

Supplementary Materials: The Influence of Chimeric Antigen Receptor Structural Do-mains on Clinical Outcomes and Associated Toxicities

Ashleigh S. Davey, Matthew E. Call and Melissa J. Call

Table S1. Number and grade of patients diagnosed with CRS in each anti-CD19 CAR-T cell clinical trial.

NCT ID	CAR Name	CAR domain structure					No. of patients	Clinical Response (No. of patients)				
		ScFv	Hinge	TM	Costim	Signal		SD	PD	PR	CR	NR
NCT02842138	CD19-BBz(86)	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	7	1	1	3	2	0
NCT02842138	CD19-BBz(86)	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	13	1	6	4	5	0
NCT02030834	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	28	-	-	2	16	12
NCT02445248	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	93	14	24	11	37	7
NCT01626495	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	30	3	0	3	27	0
NCT01029366												
NCT02435849	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	75	0	6	16	45	8
NCT02631044	JCAR017	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	255	-	-	51	135	69
NCT01860937	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	25	0	6	0	18	1
NCT01044069	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	53	-	-	-	44	1
NCT00466531	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	16	7	5	0	3	1
NCT01840566	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	15	2	4	0	8	1
NCT02601313	KTE-X19	FMC63	CD28	CD28	CD28	CD3 ζ	68	2	2	16	40	8
NCT02348216	KTE-C19	FMC63	CD28	CD28	CD28	CD3 ζ	101	11	5	28	55	2
NCT00924326	CAR-19	FMC63	CD28	CD28	CD28	CD3 ζ	17	1	3	4	9	0
NCT01593696	FMC63-28z	FMC63	CD28	CD28	CD28	CD3 ζ	21	3	4	0	14	0
NCT02963038	SENL-B19	FMC63	CD28	CD28	41BB	CD3 ζ	10	0	0	1	8	1
NCT01865617	-	FMC63	IgG4	CD28	41BB	CD3 ζ	32	-	-	9	10	13

CR, Complete Response; NR, No Record; PD, Progressive Disease; PR, Partial Response; SD, Stable Disease

Table S2. Number and grade of patients diagnosed with CRS in each anti-CD19 CAR-T cell clinical trial.

NCT ID	CAR Name	CAR domain structure					No. of patients	CRS patient diagnosis (No. of patients)				
		ScFv	Hinge	TM	Costim	Signal		None	Grade 1	Grade 2	Grade 3	Grade 4+
NCT02842138	CD19-BBz(86)	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	7	6	1	0	0	0
NCT02842138	CD19-BBz(86)	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	16	11	5	0	0	0
NCT02030834	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	28	12	0	11	4	1
NCT02445248	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	111	47	40	15	9	
NCT01626495	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	30	0	22	8	0	
NCT01029366												
NCT02435849	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	75	17	23	16	19	
NCT02631044	JCAR017	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	268	155	107	6		
NCT01860937	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	25	5	16	4		
NCT01044069	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	53	8	31	14		
NCT00466531	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	16	0	4	10	1	1
NCT01840566	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	15	9	0	3	2	1
NCT02601313	KTE-X19	FMC63	CD28	CD28	CD28	CD3 ζ	68	6	20	32	8	2
NCT02348216	KTE-C19	FMC63	CD28	CD28	CD28	CD3 ζ	101	7	81	13	0	0
NCT00924326	CAR-19	FMC63	CD28	CD28	CD28	CD3 ζ	17	9	5	3	0	
NCT01593696	FMC63-28z	FMC63	CD28	CD28	CD28	CD3 ζ	21	5	8	2	3	3
NCT02963038	SENL-B19	FMC63	CD28	CD28	41BB	CD3 ζ	10	0	5	1	3	1
NCT01865617	-	FMC63	IgG4	CD28	41BB	CD3 ζ	32	12	5	6	6	3

Table S3. Number and grade of patients diagnosed with neurotoxicity in each anti-CD19 CAR-T cell clinical trial.

NCT ID	CAR Name	CAR domain structure					No. of patients	Neurotoxicity patient diagnosis (No. of patients)				
		ScFv	Hinge	TM	Costim	Signal		None	Grade 1	Grade 2	Grade 3	Grade 4+
NCT02842138	CD19-BBz(86)	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	7	7	0	0	0	0
NCT02842138	CD19-BBz(86)	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	16	16	0	0	0	0
NCT02030834	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	28	17	4	4	1	2
NCT02445248	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	111	88	10		8	5
NCT01626495	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	30	-	-	-	-	-
NCT01029366												
NCT02435849	CTL-019	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	75	45	20		10	0
NCT02631044	JCAR017	FMC63	CD8 α	CD8 α	41BB	CD3 ζ	268	188	53			27
NCT01860937	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	25	7	11			7
NCT01044069	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	53	30	1			19
NCT00466531	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	16	10	3	2	1	0
NCT01840566	19-28z	FMC63	CD28	CD28	CD28	CD3 ζ	15	5	0	1	5	4
NCT02601313	KTE-X19	FMC63	CD28	CD28	CD28	CD3 ζ	68	25	13	9	15	6
NCT02348216	KTE-C19	FMC63	CD28	CD28	CD28	CD3 ζ	101	36	37	28	0	36
NCT00924326	CAR-19	FMC63	CD28	CD28	CD28	CD3 ζ	17	5	5			7
NCT01593696	FMC63-28z	FMC63	CD28	CD28	CD28	CD3 ζ	21	15	2	3	1	0
NCT02963038	SENL-B19	FMC63	CD28	CD28	41BB	CD3 ζ	10	4	0	0	5	1
NCT01865617	-	FMC63	IgG4	CD28	41BB	CD3 ζ	32	24	0	0	6	2