A Phase 2, Multicenter Study to Assess the Efficacy and Safety of Autologous Tumor Infiltrating Lymphocytes (LN-144) for Treatment of Patients with Metastatic Melanoma

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BACKGROUND

• There are an estimated 232,000 newly diagnosed cases of melanoma skin cancers occurring globally each year, making it the fifth most common malignancy in men and sixth most common malignancy in women.1

• With the approval of ipilimumab in 2011, followed by approvals for pembrolizumab and nivolumab in 2014, there has been rapid implementation of immune checkpoint inhibitors (eg, anti-PD-1) and, more recently, anti-PD-L1 antibodies.2,3

• Adoptive cell therapy (ACT) utilizing tumor infiltrating lymphocytes (TIL) for patients with metastatic melanoma and other solid tumors, demonstrates potentially durable and complete responses in heavily pretreated patients in studies conducted by the National Cancer Institute.3

• The C-144-01 study will enroll metastatic melanoma patients who have progressed following anti-PD-1 therapy, and BRAF inhibitor, if BRAF mutation positive.

• This phase 2 multicenter trial utilizes a central GMP facility for the manufacture of LN-144 in either a non-cryopreserved generation 1 (Gen 1), or cryopreserved generation 2 (Gen 2) investigational TIL infusion product.

Figure 1. Iovance cryopreserved LN-144 manufacturing process (22 days)

STUDY OVERVIEW

• Patients must have confirmed diagnosis of Stage IIIIC or Stage IV Metastatic Melanoma with progression on/after prior immune checkpoint (anti-PD-1) therapy and, if BRAF mutation positive, after BRAF inhibitor systemic therapy.

• Up to 60 investigational centers in the US & Europe, to enroll approximately 85 patients.

• The study consists of 3 treatment cohorts:
  - Cohort 1: patients to receive Gen 1 non-cryopreserved LN-144; enrollment closed
  - Cohort 2: patients to receive Gen 2 cryopreserved LN-144
  - Cohort 3: patients from Cohort 1/2 to receive a 2nd treatment with LN-144 therapy

• Patients receive a nonmyeloablative lymphodepletion (NMA-LD) preparative regimen (cyclophosphamide 60 mg/kg x 2 days, followed by fludarabine 25 mg/m2 x 5 days), preceding the autologous TIL infusion (LN-144), after which patients receive up to six doses of intravenous IL-2 (600,000 IU/kg).

• Patients will be evaluated for tumor response every 6 weeks following LN-144 infusion up to Month 6, after which, patients will be assessed every 12 weeks at 9, 12, 15, 18, 21, and 24 months.

STUDY DESIGN

Figure 2. Study Design

Now enrolling at sites in US and Europe