

Supplementary Table 1. Patient characteristics.

Patients	(n=35)
Gender	
M	22 (63%)
F	13 (37%)
Age at Transplantation, years (median and range)	8.48 (1-18)
Disease	
ALL	18 (51%)
AML	11 (31%)
MDS	4 (12%)
NHL	2 (6%)
ALL immunophenotype	
BCP	17 (95%)
T	1 (5%)
ALL recurrent molecular lesions	
t(9;22)(BCR/ABL)	2
t(12;21)(TEL/AML1)	1
t(4;11)(AF4/MLL)	1
3' deletion of MLL	1
t(10;11)(AF10/MLL)	1
AML recurrent molecular/cytogenetic lesions	
FLT3-ITD+; DEK-CAN-t(6;9)	1
t(11;12) NUP98-KDM5A	1
FLT3/ITD	1
Disease status at Transplantation	
ALL	
CR1	5 (28%)
CR2	12 (67%)
CR3	1(5%)
Active disease	-
AML	
CR1	6 (55%)
CR2	3 (27%)
CR3	-
Active disease	2 (18%)
Viral infections/reactivations after HSCT	
Yes	10 (29%)
No	25 (71%)
Acute GvHD	9 (26%)
Chronic GvHD	1 (3%)

Relapse	3 (9%)
Conditioning regimens	
TBI+TT+ Flu	14 (40%)
BU+TT+Flu	8 (23%)
TBI+TT+L-PAM	6 (17%)
Treo+TT+Flu	3 (8%)
TBI+TT+CY	2 (6%)
BU+CY+L-PAM	1 (3%)
BU+FLU+L-PAM	1 (3%)
Donor characteristics	
Age (years; range)	40; 21-50
Type of donor	
Mother	16 (46%)
Father	18 (51%)
Sister	1 (3%)
Gender mismatch	16 (46%)
Female Donor -> Male Recipient	10 (28%)
Cell dose infused, median (range)	
CD34+ cells x 10 ⁶ /kg	19.7 (5.9-33.3)
αβ+ T cells x 10 ⁶ /kg	0.04 (0.01-0.09)
γδ+ T cells x 10 ⁶ /kg	10.6 (1.26-38.5)
NK cells x 10 ⁶ /kg	29.3 (3.35-103.5)
DLI	
1 x 10 ⁶	29 (83%)
0,25 x 10 ⁶	1 (3%)
4 x 10 ⁶	5 (14%)

M = male; F = female; ALL = acute lymphoblastic leukemia; AML = acute myeloid leukemia; NHL: Non-Hodgkin Lymphoma; BCP = B-cell precursors; TBI = total body irradiation; TT = thiotepa; Flu = fludarabine; L-PAM = melphalan; BU = busulfan; CY = cyclophosphamide; Treo = treosulfan; CR = complete remission; NK = natural killer;

Supplementary Table 2.

Antigen	Clone	Isotype	Fluorochrome
CD3	SK7	Mouse IgG1	APC-H7
	SK7	Mouse IgG1	FITC
CD16	3G8	Mouse IgG1	PerCP y5.5
CD25	2°3	Mouse IgG1	APC
CD27	M-T271	Mouse IgG1	APC
CD45	2D1	Mouse IgG1	APC H7
	HI30	Mouse IgG1	PE Cy7
CD56	NCAM16.2	Mouse IgG2b	PE
CD57	NK-1	Mouse IgM	FITC
CD62L	DREG-56	Mouse IgG1	APC
CD107a	H4A3	Mouse IgG1	APC
CD122	27302	Mouse IgG1	APC
CD127	h-IL-7R-M21	Mouse IgG1	Alexa Fluor 647
CD158a	HP-3E4	Mouse IgM	FITC
CD158b	CH-L	Mouse IgG2b	FITC
CD158e1	DX9	Mouse IgG1	FITC
CD161	DX12	Mouse IgG1	APC
CXCR3	1C6	Mouse IgG1	APC
CXCR4	12G5	Mouse IgG2a	APC
CX3CR1	2A9-1	Rat IgG2b	APC
NKG2D	1D11	Mouse IgG1	APC
NKG2A	Z199	Mouse IgG1	APC
NKG2C	134591	Mouse IgG1	APC
NKp46	9,00E+02	Mouse IgG1	APC
INF-γ	B27	Mouse IgG1	APC
DNAM-1	DX-11	Mouse IgG1	FITC

Supplementary Table 3: Characteristics of patients used in Figure 2.

PB CD107a (R)			PB CD107a (NR)		
DISEASE	GVHD	VIRAL INFECTION	DISEASE	GVHD	VIRAL INFECTION
43.5% ALL 35% AML 17.5% MDS	21.7%	39%	50% ALL 30% AML 20% NHL	40%	60%

PB IFN- γ (R)			PB IFN- γ (NR)		
DISEASE	GVHD	VIRAL INFECTION	DISEASE	GVHD	VIRAL INFECTION
45% ALL 36% AML 9% MDS 9% NHL	36%	36%	69.3% ALL 30.7% AML	15.4%	23%

BM CD107a (R)			BM CD107a (NR)		
DISEASE	GVHD	VIRAL INFECTION	DISEASE	GVHD	VIRAL INFECTION
49.5% ALL 41.5% AML 8% MDS	16.6%	41.6%	33.4% ALL 41.6% AML 25% MDS	8%	41.6%

BM IFN- γ (R)			BM IFN- γ (NR)		
DISEASE	GVHD	VIRAL INFECTION	DISEASE	GVHD	VIRAL INFECTION
54.6 % ALL 45.4% AML	27%	36%	56.1% ALL 28.6% AML 14.3% MDS	0%	14.3%

R = responder; NR = non-responder

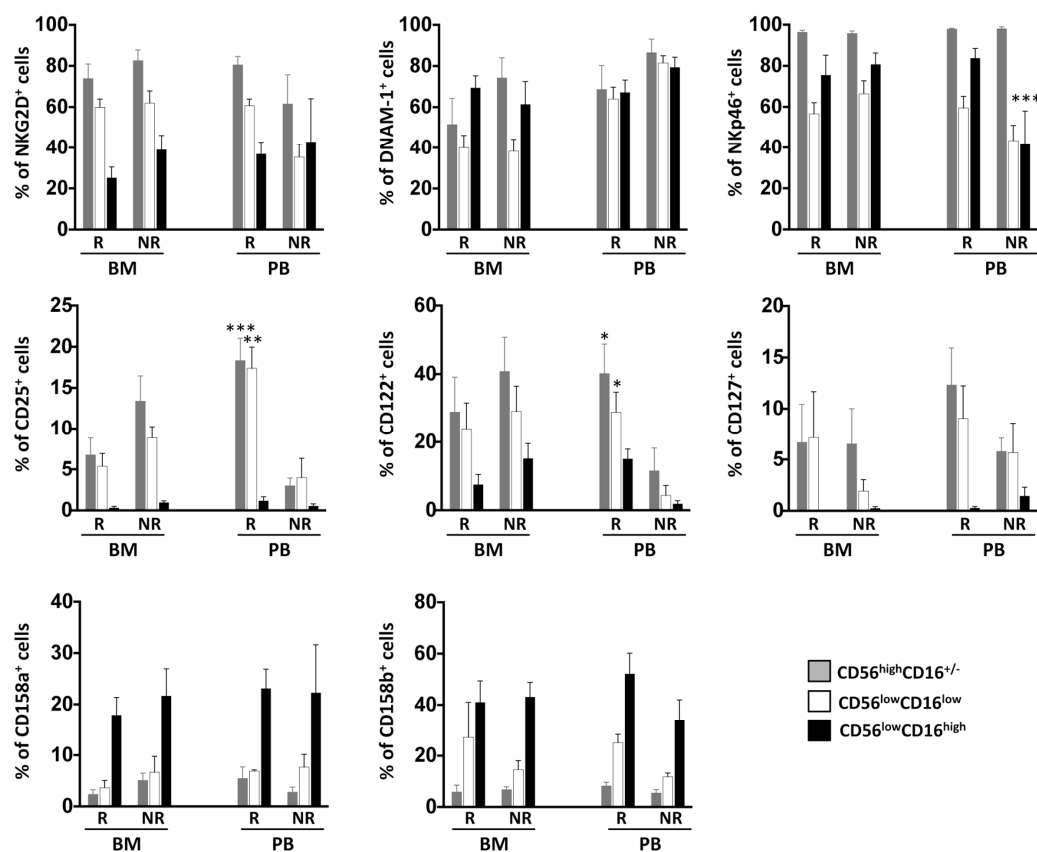
Supplementary Table 4: Characteristics of patients used in Figure 3.

PB CD107a (R) – IFN- γ (NR)			PB CD107a (NR) – IFN- γ (R)		
DISEASE	GVHD	VIRAL INFECTION	DISEASE	GVHD	VIRAL INFECTION
62.5% ALL 25% AML 12.5% MDS	12.5%	37.5%	50% ALL 50% AML	25%	50%

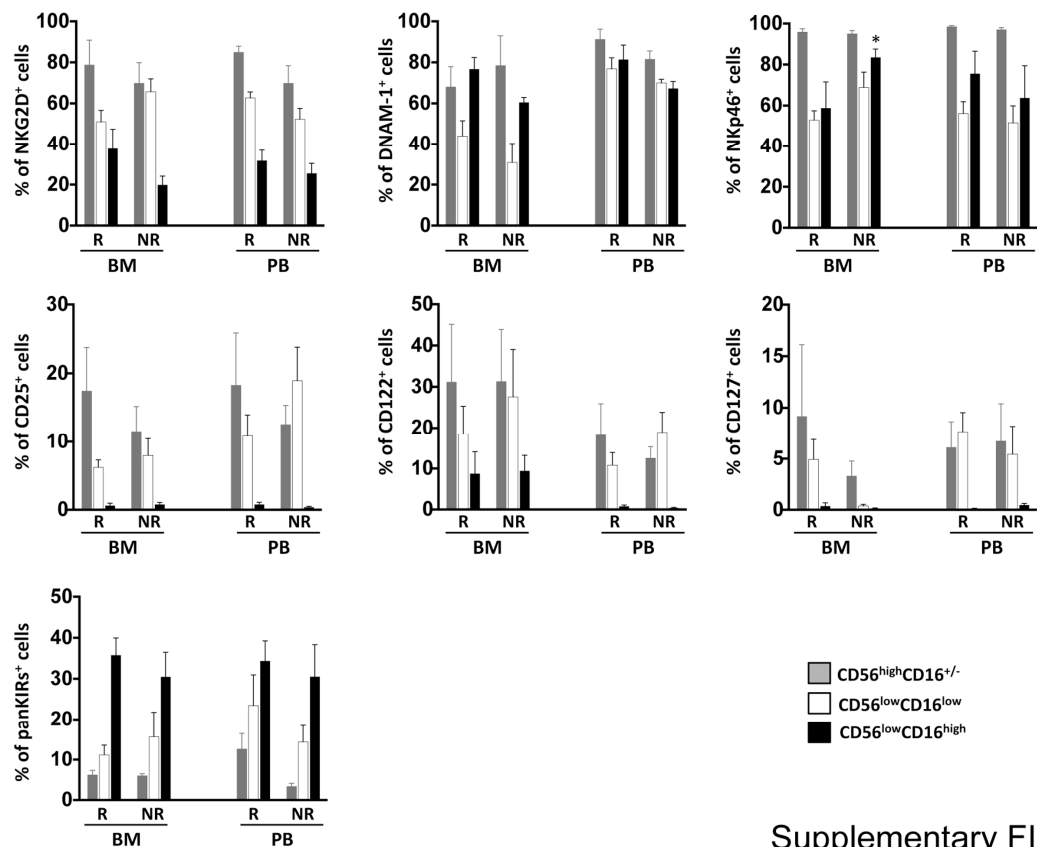
BM CD107a (R) – IFN- γ (NR)			BM CD107a (NR) – IFN- γ (R)		
DISEASE	GVHD	VIRAL INFECTION	DISEASE	GVHD	VIRAL INFECTION
33.4% ALL 66.6% AML	0%	33.3%	60% ALL 40% AML	20%	40%

R = responder; NR = non-responder

A

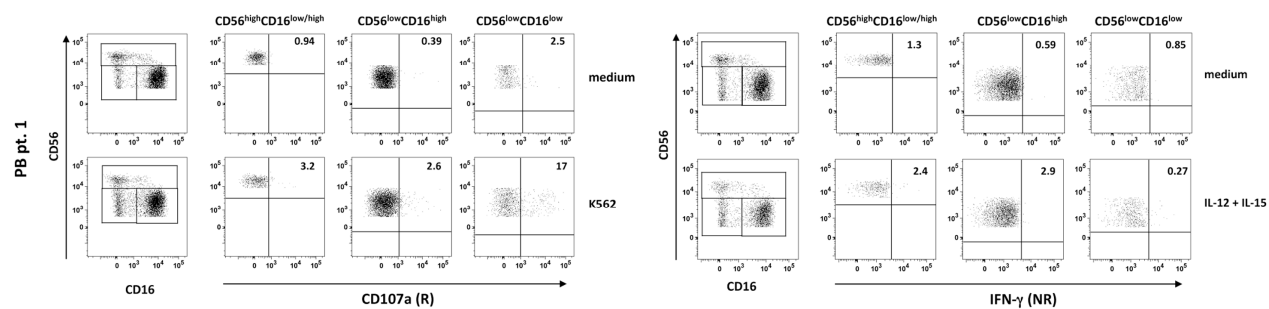


B

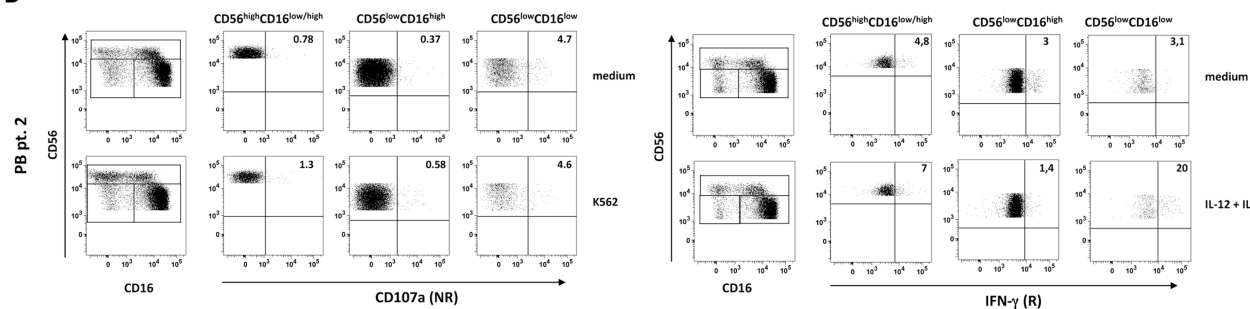


Supplementary FIGURE 1

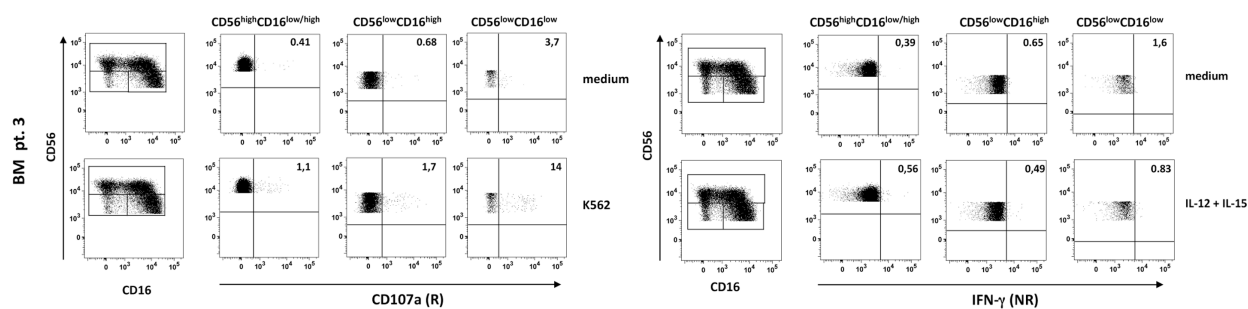
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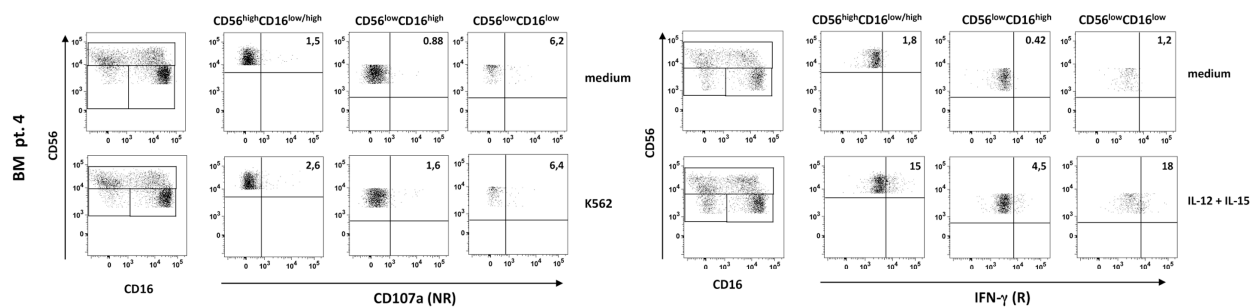
B



C



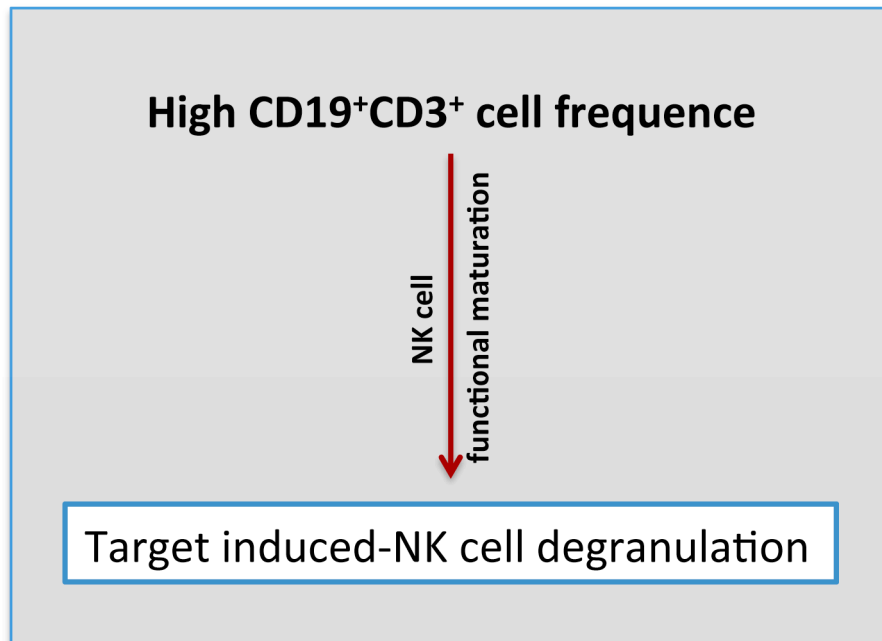
D



Supplementary FIGURE 2

FUNCTION	CD56 ^{low} CD16 ^{low} NK cell subset	
PB and BM CD107a	-	+ (*)
PB and BM IFN- γ	+	-

* indicate the correlation between degranulation ability of CD56^{low}CD16^{low} NK cells and the frequency of CD19⁺CD3⁺ cells.



Supplementary FIGURE 3