Research topic: The immune microenvironment and the infectious complications of allo-HSCT

Persistence of KIR^{neg} NK cells after haploidentical hematopoietic stem cell transplantation protects from human Cytomegalovirus infection/reactivation

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Supplementary Material

Supplementary tables

Supplementary table 1. Statistical analysis of NR and R patient characteristics.

	NR **(n; %)**	**R** **(n; %)**	**P value** (χ^2)
Donor M	6; 60%	12; 60%	1
Donor F	4; 40%	8; 40%	
Recipient M	7; 70%	13; 65%	0.78
Recipient F	3; 30%	7; 35%	
Donor HCMV -	7; 70%	6; 30%	0.37
Donor HCMV +	3; 30%	14; 70%	
Recipient HCMV -	8; 80%	4; 20%	0.001***
Recipient HCMV +	2; 20%	16; 80%	
Acute GvHD YES	6; 60%	12; 60%	0.69
Acute GvHD NO	4; 40%	8; 40%	
Chronic GvHD YES	1; 10%	3; 15%	0.70
Chronic GvHD NO	9; 90%	17; 85%	
	NR **(median; range)**	**R** **(median; range)**	**P value** (Mann-Whitney test)
Donor age	51; 29-62	37.5; 25-64	0.027*
Recipient age	33.5; 20-49	44; 20-70	0.053

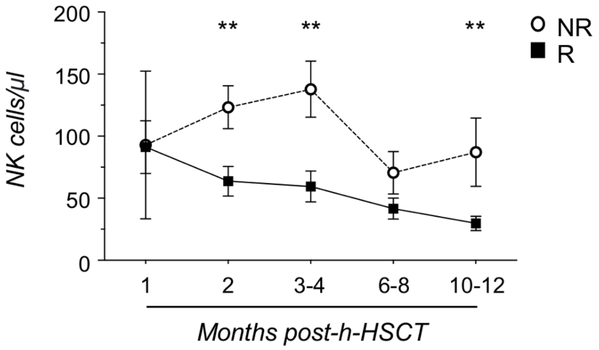
Abbreviations: NR, not-reactivated patients; R, reactivated patients; F, Female; M, Male; GvHD, Graft versus Host Disease.

Supplementary table 2. Characteristics of patients used in *in vitro* infection experiments.

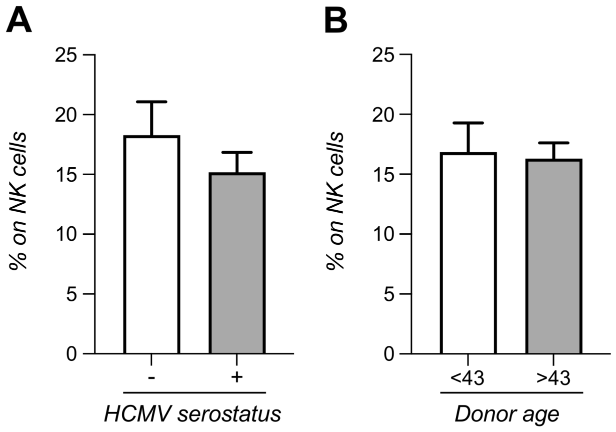
Group	**Day post-h-HSCT** used for in vitro infection experiments	**HCMV d/r**	**HCMV-I/R** (day post-h-HSCT)	**Sex**: d/r	**r: age**	**d: age**	**Disease; status before transplant**	**Follow-up** (weeks)
NR	369	+/+	NA	M/M	25	51	NHL; CR	53
NR	231	+/-	NA	M/F	26	62	HL; CR	51
NR	228	+/+	NA	F/M	54	55	NHL; SD	51
NR	377	-/-	NA	M/M	68	32	MDS; CR	54
R	331	+/+	33	F/M	47	38	HL; CR	47
R	258	+/-	62	M/M	62	35	NHL; PR	50
R	241	-/+	31	M/M	70	37	MDS; SD	52
R	362	+/+	54	M/M	52	50	HL; CR	52

Abbreviations: NR, not-reactivated patients; R, reactivated patients; d, donor; r, recipient; F, Female; M, Male; NHL, Non-Hodgkin Lymphoma; HL, Hodgkin Lymphoma; MDS, Myelodysplastic Syndrome; CR, complete response; SD, stable disease; PR, partial response.

Supplementary Figures

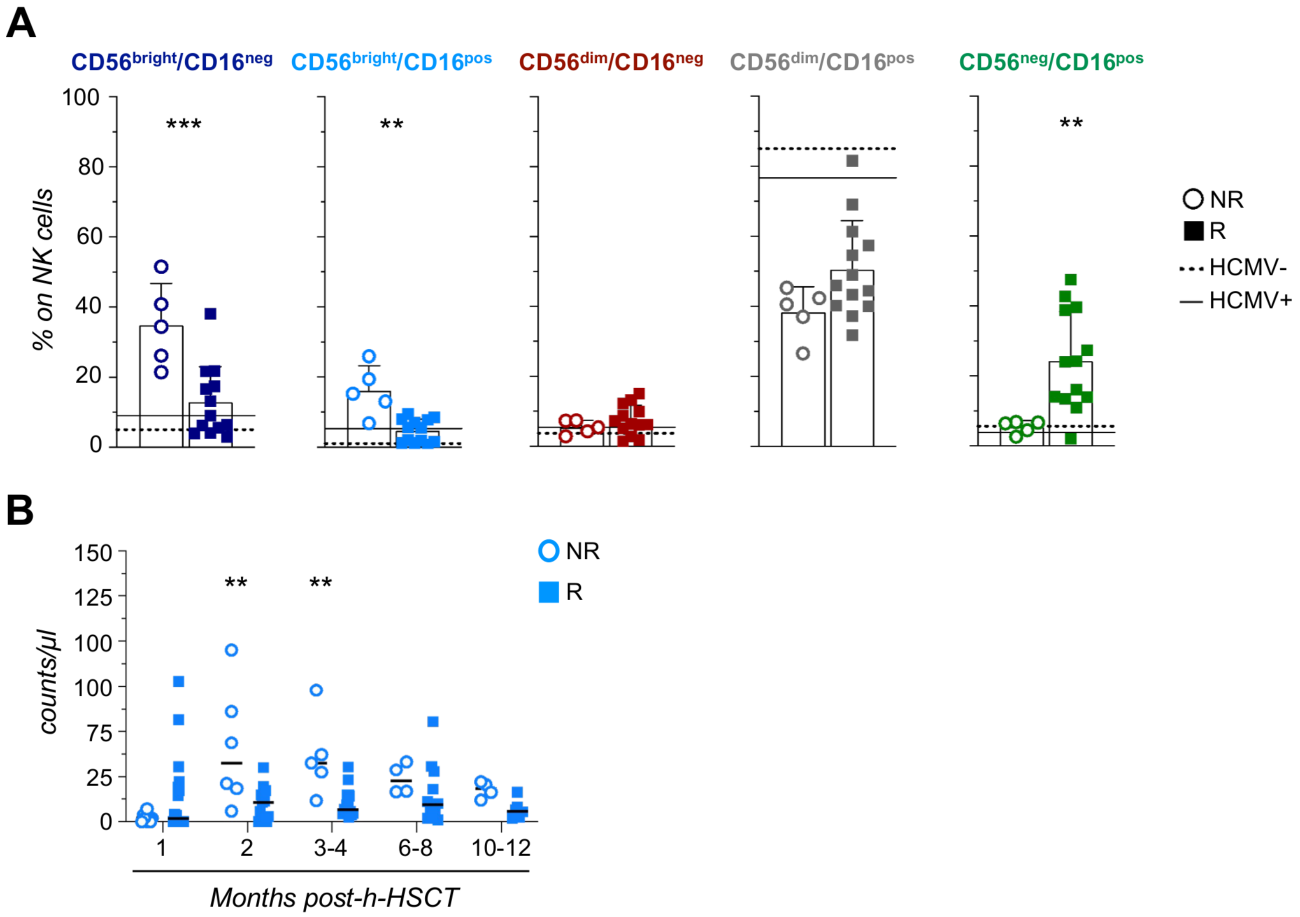


Supplementary Figure 1. Longitudinal analysis of KIR^{neg} NK cell absolute counts in NR and R. Summary statistical graphs showing the absolute counts (NK cells/µl, mean ± SD) of CD158b1b2j^{neg}/NKG2A^{pos}/NKG2C^{neg}/NKp30^{pos}/NKp46^{pos} NK cells in NR (○; n=10) and R (■; n=20) recipients at 1, 2, 3-4, 6-8, 10-12 months after the h-HSCT. Student's t-test NR vs R, **p<0.01.



Supplementary Figure 2. KIR^{neg} NK cell frequency in donor grafts.

Summary statistical graphs showing the frequency (%, mean ± SD) of CD158b1b2j^{neg}/NKG2A^{pos}/NKG2C^{neg}/NKp30^{pos}/NKp46^{pos} NK cells on total NK cells in donor grafts subdivided based on **(A)** their HCMV serostatus or **(B)** age. The cut-off age of 43 corresponds to the median age of donors. Student's t-test, not significant.



Supplementary Figure 3. NK cell subset distribution in recipients experiencing or not a HCMV infection/reactivation after h-HSCT.

(A) Summary statistical graphs showing the NK cell subset distribution (%; mean ± SD) in NR (○; n=5) and R (■; n=20) recipients on total NK cells at 3-4 months after h-HSCT. Solid and dotted lines represent the average frequency of NK cell subsets in HCMV seropositive (HCMV+, n=5) and seronegative (HCMV-, n=5) healthy donors, respectively.

(B) Summary statistical graphs showing the absolute counts (cells/µL, line at mean) of circulating $\text{CD56}^{\text{bright}}/\text{CD16}^{\text{pos}}$ NK cells in recipients either experiencing (R: ■; n=20) or not (NR: ○; n=10) HCMV reactivation/infection at different time points after h-HSCT.

Student's t-test NR vs R, *p<0.05, **p<0.01, ***p<0.001.