Molecular Therapy
Correction

Immunological Synapse Predicts Effectiveness of Chimeric Antigen Receptor Cells

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In the originally published version of this article, the DIC images in the Kappa-CAR-41BB panel (bottom) of Figure 2A were uploaded incorrectly, although we had repeated group data in Supplemental Figures 3A and 4A. The correct differential interference contrast (DIC) images are aligned with the images from the other three corresponding fluorescence channels.

In the originally published right panel of Figure 3A, the specific lysis of CD19-CAR T cells was uploaded incorrectly and used the same graph as the Kappa-CAR group (left panel), although we had additional two-donor repeat group data in Supplemental Figure S5. The correct version is shown below.

With regard to Figures 4B and 4C in the original article, the graphs from each condition were generated from different data, although the curve of the truncated membrane (TM) group looks very similar. We apologize that we repeated uploading the data of the same donor with donor #2 in Figure S7. The data of an additional three donors was included in Figure S7 to support the point that 4-1BB -CAR T cells have enhanced antitumor activity in the long-time killing assays. The correct version of the graph in Figure 4C is included below.

We also removed the data of donor #2 from the original Figure S7.

The main conclusion that the concept that "CAR immunological synapse quality can predict the efficacy of CAR-modified immune cells" from the original article has not been affected. Each co-first author can successfully repeat the other co-first author's key experiments. These factors could play a role in these careless errors during the manuscript preparation. However, the data are reliable, traceable, and repeatable, and the continuation of the project is still in progress. The authors regret these errors.

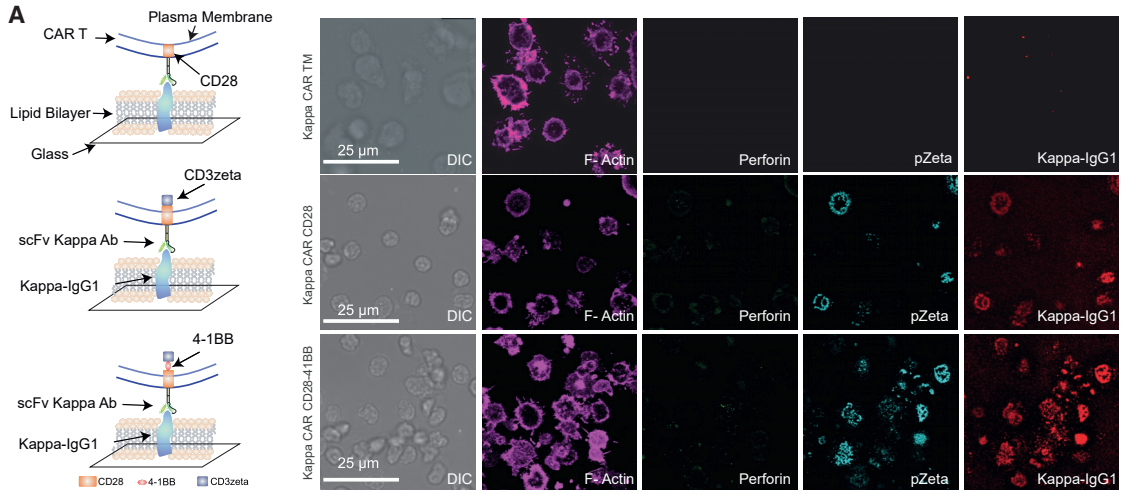

Figure 2. (A) Confocal microscopy of Kappa-4-1BB-CAR T cells and Kappa-CD28-CAR T cells on a lipid bilayer carrying human Kappa IgG1-Alexa Fluor 647 (red). Fixed and permeabilized CAR T cells were stained for Perforin(green), pZeta (cyan), and F-actin (magenta). A visual cartoon of the lipid bilayer and CAR T cells is displayed (left). Scale bars represent 25 μm.

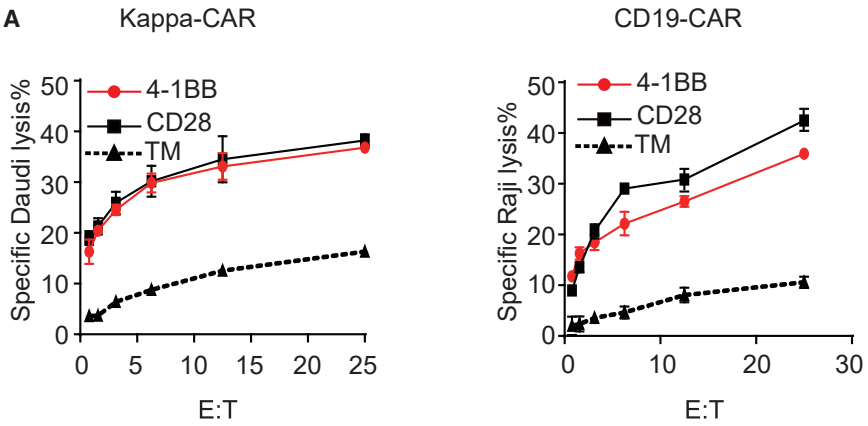

Figure 3. (A) Cytotoxicity of Kappa-CAR T cells (left) and CD19-CAR T cells (right) from the same healthy donor was measured using a standard 4-hr ^{51}Cr-release assay. Daudi cells (the Kappa-positive B cell lymphoma cell line) were used as the Kappa-CAR T cell's target cells. Raji cells (the CD19-positive B cell lymphoma cell line) were used as the CD19-CAR T cell's target cells. PBMCs from a healthy donor were transduced with 4-1BB construct (red dots) or CD28 construct (black dots) retrovirus. TM (black triangle) was used as control.

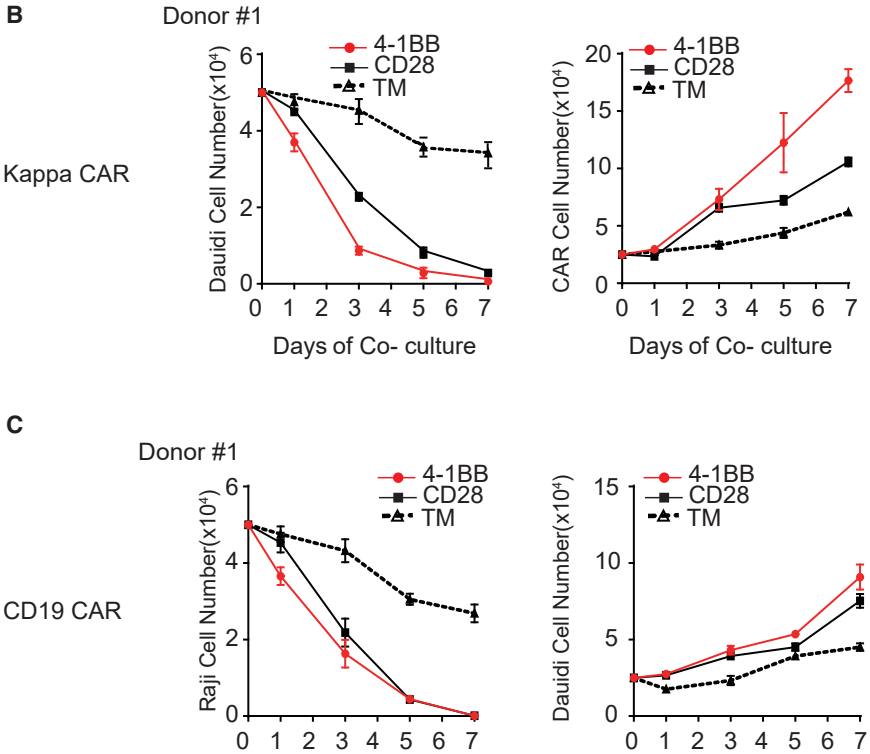

Figure 4. (B and C) Anti-tumor effects of Kappa-CAR (B) and CD19-CAR (C) were measured by the decrease in tumor cell number (left) and increase in effector cell number (right). A Kappa-positive Daudi cell expressing fluorescent protein mCherry was used as a target cell. Error bars show ± SD. TM (black triangle) was used as control.

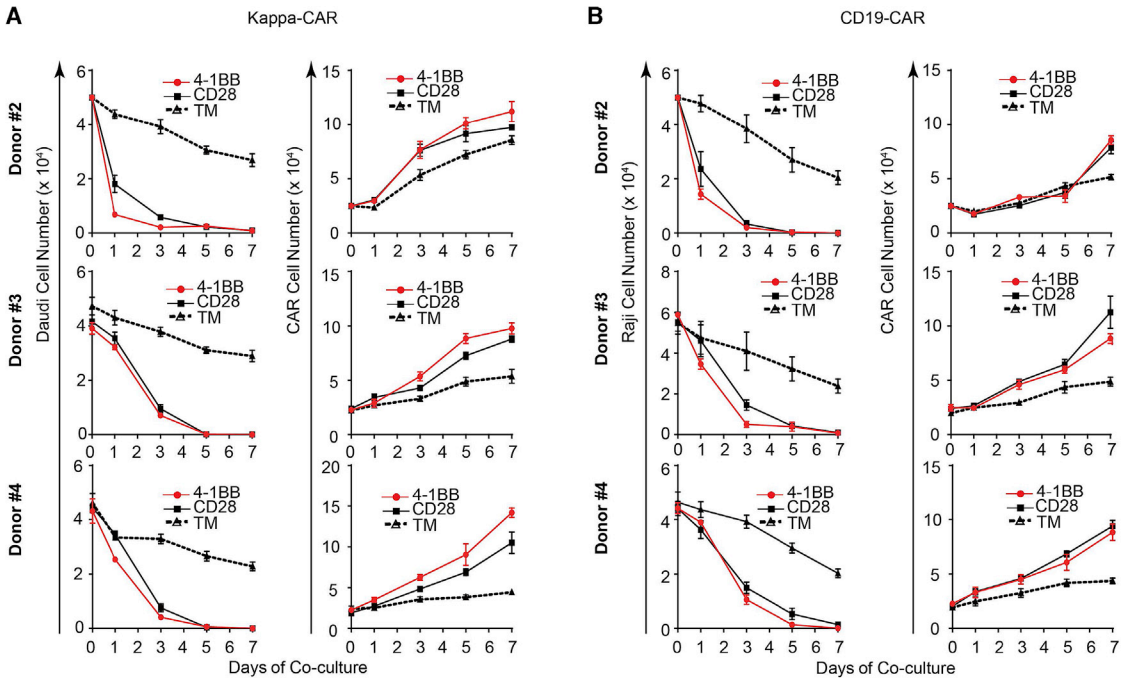

Figure S7. (A) Kappa-CAR T cells were isolated from four different individuals and transduced with TM, 4-1BB, and CD28 constructs. The target Daudi cells expressing fluorescent protein mCherry were mixed with CAR T cells for 7 days. The number of both target cells and CAR T cells were measured by flow cytometry, as described in Figure 4. (B) CD19-CAR T cells were isolated from four different individuals and transduced with TM, 4-1BB, and CD28 constructs. The Raji-GFP target cells were mixed with CAR T cells for 7 days. The number of both target cells and CAR T cells was measured by flow cytometry. These data are pooled from at least three independent experiments. TM (black triangle) was used as control.TM (black triangle) was used as control.