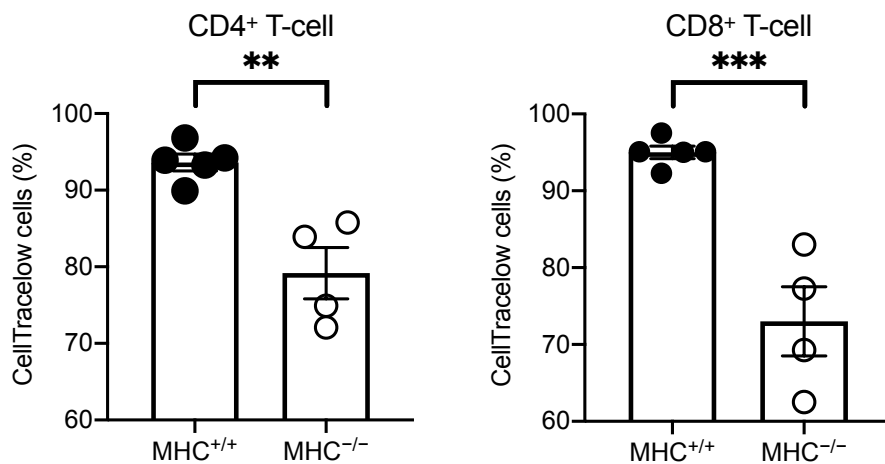


Supplemental Table 1

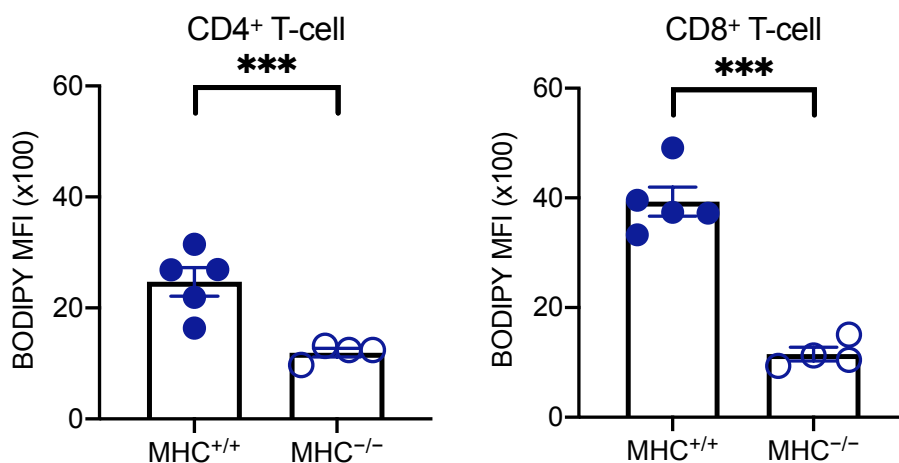
Antibody	Species	Clone	Supplier	Cat Number	Fluorophore
CD3	Rat-anti-human	OKT3	BioLegend	317336	PerCP/ Cyanine5.5
CD4	Rat-anti-human	RPA-T4	BioLegend	300532	BV421
CD45RA	Rat-anti-human	HI100	BioLegend	304138	BV711
CCR7	Rat-anti-human	G043H7	BioLegend	353204	PE
CellTrace Far Red Cell Proliferation	N/A	N/A	Invitrogen	C34572	APC
Fixable Viability Dye eFluor 780	N/A	N/A	eBioScience	65-0865-14	APC/ Cyanine7
BODIPY 500/510	N/A	N/A	Invitrogen	D3823	FITC
2-NBDG	N/A	N/A	Cayman	11046	FITC
CD45	Rat-anti-human	HI100	BioLegend	304016	PE/ Cyanine7
CD45	Rat-anti-mouse	30-F11	BioLegend	103108	FITC
CD4	Rat-anti-human	RPA-T4	BioLegend	300532	BV421
CD8	Rat-anti-human	HIT8a	BD BioSciences	555635	PE
CellTrace Far Red Cell Proliferation	N/A	N/A	Invitrogen	C34572	APC
7AAD	N/A	N/A	BD BioSciences	559925	PerCP/ Cyanine5.5
CD25	Rat-anti-human	BC86	BioLegend	302630	Brilliant Violet 421
FOXP3	Rat-anti-human	PCH101	ThermoFisher	12-4776-42	PE

Supplemental Figure 1

A



B



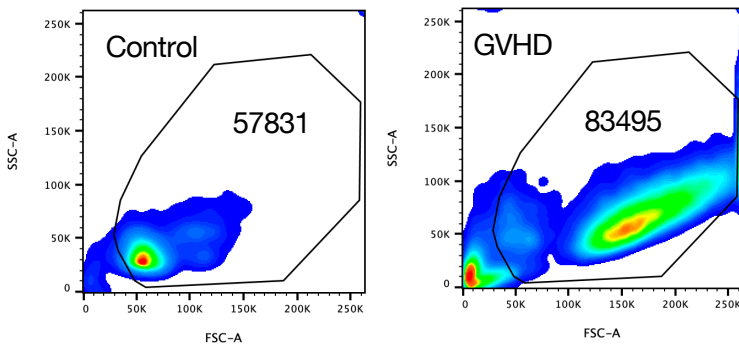
Supplemental Figure 1: Comparison of cell proliferation and extracellular FA uptake in human T-cell from MHC^{+/+} and MHC^{-/-} NOG mice during GVHD.

Cells were harvested from the lungs of NOG mice at day 9 after transplantation.

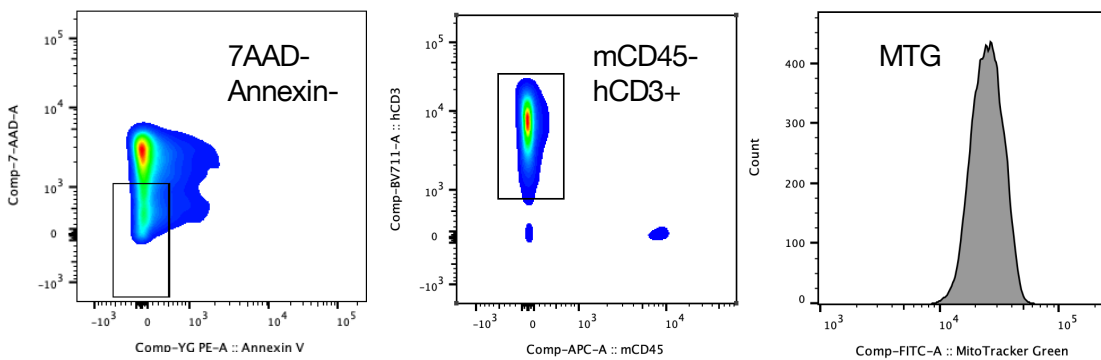
(A) Cell proliferation determined by the dilution of CellTrace Far Red. **: $P < .01$. ***: $P < .001$. (B) Extracellular FA uptake determined by BODIPY 500/510 fluorescence. Plots are gated on highly proliferating human T-cells (CellTrace Far Red^{low} in live whole T-cells). ***: $P < .001$.

Supplemental Figure 2

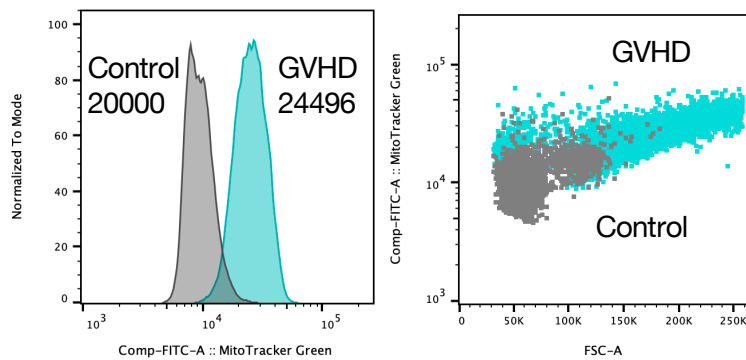
A



B



C



Supplemental Figure 2: Comparison of mitochondrial mass and cells size between unmanipulated T-cell and GVHD T-cells.

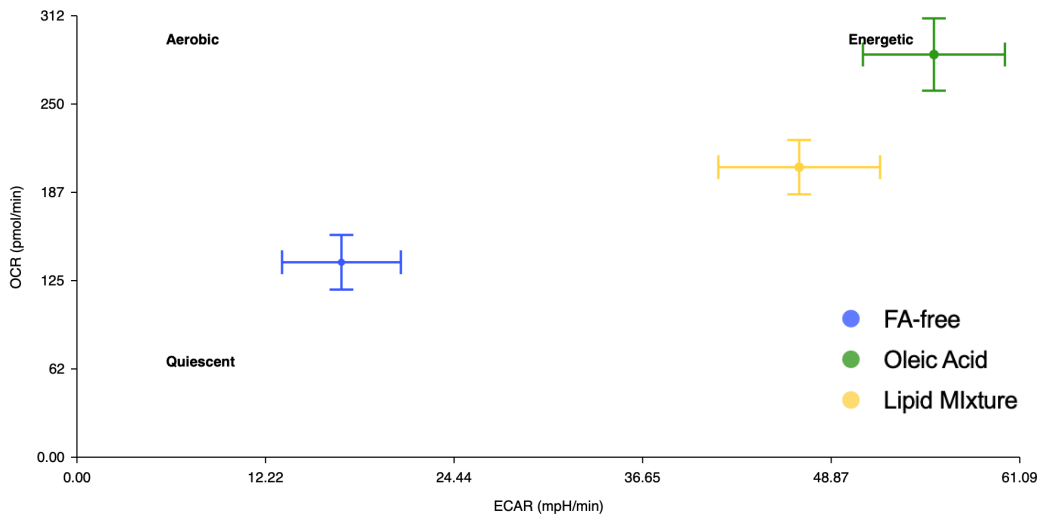
(A) Flow cytometry analysis of cell size by forward scatter measurement.

(B) Gating strategy to identify human T-cells from NOG mice after transplantation.

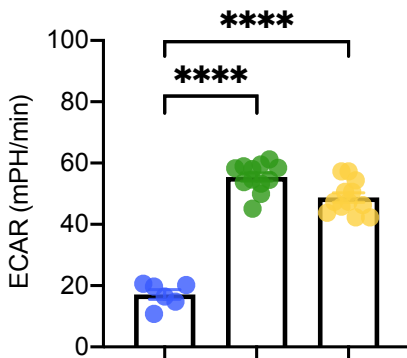
(C) Representative histogram of dot plot showing the association between mitochondrial mass content and cell size.

Supplemental Figure 3

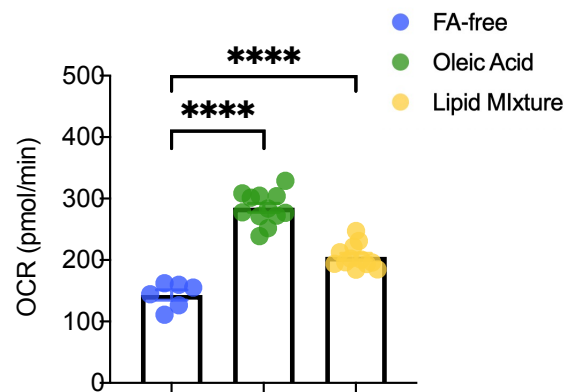
A



B



C



Supplemental Figure 3: Bioenergetic profile of T-cells under FA-free conditions.

Human pan T-cells were activated with anti-CD3/CD28-coated beads for 3 days under FA-free conditions (Minimal Essential Medium supplemented with 1% FA-acid free BSA, non-essential amino acids solution, and 1 mM sodium pyruvate) in the presence or absence of BSA-conjugated oleic acid (30 μ M, Sigma O3008) or chemically defined lipid concentrate (1:100, Sigma L0288). Cell energy phenotype profiles were generated by the XF Cell Energy Phenotype Test Report Generator. (A) Energy map. (B) ECAR and (C) OCR. ****: $P < .0001$.