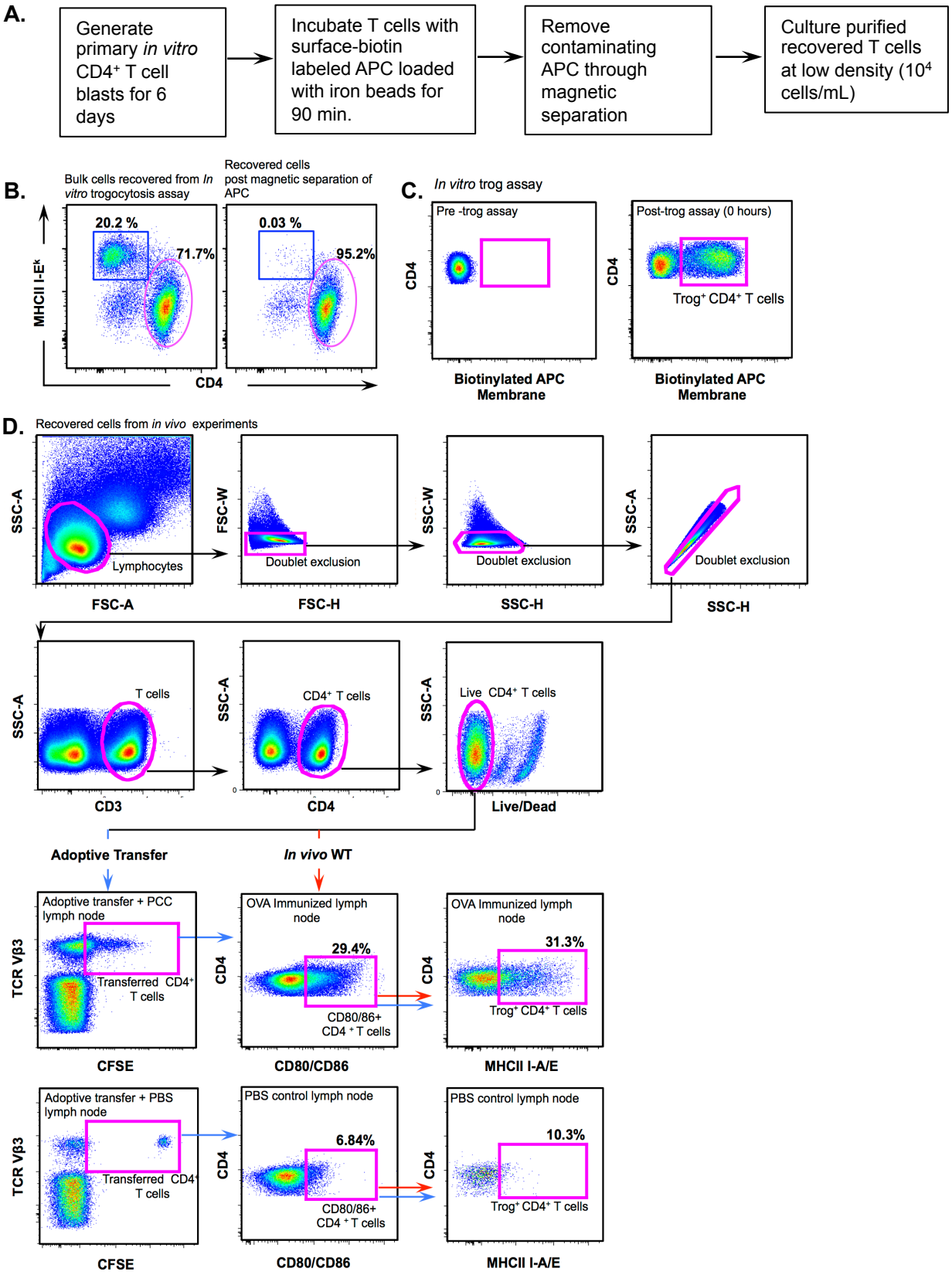
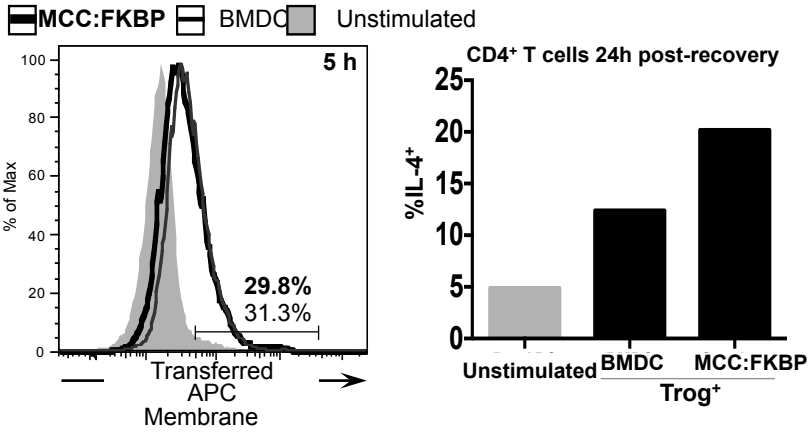
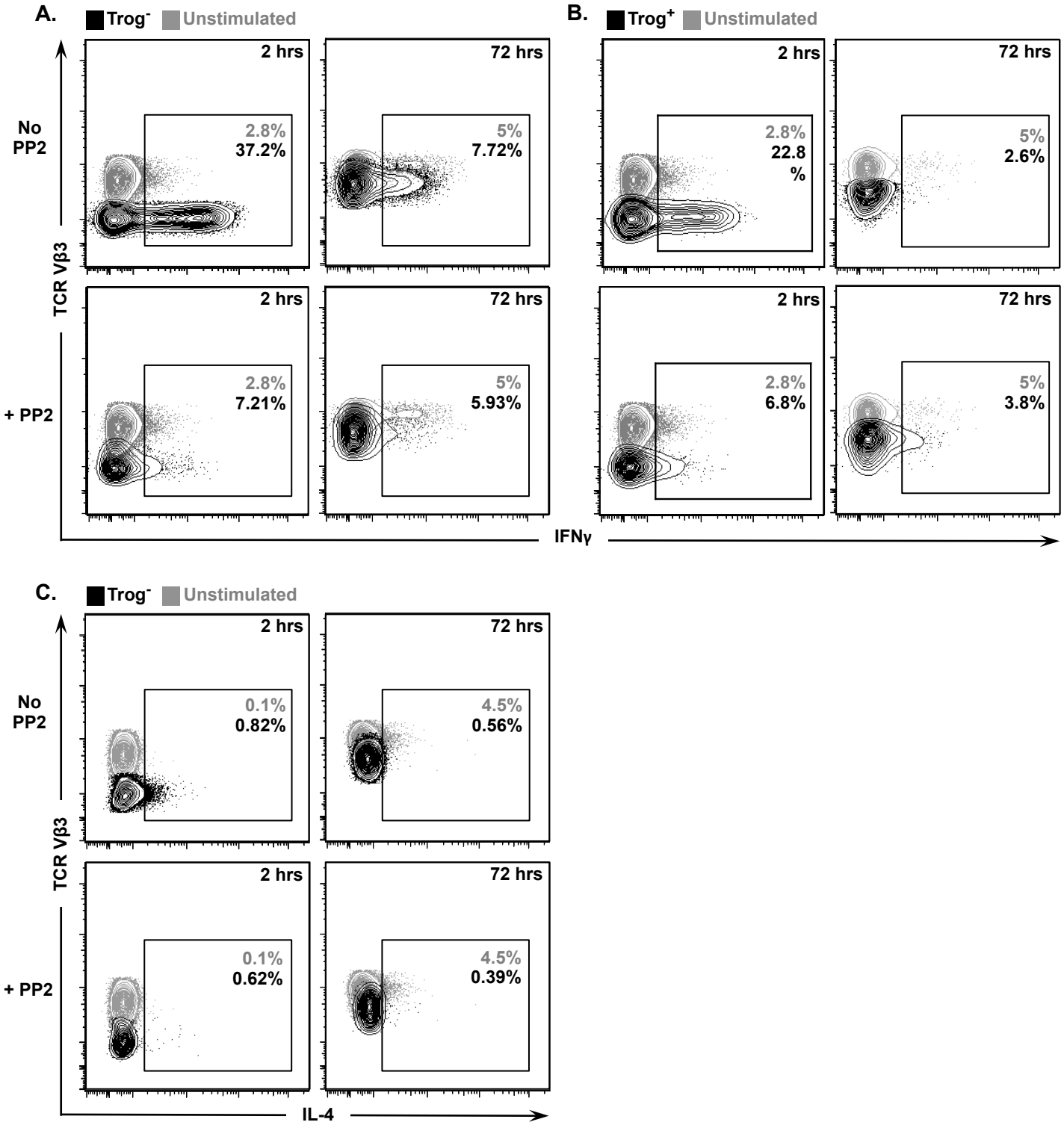


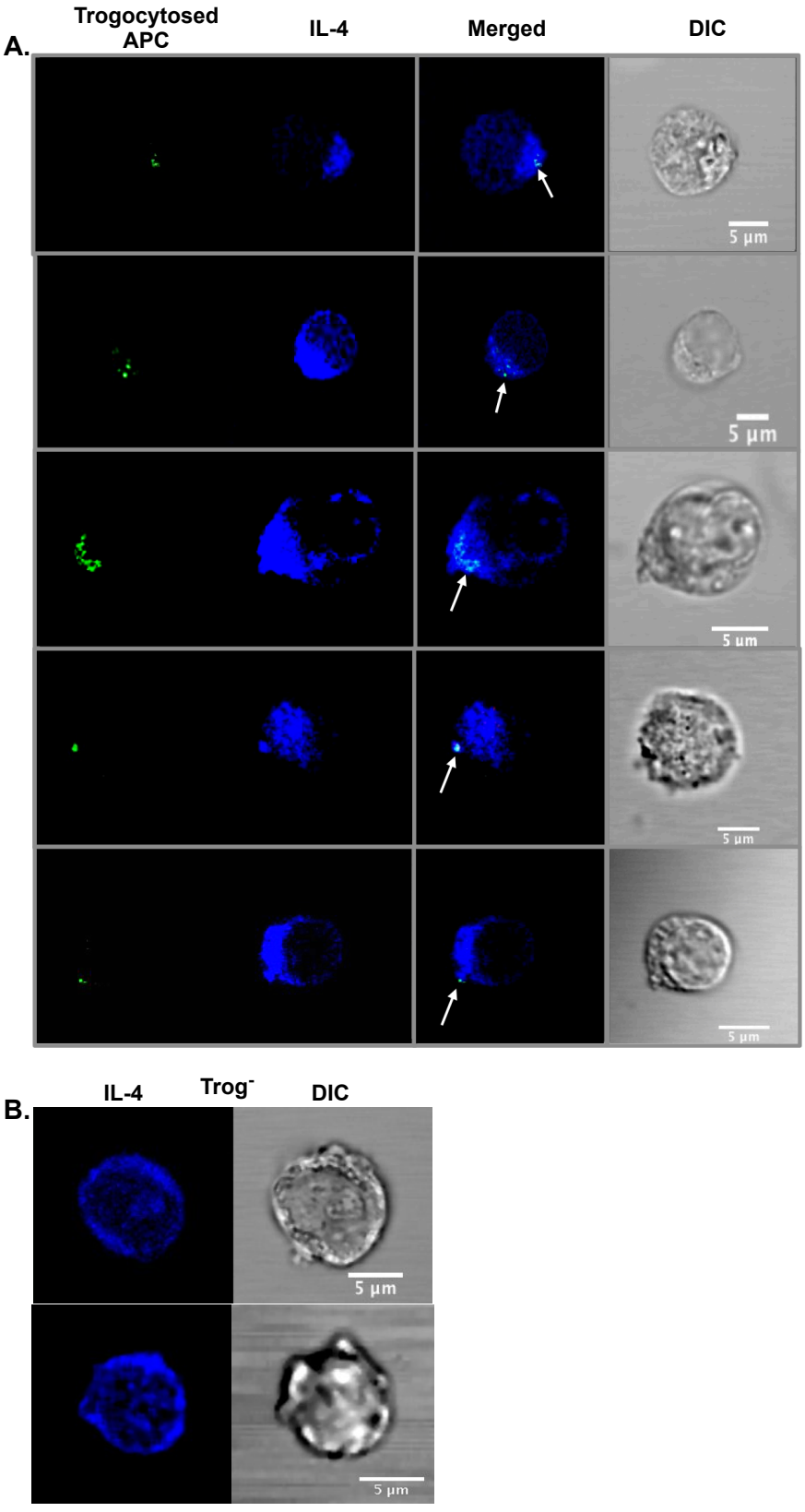
Supplemental Figure 1. *Trog⁺cells generated in vitro are identified by presence of APC membrane, in vivo generated trog⁺ cells are identified by presence of CD80/CD86 and MHCII* **(A)** Schematic timeline of a standard *in vitro* trogocytosis assay. **(B)** Purity of CD4⁺ T cells following recovery from an *in vitro* trogocytosis assay. APC shown in square box and CD4⁺ cells are shown in the oval gate. Plots show recovered samples pre-magnetic separation *(left)* and post-magnetic separation of APC *(right)*. **(C)** Identification of *in vitro* generated trog⁺ cells as determined by the presence of trogocytosed APC membrane. **(D)** Gating scheme for identification of adoptively transferred *(blue arrow)* and wild-type *(red arrow), in vivo* generated trog⁺ CD4⁺ T cells.



Supplemental Figure 2. *CD4$^+$ T cells perform trogocytosis at similar frequencies from BMDC and MCC:FKBP fibroblasts, and the frequency of IL-4$^+$ trog$^+$ cells is similar 24 hours later.* BMDC and MCC:FKBP fibroblasts were used as APC in parallel standard *in vitro* trogocytosis-assays. **(Left)** Histograms showing frequency, and levels of trogocytosed APC membrane from BMDC *(thin grey line) and* MCC:FKBP fibroblasts *(thick black line)*, with unstimulated cells *(shaded grey)* for comparison. Numbers represent frequency of trog$^+$ cells from respective APC. **(Right)** Frequency of unstimulated IL-4$^+$ cells *(grey),* IL-4$^+$ trog$^+$ cells recovered from a standard trogocytosis-assay using MCC-pulsed BMDC (*middle)* and MCC: FKBP fibroblasts *(right),* 24 hours post-recovery.



Supplemental Figure 3. *IFNγ expression in trog⁺ and trog⁻ cells is dependent on signals from APC, PP2-treated and untreated trog⁻ cells do not express IL-4.* After recovery from an *in vitro* trogocytosis assay, cells were left untreated *(top row)* or were treated for 20 minutes with 20 μM PP2 *(bottom row)* to halt TCR signaling. Cells were analyzed for surface TCR levels and intracellular cytokine expression 2 *(left column),* or 72 hours *(right column)* after removal of PP2. **(A & B)** IFNγ and TCR Vβ3 levels of ***(A)*** trog⁻ cells, and ***(B)*** trog⁺ cells. **(C)** IL-4 and TCR Vβ3 levels of trog⁻ cells. Data is representative of three separate experiments.



Supplemental Figure 4. *Intracellular IL-4 is polarized towards trogocytosed molecules.* **(A)** Additional representative images show trog $^{+}$ cells 72 hours post recovery, with trogocytosed APC molecules *(green)* and IL-4 *(blue)*. In merged images *(second from right),* arrows point to trogocytosed molecules. **(B)** IL-4^{+} trog^{-} cells 72 hours post recovery, with IL-4 shown in blue.