SUPPLEMENTARY TABLES

Supplementary Table 1. CD19-directed CAR-T cell therapy product features

Product Features	Tisagenlecleucel (1, 2)	Axicabtagene Ciloleucel (3)	Lisocabtagene Maraleucel (4)
Costimulatory domain	4-1BB	CD28	4-1BB
Vector	Lentivirus	Gamma retrovirus	Lentivirus
Leukapheresis material	Cryopreserved	Fresh	Fresh
Treatment setting	Inpatient or outpatient	Inpatient only	Inpatient or outpatient
Approved indications	r/r B-ALL, r/r DLBCL, HGBCL, tFL	r/r DLBCL, HGBCL, tFL, r/r PMBCL	None

Brexucabtagene autoleucel is an additional CD19-directed CAR-T cell therapy indicated for the treatment of adult patients with relapsed or refractory mantle cell lymphoma **(5)**.

B-ALL, B-cell precursor acute lymphoblastic leukemia; CAR-T, chimeric antigen receptor T-cell; CD, cluster of differentiation; DLBCL, diffuse large B-cell lymphoma; HGBCL, high-grade B-cell lymphoma; PMBCL, primary mediastinal large B-cell lymphoma; r/r, relapsed or refractory; tFL,transformed follicular lymphoma.

Supplementary Table 2. CD19-directed CAR-T cell therapy characteristics of patients, efficacy, and safety in key clinical trials

r/r DLBCL	JULIET (6-9)[a] N=115	ZUMA-1 (10)[b] N=108[c]	TRANSCEND-NHL-001 (11)[b] N=269
Age, median (range), years	56 (22-76)	58 (51-64)	63 (54-70)
Age, ≥65 years, %	23	24	42
ECOG performance status 0-1, %	88	100	99
No. of prior therapies, %			
1	5	3	Median, 3 Range, 1-8
2	44	28	
3	51	69[d]	
Prior autoHSCT, %	49	21	33
Bridging chemotherapy, %	90	Not permitted	59
Best ORR, %	52.2	83[e]	73
CR, %	38.3	58[f]	53
Median DOR, months (95% CI)	NE (10-NE)	11.1 (4.2-NE)[g]	NR (8.6-NR)
Median OS, months (95% CI)	11.1 (6.6-23.9)	NR (12.8-NE)[h]	21.1 (13.3-NR)
Median PFS, months (95% CI)	2.9 (2.2-4.2)	5.9 (3.3-15.0)	6.8 (3.3-4.1)
CRS, %	57	93	42[a]
Grade ≥3, %	23	11	2
Time to onset, median (range), days	3	2 (1-12)	5 (1-14)

Duration, median (range), days	7 (2-30)	7 (2-58)	5 (1-17)
Neurological events, %[i]	20	67	30
Grade ≥3, %	11	32	10
Time to onset, median (range), days	6 (1-17)	4 (1-43)	9 (1-66)
Duration, median (range), days	14	17	11 (1-86)
	ELIANA (12)[,a]		
r/r B-ALL	**N=79**		
Age, median (range), years	11 (3-24)		
No. of prior therapies, median (range)	3 (1-8)		
Prior alloSCT, %	61		
Overall remission rate, %	82		
MRD negative, %	98		
Duration of remission, %			
Month 6[j]	81		
Month 12	66		
Month 18	66		
Month 24	62		
OS, %			
Month 6[j]	89		
Month 12	76		
Month 18	70		
Month 24	66		

RFS, %	
Month 6	—
Month 12	66
Month 18	66
Month 24	62
CRS, %	77
Grade ≥3, %	49
Time to onset, median, days	3
Duration, median, days	8
Neurological events, %[j]	39
Grade ≥3, %	13
Time to onset, median (range), days	7
Duration, median (range), days	—

The purpose of this table is to summarize data. Head-to-head studies have not been performed and no comparisons can be made.
The first determination of first response was assessed at month 3 in JULIET and month 1 in ZUMA-1 and TRANSCEND-NHL-001.
The median follow-up for JULIET, ZUMA-1, and TRANSCEND-NHL-001 was 32.6, 27.1, and 18.8 months, respectively.
[a]CRS was graded by the Penn grading scale (JULIET, ELIANA); regrading comparisons have been published for JULIET **(13)**.
[b]CRS was graded by the Lee grading scale (TRANSCEND-NHL-001, ZUMA-1).
[c]101/108 patients included for baseline characteristics and efficacy analyses.
[d]≥3 prior therapies.
[e]Investigator assessed, IRC assessed=74%.
[f]Investigator assessed, IRC assessed=54%.
[g]Investigator assessed, IRC assessed=NR (10.9-NE).
[h]Investigator and IRC assessed.
[i]CTCAE was not designed for grading CAR-T cell therapy-associated neurological effects. The CRES and ASTCT scales, which assess ICANS, provide more accurate assessments of neurological effects after CAR-T cell therapy **(14)**.
[j]ELIANA duration of remission and OS as listed in the CIBMTR Cellular Therapy Registry **(15)**.
alloSCT, allogeneic stem cell transplantation; ASTCT, American Society for Transplantation and Cellular Therapy; autoHSCT, autologous hematopoietic stem cell transplantation; B-ALL, B-cell precursor acute lymphoblastic leukemia; CAR-T, chimeric antigen receptor T-cell; CD, cluster of differentiation; CI, confidence interval; CIBMTR, Center for International Blood and Marrow Transplant Research; CR, complete response; CRES, CAR-T related encephalopathy syndrome; CRS, cytokine release syndrome; CTCAE, Common Terminology Criteria for Adverse Events; DLBCL, diffuse large B-cell lymphoma; DOR, duration of response; ECOG, Eastern Cooperative Oncology Group; ICANS, immune effector cell-associated neurotoxicity syndrome; IRC, independent review committee; MRD, minimal residual disease; NE, not estimable; NR, not reached; ORR, overall response rate; OS, overall survival; PFS, progression-free survival; RFS, relapse-free survival; r/r, relapsed or refractory.

Supplementary Table 3. CD19-directed CAR-T cell therapy characteristics of patients, efficacy, and safety in the real-world treatment setting

	Tisagenlecleucel		Axicabtagene Ciloleucel	
r/r DLBCL	**CIBMTR Cellular Therapy Registry (16)[a] N=155[b]**	**Riedell, et al (17)[c] N=86**	**CIBMTR Cellular Therapy Registry (18)[d,e] N=533**	**Riedell, et al (17)[c] N=158**
Age, median (range), years	65 (18-89)	67 (29-88)	61 (19-86)	59 (18-85)
Age, ≥65 years, %	—	62	70	34
ECOG performance status 0-1, %	83	95	80	90
≥3 prior therapies, %	4[f]	86	66[g]	73
Prior autoHSCT, %	26	26	32	27
Bridging chemotherapy, %	—	75	—	61
Best ORR, %	62	59	74	75[i]
CR, %	40	41	—	45[i]
Median PFS, months	39% at month 6 26% at month 12[h]	3.2	—	6.7
CRS, %	45	41	80-84	85
Grade ≥3, %	5	1	8-10	8
Time to onset, median, days	4	3	3	2
Duration, median, days	5	3	7	6
NE, %	18	14	55-64	53
Grade ≥3, %	5	0	19-22	33
Time to onset, median (range), days	8	4	6	6
Duration, median (range), days	7	4	7-10	7

	Tisagenlecleucel
r/r B-ALL	**CIBMTR Cellular Therapy Registry (16)[,a] N=255[j]**
Age, median (range), years	13 (<1-26)
Number of prior therapies, median (range)	3 (0-15)
Prior alloSCT, %	28
CR, %	86
MRD negative, %	99
Duration of remission, % at month 6	78
OS, % at month 6	89
OS, % at month 12	77
EFS, % at month 6	69
EFS, % at month 12	52
CRS, %	55
Grade ≥3, %	16
Time to onset, median, days	6
Duration, median, days	7
NE, %	27
Grade ≥3, %	9
Time to onset, median, days	7
Duration, median, days	7

The purpose of this table is to summarize data. Head-to-head studies have not been performed and no comparisons can be made.
[a]CRS was graded by the ASTCT grading scale.
[b]152/155 patients included for efficacy.
[c]Institutional scale grading/ASTCT scale grading.
[d]Patients <65 – patients >65 years of age.
[e]CRS was graded by the Lee grading scale.

[f]Median number of prior therapies.
[g]>3 prior therapies.
[h]<10 patients at risk at this time point.
[i]30 days post infusion.
[j]249/255 patients included for efficacy.
alloSCT, allogeneic stem cell transplantation; ASTCT, American Society for Transplantation and Cellular Therapy; autoHSCT, autologous hematopoietic stem cell transplantation; B-ALL, B-cell precursor acute lymphoblastic leukemia; CAR-T, chimeric antigen receptor T-cell; CD, cluster of differentiation; CIBMTR, Center for International Blood and Marrow Transplant Research; CR, complete response; CRS, cytokine release syndrome; DLBCL, diffuse large B-cell lymphoma; DOR, duration of remission; ECOG, Eastern Cooperative Oncology Group; EFS, event-free survival; MRD, minimal residual disease; NE, neurological events; PFS, progression-free survival; ORR, overal response rate; OS, overall survival; r/r, relapsed or refractory.

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