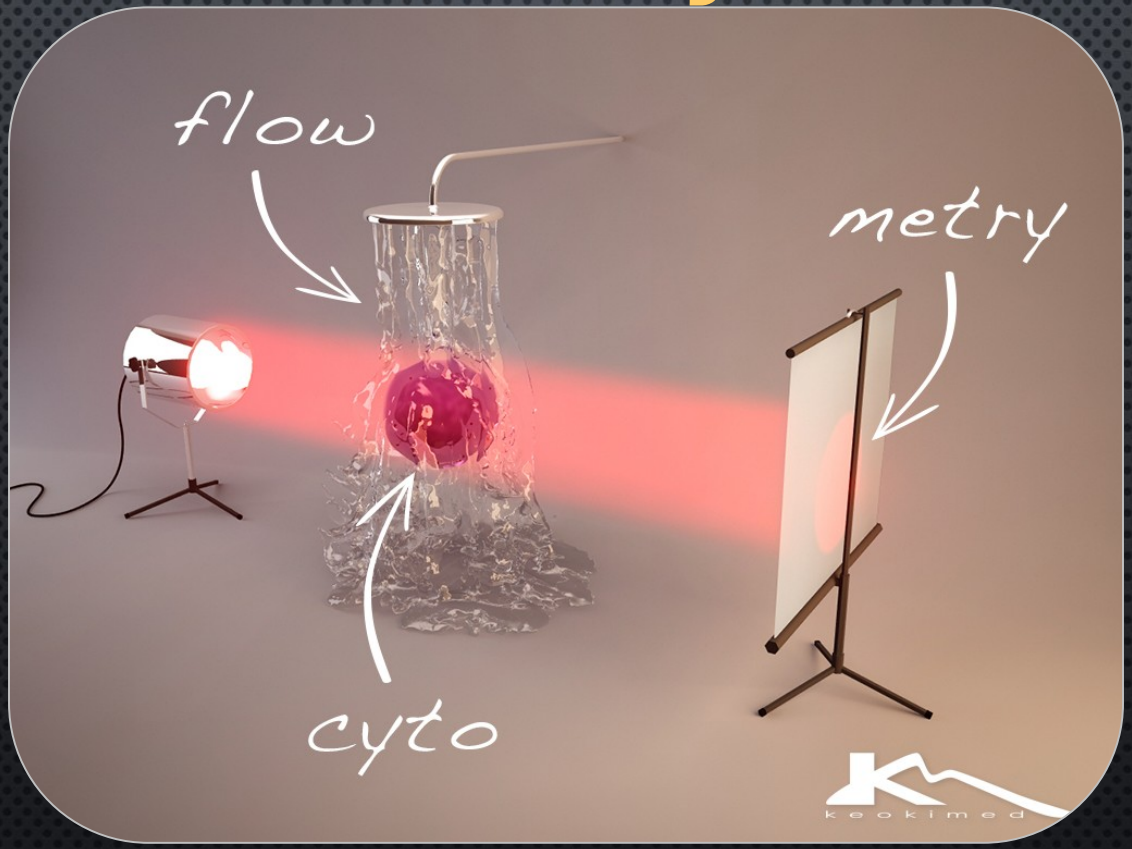
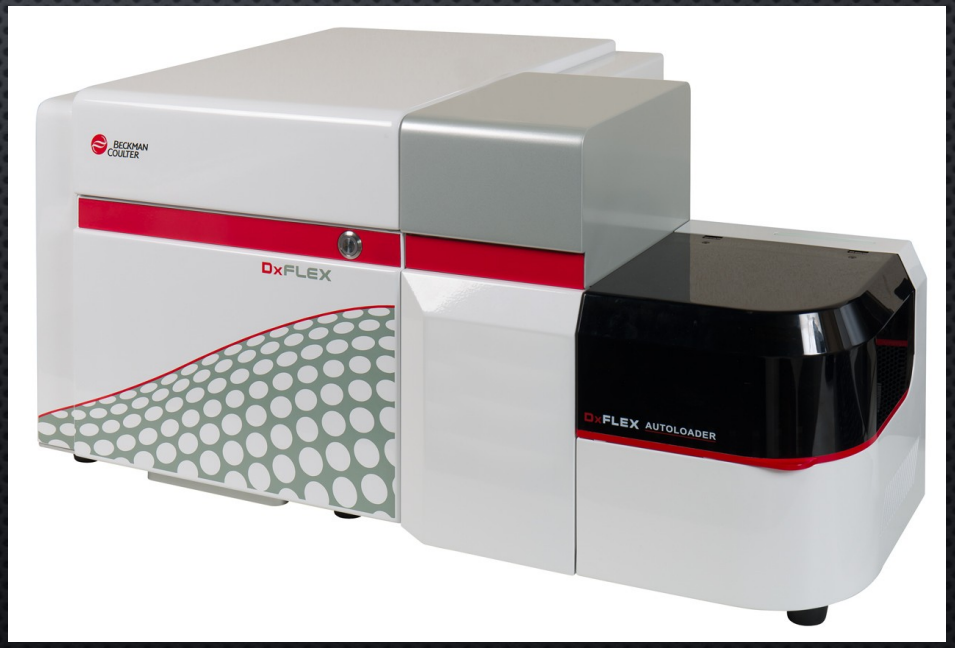
Diagnostické pasti a šedé zóny u lymfoproliferací v průtokové cytometrii



Ústav patologie a molekulární medicíny 2. LF UK FN Motol a Homolka **Jana Včeláková**

LABORATOŘ PRŮTOKOVÉ CYTOMETRIE PATOLOGIE FNMH

- Diagnostika dospělých pacientů
- Především lymfoproliferativní onemocnění a lymfomy
- Materiál:
  - nativní bioptický materiál
  - periferní krev
  - kostní dřeň
  - mozkomíšní mok
  - BAL (bronchoalveolární laváž)
  - Výpotek
- Přístroj : DxFlex (BC)



Značení: jednobarevné protilátky



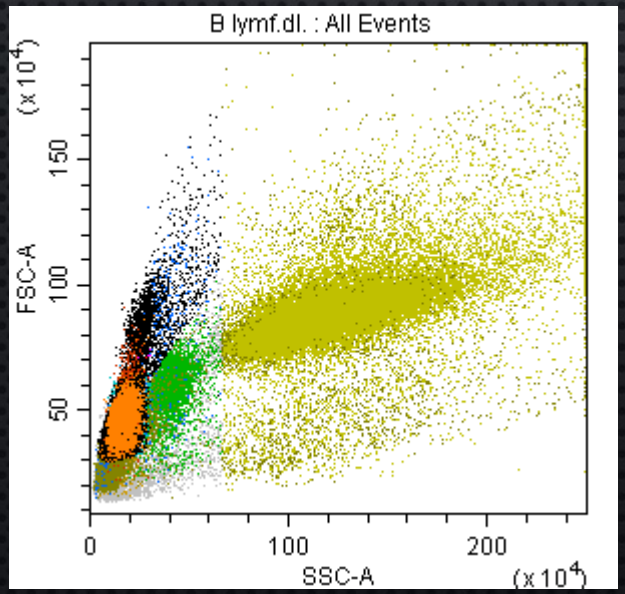
Definované panely

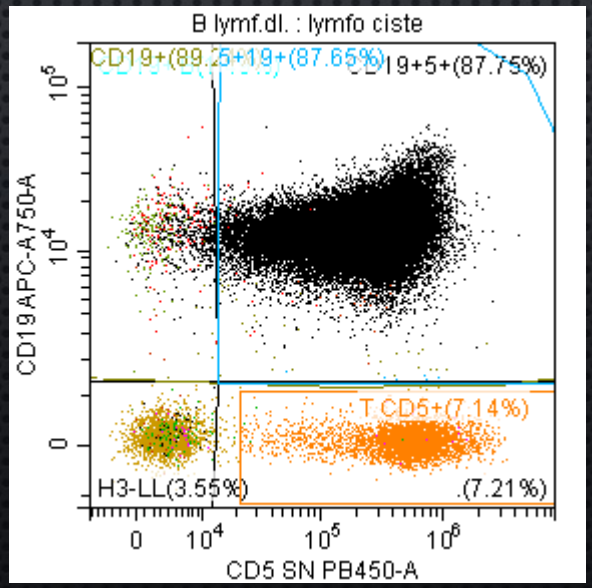
	FITC	PE	ECD	PC5.5	PC7	APC	APC-A700	APC-A750	PB450	KO525	Violet610	Violet660	Violet780
	Blue Laser Channels 488 nm Laser					Red Laser Channels 638 nm Laser			Violet Laser Channels 405nm Laser				
Detector	525/40 BP	585/42 BP	610/20 BP	690/50 BP	780/60 BP	660/10 BP	712/25 BP	780/60 BP	450/45 BP	525/40 BP	610/20 BP	660/10 BP	780/60 BP

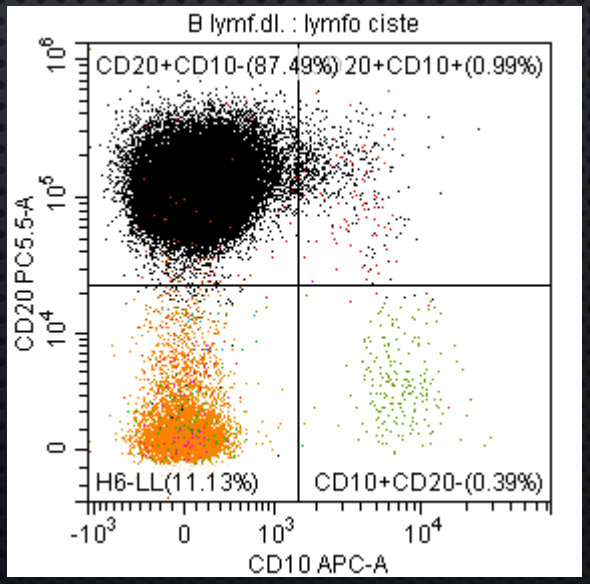
FITC	PE	ECD	PC 5.5	PC7	APC	APC-A700	APC-A750	PB/SN	KO
KAPPA	LAMBDA	CD14	CD20	CD38	CD10		CD19	CD5 SN	CD45
CD7	CD8	CD34	CD19	CD5	CD2	CD56	CD3	CD4 PB	CD45

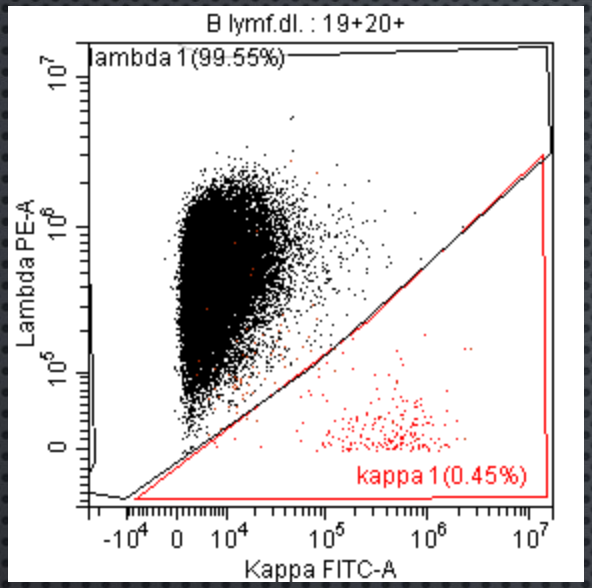
PACIENT 1

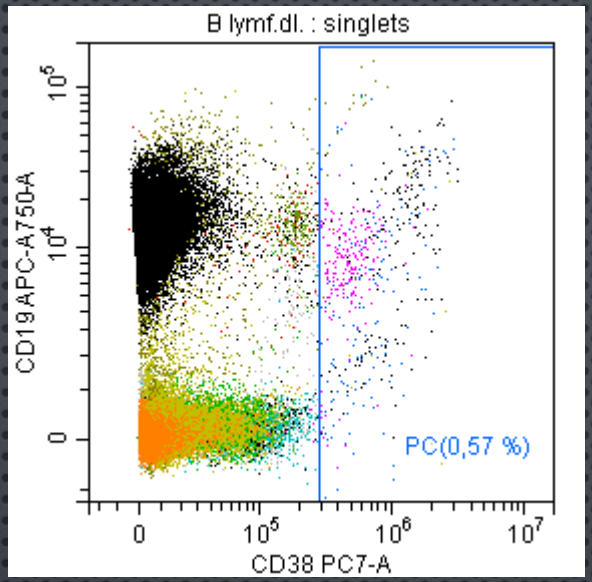
- Muž 64 let
- Hraniční velikost sleziny, zvětšená lymf. uzlina vlevo v radixu mezenteria. Hyperkalcémie, PPT IgM (2,6 g/l), dle CT lymfadenopatie mediastina a plicního hilu. Anamnesticky váhový úbytek, noční poty
- Kostní dřeň (SP)

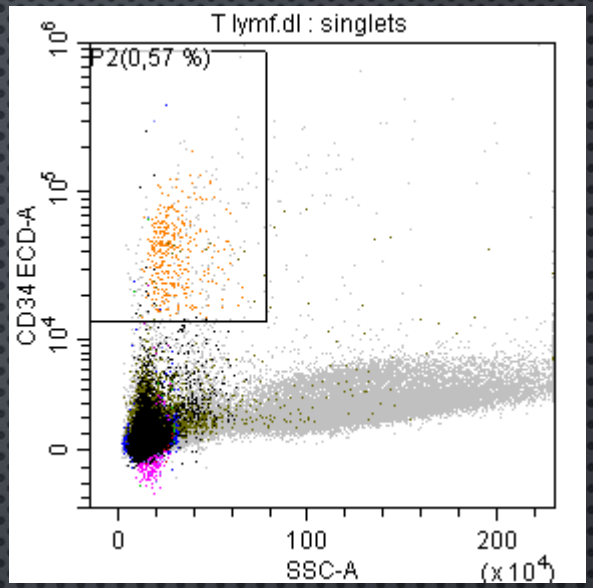


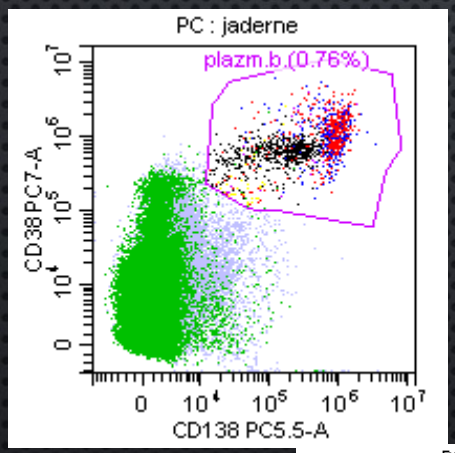


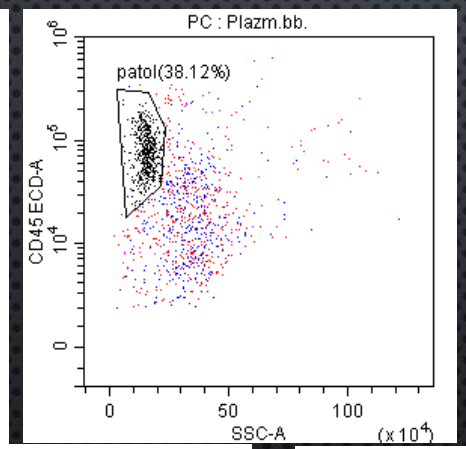


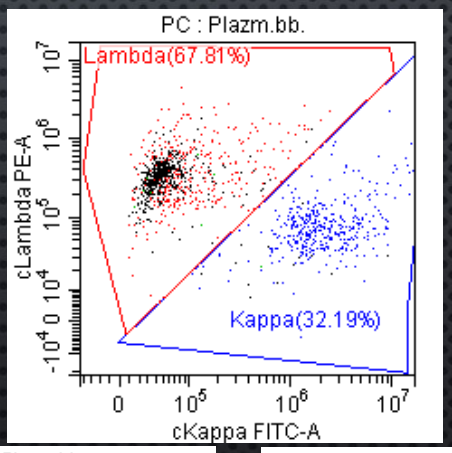

B lymf.dl. : 19+20+
lambda 1(99.55%)
kappa 1(0.45%)
Lambda PE-A
Kappa FITC-A

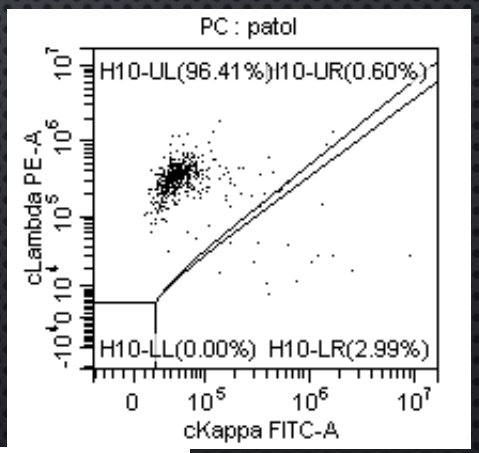

B lymf.dl. : singlets
PC(0,57 %)
CD19 APC-A750-A
CD38 PC7-A

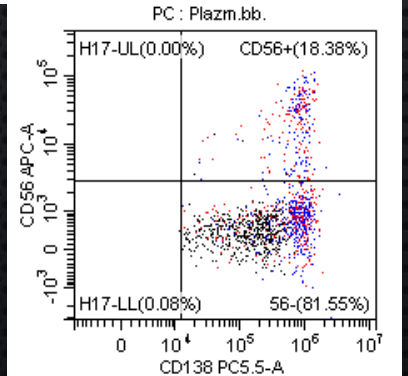

T lymf.dl : singlets
P2(0,57 %)
CD34 ECD-A
SSC-A
(x 10^4)

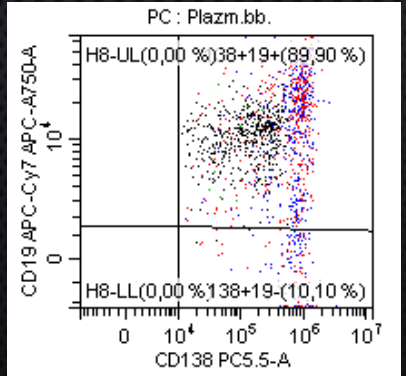

PC : jaderne
plazm.b (0.76%)
CD38 PC7-A
CD138 PC5.5-A

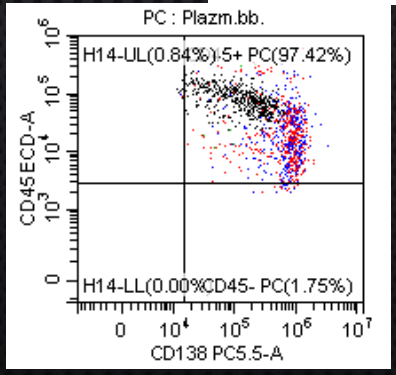

PC : Plazm.bb.
patol(38.12%)
CD45 ECD-A
SSC-A
(x 10^4)

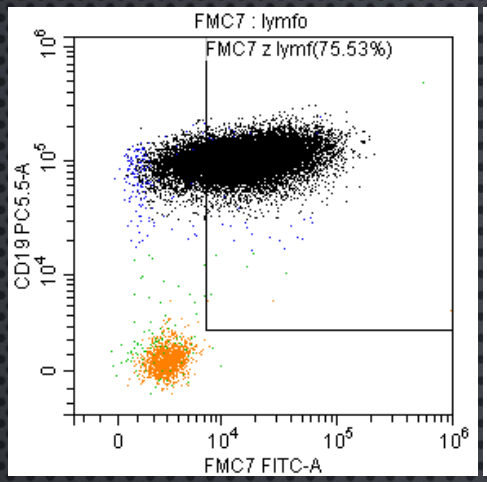

PC : Plazm.bb.
Lambda(67.81%)
Kappa(32.19%)
cLambda PE-A
cKappa FITC-A

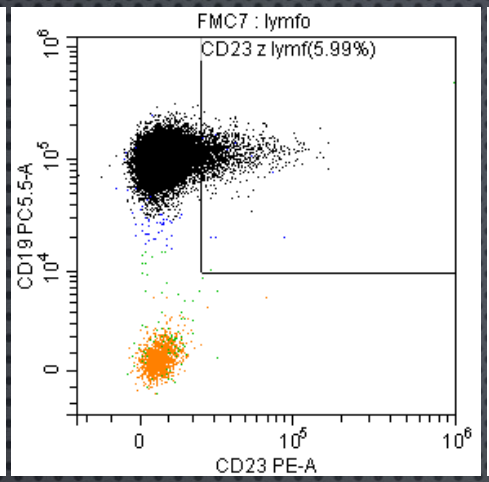

PC : patol
H10-UL(96.41%)
H10-UR(0.60%)
H10-LL(0.00%)
H10-LR(2.99%)
cLambda PE-A
cKappa FITC-A

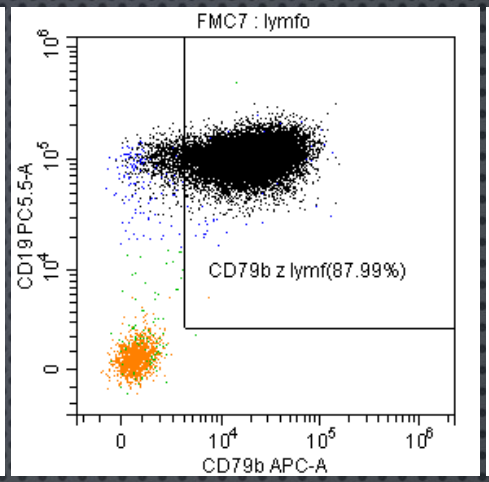

PC : Plazm.bb.
H17-UL(0.00%)
CD56+(18.38%)
H17-LL(0.08%)
56-(81.55%)
CD56 APC-A
CD138 PC5.5-A

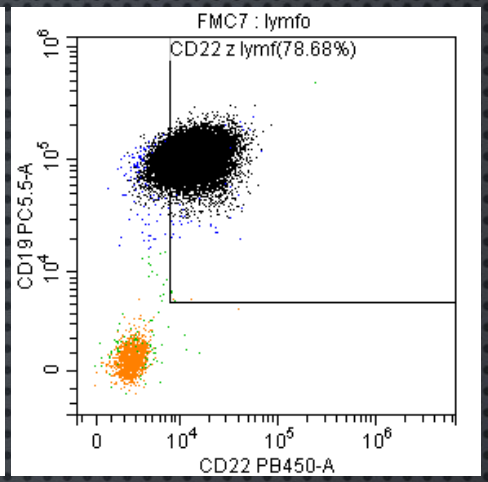

PC : Plazm.bb.
H8-UL(0,00 %)38+19+(89,90 %)
H8-LL(0,00 %)38+19-(10,10 %)
CD19 APC-Cy7 APC-A750-A
CD138 PC5.5-A

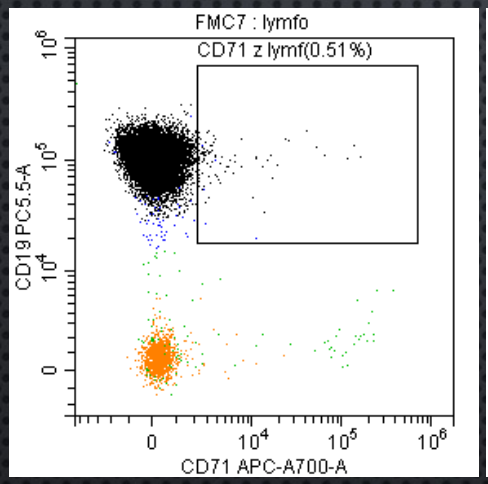

PC : Plazm.bb.
H14-UL(0.84%)5+ PC(97.42%)
H14-LL(0.00%CD45- PC(1.75%)
CD45 ECD-A
CD138 PC5.5-A

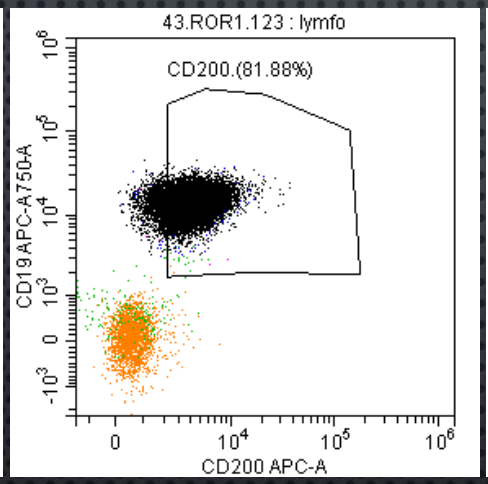

FMC7 : lymfo
FMC7 z lymf(75.53%)
CD19 PC5.5-A
FMC7 FITC-A

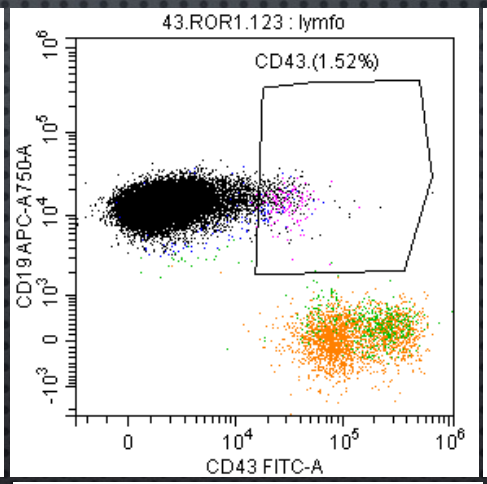

FMC7 : lymfo
CD23 z lymf(5.99%)
CD19 PC5.5-A
CD23 PE-A

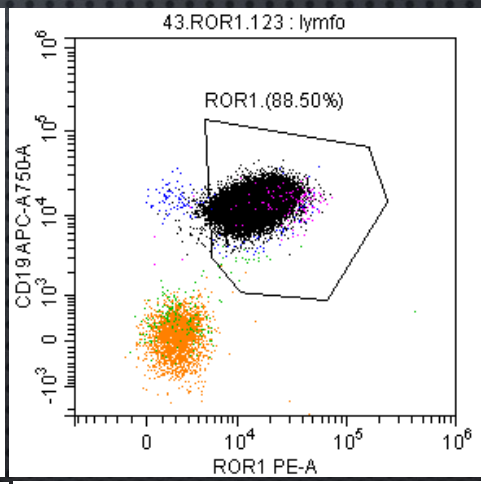

FMC7 : lymfo
CD79b z lymf(87.99%)
CD19 PC5.5-A
CD79b APC-A

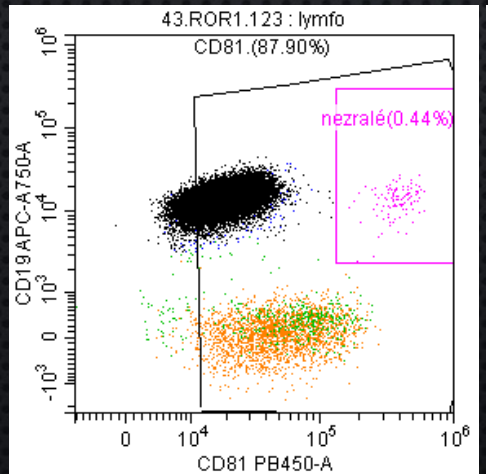

FMC7 : lymfo
CD22 z lymf(78.68%)
CD19 PC5.5-A
CD22 PB450-A

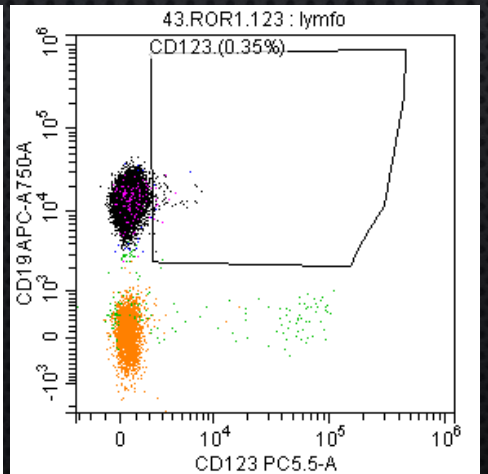

FMC7 : lymfo
CD71 z lymf(0.51%)
CD19 PC5.5-A
CD71 APC-A700-A

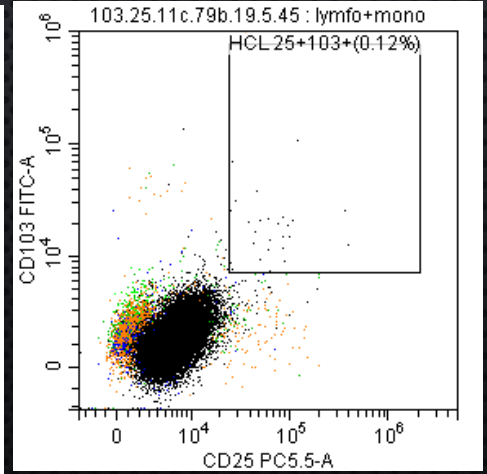

43.ROR1.123 : lymfo
CD200.(81.88%)
CD19 APC-A750-A
CD200 APC-A

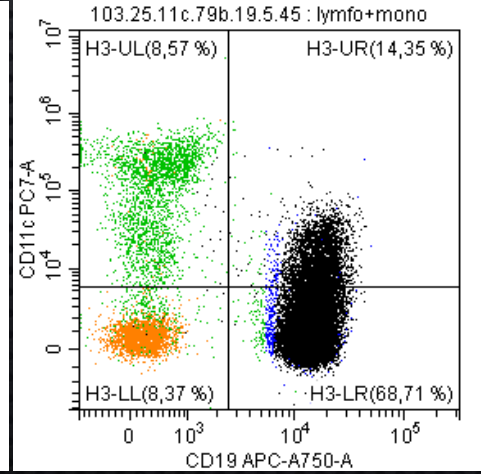

43.ROR1.123 : lymfo
CD43.(1.52%)
CD19 APC-A750-A
CD43 FITC-A

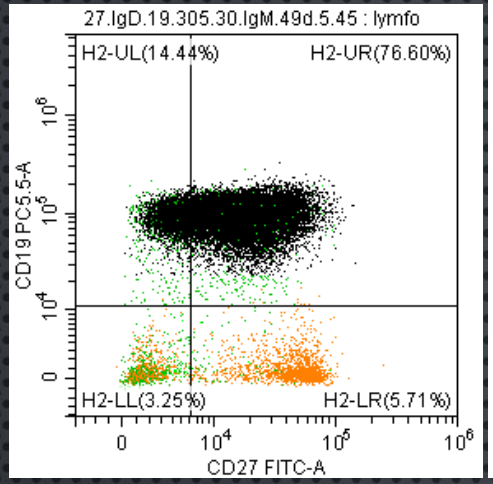

43.ROR1.123 : lymfo
ROR1.(88.50%)
CD19 APC-A750-A
ROR1 PE-A

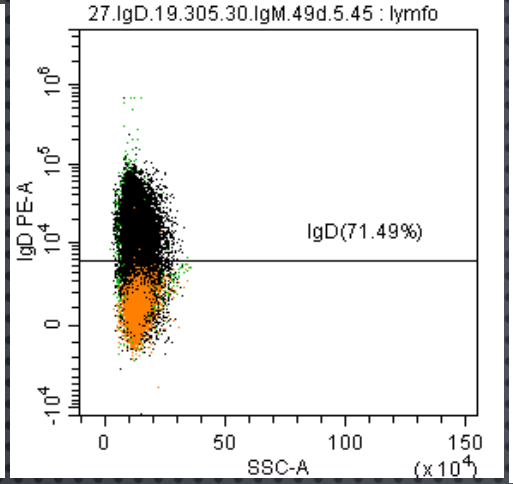

43.ROR1.123 : lymfo
CD81.(87.90%)
nezralé(0.44%)
CD19 APC-A750-A
CD81 PB450-A

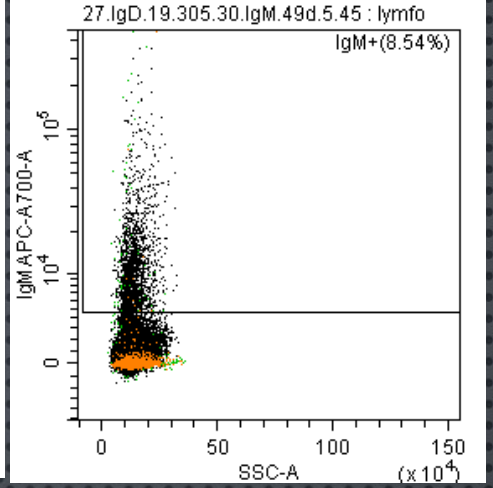

43.ROR1.123 : lymfo
CD123.(0.35%)
CD19 APC-A750-A
CD123 PC5.5-A

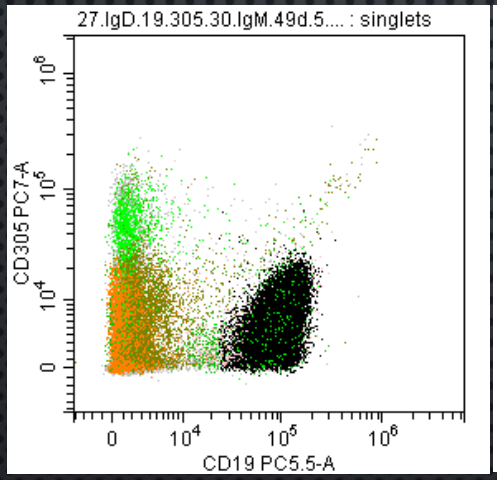

103.25.11c.79b.19.5.45 : lymfo+mono
HCL 25+103+(0.12%)
CD103 FITC-A
CD25 PC5.5-A

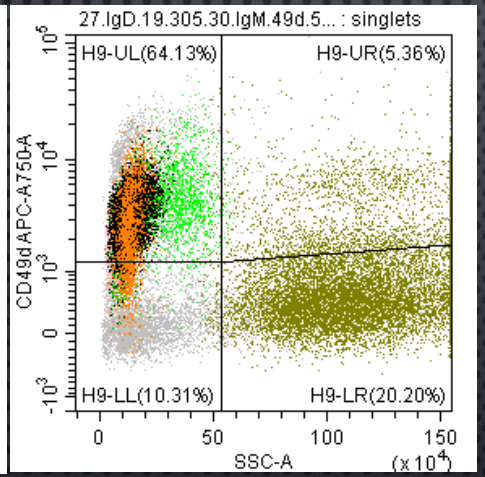

103.25.11c.79b.19.5.45 : lymfo+mono
H3-UL(8,57 %)
H3-UR(14,35 %)
H3-LL(8,37 %)
H3-LR(68,71 %)
CD11c PC7-A
CD19 APC-A750-A











CyklinD1: nádorové buňky negativní

SOX11: nádorové buňky negativní

Ki67: jaderná pozitivita kolem 10-15% nádorových buněk

nedetekovali přítomnost mutace p.(L265P) v genu MYD88

- Závěr z LU biopsie:

Infiltrace lymfatické uzliny lymfomem z marginální zóny (MZL) s plazmocytoidní diferenciací, s aberantní expresí CD5.

PACIENT 2

- Žena 79 let

- Invazivní high-grade (grade 3) papilární uroteliální karcinom ledvinné pánvičky, který iniciálně prorůstá do parenchymu ledviny.

- Sledována na urologii pro st.p. nefroktomii vpravo pro Ca (2020)-remise. Pravidelně UZ,CT (2025) břicha-bez nálezu, RTG S+P 2026-bez nálezu.
V KO již od r. 2023 mírná leuko/lymfocytóza.

ESR		10	mm/h	3-46
WBC	*	11.1	x10^9/l	4.0-10.0
RBC		4.76	x10^12/l	3.80-5.20
HGB		149	g/l	120-160
HCT		0.443	l/l	0.350-0.470
MCV		93.1	fl	82.0-98.0
MCH		31.3	pg	28.0-34.0
MCHC		336.3	g/l	320.0-360.0
RDW		13.8	%	10.0-15.2
PLT		328	x10^9/l	150-400
MPV		10.3	fl	7.8-12.8
PCT		0.340	%	0.120-0.350
PDW		11.9	fl	9.0-17.0
NRBC		viz mikr	%	
NRBC#			/ x10^9/l	0.000-0.000
Lymfocyty		0.320	--	0.200-0.450
Monocyty		0.050	--	0.020-0.100
Segmenty		0.600	--	0.470-0.700
Tyče		0.010	--	0.000-0.040
Bazofily	*	0.020	--	0.000-0.010
NRBC		0	/100WBC	0-0
Lymfocyty#		3.552	x10^9/l	0.800-4.000
Monocyty#		0.555	x10^9/l	0.080-1.000
Neutr(Se+Ty)#		6.771	x10^9/l	2.000-7.000
Eosinofily#			/ x10^9/l	0.000-0.500
Bazofily#	*	0.222	x10^9/l	0.000-0.100
P-LCR		27.2	%	15.0-35.0
RET		1.50	%	0.50-2.50
RET#		71.4	x10^9/l	25.0-100.0
RET-HGB		33.7	pg	28.0-36.0
RET-LFR		91.0	%	89.4-99.5
RET-MFR		8.4	%	1.8-14.4
RET-HFR		0.6	%	0.0-2.4
RET-IRF		9.00	%	2.40-17.50

***** Morfologie leukocytů: *****
polymorfni lymfocyty
***** Morfologie erytrocytů: *****
sférocyty;anizochromie
***** Morfologie trombocytů: *****
Pocet PLT mikroskopicky overen

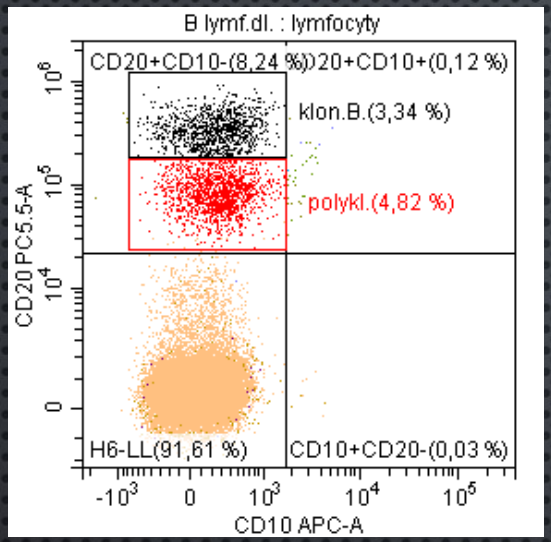
Sodný kation		140	mmol/l	137-144
Draselný kation		4,2	mmol/l	3,9-5,3
Chloridy		105	mmol/l	98-107
Ca celkový		2,31	mmol/l	2,05-2,54
S-Ca korig na Alb 41,3		2,24	mmol/l	2,05-2,40
Hořčík		0,88	mmol/l	0,66-0,99
Fosfát anorganický	*	1,31	mmol/l	0,74-1,29
Osmolalita-počítaná		291	mmol/kg	280-301
Glukóza v plazmě	*	4,3	mmol/l	4,6-6,4
Alkalická fosfatáza		1,07	ukat/l	0,88-2,35
AST		0,50	ukat/l	0,16-0,63
ALT		0,45	ukat/l	0,10-0,63
FIB-4 skóre	*	1,39		0,00-1,30
GGT (GMT)		0,30	ukat/l	0,15-0,92
LD (IFCC)		3,32	ukat/l	1,83-3,50
Amyláza		1,62	ukat/l	0,40-2,51
Bilirubin celkový		9,8	umol/l	3,0-19,0
Kyselina močová		298	umol/l	208-434
Močovina		7,1	mmol/l	2,9-8,2
Kreatinin	*	112	umol/l	42-80
eGFR-krea-(CKD-EPI)		0,67	ml/s/1,73 m2	
Cholesterol		5,7	mmol/l	3,8-7,0
Albumin		44,6	g/l	32,0-46,0
Celková bílkovina		73,8	g/l	62,0-77,0
CZE-Albumin		0,651	rel.j.	0,558-0,661
CZE-Alfa 1		0,032	rel.j.	0,029-0,049
CZE-Alfa 2		0,087	rel.j.	0,071-0,118 , zdvoj. frakce
CZE-Beta 1		0,047	rel.j.	0,047-0,072
CZE-Beta 2		0,047	rel.j.	0,032-0,065
CZE-Gamma		0,136	rel.j.	0,110-0,188
CRP-HS		1,8	mg/l	0,0-5,0
IgG		10,1	g/l	6,7-15,0
IgA		2,53	g/l	0,90-3,70
IgM	*	2,23	g/l	0,60-2,20
Beta-2-mikroglobulin	!	4,83	mg/l	1,00-2,30
ASLO		40	kU/l	0-200

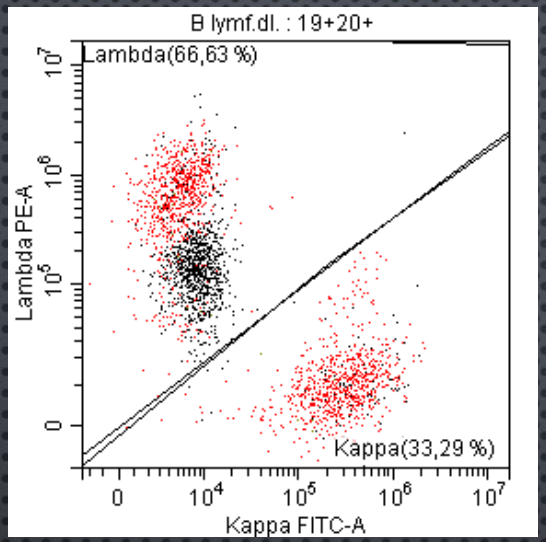
Kontroloval: 09.09.2026-16:08 Ing. Mellová Mária

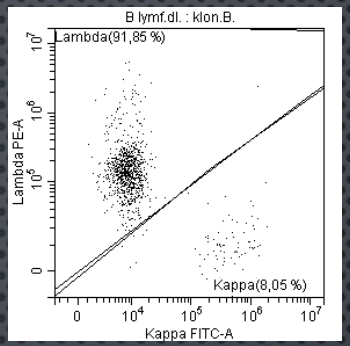
EBV - serologie
anti VCA IgG: 254 U/ml
anti VCA IgM: negativní
anti EA-D IgG: negativní
anti EBNA 1 IgG: 38 U/ml
Anamnestické protilátky.

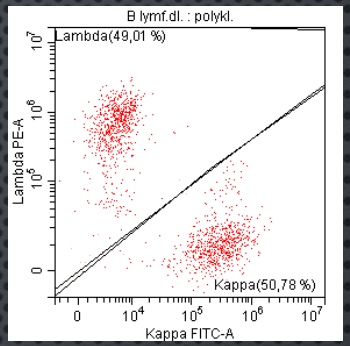
CMV - serologie
anti CMV IgM: negativní
anti CMV IgG: 117 U/ml
Anamnestické protilátky.

Toxoplasma gondii (CLIA)
Toxoplasma gondii IgM: negativní
Toxoplasma gondii IgG: negativní









Černá- patologická subpopulace

Červená- polyklonální B lymfocyty

Imunofenotyp lamda(slabě)+ CD19+ CD20(silně)+ CD22+ CD79b(slabě)+ CD81+ FMC7(silně)+ CD5- CD10- CD11c- CD23- CD25- CD38- CD43- CD71- CD79b- CD103- CD200- ROR1- IgM-.

HTTPS://APP.SLI.DO/EVENT/QHGPQ6IYZTNQXUMQ5WSZSJ

Více voleb 0

Pokud uvolňuji výsledek pacienta, kde v periferní krvi vidím zcela minoritní subpopulaci klonálních CD5- CD19+ CD20+ buněk bez lymfocytózy v KO, jak uzavřete?

- Touto problematikou se nezabývám / Výsledky neuvolňuji.
- Uvolním výsledek jako B-NHL (případně i blíže specifikuji).
- Uvolním výsledek jako MBL (pouze).
- Uvolním výsledek s tím, že uvedu všechny možnosti.

Hlasováno jako **Anonymní**

Odeslat

Celková bílkovina	69,3 g/l	62,0-77,0	
CZE-Albumin	0,637 rel.j.	0,558-0,661	
CZE-Alfa 1	0,036 rel.j.	0,029-0,049	
CZE-Alfa 2	0,094 rel.j.	0,071-0,118	, zdvoj. frakce
CZE-Beta 1	0,049 rel.j.	0,047-0,072	
CZE-Beta 2	0,047 rel.j.	0,032-0,065	
CZE-Gamma	0,137 rel.j.	0,110-0,188	
MIG IgG Kappa	negativní		
MIG IgG Lambda	negativní		
MIG IgA Kappa	negativní		
MIG IgA Lambda	negativní		
MIG IgM Kappa	negativní		
MIG IgM Lambda	pozitivní		
MIG IgM L kvantita	<2,0 g/l		
MIG FLC Kappa	negativní		
MIG FLC Lambda	negativní		
Free Kappa	* 32,0 mg/l	3,3-19,4	
Free Lambda	málo materiálu mg/l	5,7-26,3	
Kappa/Lambda	nelze spočítat	0,26-1,65	

Kontroloval: 25.09.2026-09:26 Mgr. Illner Jan

WHO Classification of Tumours on

Hematolymfoidní nádory (5. vydání) // Proliferace a lymfoidní pr

// Monoklonální B-buněčná lymfocytóza

Závěr:

Nález svědčí pro minimální př

Monoklonální B-buněčná lymfocytóza

Definice

Monoklonální B-buněčná lymfocytóza (MBL) je asymptomatický stav charakte
znaků jiné B-buněčné lymfoproliferativní poruchy (B-LPD).

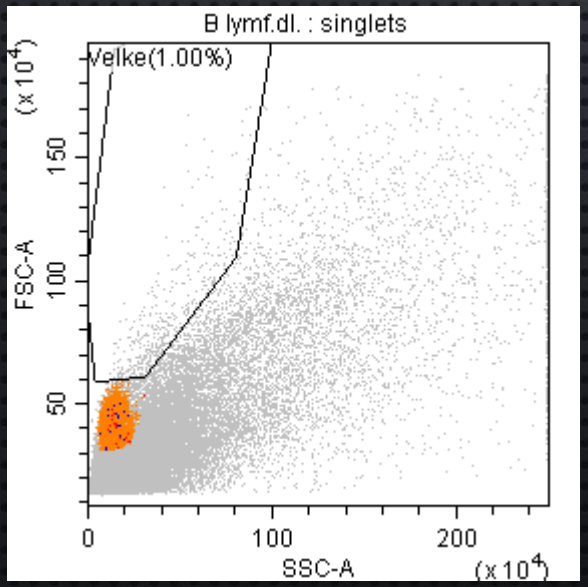
Kódování MKN-O

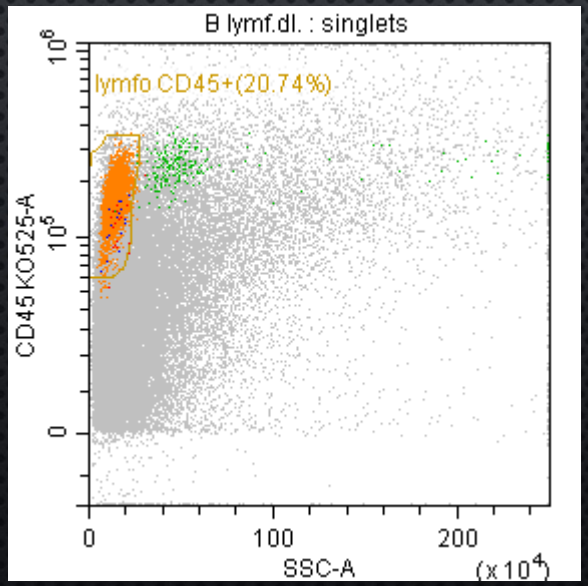
9823/1 Monoklonální B-buněčná lymfocytóza, typ chronické lymfocytární leuké
9591/1 Monoklonální B-buněčná lymfocytóza, typ nechronické lymfocytární leu

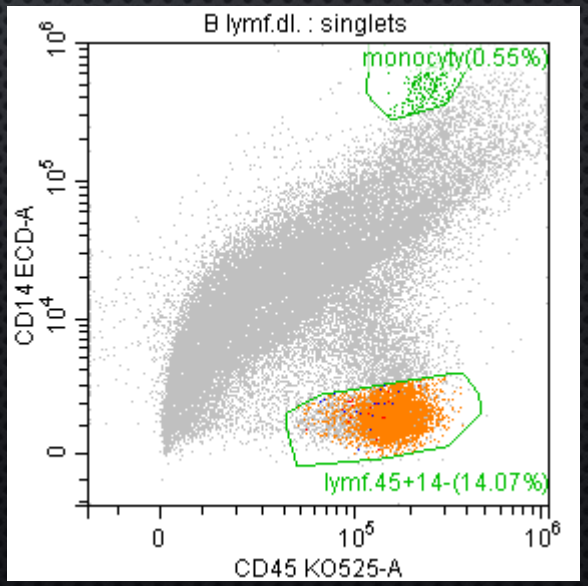
PACIENT 3

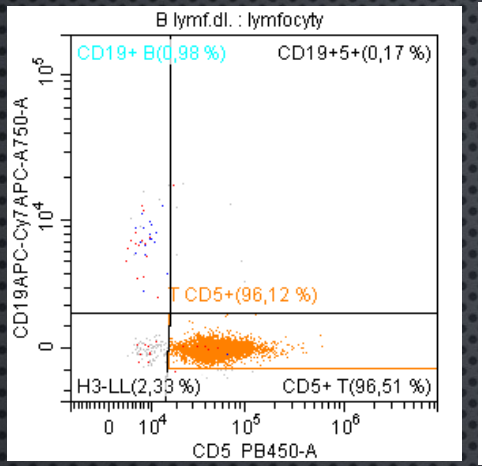
- Žena 86 let

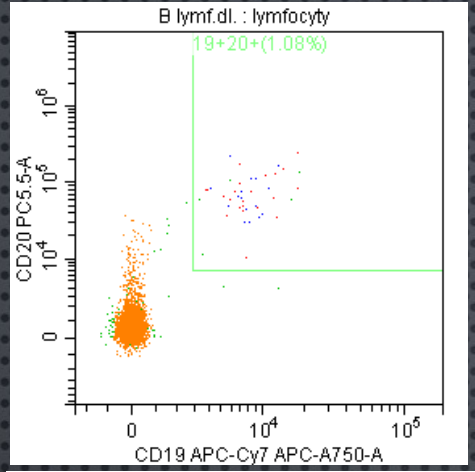
- Tumor nasopharyngis,
- Materiál příušní žláza – minimum materiálu.

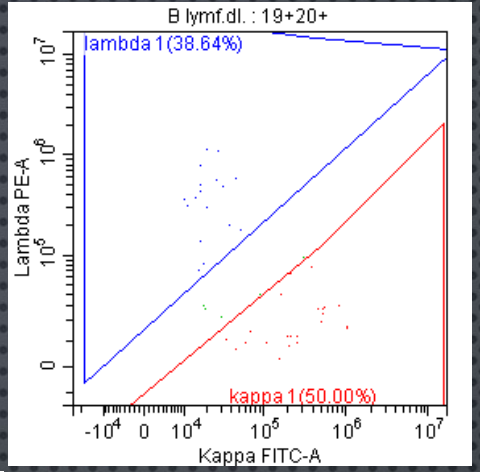


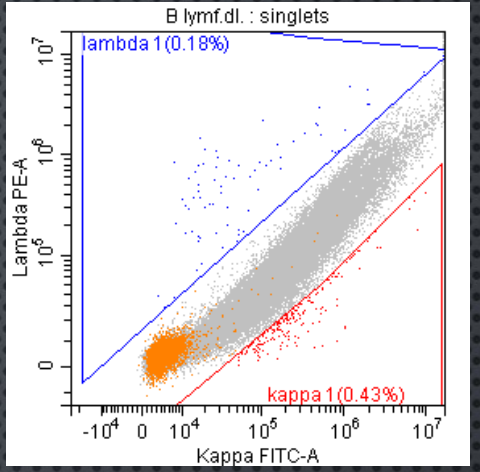


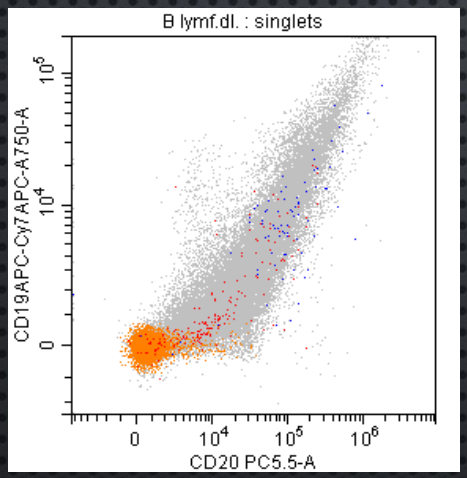


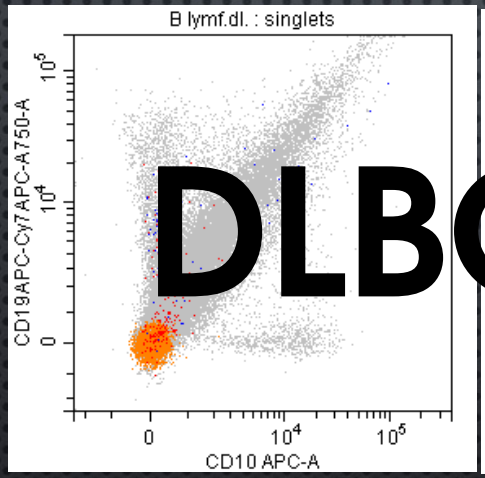

B lymf.dl. : lymfocyty
CD19+ B(0,98 %)
CD19+5+(0,17 %)
T CD5+(96,12 %)
H3-LL(2,33 %)
CD5+ T(96,51 %)
CD19APC-Cy7APC-A750-A
CD5 PB450-A

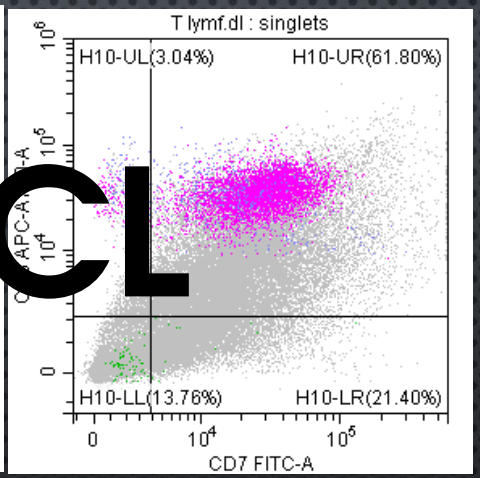

B lymf.dl. : lymfocyty
19+20+(1.08%)
CD20 PC5.5-A
CD19 APC-Cy7 APC-A750-A

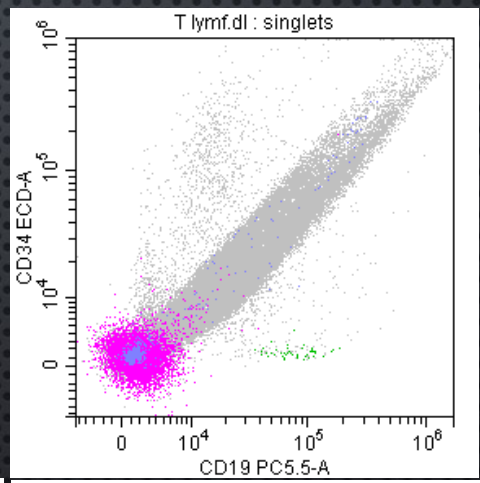

B lymf.dl. : 19+20+
lambda 1(38.64%)
kappa 1(50.00%)
Lambda PE-A
Kappa FITC-A

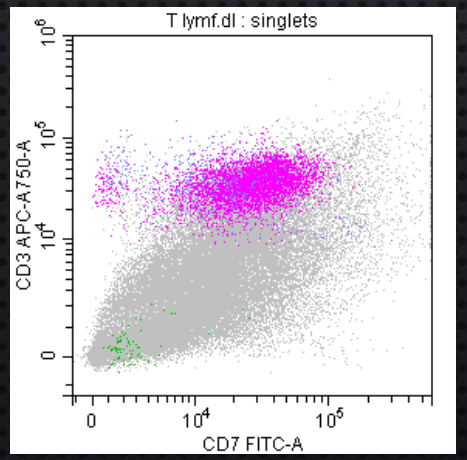

B lymf.dl. : singlets
lambda 1(0.18%)
kappa 1(0.43%)
Lambda PE-A
Kappa FITC-A

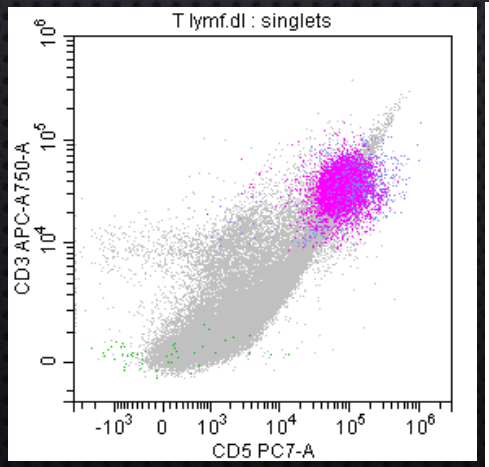

B lymf.dl. : singlets
CD19APC-Cy7APC-A750-A
CD20 PC5.5-A

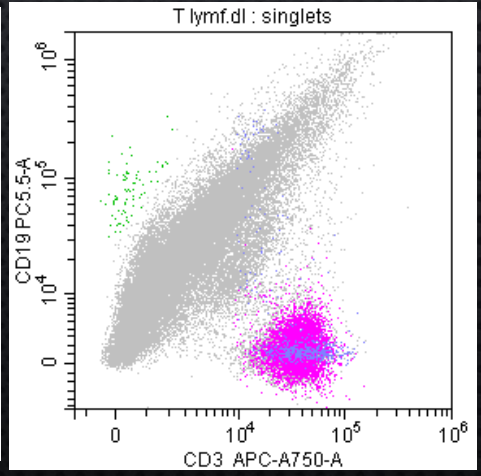

B lymf.dl. : singlets
CD19APC-Cy7APC-A750-A
CD10 APC-A

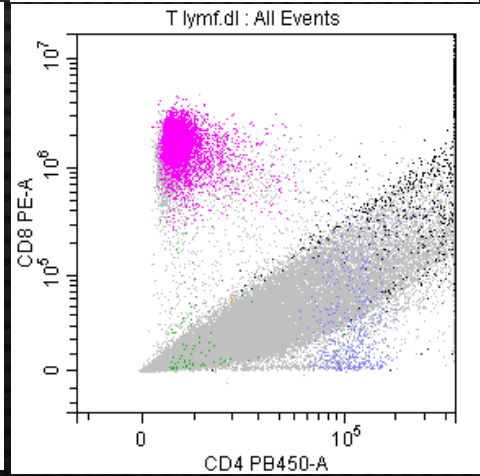

T lymf.dl : singlets
H10-UL(3.04%)
H10-UR(61.80%)
H10-LL(13.76%)
H10-LR(21.40%)
CD7 FITC-A


T lymf.dl : singlets
CD34 ECD-A
CD19 PC5.5-A


T lymf.dl : singlets
CD3 APC-A750-A
CD7 FITC-A


T lymf.dl : singlets
CD3 APC-A750-A
CD5 PC7-A


T lymf.dl : singlets
CD19 PC5.5-A
CD3 APC-A750-A


T lymf.dl : All Events
CD8 PE-A
CD4 PB450-A

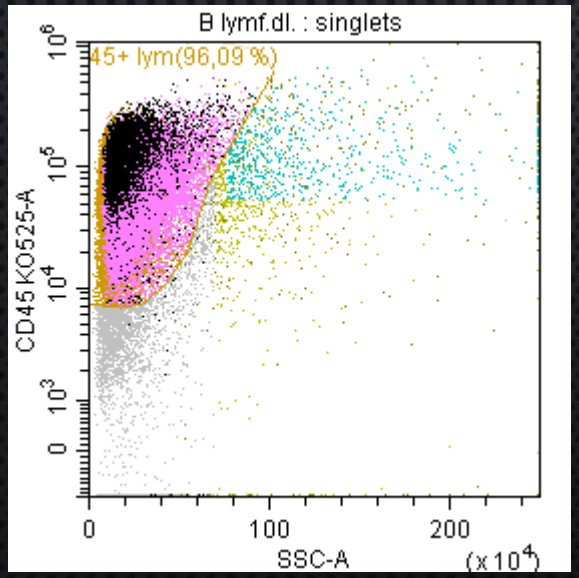
DLBCL

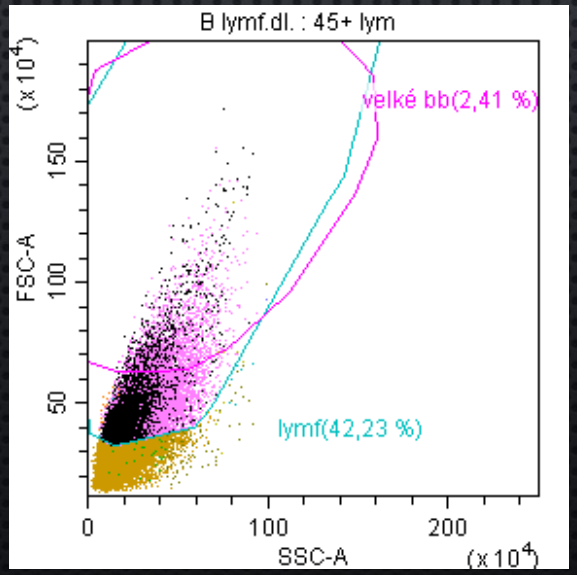
PACIENT 4

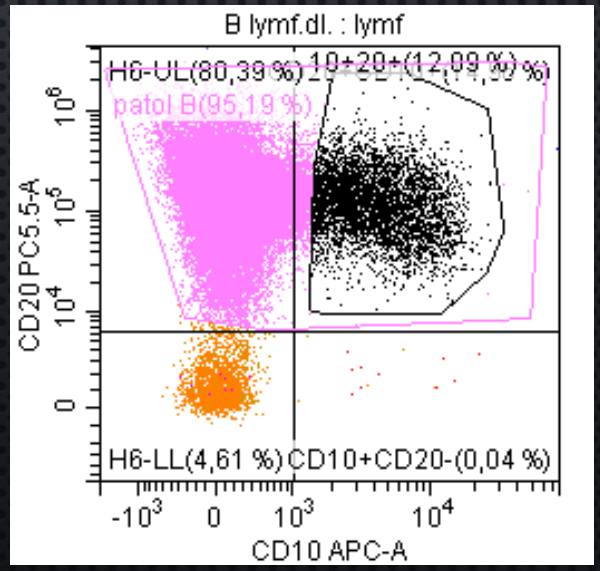
- Pokud je dost materiálu, může pomoci přidat znak na viabilitu buněk

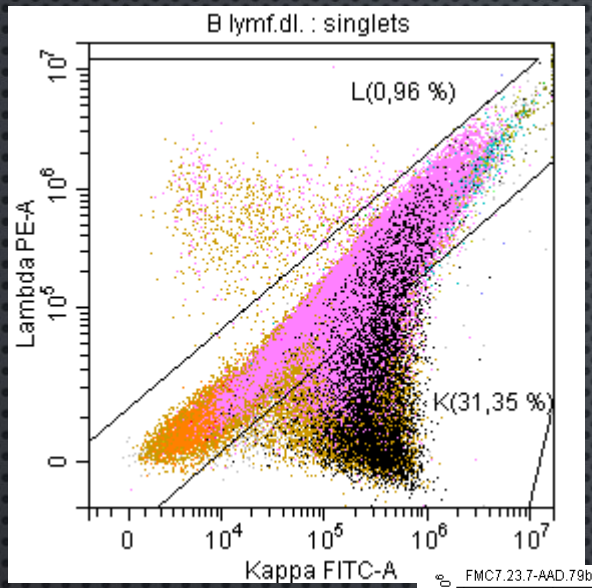
- Nově máme 7-AAD (7-aminoaktinomycin D) je fluorescenční barvivo, které se pevně váže na DNA (interkalační činidlo).

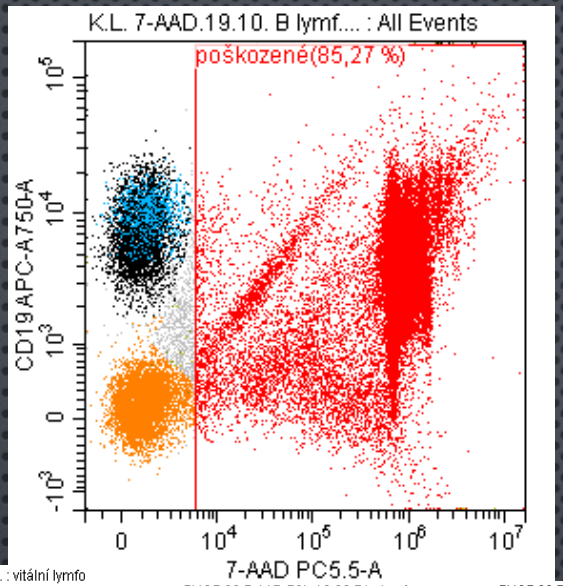
- př. LU muž 61 let, tumor mezenteria

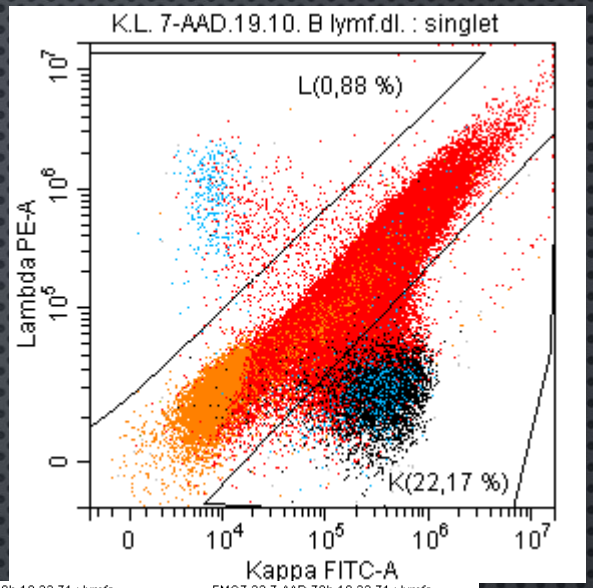


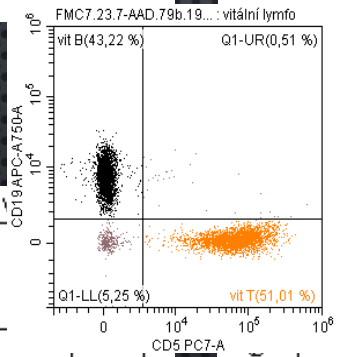


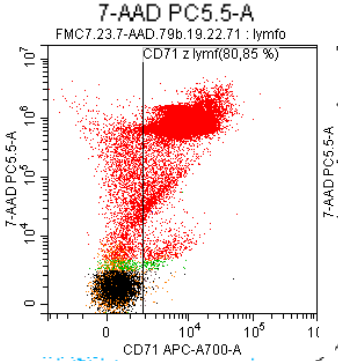


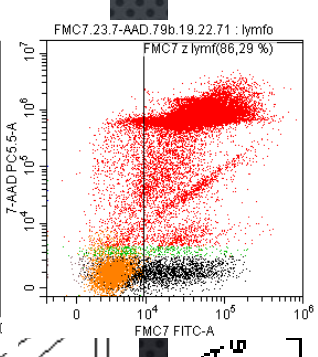

B lymf.dl. : singlets
L(0,96 %)
K(31,35 %)
Lambda PE-A
Kappa FITC-A

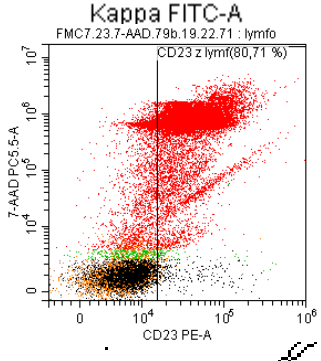

K.L. 7-AAD.19.10. B lymf.... : All Events
poškozené(85,27 %)
CD19 APC-A750-A
7-AAD PC5.5-A

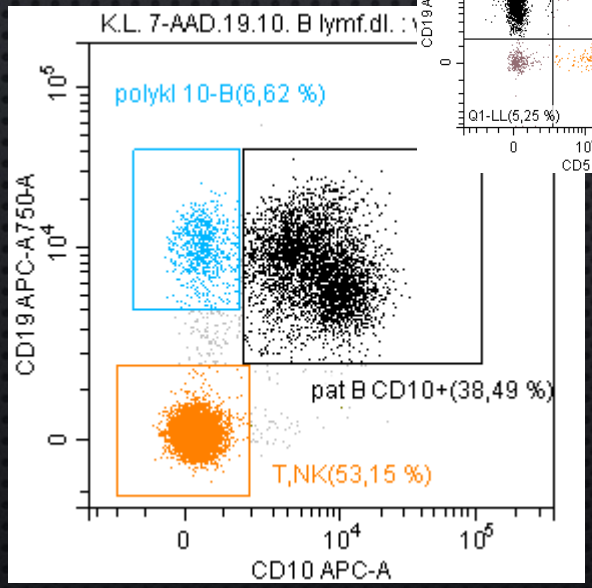

K.L. 7-AAD.19.10. B lymf.dl. : singlet
L(0,88 %)
K(22,17 %)
Lambda PE-A
Kappa FITC-A

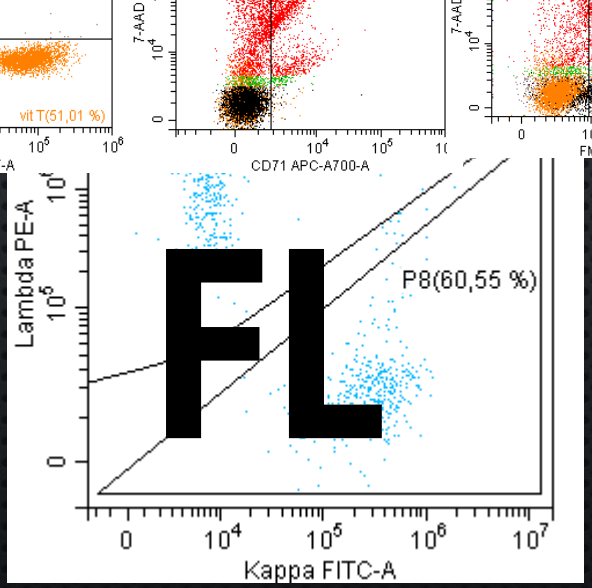

FMC7.23.7-AAD.79b.19... : vitální lymfo
vit B(43,22 %)
Q1-UR(0,51 %)
Q1-LL(5,25 %)
vit T(51,01 %)
CD19 APC-A750-A
CD5 PC7-A

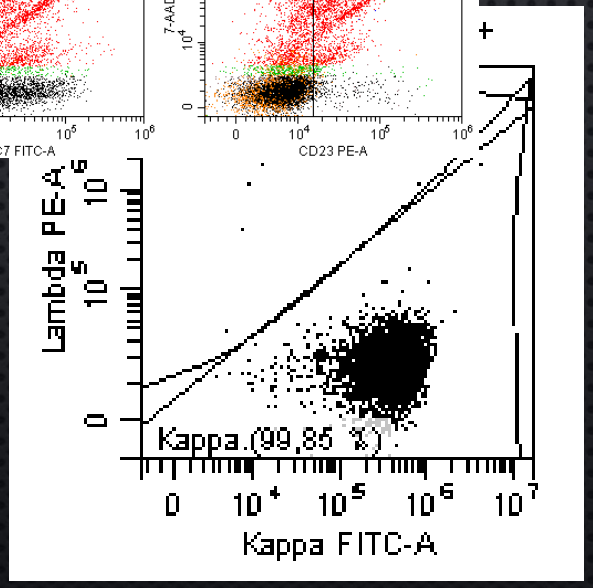

FMC7.23.7-AAD.79b.19.22.71 : lymfo
CD71 z lymf(80,85 %)
7-AAD PC5.5-A
CD71 APC-A700-A


FMC7.23.7-AAD.79b.19.22.71 : lymfo
FMC7 z lymf(86,29 %)
7-AAD PC5.5-A
FMC7 FITC-A


FMC7.23.7-AAD.79b.19.22.71 : lymfo
CD23 z lymf(80,71 %)
7-AAD PC5.5-A
CD23 PE-A


K.L. 7-AAD.19.10. B lymf.dl. : v
polykl 10-B(6,62 %)
pat B CD10+(38,49 %)
T,NK(53,15 %)
CD19 APC-A750-A
CD10 APC-A


FL
P8(60,55 %)
Lambda PE-A
Kappa FITC-A


Kappa (99,85 %)
Lambda PE-A
Kappa FITC-A

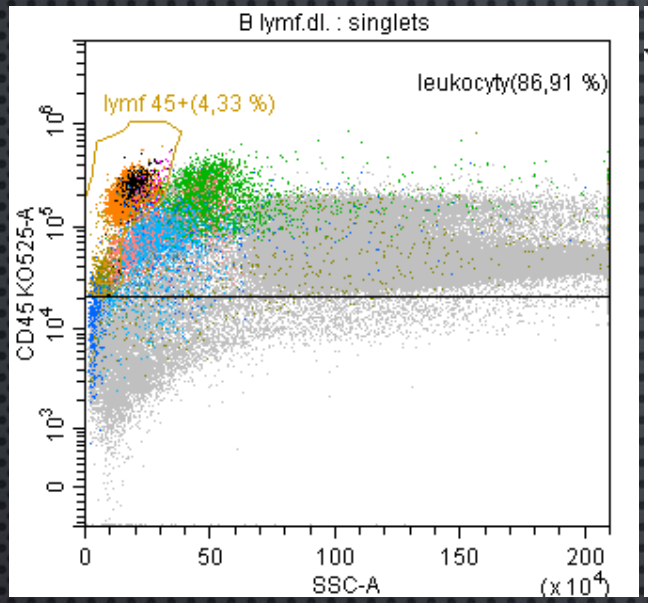
PACIENT 5

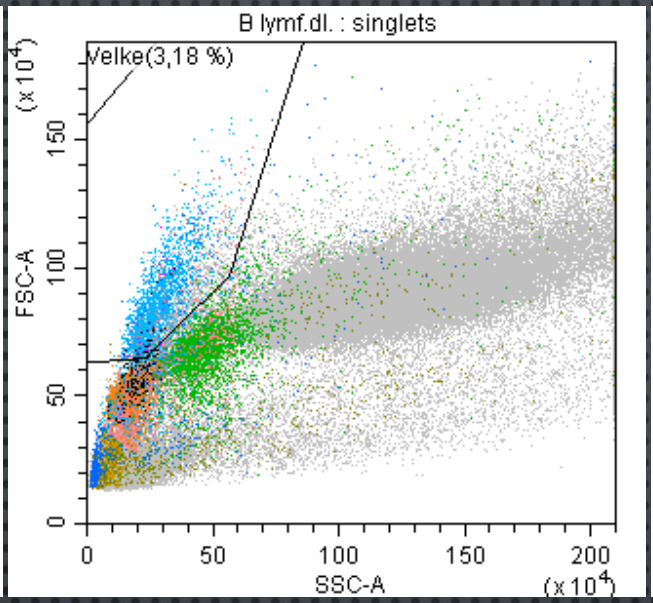
- Muž 60 let

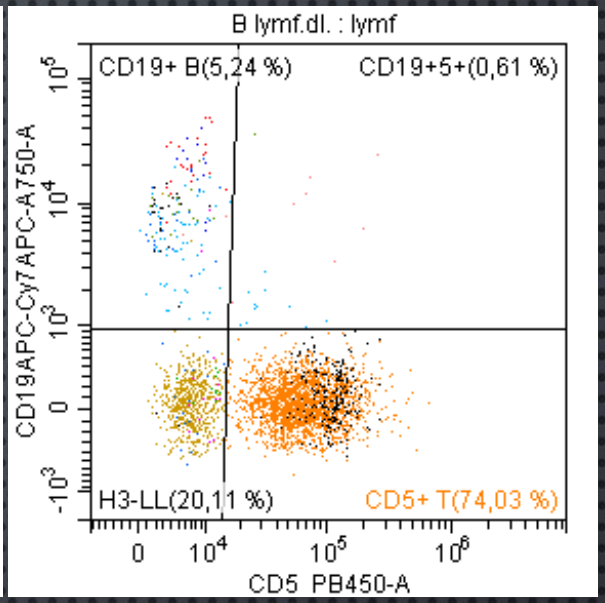
- Odeslán PL na urgent. Laboratorně od PL leukocytóza, mírná anemie, četné biochemické abnormality - chybný odběr? Nasazeny atb.
-

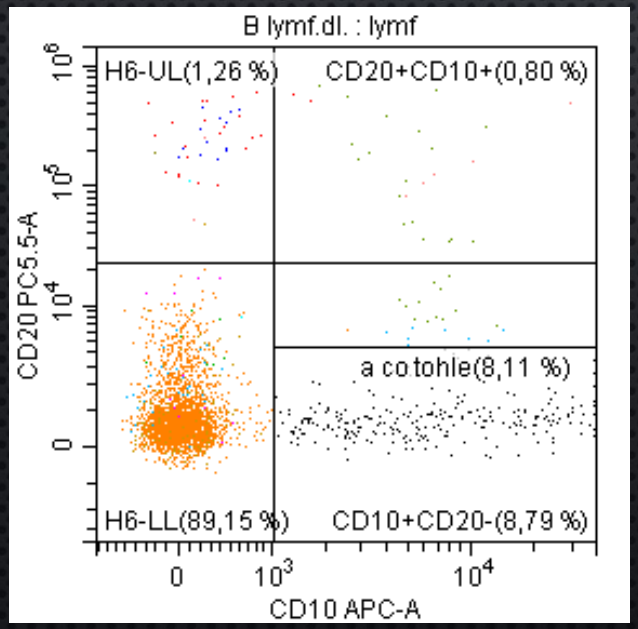
vyšetřován pro susp. protrahovaný respirační infekt a polymorfní obtíže, teplota 37,5°C, zimnice, noční pocení, doporučeno dobrat atb.

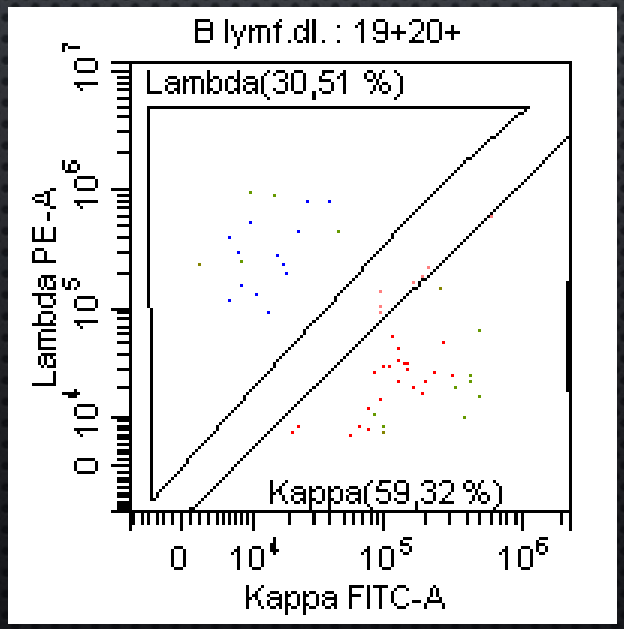
- četné hmatné LU nad kývačem vlevo - chronicky, biopsie neprovedena

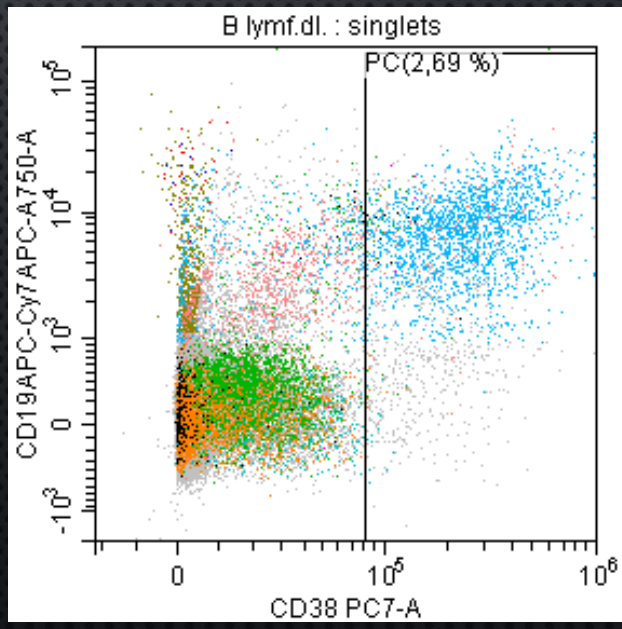

B lymf.dl. : singlets
lymf 45+(4,33 %)
leukocyty(86,91 %)
CD45 KO525-A
SSC-A
(x10^4)

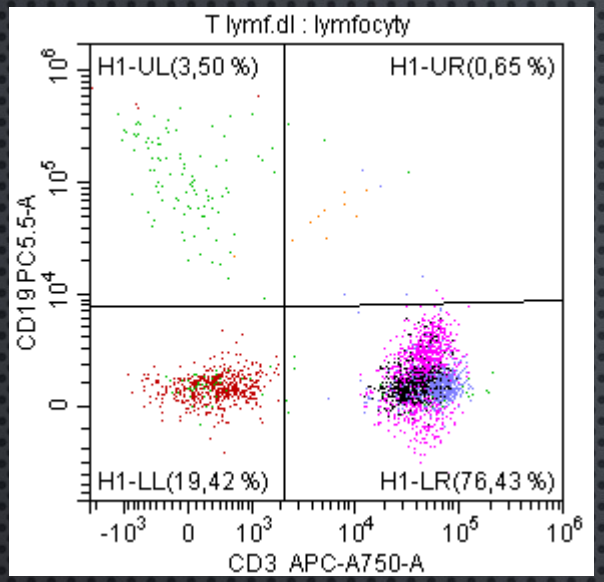

B lymf.dl. : singlets
Velke(3,18 %)
FSC-A
SSC-A
(x10^4)

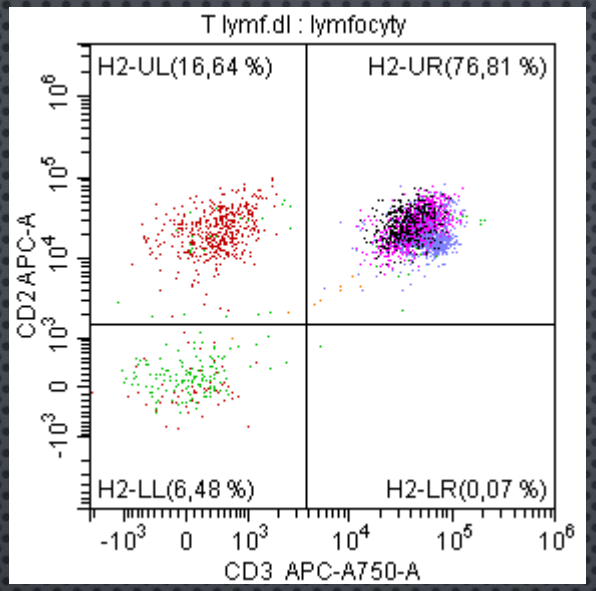

B lymf.dl. : lymf
CD19+ B(5,24 %)
CD19+5+(0,61 %)
H3-LL(20,11 %)
CD5+ T(74,03 %)
CD19APC-Cy7 APC-A750-A
CD5 PB450-A

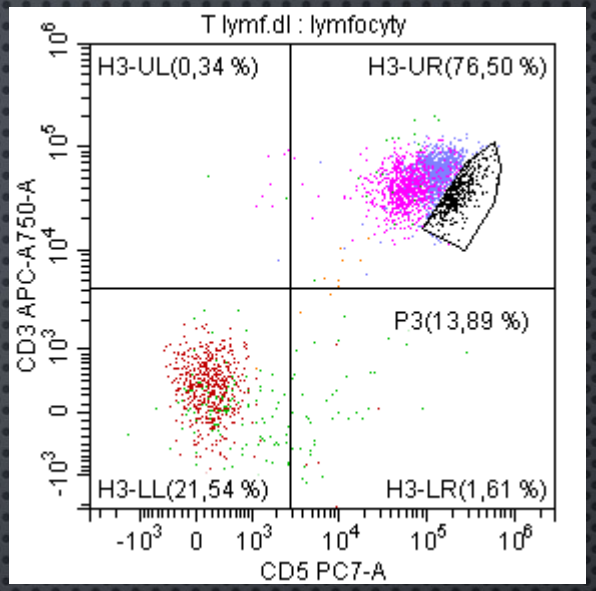

B lymf.dl. : lymf
H6-UL(1,26 %)
CD20+CD10+(0,80 %)
a co tohle(8,11 %)
H6-LL(89,15 %)
CD10+CD20-(8,79 %)
CD20 PC5.5-A
CD10 APC-A

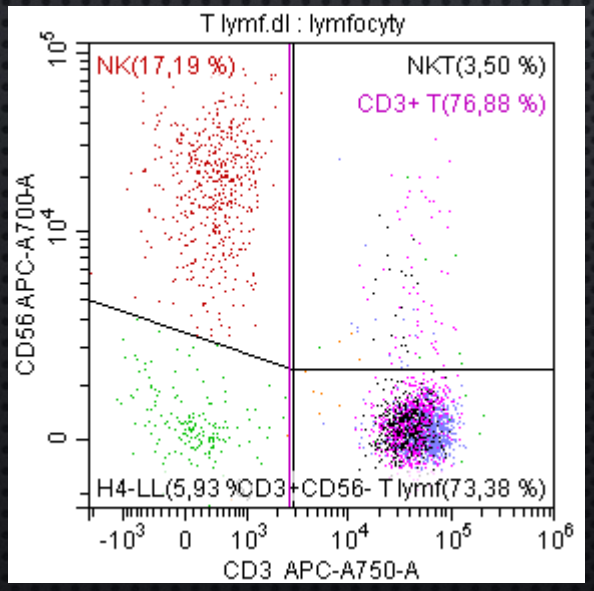

B lymf.dl. : 19+20+
Lambda(30,51 %)
Kappa(59,32 %)
Lambda PE-A
Kappa FITC-A

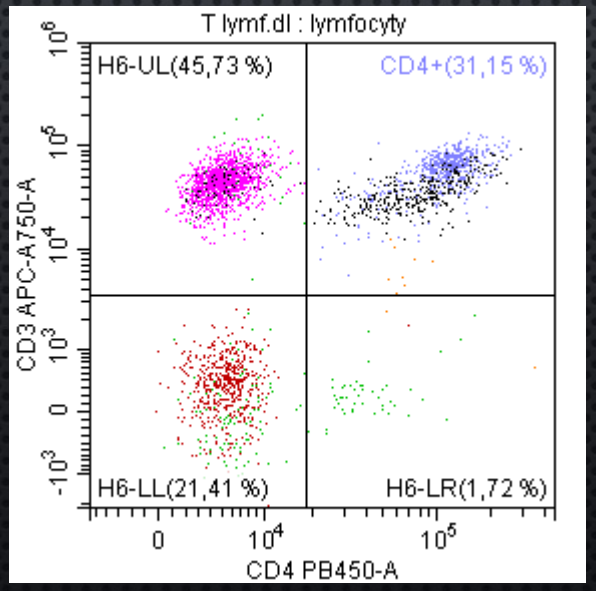

B lymf.dl. : singlets
PC(2,69 %)
CD19APC-Cy7 APC-A750-A
CD38 PC7-A

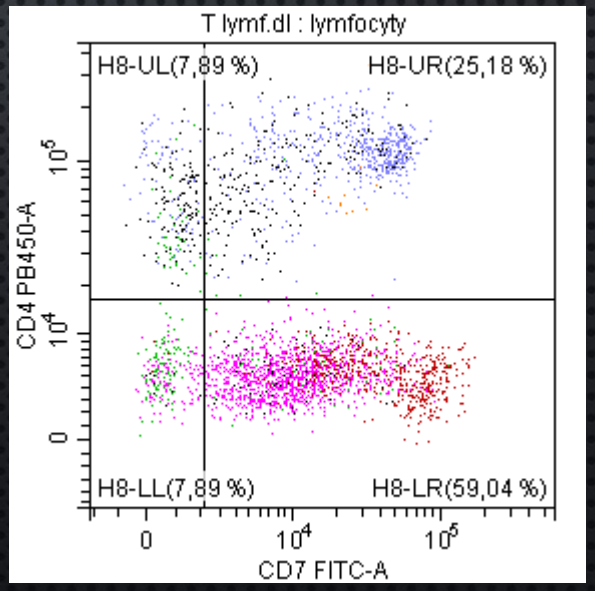

T lymf.dl : lymfocyty
H1-UL(3,50 %)
H1-UR(0,65 %)
H1-LL(19,42 %)
H1-LR(76,43 %)
CD19 PC5.5-A
CD3 APC-A750-A

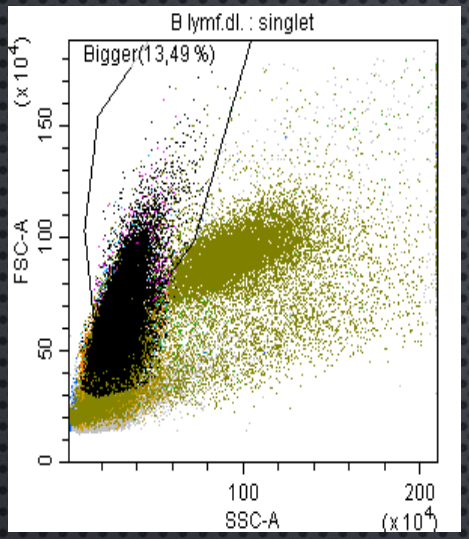

T lymf.dl : lymfocyty
H2-UL(16,64 %)
H2-UR(76,81 %)
H2-LL(6,48 %)
H2-LR(0,07 %)
CD2 APC-A
CD3 APC-A750-A

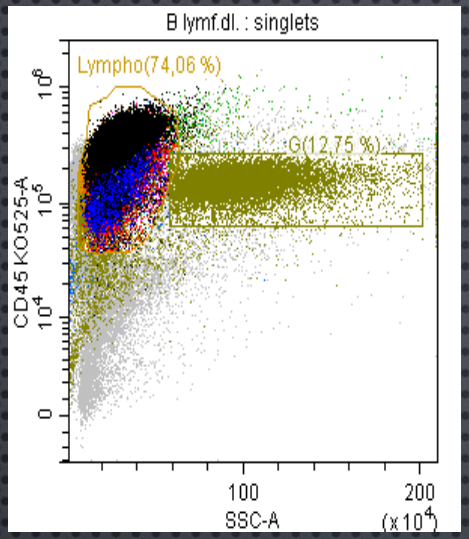

T lymf.dl : lymfocyty
H3-UL(0,34 %)
H3-UR(76,50 %)
P3(13,89 %)
H3-LL(21,54 %)
H3-LR(1,61 %)
CD3 APC-A750-A
CD5 PC7-A

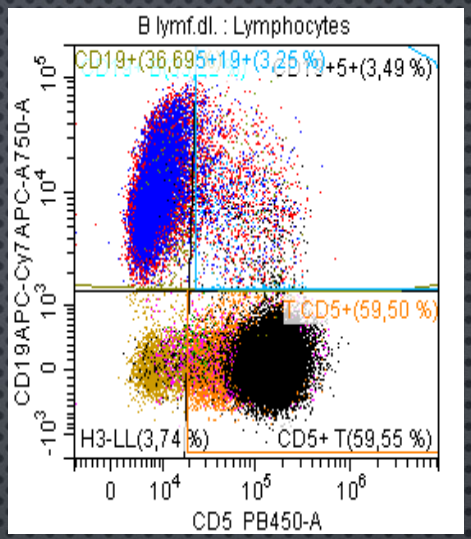

T lymf.dl : lymfocyty
NK(17,19 %)
NKT(3,50 %)
CD3+ T(76,88 %)
H4-LL(5,93 %CD3+CD56- T lymf(73,38 %)
CD56 APC-A700-A
CD3 APC-A750-A

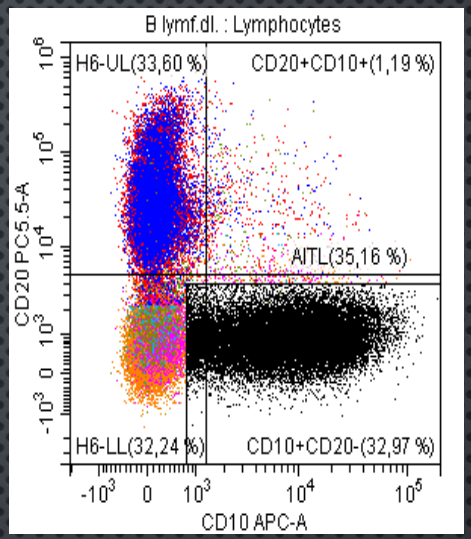

T lymf.dl : lymfocyty
H6-UL(45,73 %)
CD4+(31,15 %)
H6-LL(21,41 %)
H6-LR(1,72 %)
CD3 APC-A750-A
CD4 PB450-A

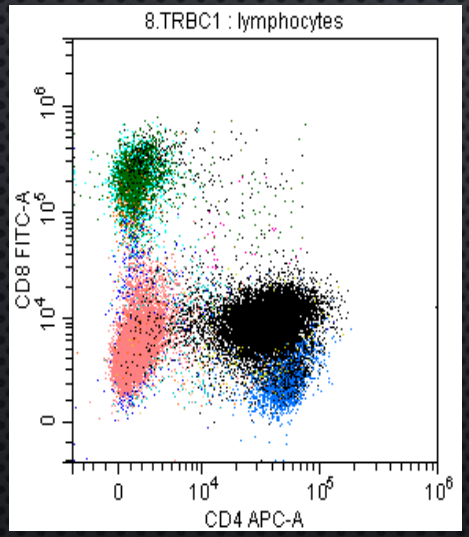

T lymf.dl : lymfocyty
H8-UL(7,89 %)
H8-UR(25,18 %)
H8-LL(7,89 %)
H8-LR(59,04 %)
CD4 PB450-A
CD7 FITC-A

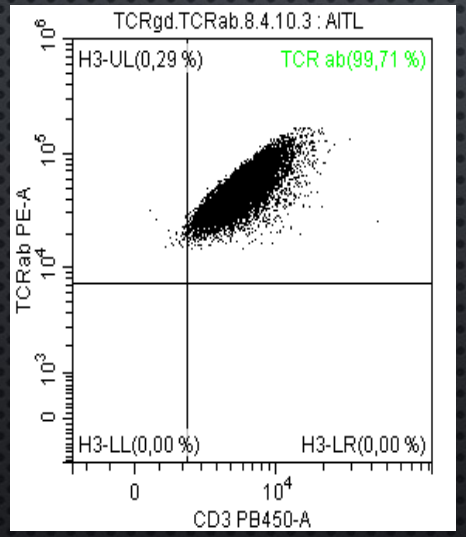


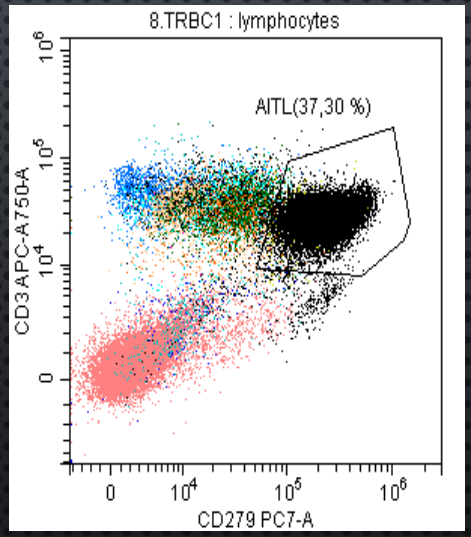


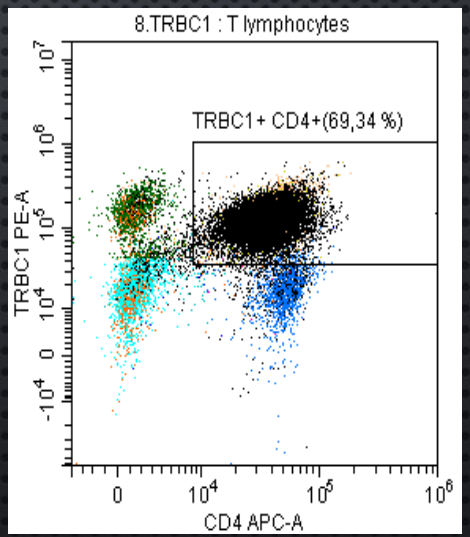












Immunofenotyp CD2+ CD3+ CD4+ CD5(silně)+ CD10+ CD279/PD-1(silně)+ TRBC1+ TCRab+ CD7- (část CD7 slabě+) CD8- CD34- CD56- TCRgd-

Shrnutí

- **Limitace metodiky:**
  Průtoková cytometrie (FC) hodnotí pouze fenotyp, nikoliv architekturu tkáně (nutná korelace s histologií a dalšími metodami).
  Každá metoda má své výhody a limitace (fibrotizace, křehkost buněk,…, „falešně negativní“ výsledek, „gateing“)

- **Neklasické fenotypy:**
  Nádorové buňky často nerespektují „učebnicové“ tabulky (aberantní exprese, ztráta liniových markerů, implementace nových markerů).

- **Reaktivní stavy vs. klonalita:**
  Přítomnost klonální populace nemusí vždy znamenat malignitu a naopak.



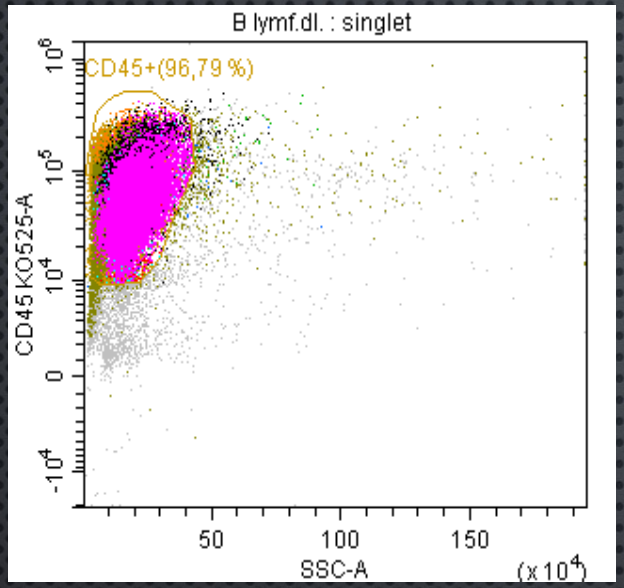
DĚKUJI ZA POZORNOST

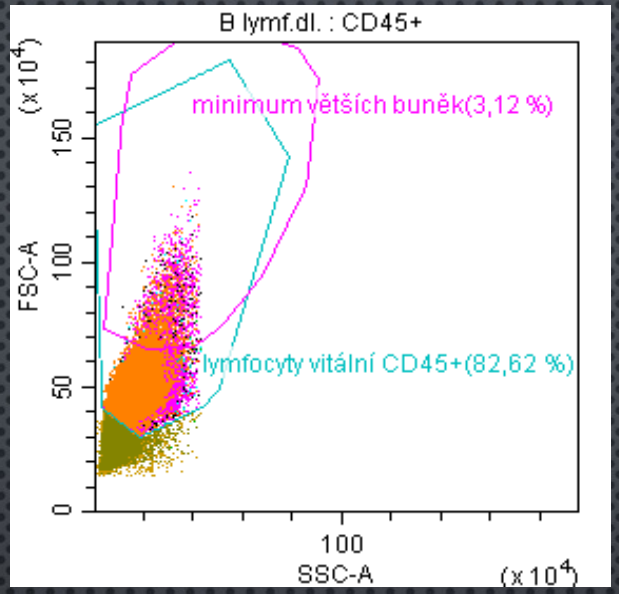
Mgr. Jana Včeláková, Ph.D.
jana.vcelakova@fnmotol.cz

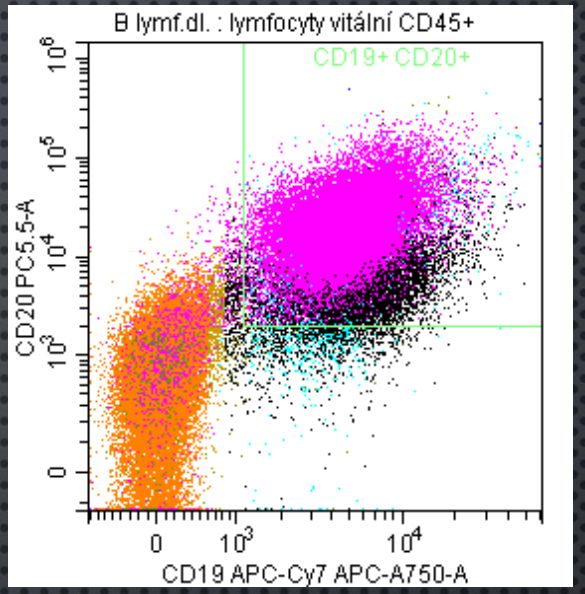
PACIENT 5

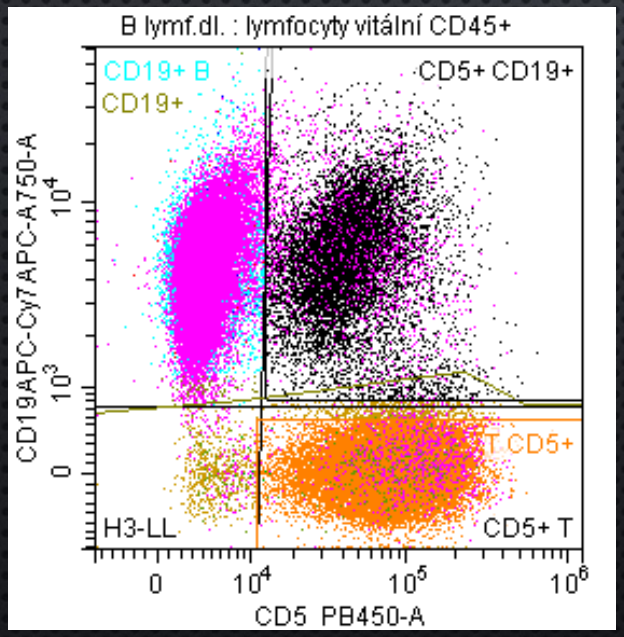
- Muž 64 let

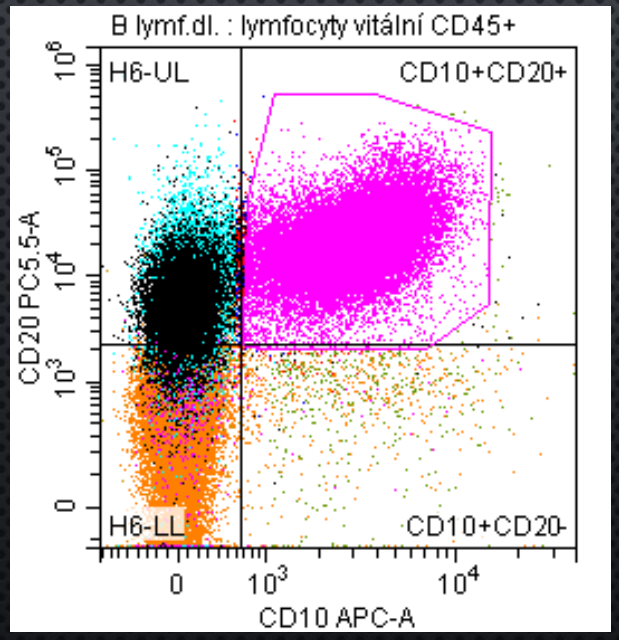
- Progredující tříselná lymfadenopatie.
V KD minimální infiltrace (3,6 %) populací s imunofenotypem B-CLL/SLL.

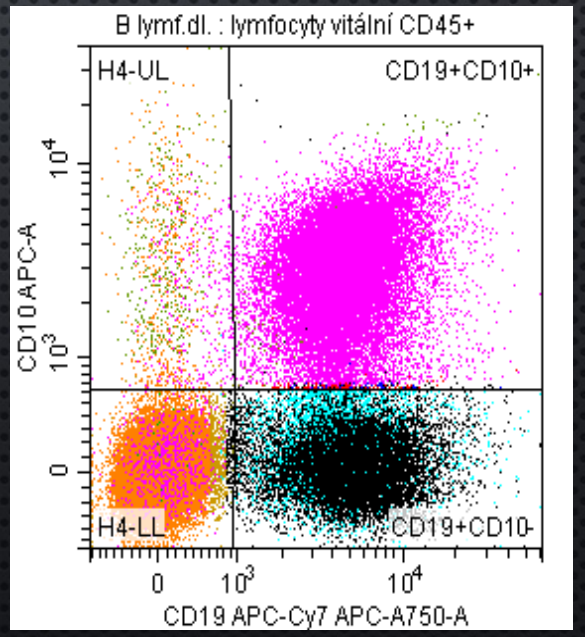

B lymf.dl. : singlet
CD45+(96,79 %)
CD45 KO525-A
SSC-A
(x 10^4)

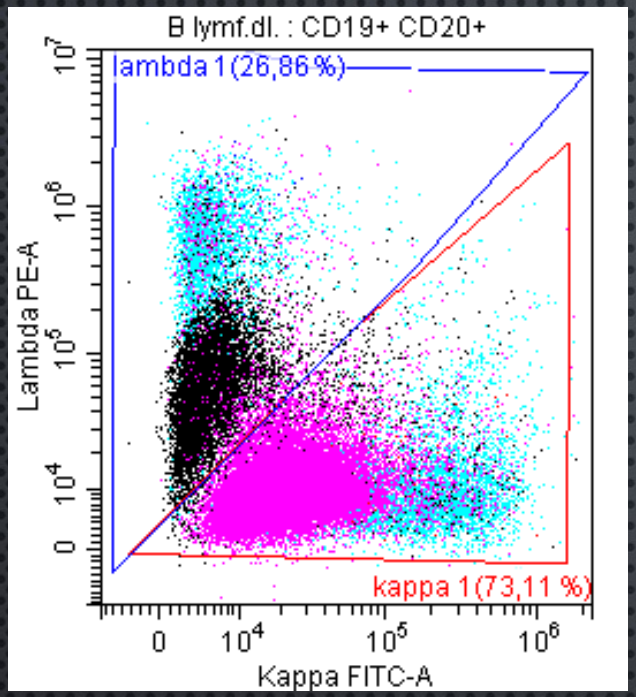

B lymf.dl. : CD45+
minimum větších buněk(3,12 %)
lymfocyty vitální CD45+(82,62 %)
FSC-A
SSC-A
(x 10^4)

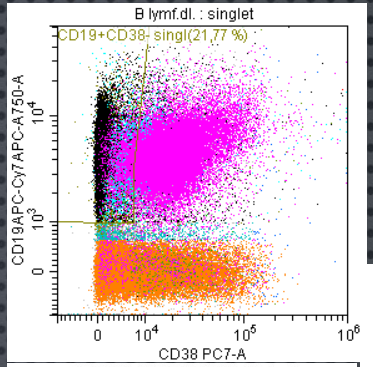

B lymf.dl. : lymfocyty vitální CD45+
CD19+ CD20+
CD20 PC5.5-A
CD19 APC-Cy7 APC-A750-A

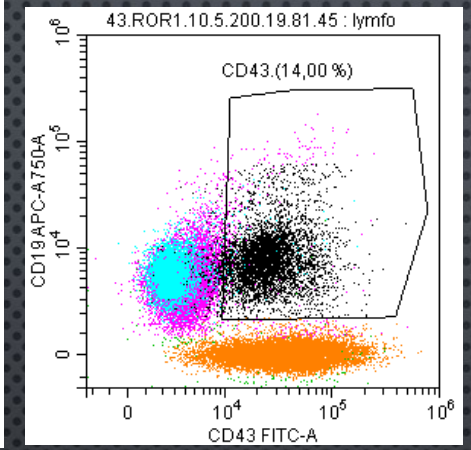

B lymf.dl. : lymfocyty vitální CD45+
CD19+ B
CD19+
CD5+ CD19+
T CD5+
H3-LL
CD5+ T
CD19 APC-Cy7 APC-A750-A
CD5 PB450-A

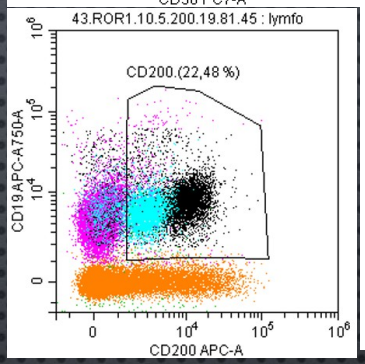

B lymf.dl. : lymfocyty vitální CD45+
H6-UL
CD10+CD20+
H6-LL
CD10+CD20-
CD20 PC5.5-A
CD10 APC-A

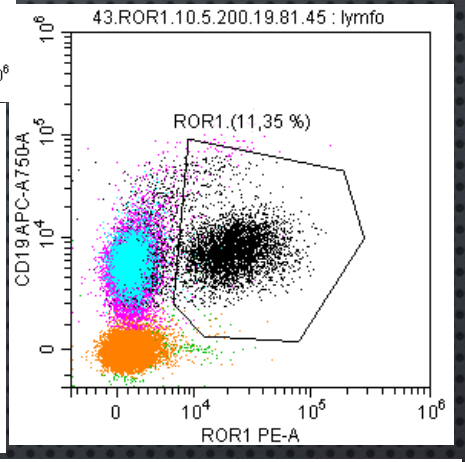

B lymf.dl. : lymfocyty vitální CD45+
H4-UL
CD19+CD10+
H4-LL
CD19+CD10-
CD10 APC-A
CD19 APC-Cy7 APC-A750-A

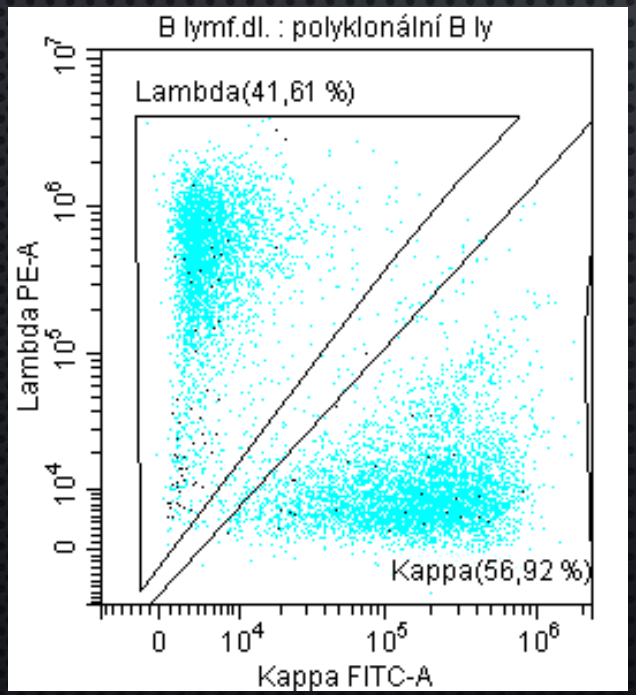

B lymf.dl. : CD19+ CD20+
lambda 1 (26,86 %)
kappa 1 (73,11 %)
Lambda PE-A
Kappa FITC-A

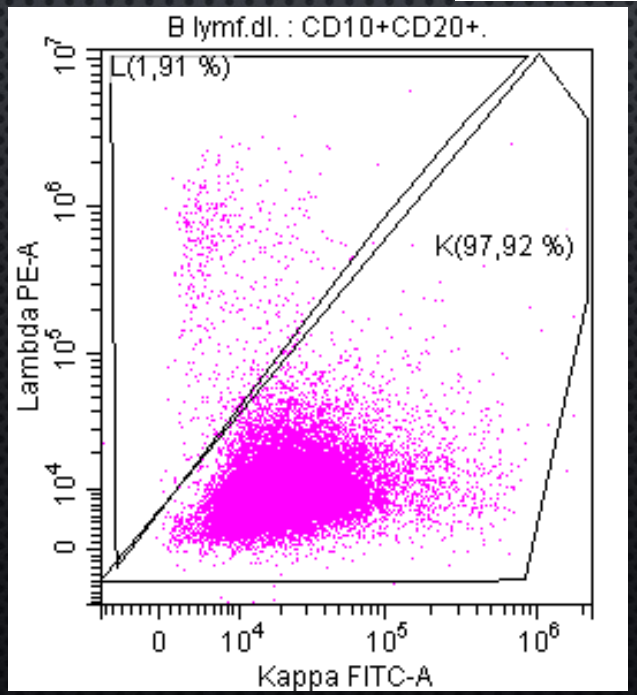

B lymf.dl. : singlet
CD19+CD38- singl(21,77 %)
CD19APC-Cy7APC-A750-A
CD38 PC7-A

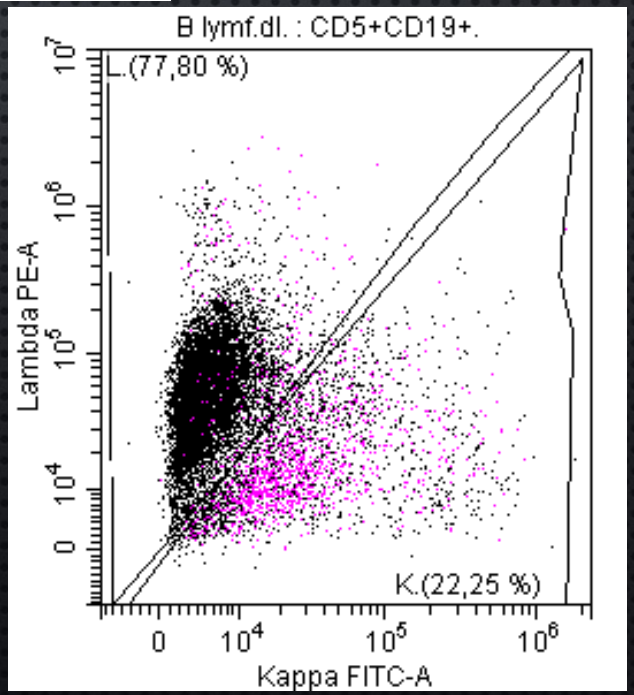

43.ROR1.10.5.200.19.81.45 : lymfo
CD43.(14,00 %)
CD19 APC-A750-A
CD43 FITC-A


43.ROR1.10.5.200.19.81.45 : lymfo
CD200.(22,48 %)
CD19APC-A750-A
CD200 APC-A


43.ROR1.10.5.200.19.81.45 : lymfo
ROR1.(11,35 %)
CD19 APC-A750-A
ROR1 PE-A


B lymf.dl. : polyklonální B ly
Lambda(41,61 %)
Kappa(56,92 %)
Lambda PE-A
Kappa FITC-A


B lymf.dl. : CD10+CD20+.
L(1,91 %)
K(97,92 %)
Lambda PE-A
Kappa FITC-A


B lymf.dl. : CD5+CD19+.
L.(77,80 %)
K.(22,25 %)
Lambda PE-A
Kappa FITC-A