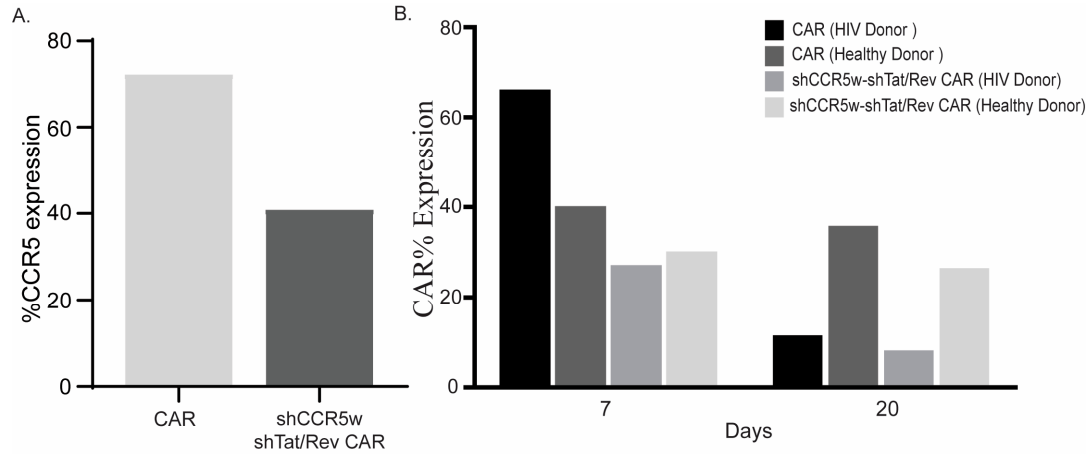
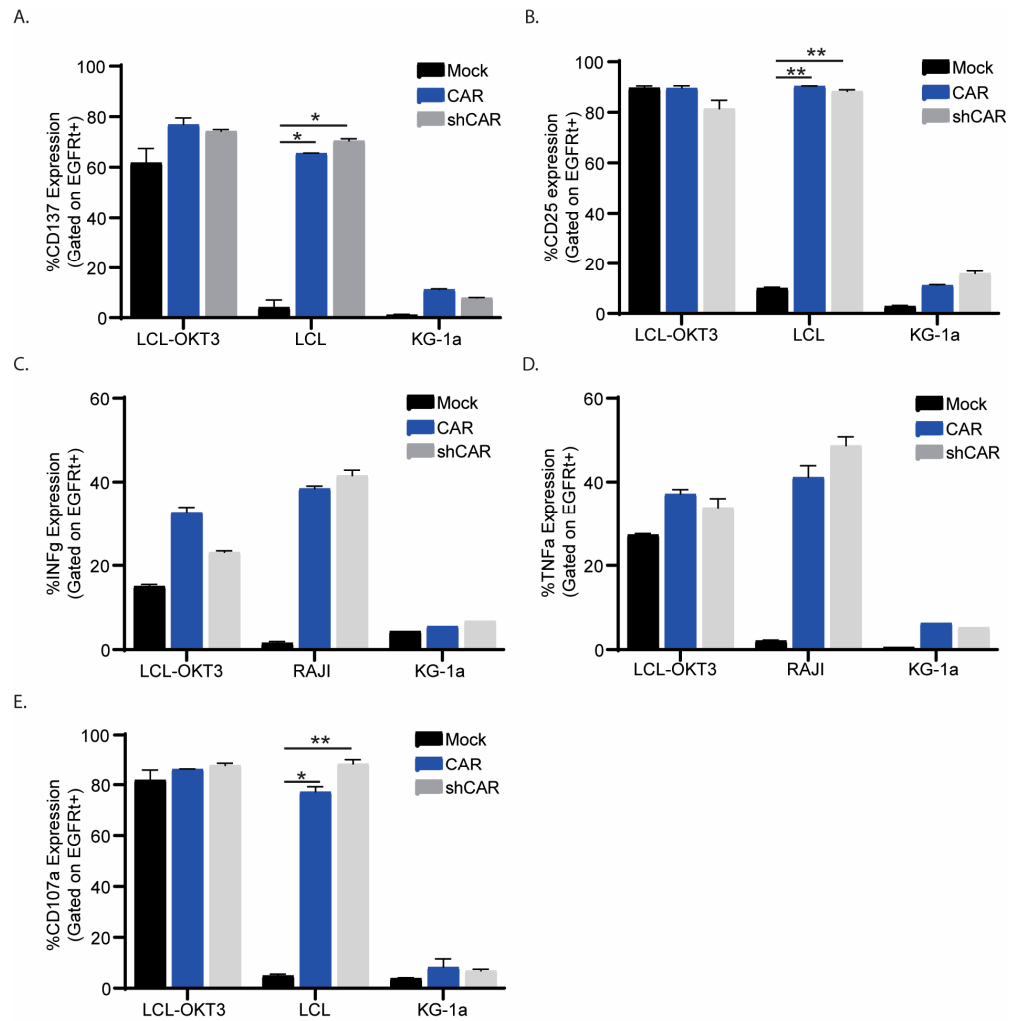


## Supplemental Figures



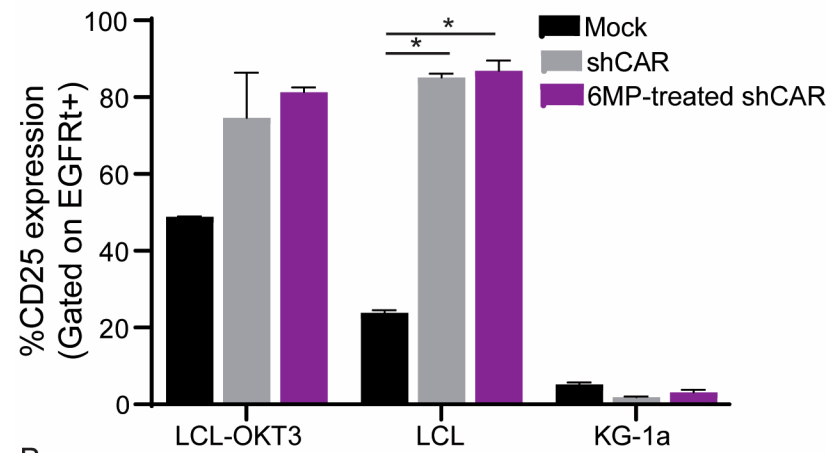
**Figure S1. Evaluating shCCR5 function and CAR expression.** (A) qPCR analysis of CCR5 in CCR5-expressing MAGI cells when comparing shCCR5w-shTat/Rev CAR with conventional CAR ( $n = 1$ ). (B) Comparison of CAR expression of healthy donor to PLWH T cells for conventional and shRNA-containing CAR at day 7 and 20 ( $n = 1$ ).



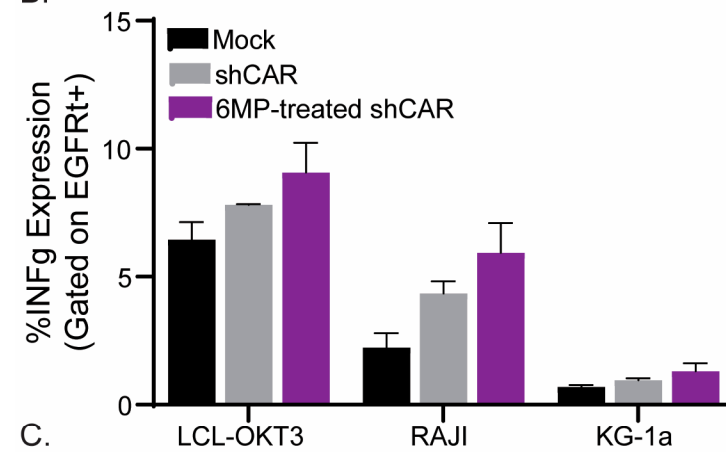
**Figure S2. Functional analysis of shHPRT CAR compared to conventional CAR.** shHPRT CAR has similar activation, CD137 ( $n = 2$ ) (A) and CD25 ( $n = 2$ ) (B), cytokine production, interferon-gamma ( $n = 2$ ) (C) and TNF alpha ( $n = 2$ ) (D), and degranulation production ( $n = 2$ ) (E) as conventional CAR T cells. LCL-OKT3 is the positive control and KG-1a is the negative control. To ensure accuracy and reliability, each experiment had technical replicates ( $n$ ). This figure represents 1

healthy donor of the 3 healthy donors that were interrogated. The symbols \*\* and \* represent a  $p$  value 0.001 and 0.005, respectively.

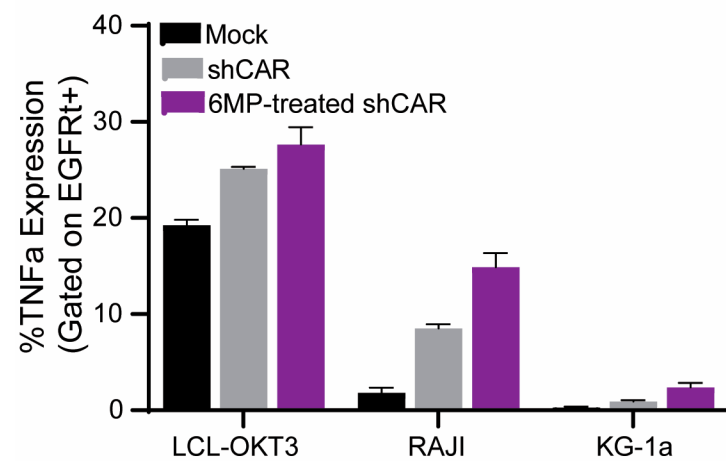
A.



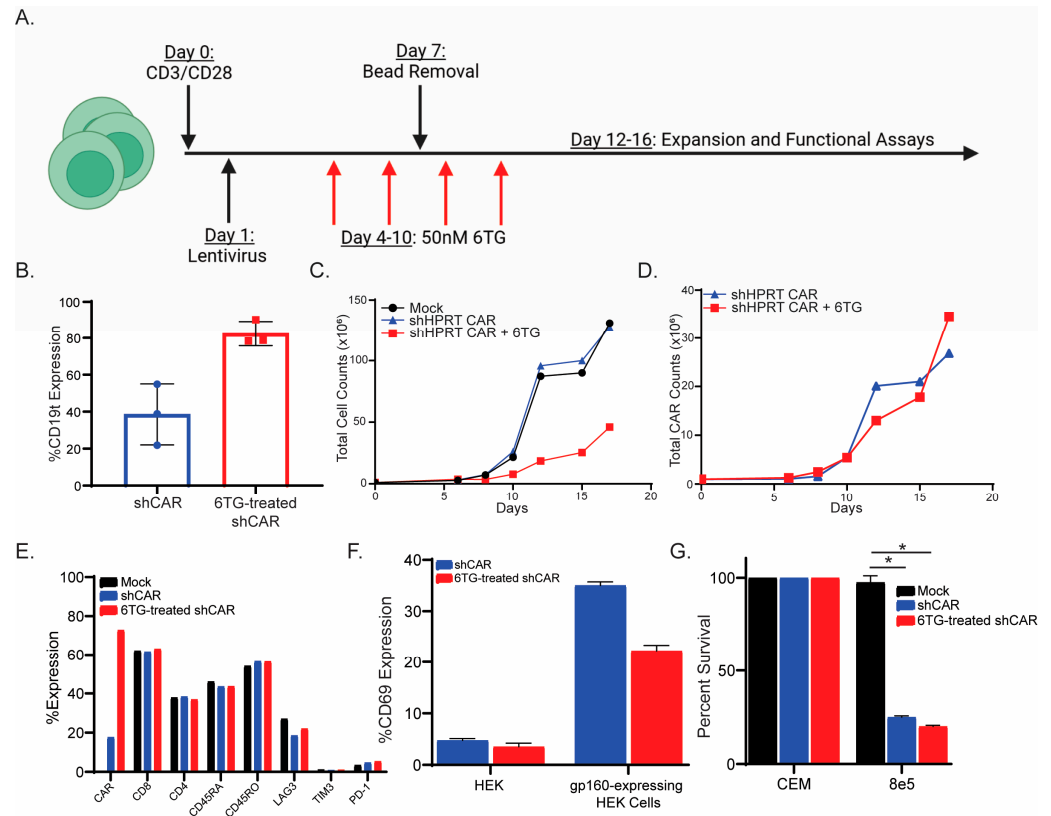
B.



C.



**Figure S3. Functional analysis of post-enrichment shHPRT CAR compared to untreated shHPRT CAR.** shHPRT CAR with or without 6MP treatment had similar CD25 ( $n = 2$ ) (A), interferon-gamma ( $n = 2$ ) (B) and TNF alpha ( $n = 2$ ) (C). LCL-OKT3 is the positive control and KG-1a is the negative control. To ensure accuracy and reliability, each experiment had technical replicates ( $n$ ). This figure represents 1 healthy donor of the 3 healthy donors that were interrogated. The symbols \* represent a  $p$  value 0.005, respectively.



**Figure S4. 6thioguanine enrichment of shHPRT CAR did not impact growth or function.** (A) Schema of 6thioguanine enrichment of shHPRT CAR T cells. (B) 6thioguanine enrichment of shHPRT CAR ( $n = 3$  healthy donor). Growth curve of 6thioguanine treated shHPRT CAR T cells as compared to mock and untreated shHPRT CAR for total T cells (C) and total CAR (D). Phenotype analysis of 6thioguanine treated shHPRT CAR T cells when compared to untreated. Functionality analysis, CD69 activation ( $n = 2$ ) (F) and killing ( $n = 2$ ) (G), of 6thioguanine, treated and untreated shHPRT CAR T cells. To ensure accuracy and reliability, each experiment had technical replicates ( $n$ ). This figure represents 1 healthy donor of the 3 healthy donors that were interrogated. The symbols \* represent a  $p$  value 0.005.