700 LUCA-MERIT-1: FIRST-IN-HUMAN OPEN LABEL DOSE CONFIRMATION TRIAL EVALUATING SAFETY, TOLERABILITY, AND EFFICACY OF BNT116 ALONE AND IN COMBINATIONS IN PATIENTS WITH ADVANCED NON-SMALL CELL LUNG CANCER

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Background Lung cancer is the leading cause of cancer deaths worldwide.[1] The diagnosis of non-small cell lung cancer (NSCLC) is often made when the disease is already advanced or metastatic (Stage IIIB/IV).[2] The approved Programmed Cell Death protein 1/Programmed Cell Death Ligand 1 (PD-1/PD-L1) inhibitors have demonstrated substantial anti-tumor activity; however, a majority of patients do not respond to therapy or only respond for a limited time.[3-7] BNT116 is an intravenously (IV) administered cancer immunotherapy consisting of a mixture of six liposomally formulated ribonucleic acids (RNA) each of which encodes for a different tumor-associated antigen. BNT116 alone or in combination with either docetaxel or the PD-1 inhibitor cemiplimab (Libtayo®) may have synergistic anti-tumor effects, thus potentially addressing the unmet medical need of these cancer patients.

Methods The trial comprises four cohorts, each with a single-step dose confirmation using a 3+3 design in both monotherapy and in combinations followed by an expansion phase including up to 20 patients in each cohort. Depending on the cohort, patients with histologically confirmed unresectable or metastatic NSCLC, measurable disease by Response Evaluation Criteria in Solid Tumors (RECIST) 1.1 and the ability to tolerate additional PD-1 inhibitor therapy are included. In all cohorts, the first dose of BNT116 is given at 60 µg total RNA (Cycle 1 Day 1 [C1 D1]). Depending on Safety Review Committee decisions, all subsequent doses of 90 µg total RNA are given once weekly for the initial 7 weeks followed by every 3-week (Q3W) dosing on Day 1 of each cycle. Cemiplimab (350 mg) may be added at the discretion of the investigator in Cohort 1 after the second cycle. Patients in cohort 2 and 4 receive cemiplimab starting with C1 D1. Docetaxel will be administered at the approved dose of 75 mg/m^2 IV Q3W on Day 2 of each cycle (Cohort 3). Primary endpoints are occurrence of dose limiting toxicities and adverse events coded using MedDRA® assessed according to National Cancer Institute – Common Terminology Criteria for Adverse Events v5.0. Secondary endpoints are related to clinical activity, e.g., tumor assessments, as per RECIST 1.1.

The first patient was dosed in JUL 2022, with enrolment expected for approximately 12 months.

The study was approved by IRB/IEC, approval numbers: 2022-03/1691 (Turkey), OGYÉI/6962-9/2022 (Hungary), and US and Spain (approval numbers for the later were not provided).

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Ethics Approval The study was approved by IRB/IEC, approval numbers: 2022-03/1691 (Turkey), OGYÉI/6962-9/2022 (Hungary), and US and Spain (approval numbers for the later were not provided).

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