

Society for Immunotherapy of Cancer



#SITC23 SITCANCER.ORG/2023

38th Annual Meeting & Pre-Conference Programs

Advance the science, discover breakthroughs and educate the world on cancer immunotherapy.



Development of ex vivo precision gene engineered B cell medicines that produce highly active and sustained levels of transgenic anti-tumor biologics

Jasmine Edelstein, Tyler Hill, Michael Leiken, Katherine Molloy, Glory Adekanye, Caroline Bullock, Adam Lazorchak, Ken-Edwin Aryee, David Rawlings, Richard James, Richard Morgan, <u>Sean Arlauckas</u>







38th Annual Meeting & Pre-Conference Programs #SITC23 | WWW.SITCANCER.ORG/2023





Disclosures

I am a full-time employee of Be Biopharma



38th Annual Meeting & Pre-Conference Programs #SITC23 | WWW.SITCANCER.ORG/2023

Multiplexed B cell editing for scFv knock-in & CD19 knockout



Hill TF, et. al. BioRxiv 2023.

Requires 28-d infusion \geq



BeCM-derived BiTE Efficacy in Patient-Derived Xenograft (PDX) model





Improving the potency of BeCM





Optimized BiTE-BeCM secretion and activity

BeCM-derived BiTE shows reporter cell line activity

Secretion rate interpolated from recombinant standard curve

Potency of BeCM-BiTE comparable to recombinant

Potent tumor cell killing also observed





In vivo test of optimized BeCM in PDX model





- Serum levels reached using clinically-effective blincyto doses: 550 – 750 pg/mL
- ~1000 pg/mL achieved with optimized construct

Conclusions

- BeCM are capable of secreting potent BiTE biosimilars
- This approach holds promise for B-ALL and other applications



Acknowledgements



We thank all our Be Bio team members for their support!



Tyler Hill David Rawlings Richard James

Abstract #3684 Poster #409