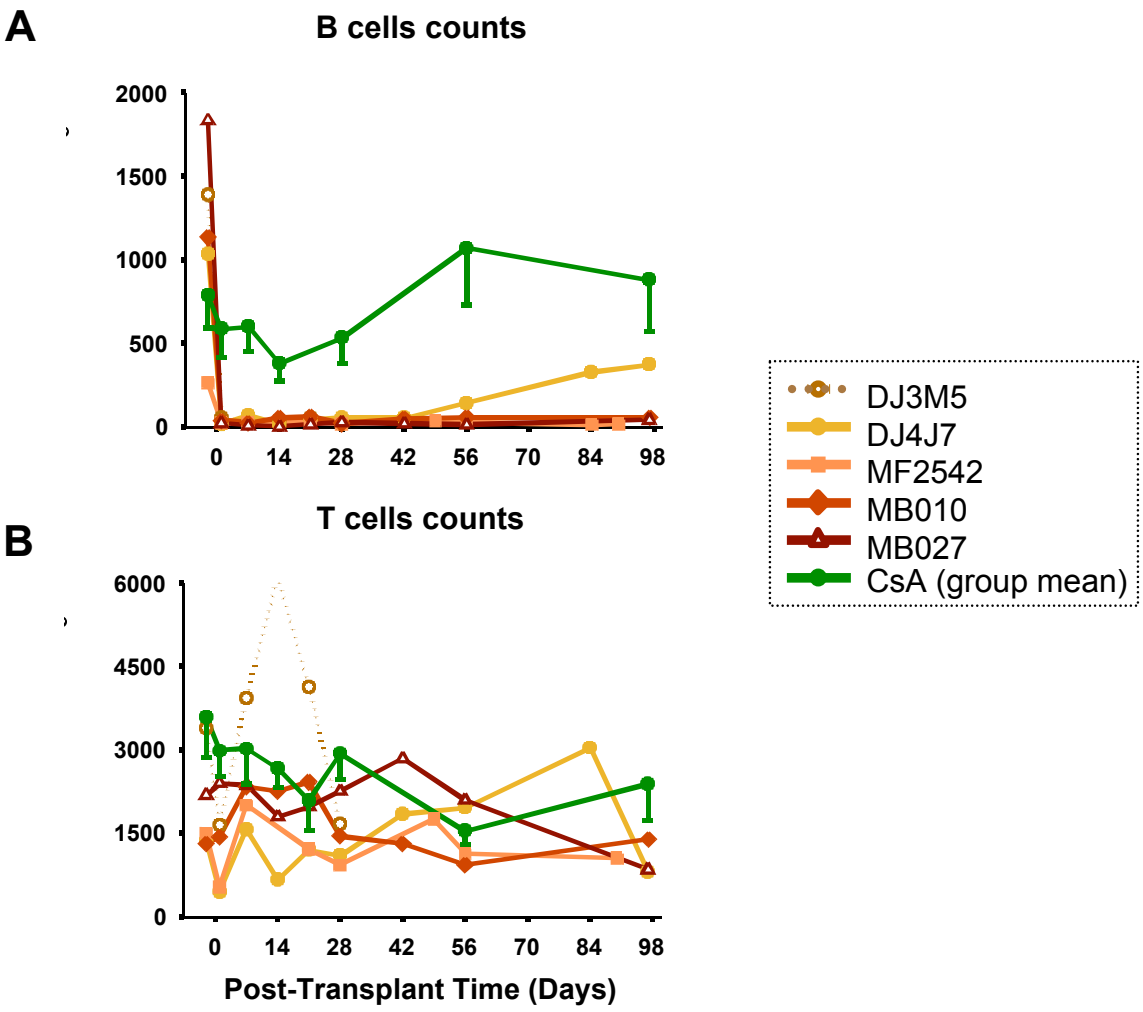
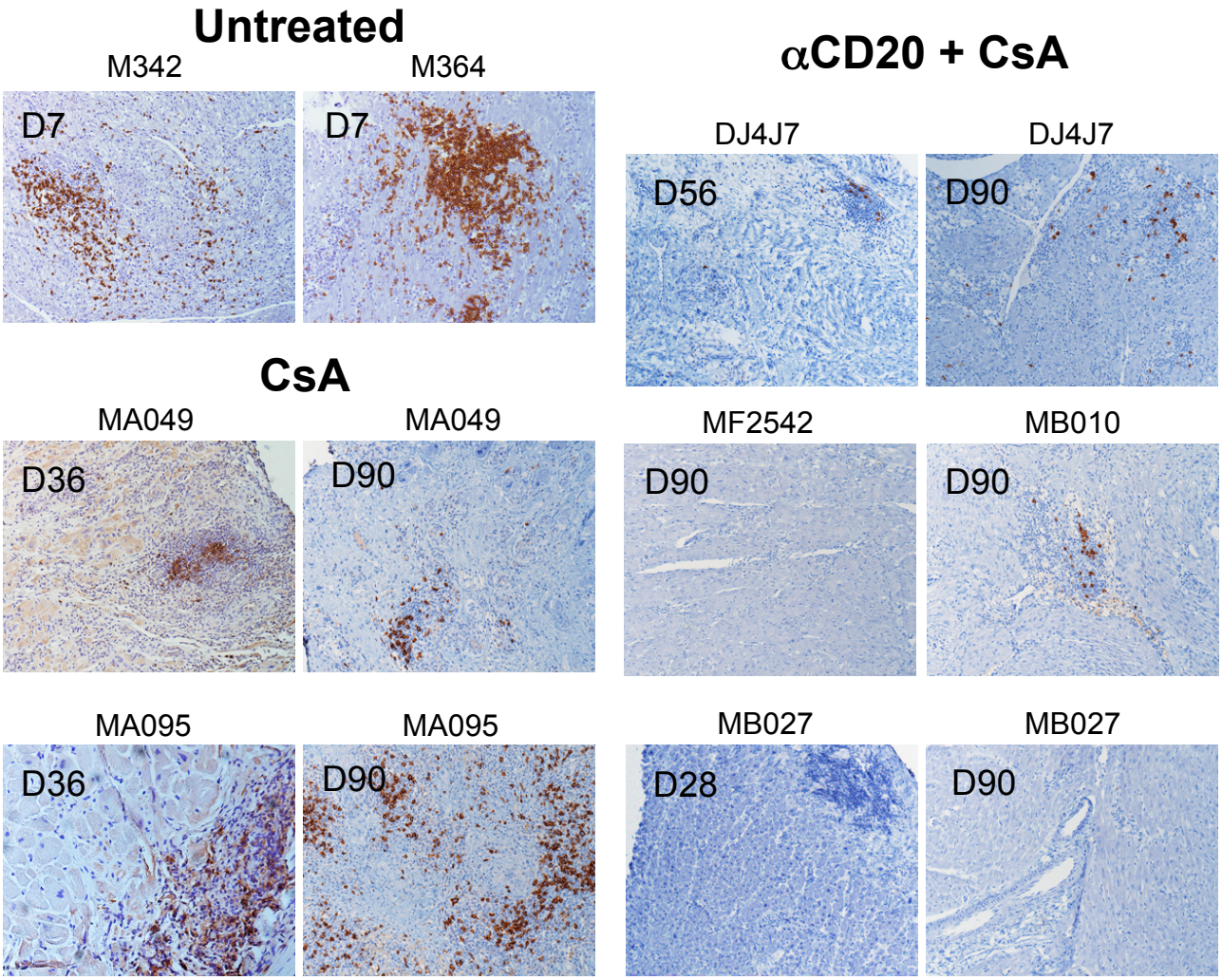
Suppl. Figure 1



Suppl. Figure 2



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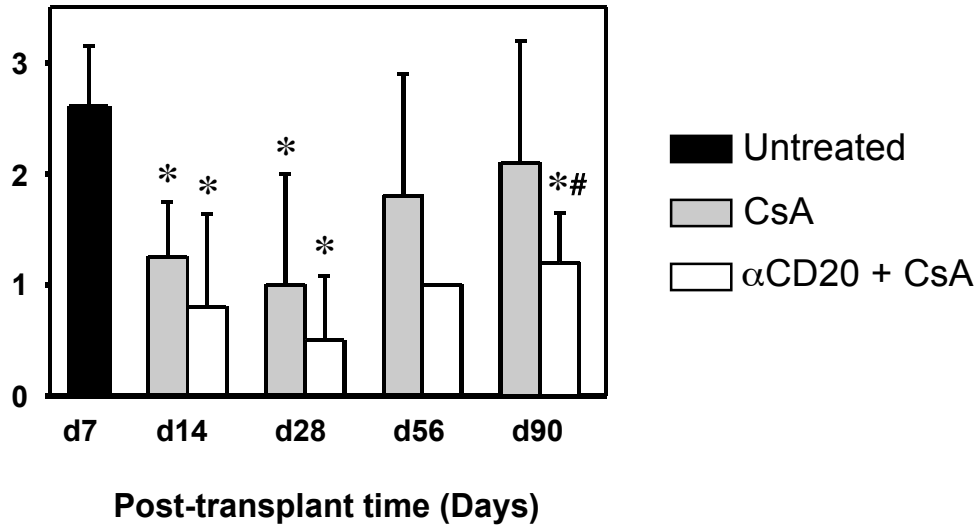
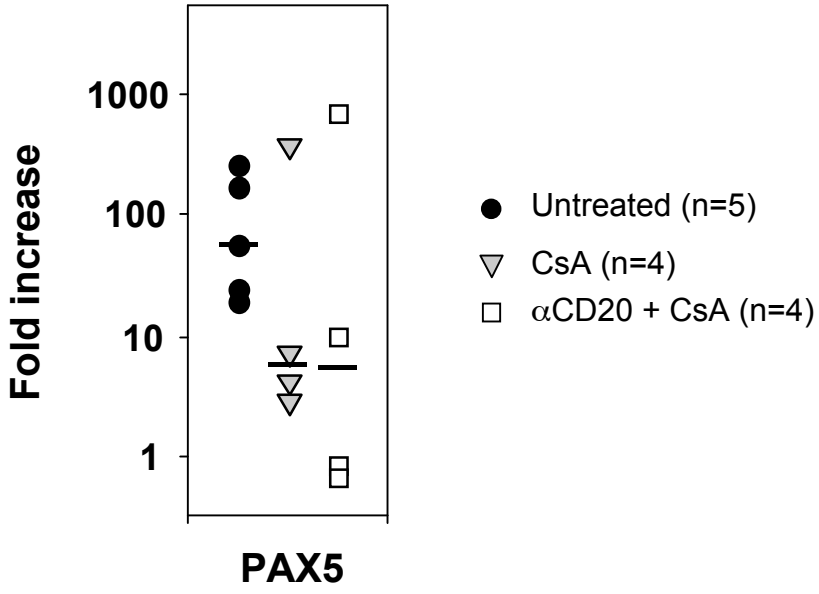
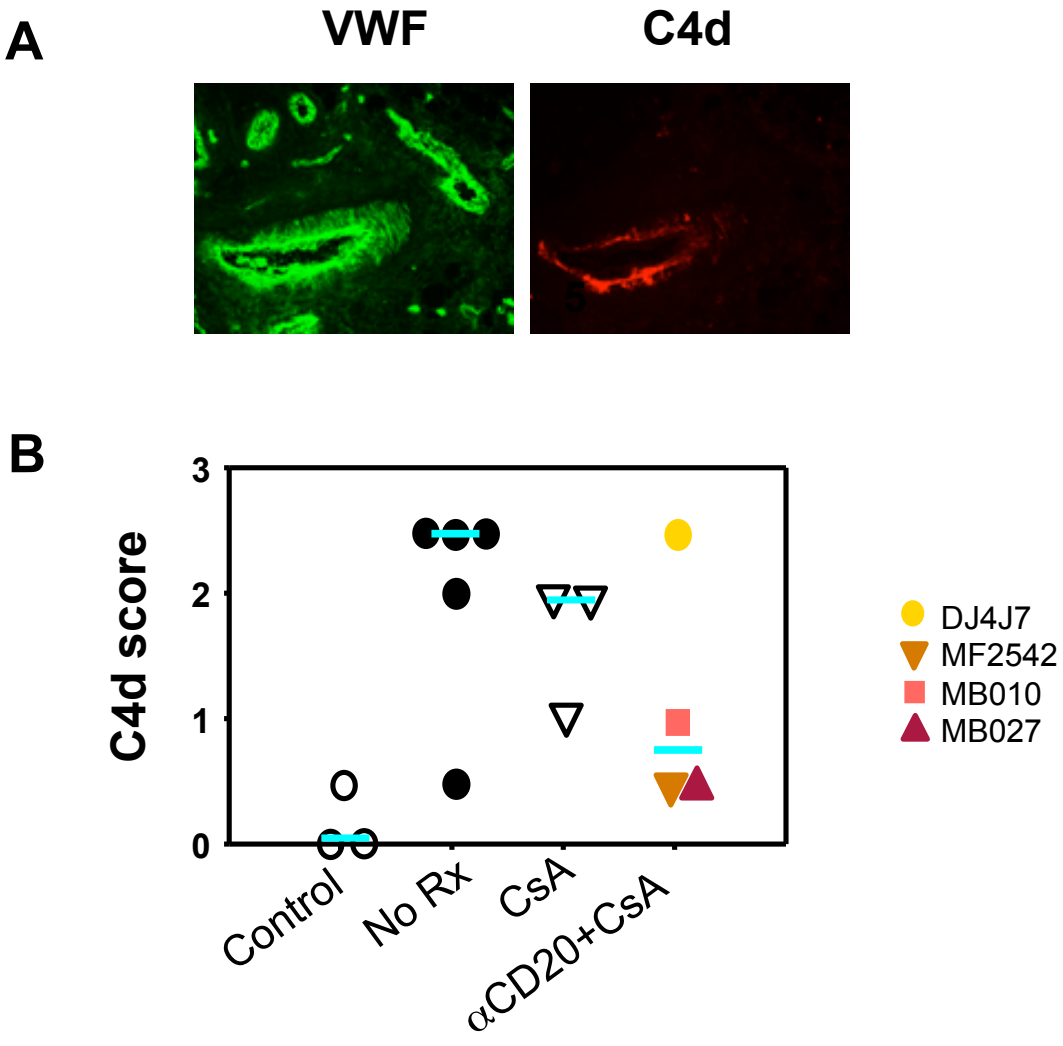


Suppl. Figure 4



Suppl. Figure 5



Supplemental Figure Legends

Supplemental Figure 1. Absolute B-cell and T-cell counts in peripheral blood of individual animals after anti-CD20 therapy. Peripheral blood B-cell numbers (A) are significantly reduced with αCD20+CsA (brown curves; each line represents an individual animal) relative to CsA (green curve reflects CsA group mean ± SEM), whereas T-cells (B) exhibit similar trends over time in both treatment groups. DJ3M5 (dotted line, panel B) exhibited high leukocyte counts associated with acute parvovirus infection that proved lethal on day 35, and was excluded from Figure1.

Supplemental Figure 2. Immunochemistry analysis of graft infiltrating B-cells. Cardiac graft biopsy or explanted heart tissue specimens were stained for CD20 as described in Methods. Representative pictures from untreated and treated transplant recipients. Original magnification x100. D: day post-transplant.

Supplemental Figure 3. Rejection scores determined according to the ISHLT guidelines. (mean ± SD) Perioperative depletion of B-cells with αCD20 in CsA-treated heart allograft recipients is associated with lower ISHLT acute cellular rejection scores relative to animals treated with CsA alone ($p=0.045$ at day 90, including monkey ID#DJ4J7). *, $p<0.05$ vs. untreated, #, $p<0.05$ vs. CsA

Supplemental Figure 4. Intra-graft gene expression of PAX5 in explanted cardiac allografts. Relative expression levels by real-time RT-PCR expressed as fold increase over normal heart after normalization to HRPT. The black bar displays the group

median while each dot represents an individual animal. PAX5 expression correlates with CD20 gene expression and is generally decreased in surviving grafts compared to acutely rejected controls. The outlier with high PAX5 expression in the αCD20+CsA group corresponds to the animal exhibiting partial depletion by flow cytometry and immunochemistry (DJ4J7).

Supplemental Figure 5. Immunochemistry analysis of intra-graft classical pathway complement activation. Frozen tissue sections were stained by double immuno-fluorescence for Von Willebrand factor (VWF, green) and complement deposits (C4d, red). **A,** Representative picture showing vascular deposits of C4d in an animal treated with CsA, original magnification x200. **B**, Quantitative C4d deposits scores are shown for native hearts (control) and cardiac allografts harvested from recipients treated with the indicated regimens. Each dot represents an individual animal, the turquoise bar displays the group median. Experiments for which the quality of frozen tissue was inadequate to accurately estimate C4d deposition are excluded from the figure

Supplemental Table 1. Real-time PCR reagents.

Gene symbol	Company	Catalog #
TNFSF13B (BAFF)	Qiagen	QT00094759
PAX5	Applied Biosystems	Rh_02872283_m1
CD3E	Applied Biosystems	Rh_010662242_m1
CD28	Applied Biosystems	Hs_00174796_m1
CD80	Applied Biosystems	Hs_00175478_m1
IFNγ	Applied Biosystems	Hs_99999041_m1
IL-4	Applied Biosystems	Rh_02621716_m1
IL-17	Applied Biosystems	Rh_02621750_m1

Gene symbol	Forward primer *	Reverse primer *	Probe *
HPRT1	Rh-HPRT-740F-TGCCCTTGACTATAATGAATACTTCAG	Rh-HPRT-848R-CCAAACTCAACTTGAACTCTCATCTT	Hs-HPRT-785T-TGTCATTAGTGAAACTGGAAAAGCAAATACAAAGCC
FOXP3	p/h-FOXP3-467F-CCCTGCCCTTCTCATCCA	p/h-FOXP3-555R-GTGGCCCGGATGTGAAAA	p/h-FOXP3-526T-AGCCAGAGGACTTCCTCAAGCACTGCC
CD20	Rh-CD20-686F-CCATCTACTAATACTGTTACAGCATACA	Rh-CD20-763R-AAGAAGGCAAAGATCAGCATCACTGA	

* These reagents were designed based on macaque sequences (Accession #GI:109080344;74136394;109105983) using Primer Express.