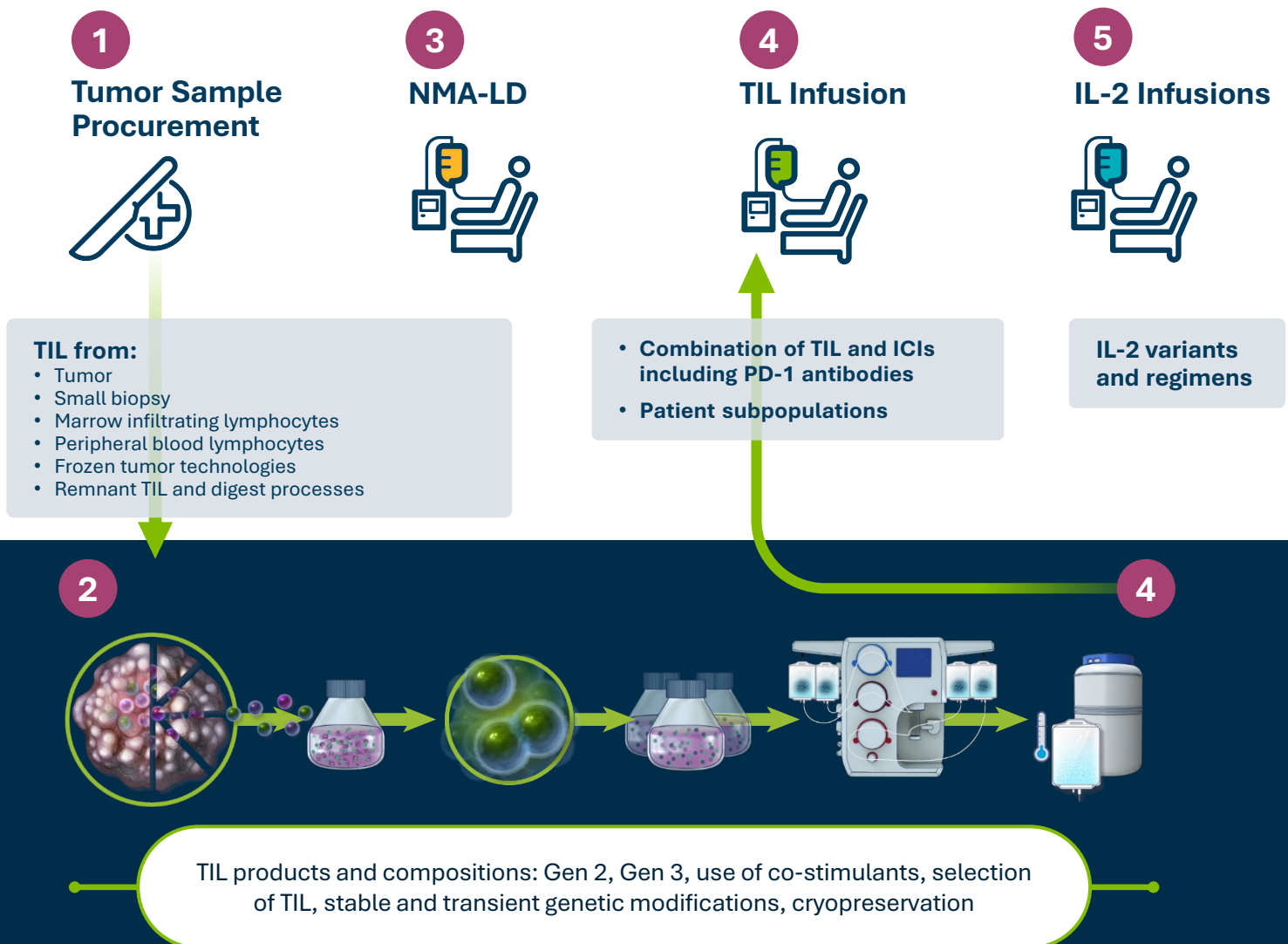


Iovance IP Leadership Within T-cell Based Immunotherapy

Iovance IP Portfolio Summary:

- >375 granted or allowed US and international patents
- >1,000 patents and applications worldwide, including major pharmaceutical markets
- Lifileucel patent rights expected to provide exclusivity into 2042
 - Compositions of matter for TIL products
 - Methods of treatment in a broad range of cancers
 - Manufacturing processes

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.



Broad, Iovance-Owned IP Around AMTAGVI® and Other TIL Therapies in Development

Iovance owns more than 100 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; 11,141,434; 11,141,438; 11,168,303; 11,168,304; 11,179,419; 11,202,803; 11,202,804; 11,220,670; 11,241,456; 11,254,913; 11,266,694; 11,273,180; 11,273,181; 11,291,687; 11,293,009; 11,304,979; 11,304,980; 11,311,578; 11,337,998; 11,344,579; 11,344,580; 11,344,581; 11,351,197; 11,351,198; 11,351,199; 11,364,266; 11,369,637; 11,384,337; 11,401,507; 11,433,097; 11,517,592; 11,529,372; 11,541,077; 11,631,483; 11,713,446; 11,819,517; 11,857,573; 11,865,140; 11,866,688; 11,939,596; 11,969,444; 11,975,028; 11,981,921; 11,998,568; 12,023,355; 12,024,718; 12,031,157; 12,104,172; 12,121,541; 12,159,700; 12,170,134; 12,188,048; 12,194,061; 12,226,434; 12,226,522; 12,230,378; 12,230,379; 12,233,075; 12,280,140; 12,343,380; 12,453,697; 12,473,532; 12,485,145; 12,495,791; 12,553,029; 12,553,031; 12,558,375; 12,570,959; 12,570,961; 12,611,427; 12,611,428; and 12,611,429.

Iovance owns U.S. Patent Nos. 12,553,031 and 12,570,961 covering a potency and identity assay for evaluating potency and/or functionality of TIL products, including AMTAGVI®.

Iovance owns U.S. Patent No. 11,819,517 covering methods of using TIL therapy for the treatment of double refractory melanoma in a patient resistant to a PD1 or PD-L1 inhibitor and resistant to a BRAF inhibitor or a BRAF inhibitor and a MEK inhibitor, which methods are free of any TIL process limitations.

Iovance owns U.S. Patent No. 12,553,029 covering methods of using TIL therapy for the treatment of NSCLC in ICI-refractory patients lacking an EGFR driver mutation, which methods are free of any TIL process limitations.

Iovance owns U.S. Patent No. 11,981,921 covering methods of manufacturing TIL product using a rapid expansion process (REP) in the presence of antigen presenting cells (including artificial antigen presenting cells) but without IL-2.

Iovance owns U.S. Patent No. 10,537,595 covering a composition comprising TIL cells and a cryopreservant, free of any TIL process limitations.

Iovance owns U.S. Patent No. 10,653,723 covering a pharmaceutical composition comprising TIL cells and a pharmaceutically acceptable carrier free of any TIL process limitations.

Iovance owns U.S. Patent Nos. 10,905,718 and 10,933,094 covering methods of treating cancer with a pharmaceutical composition comprising TIL cells and a cryopreservant, free of any TIL process limitations.

Iovance owns U.S. Patent Nos. 10,953,046 and 10,953,047 covering methods of treating cancer with a pharmaceutical composition comprising TIL cells and a pharmaceutically acceptable carrier, free of any TIL process limitations.

Iovance owns U.S. Patent Nos. 10,946,044 and 10,946,045 covering methods of treating cancer with TIL therapy, free of any TIL process limitations.

Iovance owns U.S. Patent Nos. 12,226,522 and 12,280,140 covering methods of using TIL therapy and manufacturing TIL products for the treatment of endometrial cancer.

Iovance owns U.S. Patent Nos. 11,384,337, 12,024,718 and 12,495,791 covering methods of manufacturing or using gene-edited TIL product, which methods are free of gene-editing process and target limitations.

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 Nos. 10,272,113 and 12,611,428, or an anti-PD-L1 antibody, such as U.S. Patent No. 11,013,770.



Iovance's patent portfolio also includes patents and 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 cell selection technologies;
- Methods of treating patient subpopulations;
- Cytokine-tethered TIL product, and methods of making and using;
- Artificial antigen presenting cells and use in TIL cell expansion;
- TIL cell expansion from small biopsy or fine needle aspirate.

U.S. Patent/Application Information for lovance Products:

Therapy	Pursued Indication or use	Composition of Matter	Method of Use	Method of Manufacturing	
AMTAGVI®	Patients with metastatic melanoma	US 10,894,063;	US 10,166,257;	US 10,953,047;	US 10,420,799;
		US 10,398,734;	US 10,272,113;	US 11,202,803;	US 10,639,330;
		US 10,537,595;	US 10,463,697;	US 11,202,804;	US 10,918,666;
		US 10,695,372;	US 10,905,718;	US 11,241,456;	US 11,273,180;
		US 10,653,723;	US 10,925,900;	US 11,273,181;	US 11,291,687;
		US 11,337,998;	US 10,933,094;	US 11,433,097;	US 11,304,979;
		US 11,344,579;	US 10,946,044;	US 11,517,592;	US 12,485,145;
		US 12,194,061;	US 10,946,045;	US 11,819,517;	US 12,553,031;
	US 12,611,429	US 10,953,046;	US 12,121,541	US 12,570,961	
Lifileucel	Patients with NSCLC, sarcoma, HNSCC, cervical cancer or endometrial cancer	US 10,894,063;	US 10,130,659;	US 10,953,047;	US 10,420,799;
		US 10,398,734;	US 10,166,257;	US 11,202,804;	US 10,639,330;
		US 10,537,595;	US 10,272,113;	US 11,241,456;	US 10,918,666;
		US 10,653,723;	US 10,463,697;	US 11,273,181;	US 11,273,180;
		US 10,695,372;	US 10,363,273;	US 11,433,097;	US 11,291,687;
		US 11,337,998;	US 10,905,718;	US 12,121,541;	US 11,304,979;
		US 11,344,579;	US 10,933,094;	US 12,226,522;	US 12,280,140;
		US 12,194,061;	US 10,946,044;	US 12,553,029;	US 12,485,145;
		US 11,376,318 ^b	US 10,946,045;	US 12,611,427;	US 12,553,031;
			US 10,953,046;	US 12,611,428;	US 12,570,959;
				US 11,077,182 ^b ;	US 12,570,961
				US 11,331,385 ^b ;	
		US 11,338,032 ^b ;			
		US 11,376,318 ^b			
IOV-4001 (PD1 KO TIL)	Patients with metastatic melanoma or NSCLC	US 10,537,595;	US 10,905,718;	US 10,953,047;	US 11,304,979;
		US 10,653,723;	US 10,933,094;	US 11,202,804;	US 11,384,337;
		US 12,031,157	US 10,946,044;	US 11,819,517;	US 12,024,718;
			US 10,946,045;	US 12,121,541;	US 12,495,791;
			US 10,953,046;	US 12,495,791	US 11,674,155 ^a ;
			US 11,891,614 ^a		
IOV-5001 (Cytokine-Tethered TIL)	Solid tumors, including colorectal cancer, triple-negative breast cancer, and ER ^{low} breast cancer	US 8,556,882 ^b			US 11,384,337
		US 12,157,762 ^b			US 11,981,921
					US 12,024,718
IOV-3001 (Next-Generation IL-2)	Supportive therapy for patients treated with TIL	US 12,006,354 ^c	US 12,006,354 ^c		
lovanceCares™	TIL therapy ordering, chain of custody, supply, and patient support services				US 11,631,483;
					US 12,159,700;
					US 12,170,134;
					US 12,230,378;
					US 12,230,379

^alovance holds an exclusive license under patents and patent applications of Collectis covering lovance's IOV-4001 product.

^blovance holds an exclusive license under patents and patent applications of NIH covering lovance's IOV-5001 product and a subset of lifileucel-related patents.

^clovance holds an exclusive license under patents and patent applications of Novartis covering lovance's IOV-3001 product.

Abbreviations: ER, estrogen receptor; HNSCC, head and neck squamous cell carcinoma; IL-2, interleukin 2; KO, knock-out; NSCLC, non-small-cell lung cancer; PD1, programmed cell death protein 1; TIL, tumor infiltrating lymphocytes.

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