625 **A PHASE 1 SINGLE ASCENDING DOSE STUDY EVALUATING THE SAFETY, TOLERABILITY, AND PHARMACODYNAMIC EFFECTS OF MDK-703, AN IL-7 MIMETIC WITH EXTENDED HALF-LIFE**

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Background There has been historical interest in applying IL-7 as an immunotherapeutic in oncology. Efforts to develop derivatives of IL-7 have been hampered by short half-life and immunogenicity, which has the potential to neutralize native IL-7. MDK-703 is an IL-7 mimetic peptide fused to an immunoglobulin Fc-domain. MDK-703 behaves like IL-7 in human immune cells *in vitro* and in humanized mice and non-human primates studies. In addition to increasing the total number of CD8+ and CD4+ T cells, MDK-703 increases the number of memory T cells, particularly the T stem cell memory (Tscm) subpopulation. In addition, MDK-703 had a negligible-to-no impact on the expansion of CD4+ T regulatory and natural killer (NK) cells. Because the IL-7 mimetic peptide in MDK-703 is structurally unrelated to IL-7, it is unlikely to generate anti-drug antibodies (ADAs) that neutralize native IL-7.

Methods This Phase 1, randomized, placebo-controlled, single-blind, single ascending dose study evaluates the safety, tolerability, pharmacokinetics, and pharmacodynamics of MDK-703 in healthy adult volunteers. Three sequential cohorts of 10 subjects (8 MDK-703; 2 Placebo) will be studied. The primary outcome measure is the assessment of adverse events after a single injection of MDK-703 over 8 weeks. Pharmacodynamic measures include assessment of blood cells by complete blood counts, including lymphocytes, and immunophenotyping of T-cells, including memory cell subpopulations. Blood cytokine/chemokines and T-cell receptor repertoire will also be measured, along with the presence of ADAs and NAbs against MDK-703 and IL-7.

Results As of July 28, 2022, the first cohort of subjects has been dosed. It is expected that preliminary data for three ascending dose cohorts will be available in November 2022 (Clinical trial information: NCT05366634)

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