## **Engineering immunity: How CAR-T cells are redefining cancer therapy development**References

- 1. Lu, J. & Jiang, G. The journey of CAR-T therapy in hematological malignancies. *Molecular Cancer 2022 21:12*1, 1–15 (2022).
- 2. Cappell, K. M. & Kochenderfer, J. N. Long-term outcomes following CART cell therapy: what we know so far. *Nat Rev Clin Oncol* 20, 359 (2023).
- 3. Pievani, A. et al. CARs are sharpening their weapons. *J Immunother Cancer* 12, e008275 (2024).
- 4. Hawkins, E. R., D'souza, R. R. & Klampatsa, A. Armored CAR T-Cells: The Next Chapter in T-Cell Cancer Immunotherapy. *Biologics* 15, 95 (2021).
- 5. Xue, B. *et al.* CAR T-Cell Therapy Combined with PD-1 Inhibitors Significantly Improve the Efficacy and Prognosis of r/r DLBCL with TP53 Alterations. *Blood* 142, 3515–3515 (2023).
- 6. Khorsandi, K. & Haydar, D. DMG-07. Enhancing CAR T-Cell Therapy in DIPG Through Dual Targeting of CD123 and B7-H3. *Neuro-Oncology Pediatrics* 1, (2025).
- 7. Nolan-Stevaux, O. & Smith, R. Logic-gated and contextual control of immunotherapy for solid tumors: contrasting multi-specific T cell engagers and CAR-T cell therapies. *Front Immunol* 15, 1490911 (2024).
- 8. Hegde, M. *et al.* Tandem CAR T cells targeting HER2 and IL13Rα2 mitigate tumor antigen escape. *J Clin Invest* 126, 3036–3052 (2016).
- 9. Zheng, S. *et al.* Abstract 4798: In vivo generation of universal CAR T cells for targeting heterologous antigens in solid tumors. *Cancer Res* 85, 4798–4798 (2025).
- 10. Richards, R. M. *et al.* NOT-Gated CD93 CAR T Cells Effectively Target AML with Minimized Endothelial Cross-Reactivity. *Blood Cancer Discov* 2, 649–665 (2021).
- 11. Pont, M. J. *et al.* γ-Secretase inhibition increases efficacy of BCMA-specific chimeric antigen receptor T cells in multiple myeloma. *Blood* 134, 1585–1597 (2019).
- 12. Cowan, A. J. *et al.* Efficacy and Safety of Fully Human Bcma CAR T Cells in Combination with a Gamma Secretase Inhibitor to Increase Bcma Surface Expression in Patients with Relapsed or Refractory Multiple Myeloma. *Blood* 134, 204–204 (2019).
- 13. Li, H. et al. Scattered seeding of CAR T cells in solid tumors augments anticancer efficacy. *Natl Sci Rev* 9, (2022).
- 14. Tang, L. Harboring CAR-T cells using an injectable scaffold to treat solid tumors. *Natl Sci Rev* 11, (2024).
- 15. Zhang, Y. & Han, W. Management of Cytokine Release Syndrome (CRS) following CAR T-cell therapy: a comprehensive review. *Clinical Cancer Bulletin 2025 4:1* 4, 1–9 (2025).

## **Engineering immunity: How CAR-T cells are redefining cancer therapy development**References

- 16. Jain, M. D., Smith, M. & Shah, N. N. How I treat refractory CRS and ICANS after CAR T-cell therapy. *Blood* 141, 2430–2442 (2023).
- 17. Cavallo, M. C. *et al.* Cost of implementing CAR-T activity and managing CAR-T patients: an exploratory study. *BMC Health Serv Res* 24, 1–11 (2024).
- 18. Bharadia, H. *et al.* CAR T-cell immunotherapy as the next horizon in cancer eradication: current landscape, challenges, and future directions. *Medical Oncology* 2025 42:9 42, 1–30 (2025).
- 19. Mohty, R. & Lazaryan, A. "Off-The-Shelf" allogeneic chimeric antigen receptor T-cell therapy for B-cell malignancies: current clinical evidence and challenges. *Front Oncol* 14, 1433432 (2024).
- 20. Mullard, A. In vivo CART cells move into clinical trials. *Nat Rev Drug Discov* 23, 727–730 (2024).
- 21. Kong, R., Liu, B., Wang, H., Lu, T. & Zhou, X. CAR-NK cell therapy: latest updates from the 2024 ASH annual meeting. *J Hematol Oncol* 18, 1–4 (2025).
- 22. Sanomachi, T., Katsuya, Y., Nakatsura, T. & Koyama, T. Next-Generation CAR-T and TCR-T Cell Therapies for Solid Tumors: Innovations, Challenges, and Global Development Trends. *Cancers* 2025, Vol. 17, Page 1945 17, 1945 (2025).
- 23. Rohaan, M. W. *et al.* Tumor-Infiltrating Lymphocyte Therapy or Ipilimumab in Advanced Melanoma. *New England Journal of Medicine* 387, 2113–2125 (2022).
- 24. Chavez, J. C. *et al.* Three-year follow-up analysis of first-line axicabtagene ciloleucel for high-risk large B-cell lymphoma: the ZUMA-12 study. *Blood* 145, 2303–2311 (2025).
- 25. Bagley, S. J. *et al.* Intracerebroventricular bivalent CAR T cells targeting EGFR and IL-13Rα2 in recurrent glioblastoma: a phase 1 trial. *Nat Med* 31, 2778–2787 (2025).
- 26. Qi, C. et al. Claudin18.2-specific CAR T cells (Satri-cel) versus treatment of physician's choice (TPC) for previously treated advanced gastric or gastroesophageal junction cancer (G/GEJC): Primary results from a randomized, open-label, phase II trial (CT041-ST-01). *Journal of Clinical Oncology* 43, 4003–4003 (2025).
- 27. AstraZeneca goes in vivo, pens \$1B deal for lentiviral biotech. https://www.fiercebiotech.com/biotech/astrazeneca-goes-vivo-penning-1b-deal-belgian-lentiviral-vector-cell-therapy-biotech.
- 28. AbbVie to Acquire Capstan Therapeutics, Further Strengthening Commitment to Transforming Patient Care in Immunology Jun 30, 2025. https://news.abbvie.com/2025-06-30-AbbVie-to-Acquire-Capstan-Therapeutics,-Further-Strengthening-Commitment-to-Transforming-Patient-Care-in-Immunology.