IOVANCE BIOTHERAPEUTICS



Corporate Overview

November 2026

ADVANCING IMMUNO-ONCOLOGY

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Forward-Looking Statements

Certain matters discussed in this presentation are “forward-looking statements” of Iovance Biotherapeutics, Inc. (hereinafter referred to as the “Company,” “we,” “us,” or “our”) within the meaning of the Private Securities Litigation Reform Act of 1995 (the “PSLRA”). Without limiting the foregoing, we may, in some cases, use terms such as “predicts,” “believes,” “potential,” “continue,” “estimates,” “anticipates,” “expects,” “plans,” “intends,” “forecast,” “guidance,” “outlook,” “may,” “can,” “could,” “might,” “will,” “should,” or other words that convey uncertainty of future events or outcomes and are intended to identify forward-looking statements. Forward-looking statements are based on assumptions and assessments made in light of management’s experience and perception of historical trends, current conditions, expected future developments, and other factors believed to be appropriate. Forward-looking statements in this presentation are made as of the date of this presentation, and we undertake no duty to update or revise any such statements, whether as a result of new information, future events, or otherwise. Forward-looking statements are not guarantees of future performance and are subject to risks, uncertainties, and other factors, many of which are outside of our control, that may cause actual results, levels of activity, performance, achievements, and developments to be materially different from those expressed in or implied by these forward-looking statements. Important factors that could cause actual results, developments, and business decisions to differ materially from forward-looking statements are described in the sections titled “Risk Factors” in our filings with the U.S. Securities and Exchange Commission, including our most recent Annual Report on Form 10-K and Quarterly Reports on Form 10-Q, and include, but are not limited to, the following substantial known and unknown risks and uncertainties inherent in our business: the risks related to our ability to successfully commercialize our products, including ATC network expansion and new markets; the size of the addressable patient populations for, and the acceptance by the market of, our products and product candidates, if approved, and their potential pricing and/or reimbursement by payors, and whether such acceptance is sufficient to support continued commercialization or development of our products or product candidates; the risk regarding our ability to manufacture our therapies at our iCTC facility, including the risk that our ability to increase manufacturing capacity at our facility may adversely affect our commercial supply or clinical supply; the risks related to our ability to obtain, maintain, and enforce patent and other intellectual property protection for our products and product candidates, including our biomarker-directed strategy; the risk that the successful development or commercialization of our products may not generate sufficient revenue from product sales, and we may not become profitable in the near term, or at all; the risks related to the timing of and our ability to successfully develop, submit, obtain, or maintain regulatory authority approval of our product candidates; whether clinical trial results from our clinical studies and cohorts, and meetings with regulatory authorities, may support registrational studies, including biomarker-selected studies, and subsequent approvals by regulatory authorities, and the risk that our clinical trials, including registrational and investigator-sponsored trials, may experience delays in site activation, enrollment, or data readouts, may not meet their primary endpoints, or may not support approval; clinical results, whether preliminary, interim, or final, which may include efficacy and safety results, from clinical trials or cohorts may not be confirmed or reflected in independent review assessments or the final analyses of our ongoing clinical trials or subgroups within these trials or in other prior or future trials or cohorts; the risk that we may be required to conduct additional clinical trials or modify ongoing or future clinical trials based on feedback from regulatory authorities; the risk that our interpretation of the results of our clinical trials, including comparisons to other therapies, or communications with regulatory authorities may differ from the interpretation of such results or communications by such regulatory authorities or others; the risk that clinical data from ongoing clinical trials of Amtagvi will not continue or be repeated in ongoing or planned clinical trials or may not support regulatory approval or renewal of authorization; the risk that unanticipated expenses may decrease our estimated cash balances and forecasts and increase our estimated capital requirements; the risk that we may not be able to recognize revenue for our products; the risk that Proleukin revenues, and other factors such as the number of ATCs, may not serve as a leading indicator for Amtagvi revenues; the risks regarding our anticipated operating and financial performance, including our financial guidance and projections; the effects of global and domestic geopolitical factors or public health events; and other factors, including general economic conditions and regulatory developments, not within our control. Any financial guidance provided in this presentation assumes the following: no material change in our ability to manufacture our products; no material change in payor coverage; no material change in revenue recognition policies; no new business development transactions not completed as of the period covered by this presentation; and no material fluctuation in exchange rates.

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Global Leader in Innovating, Developing and Delivering TIL Therapy for Patients with Cancer

2
Approved Products

AMTAGVI® (lifileucel)
U.S., Canada & Australia

PROLEUKIN® (aldesleukin)
Multiple Markets Globally

>2,000
Patients treated with commercial and clinical Iovance TIL products

Commercial Launch

>95% Addressable Patients within 200 miles of an ATC

>100 Treatment Centers as of 11/05/26

~60% Margin from Cost of Sales[1]

Financials

Full Year 2026 Revenue Guidance*
$410M — $420M

3Q26 revenue
~$122M

Cash Runway Well into 2029[2]
~$382M

*The midpoint represents an increase of $55 million, or ~15%, over the previous guidance range of $350 to $370 million.
1. Excludes depreciation and amortization 2. Cash, cash equivalents, short-term investments, and restricted cash as of September 30, 2026.

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Strong Platform Supports Backbone IO Therapy for Solid Tumors

Iovance Retains Global Portfolio and Technology Platform Rights

AMTAGVI (lifileucel)	Approved	Potential Approval 1Q 2027	Planned 2027 Submission
Advanced Melanoma (2L+)	U.S., Australia, Canada	UK, Switzerland	EU, Brazil
Additional Indications	Planned 2027 Submission: mNSCLC*	2028/2029 Submission: Biomarker-enriched NSCLC**, Soft tissue sarcomas***	

PROLEUKIN (aldesleukin) | *Amtagvi Regimen* | *Clinical & Manufacturing*

		INDICATION & TREATMENT SETTING	PHASE 1	PHASE 2	PHASE 3
Amtagvi Label Expansion	Lifileucel + pembrolizumab	Frontline advanced melanoma	**TILVANCE-301 (FTD, Confirmatory)**		
	Lifileucel	Post-chemo & anti-PD-1 mNSCLC*	**IOV-LUN-202 Cohorts 1&2 (FTD)**		
	Lifileucel	Post-chemo & anti-PD-1 mNSCLC (biomarker-enriched)**	**POSI*TILITY* (LUN-202 Cohort 5)**		
	Lifileucel	Post-chemo advanced soft tissue sarcomas (DDLPS or UPS)	**SARATOGA (FTD)**		
	Lifileucel	Post-chemo & anti-PD-1 serous endometrial cancer	**ENDURANCE**		
	Lifileucel + pembrolizumab	Frontline mNSCLC**	**OP*TIL*ISM (Planned 2027 start)**		
Next-Generation Products	IOV-4001 (PD-1 Inactivated TIL)	Post anti-PD-1 advanced melanoma or NSCLC	**IOV-GM1-201**		
	IOV-3001 (IL-2 analog)	TIL treatment regimen	**IOV-IL2-101**		
	IOV-5001 (IL-12 tethered TIL)	Post-ICI CRC, TNBC/ER Low, HNSCC, NSCLC	**POTEN*TIL***		

Multiple investigator sponsored studies of lifileucel in CSCC, MCC, Uveal, ccRCC, additional soft tissue sarcomas and other solid tumors

*Advanced Non-squamous NSCLC wild type for EGFR, ALK, ROS1 **Advanced non-squamous NSCLC wild type for EGFR, ALK, ROS1, KRAS, HER2, current or prior smokers. ***UPS & DDLPS

Abbreviations: 2L, second line; ccRCC, clear cell renal cell carcinoma; CRC, colorectal cancer; CSCC, cutaneous squamous cell carcinoma; DDLPS, dedifferentiated liposarcoma; ER, estrogen-receptor; FTD, Fast Track Designation; HNSCC, head and neck squamous cell carcinoma; ICI, immune checkpoint inhibitor; IL-2, interleukin 2; IL-12, interleukin 12; IO, immuno-oncology; MCC, Merkel cell carcinoma; NSCLC, non-small cell lung cancer; PD-1, programmed cell death protein-1; TNBC, triple negative breast cancer; UPS, undifferentiated pleomorphic sarcoma

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The Pioneer in One-Time Cell Therapy for Solid Tumors

Platform Technology and Robust Pipeline in Blockbuster Solid Tumor Indications

$1B+ U.S. Sales Potential in 2L+ Advanced Melanoma

- First approved treatment in 2L+ advanced melanoma
- **~80% YoY revenue growth** in 3Q26
- ~22% QoQ 3Q26 revenue growth
- **5-year durability**: 31.4% ORR; 19.7% OS; mDOR of 36.5 months[1]
- **Real-world ~44% ORR**; 52% ORR in patients with ≤ 2 prior lines of therapy[2]

10X U.S. Melanoma Opportunity in mNSCLC

- **Planned sBLA submission in 2027**
- Additional planned sBLA for biomarker enriched population
- **High unmet need** with limited treatment options
- SOC: 12.8% ORR; 5.6 months mDOR; 12.3 months mOS[3]
- **Potential best-in-class clinical profile:** 24.6% ORR; 59% ORR in biomarker enriched[4]
- U.S. FDA FTD for Non-squamous NSCLC*
- **Leverages melanoma** commercial footprint and manufacturing

Operational Excellence Focused on Profitability

- **~$382M cash,** with runway well into 2029[5]
- **~60% margin** from COS in 3Q26 and 54% YTD[6]
- **Ongoing initiatives improving OpEx, cost of sales and gross margin**
- Leading IO pipeline in solid tumors
- Internal manufacturing
- 5K+ annual capacity for North America, Europe & APAC
- >2K commercial & clinical infusions

1. Medina et al, ASCO 2025. Pooled Analysis (n=153), Heavily Pre-Treated Patient Population; 2. Karapetyan L et al. Transplantation & Cell Therapy 2026. Physician-assessed confirmed ORR by RECIST v1.1. All evaluable patients received commercial Amtagvi according to the U.S. prescribing information; 3. Ahn MJ et al. J Clin Onc 2025;43:260-272. 4. Interim data cut as of October 14, 2026 of patients with non-squamous NSCLC with minimum cell dose based on FDA feedback for melanoma. Patients progressed on or after chemotherapy and anti-PD-1 therapy for mNSCLC without EGFR, ROS1 or ALK genomic mutations and received at least one line of FDA-approved targeted therapy if indicated by other actionable tumor mutations; 5. Cash, cash equivalents, short-term investments, and restricted cash as of September 30, 2026; 6. Excludes depreciation and amortization. *Non-squamous mNSCLC without EGFR, ROS1 or ALK genomic mutations. Abbreviations: 2L, second line; ALK, anaplastic lymphoma kinase; APAC, Asia Pacific; COS, cost of sales; mDOR, median duration of response; EGFR, epidermal growth factor receptor; FDA, U.S. Food and Drug Administration; FTD, fast track designation; IO, immuno-oncology; mNSCLC, metastatic non-small cell lung cancer; NSCLC, non-small cell lung cancer; OpEx, operating expenses; ORR, objective response rate; mOS, median overall survival; OS, overall survival; PD-1, programmed cell death protein-1; RECIST, Response Evaluation Criteria in Solid Tumors; ROS1, ROS proto-oncogene 1; sBLA, supplemental Biologics License Application; SOC, standard of care

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AMTAGVI™ (lifileucel) Suspension for IV infusion

Significant U.S. Commercial Business Growth and Progress in Global Expansion

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Advanced Melanoma Market Opportunity

Significant Unmet Need in Frontline and Beyond[1]

2L+ Advanced Melanoma Population[2,3]

U.S.: 8.5K

Potential ex-US Markets: 24K+

Overall (1L+): 70K+

>50% of patients on 1L standard of care progress within 12 months[4-6]

mOS after Progression on 1L Therapy:[7]

~5 months
BRAF wild-type
(prior ICI therapy)

~3 months
BRAF mutated
(prior ICI and targeted therapy)

1. Chesney J, et al. J Immunother Cancer. 2022; 2. National Cancer Institute Surveillance, Epidemiology and End Results (SEER) Program. 2026 Estimates. https://seer.cancer.gov (accessed November 2026); World Health Organization International Agency for Research on Cancer (IARC). GLOBOCAN 2022; 3. Data on file as of November 2026. Includes more than 20,000 patients in initial target markets plus additional potential markets; 4. Larkin J, Chiarion-Sileni V, Gonzalez R, et al. NEJM. 5. Robert C, et al.; Lancet 6. Tawbi HA, Schadendorf D, Lipson EJ, et al. NEJM 7. Patrinely JR et al. Cancer. 2020
Abbreviations: 1L, first line; 2L, second line; BRAF, B-Raf proto-oncogene; ICI, immune checkpoint inhibitors; mOS, median overall survival

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Deep and Durable Responses at 5-Year Follow Up[1]

One Third of Responses Remain Ongoing without Subsequent Treatment

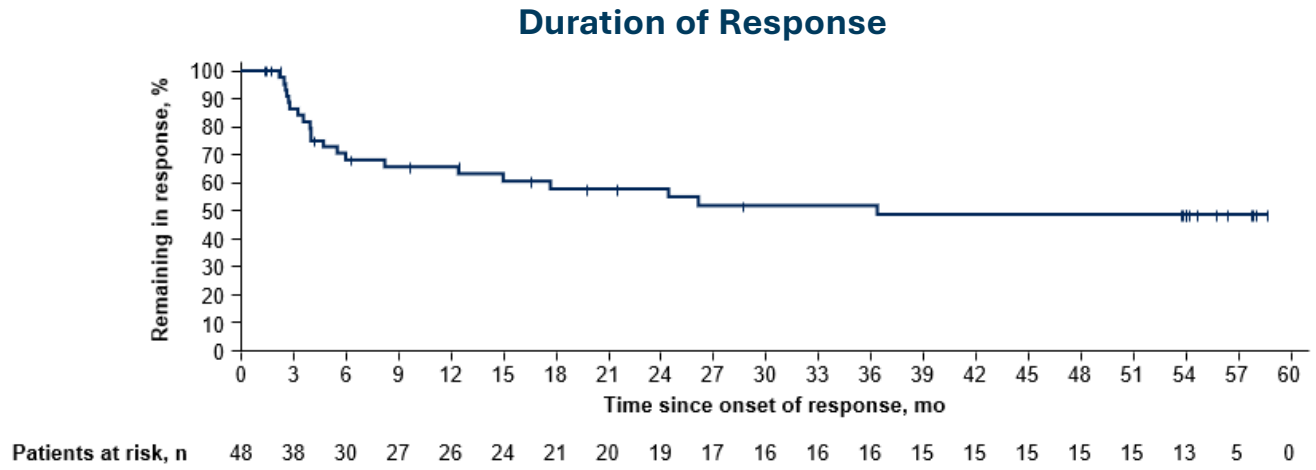
ORR
31.4%

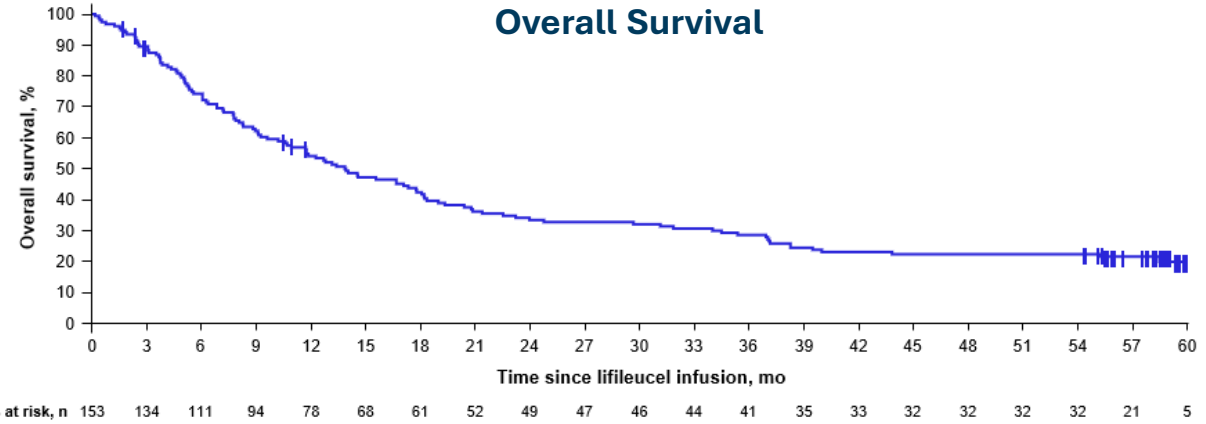
mDOR
36.5 Months

Median Follow Up
57.8 Months

5-Year OS
19.7%

mOS
13.9 Months





1. Medina et al, ASCO 2025. Pooled Analysis (n=153), Heavily Pre-Treated Patient Population

Abbreviations: mDOR, median duration of response; ORR, objective response rate; mOS, median overall survival; OS, overall survival

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Best-in-Class Real-World Data Driving Increased Amtagvi Adoption[1]

Unprecedented Real-World Response Rates of >50% ORR in multiple studies[3]

44% ORR
(18/41)

73% DCR
(30/41)

Higher response rates with earlier treatment

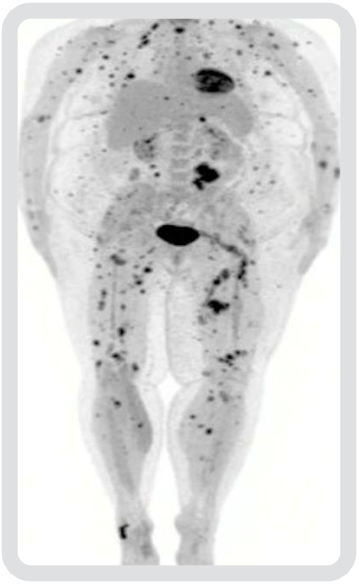
52% ORR
(12/23)
OS not reached
≤ 2 prior lines of therapy

33% ORR
(6/18)
≥ 3 prior lines of therapy

Durable Ongoing Partial Response (PR)[2]

Significant tumor burden reduction at Week 6

Before Lifileucel



Post-Lifileucel (Week 6)



Lifileucel may approximately double four-year overall survival (OS) rates compared with standard-of-care therapies in anti-PD-1-resistant advanced melanoma[4]

1. Karapetyan L et al. Transplantation & Cell Therapy 2026; 2. Three Prior Lines of Therapy (1L-3L): 1L ipilimumab + nivolumab; 2L dabrafenib + trametinib; 3L nivolumab + relatlimab. 86% reduction in target lesions. Response ongoing at 260-day follow up. Photo Credit and Permission: H. Lee Moffitt Cancer Center; 3. For more information, please visit https://www.iovance.com/real-world-data; 4. Ma B, et al, ESMO 2026
Abbreviations: 1L, first line; 2L, second line; 3L, third line; DCR, disease control rate; ORR, objective response rate; OS, overall survival; PD-1, programmed cell death protein-1; PR, partial response

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TIL Platform Backbone for Broad Global Solid Tumor Opportunity

Melanoma Establishes the Infrastructure for All Future Indications

Shared Infrastructure Across Expanding Network of 100+ ATCs Forms Base for Scalable Expansion

Medical Oncologists
Academic & Community

Surgeons
Tumor Tissue Procurement

Cell Therapists
Authorized Treatment Centers

$1B 2L+ Melanoma Potential U.S. Peak Revenue

NSCLC	Sarcoma	Endometrial	1L Melanoma
10X	**1X**	**~1X**	**1X**
vs. 2L U.S. mMel	vs. 2L U.S. mMel	vs. 2L U.S. mMel	vs. 2L U.S. mMel

Additional Indications, Markets & Next Gen

Substantial Commercial Growth Opportunity with new tumor types, earlier lines of therapy, geographic expansion and next generation therapies

Abbreviations: 1L, first line; 2L, second line; mMel, metastatic melanoma; NSCLC, non-small cell lung cancer

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CELL THERAPY CENTER
Philadelphia, PA

- The only scaled, centralized FDA-approved commercial TIL manufacturing process
- Consistently improving commercial turnaround (~30 days or less)
- Faster and more reliable than any TIL therapy in development
- Modular design
- 5K+ patient annual capacity
- Optimal utilization, quality & COS

U.S. Manufacturing Facility Dedicated to Global Delivery of Commercial and Clinical TIL Cell Therapies



Cryopreserved TIL is manufactured in Philadelphia and shipped to commercial and clinical trial sites across North America, South America, Europe, Asia and Australia.

Abbreviations: COS, cost of sales

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Amtagvi® Authorized Treatment Centers (ATC)

Adoption continuing to increase across growing ATC network

>100

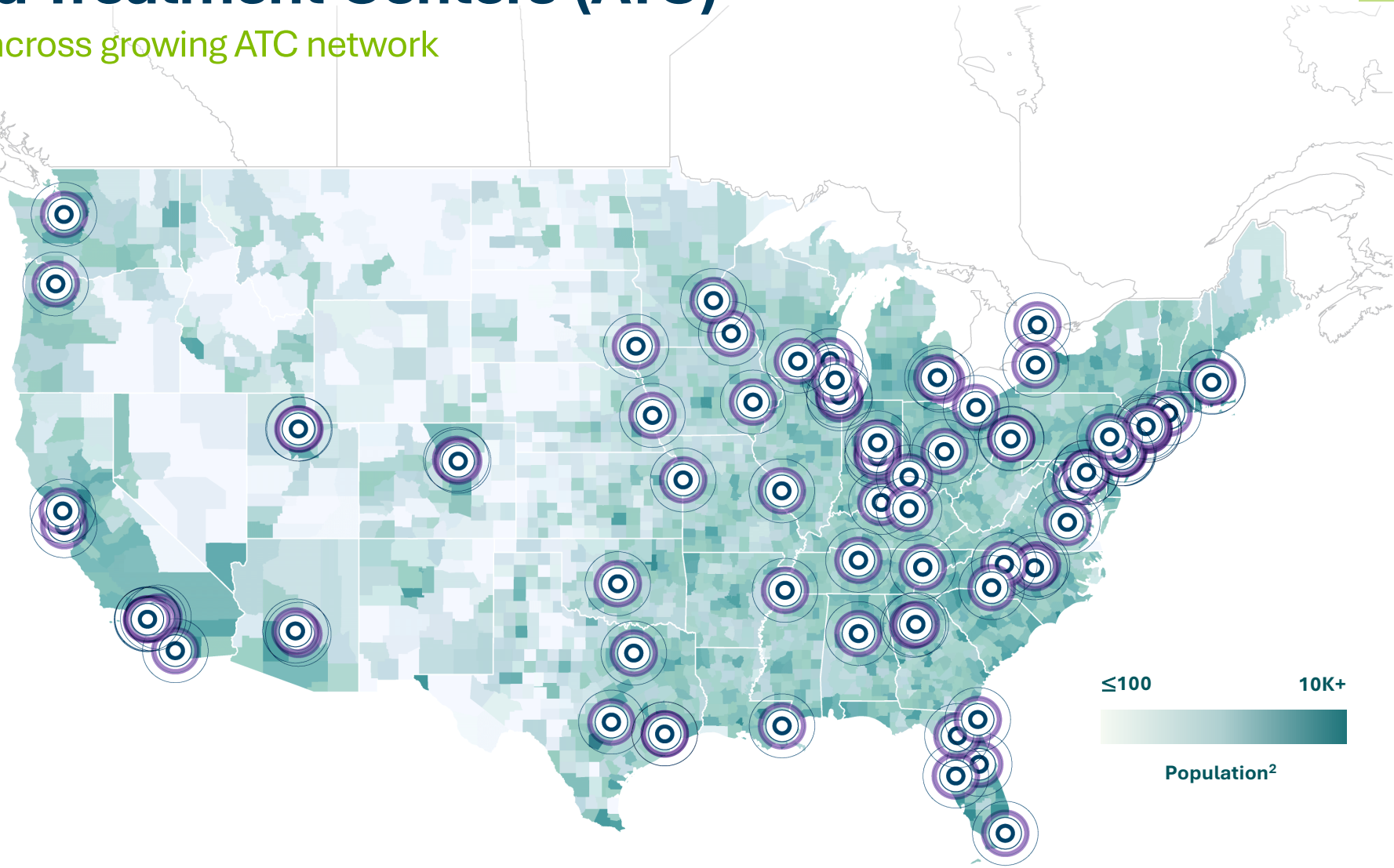
ATCs in U.S., Canada & Australia[1,2]

1/3

in Community Setting

>1,000

Commercial Patients Treated



1. Not all authorized treatment centers are listed.
2. U.S. Census Bureau, 2024 Annual Estimates. SEER annual estimated death rate from melanoma: 2 deaths per 100K people: https://seer.cancer.gov/ (accessed November 2026)

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Broad Amtagvi U.S. Market and Geographic Access[1]

The Vast Majority of Addressable Patients Have Coverage and Local Access to ATCs

BROAD PRIVATE & PUBLIC PAYER COVERAGE

>250M

Lives covered; majority with private coverage*

>75%

of patients covered by private payers & Medicare

PROXIMITY TO ATCs

>80%

of patients within 100 miles

>95%

of patients within 200 miles

COMPREHENSIVE PATIENT SUPPORT PROGRAM

- Reimbursement support
- Financial assistance
- Travel & logistics

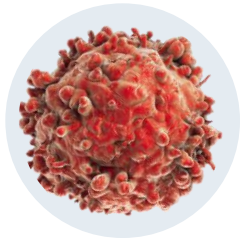
1. Data on file as of November 2026.
*Plans or policies that cover Amtagvi, including pharmacy benefit managers (PBMs)
Abbreviations: ATC, authorized treatment center

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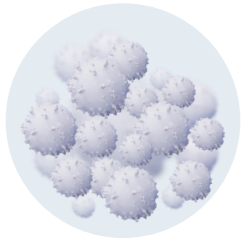
Tumor Infiltrating Lymphocytes (TIL): Leading Cell Therapy Platform for Solid Tumors

Unique mechanism of action | **One-time infusion** | **Individualized therapy**

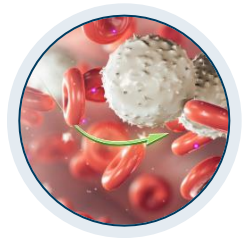
One-time therapy made from a patient's own cells



Tumor collection
Tumor resected and shipped



TIL expansion
T cells grown to the billions[1]

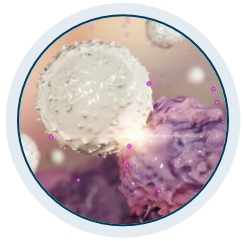


Circulation
Infused TIL circulate in the blood

Billions of TIL recognize multiple patient-specific tumor neoantigens



Migration to Tumor



Recognition



Lysis

1. Amtagvi USPI

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Deep Pipeline of Registrational Programs

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Unprecedented Rate, Depth & Durability in Frontline Melanoma

Data Support Rationale for TILVANCE Frontline Study[1]

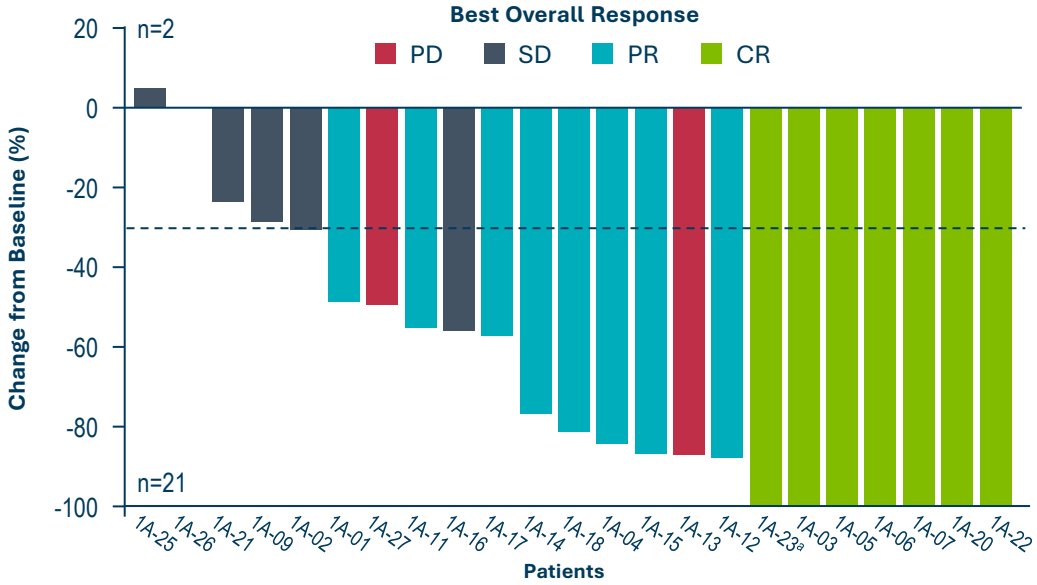
62.5% ORR

29.2% CR | 83% DCR

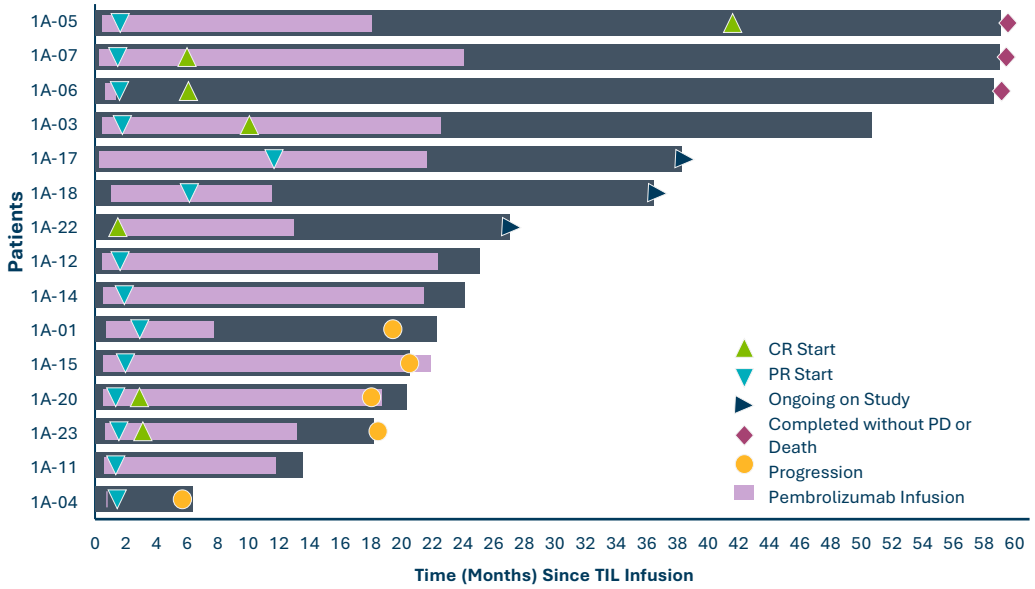
via RECIST v1.1

- **mDOR not reached (median follow-up 26.9 months)**
- **mOS not reached (median follow-up 50.9 months)**
- **19.8 months mPFS**

Best Percentage Change from Baseline in Target Lesion SOD



Time to Response & Time of Efficacy Assessment for Confirmed Responders (PR or Better)



1. Furness et al, ESMO 2026; Data on file as of November 2026. IOV-COM-202 Cohort 1A Full Analysis Set includes all patients who received ≥5.58 billion TILs meeting manufacturing product specifications. Each bar is presented for each patient starting from date of TIL infusion up to date of new anti-cancer therapy, end of assessment, death, or data cutoff date, whichever occurs earlier. Patients 1A-03 and 1A-11 withdrew consent during assessment phase while still in response. Patient 1A-12 discontinued from study while still in response to continue pembrolizumab off-study. Patient 1A-14 was in response during assessment phase before moving to long-term follow-up phase due to relocation from the investigative site. [a]Based on Kaplan-Meier product-limit estimates.

Abbreviations: CR, complete response; DCR, disease control rate; mDOR, median duration of response; ORR, objective response rate; mOS, median overall survival; PD, progressive disease; mPFS, median progression-free survival; PR, partial response; RECIST, Response Evaluation Criteria in Solid Tumors; SD, stable disease; SOD, sum of diameters

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TILVANCE-301 Global Phase 3 and Confirmatory Trial

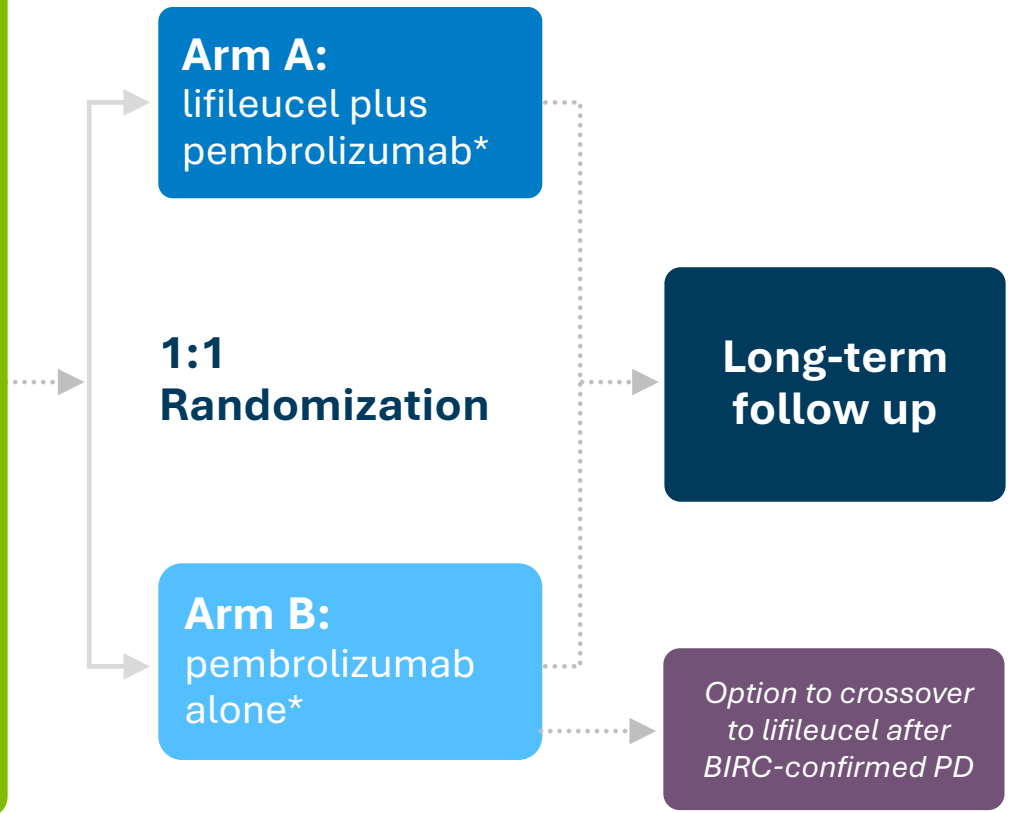
Randomized, Multicenter Study with Optional Crossover to Lifileucel (NCT05727904)

Patient Population

Unresectable or metastatic melanoma; no prior therapy for metastatic disease

N=670

80+ sites in U.S., Canada, Europe, APAC and expanding into new regions



Study Design with FDA Agreement

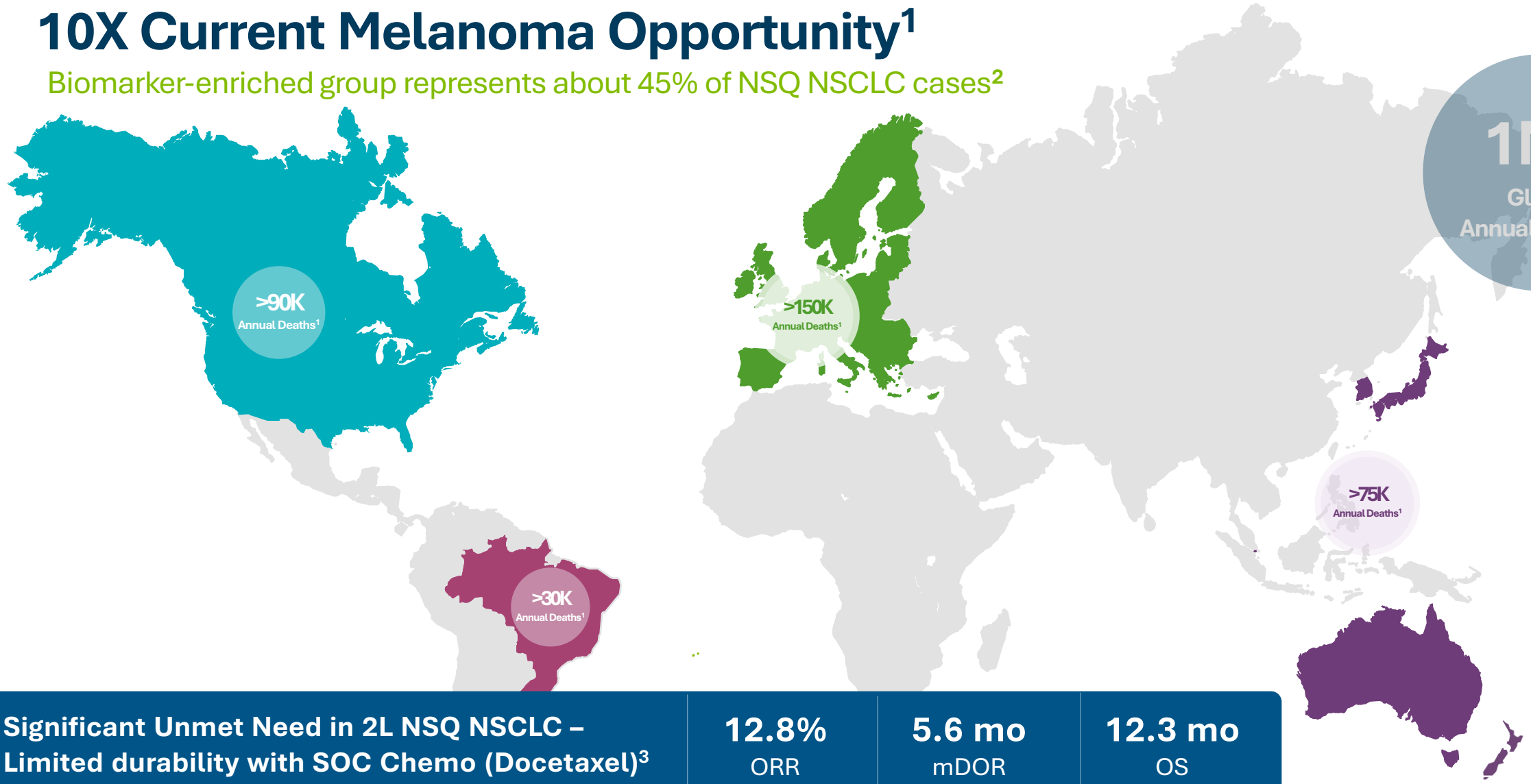
- Dual primary endpoints: ORR & PFS
- Interim analysis on ORR
- Final analysis on PFS
- Registrational for frontline melanoma
- Confirmatory for Amtagvi® full approval in post-anti-PD-1 melanoma
- Ongoing robust enrollment

*Pembrolizumab in both arms is started at the same time after randomization.
Abbreviations: APAC, Asia Pacific; BIRC, blinded independent review committee; ORR, objective response rate; PD, progressive disease; PD-1, programmed cell death protein-1; PFS, progression free survival

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Global NSCLC Commercial Opportunity
10X Current Melanoma Opportunity[1]

Biomarker-enriched group represents about 45% of NSQ NSCLC cases[2]



Significant Unmet Need in 2L NSQ NSCLC – Limited durability with SOC Chemo (Docetaxel)[3]	12.8% ORR	5.6 mo mDOR	12.3 mo OS

1. Compared to peak revenue potential in U.S. for 2L+ melanoma. Data on file as of November 2026, includes targeted patient population (Non-squamous advanced NSCLC) in potential future commercial markets. 2. Ever smokers wild type for EGFR, ALK, ROS1, KRAS & HER2, data on file as of November 2026. 3. Ahn MJ et al. J Clin Onc 2025;43:260-272.
Abbreviations: 2L, second line; mDOR, median duration of response; mo, month; NSCLC, non-small cell lung cancer; NSQ, Non-squamous; ORR, objective response rate; OS, overall survival; SOC, standard of care

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IOV-LUN-202 Registrational Trial Design

Phase 2 Multicenter Study of Lifileucel in Post-Anti-PD-1 NSCLC (NCT04614103)

Patient Population

Unresectable or metastatic NSCLC, wild type for EGFR, ALK, ROS1, with progression on or after prior anti-PD-1 treatment and chemotherapy

70+ sites in U.S., Canada, Europe, APAC

Planned sBLA 2027 (n~80)

Cohort 1
< 1% or unknown TPS

Cohort 2
≥ 1% TPS

Planned sBLA 2028 (n~80)

POSI*TIL*ITY
Cohort 5 in non-squamous; wild type for EGFR, ALK, ROS1, KRAS, HER2; ever smokers

IOV-LUN-202 is designed to enroll patients with advanced NSCLC post anti-PD-1 treatment

Endpoints

- Primary: ORR per RECIST v1.1 by IRC
- Secondary: CR rate, DOR, DCR, and PFS; OS; safety and tolerability

Abbreviations: ALK, anaplastic lymphoma kinase; APAC, Asia Pacific; sBLA, supplemental Biologics License Application; CR, complete response; DCR, disease control rate; DOR, duration of response; EGFR, epidermal growth factor receptor; HER2, human epidermal growth factor receptor 2; IRC, independent review committee; KRAS, Kirsten rat sarcoma viral oncogene homolog; NSCLC, non-small cell lung cancer; ORR, objective response rate; OS, overall survival; PD-1, programmed cell death protein-1; PFS, progression-free survival; RECIST, Response Evaluation Criteria in Solid Tumors; ROS1, ROS proto-oncogene 1; TPS, tumor proportion score

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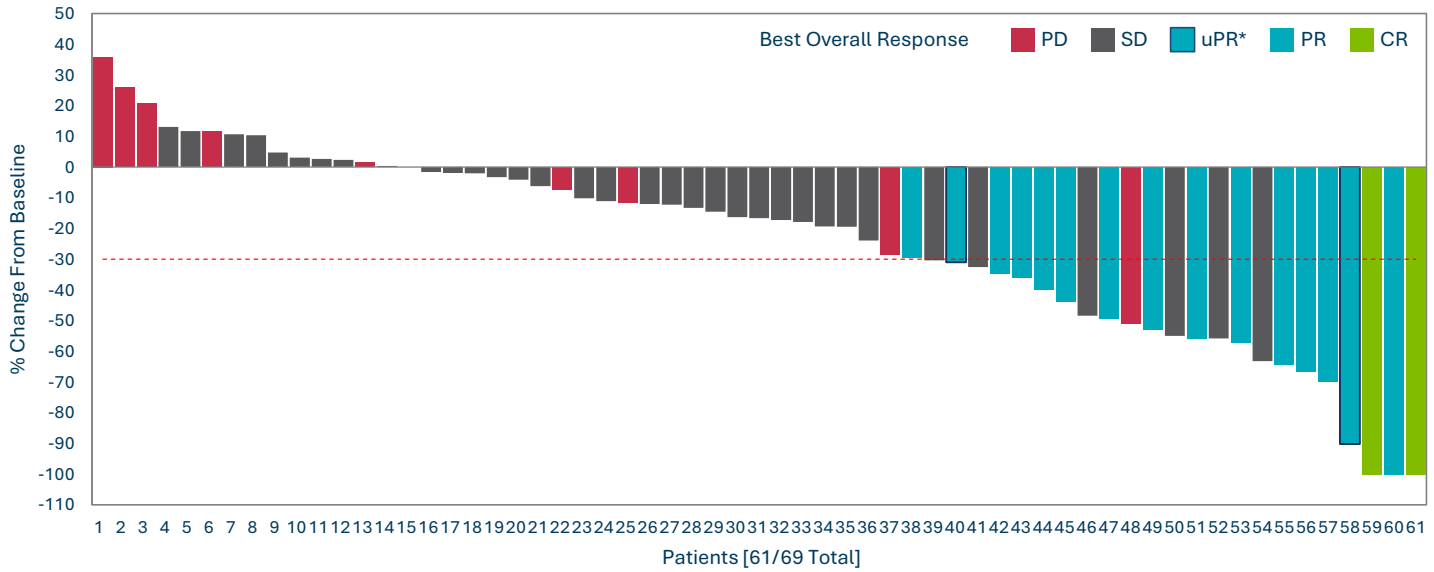
FDA Fast Track Designation in Second-Line Non-squamous mNSCLC

Planned sBLA submission to U.S. FDA in 2027

24.6% ORR [17/69]

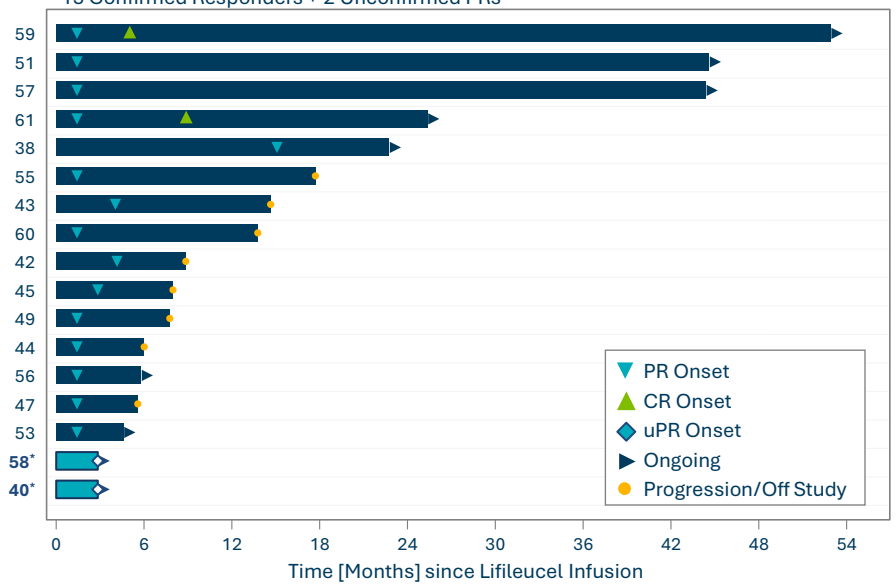
-24.2% Mean SOD

Best Percentage Change From Baseline in Target Lesion by RECIST v1.1



Durability of Response[1]

15 Confirmed Responders + 2 Unconfirmed PRs*



Data as of 14-Oct-2026 includes partial IRC; Non-squamous NSCLC, infused TVC ≥10 billion; KRAS prior-treatment sensitivity population [n=69]. ORR =17/69 [15 confirmed responses + 2 uPRs]. mSOD = −24.2% across 61 numerical values. Eight patients without numerical SOD remain in the ORR denominator. No imputation. [1]Patient numbers match the waterfall. *Patients 40 and 58 : Day 84 uPR; confirmation pending, no confirmed DOR assigned. Patient 40: −31%, Swimmer time is measured from infusion.

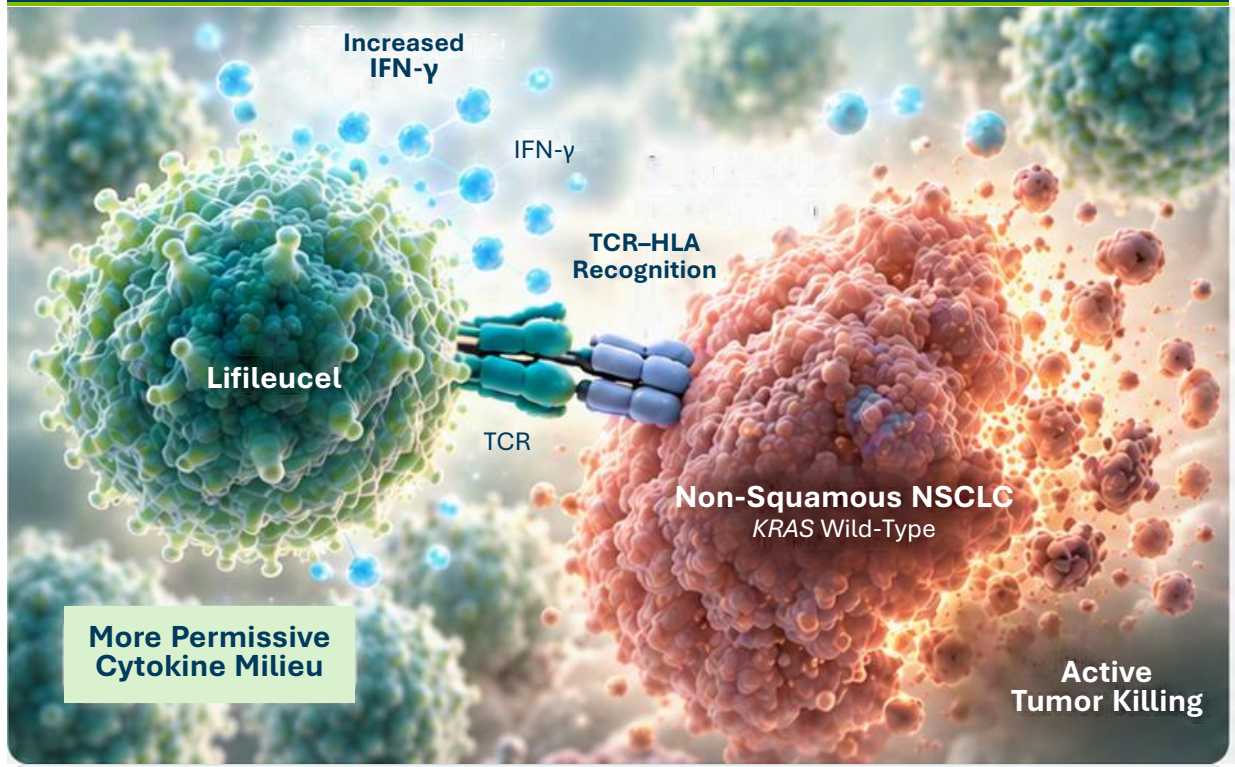
Abbreviations: sBLA, supplemental Biologics License Application; CR, complete response; DOR, duration of response; IRC, independent review committee; KRAS, Kirsten rat sarcoma viral oncogene homolog; NSCLC, non-small cell lung cancer; mNSCLC, metastatic non-small cell lung cancer; ORR, objective response rate; PD, progressive disease; PR, partial response; uPR, unconfirmed partial response; RECIST, Response Evaluation Criteria in Solid Tumors; SD, stable disease; SOD, sum of diameters; mSOD, mean sum of diameters; TVC, total viable cells

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Unmasking the Biology of TIL in NSCLC

KRAS Wild-Type Tumors

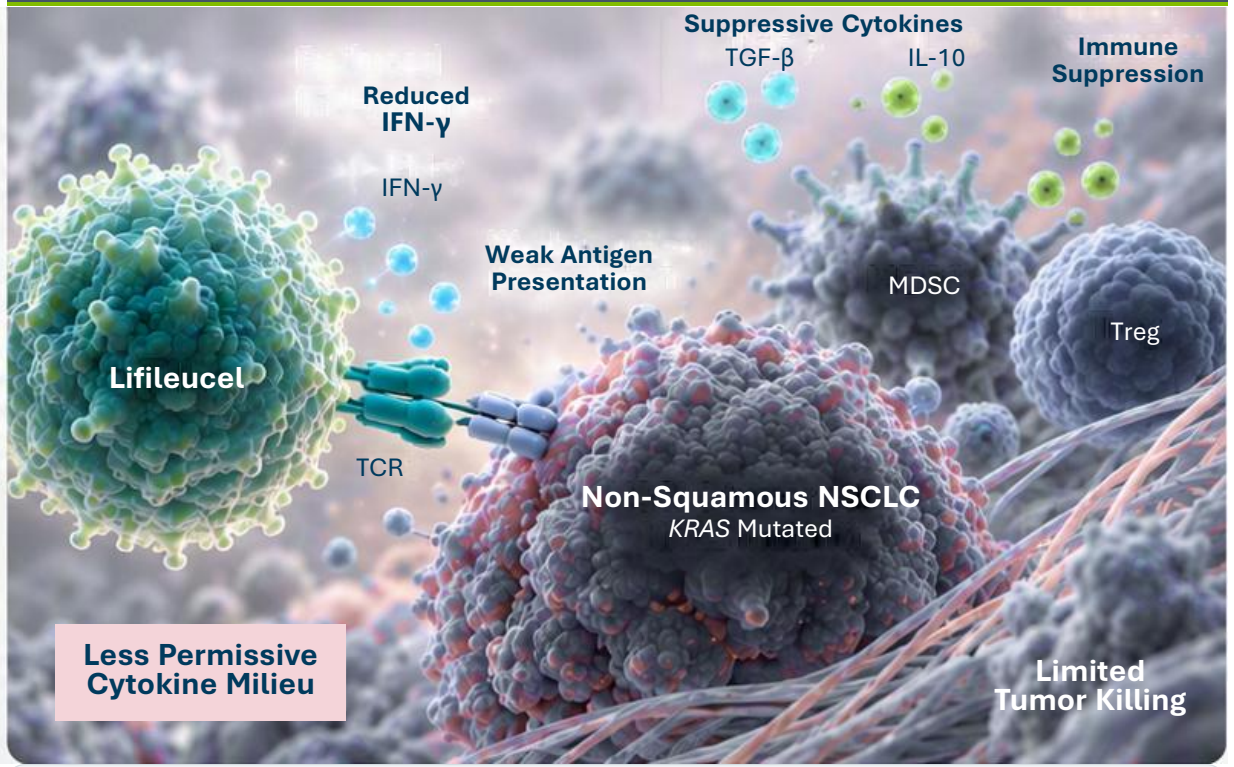
Permissive tumor microenvironment



More effective immune recognition, higher IFN-γ signaling, and active tumor killing in a permissive microenvironment.

KRAS-Mutant Tumors

Suppressive tumor microenvironment



Reduced antigen presentation, lower IFN-gamma signaling, and increased TGF-β / IL-10 in a suppressive microenvironment limits TIL activity.

Co-mutations and other factors may modify these states. Abbreviations: HLA, human leukocyte antigen; IFN-γ, interferon gamma; IL-10, interleukin 10; MDSC, myeloid-derived suppressor cell; NSCLC, non-small cell lung cancer; TCR, T-cell receptor; TGF-β, transforming growth factor beta; Treg, regulatory T cell.

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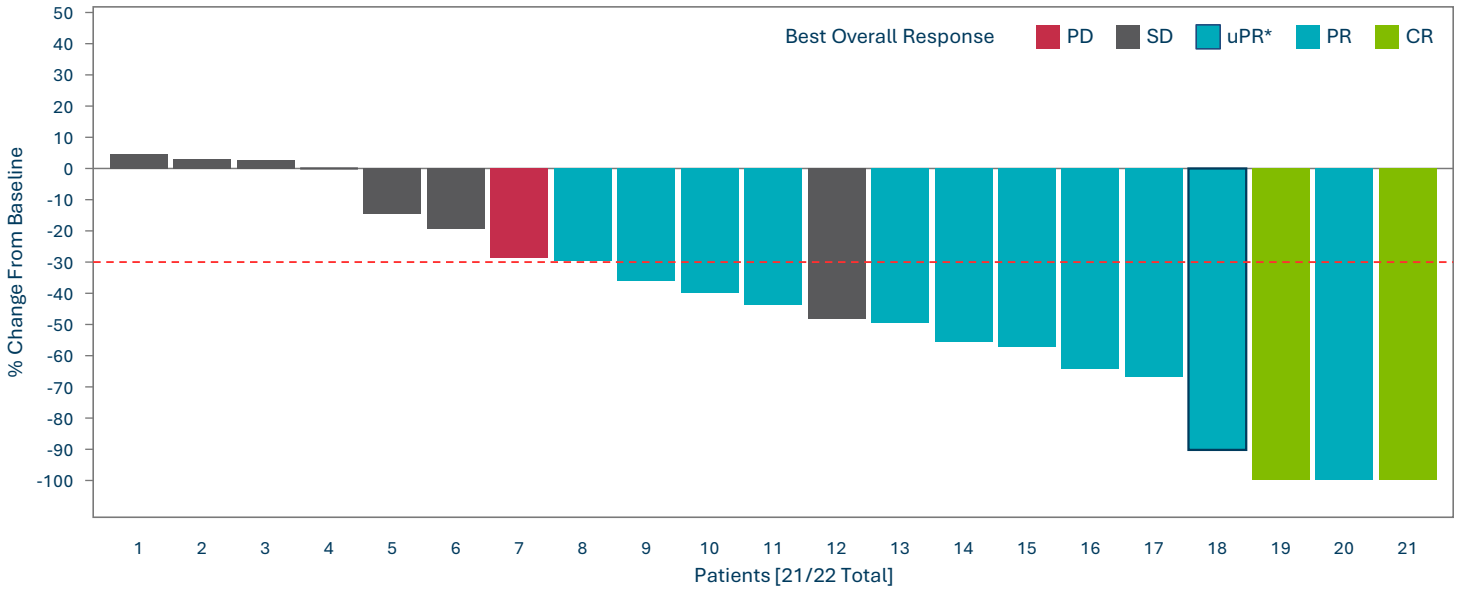
Potential Best-in-Class Clinical Profile in Biomarker Enriched Population

POSI*TIL*ITY Phase 2 trial enrolling non-squamous ever smokers wild type for *EGFR, ALK, ROS1, KRAS & HER2*

59.1% ORR [13/22]

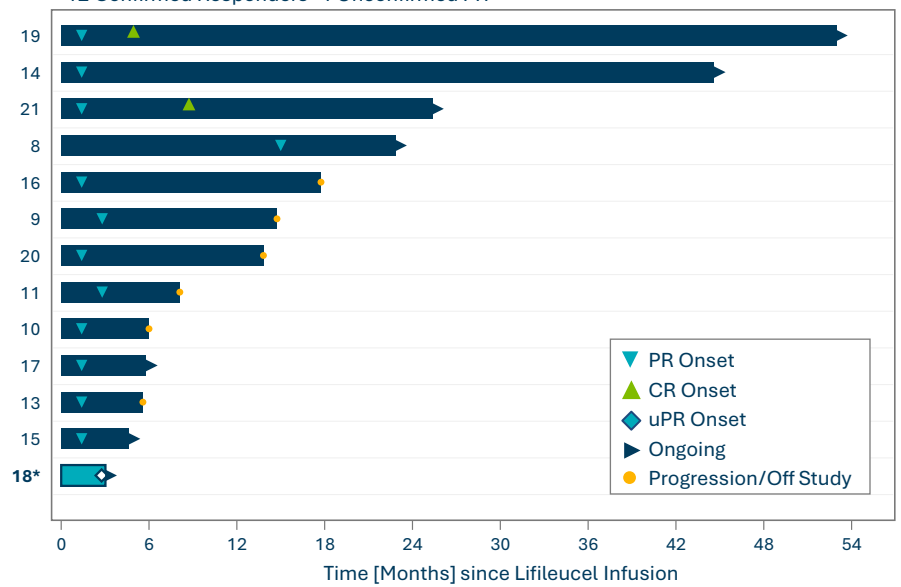
-44.4% Mean SOD

Best Percentage Change From Baseline in Target Lesion by RECIST v1.1



Durability of Response[1]

12 Confirmed Responders+1 Unconfirmed PR*



Data as of 14-Oct-2026 includes partial IRC; *KRAS*^{WT} + *HER2*^{WT} + ever-smoker non-squamous NSCLC, infused TVC ≥10 billion [n=22]. ORR = 13/22 [12 recorded confirmed responses + 1 uPR]. Mean best SOD = -44.4% across 21 numerical values; one patient without numerical SOD remains in the ORR denominator. No imputation. [1]Swimmer lane times are approximate, measured from infusion. *Patient 18: Day 84 uPR; confirmation pending response. Abbreviations: ALK, anaplastic lymphoma kinase; CR, complete response; EGFR, epidermal growth factor receptor; HER2, human epidermal growth factor receptor 2; IRC, independent review committee; KRAS, Kirsten rat sarcoma viral oncogene homolog; NSCLC, non-small cell lung cancer; ORR, objective response rate; PD, progressive disease; PR, partial response; uPR, unconfirmed partial response; RECIST, Response Evaluation Criteria in Solid Tumors; ROS1, ROS proto-oncogene 1; SD, stable disease; SOD, sum of diameters; TVC, total viable cells; WT, wild-type.

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IOVANCE

Biomarker Enriched Analysis Supports Strategy in Frontline NSCLC

OP*TIL*ISM Phase 3 Trial to initiate in 2027

64.3% ORR [9/14]

Frontline Non-Squamous NSCLC–*EGFR* Wild-Type Only

85.7% ORR [6/7]

Frontline Non-Squamous NSCLC– *KRAS* Wild-Type+ *EGFR* Wild-Type + Ever Smoker

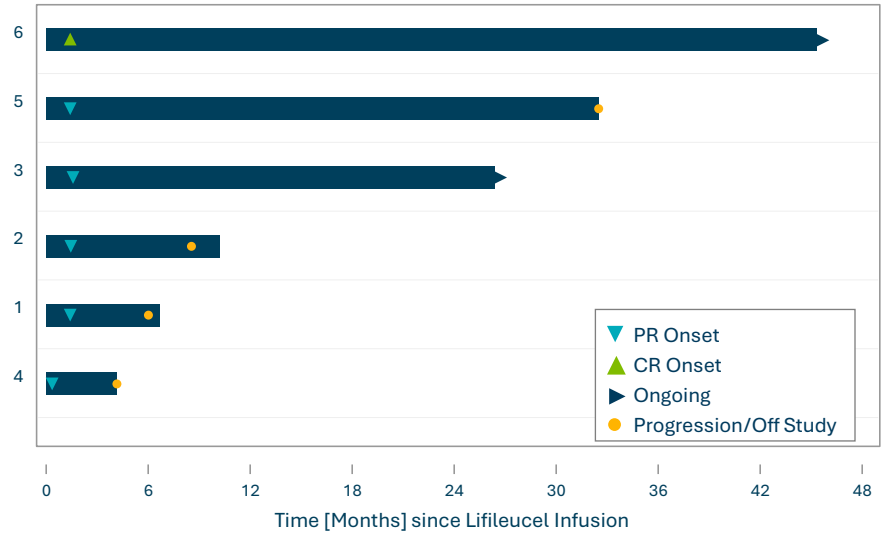
Best Percentage Change from Baseline in Target Lesion by RECIST v1.1

Non-Squamous *KRAS* Wild-Type+Ever Smoker



Durability of Response: *KRAS* Wild-Type + Ever Smoker

6 Confirmed Responders: 1 CR+5 PR



Note: Non-squamous, *KRAS*^{WT} + ever-smokers: n=7. ORR = [1 CR + 5 PR]/7 = 85.7%. All responses were confirmed and by RECIST v1.1. NE remains in the denominator.
Mean SOD = median lowest recorded percentage change from baseline. ORR includes 15/23 non-squamous patients with numeric change. All TVC levels included. Ever-smokers include former and current smokers. Exploratory subgroup analysis.
Abbreviations: CR, complete response; EGFR, epidermal growth factor receptor; KRAS, Kirsten rat sarcoma viral oncogene homolog; NE, not evaluable; NSCLC, non-small cell lung cancer; ORR, objective response rate; PD, progressive disease; PR, partial response; RECIST, Response Evaluation Criteria in Solid Tumors; SD, stable disease; SOD, sum of diameters; TVC, total viable cells; WT, wild-type

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Significant Market Opportunity for Advanced Soft Tissue Sarcomas

FDA Fast Track designation in rare, high grade, aggressive refractory UPS & DDLPS

>8K
Patients/yr (U.S. & Europe)

>3K	U.S. annual cases[1]
>5K	Europe annual cases[2]
>3.5K	Patients with advanced disease[3]

Very high unmet need, with devastating prognosis for patients

- Current 2L SOC has low ORR (<5%) with short durability (mPFS of ~2-3 months, and mOS of ~9-10 months)[4-6]

Phase 2 SARATOGA registrational trial now recruiting

- Targeting expedited pathways for registration
- Exploring additional metastatic soft tissue sarcomas with high unmet need as part of clinical program

Existing infrastructure supports fast adoption early in treatment journey

- Patients highly concentrated at ATCs within existing network
- Peak revenue opportunity similar to advanced melanoma in the U.S.

1. CancerMPact Patient Metrics for U.S. Soft Tissue Sarcoma (accessed November 2026); 2. Zhou et al. BMC Public Health 2025; 3. CancerMPact Treatment Architecture for Sarcoma for the U.S. & EU5 (May 2025) to inform treatment rates in the U.S. and EU5; 4. Parikh RC, et al. Cancer. 2018. 5. Italiano A, et al. Ann Oncol. 2012; 6. Jones RL et al. Ann Oncol. 2023.
Abbreviations: 2L, second line; ATC, authorized treatment center; DDLPS, dedifferentiated liposarcoma; ORR, objective response rate; mOS, median overall survival; mPFS, median progression-free survival; SOC, standard of care; UPS, undifferentiated pleomorphic sarcoma

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Unprecedented Efficacy with Deep, Durable Responses in DDLPS & UPS[1]

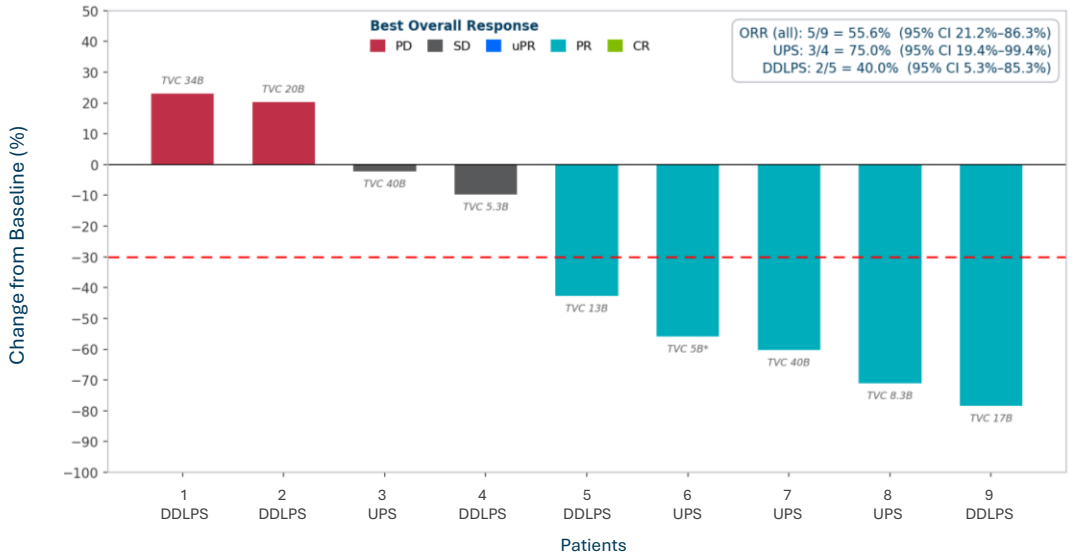
Data support rationale for registrational SARATOGA clinical trial

55.6% ORR [5/9]

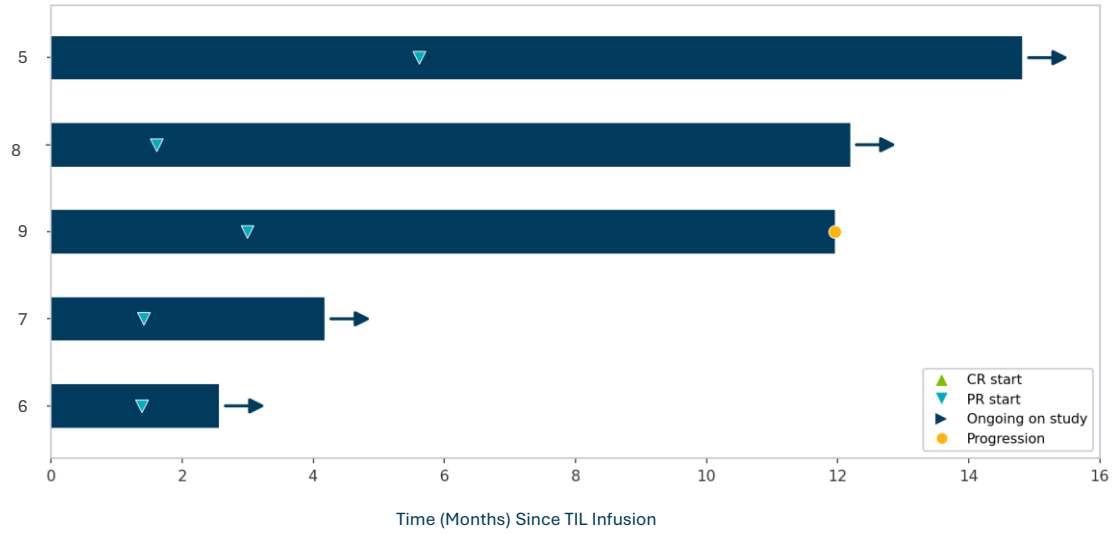
Strong durability with multiple responses ongoing >1 year

- >80% received ≥2 prior lines of therapy

Best Percentage Change from Baseline in Target Lesion(s)



Durability of Response[2]



1. Interim data cut as of October 2026 of refractory patients with DDLPS or UPS with minimum cell dose based on FDA feedback in melanoma. 2. Time to response, time on assessment for confirmed responders (PR or better). A bar is presented for each patient starting from date of lifileucel infusion up to date of new anti-cancer therapy, end of assessment, death, or data cutoff date, whichever occurs earlier. *Included under temporary TVC (total viable cell count) lower specifications of 5 billion
Abbreviations: CI, confidence interval; CR, complete response; DDLPS, dedifferentiated liposarcoma; ORR, objective response rate; PD, progressive disease; PR, partial response; uPR, unconfirmed partial response; SD, stable disease; UPS, undifferentiated pleomorphic sarcoma

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SARATOGA (IOV-SAR-201) Registrational Trial

Phase 2 Multicenter Study of Lifileucel in Advanced Soft Tissue Sarcomas (NCT07741877)

Patient Population

Undifferentiated pleomorphic sarcoma (UPS) or dedifferentiated liposarcoma (DDLPS) refractory to at least one prior line of anthracycline chemotherapy

Planned sBLA 2028-9 (n~40)

Cohort 1: UPS

Planned sBLA 2028-9 (n~40)

Cohort 2: DDLPS

Endpoints

Primary:

ORR per RECIST v1.1 by IRC

Secondary:

CR rate, DOR, DCR, PFS, OS, safety and tolerability

Abbreviations: CR, complete response; DCR, disease control rate; DDLPS, dedifferentiated liposarcoma; DOR, duration of response; IRC, independent review committee; ORR, objective response rate; OS, overall survival; PFS, progression free survival; RECIST, Response Evaluation Criteria in Solid Tumors; UPS, undifferentiated pleomorphic sarcoma

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Strong Initial Data for Serous Advanced Endometrial Cancer

Biomarker Based Approach in Difficult to Treat Subtype with Very High Unmet Need in 2L+

>40%
of Endometrial Cancer Deaths are Serous

~13K	U.S. annual endometrial cancer deaths [1]
~90K	Global deaths[2]
19.5%	5-yr survival (distant metastases)[1]

40% [2/5]
ORR via RECIST v1.1

100% [5/5]
DCR via RECIST v1.1

2
Median Prior Lines of Therapy

First 5 evaluable patients in ENDURANCE trial all pMMR and progressed on prior chemotherapy and checkpoint inhibitor therapy

FDA engagement on expedited pathway and increase in enrollment planned

No standard of care for 2L+ post-anti-PD-1

- Anti-PD-(L)1 moving into frontline setting, limited data on treatments after anti-PD-(L)1[3]
- Mono-chemotherapy after frontline chemo doublet: ~15% ORR[5,6]
- Targeted therapies available only to small subgroups

Endometrial Cancer Biomarkers[4]

pMMR: 73%
dMMR: 27%

1. National Cancer Institute Surveillance, Epidemiology and End Results (SEER) Program. 2026 Estimates. https://seer.cancer.gov (accessed November 2026); 2. World Health Organization International Agency for Research on Cancer (IARC). GLOBOCAN 2022; 3. NCCN Guidelines Version 2.2024 Endometrial Carcinoma; 4. Kang et al, Nature Portfolio, Scientific Reports, 2022; 5. Makker V, et al. N Engl J Med. 2022; 6. McMeekin S, et al. Gynecol Oncol. 2015.
Abbreviations: 2L, second line; DCR, disease control rate; pMMR, proficient DNA mismatch repair; dMMR, deficient DNA mismatch repair; NCCN, National Comprehensive Cancer Network; ORR, objective response rate; PD-1, programmed cell death protein-1; RECIST, Response Evaluation Criteria in Solid Tumors

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ENDURANCE (IOV-END-201) Phase 2 Trial

Trial in Patients with Mismatch Repair (MMR) Proficient and Deficient Tumors (NCT06481592)

Endometrial Cancer Patient Population

Recurrent, metastatic or primary unresectable disease after chemo and anti-PD-1 therapy

≤3 lines of prior systemic therapy with ≤1 line of chemotherapy

- **Serous Endometrial Cohort**
- pMMR Subgroup*
- dMMR Subgroup*

Endpoints

- **Primary**: ORR per RECIST v1.1 by investigator
- **Secondary**: CR rate, DOR, DCR, PFS, OS, safety and tolerability

*Proof of concept cohorts, enrollment complete

Abbreviations: CR, complete response; DCR, disease control rate; DOR, duration of response; dMMR, mismatch repair deficient; pMMR, mismatch repair proficient; MMR, mismatch repair; ORR, objective response rate; OS, overall survival; PD-1, programmed cell death protein-1; PFS, progression free survival; RECIST, Response Evaluation Criteria in Solid Tumors

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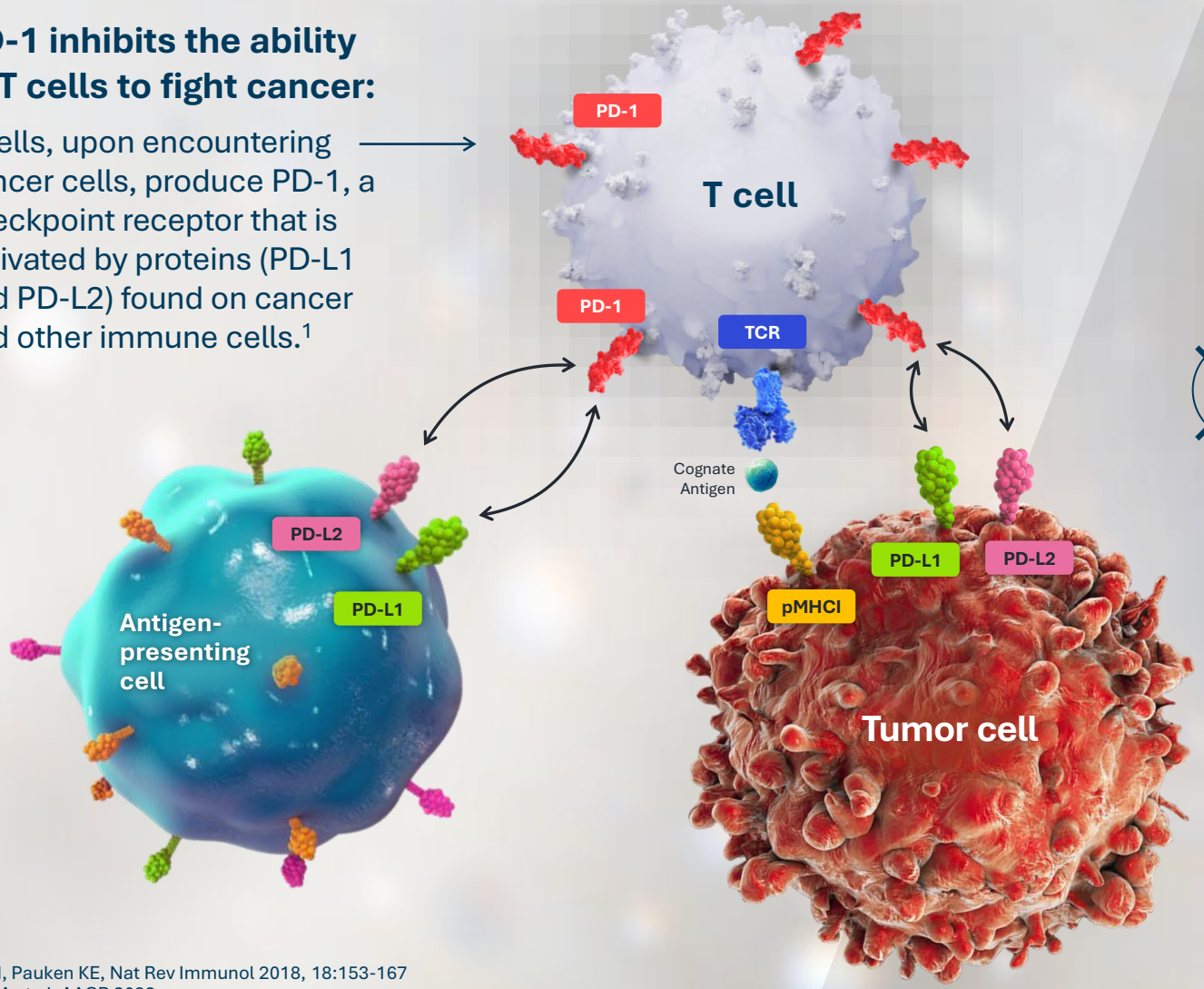
First-in-class Immuno-Oncology Technologies Target New Indications

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IOV-4001: PD-1 Inactivated TIL Therapy

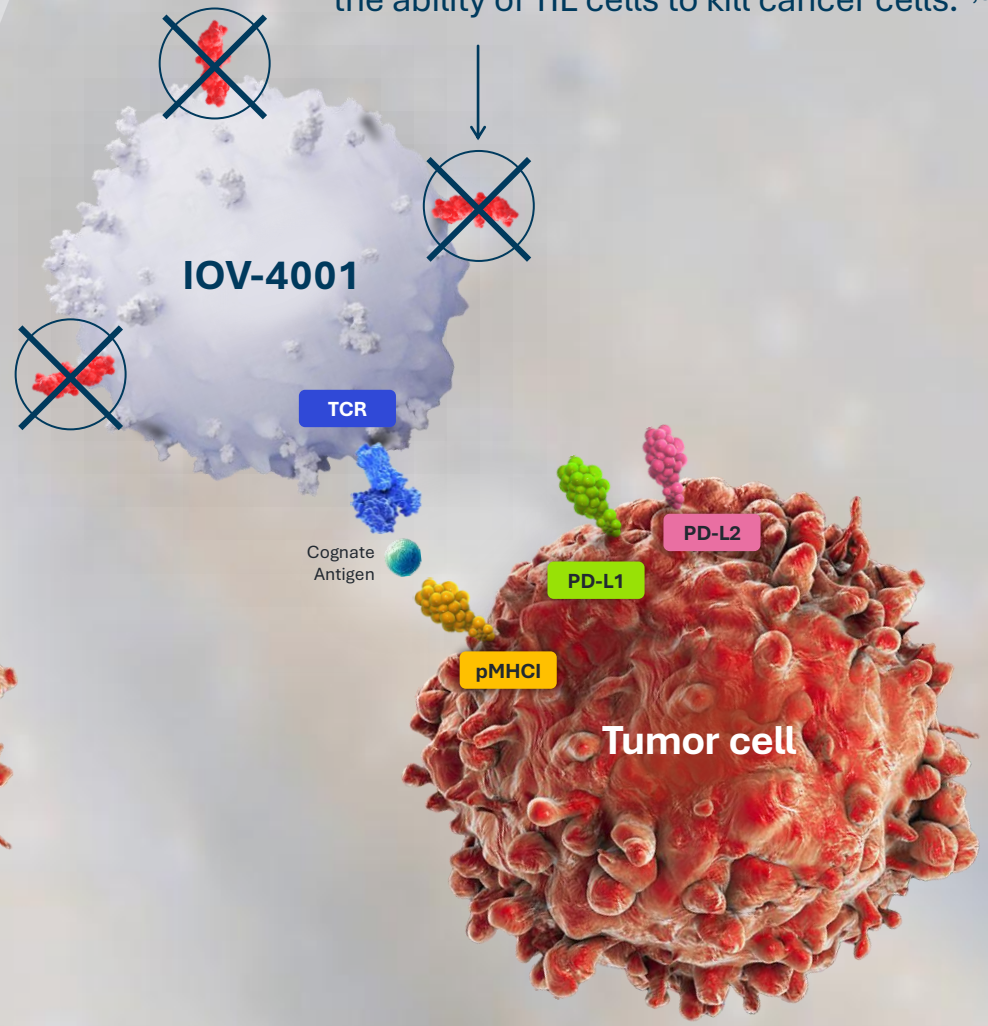
1 PD-1 inhibits the ability of T cells to fight cancer:

T cells, upon encountering cancer cells, produce PD-1, a checkpoint receptor that is activated by proteins (PD-L1 and PD-L2) found on cancer and other immune cells.[1]



2 PD-1 Inactivated T Cells Avoid Checkpoint Signals:

PD-1 is inactivated using TALEN, restoring the ability of TIL cells to kill cancer cells.[2,3]



1. Sharpe AH, Pauken KE, Nat Rev Immunol 2018, 18:153-167
2. Natarajan A et al. AACR 2022
3. Licensed from Cellectis

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Phase 1/2 Open-Label First-in-Human Study: IOV-GM1-201

Genetically Modified, PD-1 Inactivated TIL Therapy IOV-4001 in Previously Treated Metastatic Melanoma and NSCLC (NCT05361174)

Patient Population

Adults with unresectable or metastatic melanoma or advanced NSCLC

Cohort 1: Unresectable or metastatic melanoma

Post-anti-PD-1/L1, post-BRAF/MEK inhibitor in patients with BRAF mutations (fully enrolled)

Cohort 2: Stage III or IV NSCLC

Post-anti-PD-1/L1 or post targeted therapy and either chemotherapy or anti-PD-1/L1

Endpoints

- **Phase 1:** Safety (Complete)
- **Phase 2 Primary:** ORR per RECIST v1.1 by investigator
- **Secondary**: CR rate, DOR, DCR, PFS, OS, safety and tolerability

Abbreviations: BRAF, B-Raf proto-oncogene; CR, complete response; DCR, disease control rate; DOR, duration of response; MEK, mitogen-activated protein kinase kinase; NSCLC, non-small cell lung cancer; ORR, objective response rate; OS, overall survival; PD-1, programmed cell death protein-1; PFS, progression free survival; RECIST, Response Evaluation Criteria in Solid Tumors

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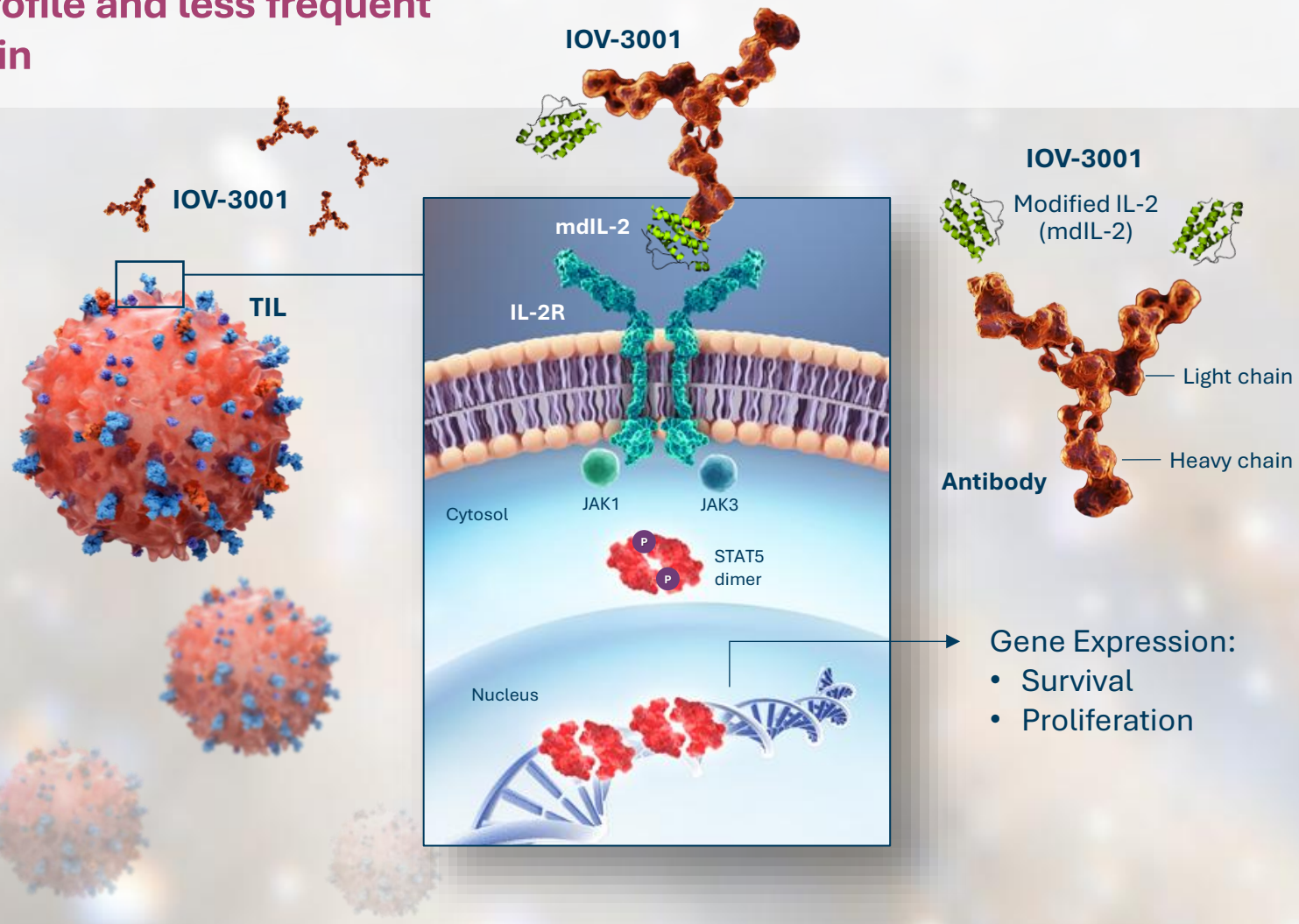
IOV-3001: Next Generation IL-2 for TIL Supportive Regimen[1,2]

Preclinical data suggest a better safety profile and less frequent dosing for IOV-3001 compared to Proleukin

Phase 1/2 trial enrolling patients

Recombinant fusion protein designed to enhance TIL survival and cellular proliferation

- A modified copy of the coding sequence for aldesleukin (mdIL-2) is fused to a humanized monoclonal immunoglobulin (Ig)G1κ antibody
- The mdIL-2 moiety of IOV-3001 binds to the IL-2-receptor (IL-2R) with subsequent phosphorylation of signal transducer and activator of transcription 5 (STAT5), resulting in enhanced performance



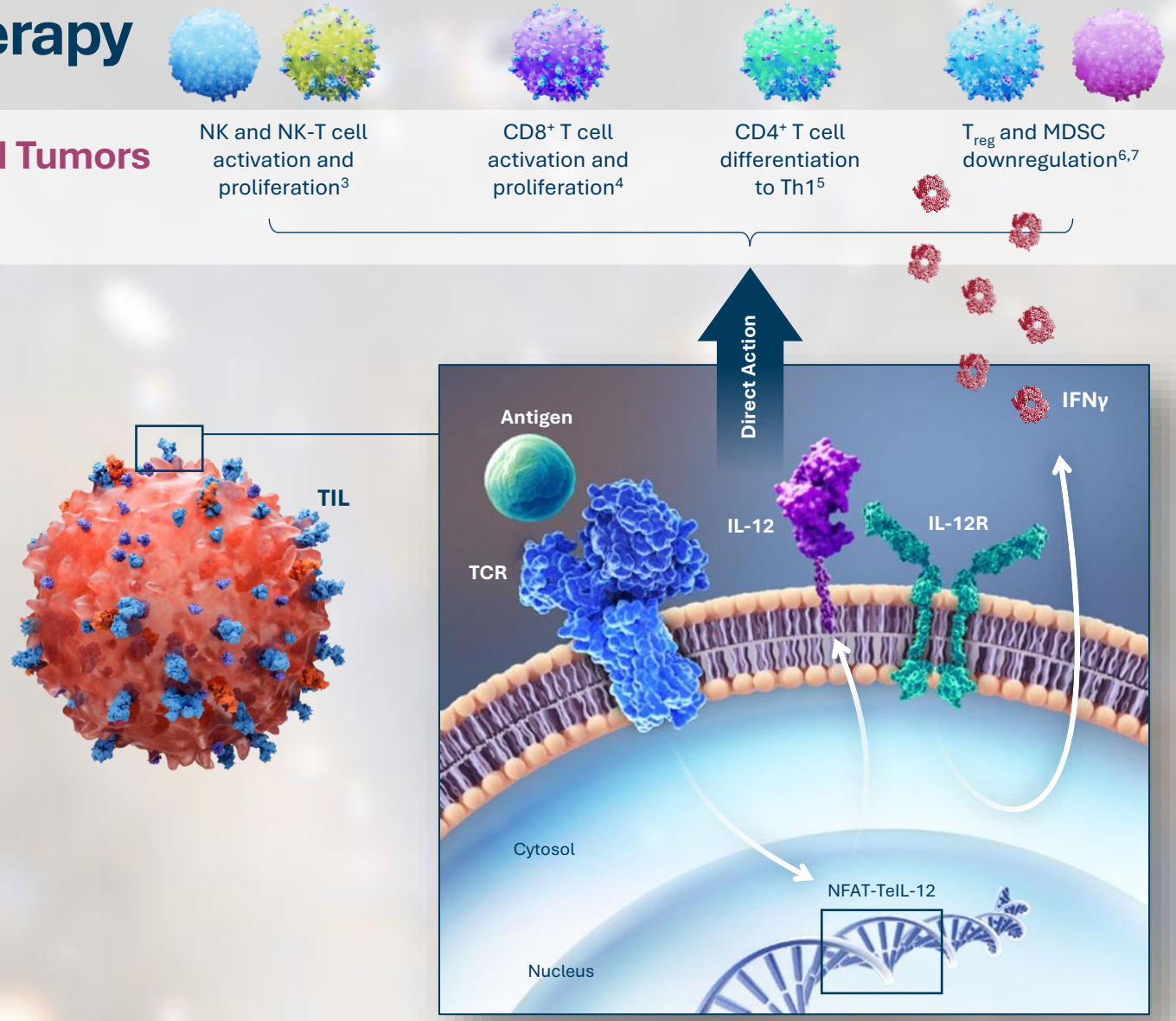
1. Mitra S, Leonard WJ, Journal of Leukocyte Biology 2018 103(4): 643-655
2. Simpson-Abelson M et al, ASCO 2024

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IOV-5001: IL-12 Tethered TIL Therapy

POTEN*TIL*: Phase 1/2 Basket Trial Enrolling in Solid Tumors Representing 100K+ U.S. Deaths Annually

- Tethered IL-12 TIL cells can improve efficacy by remodeling the suppressive TME into an immuno-supportive state
  - In advanced melanoma patients, an ORR of 63% (n=16) was observed with prior generation IL-12 secreting TIL product at doses 10- to 100-fold lower than conventional TIL products[1]
- IL-12 shows independent clinical efficacy, with safe delivery to the TME being the primary challenge[1,2]
- Expression of IL-12 on IOV-5001 is induced upon antigen encounter in the TME[1,2]
- IOV-5001's expressed IL-12 is tethered to the membrane surface of TIL to avoid release into circulation (shedding) [2]
- Inducible IL-12 expression in the TME and lack of IL-12 shedding expected to allow increased IOV-5001 cell doses and improved TIL efficacy in solid tumor cancers



1. Zhang L, et al, Clin Cancer Res 2015;21(10):2278–2288; 2. Zhang L, et al, J Immunother Cancer 2020;8:e000210; 3. Kobayashi M, et al, J Exp Med 1989;170:827–845; 4. Zeh HJ, et al, J Immunother 1993;14:155–61; 5. Tugues S, et al, Cell Death and Differentiation 2015;22:237–246; 6. Cao X, et al, Cancer Res 2009;69:8700–9; 7. Steding CE, et al, Immunology 2011;133:221–38

Abbreviations: CD4, cluster of differentiation 4; CD8, cluster of differentiation 8; IFNγ, interferon gamma; IL-12, interleukin 12; IL-12R, interleukin 12 receptor; MDSC, myeloid derived suppressor cell; NK, natural killer cell; NK-T, natural killer T cell; ORR, objective response rate; TCR, T cell receptor; Th1, T helper 1; TME, tumor microenvironment; Treg, regulatory T cell

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Phase 1/2 First-in-Human Study: POTEN*TIL* (IOV-GE1-201)

Genetically Engineered, IL-12 Tethered TIL Therapy IOV-5001 in Previously Treated Advanced Solid Tumors (NCT07743723)

Patient Population

Adults with previously treated unresectable or metastatic solid tumor cancers

- **Cohort 1: Stage IV NSCLC** without EGFR, ALK, or ROS1 genomic alterations
- **Cohort 2: Unresectable or Stage IV TNBC or ER-low breast cancer**
- **Cohort 3: Stage IV CRC**
- **Cohort 4: Stage III or IV HNSCC**

Endpoints

- **Phase 1:** Safety
- **Phase 2 Primary:** ORR per RECIST v1.1 by investigator
- **Secondary**: CR rate, DOR, DCR, PFS, OS, safety and tolerability

Abbreviations: ALK, anaplastic lymphoma kinase; CR, complete response; CRC, colorectal cancer; DCR, disease control rate; DOR, duration of response; EGFR, epidermal growth factor receptor; ER, estrogen-receptor; HNSCC, head and neck squamous cell carcinoma; IL-12, interleukin 12; NSCLC, non small cell lung cancer; ORR, objective response rate; OS, overall survival; PFS, progression free survival; RECIST, Response Evaluation Criteria in Solid Tumors; ROS1, ROS proto-oncogene 1; TNBC, triple negative breast cancer

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Financial Summary

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Financial Position & Outlook

Full Year 2026 Revenue Guidance

Raised from $350M — $370M

$410M — $420M*

3Q26 Revenue

~$122M

⬆ ~80% YoY | ⬆ ~22% QoQ

3Q26 Margin[1]

~60%

54% YTD

Cash position[2]

~$382M

As of September 30, 2026

Cash runway well into

2029

Revenue Growth

Margin Improvement

Cost Control

*The midpoint represents an increase of $55 million, or ~15%, over the previous guidance range of $350 to $370 million.

1. Excludes depreciation and amortization
2. Cash, cash equivalents, short-term investments, and restricted cash as of September 30, 2026

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IOVANCE BIOTHERAPEUTICS



Thank You

ADVANCING IMMUNO-ONCOLOGY

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