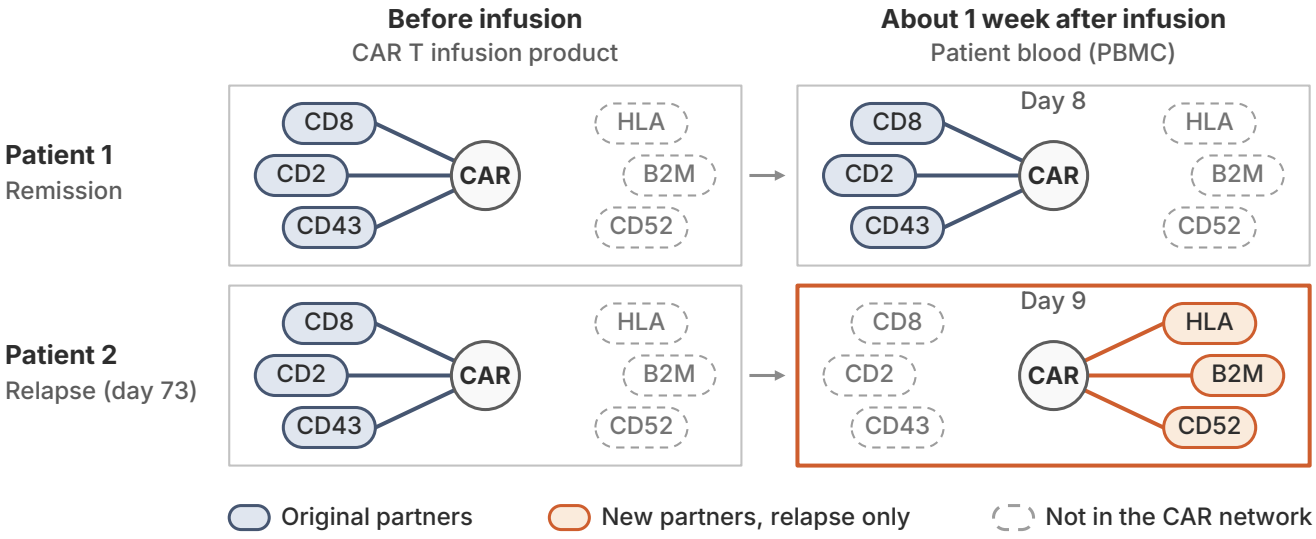
The CAR moved to a new membrane network in a relapsing CAR T patient

Assoc. Prof. Yukie Kashima, in the group of Prof. Yutaka Suzuki (The University of Tokyo) mapped which proteins sit next to the CAR on Kymriah® CAR T cells, before infusion and in patient blood one week after therapy, associating the organization to therapeutic response.



WHAT THE STUDY FOUND

1. **Before infusion,** the CAR colocalized with CD8, CD2 and CD43 on CD8+ CAR T cells in both patients.
2. **After infusion,** the patient in remission kept this network. In the patient who relapsed, the CAR moved to a new network with HLA, B2M and CD52.
3. **Abundance did not show it.** Protein levels were similar in both patients. Only colocalization separated them.

WHY IT MATTERS

If confirmed in larger cohorts, CAR colocalization could become a candidate biomarker of CAR T response, measured in patient blood about one week after infusion.

Study CAR organization in your samples

The Pixelgen Proxiome kit measure abundance, clustering and colocalization on single cells, with CAR detection antibodies (FMC63, FLAG, G4S, Whitlow).

Kashima Y, et al. Spatial profiling of CAR protein organization reveals in vivo remodeling during CAR-T therapy. bioRxiv 2026. doi: 10.64898/2026.04.20.719384. Preprint, not peer reviewed. The study used Molecular Pixelation (MPX), the Pixelgen technology that came before PNA. Kymriah is a registered trademark of Novartis AG.

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