INTRODUCTION

- Extended T-cell persistence is critical to achieve the desired therapeutic outcome. In CAR (Chimeric Antigen Receptor) T-cell therapy, the efficacy and proliferation of the CAR T-cells are dependent on factors such as cell type, and the CAR protein. YTB323 cell potency was also examined through comparison with CTL*019 regarding the number of CAR+ cells required for CTL*019 (Antitumor efficacy of YTB323 against B-cell tumors was assessed in immunodeficient NSG mouse models using cell numbers ranging from 1e+07 to 1e+10). Cytokine concentration in cell culture supernatants (IFN-γ (pg/mL)) was observed for both YTB323 and CTL*019. Cytokine concentration in cell culture supernatants. IFN-γ (pg/mL) was observed for both YTB323 and CTL*019.

METHODS

Study Design

- YTB323 Manufacturing (T-Charge™) vs CTL*019 Manufacturing (TMD Process)

- In Vivo Antitumor Efficacy

- YTB323 cell potency was also examined through comparison with CTL*019 regarding in vivo antitumor efficacy at multiple doses. Cytokine concentration in cell culture supernatants (IFN-γ (pg/mL)) was observed for both YTB323 and CTL*019. Cytokine concentration in cell culture supernatants (IFN-γ (pg/mL)) was observed for both YTB323 and CTL*019.

RESULTS

- YTB323 and CTL*019 CAR-T cell products were analyzed by flow cytometry and single-cell RNAseq (NALM6-19KO), and a DLBCL line (TMD-8) (Figures 3B and 3D) inoculated with a different number of cells as described in the report. In vivo antitumor efficacy of YTB332 in 6-ALL Tumor Model

CONCLUSIONS

- The novel, expansionless T-Charge™ platform utilized to manufacture YTB323 is simplified and shortened. YTB323 CAR-T cell proliferation is optimized to retain the naive immunophenotype of the input leukapheresis. The ability of YTB323 to control tumor growth in vivo and at lower doses compared to traditionally manufactured CTL*019 confirms its proliferative capacity and potency. Compared to approved CAR-T cell therapies, YTB323 has the potential to achieve improved clinical efficacy at respective lower doses. YTB323 is currently being investigated in a trial for the treatment of patients with relapsed/refractory diffuse large B-cell lymphoma (Fame Study).

The T-Charge™ platform is also being evaluated in the context of a BCL2-targeting CAR-T (Bi-D). In addition, the YTB323 platform has been optimized for use in a variety of different settings.

Acknowledgments

- Presented at the 2021 ASH Annual Meeting and Exposition; December 11-14, 2021, Atlanta, GA, and Virtual.

Declaration of Interests

- No conflicts of interests are declared.

References


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