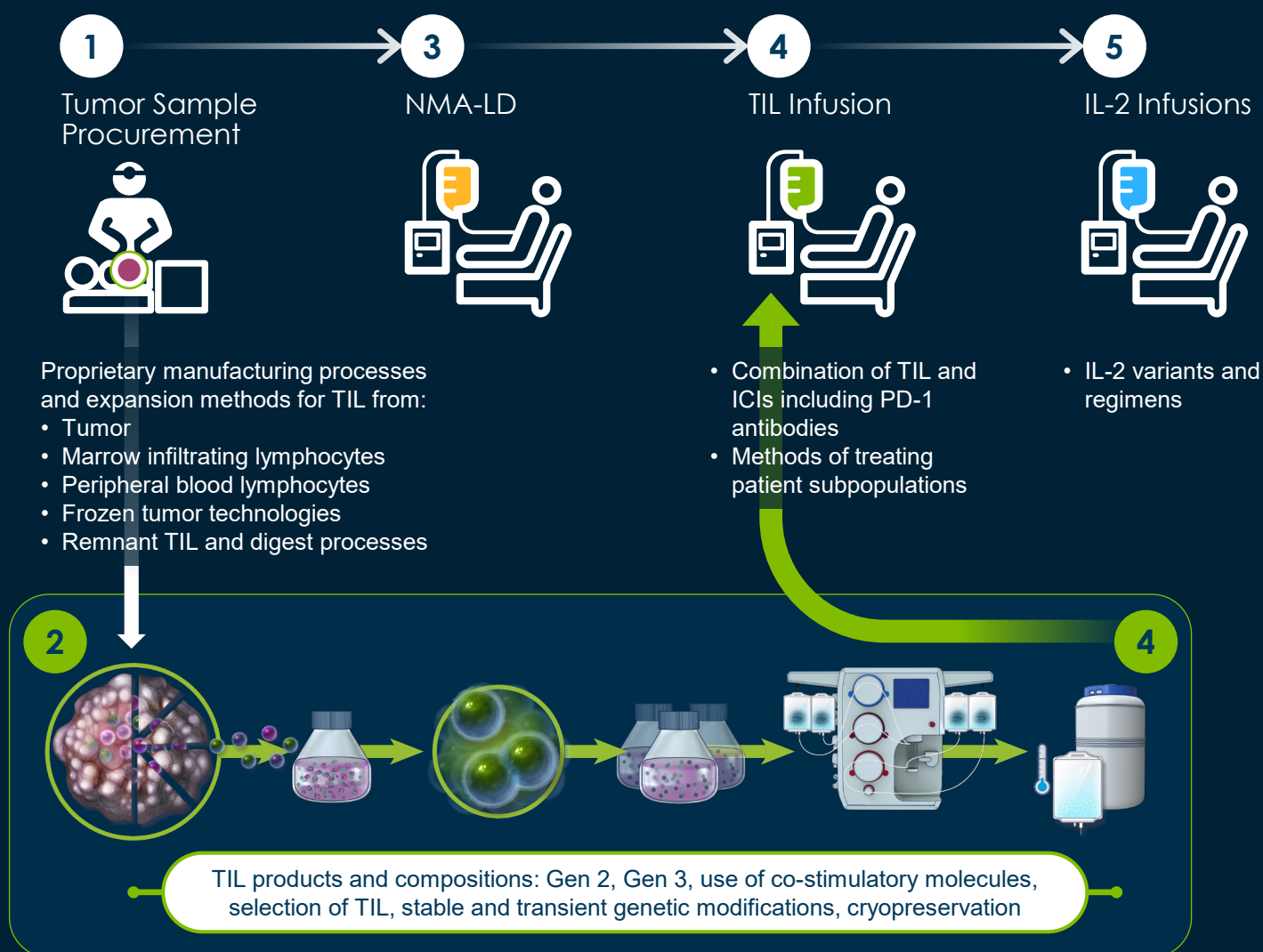


Iovance IP Leadership Within T-cell Based Immunotherapy

Iovance IP Portfolio Summary:

- ✓ >40 granted or allowed US and international patents
- ✓ Compositions of matter for TIL products
- ✓ Methods of treatment in a broad range of cancers
- ✓ Manufacturing processes
- ✓ >700 patents and applications worldwide, including major pharmaceutical markets

We established our leadership within T cell-based immunotherapy by building and augmenting the patent rights for our proprietary tumor infiltrating lymphocyte (TIL) technology platform—developed internally and licensed from third parties.



Abbreviations: ICI, immune checkpoint inhibitors; IL-2, interleukin 2; IP, intellectual property; NMA-LD, non-myeloablative lymphoid depletion; TIL, tumor infiltrating lymphocytes

Broad, Iovance-Owned IP Around TIL Therapy

Iovance owns more than 40 U.S. patents related to TIL therapy, including patents directed to compositions and methods of treatment in a broad range of cancers, such as U.S. Patent Nos. 10,130,659; 10,166,257; 10,272,113; 10,363,273; 10,398,734; 10,420,799; 10,463,697; 10,517,894; 10,537,595; 10,639,330; 10,646,517; 10,653,723; 10,695,372; 10,894,063; 10,905,718; 10,918,666; 10,925,900; 10,933,094; 10,946,044; 10,946,045; 10,953,046; 10,953,047; 11,007,225; 11,007,226; 11,013,770; 11,026,974; 11,040,070; 11,052,115; 11,052,116; 11,058,728; 11,083,752; 11,123,371; 11,141,438; 11,168,303; 11,168,304; 11,179,419; 11,202,803; 11,202,804; 11,241,456; 11,254,913; 11,266,694; 11,273,180; 11,273,181.

Iovance also owns U.S. patents covering TIL manufactured from a tumor digest and the use thereof, such as U.S. Patent Nos. 11,007,225; 11,007,226; 11,052,115; 11,052,116; 11,058,728; 11,083,752; 11,123,371; 11,141,438; 11,179,419; 11,202,803; 11,202,804; 11,241,456; 11,254,913; 11,266,694; 11,273,180; 11,273,181; and others. U.S. Patent No. 11,058,728 specifically covers a method of treatment using expanded TILs manufactured from a tumor digest where the expansion steps through the step of cryopreservation of the infusion bag having a harvested TIL population are performed within about 24 days. U.S. Patent No. 11,123,371 specifically covers a cryopreserved TIL composition comprising expanded TILs manufactured from a cryopreserved tumor digest where the expansion steps through the step of cryopreservation of the infusion bag having a harvested TIL population are performed within about 24 days. U.S. Patent No. 11,141,438 specifically covers an expanded population of TILs manufactured from a cryopreserved tumor digest where the expansion steps through the harvest step are performed within about 24 days. U.S. Patent No. 11,179,419 specifically covers a method for expanding TILs from a cryopreserved tumor digest where the expansion steps through the step of cryopreservation of the infusion bag having a harvested TIL population are performed within about 24 days.

Iovance holds an exclusive license from NIH of certain rights under U.S. Patent No. 11,077,182 and additional allowed U.S. patent applications covering methods of treating HPV+ cancers in a patient with T-cells expanded from HPV+ tumor fragments obtained from the patient.

Furthermore, Iovance owns U.S. patents covering the use of the combination of TIL therapy and an anti-PD-1 antibody, such as U.S. Patent No. 10,272,113, or an anti-PD-L1 antibody, such as U.S. Patent No. 11,013,770.

U.S. Patent/Application Information for Iovance Clinical Products

Product	Pursued Indication*	Composition of Matter	Method of Use	Method of Manufacturing	
Lifileucel (TIL)	Patients with metastatic melanoma or cervical cancer	US 10,894,063; US 10,398,734; US 10,537,595; US 10,695,372; US 10,653,723	US 10,166,257; US 10,130,659; US 10,272,113; US 10,463,697; US 10,363,273; US 10,646,517; US 10,905,718; US 11,202,803; US 11,241,456	US 10,953,046; US 10,946,044; US 10,953,047; US 10,933,094; US 10,946,045; US 10,925,900; US 11,013,770; US 11,202,804; US 11,273,181	US 10,420,799; US 10,639,330; US 10,918,666; US 11,273,180
Lifileucel or tumor digest TIL	Same as above		US 11,202,803; US 11,202,804; US 11,241,456;	US 11,273,181	US 11,273,180
LN-145 (TIL)	Patients with metastatic melanoma, HNSCC, or NSCLC	US 10,894,063; US 10,398,734; US 10,537,595; US 10,695,372; US 10,653,723	US 10,166,257; US 10,130,659; US 10,272,113; US 10,463,697; US 10,363,273; US 10,646,517; US 10,905,718; US 11,241,456	US 10,953,046; US 10,946,044; US 10,953,047; US 10,933,094; US 10,946,045; US 11,013,770; US 11,202,804;	US 10,420,799; US 10,639,330; US 10,918,666
Gen 3 TIL	Same as above	US 10,894,063; US 10,398,734; US 10,537,595; US 10,695,372; US 10,653,723	US 10,166,257; US 10,130,659; US 10,272,113; US 10,463,697; US 10,363,273; US 10,646,517; US 10,905,718; US 11,202,803; US 11,241,456	US 10,953,046; US 10,946,044; US 10,953,047; US 10,933,094; US 10,946,045; US 10,925,900; US 11,013,770; US 11,202,804;	US 10,420,799; US 10,639,330; US 10,918,666; US 11,168,304
IOV-2001 (PBL)	Patients with CLL or SLL	WO 2020/180733 A1; US 2020/0224161 A1; US 2020/0347350 A1	WO 2020/180733 A1; US 2020/0224161 A1; US 2020/0347350 A1		WO 2020/180733 A1; US 2020/0224161 A1; US 2020/0347350 A1

*Subject to FDA approval.

Abbreviations: CLL, chronic lymphocytic leukemia; HNSCC, head and neck squamous cell carcinoma; NSCLC, non-small-cell lung cancer; SLL, small lymphocytic leukemia; TIL, tumor infiltrating lymphocytes.

Iovance's patent portfolio also includes patent applications relating to:

- ✓ Frozen tumor-based TIL technologies;
- ✓ Remnant TIL and digest TIL compositions and methods;
- ✓ Use of co-stimulatory and T cell modulating molecules in TIL therapy and manufacturing;
- ✓ Stable and transient genetically-modified TIL therapies;
- ✓ Methods of using immune checkpoint inhibitors in combination with TIL therapies;
- ✓ TIL selection technologies;
- ✓ Methods of treating patient subpopulations.