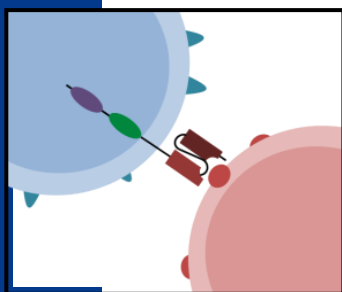


BCL-XL VARIANTS FOR ENHANCING CELLULAR IMMUNOTHERAPY FUNCTION



Lack of persistence and sensitivity to apoptosis and activation induced cell death are key contributors to cellular immunotherapy failure. The protein Bcl-XI functions as an anti-apoptotic protein that resides in mitochondria. Moffitt researchers found that certain amino acid mutations help Bcl-XI maintain this crucial anti-apoptotic function. A mutated Bcl-XI variant was created, and was found to produce a more potent and durable immune response by reducing exhaustion, maintaining function, and increasing the viability of T-cells. Our novel degradation-resistant Bcl-XI variant increased efficacy of cellular immunotherapies.

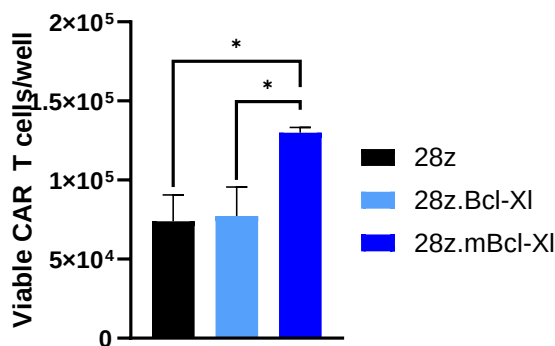
COMMERCIAL OPPORTUNITY

Approved CAR-T	Company	Target	2022 Drug Sales (worldwide)	Drug Price
Kymriah	Novartis	Anti-CD19	\$536M	\$475,000
Yescarta	Gilead	Anti-CD19	\$1,160M	\$373,000
Tecartus	Gilead	Anti-CD19	\$299M	\$373,000
Breyanzi	BMS/Juno Therapeutics	Anti-CD19	\$182M	\$410,300
Abecma	BMS/Bluebird Bio	Anti-BCMA	\$388M	\$481,499
Carvykti	Legend Biotech/Janssen	Anti-BCMA	N/A	\$465,000

TECHNOLOGY

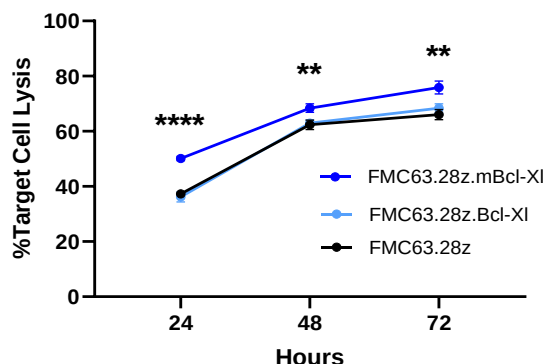
Figure 1 shows that overexpression of degradation-resistant mBcl-XI reduces activation induced cell death in CAR-T cells. Figure 2 shows that overexpression of mBcl-XI improves cytotoxicity.

1 Survival



2

% Target Cell Lysis



PUBLICATION/PATENT

- Provisional Patent filed for Drs. Locke and Atkins

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LICENSING OPPORTUNITY

