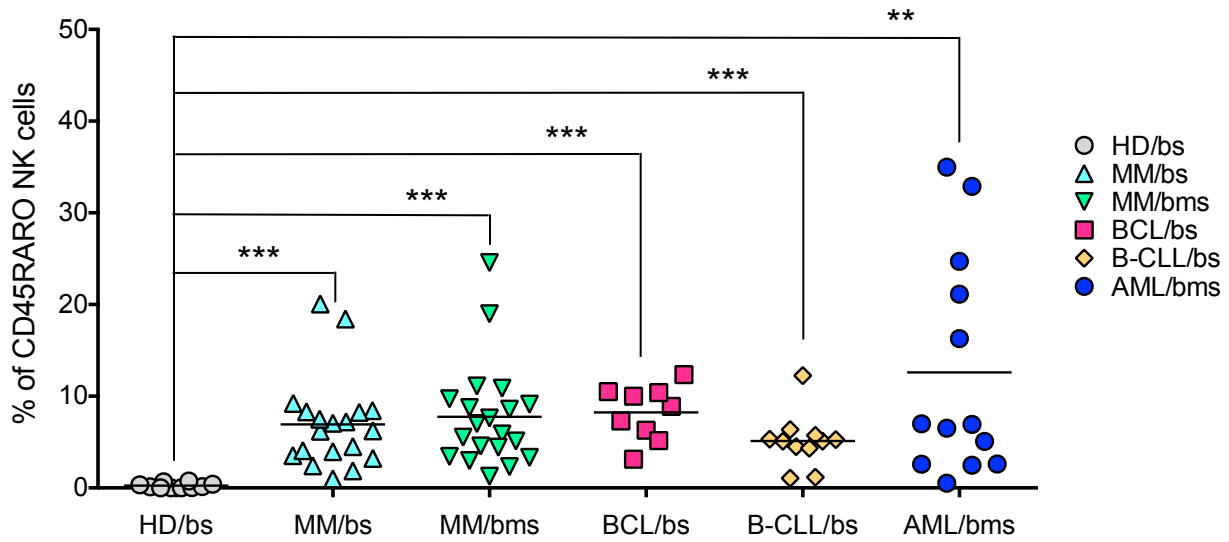
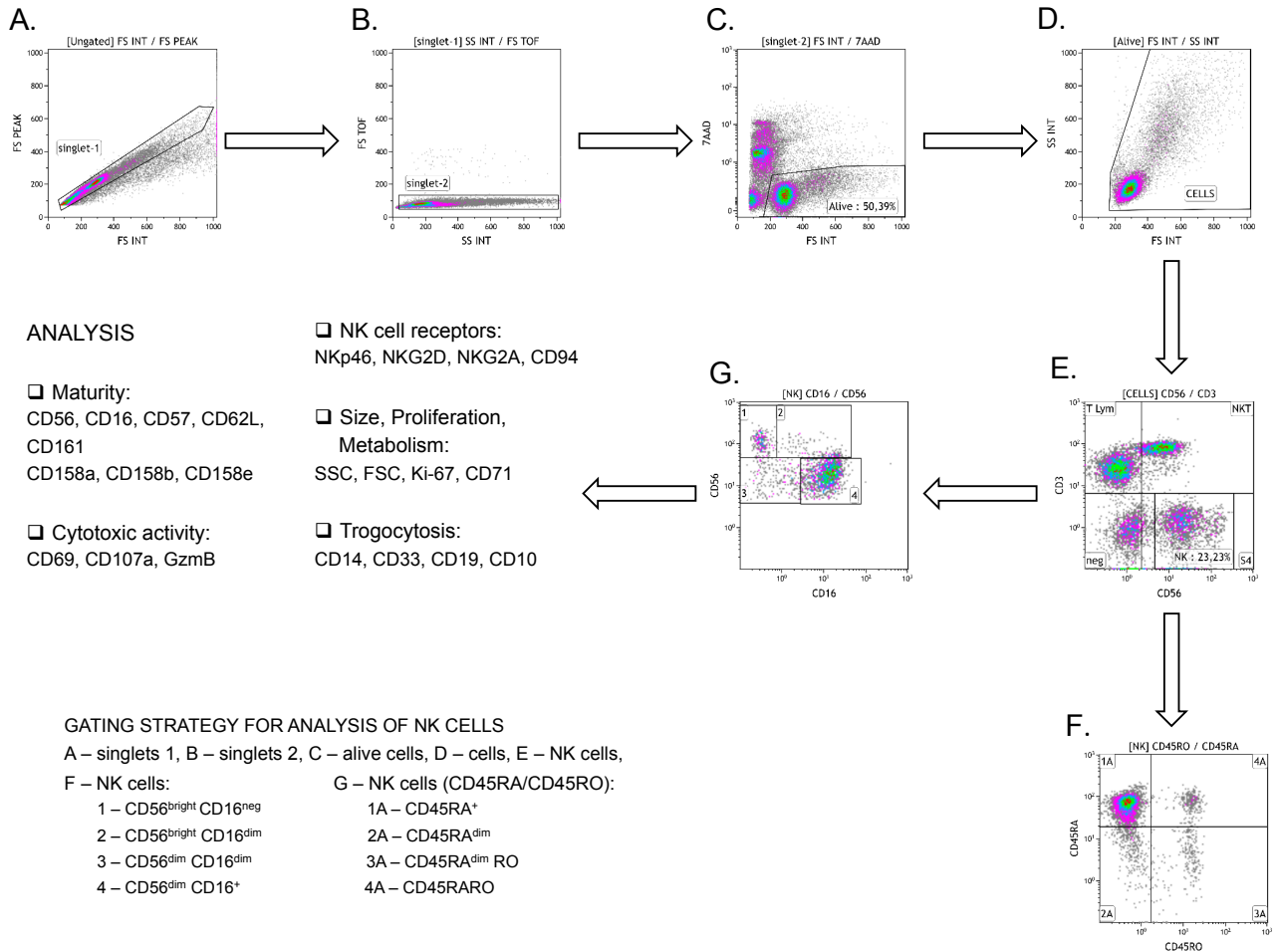


A.

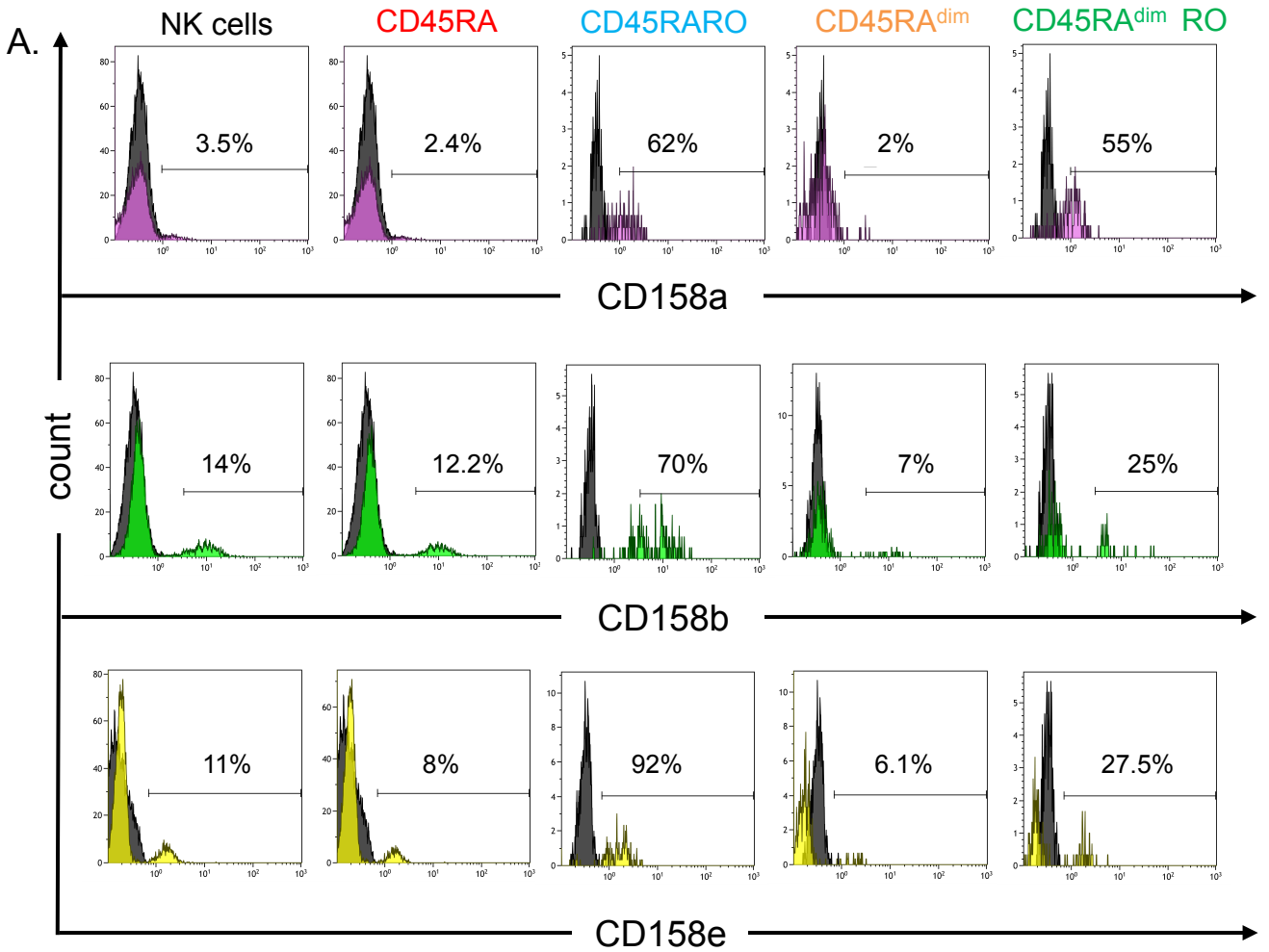


B.

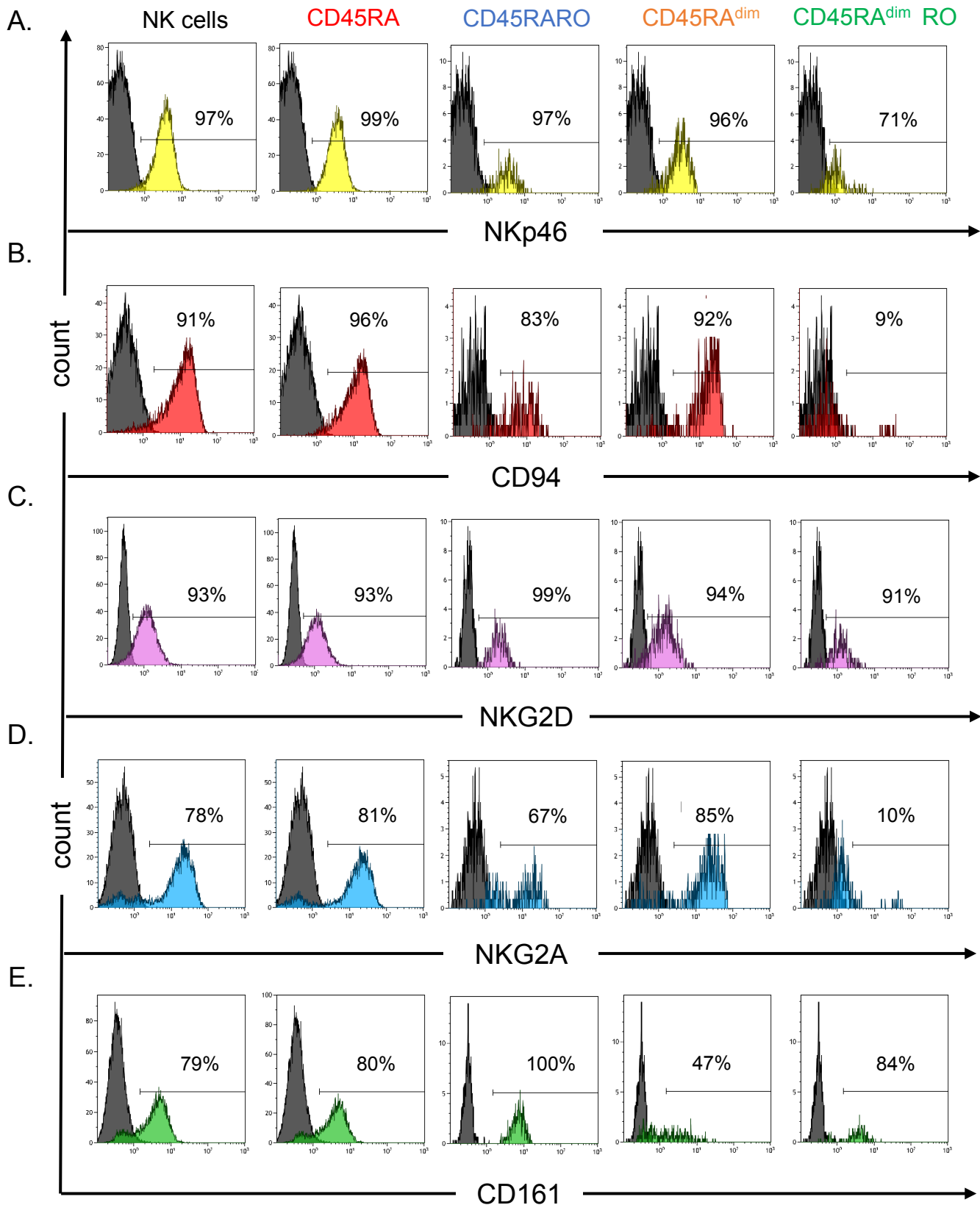
GATING SCHEME



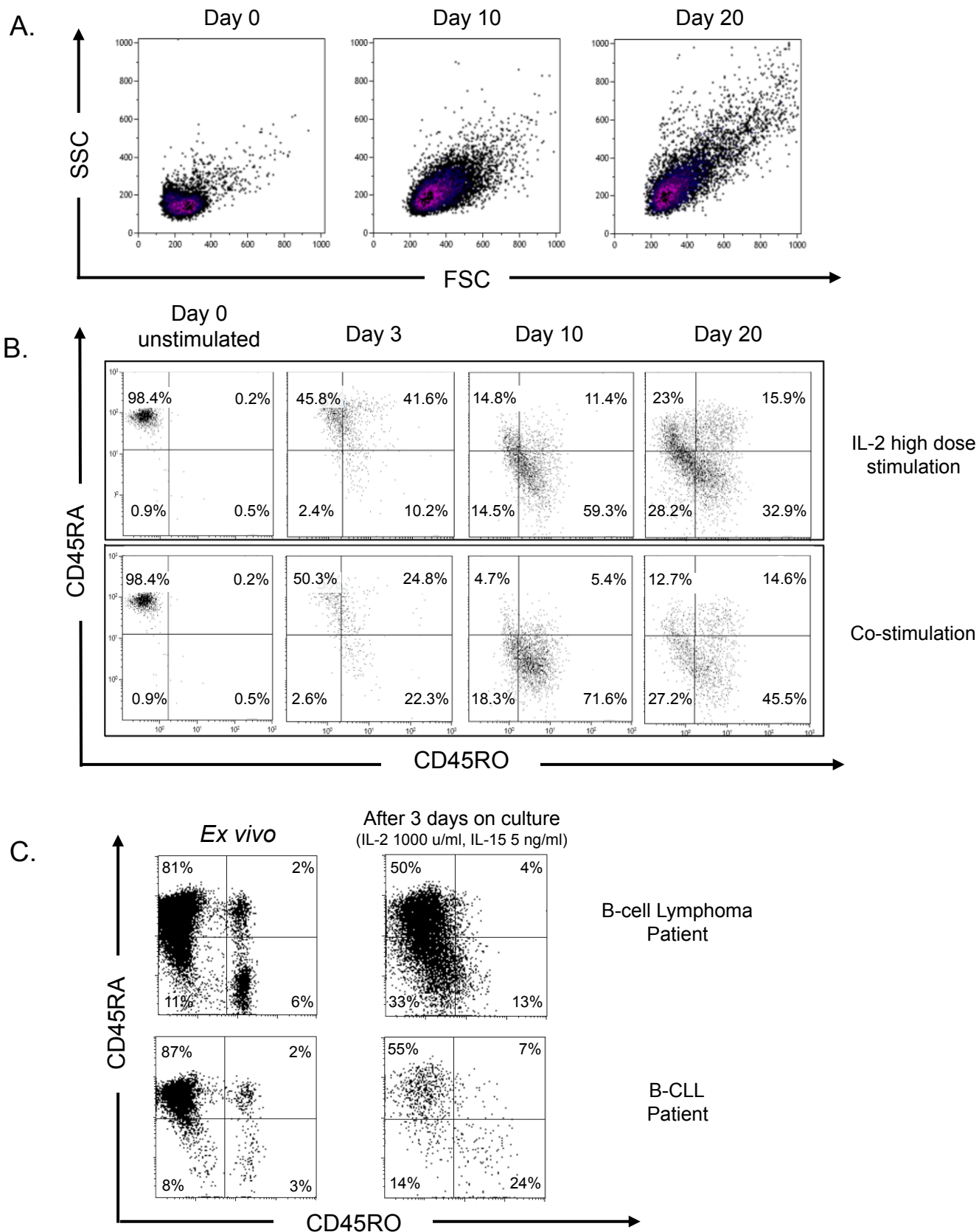
Supplemental Figure 1. A. The percentage of CD45RARO cells in the NK cell population is depicted in the graphic for different diseases on patients at diagnosis. B. Gating strategy.



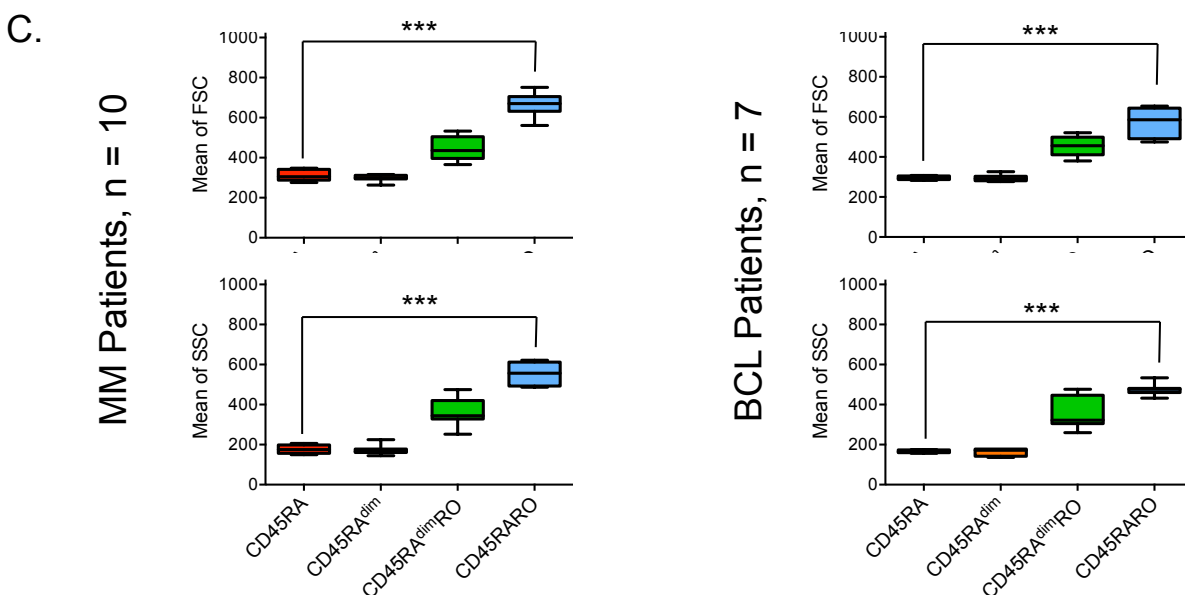
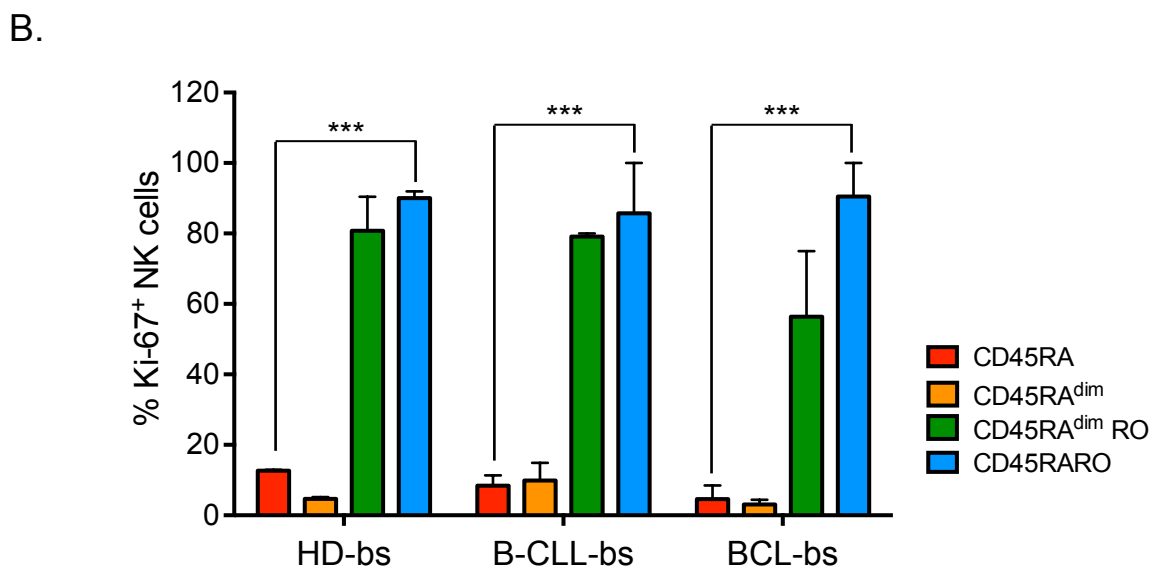
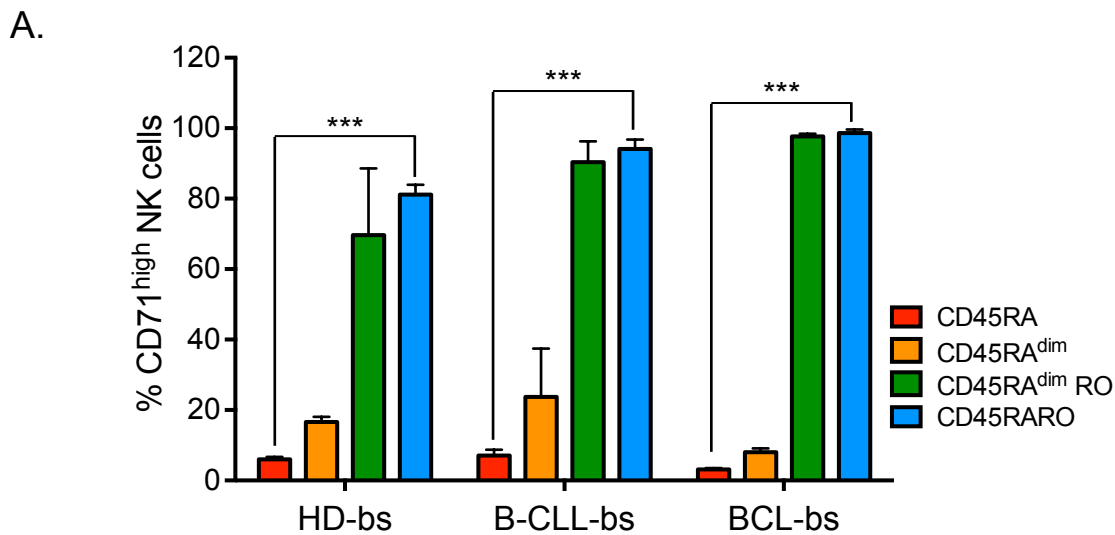
Supplemental Fig. 2. PBMCs from a BCL patient were stained as in figure 1 to identify the CD45RAR₀ population and the expression of different KIRs was identified by specific antibodies.



Supplemental Fig. 3. The phenotypic characterization of CD45RAR0 cells. PBMCs from a representative BCL patient were stained as in figure 1 to identify the CD45RAR0 population and the expression of NK cell receptors was revealed by using antibodies against the NCR NKp46 (A), the molecule CD94 (B) the activating receptor NKG2D (C), the inhibitory receptor NKG2A (D) and the Lectin Like Transcript-1 (LLT1) receptor CD161 on the different NK cell subsets.

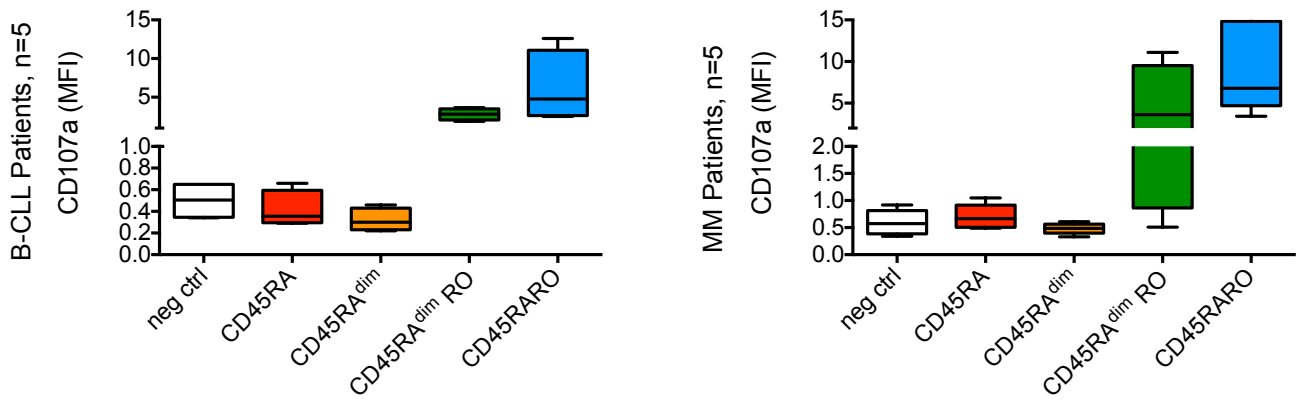


Supplemental Figure 4. PBMC from healthy donors were activated *in vitro* for different times by incubation with the EBV cell line PLH in the presence of IL-2 100 U/ml and IL-15 5ng/ml. A) Size (FCS) and granularity (SSC) of NK cells. B) CD45RARO expression in the NK cell compartment was analyzed at different times after activation. Cells were also activated with IL-2 1000 U/ml + IL-15 5 ng/ml). C) PBMCs from two patients were activated with IL-2 1000 U/ml + IL-15 5 ng/ml, and 3 days later we analyzed CD45RARO expression in the NK cell compartment.

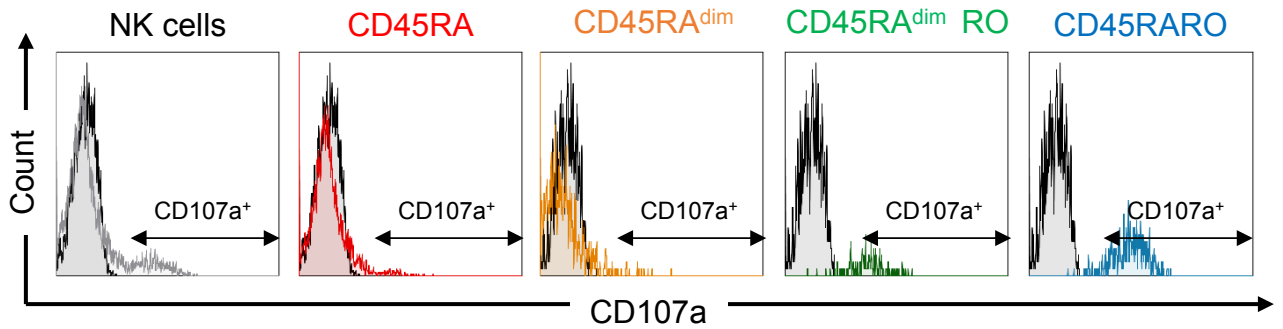


Supplemental Fig. 5. A-B) Percentage of NK cells that express CD71 or Ki-67 in the four different NK cell subsets (CD45RA/RO) from blood samples of healthy donors (HD) and patients with B-cell chronic lymphocytic leukemia (B-CLL) or B-cell lymphoma (BCL). C) Mean of FSC and SSC of different CD45RA CD45RO populations in MM patients (n = 10) and BCL patients (n = 7). Bars represent the mean \pm SD for each medical condition.

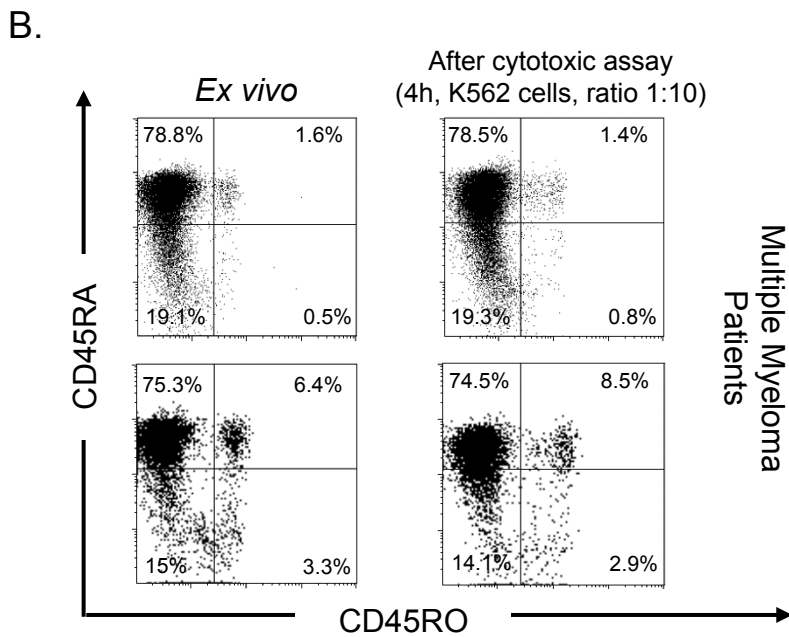
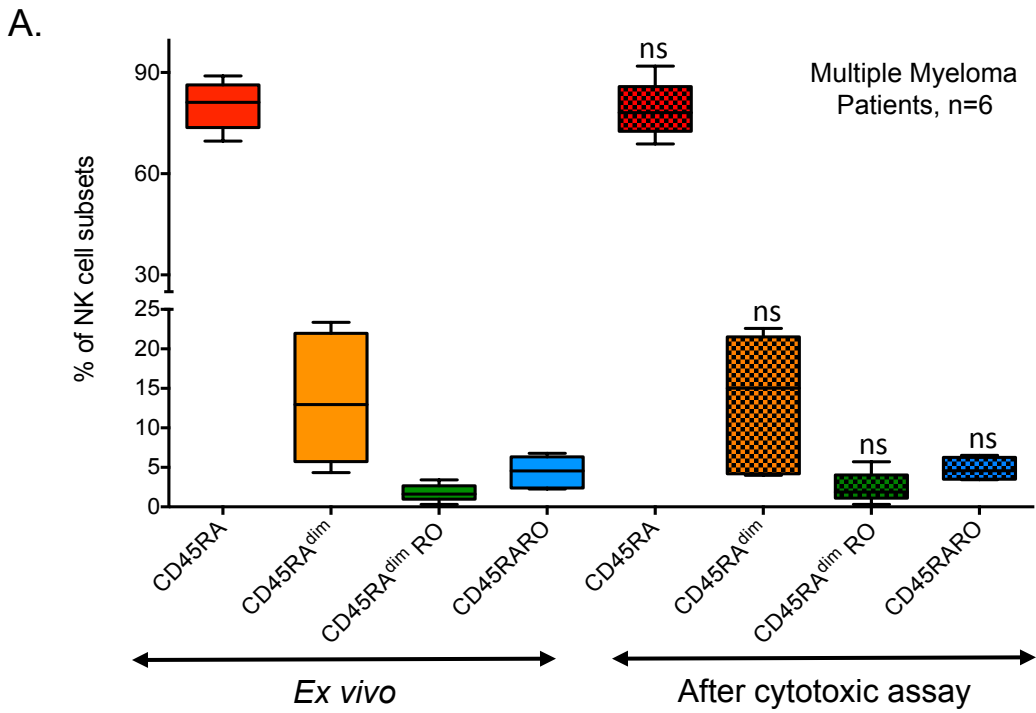
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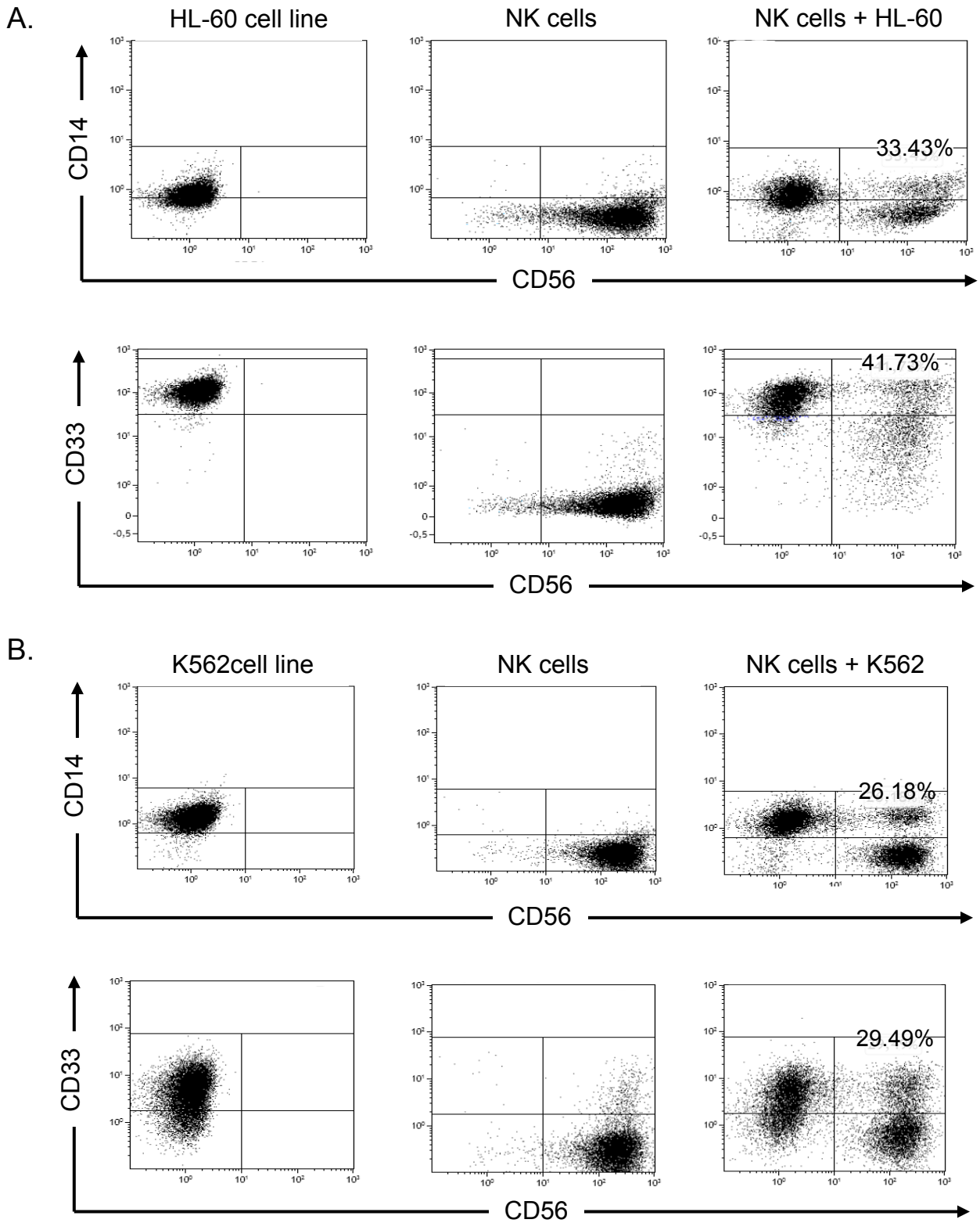
B.



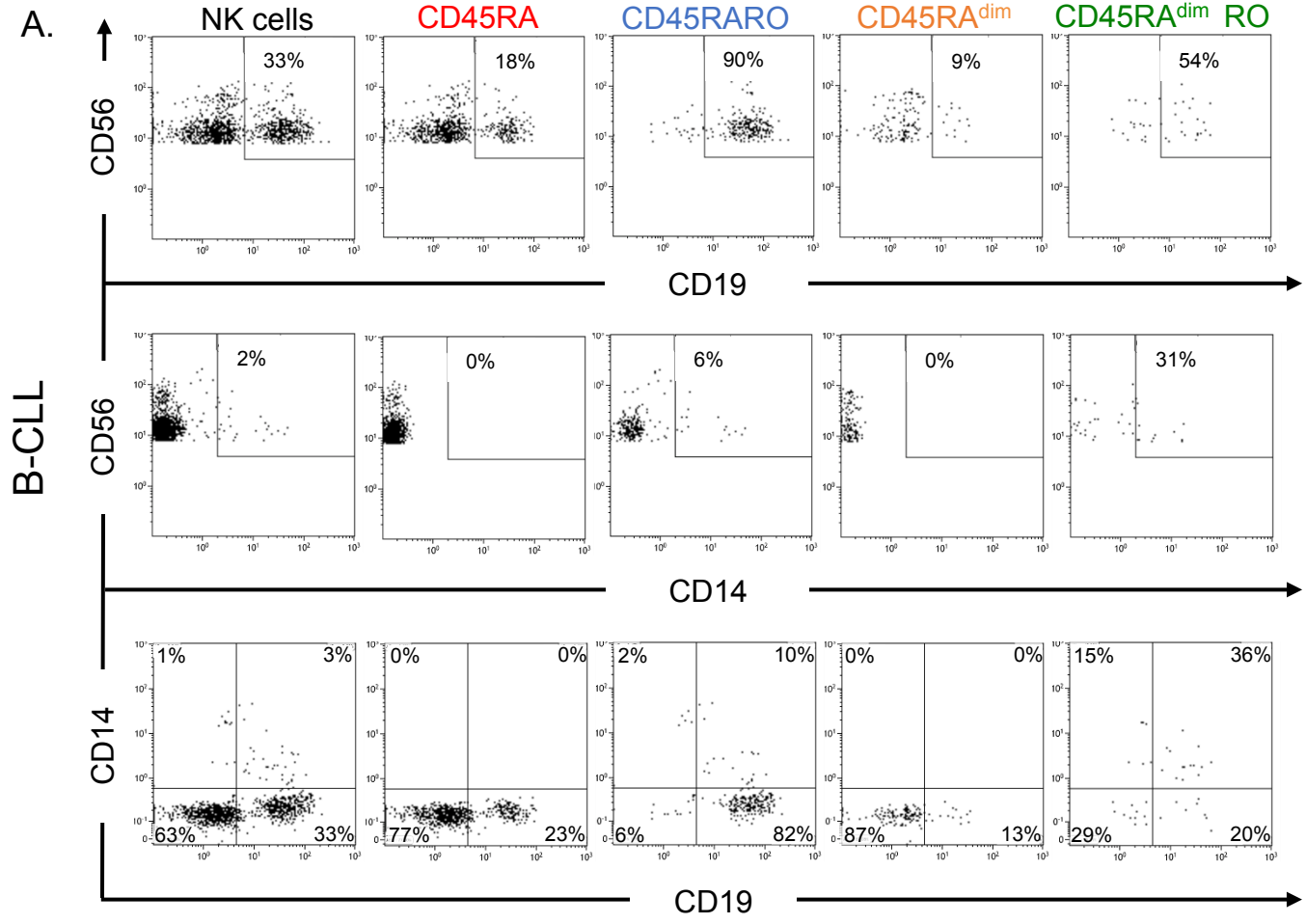
Supplemental Fig. 6. CD107a MFI values of the four different NK cell subsets (CD45RA/RO) from blood samples of B-CLL or MM patients. Graphics represent the mean \pm SD for each population. B) Representative histograms of a B-CLL patient showing CD107a expression in NK cell subsets (CD45RA/RO).



Supplemental Figure 7. CD45 NK subsets do not change after a 4 hour *in vitro* cytotoxicity assay. PBMCs from 6 MM patients were purified as in Fig. 5C and were stained with the same antibodies. The percentage of cells in each NK cell subset regarding CD45RA/RO is depicted in the graphics before and after the assay.



Supplemental Figure 8. *In vitro* activated NK cells performed trogocytosis on AML cell lines. NK cells activated as described in supplemental Fig. 4 were incubated for 2 hours at an effector:target ratio of 0.3:1 with the AML cell lines HL-60 (A) or K562 (B). The expression of the different markers in the cell membrane was analyzed by FACs.



Supplemental Figure 9. CD45RARO cells have performed trogocytosis on tumor cells in a B-CLL patient. PBMCs from a B-CLL patient were purified as in Fig. 1 and were stained with different antibodies. In this experiment, the NK cell population corresponded to CD56⁺NKp46⁺ cells. The percentage of cells in each NK cell subset regarding CD45RA/RO is depicted in the graphics.

Donor	Sample type	% CD45RARO in NK cells
HD1	blood	0,01
HD2		0
HD3		0,03
HD4		0,67
HD5		0,12
HD6		0,15
HD7		0,41
HD8		0,02
HD9		0,75
HD10		0,34

Supplemental Table 1. Percentage of CD45RARO cells in ten healthy donors.

Patient	Type of cancer	Sample type	% CD45RARO in NK cells
P48	MM	blood	8,43
		bone marrow	5,89
P49		blood	6,22
		bone marrow	1,28
P51		blood	20,06
		bone marrow	5,54
P55		blood	18,42
		bone marrow	24,57
P56		blood	7,22
		bone marrow	11,11
P58		blood	3,52
		bone marrow	4,58
P59		blood	4,5
		bone marrow	9,13
P61		blood	6,18
		bone marrow	8,58
P62		blood	1,87
		bone marrow	4,45
P63		blood	2,42
		bone marrow	5,11
P64		blood	8,23
		bone marrow	10,88
P65		blood	7,06
		bone marrow	19
P66		blood	9,22
P68		blood	4,07
		bone marrow	7,02
P70		blood	8,31
		bone marrow	7,63
P82		bone marrow	8,75
P83		bone marrow	2,32
P84		blood	7,5
	bone marrow	2,97	
P85	blood	3,22	
	bone marrow	3,32	
P94	blood	3,96	
	bone marrow	9,72	
P101	blood	0,99	
	bone marrow	3,44	

Supplemental Table 2. Percentage of CD45RARO cells in patients of multiple myeloma.

Patient	Type of cancer	Sample type	% CD45RARO in NK cells
P1A	BCL	blood	8,9
P2A			7,3
P20			10,5
P38			6,3
P45			10,01
P46			3,13
P69			12,35
P93			5,16
P98			10,4
PGL6			4,5
PGL7			1,5
PGL8			12,6
PGL10			6,3
PGL14			8,78
P18	B-CLL	blood	5,1
P25			5,32
P43			5,1
P52			6,36
P53			12,25
P54			5,73
P67			4,5
P90			1,05
P99			5,26
P139			1,17
P156			4,33
P158			3,16
P159			4,08
P168			1,56
P169	4,28		
P78	AML	bone marrow	32,88
P79			16,29
P95			6,52
P96			21,13
P97			4,5
P100			6,93
P103			7
P110			24,71
P138			2,61
P141			0,52
P142			34,98
P144			5,08
P154			2,58
P155			2,47

Supplemental Table 3. Percentage of CD45RARO cells in patients of B-CLL, B-cell chronic lymphocytic leukemia; BCL, B-cell lymphoma and AML, acute myeloid leukemia.