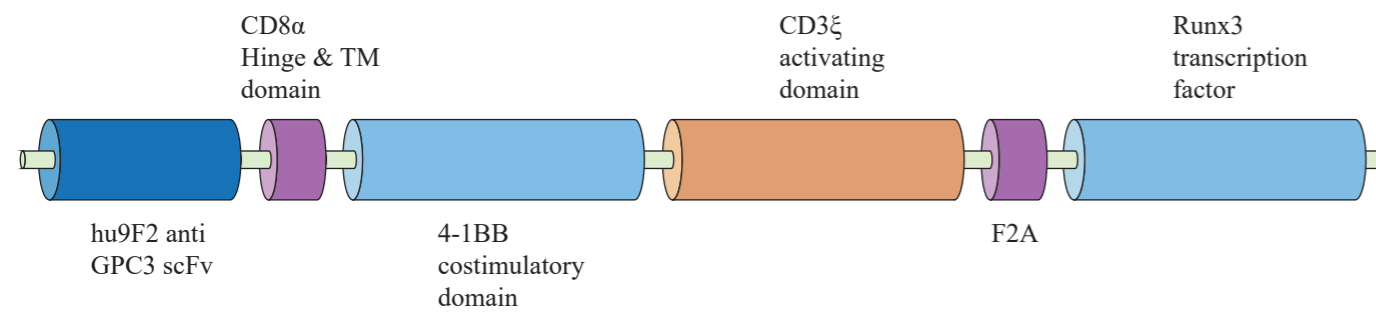


Supplementary Materials:

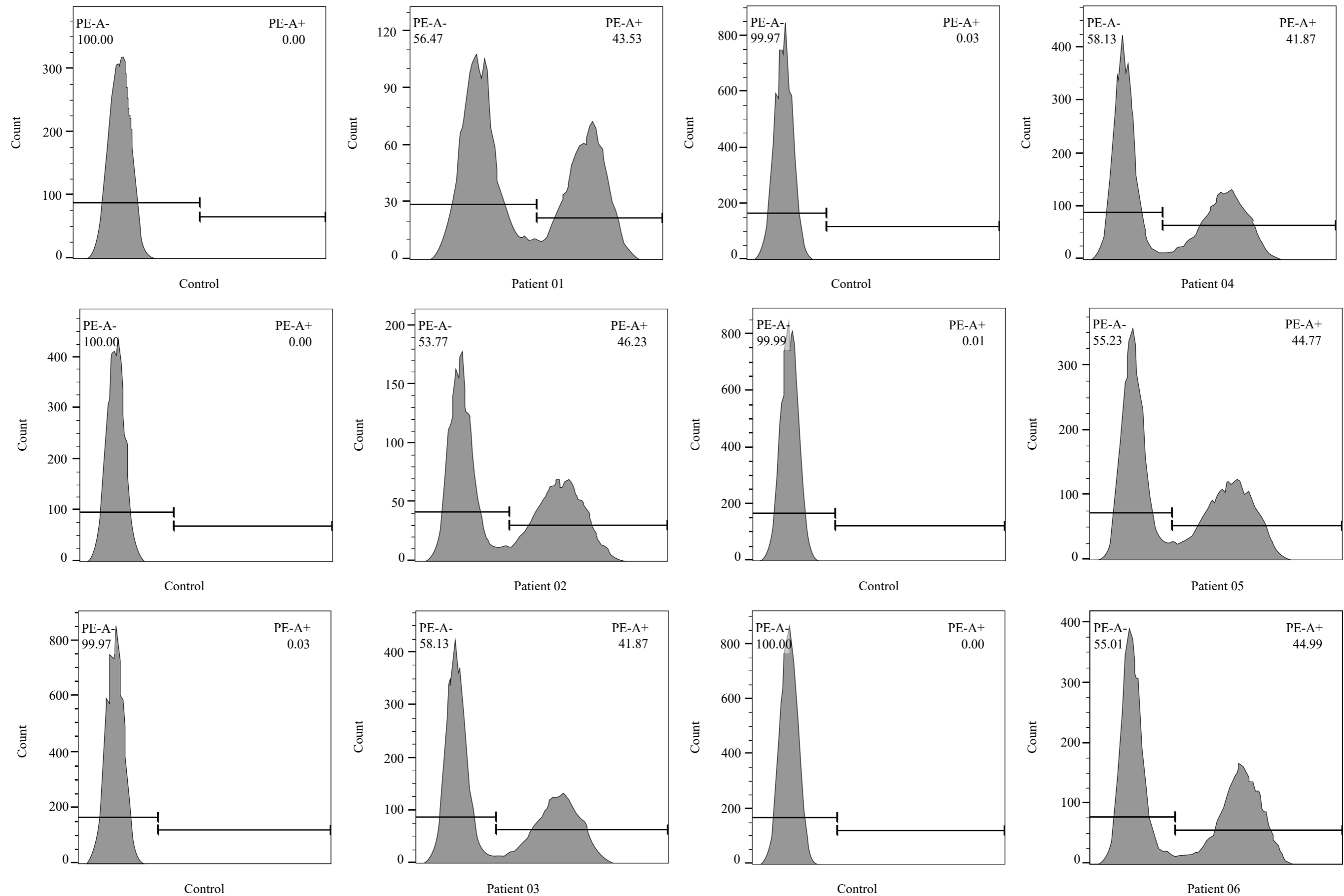
Supplementary Figures:

Fig. S1: Construction of CT017 CAR-T cells. (a) The modular composition of CT017 CAR-T cells. (b) CT017 GPC3-CAR expression detected by FACS.

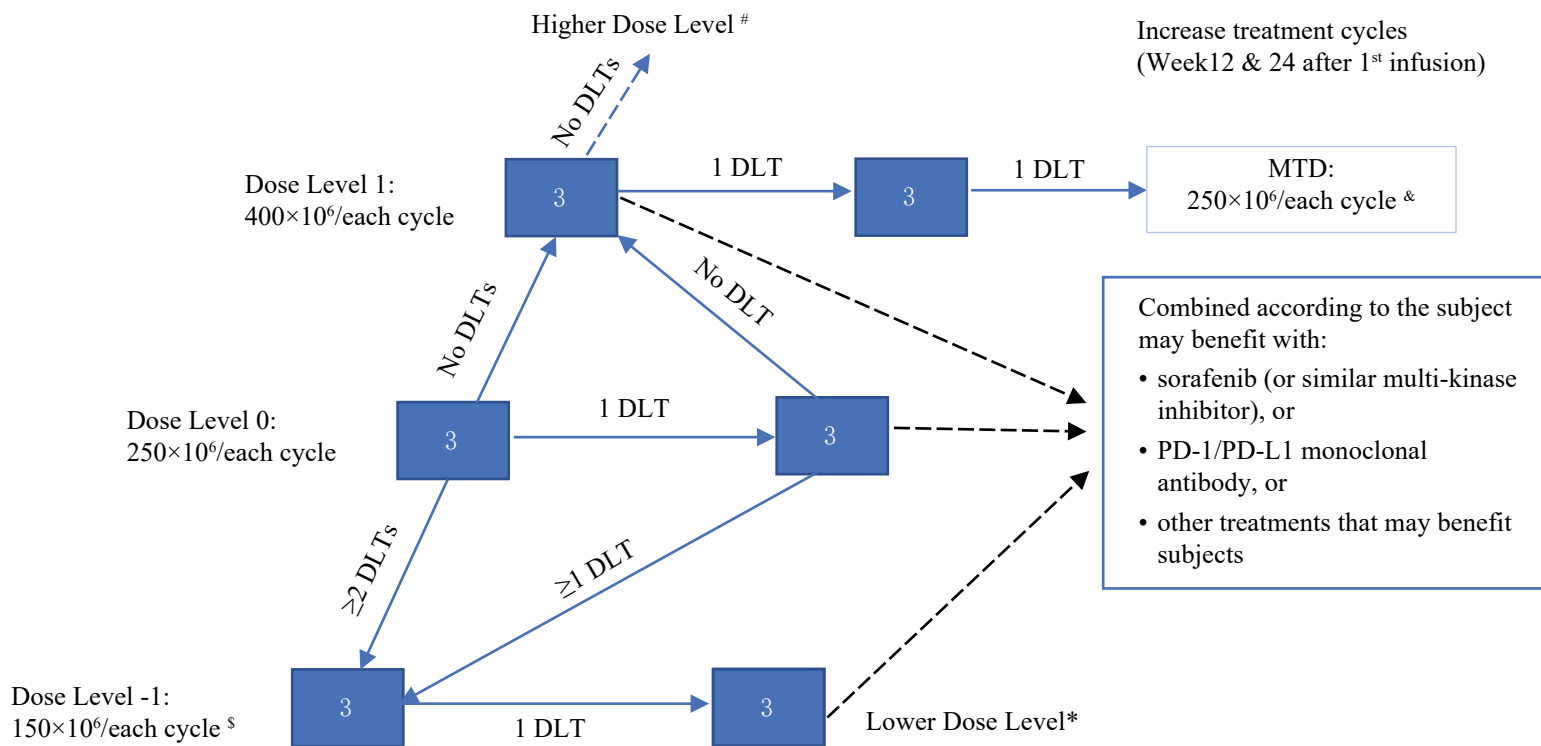
a



b



**Fig. S2 Schematic of dose-escalation phase design**



**Note:**

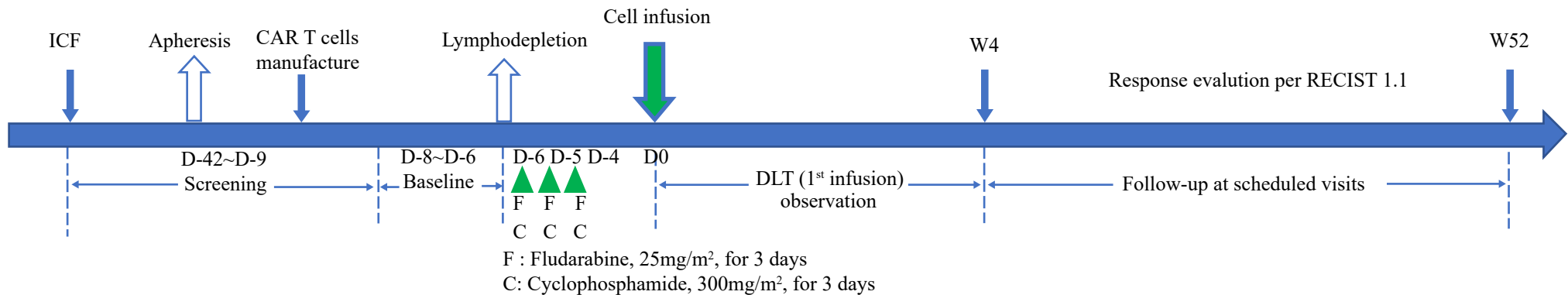
# If the 400×10<sup>6</sup> dose level is not identified as the MTD, escalation to a higher dose may be decided by the investigator and collaborators together.

& If up to 6 subjects are enrolled into the 250×10<sup>6</sup> dose level, then this dose level will be defined as MTD; if only 3 subjects are enrolled into the 250×10<sup>6</sup> dose level, then another 3 subjects will be enrolled into this dose level, and if there is  $\leq 1$  DLT, this dose level will be defined as MTD.

§ If there is no DLT in 3 subjects of 150×10<sup>6</sup> dose level, dose adjustment may be decided by the investigator and collaborators together.

\* If there is no DLT in the newly added 3 subjects of 150×10<sup>6</sup> dose level, this dose level will be defined as MTD; if there is one DLT in the newly added 3 subjects of 150×10<sup>6</sup> dose level, dose reduction or administration method adjustment will be decided by the investigator and collaborators together.

**Fig. S3: Protocol schedule for screening, manufacturing autologous CAR-GPC3 T cells, and lymphodepletion followed by infusion of CAR-GPC3 T cells and follow-up.**



## Supplementary Tables:

**Table S1:** The affinity data of humanized anti-GPC3 single-chain variable fragment (hu9F2)

	$K_{on}$ ( $M^{-1}\cdot s^{-1}$ )	$K_{off}$ ( $s^{-1}$ )	$K_D$ (nM)
hu9F2	$7.651\times 10^5$	$1.657\times 10^{-3}$	2.166

$K_{on}$ : association rate constant;  $K_{off}$ : dissociation rate constant;  $K_D$ : equilibrium dissociation constant;  $K_D=K_{off}/K_{on}$

**Table S2:** The listing of ADA test data

Patient Number	Visit	ADA Positive/Negative	ADA titers
01	Treatment (D0)	Negative	NA
01	Treatment (D28)	Negative	NA
01	Treatment (D84)	Negative	NA
02	Treatment (D0)	Negative	NA
02	Treatment (D28)	Positive	1
03	Treatment (D0)	Negative	NA
03	Treatment (D28)	Negative	NA
03	Treatment (D0/C2)	Negative	NA
03	Treatment (D84)	Negative	NA
04	Treatment (D0)	Negative	NA
05	Treatment (D0)	Negative	NA
05	Treatment (D28)	Positive	1
05	Treatment (D0/C2)	Positive	4
05	Treatment (D84)	Positive	121
05	Treatment (D168)	Positive	125
06	Treatment (D0)	Negative	NA
06	Treatment (D28)	Positive	56
06	Treatment (D84)	Positive	12

**Abbreviations:** ADA, anti-CAR-GPC3 antibodies; D, day; NA, not available