Supplemental Material

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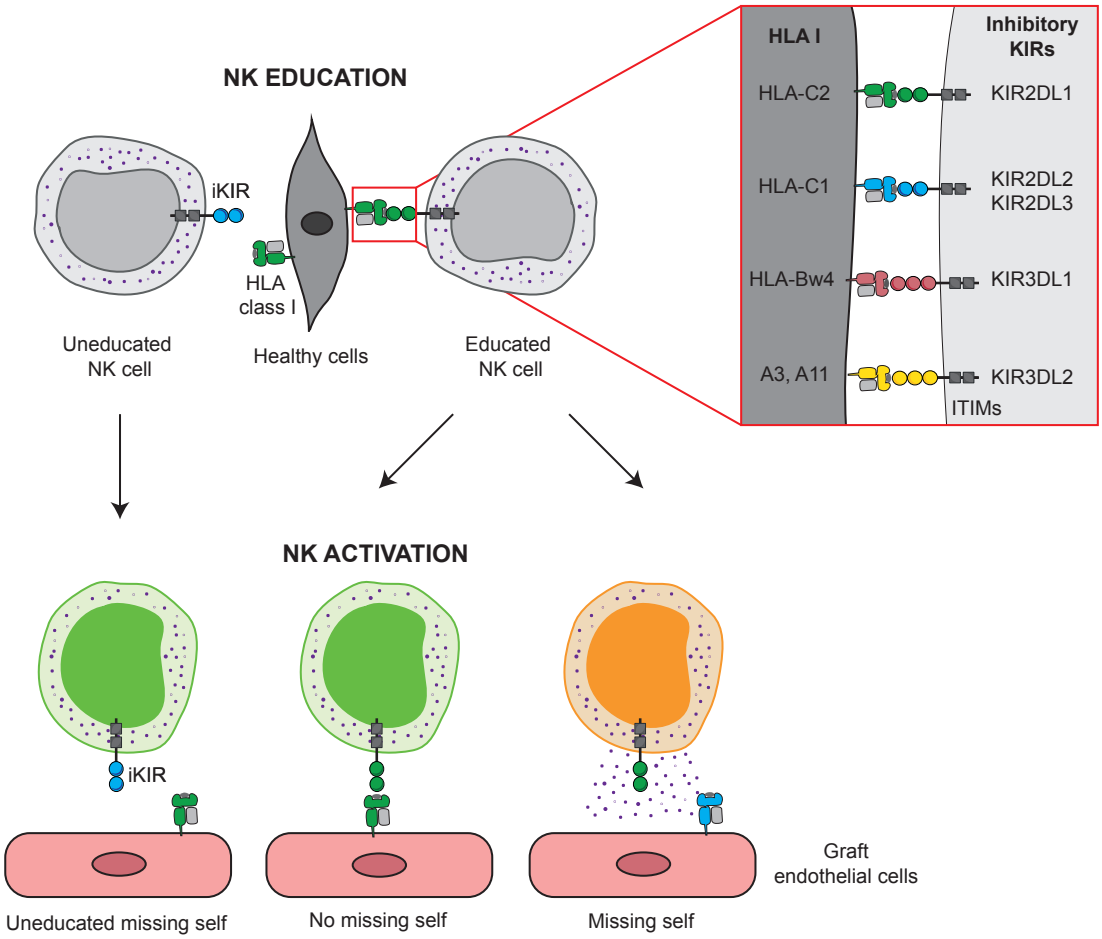
Supplemental Figure 1: NK cell education and activation by missing self

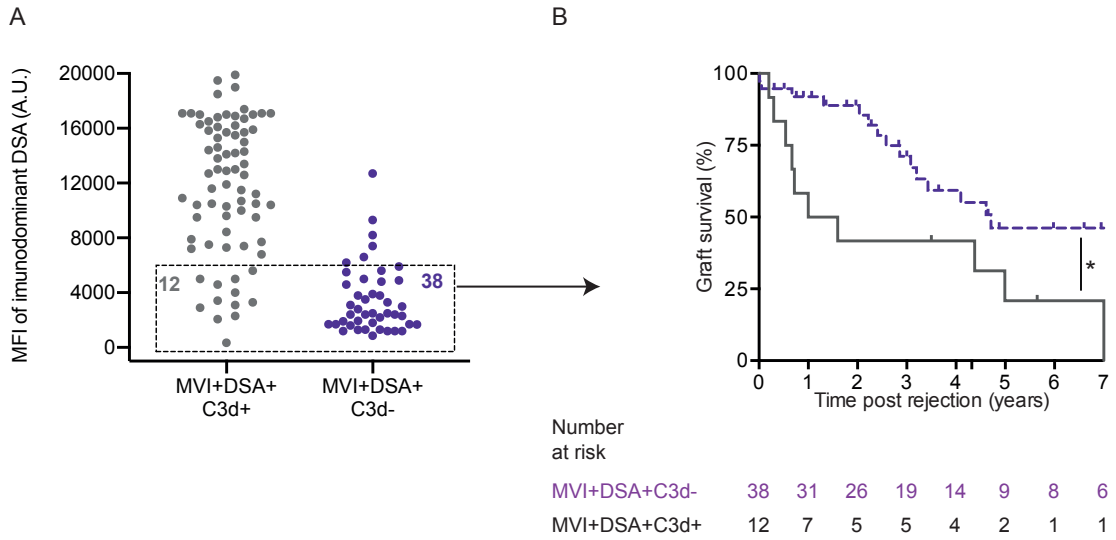


Schematic representation of the education process of NK cells and of the interactions between inhibitory KIR receptors on human NK cells and their ligands (upper). KIR2DL1 and KIR2DL2/3 recognise distinct HLA-C allotypes, called C2 or C1 based on polymorphisms at positions 77 and 80 in the α1-domain of the HLA heavy chain. KIR3DL1 ligands are HLA A and B molecules that share the Bw4 epitope, and KIR3DL2 binds HLA-A3 and HLA-A11.

Schematic representation of the 3 distinct situations that can be encountered by circulating recipients' NK cells when contacting the vasculature of an allogeneic organ (lower): presence of a missing self for a ligand not expressed by recipients' NK cells (Uneducated missing self) (left panel), absence of missing self (No missing self)

(centre panel), or presence of a missing self for a ligand expressed by recipients' NK cells (Missing self) (right panel).

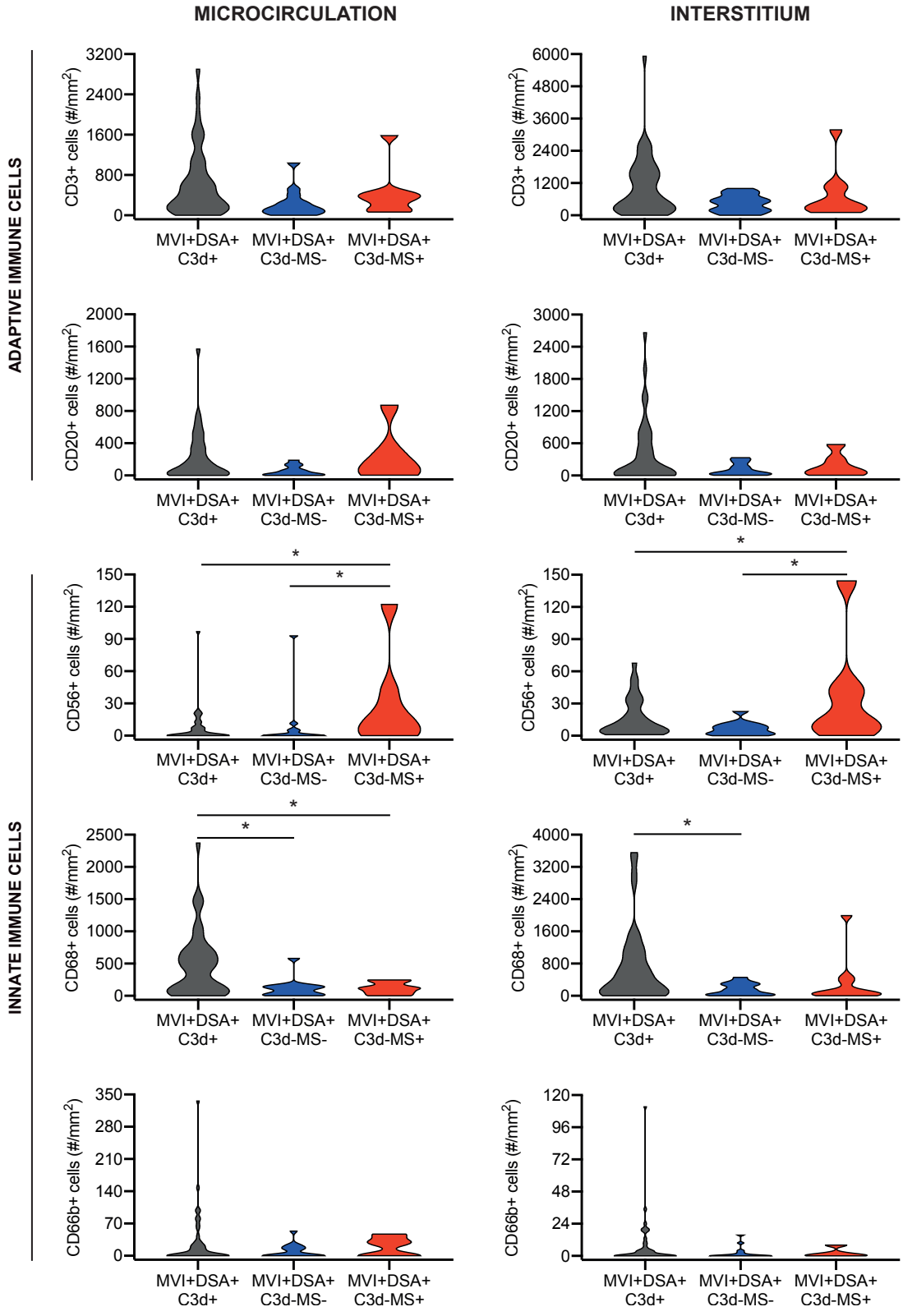
Supplemental Figure 2: Activation of complement in patients with similar MFI of immuno-dominant DSA



A. Titre of immunodominant DSA was assessed in solid phase assay. Distribution of this parameter is shown for the different groups**.**

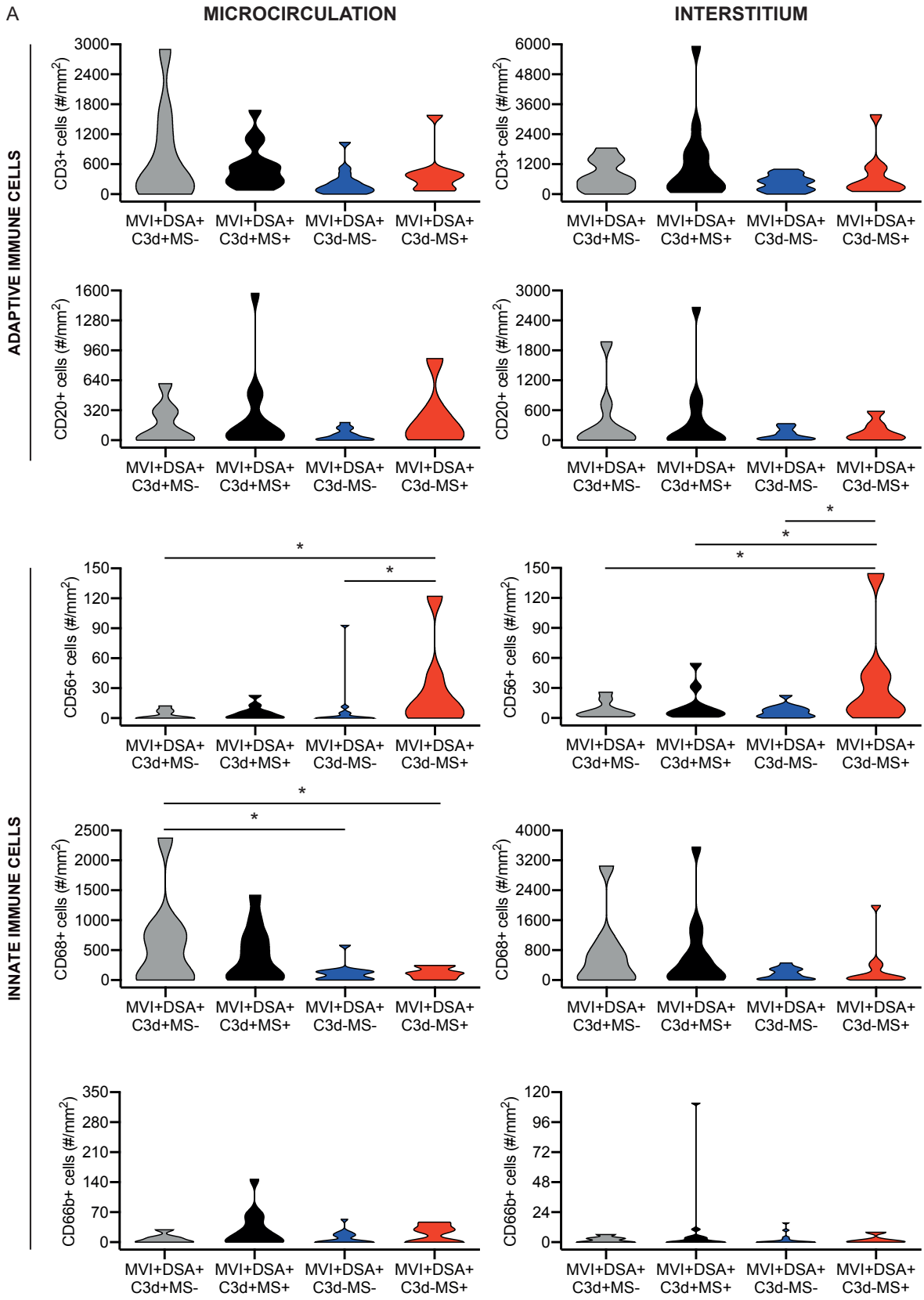
B. Renal graft survival of MVI+DSA+C3d- (dashed purple line) and MVI+DSA+C3d+ (solid dark grey line) with similar MFI of immunodominant DSA were compared.

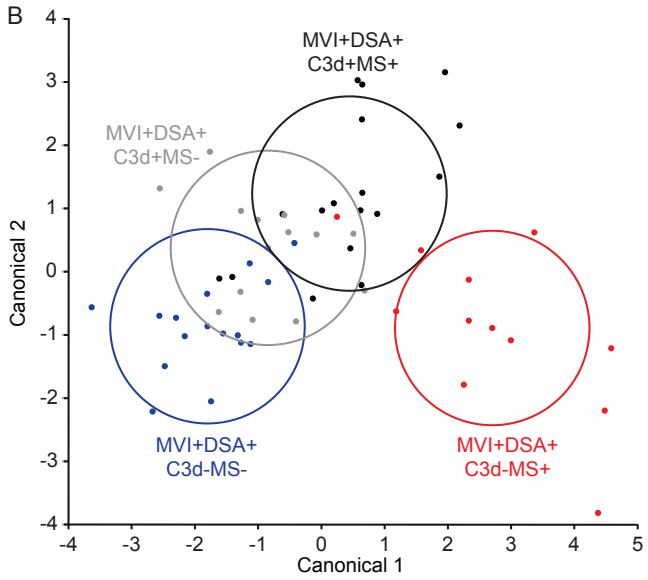
Supplemental Figure 3: Computer-assisted analysis of allograft inflammation (CAGI): three groups analysis



Quantification of adaptive effectors (B cells [CD20+], and T cells [CD3+]) and innate effectors (NK cells [CD56+], macrophages [CD68+], and granulocytes [CD66b+]) in the microcirculation (glomeruli and peritubular capillaries) and the tubulo-interstitial compartment of renal allograft of patients with available biopsy material from MVI+DSA+C3d+ (n=61), MVI+DSA+C3d-MS- (n=17), and MVI+DSA+C3d-MS+ (n=13) groups using the Computer-assisted Analysis of Graft Inflammation (CAGI) method. *$p<0.05$; One-way ANOVA.

Supplemental Figure 4: Computer-assisted analysis of allograft inflammation (CAGI): four groups analysis





A. Quantification of adaptive effectors (B cells [CD20+], and T cells [CD3+]) and innate effectors (NK cells [CD56+], macrophages [CD68+], and granulocytes [CD66b+]) in the microcirculation (glomeruli and peritubular capillaries) and the tubulo-interstitial compartment of renal allograft of patients with available biopsy material from MVI+DSA+C3d+MS- (n=14), MVI+DSA+C3d+MS+ (n=17), MVI+DSA+C3d-MS- (n=17), and MVI+DSA+C3d-MS+ (n=13) groups using the Computer-assisted Analysis of Graft Inflammation (CAGI) method. *$p<0.05$; One-way ANOVA.

B. The scatter plot of the first two canonical discriminant function analysis for CAGI dataset is shown. Entropy r2 =0.65.