DEKA-1 A DOSE-FINDING PHASE 1 TRIAL: OBSERVING SAFETY AND BIOMARKERS USING DK210 (EGFR) FOR INOPERABLE LOCALLY ADVANCED AND/OR METASTATIC EGFR+ TUMORS FAILING SYSTEMIC THERAPY

Background Both interleukin-2 (IL-2) and interleukin-10 (IL-10) have been extensively studied for their stimulatory function on T cells and their potential to obtain sustainable tumor control in renal, melanoma, lung, and pancreatic cancers as monotherapy. While approved, IL-2 exhibits significant toxicity in a high percentage of the patient population, limiting its widespread use. The significant efforts undertaken to uncouple IL-2 toxicity from its anti-tumor function have been unsuccessful and early phase clinical safety observed with PEGylated IL-10 was not met in a blinded Phase 3 trial.

Deka Biosciences has engineered a novel molecule coupling wild-type IL-2 to a high affinity variant of Epstein Barr Viral (EBV) IL-10 via a scaffold that binds to epidermal growth factor receptors (EGFR). This patented molecule, named DK210 (EGFR), is targeted to EGFR expressing cells and demonstrated to be retained at high levels within the tumor microenvironment days after dosing. In addition to overlapping and non-redundant anti-tumor function, IL-10 reduces IL-2 mediated cytokine release syndrome (CRS) risks and inhibits IL-2 mediated T regulatory cell proliferation.

Methods DK210 (EGFR) is being evaluated in an open-label, dose-escalation (Phase 1) study (BOIN design) with five (0.025 – 0.3 mg/kg) monotherapy dose levels. DK210 (EGFR) is home-administered via subcutaneous injection three times a week. The objectives of this study include evaluating the safety, CRS occurrence, pharmacokinetics, pharmacodynamic and predictive biomarkers, presence of anti-drug antibodies, and antitumor activity.

Results As of June 22, 2023, three patients were enrolled, and are continuing DK210 (EGFR) treatment. Subjects improved clinically and no drug related toxicities, nor CRS were observed in any of the patients. One subject with pancreatic cancer achieved stable disease by RECIST 1.1.

Conclusions DK210 (EGFR) couples wild-type IL-2 with a high affinity IL-10 and targets cytokines directly to the tumor microenvironment significantly changing IL-2s therapeutic window. Preliminary human data shows an encouraging safety and efficiency profile. The dose-escalation study is expected to be completed by the end of this year (NCT05704985).

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Trial Registration Trial Registration www.clinicaltrials.gov; NCT05704985
Ethics Approval The study was approved by NEXT Oncology, Salus IRB, approval number NXVIR22.60, on 14-Feb-2023 and by Mary Crowley Medical Research Center Institutional Review Board, approval number 23-08, on 21-Apr-2023.

Consent Written informed consent was obtained from the patient for publication of this abstract and any accompanying images. A copy of the written consent is available for review by the Editor of this journal.