

Supplemental Information

Single-Cell Analyses Identify Brain Mural

Cells Expressing CD19 as Potential

Off-Tumor Targets for CAR-T Immunotherapies

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Table S1. Severe Neurological Events in Trials Investigating anti CD19 CAR-T Cells, Related to [Figure 7](#)

| PI | Study Name | Indication | Center | scFv | Endo-domain s | Neurologic events Grade > 3 | Fatal Neuro-toxicity | NCT | Status |
|----------|--------------|--|-----------------------|--------|--------------------|-----------------------------|----------------------|--|------------|
| Trede | Rocket Trial | R/R or MRD+ CD19+ adult B cell ALL | MSKCC | SJ25C1 | CD28-CD3- ζ | 42% (16/38) | 5 | NCT02535364 (Juno Therapeutics, a Subsidiary of Celgene, 2020) | Terminated |
| Locke | ZUMA1 | R/R NHL | Moffitt Cancer Center | FMC63 | CD28-CD3- ζ | 57% (4/7) | 1 | NCT02348216 (Locke et al., 2017) | completed |
| Maloney | - | R/R CD19+ adult CLL | Fred Hutch | FMC63 | 4-1BB-CD3- ζ | 25% (6/24) | 1 | NCT01865617 (Turtle et al., 2017) | ongoing |
| Maloney | - | R/R adult NHL | Fred Hutch | FMC63 | 4-1BB-CD3- ζ | 28% (9/32) | 1 | NCT01865617 (Turtle et al., 2016a) | ongoing |
| Maloney | - | R/R adult B-ALL | Fred Hutch | FMC63 | 4-1BB-CD3- ζ | 50%. (15/30) | 1 | NCT01865617 (Turtle et al., 2016b) | ongoing |
| Schuster | - | R/R adult DLBCL | Penn | FMC63 | 4-1BB-CD3- ζ | 11% (3/28) | 1 | NCT02030834 (Schuster et al., 2017) | completed |
| Maude | CTL019 | Pediatric/young adult B cell ALL | Penn | FMC63 | 4-1BB-CD3- ζ | 45% (23/51) | - | NCT01626495 (Gofshiteyn et al., 2018) NCT01029366 | completed |
| Maude | ELIANA | R/R CD19+ pediatric/young adult B cell ALL | Multi-center | FMC63 | 4-1BB-CD3- ζ | 13% (10/75) | - | NCT02435849 (Maude et al., 2018) | completed |
| Lee | KTE-C19 | R/R CD19+ B cell ALL | NCI | FMC63 | CD28-CD3- ζ | 4% (1/21) | - | NCT01593696 (Lee et al., 2015) | completed |
| Neelapu | ZUMA1 | R/R Adult DLBCL | Multi-center | FMC63 | CD28-CD3- ζ | 28% (28/101) | - | NCT02348216 (Neelapu et al., 2017) | completed |
| Park | - | R/R CD19+ adult B cell ALL | MSKCC | FMC63 | CD28-CD3- ζ | 42% (22/53) | - | NCT01044069 (Park et al., 2018) | completed |
| Gardner | - | R/R CD19+ ALL pediatric/young adult | Seattle Children's | FMC63 | 4-1BB-CD3- ζ | 21% (9/43) | - | NCT02028455 (Gardner et al., 2017) | completed |

Nomenclature: B-ALL (B cell acute lymphoblastic leukemia), CLL (Chronic lymphocytic leukemia), DLBCL (Diffuse large B cell lymphoma), MRD (Minimal residual disease), NHL (Non-Hodgkin Lymphoma), R/R Relapsed/Refractory, scFv Single Chain Fragment Variable, PI (principal investigator).