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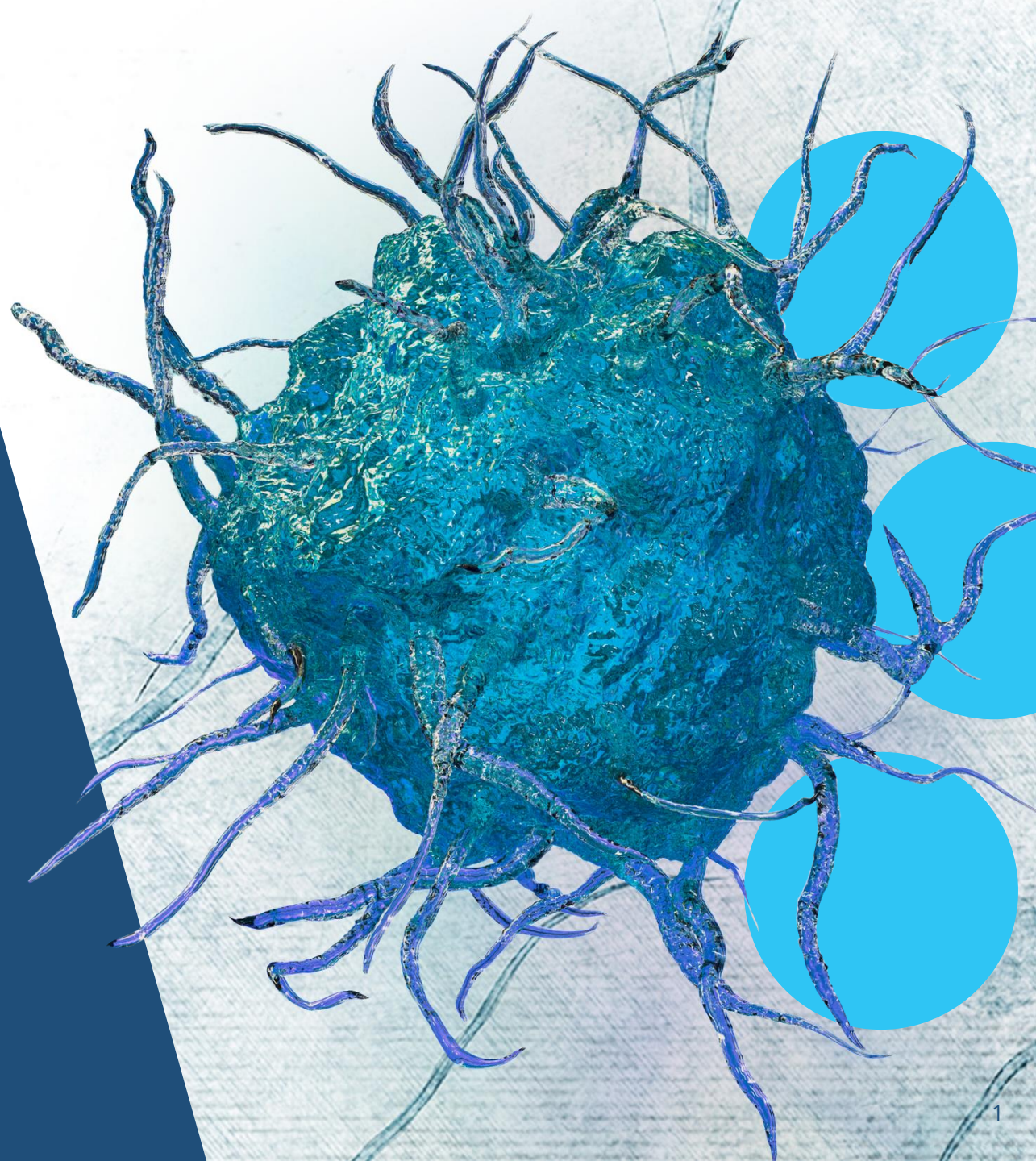
NEXT GENERATION

Natural Killer Cells

Engineered to Beat Cancer



5 December 2022

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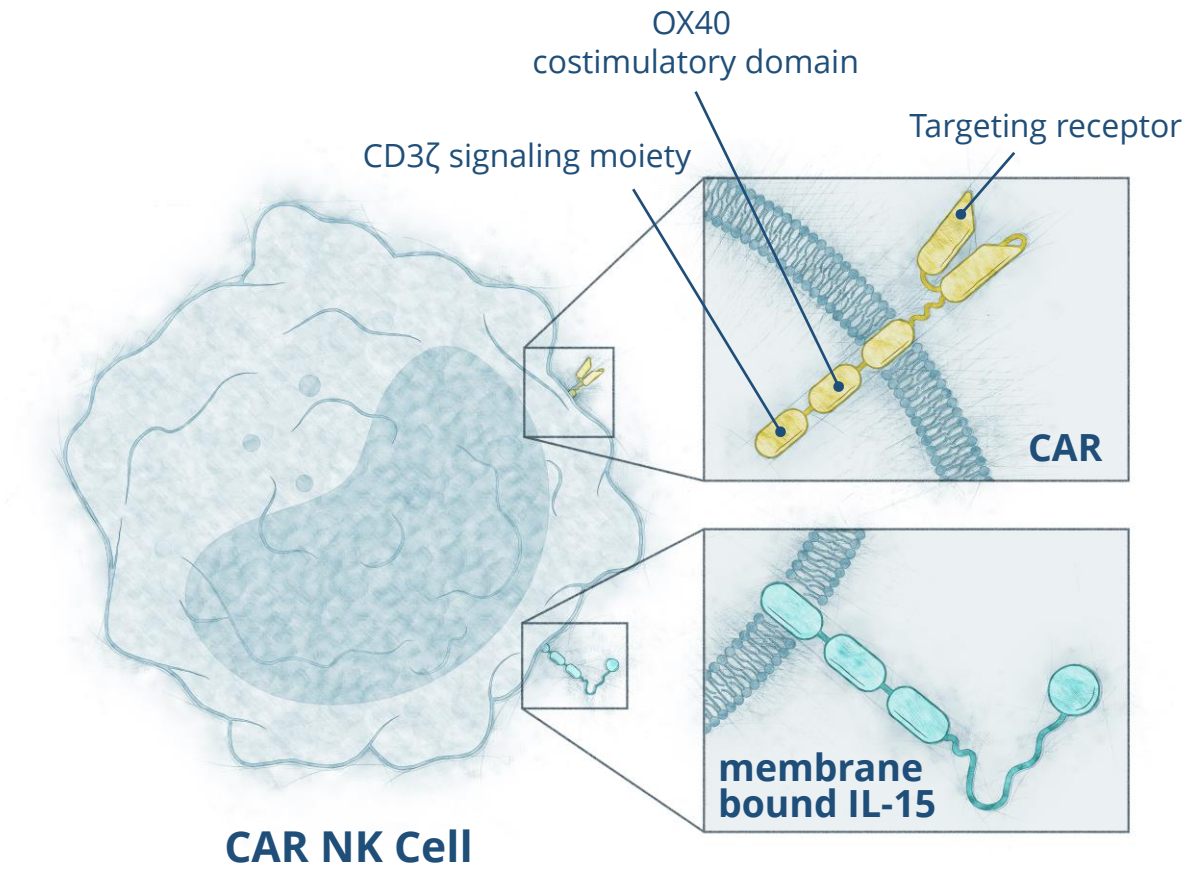
CAR NK cells driving a revolution in off-the-shelf cell therapy

Next generation platform built for:

- **Blood cancers and solid tumors**
- **Allogeneic, off-the-shelf, and on demand**
- **Industrialized manufacturing**
- **Outpatient administration**



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NKX019: Key topics for discussion

- **Best response for 6 additional patients treated since April update**
- **Follow-up on patients from April update, including multiple patients with durability beyond 6 months**
- **Tolerability and clinical impact of additional cycles of NKX019**
  - Deepening
  - Consolidation
  - Retreatment
- **Outpatient administration in multiple patients**
- **Opening of dose expansion cohorts**

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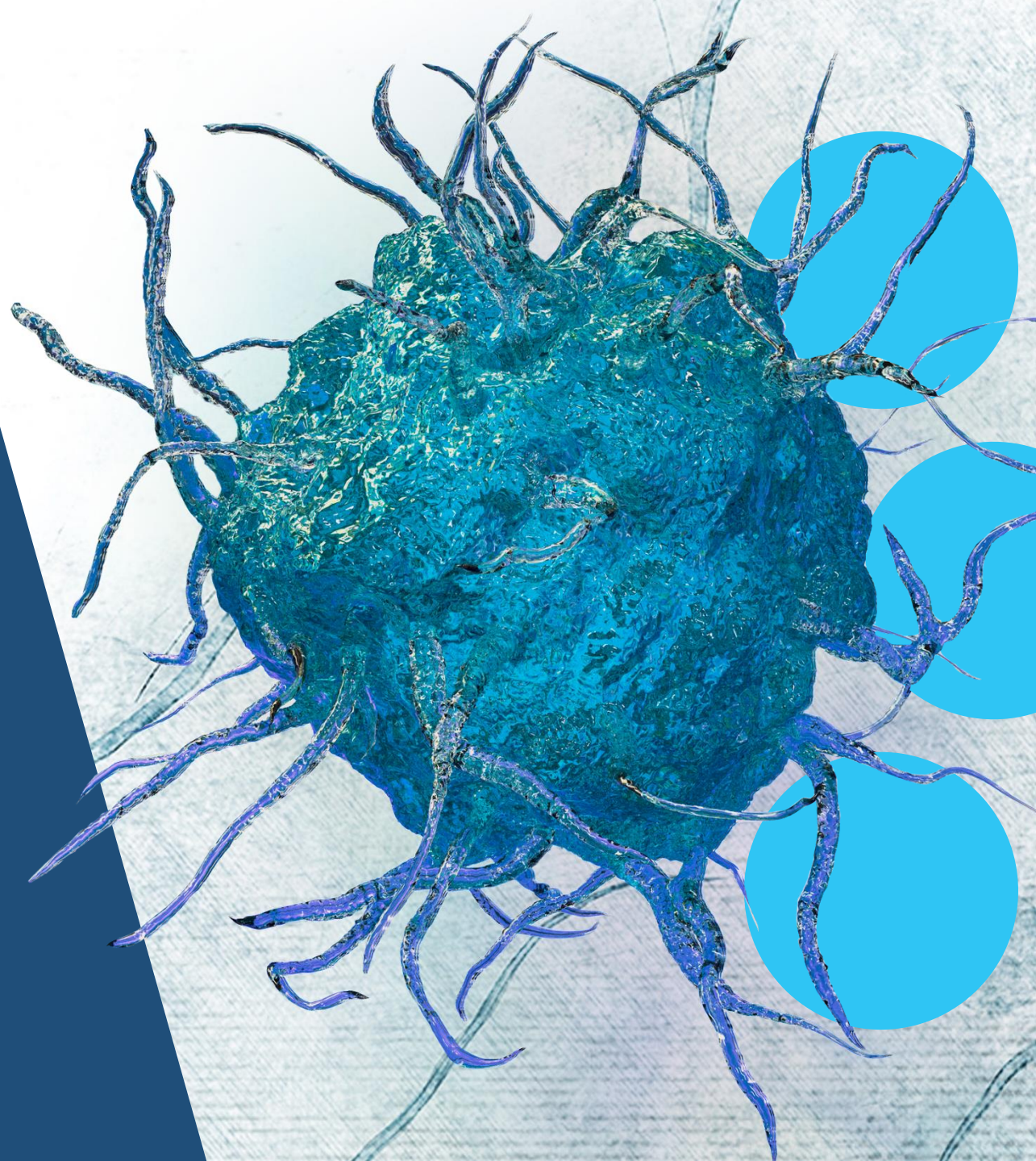
NKX019 for the Treatment of Relapsed / Refractory B-Cell Malignancies

Clinical Data as of 28 November 2022



Autologous CAR T-cell therapy has set the bar for cellular therapies in relapsed / refractory NHL but has limitations

- **CAR T-cell therapy is not accessible to most patients with NHL**
  - Only 20-30% of patients with LBCL that can benefit from cell therapy receive it
- **Potential for toxicity requires close proximity to an intensive care unit**
  - Need for specialized sites as >25% of patients require ICU care
  - Grade 3+ CRS: 13 to 49%, Grade 3+ ICANS / neurotoxicity: 18 to 31%
- **Only 30-40% of patients with LBCL treated with CAR T-cell therapy have 6-month CR**
  - No ability to re-dose for incomplete response
  - Outcomes among those that relapse is poor

YESCARTA USPI; KYMRIAH USPI; BREYANZI USPI; Azoulay et al, 2020; Tomas, et al. 2022.

CAR: chimeric antigen receptor; CR: complete response; CRS: cytokine release syndrome; ICANS: immune cell associated neurotoxicity syndrome; ICU: intensive care unit; LBCL: large B-cell lymphoma; NHL: non-Hodgkin lymphoma; USPI: U.S. Prescribing Information.

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NKX019 for B-cell malignancies: A multicenter, open-label, phase 1 study

Key Inclusion Criteria

- r/r CD19+ B-cell malignancies
- Received ≥2 prior lines of therapy
- ECOG PS 0 or 1
- CAR T-cell therapy naïve (dose-finding phase)

Endpoints:

- Safety and tolerability
- Anti-tumor activity
- Pharmacokinetics

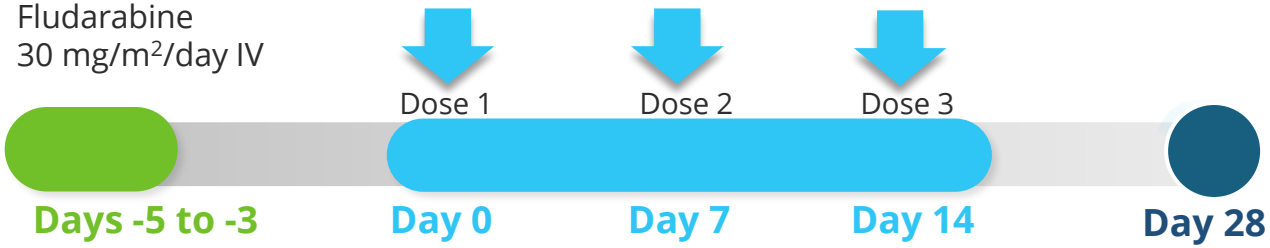
NCT05020678

Lymphodepletion

- Cyclophosphamide 300 mg/m^2/day IV (dose-finding phase)
- Fludarabine 30 mg/m^2/day IV

NKX019

3 doses per 28-day cycle



- Multiple cycles allowed to **deepen response** for subjects tolerating and benefiting from treatment
- Subjects in **CR** may receive additional cycle as **consolidation**

Efficacy assessment*

Post-treatment follow-up

Subjects with initial clinical benefit and subsequent progression may receive **retreatment**

**Efficacy based on: Lugano criteria for NHL; 2018 iwCLL guidelines for CLL; NCCN v1.2020 for B-ALL*
CAR: chimeric antigen receptor; CR: complete response; ECOG PS: Eastern Cooperative Oncology Group performance status; EOT: end of therapy; r/r: relapsed/refractory; iwCLL: International Workshop on Chronic Lymphocytic Leukemia; NCCN: National Comprehensive Cancer Network.

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Patients who were treated with NKX019 were heavily pre-treated and had a poor prognosis

	Total (N=19)
Age, median (range)	**59 (21-82)**
Baseline ECOG PS 1	**13**
Australia/US	**13/6**
Diagnosis	
Large B cell lymphoma (LBCL)[#] IPI 3+	**7** 3 (43%)
Follicular lymphoma (FL) FLIPI high risk	**5** 3 (60%)
Marginal zone lymphoma (MZL)	**1**
Mantle cell lymphoma (MCL)	**1**
Chronic lymphocytic leukemia (CLL)	**2**
B-cell acute lymphoblastic leukemia (B-ALL)	**3**
Prior lines of therapy, median (range)	**4 (2 - 10)**

[#]LBCL includes 6 DLBCL and 1 FL3b.

50% 7 of 14 patients with NHL had aggressive LBCL

4 Median lines of prior therapy

DLBCL: diffuse large B-cell lymphoma; ECOG PS: Eastern Cooperative Oncology Group performance status; FL3b: follicular lymphoma grade 3b; FLIPI: Follicular Lymphoma International Prognostic Index; LBCL: large B-cell lymphoma; NHL: non-Hodgkin lymphoma.

NKX019 was well-tolerated up to 1.5 B cells / dose

- **No ICANS / neurotoxicity, GVHD, Grade 5 or dose-limiting toxicities**
- **One (5%) Grade ≥ 3 infection**
- **No treatment-related AEs leading to discontinuation of NKX019**
- **Myelosuppression, consistent with standard lymphodepletion, was the most common Grade ≥ 3 toxicity and manageable**

Grade 3/4 AEs in >1 subject	Total (N=19)
Subjects with any ≥ Grade 3 AEs	16 (84%)
Neutrophil count decreased	12 (63%)
Platelet count decreased	8 (42%)
Febrile neutropenia	5 (26%)
Anemia	4 (21%)
WBC count decreased	3 (16%)
Lymphocyte count decreased	2 (11%)

Treatment-emergent AEs regardless of relationship.

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AE: adverse event; GVHD: graft versus host disease; ICANS: immune effector cell-associated neurotoxicity syndrome. WBC: white blood cell count.

A minority of patients experienced transient and manageable infusion-related effects

- **5/19 patients (26%) developed fever within 8 hours that resolved within 24 hours**
  - In contrast, CAR T-cell therapy–associated CRS has a median onset of 2-5 days and a median duration of 5-8 days
  - Grade 1/2 infusion-related reactions (IRR) listed as expected side effect in Investigator's Brochure
- **No apparent association between symptoms and response**

Patient	Grade*	Investigator assessment	Anti-IL-6 therapy	Steroids	Description of event
#1	G1	IRR	N	N	Fever within 8 hours; resolved with antipyretics and did not recur
#2	G1	IRR	N	N	Fever within 5 hours; resolved with antipyretics and did not recur
#3	G2	CRS	N	N	Fever and hypotension within 8 hours; resolved with antipyretics and did not recur
	G1	CRS	N	N	Fever within 6 hours; resolved with antipyretics and did not recur
#4	G3	CRS	Y	Y	Fever and hypoxia within 5 hours; fever resolved within 24 hours and did not recur
#5	G1	IRR	N	N	Tachycardia (no fever) within 3 hours; resolved within 24 hours without intervention
	G2	CRS	Y	N	Fever with hypotension and hypoxia within 6 hours; symptoms resolved within 24 hours after treatment and did not recur

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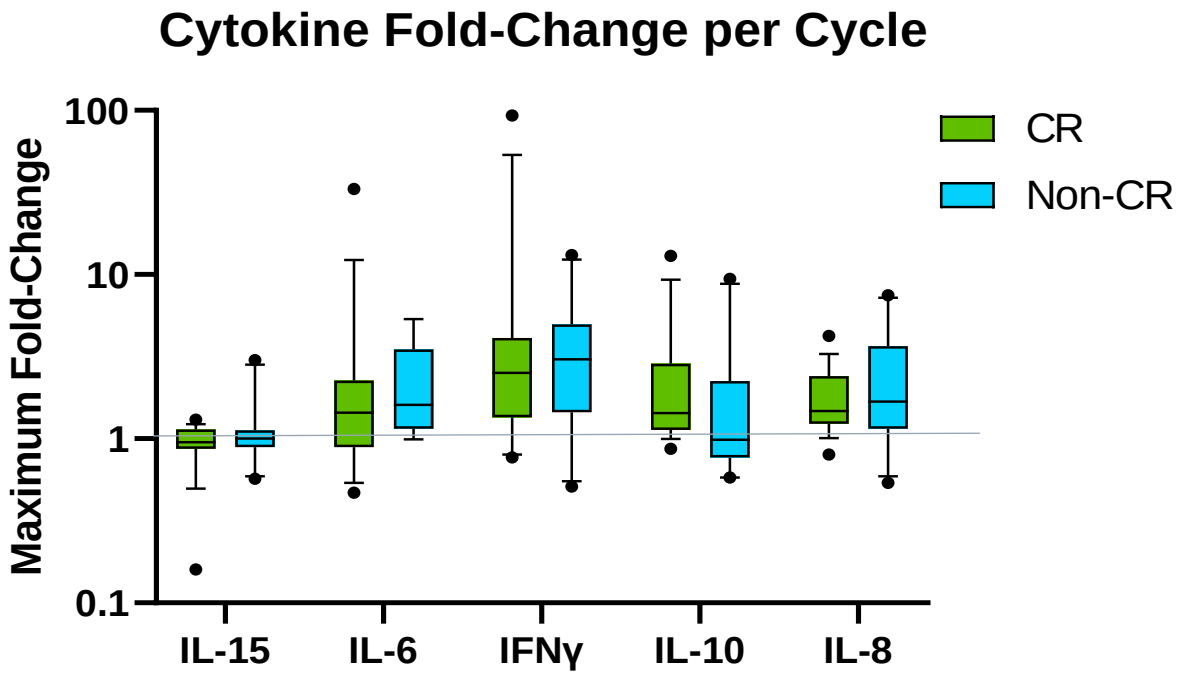
* Lee, ASTCT.
YESCARTA USPI; KYMRIAH USPI; BREYANZI USPI.
CAR: chimeric antigen receptor; CRS: cytokine release syndrome; G: grade.

Cytokine elevation was generally modest across all patients

- **Peak IL-6, IFNγ, IL-10, and IL-8 levels were marginally above baseline throughout treatment for most patients**
  - Severe (Grade > 3) CRS in those receiving CAR T-cell therapies is generally associated with ~100-fold changes of multiple serum cytokines
  - No Grade > 3 CRS observed to date with NKX019
- **No association was observed between elevated serum cytokines and clinical response**



M. Davila et al., *Sci Transl Med*. 2014; Hay et al., *Blood*, 2017.
CAR: chimeric antigen receptor; CR: complete response; CRS: cytokine release syndrome.

NKX019 showed monotherapy activity across multiple histologies

8/10 ORR (80%), including 7/10 CRs (70%) observed at higher dose levels in NHL

	300 M Cells × 3 Doses		1 B Cells × 3 Doses		1.5 B Cells × 3 Doses	
	ORR (CR, PR)	**CR**	**ORR** (CR, PR)	**CR**	**ORR** (CR, PR)	**CR**
All NHL	**2/4**	**1/4**	**5/6 (83%)**	**4/6 (67%)**	**3/4 (75%)**	**3/4 (75%)**
LBCL[#]	1/3	0/3	1/2	1/2	1/2	1/2
MCL	-	-	1/1	1/1	-	-
FL	1/1	1/1	2/2	1/2*	2/2	2/2
MZL	-	-	1/1	1/1	-	-
Leukemia	0/1	0/1	0/2	0/2	0/2	0/2
ALL	0/1	0/1	0/2	0/2	-	-
CLL	-	-	-	-	0/2 [1/2 SD]	0/2

*** PR deepened to CR since April 2022**

New since April 2022

[#]*LBCL includes DLBCL and FL3b.*
ALL: acute lymphoblastic leukemia; CLL: chronic lymphocytic leukemia; CR: complete response; DLBCL: diffuse large B-cell lymphoma; FL: follicular lymphoma; FL3b: follicular lymphoma grade 3b; LBCL: large B-cell lymphoma; MCL: mantle cell lymphoma; MZL: marginal zone lymphoma; NHL: non-Hodgkin lymphoma; ORR: overall response rate; PR: partial response.

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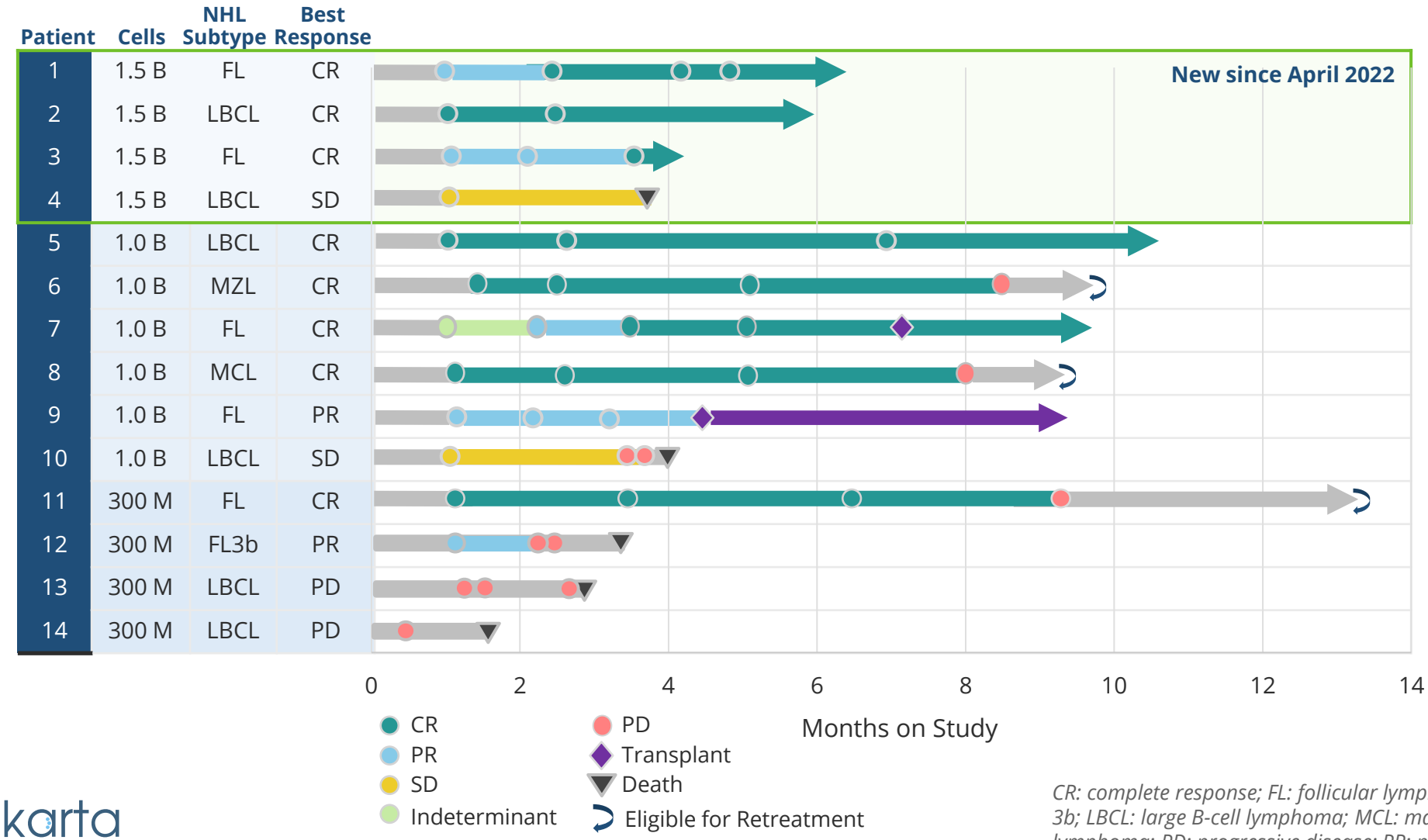
NKX019 monotherapy elicited complete responses with early durability across NHL histologies; most responses occurred after a single cycle



8 patients achieved CR with NKX019 *monotherapy*

- 5 after a single cycle
- 3 with PR deepened to CR with additional cycles
- 7 received consolidation cycle

Retreatment planned with 1.5 B dose for 3 patients

CR: complete response; FL: follicular lymphoma; FL3b: follicular lymphoma grade 3b; LBCL: large B-cell lymphoma; MCL: mantle cell lymphoma; MZL: marginal zone lymphoma; PD: progressive disease; PR: partial response; SD: stable disease.

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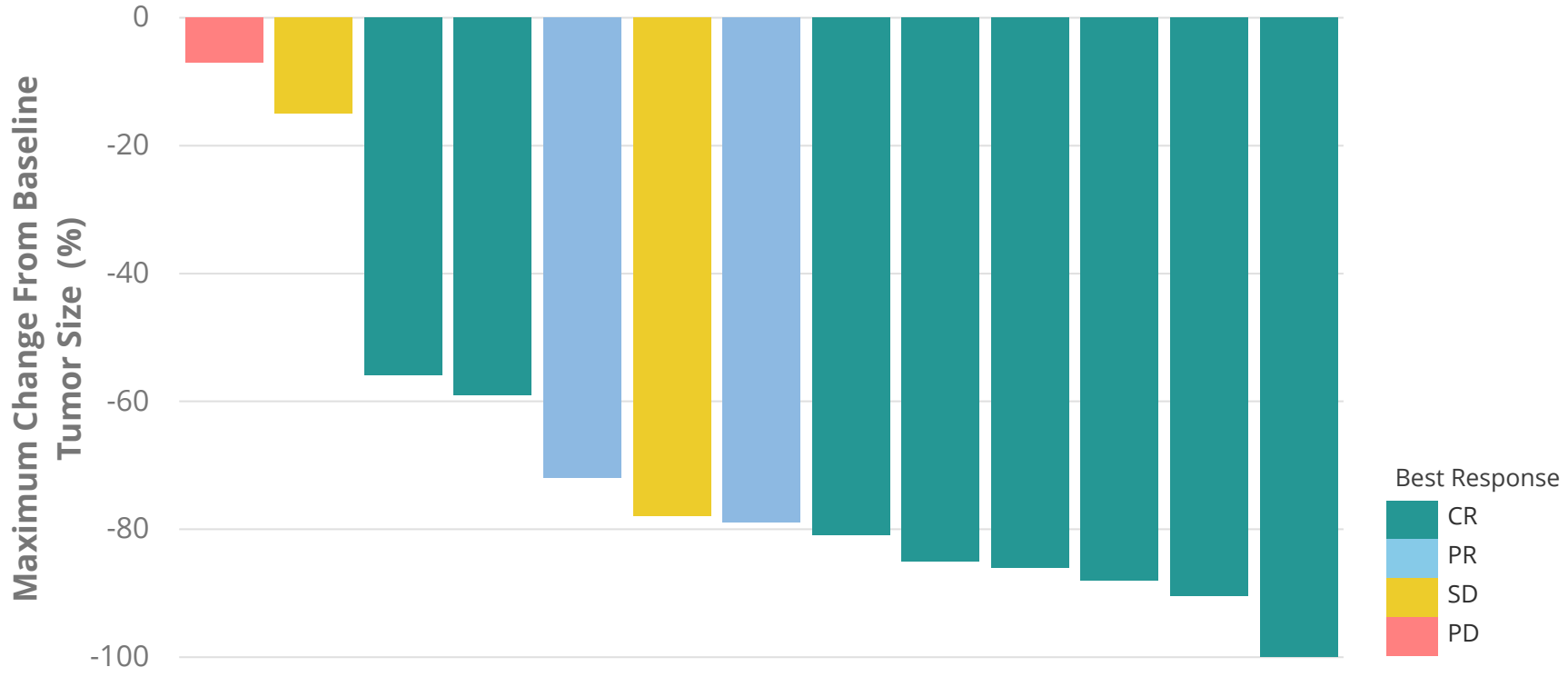
Nearly every patient with NHL treated with NKX019 experienced tumor reduction



Notes:
1. Tumor size is calculated as sum of the product of the perpendicular diameters (SPD).
2. One patient discontinued due to clinical progression without SPD assessment.
3. One patient did not have any target lesions. The SPD was calculated based on measurable non-target lesions.
CR: complete response; NHL: non-Hodgkin lymphoma; PD: progressive disease; PR: partial response.

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Higher peak concentrations of NKX019 correlated with complete responses and higher doses of NKX019

- **Higher cell doses correlated with higher peak measured concentration (C_{max})**
- **Peak concentration trended higher in patients achieving CR**

Dose Level	C_{max}	All subjects	CR	Non-CR
300 M cells	**n**	5	1	4
	Median (range)	***< 6.7*** (< *6.7*-393)	**393** (393)	***< 6.7*** (< *6.7*-234)
1 B/1.5 B cells	**n**	14	7	7
	Median (range)	**156.9** (< *6.7*-567.0)	**298** (< *6.7*-567.0)	***< 6.7*** (< *6.7*-481)

6.7 = Lower limit of quantification
C_{max}, given as transgene copies/µg of DNA.

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C_{MAX}, peak detected concentration; CR: complete response.

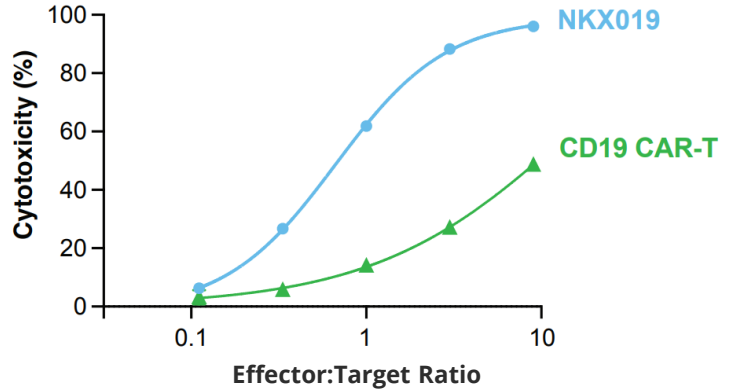
On demand availability of NKX019 facilitated successive treatment cycles and outpatient administration

- **Successive rounds of NKX019 are feasible and effective at achieving clinical responses**
  - Median interval between treatment cycles was 8 days
  - Lymphodepletion was given at the beginning of each 28-day cycle of therapy and was well-tolerated
- **40% of eligible patients received NKX019 in the outpatient setting after first cycle**
  - Mandatory 24-hour admission after each dose in the first cycle
  - Increased outpatient utilization observed with increased experience

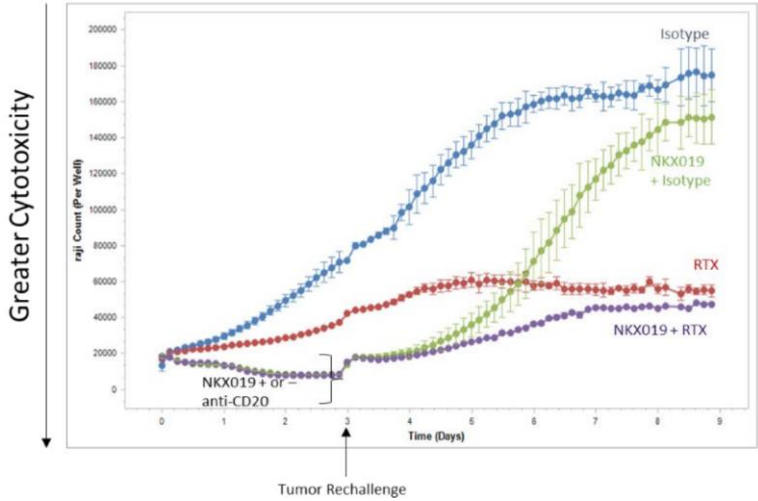
NKX019 expansion cohorts are now open, each using 1.5 B cell dose and updated lymphodepletion

- **CAR T-cell therapy–naïve LBCL cohort**
  - Improved access and favorable safety profile
  - Comparable CR rate to autologous CAR T
- **CAR T-cell therapy–experienced LBCL cohort**
  - CD19 expression persists in >90% of those who fail CAR T-cell therapy; outcomes for these patients are poor[1]
  - NKX019 offers NK-driven cytotoxicity and superior sensitivity to CD19 antigen[2]
- **Rituximab combination cohort**
  - Dual antigen targeting through ADCC and improved anti-tumor activity of NKX019[3]
  - CAR T-naïve and CAR T-experienced

NKX019 has greater cytotoxicity than CAR T cells against a low CD19 expressing cell line [2]



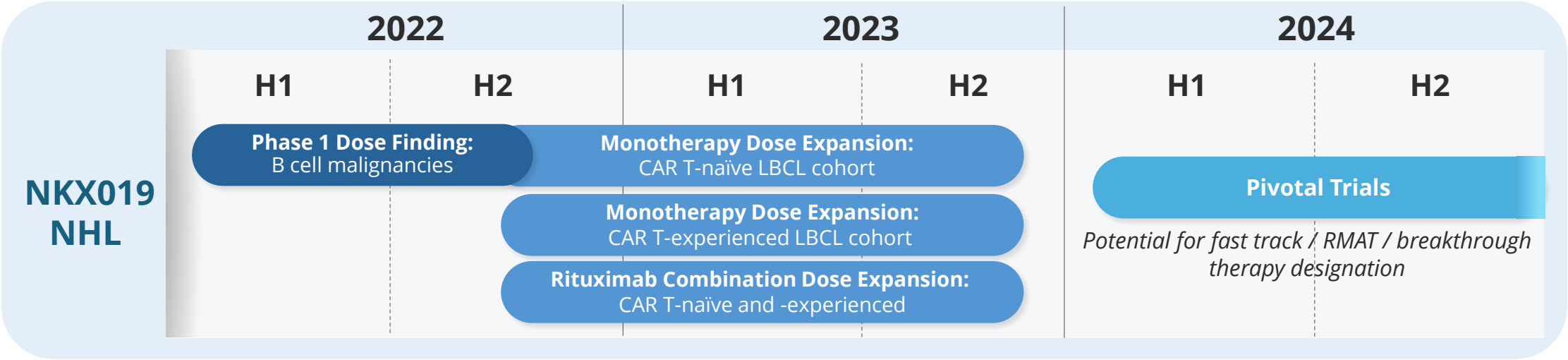
NKX019 has enhanced tumor cell killing when combined with rituximab [3]



1. Tomas, et al. Leukemia 2022; 2.Dickinson, et al. ASH 2021; 3.Thome, et al. SITC 2022.
ADCC: antibody-dependent cell-mediated cytotoxicity; CAR: chimeric antigen receptor; CR: complete response; LBCL: large B-cell lymphoma.

Clinical data strengthen Nkarta's position in the NHL therapeutic landscape

- **NKX019 remains on track for potential registration-enabling studies**
  - Allogeneic and off-the-shelf cell therapy to improve patient access
  - Evaluation of monotherapy activity as well as in combination with rituximab
- **Strong cash position: $395 million as of September 30, with runway into 2025**



CAR: chimeric antigen receptor; LBCL: large B-cell lymphoma; NHL: non-Hodgkin lymphoma; Ph: phase.

NKX019 is an accessible, off-the-shelf CAR NK cell therapy with encouraging activity and safety profile

- **Building on earlier data, NKX019 monotherapy continues to be well-tolerated with promising anti-tumor activity**
  - Six additional patients with r/r NHL have been treated since prior data cut-off
  - Earlier reported PR deepened to CR
  - CR rate improved to 70% from previous update of 50%
- **On-demand availability for administration in the outpatient setting**
- **No DLTs, ICANS, GVHD, or Grade > 3 CRS**
- **At highest dose levels, 8 of 10 patients with NHL responded (80% ORR), and 7 of 10 patients achieved complete responses (70% CR)**
  - CRs observed in multiple NHL histologies, including 50% CR in LBCL
  - Nearly every patient with NHL treated with NKX019 had tumor reduction
  - Deepening of response and consolidation of CR achieved with multiple cycles
  - Potential for retreatment should tumor recur
- **Deep responses with durability exceeding 6 months in multiple patients**
- **Expansion cohorts now open for enrollment**

CAR: chimeric antigen receptor; CR: complete response; CRS: cytokine release syndrome; DLT: dose-limiting toxicity; GVHD: graft versus host disease; ICANS: immune effector cell-associated neurotoxicity syndrome; LBCL: large B-cell lymphoma; NHL: non-Hodgkin lymphoma; ORR: overall response rate: Ph: phase; r/r: relapsed/refractory.