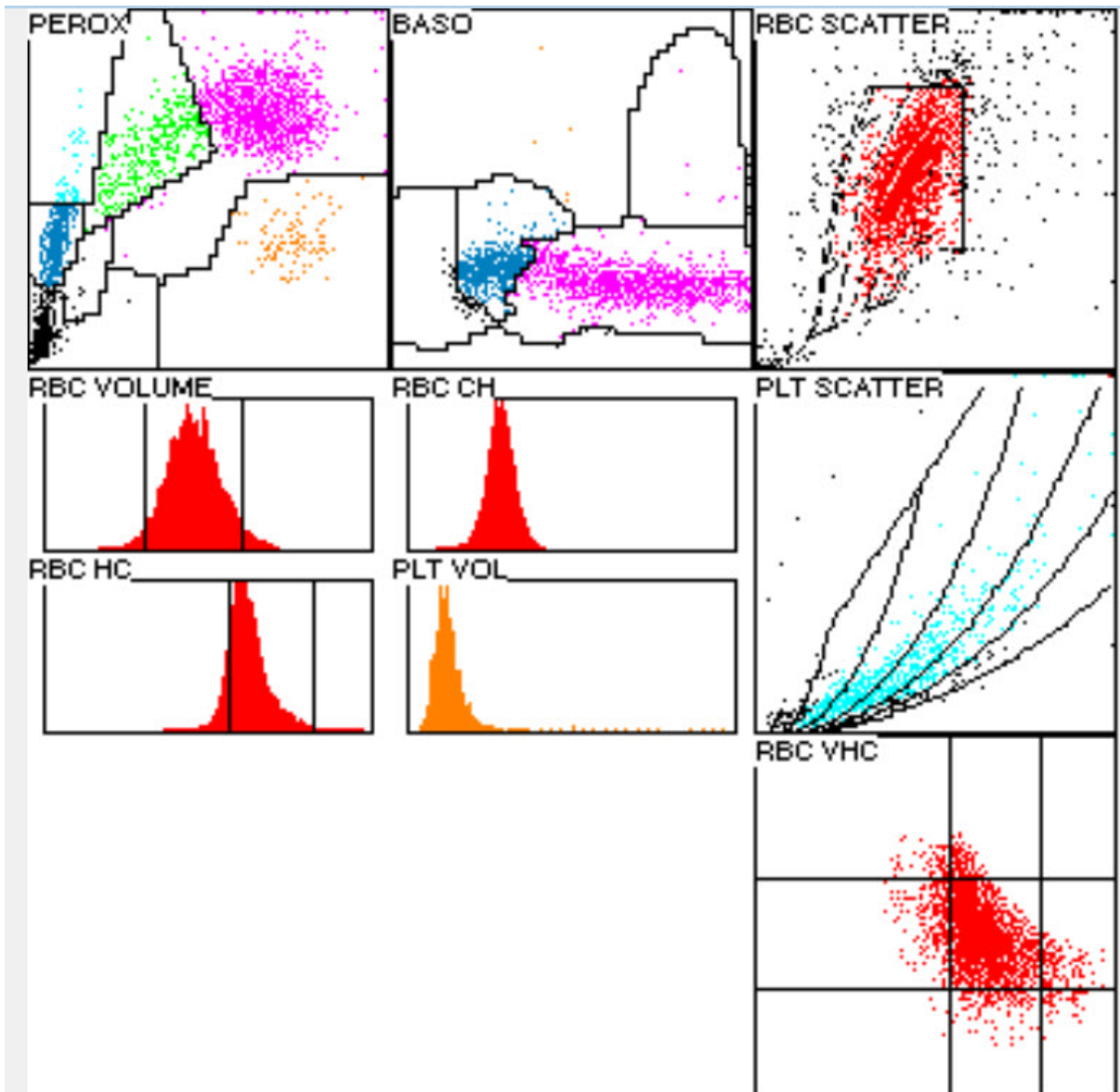


## 2.6 ADVIA 2120



### Findings HAD MQ 2017-3 H3B 30 year old woman

Analysis		Result	Unit	Reference value
<b>Blood Count</b>				
Hemoglobin	*	74	g/l	134-170
Hematocrit	*	0.229	l/l	0.400-0.500
Erythrocytes	*	2.51	T/l	4.2-5.7
MCV		91.2	fl	80-100
MCH		29.6	pg	26-34
MCHC		324	g/l	310-360
Mikrocytes	*	2.5	%	0-2.0
Makrocytes	*	3.6	%	0-2.0
Hypochromic Ec	*	12.2	%	0-2.0
Hyerchromic Ec		1.0	%	0-2.0
RDW	*	18.0	%	11.0-0-14.8
Thrombocytes	*	409	G/l	143-400
Vd. L-SHIFT		0	+	Keine (0)
Leukocytes	*	16.41	G/l	3.0-9.6
<b>Leucocytes Differentiation</b>				
Neutrophils	*	9.17	G/l	1.40-8.00
Monocytes	*	1.52	G/l	0.16-0.95
Eosinophils		0.39	G/l	0.00-0.70
Basophils		0.2	G/l	0.00-0.15
Lymphocytes		30.9	G/l	1.50-4.00
LUC		1.4	%	0.0-4.0



## 2.7 Differential Blood Smear

### Findings MQ 2017-3 H3B

30 year old woman

Analysis	Result	Unit	Reference value
<b>Leucocytes Differentiation</b>			
Neutrophils total		G/l	1.40-8.00
Monocytes	* 9.17	G/l	0.16-0.95
Eosinophils	* 1.52	G/l	0.00-0.70
Basophils	0.39	G/l	0.00-0.15
Lymphocytes	0.04	G/l	1.50-4.00
Neutrophils total	* 5.07	%	40.0-74.0
Neutrophils Band	53.5	%	0.0-20.0
Neutrophils Segmented	5.5	%	30.0-50.0
Monocytes	48.0	%	3.4-9.0
Eosinophils	* 10.0	%	0.0-7.0
Basophils	2.0	%	0.0-1.5
Lymphocytes	1.5	%	19.0-48.0
Plasmacells	33.0	%	0-0.5
Blasts	0.0	%	0
Promyelocytes	0.0	%	0
Myelocytes	0.0	%	0
Metamyelocytes	0.0	%	0

### Commentary

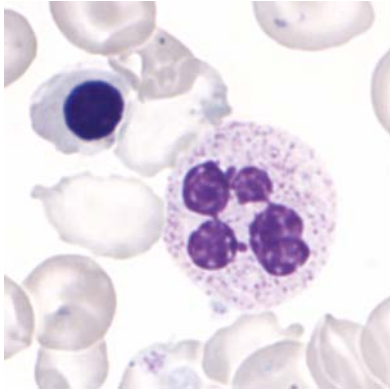
The red blood picture is mildly hypochromic and anisocytic, with a few micro- and macrocytes, discrete polychromasia. Mild poikilocytosis with a few acanthocytes, target-cells and 1-3 sickle cells per high power field 1.0 erythroblasts/100 leukocytes.

No erythrocytic inclusions seen. Neutrophil granulocytes with fine cytoplasmic granulation.

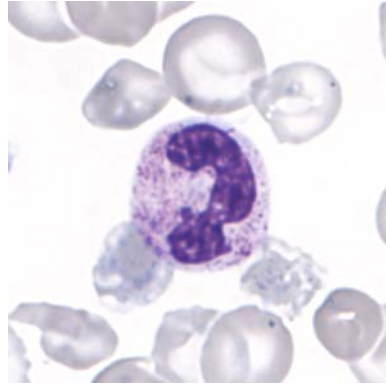
Thrombocytes are mildly anisocytic. No giant forms seen.

K. Schreiber / PD. Dr. St. Balabanov

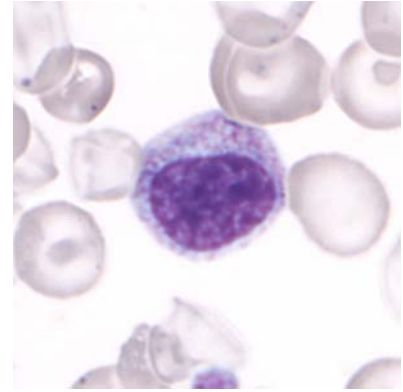




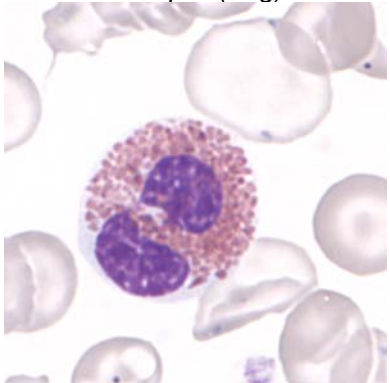
*Abb 1. Neutrophil (Seg)*



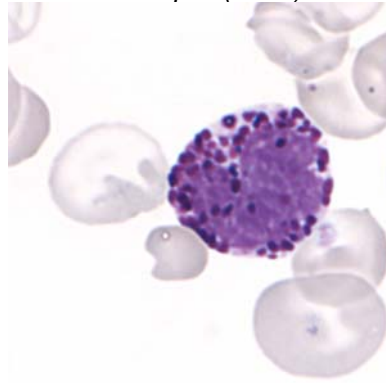
*Abb 2. Neutrophil (Band)*



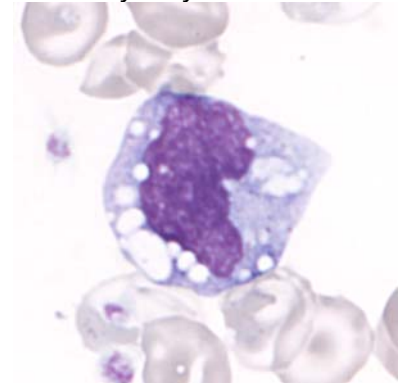
*Abb 3. Myelocyte*



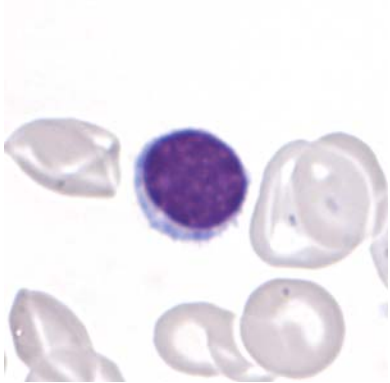
*Abb 4. Eosinophil*



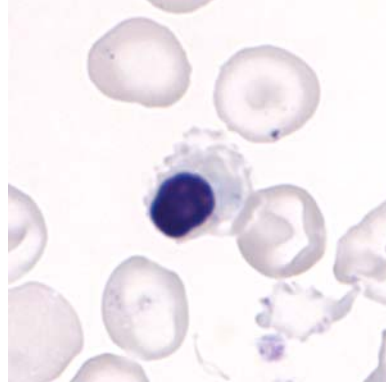
*Abb 5. Basophil*



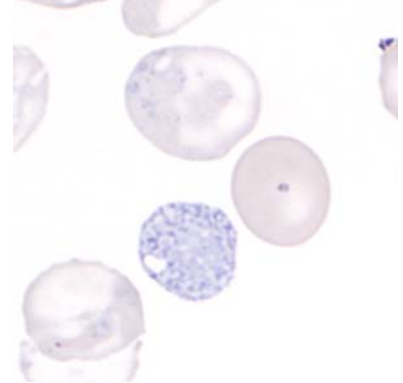
*Abb 6. Monocyte*



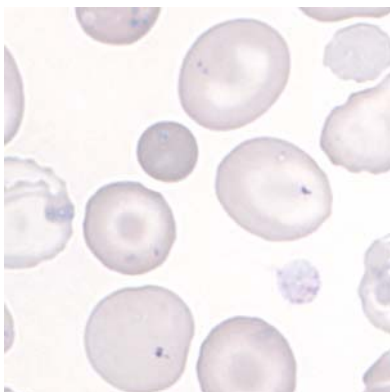
*Abb 7. Lymphocyte*



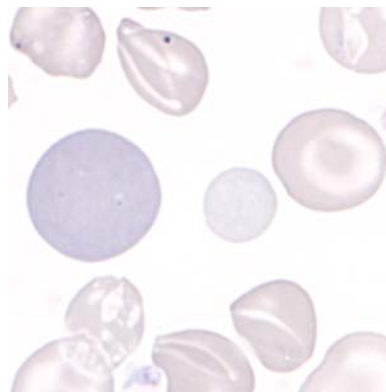
*Abb 8. Erythroblast*



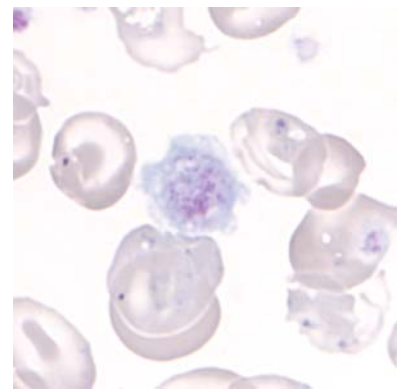
*Abb 9. basophilic stippling*



*Abb 10. Anisocytosis, Target cells*



*Abb 11. Polychromasia*



*Abb 12. Giant Thrombocyte*

## Summary of participant results

### Leukocyte Differential H3-B

	<1	1-4	5-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	>79
<i>Neutrophils Band</i>	v	163	101	23	3						
<i>Neutrophils Segmented.</i>	1	6	16	200	84	3					
<i>Eosinophils</i>	222	88									
<i>Basophile</i>	287	23									
<i>Monocytes</i>	92	63	19	14	5	5	3	13	67	28	1
<i>Lymphocytes</i>	8	88	140	30	3	1	2	3	6	13	16
<i>Plasmacells</i>	305	4									1
<i>Blasts</i>	139	51	29	11	3	2	5	9	25	25	11
<i>Promyelocytes</i>	252	36	7	6	3	1	1	1	1	2	0
<i>Myelocytes</i>	208	49	14	2	4	1	4	8	7	12	1
<i>Metamyelocyten</i>	241	47	13	4	3	1	1				
<i>Erythrocytes Nucleated</i>	280	29							1		
<i>Unknown</i>	272	2	3	3		2	1	5	9	8	5
<i>Smudge cells</i>	274	15	7	12	1			1			

### Evaluation H3-B

	<i>light</i>	<i>medium</i>	<i>strong</i>		<i>light</i>	<i>medium</i>	<i>strong</i>
<i>Hypersegmentation</i>	56	30	4	<i>Hypochromic Ec</i>	63	101	47
<i>Pelger-Hüet Anomaly</i>	7			<i>Polychromatic Ec</i>	72	107	24
<i>Coarse Granulation</i>	58	16	1	<i>Anisocytes</i>	57	159	39
<i>Basophilic Stripling</i>	10	3		<i>Mikrocytes</i>	93	41	6
<i>Vacuoles</i>	36	13		<i>Makrocytes</i>	83	44	5
<i>Atypical Lymph, reactive</i>	55	27	4	<i>Megalocytes</i>	27	3	1
<i>Atypical Lymph, neoplastic</i>	10	1	2	<i>Poikilocytosis</i>	110	64	17
<i>Others</i>	16	11	3	<i>Ovalocytes</i>	108	29	1
				<i>Target Cells</i>	138	45	2
				<i>Akanthocytes</i>	62	7	
<i>Anisocytosis</i>	90	82	19	<i>Echinocytes</i>	49	14	1
<i>Megakaryocyte Nucleaus</i>	32	8	4	<i>Sickle Cells</i>	58	21	2
<i>Granulation</i>	24	9	7	<i>Fragmentocytes</i>	69	11	
<i>Others</i>	90	82	19	<i>Spherocytes</i>	23	4	
				<i>Stomatocytes</i>	26	2	
				<i>Basophilic Stripling</i>	72	24	4
				<i>Howell-Jolly Bodies</i>	79	28	9
				<i>Pappenheim Bodies</i>	22	43	9
				<i>Others</i>	9	0	1

### Commentary

Smear H3-B comes from a patient with homozygous sickle-cell disease (SCD), HbSS

## 2.8 Qualab Codes

Summary of the participant codes  
(Bold printed: expected codes)

Code	Text	Number
<b>30</b>	<b>Pathologic findings, refer to expert</b>	<b>235</b>
<b>15</b>	<b>Polychromatophilic Red Cells</b>	<b>126</b>
<b>14</b>	<b>Hypochromic Erythrocytes</b>	<b>125</b>
<b>19</b>	<b>Targetcells</b>	<b>69</b>
27	Erythrocytes, other	67
16	Poikilocytosis	63
<b>24</b>	<b>Howell-Jolly bodies</b>	<b>63</b>
9	Macrothrombocytes	49
31	Pathologic findings	46
1	Neutrophils, hypersegmentation of nucleus	42
5	Atypical lymphocytes, probably reactive	42
12	Microcytes	30
25	Basophilic strippling	29
13	Macrocytes	28
17	Elliptocytes/Ovalocytes	22
6	Atypical lymphocytes, probably neoplastic	17
20	Fragmentocytes	15
8	Leucocytes other:	12
22	Rouleaux	11
4	Neutrophils, Toxic Changes	10
11	Thrombocytes, others	8
29	Normal findings	7
2	Neutrophils, left shift	6
18	Stomatocytes	5
26	Teardrops	4
10	Thrombocyte aggregates	3
21	Spherocytes	2
28	Parasites	1
99	Pathologic findings, refer to expert	308
30	Total	235