

# Hodnocení výsledků KO

Bourková L., OKH FN Brno

# Obecná pravidla pro měření

- pravidelná kontrola KO i dif
- kontrola správnosti (firemní materiál)
- kontrola přesnosti (vitální krev)
- správná údržba přístroje

- 
- *správný odběr do K2EDTA, K3EDTA, Na2EDTA*

*Pozor na: stáří vzorku, vzhled vzorku - chilózní, ikterický...*

# Obecná pravidla pro hodnocení

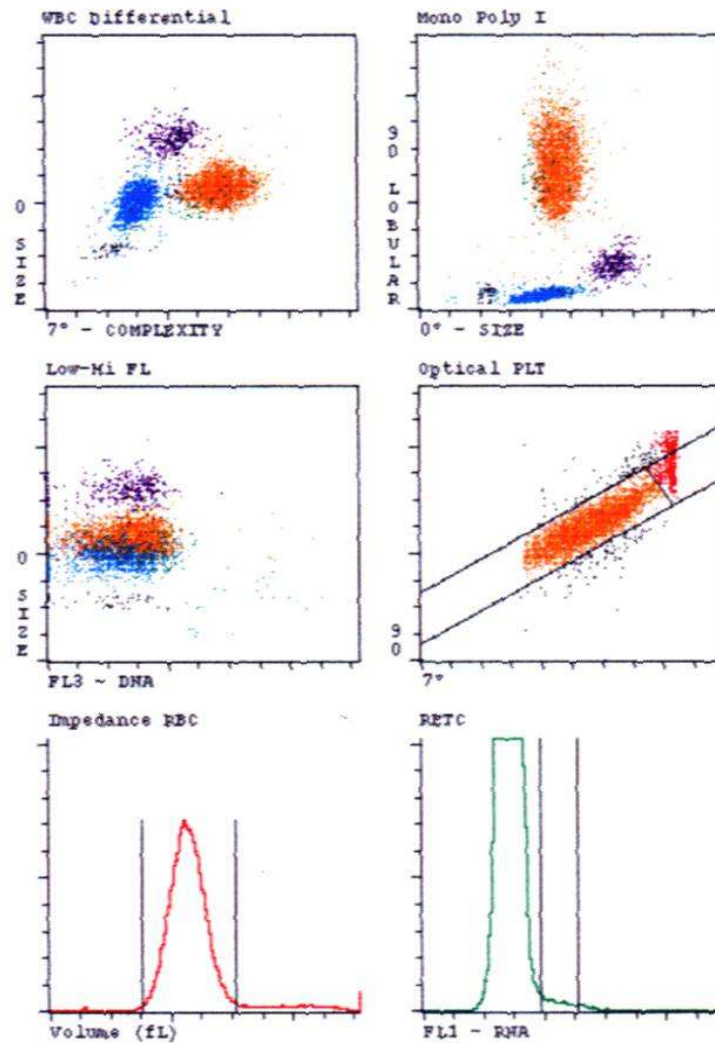
- specifická pravidla pro daný analyzátor:
  - princip měření
  - rozsah hodnot měřených parametrů (linearita)
  - hlášení přístroje
  - měřený / počítaný parametr, grafy
- klinická hlediska:
  - diagnóza
  - léčba
  - historie pacienta (LIS, četnost měření)

# Normální vzorek

Sequence #: 703 Autoloader r38t06  
 Patient/Human  
 Specimen ID: 020003255  
 Name:

Test Selection: CBC+RETC  
 Param Set(Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 04.10.99 13:34

X-B In	WBC In	RBC In	PLT In	RETC In
WBC	7.88 10e9/L	WVF	.992	
SEG	4.73	%S	60.1	
BAND	0.00	%BD	0.00	
IG	0.00	%IG	0.00	
BLST	0.00	%BL	0.00	
MONe	.483	%Me	6.12	
EOS	.186	%E	2.37	
BASO	.051	%B	.641	
LYMe	2.43	%Le	30.8	
VARL	0.00	%VL	0.00	
RBC	5.22 10e12/L	RBCo	5.12	
HGB	9.38 mmol/L			
HCT	49.0 %			
MCV	93.9 fL			
MCH	1.80 fco1			
MCHC	19.2 mmol/L			
RDW	12.4 %CV			
RETC	71.7 10e9/L	%R	1.38	
IRF	.221			
NRBC	0.00 10e9/L	NR/W	0.00	
PLTo	229. 10e9/L	PLTi	239.	
MPV	9.59 fL	CD61	----	
PDW	16.7 10(GSD)	PLTs	----	
PCT	2.19 mL/L	PLTl	----	

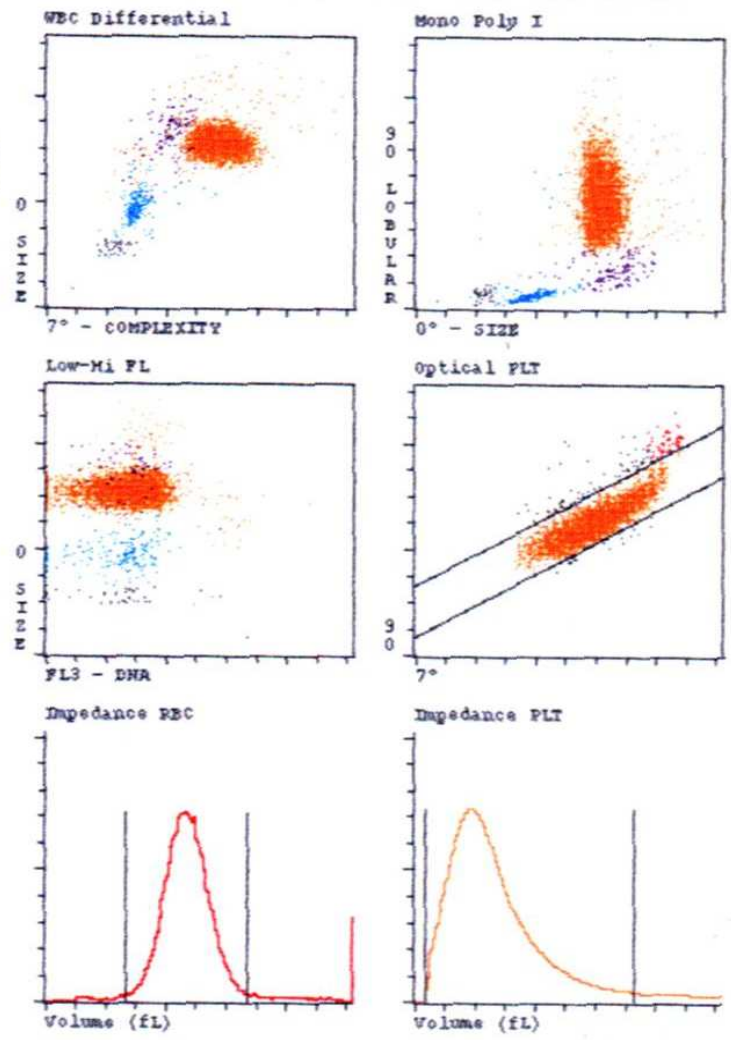


# Infekce

Sequence #: 7967 Autoloader r04t02  
 Patient/Human  
 Specimen ID: 031273  
 Name:

Test Selection: CBC  
 Param Set(Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 30.04.99 08:58

X-B In	WBC 1 Out	RBC In	PLT In	RETC In	
WBC	31.0 10e9/L	WVF	.990		
SEG	17.8	%S	57.5		
BAND	9.14	%BD	29.5	BAND	.83
IG	2.06	%IG	6.65	IG	.81
BLST	0.00	%BL	0.00		
MONe	.637	%Me	2.06		
EOS	.043	%E	.139		
BASO	0.00	%B	0.00		
LYMe	1.29	%Le	4.16		
VARL	0.00	%VL	0.00		
RBC	3.39 10e12/L	RBCo	3.45		
HGB	6.49 mmol/L				
HCT	33.2 %				
MCV	98.0 fL				
MCH	1.91 fmoI				
MCHC	19.5 mmol/L				
RDW	15.3 %CV				
RETC	---- 10e9/L	%R	----		
IRF	----				
NRBC	0.00 10e3/uL	NR/W	0.00		
PLTo	305. 10e9/L	PLTi	305.		
MPV	9.00 fL				
PDW	14.7 10(GSD)				
PCT	2.74 mL/L				



# Starý vzorek

sequence #: 1448 Autoloader r93t08  
 specimen Type/SubType: Patient/Human  
 specimen ID: JJ5312  
 name:

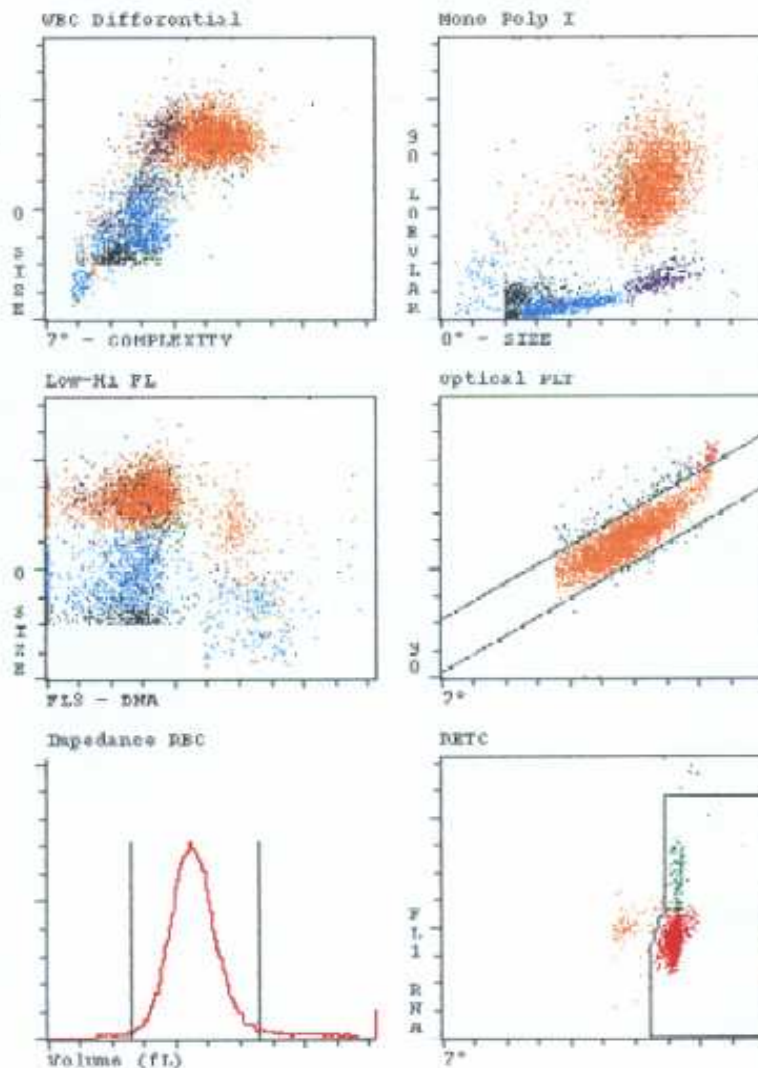
Test Selection: CBC+RETC  
 Param Set(Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 28/10/98 17:16

WBC	8.30	10e3/uL	WVF	.890	nvWBC
ES	3.39		%S	40.8	
AND	2.11		%BD	25.4	BAND
%	.551		%IG	6.64	IG
LST	0.00		%BL	0.00	
ONE	.489		%Me	5.89	
OS	.105		%E	1.26	
ASO	.017		%B	.204	
YMe	1.65		%Le	19.8	
ARL	0.00		%VL	0.00	

BC	3.19	10e6/uL	RBCo	3.34
GB	9.82	g/dL		
CT	30.3	%		
CV	95.0	fL		
CH	30.8	pg		
CHC	32.4	g/dL		
DW	15.6	%		
ETC	60.6s	10e3/uL	%R	1.90s
RF	.490			IR
RBC	0.00	10e3/uL	NR/W	0.00

PLT	361.	10e3/uL	PLTi	329.
MPV	10.9	fL		
PDW	15.3	10(GSD)		
PCT	.395	%		

WBC Differential	RBC Morphology		
ES	META	NORMAL	MICRO
AND	MYELO	POLYCH	MACRO
MPH	PRO	HYPOCH	ANISO
ENO	BLAST	POIK	BASOSTIP
CSIN	VAR LYM	TARGET	
ISO	TOXGRAN	SPHERO	NRBC



# Satelitůza trombocytů

Sequence #: 9427 Open Tube  
 Specimen Type/SubType: Patient/Human  
 Specimen ID: gruyters  
 Name:

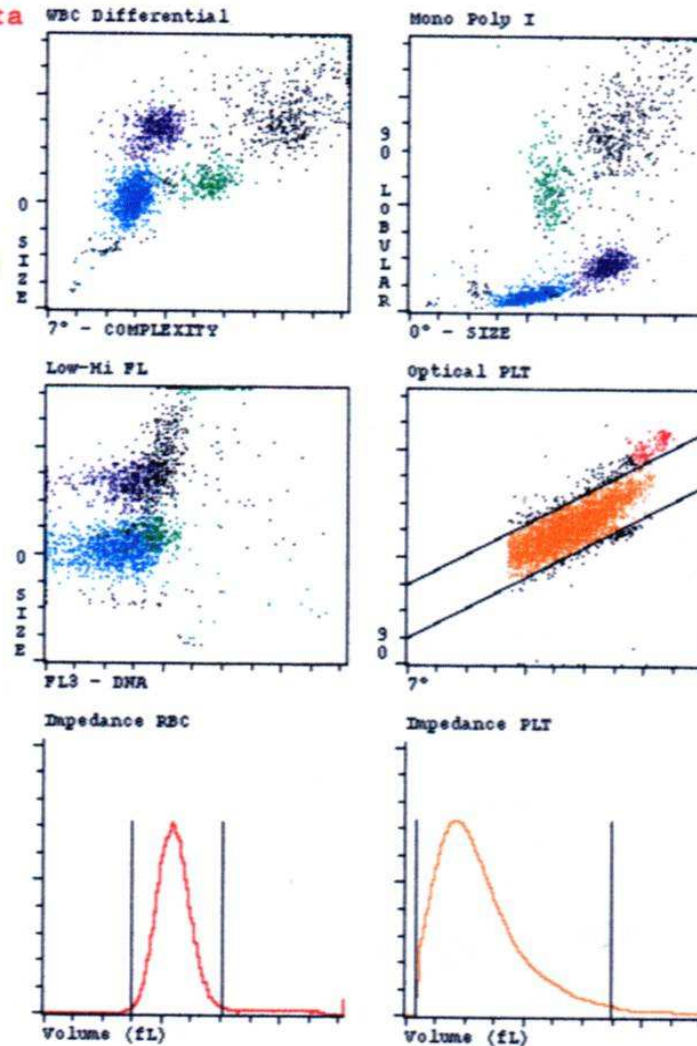
Test Selection: CBC  
 Param Set(Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 26/01/99 17:44

**\*InvalidData**

WBC	3.20*10e9/L	WVF	.954*
NEU	0.00*	%N	0.00*
LYM	2.00*	%L	62.6*
MONO	.663*	%M	20.7*
EOS	.512*	%E	16.0*
BASO	.023*	%B	.732*

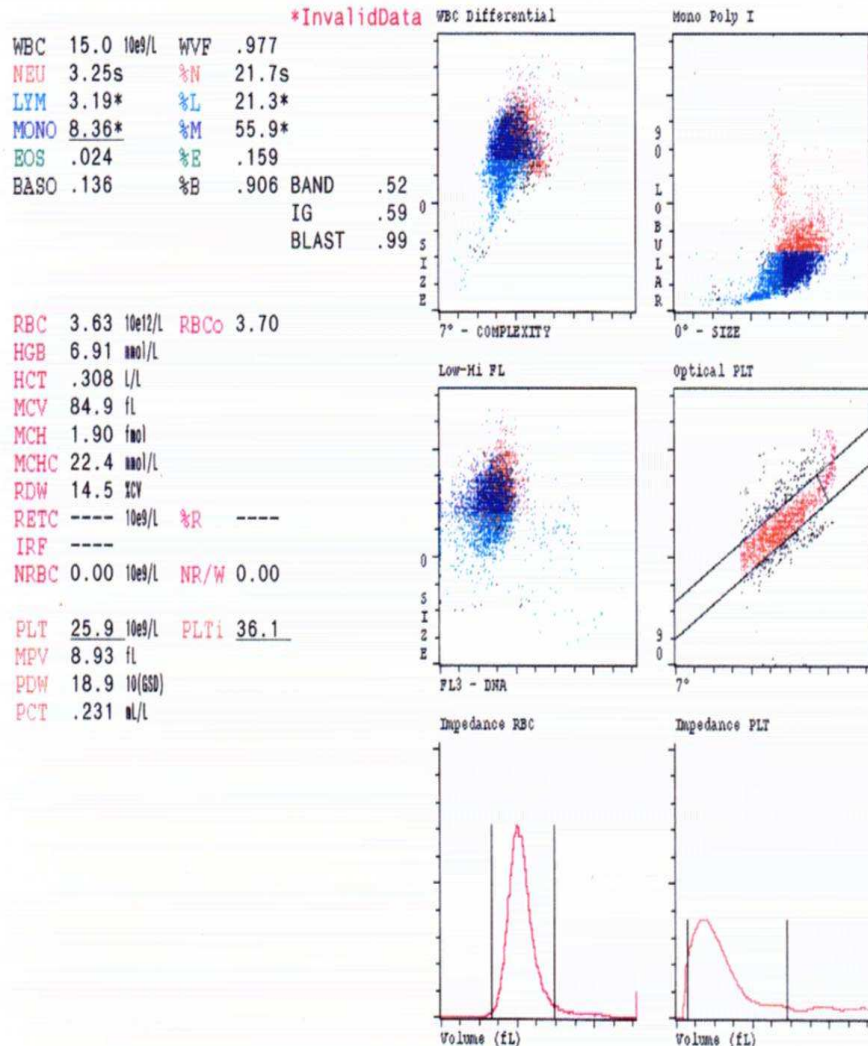
VARLYM .50

RBC	5.00	10e12/L	RBCo	4.84
HGB	9.50	mmol/L		
HCT	.455	L/L		
MCV	91.0	fL		
MCH	1.90	fmol		
MCHC	20.9	mmol/L		
RDW	12.4	%CV		
RETC	----	10e9/L	%R	----
IRF	----			
NRBC	0.00*10e9/L	NR/W	0.00*	
PLT	156.	10e9/L	PLTi	162.
MPV	8.48	fL		
PDW	16.9	10(GSD)		
PCT	1.32	mL/L		



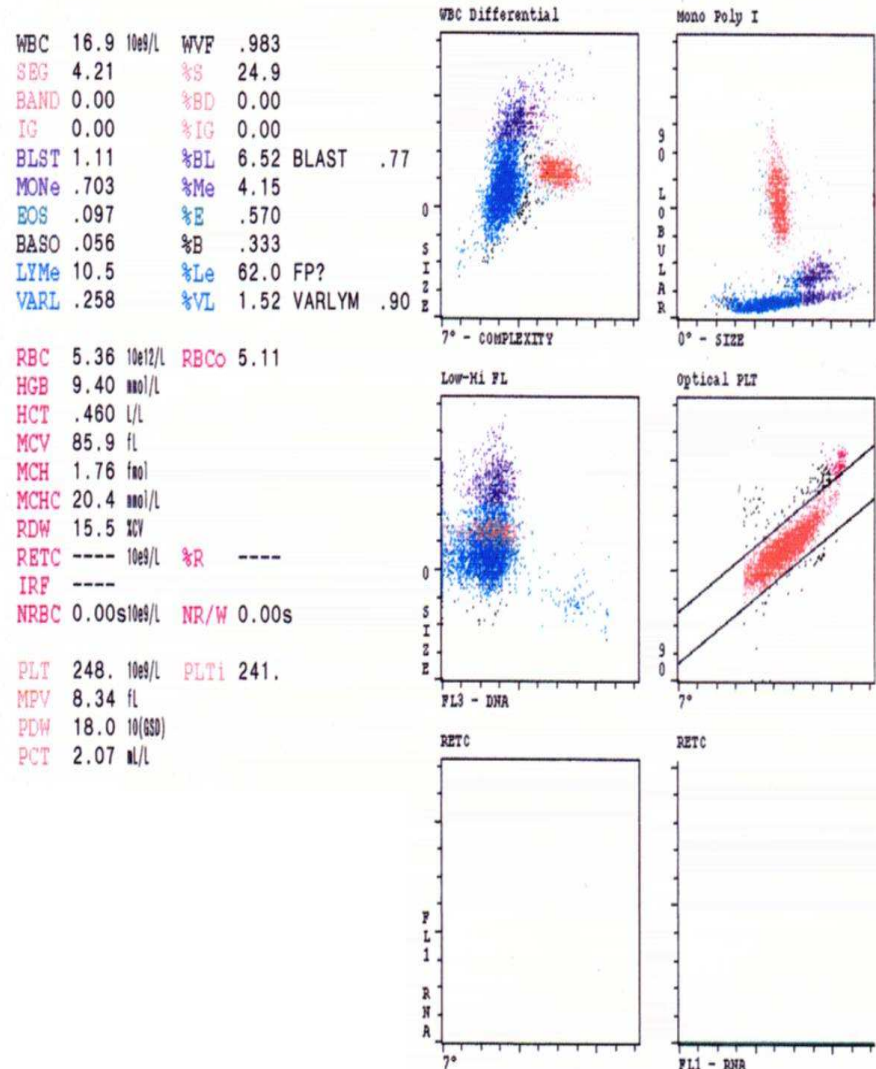
# Monoblasty

Sequence #: 2830 Open Tube  
 Specimen Type/SubType: Patient/Human  
 Specimen ID:  
 Name:  
 Test Selection: CBC  
 Param Set(from Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 03/06/98 10:13



# Mononukleóza

Sequence #: 3556 Auto loader  
 Specimen Type/SubType: Patient/Human  
 Specimen ID: 05374  
 Name:  
 Test Selection: CBC  
 Param Set(from Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 08/09/97 14:33





# Chronická lymfatická leukémie

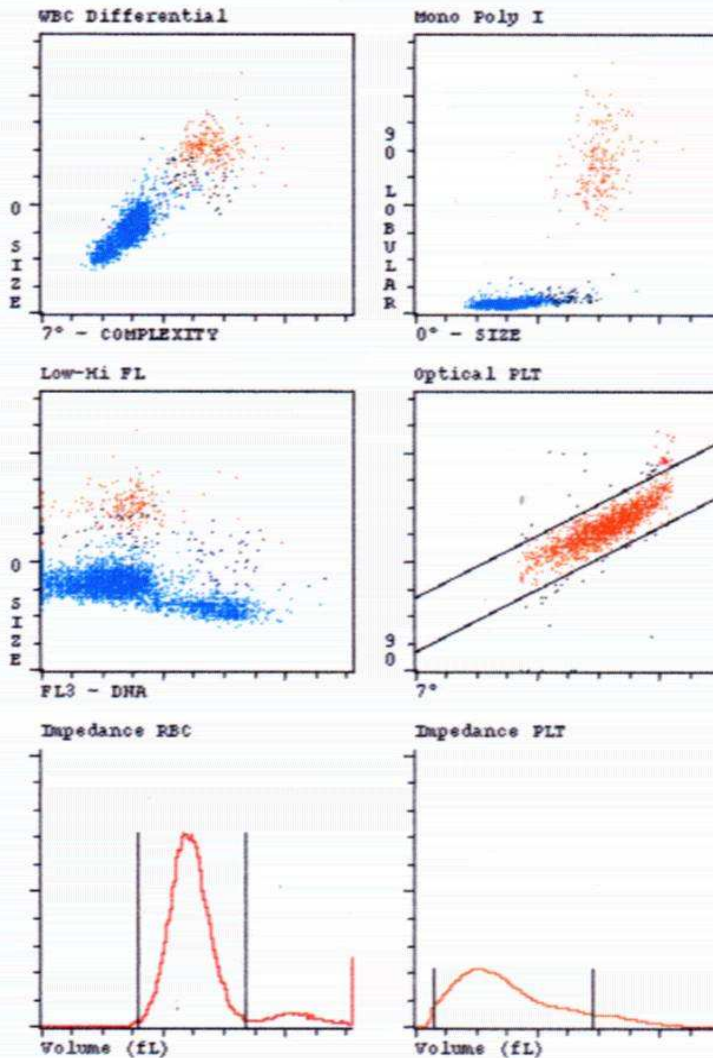
Sequence #: 3706 Autoloader r08t02  
 Patient/Human  
 Specimen ID: 990914696018  
 Name:

Test Selection: CBC  
 Param Set(Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 22/09/99 13:20

X-B	WBC	RBC	PLT	RETC
In	2 Out	In	In	In
WBC	207.10e9/L	WVF	.843	nvWBC
NEU	8.76	%N	4.24	
LYM	195.s	%L	94.3s	
MONO	1.62	%M	.782	
EOS	0.00	%E	0.00	
BASO	1.34	%B	.647	

VARLYM .80

RBC	3.80	10e12/L	RBCo	3.79
HGB	7.31	mmol/L		
HCT	.376	L/L		
MCV	98.9	fL		
MCH	1.92	fmol		
MCHC	19.5	mmol/L		
RDW	12.9	%CV		
RETC	----	10e9/L	%R	----
IRF	----			
NRBC	0.00	10e9/L	NR/W	0.00
PLTo	47.8	10e9/L	PLTi	42.9
MPV	9.81	fL		
PDW	17.0	10(GSD)		
PCT	.469	nL/L		

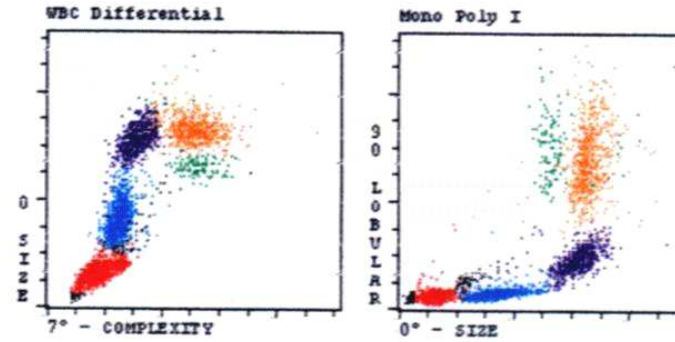


# NRBC ve vzorku

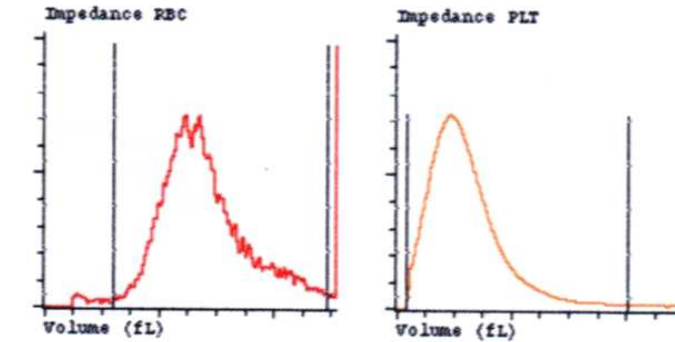
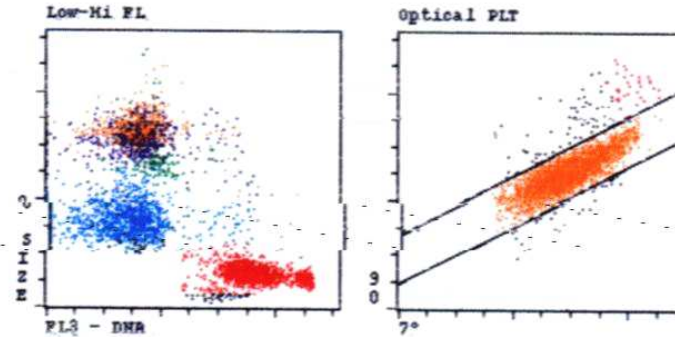
Sequence #: 7677 Open Tube  
 Patient/Human  
 Specimen ID: 990812880018  
 Name:

Test Selection: CBC+R  
 Param Set(Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 22/08/99 20:54

X-B In	WBC In	RBC In	PLT In	RETC In
WBC	7.73 10e9/L	WVF	.957	
NEU	1.86	%N	24.1	
LYM	3.74	%L	48.4	
MONO	1.78	%M	23.1	
EOS	.326	%E	4.22	
BASO	.020	%B	.258	



RBC	1.22s10e12/L	RBCo	1.28
HGB	3.23 mmol/L		
HCT	.141sl/L		ASYM
MCV	115.sfl		
MCH	2.65sfmol		
MCHC	23.0smmol/L		
RDW	26.5s%CV		
RETC	----- 10e9/L	%R	-----
IRF	-----		
NRBC	5.07 10e9/L	NR/W	65.6
PLTo	290. 10e9/L	PLTi	285.
MPV	8.31 fl		
PDW	14.6 10(GSD)		
PCT	2.41 mL/L		



# Vzorek po dialýze

# Po odstranění rstRBC

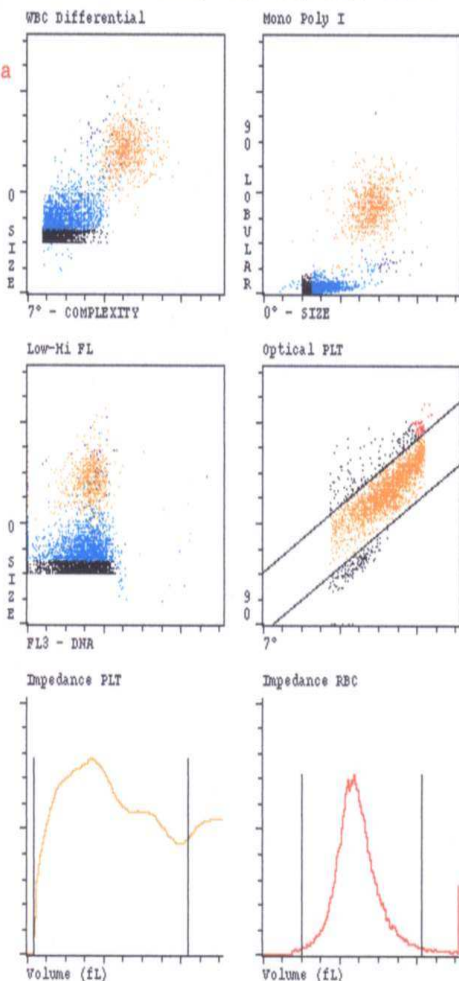
Sequence #: 4453 Auto-loader r91t07  
 Patient/Human  
 Specimen ID: JX6223  
 Name:  
 Test Selection: CBC+RETC  
 Param Set(Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 29/06/00 12:08

X-B In	WBC In	RBC -	PLT In	RETC In
WBC	15.0*10e9/L	WVF	.990*	
NEU	5.78*	%N	38.5*	
LYM	9.00*	%L	59.9*	
MONO	.214*	%M	1.43*	
EOS	.022*	%E	.149*	
BASO	0.00*	%B	0.00*	

VARLYM .60

RBC	3.78s10e12/L	RBCc	3.85
HGB	8.08 mmol/L		rstRBC
HCT	.395 L/L		
MCV	104. fL		
MCH	2.13 fmol		
MCHC	20.5 mmol/L		
RDW	21.9 %CV		
RETC	95.3s10e9/L	%R	2.52s
IRF	.335		IR
NRBC	0.00*10e9/L	NR/W	0.00*
PLTo	76.9 10e9/L	PLTi	90.3
MPV	16.6*fL	CD61	----
PDW	39.8*10(GSD)	PLTs	----
PCT	1.28*ml/L	PLTl	----

Manual Differential	'RBC Morphology		
SEG	'META	'NORMAL	'MICRO
BAND	'WYELD	'POLYCH	'MACRO
LYMPH	'PRO	'HYPOCH	'ANISO
MONO	'BLAST	'POIK	'BASOSTIP
EOSIN	'VAR LYM	'TARGET	
BASO	'TOXGRAN	'SPHERO	'NRBC
PLT EST	'PLT MORPH		
Comment:			
DIFF by:	Date:		



WBC Count Rate Violation  
 Resistant RBC Interference with WBC results  
 Unable to Find Clear Separation Between WBC Subpopulations  
 Lower, Upper, or Lower and Upper Region Interference in PLTi Histogram  
 Lower, Upper, or Lower and Upper Region Interference in PLTi Histogram

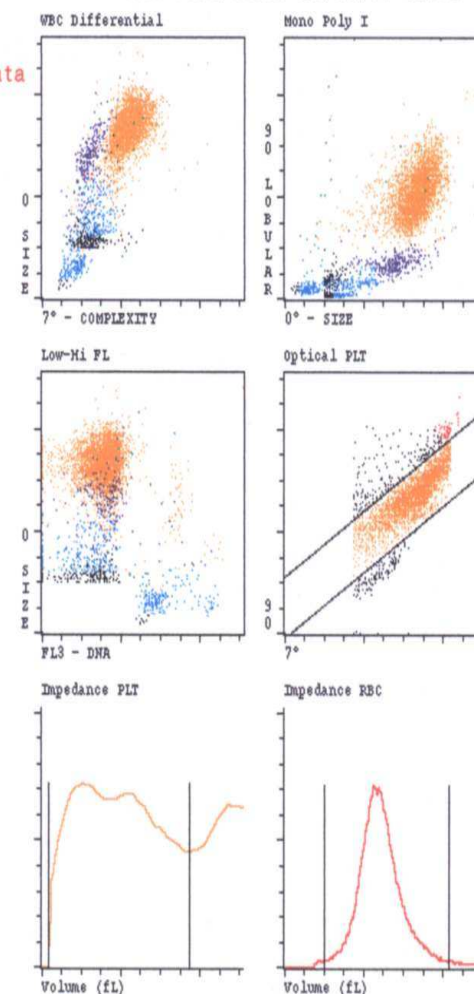
Sequence #: 4472 Auto-loader r94t09  
 Patient/Human  
 Specimen ID: JX6223  
 Name:  
 Test Selection: CBC+R  
 Param Set(Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 29/06/00 12:56

X-B In	WBC In	RBC -	PLT In	RETC In
WBC	6.47 10e9/L	WVF	.945	
NEU	5.55	%N	85.7	
LYM	.531	%L	8.21 FP?	
MONO	.364	%M	5.63	
EOS	.028	%E	.437	
BASO	.001	%B	.015	

\*InvalidData

RBC	3.74 10e12/L	RBCc	3.78
HGB	7.96 mmol/L		
HCT	.388 L/L		
MCV	104. fL		
MCH	2.13 fmol		
MCHC	20.5 mmol/L		
RDW	21.9 %CV		
RETC	----	%R	----
IRF	----		
NRBC	0.00s10e9/L	NR/W	0.00s
PLTo	75.2 10e9/L	PLTi	81.3
MPV	13.2*fL	CD61	----
PDW	19.7*10(GSD)	PLTs	----
PCT	.992*ml/L	PLTl	----

Manual Differential	'RBC Morphology		
SEG	'META	'NORMAL	'MICRO
BAND	'WYELD	'POLYCH	'MACRO
LYMPH	'PRO	'HYPOCH	'ANISO
MONO	'BLAST	'POIK	'BASOSTIP
EOSIN	'VAR LYM	'TARGET	
BASO	'TOXGRAN	'SPHERO	'NRBC
PLT EST	'PLT MORPH		
Comment:			
DIFF by:	Date:		



Lower, Upper, or Lower and Upper Region Interference in PLTi Histogram  
 Lower, Upper, or Lower and Upper Region Interference in PLTi Histogram

# Reakce na EDTA

Sequence #: 8950 Autoloader r06t03  
 Patient/Human  
 Specimen ID: 030074152  
 Name: KATINKA JOHA PETERSEN

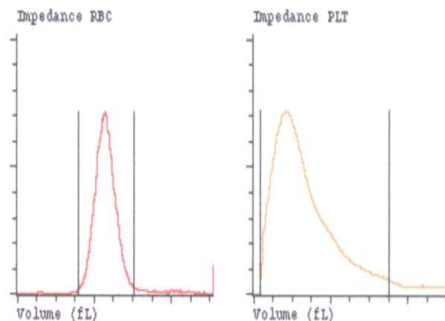
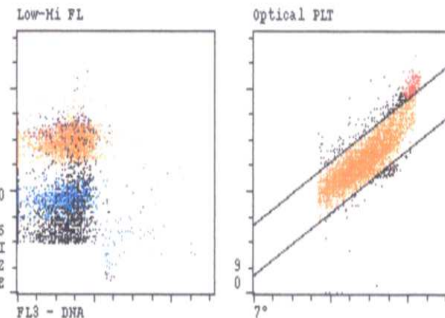
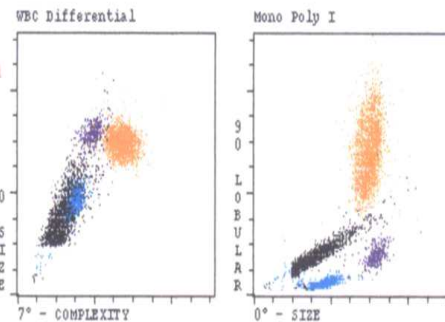
Test Selection: CBC  
 Param Set(Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 02.05.00 09:47

X-B In	WBC In	RBC In	PLT In	RETC In
	14.8	3.56	45.2	43.6
	10e9/L	10e12/L	10e9/L	10e9/L
	9.64	7.09	10.5	16.8
	%S	nmol/L	*fL	*10(GSD)
	0.00	33.0	15.2	1.18
	%BD	%	*10(GSD)	*mL/L
	0.00	92.8	1.18	
	%IG	fL		
	0.00	1.99		
	%BL	nmol		
	0.00*	21.5		
	%Me	nmol/L		
	8.54*	8.99		
	%E	fL		
	.109	15.2		
	%B	*10(GSD)		
	.068	1.18		
	%Le	*mL/L		
	26.4*FP?			
	%VL			
	0.00*VARLYM			
	.50			

RBC	HGB	HCT	MCV	MCH	MCHC	RDW	RETC	IRF	NRBC	PLT	MPV	PDW	PCT
3.56	7.09	33.0	92.8	1.99	21.5	11.3	43.6	.232	0.00	45.2	10.5	16.8	1.18
10e12/L	nmol/L	%	fL	fmol	nmol/L	scv	10e9/L		10e9/L	10e9/L	*fL	*10(GSD)	*mL/L
RBCo							%R		NR/W	PLTi	CD61	PLTs	PLT1
3.59							0.00s		0.00s	140.*PltClmp	----	----	----

Manual Differential	'RBC Morphology		
SEG	'META	'NORMAL	'MICRO
BAND	'MYELO	'POLYCH	'MACRO
LYMPH	'PRO	'HYPOCH	'ANISO
MONO	'BLAST	'POIK	'BASOSTIP
EOSIN	'VAR LYM	'TARGET	
BASO	'TOXGRAN	'SPHERO	'NRBC
PLT EST		'PLT MORPH	

Comment:



Unable to Find Clear Separation Between WBC Subpopulations  
 Significant Number of Cells Removed from WBC Differential Analysis  
 Interference with PLT Results Due to PLT Clumping

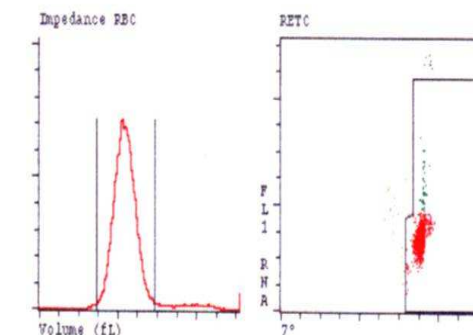
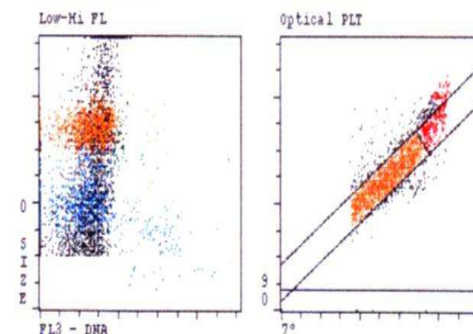
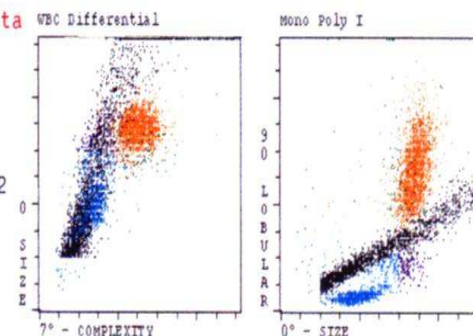
Sequence #: 2568  
 Specimen Type/SubType: Patient/Human  
 Specimen ID: IA5285  
 Name:

Test Selection: CBC+RETC  
 Param Set(from Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 22/01/97 12:17

Invalid Data

WBC	NEU	LYM	MONO	BASO	WVF	%N	%L	%M	%E	%B
6.46	4.14	1.87	0.257	0.00	.961	64.1	29.0	3.98	2.93	0.00
10e9/L	*	*	*	*	*	*	*	*	*	*

RBC	HGB	HCT	MCV	MCH	MCHC	RDW	RETC	IRF	NRBC	PLT	MPV	PDW	PCT
5.19	15.7	.454	87.5	30.2	34.6	12.1	43.6	.232	0.00	45.2	10.5	16.8	1.18
10e12/L	g/dL	L/L	fL	pg	g/dL	%	10e9/L		10e9/L	10e9/L	*fL	*10(GSD)	*mL/L
RBCo							%R		NR/W	PLTi			
5.28							.840		0.00*	49.6*PltClmp			



# ALL a fragmenty cytoplazmy

Sequence #: 2699 Autoloader r38t02  
 Patient/Human  
 Specimen ID: 000213479091  
 Name:

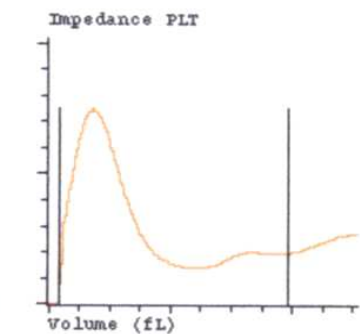
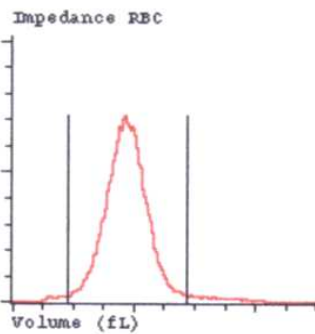
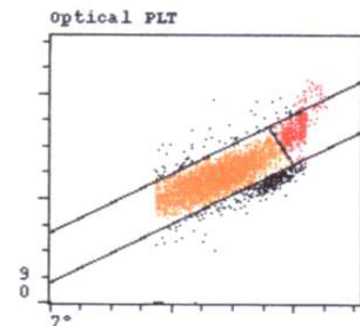
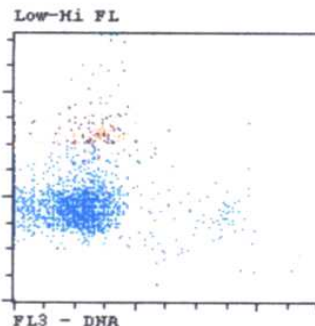
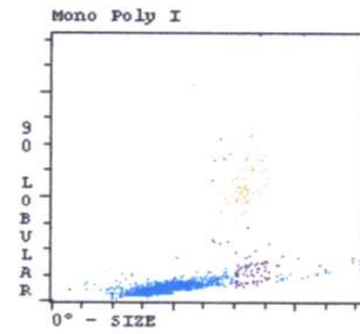
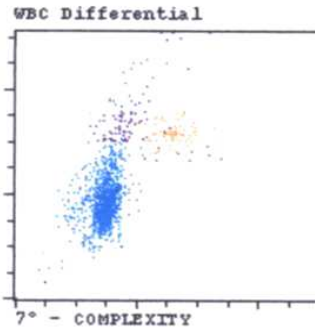
Test Selection: CBC  
 Param Set(Chart Page): 1  
 Limit Set: 1  
 Run Date/Time: 21/02/00 08:57

X-B In	WBC 2 Out	RBC In	PLT In	RETC In
WBC	3.36 10e9/L	WVF	.956	<b>*InvalidData</b>
NEU	.133	%N	3.95	
LYM	3.08s	%L	91.7s	
MONO	.136s	%M	4.05s	
EOS	.010	%E	.296	
BASO	0.00	%B	0.00	

BLAST .73  
 VARLYM .60

RBC	3.74 10e12/L	RBC <sub>o</sub>	3.78
HGB	5.81 mmol/L		
HCT	.287 L/L		
MCV	76.6 fl		
MCH	1.55 fmol		
MCHC	20.3 mmol/L		
RDW	17.9 %CV		
RETC	---- 10e9/L	%R	----
IRF	----		
NRBC	0.00 10e9/L	NR/W	0.00

PLT <sub>o</sub>	81.5*10e9/L	PLT <sub>i</sub>	131.*
MPV	5.41*fl	CD61	----
PDW	15.1*10(GSD)	PLT <sub>s</sub>	----
PCT	.441*ml/L	PLT <sub>l</sub>	----



Lower, Upper, or Lower and Upper Region Interference in PLTi Histogram  
 PIC/PDC Delta