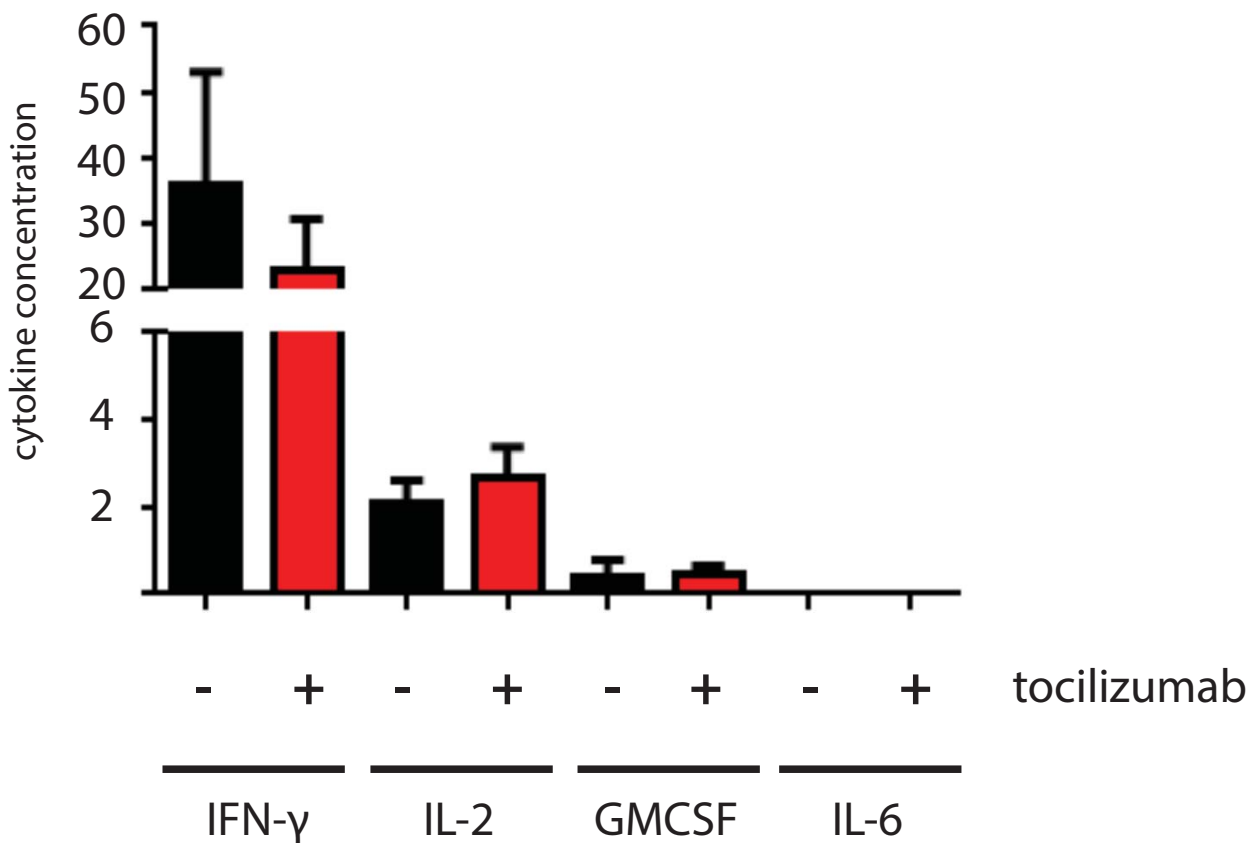
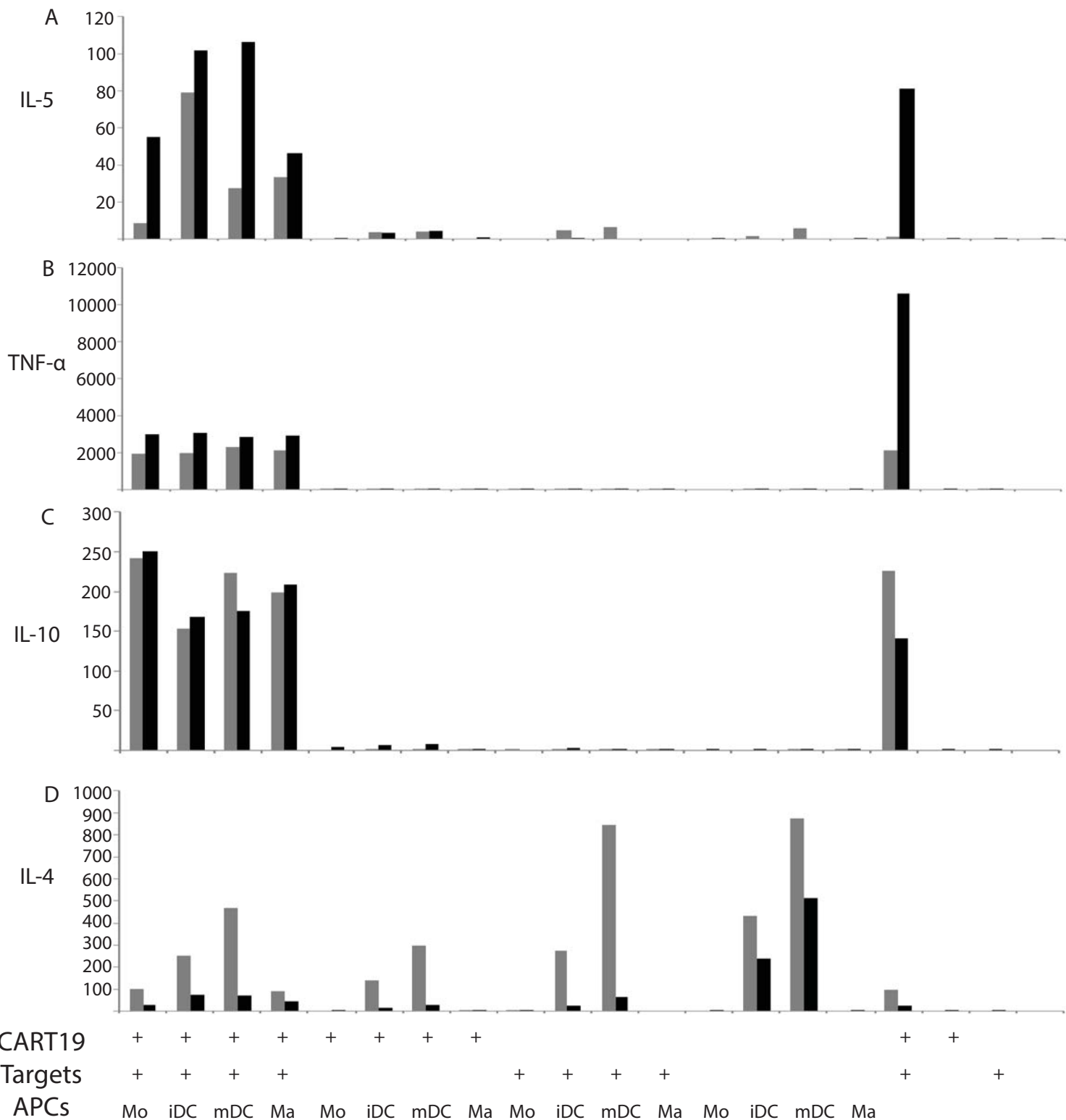


Figure S1

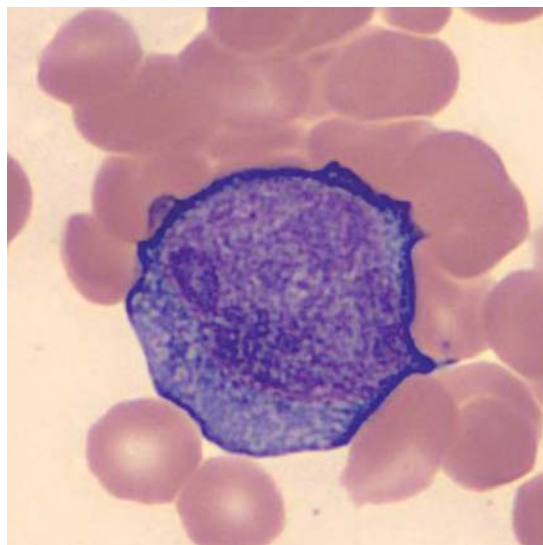
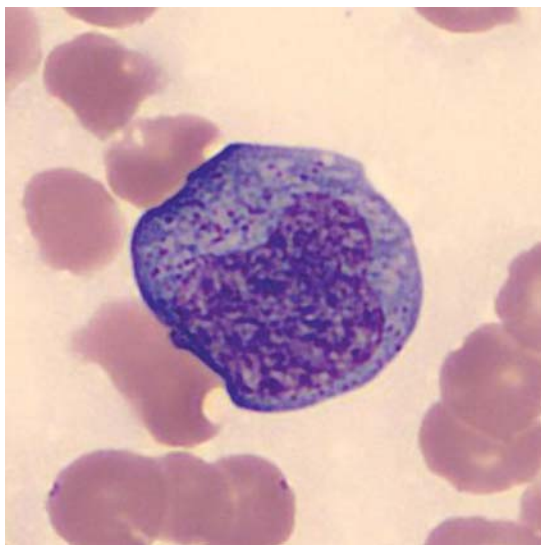


**Figure S1. Serum cytokine concentrations in xenograft mice bearing an ALL cell line treated with CD19 CART cells.** NSG mice were engrafted with  $10^6$  Nalm-6 ALL cells and seven days later given  $5 \times 10^6$  CD19 CART cells. Serum was collected 3 days following T cell delivery, and a subgroup of animals was given tocilizumab on days 1 and 3 after T cells. Cytokine concentrations are measured in pg/mL.

Figure S2



**Figure S2. Cytokine secretion from co-culture experiments combining monocyte-lineage cells with T cells and targets.** Supernatants were collected at 18 and 48 hours and analyzed for cytokine concentrations, measured in pg/mL.



**Figure S3. CART cells collected during cytokine release syndrome.** Microscopic analysis of peripheral blood T cells collected at time of first fever after CD19 CART T cell infusion in patients with acute lymphoblastic leukemia. Cells demonstrate features of T-cell activation, including granular chromatin, significant cytoplasmic granulation and irregular membranes. Images captured at 1000x magnification.