NKX019 is a CD19 CAR NK cell product that has consistent cytotoxic independence of CD19 expression levels.

Nkx019: Engineered CAR NK cells with CD19 chimeric antigen receptor, OX40 costimulatory domain, CD3ζ signaling moiety, membrane-bound IL-15

NK biology has potential to address the limitations of autologous CAR T cell therapy for B-cell malignancies:
- Over 500,000 people are diagnosed with B-cell cancers each year, yet only 35% of newly diagnosed patients with aggressive NHL fail first-line treatment.1
- Only a small percentage of patients with NHL, who have chemoresistant or relapse (R/R) will have prolonged disease-free survival.
- While over 80% of adults with ALL will achieve remission, over half will fail first-line treatment2
- 15-47% of patients in pivotal CAR T cell studies required ICU admission3
- TCR and risk for GVHD
- T cells may have prolonged persistence
- Anti-tumor activity not compromised in patients with prior CAR T treatment
- Potential to decrease monitoring to 8 hours in later cohorts if protocol-specified safety criteria are met
- 2 NKX019 dose levels planned: 3x10^6 and 6x10^6
- PK studies demonstrate superior in vitro and in vivo activity of NKX019 compared to CD19 CAR T cells

Distinct NK cell biology has potential to address T cell limitations:
- Higher proliferation rate and longer survival
- Target killing is a product of high without additional T cell interaction
- Target: L19: CD19-expressing tumor

Nkx019 has superior early activity and comparable delayed target cell killing compared to CD19 CAR T cells

Cryopreserved and thawed NKX019 remains potent cytotoxic in vivo

Cryopreservation is a standard practice for CAR T cell therapy.

Cryopreserved and thawed NKX019 retains activity in vitro and in vivo.

Study NKX019-101 provides an off-the-shelf therapeutic option for patients with refractory malignancies.

3 doses of NKX019 administered after lymphodepletion; 2 dose levels evaluated

3.0 ± 0.3

Study NKX019-101 is a Phase 1 study evaluating the safety and activity of NKX019 monotherapy in patients with R/R NHL or B-ALL.

Key Objectives:
- Assess safety and tolerability, including dose-limiting toxicity (DLT), CR rate, MT, and MRD
- Characterize PK, PD, and immunogenicity
- Assess anti-tumor activity (OCR)
- Assess and manage toxicities
- All subject safety and tolerability criteria are met

Summary:
- Unique need for patients with R/R NHL and B-ALL despite autologous CAR T cell therapy
- Prolonged disease-free survival of WHO defined NHL patients with reduced CD19 expression compared to CD19 CAR T cells
- NKX019 retains potent cytotoxicity after cryopreservation
- NKX019 is evaluated in an international multicenter study utilizing Nkx019 proprietary manufacturing and cryopreservation technologies in patients with relapsed or refractory B-cell malignancies
- NKX019-101 is a first-in-human trial of NKX019 monotherapy in patients with R/R B-cell malignancies with poor prognosis and limited treatment options

NKX019-101 is a Phase 1 study evaluating the safety and activity of NKX019 monotherapy in patients with R/R NHL or B-ALL.

3 doses of NKX019 administered after lymphodepletion; 2 dose levels evaluated

3.0 ± 0.3

Key Inclusion Criteria

- Age ≥ 18 years old
- Histologically or cytologically confirmed diagnosis of relapsed/refractory NHL or ALL defined by WHO 2016 classification
- Histologically or cytologically confirmed diagnosis of relapsed/refractory NHL or ALL defined by WHO 2016 classification
- Received ≥ 2 prior lines of appropriate therapy except subjects with MCL & WM who must have ≥ 3 prior lines of appropriate therapy
- All subject safety and tolerability criteria are met

Key Exclusion Criteria

- Anti-tumor activity not compromised
- All subject safety and tolerability criteria are met

References: