UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K
Current Report

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (date of earliest event reported): January 7, 2021

IOVANCE BIOTHERAPEUTICS, INC.

(Exact Name of Registrant as Specified in Charter)

Delaware	
(State of Incorporation)	
001-36860	**75-3254381**
Commission File Number	**(I.R.S. Employer Identification No.)**
999 Skyway Road, Suite 150 **San Carlos, California**	**94070**
(Address of Principal Executive Offices)	**(Zip Code)**

(650) 260-7120
(Registrant's Telephone Number, Including Area Code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425).

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12).

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b)).

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c)).

Indicate by check mark whether the registrant is an emerging growth company as defined in as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter). Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, par value $0.000041666 per value	IOVA	The Nasdaq Stock Market, LLC

Item 8.01 Other Events.

On January 7, 2021, Iovance Biotherapeutics, Inc. (the "Company") updated its corporate presentation that it uses for presentations at healthcare conferences and to analysts, current stockholders, and others. A copy of the Company's presentation that it intends to use at such events is attached as Exhibit 99.1 and incorporated herein by reference.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No.	Description
99.1	Iovance Biotherapeutics, Inc., Corporate Presentation – January 2021.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: January 7, 2021

IOVANCE BIOTHERAPEUTICS, INC.

By: /s/ MARIA FARDIS
Maria Fardis, Chief Executive Officer

Exhibit 99.1


IOVANCE
BIOTHERAPEUTICS
ADVANCING IMMUNO-ONCOLOGY
Tumor Infiltrating Lymphocyte Cell Therapy for Treatment of Solid Tumors
January 2021
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1

Forward Looking Statements

Certain matters discussed in this presentation are "forward-looking statements" of Iovance Biotherapeutics, Inc, 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"). All such written or oral statements made in this presentation, other than statements of historical fact, are forward-looking statements and are intended to be covered by the safe harbor for forward-looking statements provided by 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," "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 press release are made as of the date of this press release, 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 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 effects of the COVID-19 pandemic; risks related to the timing of and our ability to successfully develop, submit, obtain and maintain U.S. Food and Drug Administration ("FDA") or other regulatory authority approval of, or other action with respect to, our product candidates, and our ability to successfully commercialize any product candidates for which we obtain FDA approval; preliminary and interim clinical results, which may include efficacy and safety results, from ongoing clinical trials may not be reflected in the final analyses of our ongoing clinical trials or subgroups within these trials; the risk that enrollment may need to be adjusted for our trials and cohorts within those trials based on FDA and other regulatory agency input; the new version of the protocol which further defines the patient population to include more advanced patients in our cervical cancer trial may have an adverse effect on the results reported to date; the risk that we may be required to conduct additional clinical trials or modify ongoing or future clinical trials based on feedback from the FDA or other regulatory authorities; the risk that our interpretation of the results of our clinical trials or communications with the FDA may differ from the interpretation of such results or communications by the FDA; the acceptance by the market of our product candidates and their potential reimbursement by payors, if approved; our ability or inability to manufacture our therapies using third party manufacturers or our own facility may adversely affect our potential commercial launch; the results of clinical trials with collaborators using different manufacturing processes may not be reflected in our sponsored trials; the risk that unanticipated expenses may decrease our estimated cash balances and increase our estimated capital requirements; and other factors, including general economic conditions and regulatory developments, not within our control.

Iovance: Developing to commercialize TIL Cell Therapy

Platform

- Leading cell therapy platform in solid tumors
- Clinical data in multiple indications
- Consistent GMP manufacturing process across solid tumors
- Next gen research in selected and genetically modified TIL

Pipeline

- Pivotal programs in metastatic melanoma and advanced cervical cancers
- Registration-supporting study in NSCLC
- Combinations with immune-checkpoint inhibitors in earlier lines
- Academic collaborations in new indications

Assets

- ~$720M cash (9/30/20)
- Global rights to all programs, IP and technology
- Iovance manufacturing facility (*i*CTC)

Research Partners

NIH NATIONAL CANCER INSTITUTE

MD Anderson Cancer Network

MOFFITT CANCER CENTER

Yale CANCER CENTER

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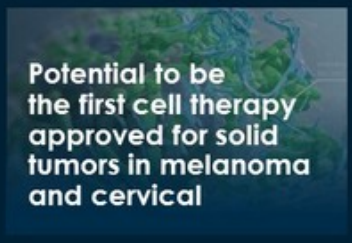
Investment Highlights

Leading cell therapy company focused on treatment of solid tumors

Large market opportunity & strong unmet need

- Initial focus in post-checkpoint solid tumors
- Expansion into combinations and earlier lines of therapy
- Five company-sponsored programs in melanoma, cervical, head & neck, non-small cell lung cancer (NSCLC), and CLL indications



Potential to be the first cell therapy approved for solid tumors in melanoma and cervical

- Accelerated path to approval in melanoma and cervical cancer
- BLA filings expected 2021
- Melanoma: RMAT, Orphan Drug, and Fast Track
- Cervical: BTD, Orphan Drug and Fast Track

Efficient & scalable proprietary manufacturing

- U.S. and E.U. capacity with contract manufacturers
- Iovance Cell Therapy Center (*i*CTC) under construction in Philadelphia
- Rapid 22-day Gen 2 manufacturing with 90%+ success rate
- 400+ patients treated with Iovance proprietary process

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2020 Accomplishments; Anticipated 2021 Milestones

	2020	2021
Regulatory	☑ Agreement with FDA on melanoma Cohort 4 clinical follow up; Cohort 2 supportive ☑ Additional work on potency assays	☐ **BLA**: Continue work on potency assay to support submission of a BLA to FDA for lifileucel
Clinical	☑ **Melanoma**: early pivotal Cohort 4 data and updated Cohort 2 data ☑ **Cervical**: last patient dosed in cervical pivotal cohort ☑ **NSCLC**: Moffitt TIL data; registration directed study initiated ☑ **HNSCC**: initial data for TIL + pembrolizumab	☑ **Cervical**: Complete enrollment into Cohort 2, under consideration for inclusion in the BLA ☐ **NSCLC:** Add a new cohort in the basket study; combine TIL + ipi/nivo ☐ **NSCLC**: Start patient dosing in IOV-LUN-202 ☐ **HNSCC:** Expanding the HNSCC TIL + pembrolizumab in basket study (as part of moving TIL in earlier lines); Close C-145-03 HNSCC single therapy
Manufacturing	☑ Gen 3 process in clinic ☑ >90% success rate in >400 patients	☐ **Melanoma**: Initiate administration of 16-day Gen 3 process in clinic in the basket study ☐ Completion of Navy Yard GMP facility (*i*CTC); start clinical manufacturing at *i*CTC

Key Highlights for Melanoma Cohort 2 Data

2019: Melanoma Data update at SITC [1]

Melanoma Cohort 2 showed

36.4% ORR

by investigator and

34.8% ORR

as read by independent review committee (IRC) (N=66)

Jan 2021: Updated Melanoma Data

Median DOR still not reached at 28.1 months of median study follow up [2]

[1] Sarnaik *et al.*, SITC 2019, P865.
[2] Investigator assessed, Data extract 14 Dec 2020

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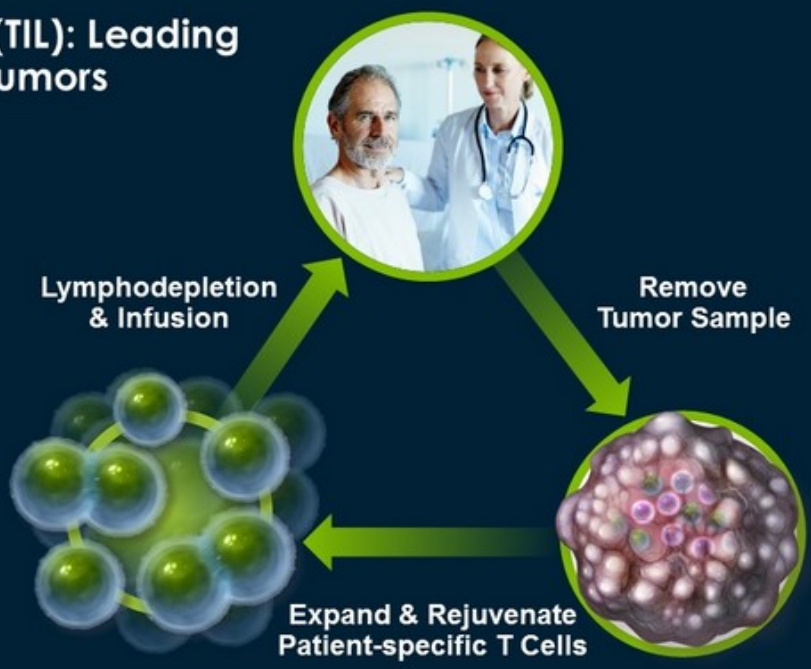
Tumor Infiltrating Lymphocytes (TIL): Leading Platform for Treatment of Solid Tumors

TIL – Unique Mechanism of Action

- Highly personalized
- One-time therapy
- Patient's own immune system amplified and rejuvenated (1)



[1]Simpson-Abelson, *et. al*, Iovance Generation-2 Tumor-infiltrating Lymphocyte (TIL) Product Is Reinvigorated During the Manufacturing Process, ESMO 2020

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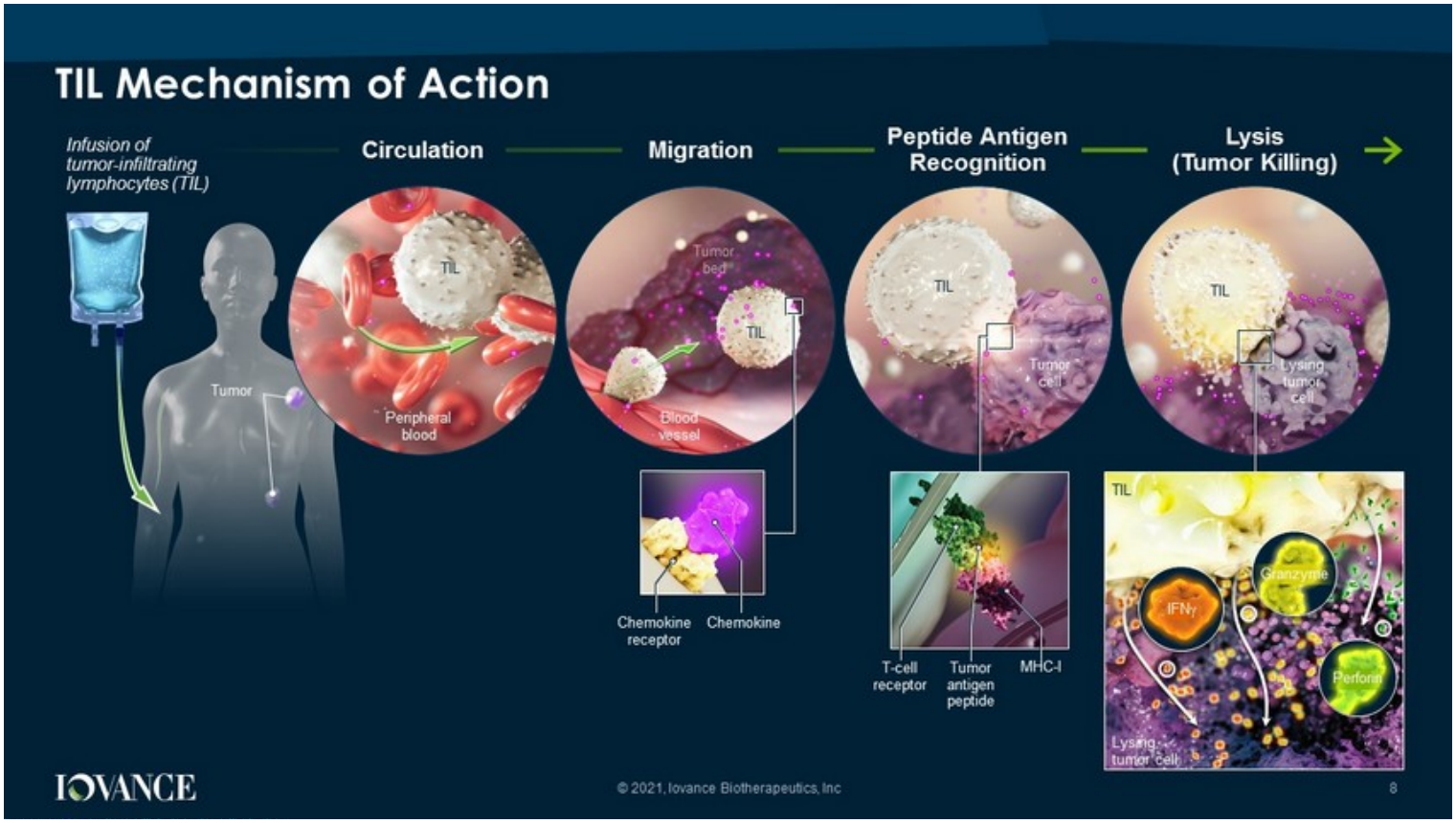
TIL Mechanism of Action
Infusion of tumor-infiltrating lymphocytes (TIL)
Circulation
Migration
Peptide Antigen Recognition
Lysis (Tumor Killing)
Tumor
TIL
Peripheral blood
Tumor bed
Blood vessel
Chemokine receptor
Chemokine
Tumor cell
T-cell receptor
Tumor antigen peptide
MHC-I
Lysing tumor cell
Granzyme
IFNγ
Perforin
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8

Competitive Advantages of TIL in Solid Tumors

Checkpoints	TCR	CAR-T (Liquid tumors)	TIL (Solid tumors)
Target multiple tumor antigens	Target only single tumor antigen	Mainly target only single/ surface tumor antigen	**Target multiple tumor antigens**
Long maintenance period	One-time treatment	One-time treatment	**One-time treatment**
Utility in several solid tumors	Few solid tumors treated so far	No examples of successful utility in solid tumors	**Available data in: melanoma, cervical, head & neck, and lung cancers**
Potential long-term irreversible toxicities	Potential on-target, off-tissue effects	Potentially immunogenic: cytokine release syndrome	**No unexpected off-tissue effects found to date**
Off-the-shelf	Autologous	Autologous	**Autologous**

TIL target a diverse array of cancer antigens; we believe this approach represents a **highly differentiated, personalized, and targeted immunotherapy**

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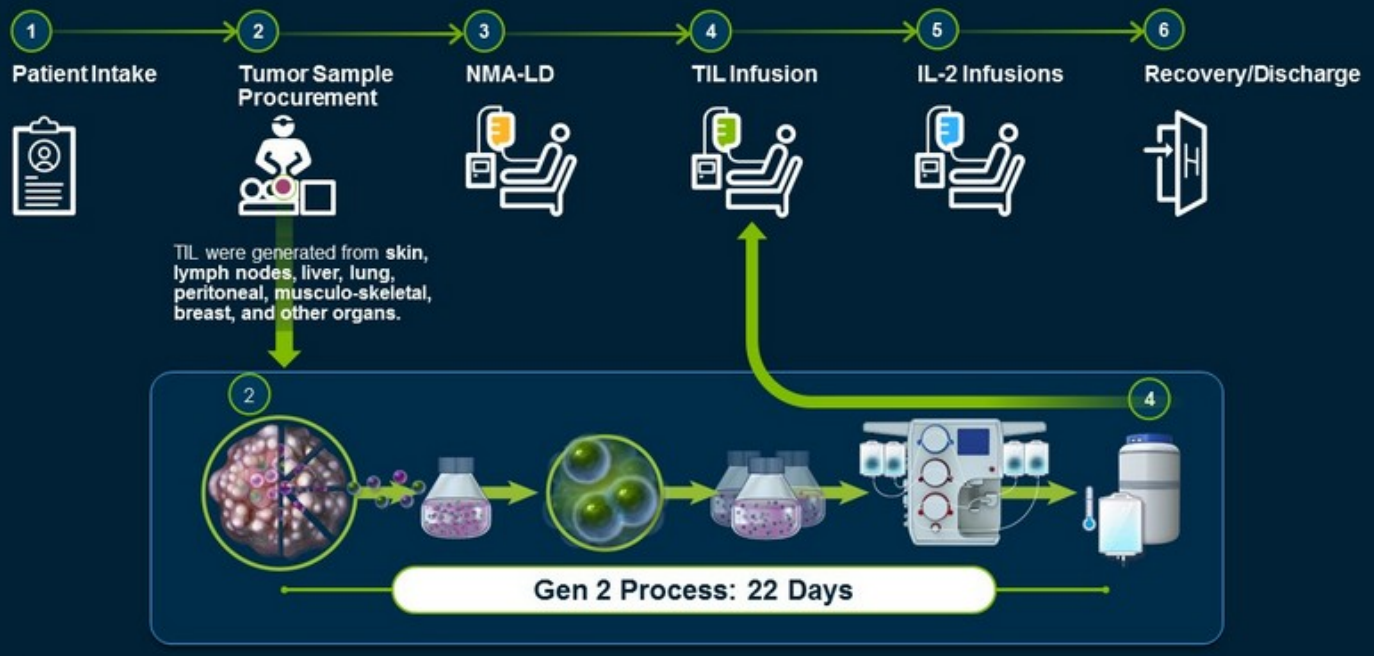
Manufacturing Process

Iovance Streamlined 22-Day GMP Manufacturing Process



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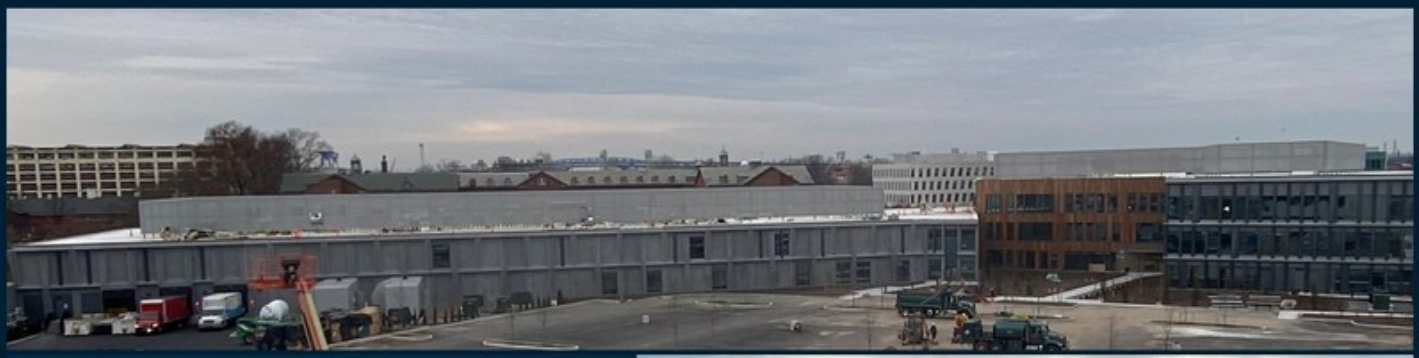
Iovance Cell Therapy Center: *i*CTC



- Build-to-suit custom facility located in the Navy Yard, Philadelphia, PA
- ~136,000 sq. feet, $85 mil investment
- First set of clean rooms completed
- Commercial GMP production is expected to commence in 2022
- Significant reduction in COGS expected

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First Set of Cleanrooms (Flex Suite) Complete

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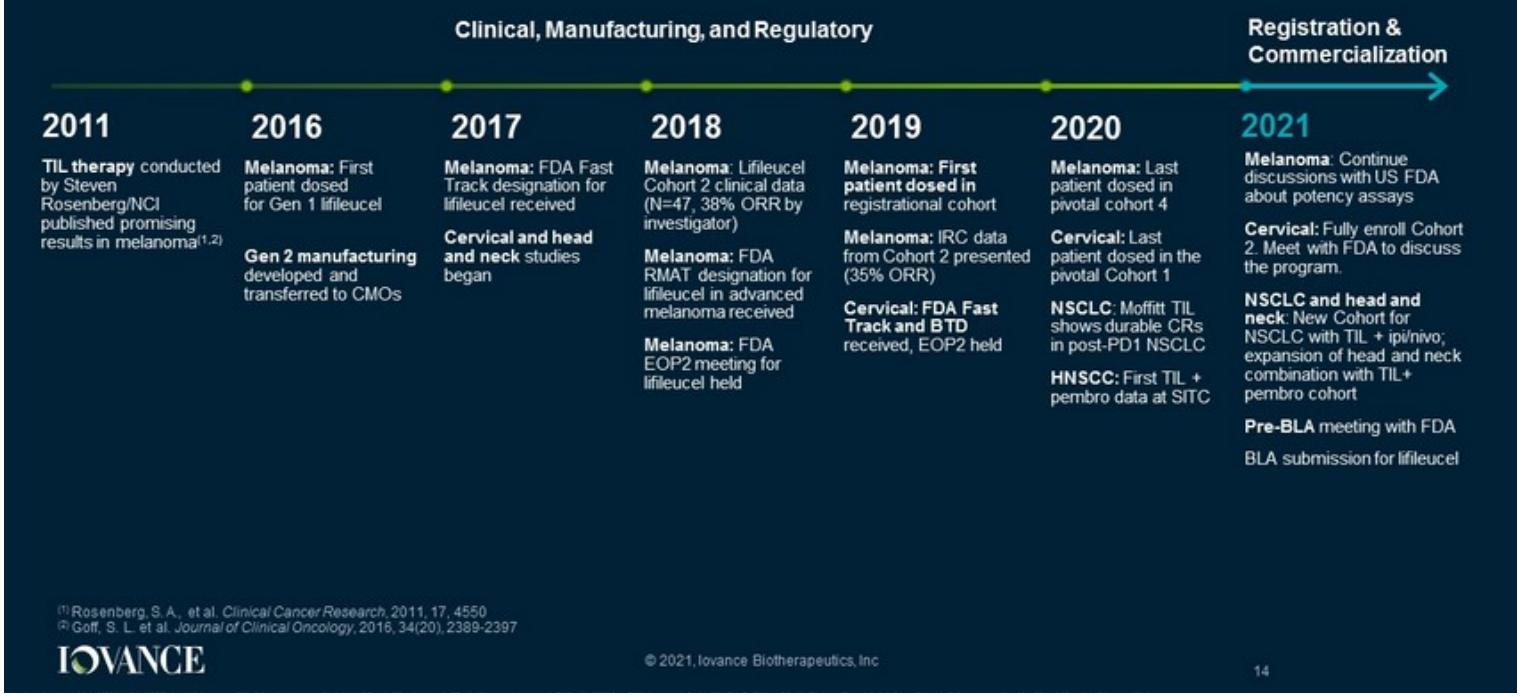
Establishing Leadership in TIL Cell Therapy for Solid Tumors



(1) Rosenberg, S. A., et al. *Clinical Cancer Research*, 2011, 17, 4550
(2) Goff, S. L. et al. *Journal of Clinical Oncology*, 2016, 34(20), 2389-2397

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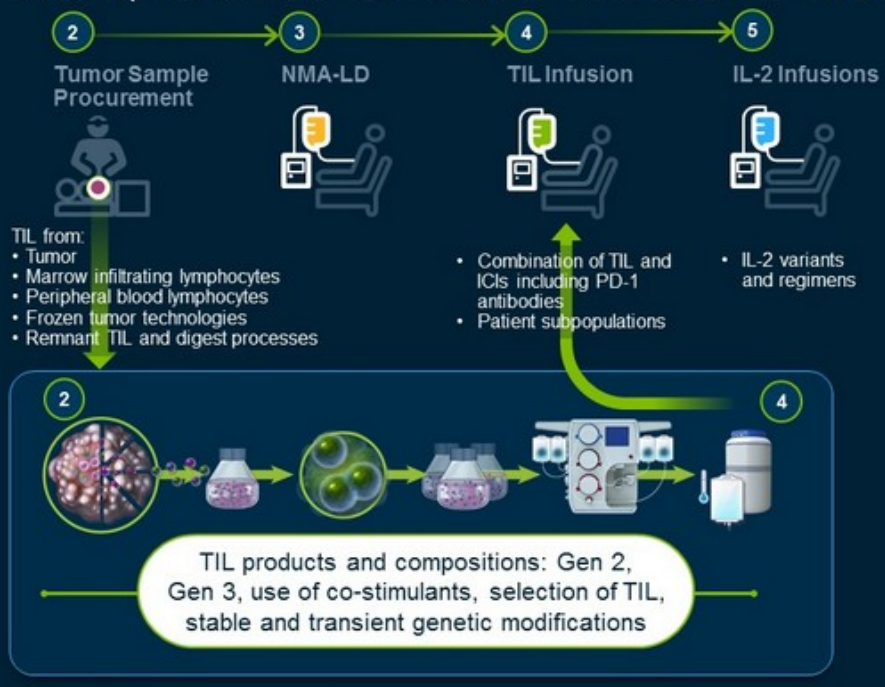
Broad, Iovance-Owned IP Around TIL Therapy



- ✓ 20 granted or allowed US and international patents
- ✓ Compositions of matter for TIL products
- ✓ Methods of treatment in a broad range of cancers
- ✓ Manufacturing processes

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Significant Market Potential in Solid Tumors

90%
of all cancer cases are solid tumors

1.6M
New cases of solid tumors in the U.S.[1]

Move into earlier line of therapy

Expand into other indications

Solid Tumor Indication	Deaths[1]	New Cases[1]
Melanoma	6,850	100,350
Cervix Uteri	4,290	13,800
Lung & Bronchus	135,720	228,820
Oral Cavity, Pharynx & Larynx	14,500	65,630
Breast	42,170	276,480
Pancreatic	47,050	57,600
Brain & Other Nervous System	18,020	23,890
	Potential to address unmet need in late lines of treatment	Potential market for early lines in combo with standard of care

[1] https://seer.cancer.gov (December, 2020)

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Current Clinical Pipeline and Select Collaboration Studies

	Regimen	Trial	Indication	N	Partner	Phase 1	Phase 2	Pivotal
Company sponsored studies	Lifileucel	C-144-01	Melanoma	178	—			
	Lifileucel	C-145-04	Cervical cancer	138	—			
	LN-145/ LN-145-S1	C-145-03	Head & neck cancer	55	—			
	Lifileucel + pembrolizumab LN-145-S1 LN-144 (Gen 3) LN-145 + pembrolizumab LN-145 + pembrolizumab LN-145 LN-145 + ipi/nivo	IOV-COM-202	Melanoma Melanoma Melanoma Head & neck cancer Non-small cell lung Non-small cell lung Non-small cell lung	~135	—			
	LN-145	IOV-LUN-202	Non-small cell lung	95	—			
	IOV-2001	IOV-CLL-01	Chronic lymphocytic leukemia	~70	—			
Select investigator sponsored proof-of-concept studies	MDA TIL	NCT03610490	Ovarian, colorectal, pancreatic	~54	MD Anderson Cancer Network			
	LN-145	NCT03449108	Ovarian, sarcomas	~54	MD Anderson Cancer Network			
	Moffitt TIL + nivolumab	NCT03215810	Non-small cell lung	20	MOFFITT CANCER CENTER			

For the studies listed in our collaboration pipeline table, the partner listed above is the sponsor of the clinical trial. Such partner may not use our Gen 2 manufacturing process and/or the therapeutic dosing may differ from our clinical trials. As a result, such partner data may not be representative of our data.

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Metastatic Melanoma

Potential Market for Metastatic Melanoma

- Estimated 7,230[1] U.S. patient deaths due to melanoma
- Limited options after progression on checkpoint and BRAF/MEK inhibitors

> *"Nature has selected TIL to recognize features unique to the tumor not present on normal tissues, which helps make a TIL therapy approach effective compared to other cell therapy strategies for solid tumors. Iovance TIL treatment has a novel mechanism of action, completely separate from those of other treatment options, and has resulted in highly durable responses in patients that have progressed on prior FDA-approved treatment for their metastatic melanoma."*
>
> — Dr. Amod Sarnaik
> Department of Cutaneous Oncology, the Immunology Program and the Melanoma Center of Excellence at Moffitt Cancer Center

Metastatic Melanoma Facts

309k	**New Cases WW** each year[3]	**62k**	**Deaths WW** each year[3]
100k	**Diagnoses in U.S.** each year[1]	**7k**	**Deaths in U.S.** each year[1]

1st line: **Immuno -therapy**	BRAF/MEK inhibitors for **BRAF positive**	**Chemotherapy ORR 4-10%**[2] **OS ~7-8 mons**[4]

(1) https://seer.cancer.gov 2019
(2) CheckMate-37 Trial Results (ICC 10%), Keytruda label (4%).
(3) *JAMA Oncol.* 2019; 5(12):1749-1768. doi:10.1001/jamaoncol.2019.2996.
(4) *Eur J Cancer.* 2016; 65:182-184. *J Clin Oncol.* 2018; 36 (suppl: abstr e21588).

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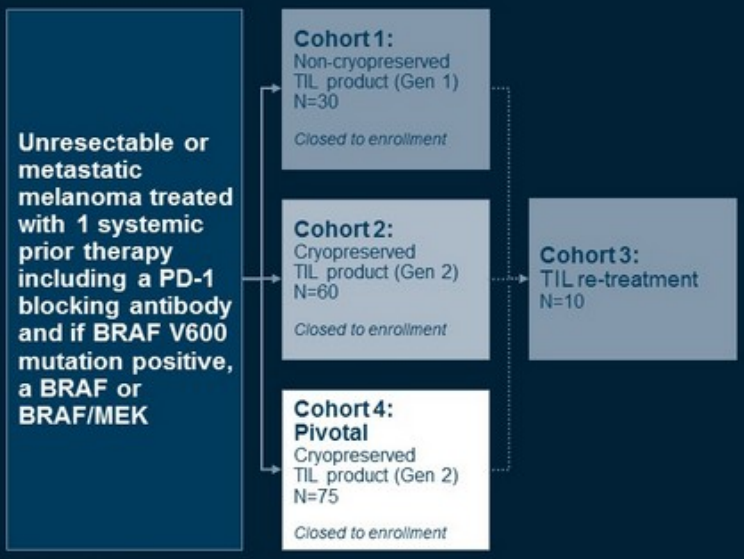
C-144-01: Phase 2 Study Design

Phase 2, multicenter study to assess the efficacy and safety of lifileucel for treatment of patients with metastatic melanoma (NCT02360579)



Endpoints

- Primary: Efficacy defined as IRC ORR

Study Updates

- Mar 2019: Cohort 4 (pivotal trial) FPI
- Jan 2020: last patient dosed
- Dec 2020: Cohort 2 median DOR not reached at 28.1 months of median study follow up

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C-144-01: Cohort 2 Patient Characteristics at ASCO 2020

CHARACTERISTIC	Cohort 2, N=66, (%)
Gender, n (%)	
Female	27 (41)
Male	39 (59)
Age, years	
Median	55
Min, Max	20, 79
Prior therapies, n (%)	
Mean # prior therapies	3.3
Anti-PD-1	66 (100)
Anti-CTLA-4	53 (80)
BRAF/MEK	15 (23)
Progressive Disease for at least 1 prior therapy	
Anti-PD-1	65 (99)
Anti-CTLA-4	41 (77[1])
Baseline ECOG score, n (%)	
0	37 (56)
1	29 (44)

CHARACTERISTIC	Cohort 2, N=66, (%)
BRAF Status, n (%)	
Mutated V600	17 (26)
Wild Type	45 (68)
Unknown	3 (5)
Other	1 (2)
Baseline LDH (U/L)	
Median	244
1-2 times ULN	19 (29)
> 2 times ULN	8 (12)
Target Lesions Sum of Diameter (mm)	
Mean (SD)	106 (71)
Min, Max	11, 343
Number of Target and Non-Target Lesions (at Baseline)	
>3	51 (77)
Mean (SD)	6 (2.7)
Patients with Baseline Liver and/or Brain Lesions	28 (42)

Cohort 2 patients have:

- 3.3 mean prior therapies, ranging from 1-9
- High tumor burden at baseline: 106 mm mean sum of diameters of the target lesions

[1] The denominator is the 53 patients who received prior anti-CTLA-4.

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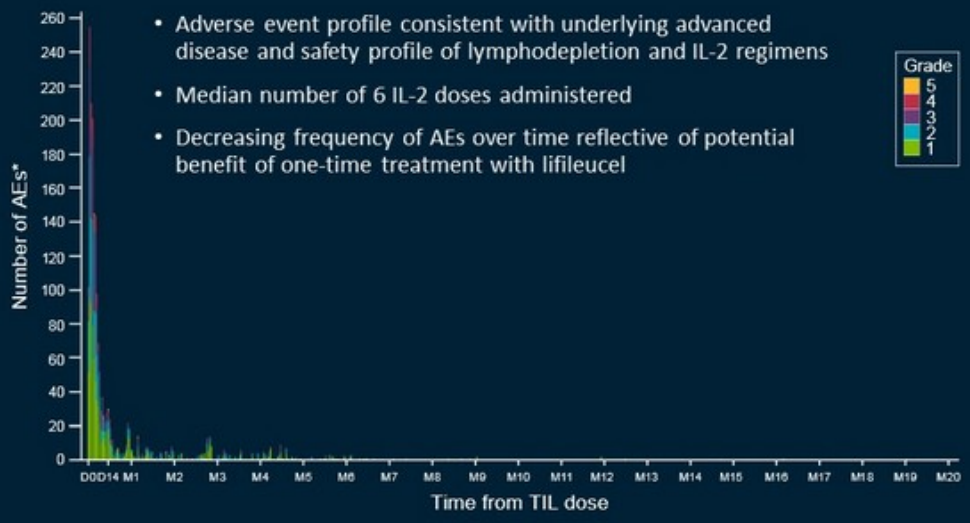
Adverse Events Tend to be Expected, Early and Transient

Frequency of AEs over time is reflective of potential benefit of one-time treatment with lifileucel



- Adverse event profile consistent with underlying advanced disease and safety profile of lymphodepletion and IL-2 regimens
- Median number of 6 IL-2 doses administered
- Decreasing frequency of AEs over time reflective of potential benefit of one-time treatment with lifileucel

Treatment Emergent Adverse Events (≥ 30%)

	Cohort 2 (N=66)		
Preferred term	Any Grade, n (%)	Grade 3/4, n (%)	Grade 5, n (%)
Number of patients reporting at least one Treatment-Emergent AE	66 (100)	64 (97.0)	2 (3.0)
Thrombocytopenia	59 (89.4)	54 (81.8)	0
Chills	53 (80.3)	4 (6.1)	0
Anemia	45 (68.2)	37 (56.1)	0
Pyrexia	39 (59.1)	11 (16.7)	0
Neutropenia	37 (56.1)	26 (39.4)	0
Febrile neutropenia	36 (54.5)	36 (54.5)	0
Hypophosphatemia	30 (45.5)	23 (34.8)	0
Leukopenia	28 (42.4)	23 (34.8)	0
Fatigue	26 (39.4)	1 (1.5)	0
Hypotension	24 (36.4)	7 (10.6)	0
Lymphopenia	23 (34.8)	21 (31.8)	0
Tachycardia	23 (34.8)	1 (1.5)	0

*The number of AEs is cumulative and represent the total number of patients dosed.
Treatment-Emergent Adverse Events refer to all AEs starting on or after the first dose date of TIL up to 30 days. Patients with multiple events for a given preferred term are counted only once using the maximum grade under each preferred term. Safety terms which describe the same medical condition were combined.

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Potentially Efficacious Treatment for Patients with Limited Options

In heavily pretreated metastatic melanoma patients (3.3 mean prior therapies)

- **ORR 36%**
- **DCR 80%**
- Mean TIL cells infused: 27.3 x 10^9
- ***Median DOR has not been reached at 28.1 months of study follow up (14 Dec 2020 data extract)***

Response	Patients, N=66 n (%)
Objective Response Rate	**24 (36.4)**
Complete Response	2 (3.0)
Partial Response	22 (33.3)
Stable Disease	29 (43.9)
Progressive Disease	9 (13.6)
Non-Evaluable(1)	4 (6.1)
Disease Control Rate	53 (80.3)

(1) Non-evaluable due to not reaching first assessment

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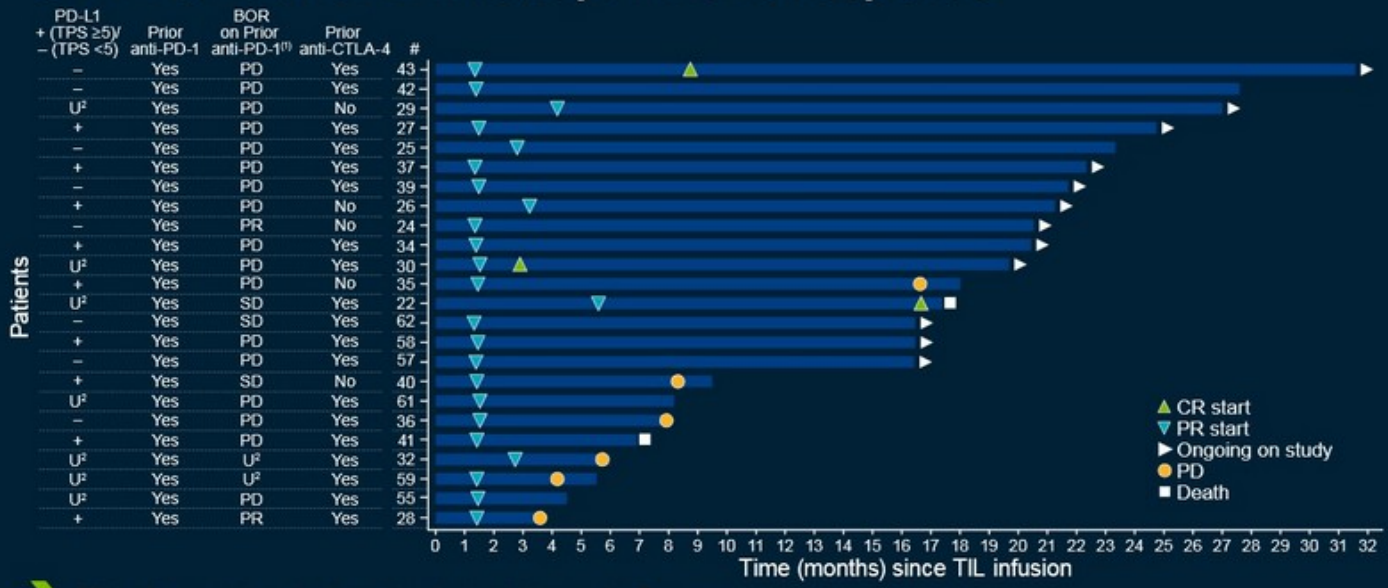
C-144-01 Cohort 2 Efficacy: Time to Response



79% of responders had received prior ipilimumab. Responses deepen over time.

(1) BOR is best overall response on prior anti-PD-1 immunotherapy. (2) U: unknown. (3) Patient 22 BOR is PR.

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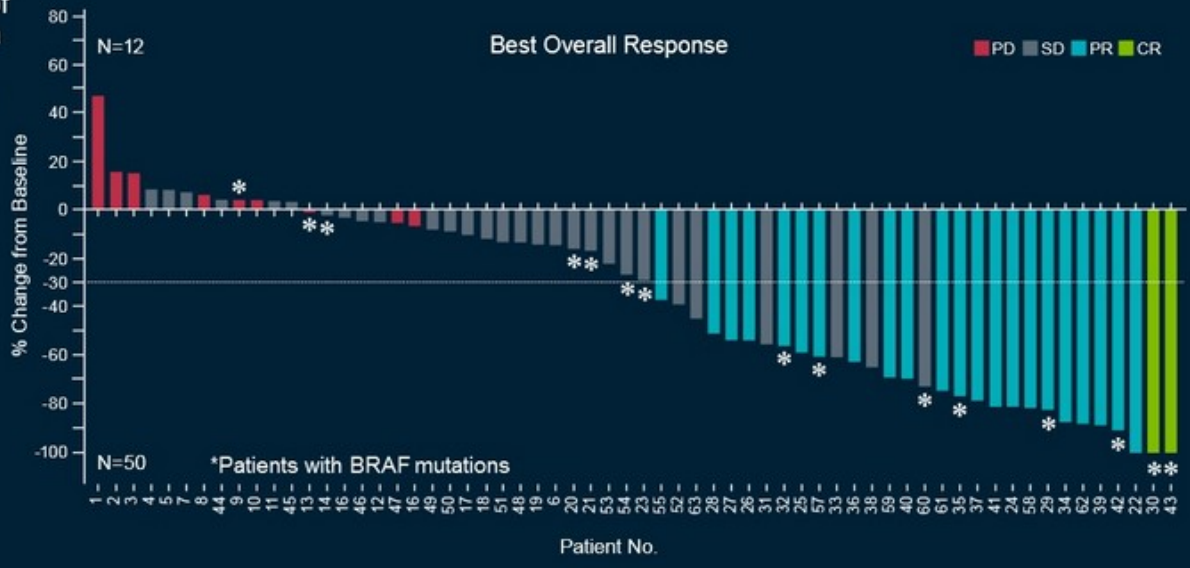
C-144-01 Cohort 2 Efficacy: Best Overall Response

- 81% (50/62) of patients had a reduction in tumor burden

- Mean Time to response 1.9 months (range 1.3-5.6)
- Responses are deep



Three subjects had no post TIL disease assessment due to early death, and one due to start of new anti-cancer therapy.

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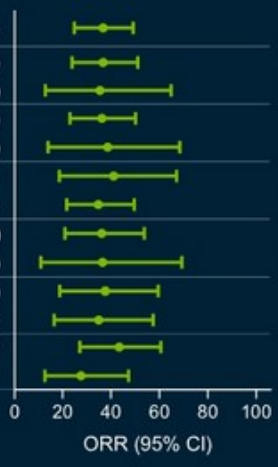
C-144-01 Cohort 2 ORR By Subgroup

Subgroup		n/N	ORR	95% CI
Overall		24/66	36.4	(24.9, 49.1)
Age Group	<65	19/52	36.5	(23.6, 51.0)
	≥65	5/14	35.7	(12.8, 64.9)
Prior Anti-CTLA-4 Use	Yes	19/53	35.8	(23.1, 50.2)
	No	5/13	38.5	(13.9, 68.4)
BRAF Mutation Status	V600 or V600K Mutated	7/17	41.2	(18.4, 67.1)
	Non-mutated	17/49	34.7	(21.7, 49.6)
PD-L1 Status (TPS ≥1% vs <1%)	≥1%	13/36	36.1	(20.8, 53.8)
	<1%	4/11	36.4	(10.9, 69.2)
PD-L1 Status (TPS ≥5% vs <5%)	≥5%	9/24	37.5	(18.8, 59.4)
	<5%	8/23	34.8	(16.4, 57.3)
Baseline ECOG	0	16/37	43.2	(27.1, 60.5)
	≥1	8/29	27.6	(12.7, 47.2)



Responses were demonstrated:

- Across a wide age range
- Even in patients who have progressed on prior anti-CTLA-4 or prior BRAF
- Regardless of the BRAF mutational status
- Equally in patients with PD-L1 low or high levels

CI, Confidence interval.
95% CI is calculated using the Clopper-Pearson Exact test.

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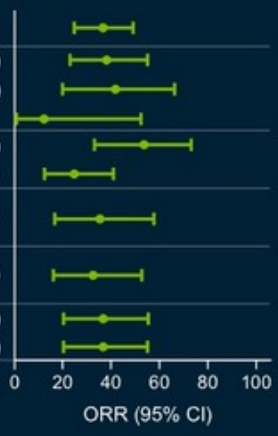
C-144-01 Cohort 2 ORR By Subgroup

Subgroup		n/N	ORR	95% CI
Overall		24/66	36.4	(24.9, 49.1)
Baseline Lactate Dehydrogenase	≤ ULN	15/39	38.5	(23.4, 55.4)
	1-2 x ULN	8/19	42.1	(20.3, 66.5)
	>2 x ULN	1/8	12.5	(0.3, 52.7)
Baseline Target Lesion Sum of Diameters	<70 mm	14/26	53.8	(33.4, 73.4)
	≥70 mm	10/40	25.0	(12.7, 41.2)
Patients with Baseline Liver Lesion		8/23	34.8	(16.4, 57.3)
Patients with Baseline Brain and/or Liver Lesion		9/28	32.1	(15.9, 52.4)
Time from Stop of Anti-PD-1/ PD-L1 to TIL Infustion	≤ median (4.76 months)	12/33	36.4	(20.4, 54.9)
	> median (4.76 months)	12/33	36.4	(20.4, 54.9)



Responses were demonstrated:

- In patients with elevated LDH (1-2x)
- In patients with bulky disease at baseline
- Patients with lesions in liver and/or brain
- Patients post anti-PD-1 regardless of duration of time from the patient's last anti-PD-1/L1

ULN, Upper Limit Normal; CI, Confidence interval.
95% CI is calculated using the Clopper-Pearson Exact test.

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C-144-01 Cohort 2: Conclusions

- In heavily pretreated metastatic melanoma patients with high baseline disease burden who progressed on multiple prior therapies, including anti-PD-1 and BRAF/MEK inhibitors, if BRAFV600 mutant, lifileucel treatment results in:
  - 36.4% ORR
  - 80.3% DCR
  - Median DOR was still not reached at 28.1 months of median study follow up (Dec 2020 update)
- Responses deepen over time

› Lifileucel has demonstrated potential efficacy and durability of response for patients with metastatic melanoma regardless of prior therapy with immune checkpoint therapies, or BRAF status.

IOVANCE

Late Stage (2L/3L) Melanoma Treatment Development Efforts

2L/3L melanoma treatment has no current standard of care

	Agent	ORR % (N)	Current Development Status	Prior Lines of Tx	Patient Characteristics
Combination with Anti-PD-1	**Checkpoints**				
	LAG-3 + nivo (BMS)	12% (N=61)[1]	Multiple 1L studies	1+	All comers, ECOG ≤2 • LAG-3 expression ≥1% (N=33) ORR=18%; • LAG-3 expression <1% (N=22) ORR=5%
	TLR9 agonists, TKI, oncolytic virus				
	IMO-2125 (Idera) + ipi	22% (N=62)[2]	Phase 3, post-PD-1 melanoma ILLUMINATE 204	1-3	ECOG ≤1, intratumoral injection mDOR was 11.4 months, mOS 10.1 mons
	CMP-001 (CheckMate) + pembro	23.5% (N=98)[3]	Phase 1b	1+	PD or SD (>12 wks) on prior anti-PD-1 Monotherapy CMP-001: ORR: 11.5%-17.5% mDOR: 5.6 mons
	Lenvatinib + pembro	21.4% (N=103)[4]	Phase 2	1+	mDOR: 6.3 mons mOS: 13.9 months
	RP1 (Replimune) + nivolumab	31% (N=16)[5]	Phase 2	1+	
Single Agent	**Cytokines**				
	HD IL-2	8% (N=9)[6]		1+	HD IL-2 post anti-PD1
	Cell therapy				
	TIL	**36.4% (N=66)[7]**	**Phase 2, Cohort 2**	**3.3**	**All post anti-PD1, 80% post anti-CTLA-4**

[1] Ascierto P et al., ESMO 2017; [2] Diab, et al., ESMO 2020; [3] Milhem M et al., SITC 2020; [4] Fernandez et al., ESMO 2020, LBA44; [5] Replimune Corp Deck, Oct 2020; [6] Buchbinder EI et al., JCO 2017; [7] Sarnaik et al., SITC 2019

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Cervical Cancer

Potential Market for Cervical Cancer

> *"TIL immunotherapy with lifileucel is literally redefining what is treatable and potentially curable in advanced metastatic chemo-refractory cervical cancer. Patients who only two years ago would be facing hospice as their only alternative now have access to this potentially life extending new treatment. This is the most exciting news in this field in decades."*

— Amir Jazaeri, M.D.
Director of the Gynecologic Cancer Immunotherapy Program in the Department of Gynecologic Oncology and Reproductive Medicine at MD Anderson

Cervical Cancer Facts

601k New Cases WW each year[1]

260k Deaths WW each year[1]

14k Diagnoses in U.S. each year[2]

4k Deaths in U.S. each year[2]

Available care:
Chemo -therapy
as first line option

For PD-L1 + patients, post-chemo receiving Keytruda[3]
ORR 14.3%
Third line patients:
ORR 3.4% [6]

Available Care
for chemotherapy in 2L or 3L metastatic cervical patients
3.4 - 13%[4-6]

[1] JAMA Oncol. 2019;5(12):1749-1768. doi:10.1001/jamaoncol.2019.2996.
[2] https://seer.cancer.gov
[3] https://www.merck.com/product/usa/pi_circulars/k/keytruda/keytruda_pi.pdf
[4] Schilder et al., Gynecologic Oncology 2005.
[5] Weiss, et al., A phase II trial of carboplatin for recurrent or metastatic squamous carcinoma of the uterine cervix: A Southwest Oncology Group Study.
[6] McLachlan, Clin Onc., 2017, 29, 153-160.

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Pivotal Phase 2 Study of TIL Therapy Lifileucel (Formerly LN-145) in Recurrent, Metastatic or Persistent Cervical Carcinoma

Endpoints

- Primary: ORR as determined by IRC
- Secondary: safety and efficacy

Study Updates

- 3Q 2020: Last patient dosed in Cohort 1
- 1Q 2021: Enrollment closed in Cohort 2- may be supportive of registration due to changing landscape of care

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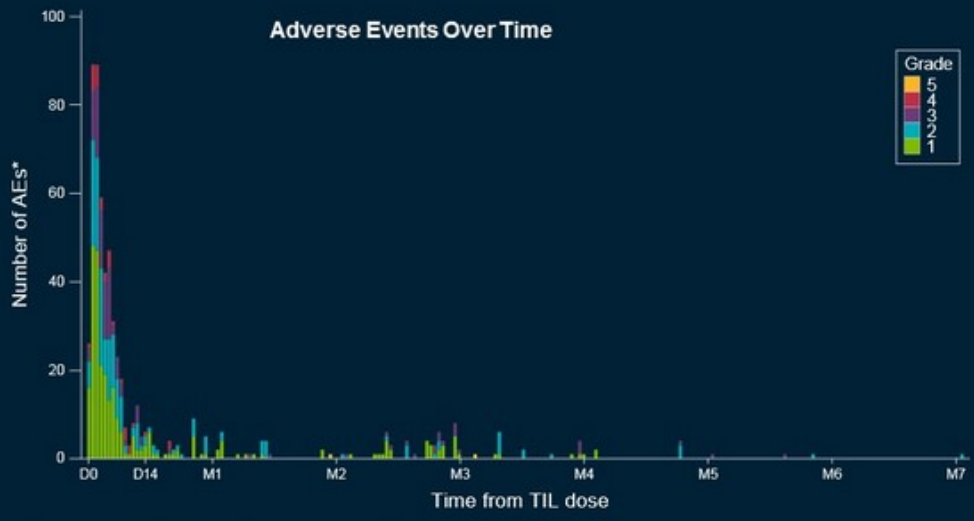
Adverse Events Tend to be Early and Transient

Frequency of AEs over time is reflective of potential benefit of one-time treatment with TIL (lifileucel)



Preferred Term	(N=27) Any Grade, n (%)	Grade 3/4, n (%)	Grade 5, n (%)
Number of patients reporting at least one Treatment-Emergent AE**	27 (100)	26 (96.3)	0
Chills	21 (77.8)	0	0
Anemia	15 (55.6)	15 (55.6)	0
Diarrhea	14 (51.9)	2 (7.4)	0
Pyrexia	14 (51.9)	1 (3.7)	0
Thrombocytopenia	14 (51.9)	12 (44.4)	0
Neutropenia	11 (40.7)	8 (29.6)	0
Vomiting	11 (40.7)	1 (3.7)	0
Hypotension	10 (37.0)	4 (14.8)	0
Dyspnea	9 (33.3)	1 (3.7)	0
Febrile neutropenia	9 (33.3)	8 (29.6)	0
Hypoxia	9 (33.3)	3 (11.1)	0
Leukopenia	9 (33.3)	6 (22.2)	0
Hypomagnesemia	8 (29.6)	0	0
Sinus tachycardia	8 (29.6)	0	0

*The number of AEs is cumulative and represent the total number of patients dosed.
Treatment-Emergent Adverse Events refer to all AEs starting on or after the first dose date of TIL up to 30 days. Patients with multiple events for a given preferred term are counted only once using the maximum grade under each preferred term. Safety terms which describe the same medical condition were combined.

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Significant Response Observed in Heavily Pretreated Patients

Baseline Demographics	N=27 (%)
Prior therapies	
Mean # prior therapies	2.4
Platinum-based	27 (100)
Taxane	26 (96)
Anti-VEGF	22 (82)
PD-1/PD-L-1	4 (15%)
Target lesions sum of diameter (mm)	
Mean (SD)	61 (38)
Min, Max	10, 165
Histologic Cell Type, n (%)	
Squamous Cell Carcinoma	12 (44)
Adenocarcinoma	12 (44)
Adenosquamous Carcinoma	3 (11)
Number of target & non-target lesions (at baseline)	
>3	17 (63)
Mean (min,max)	4 (1,9)

Responses	N=27 (%)
Objective Response Rate	**12 (44%)**
Complete Response	3 (11%)
Partial Response	9 (33%)
Stable Disease	11 (41%)
Progressive Disease	4 (15%)
Non-Evaluable	0
Disease Control Rate	23 (85%)

- **Median DOR not reached at 7.4 months median follow up**
- Adverse event profile consistent with underlying advanced disease and safety profile of lymphodepletion and IL-2
- Mean TIL cells infused: **28×10^9**
- Median number of IL-2 doses: 6.0

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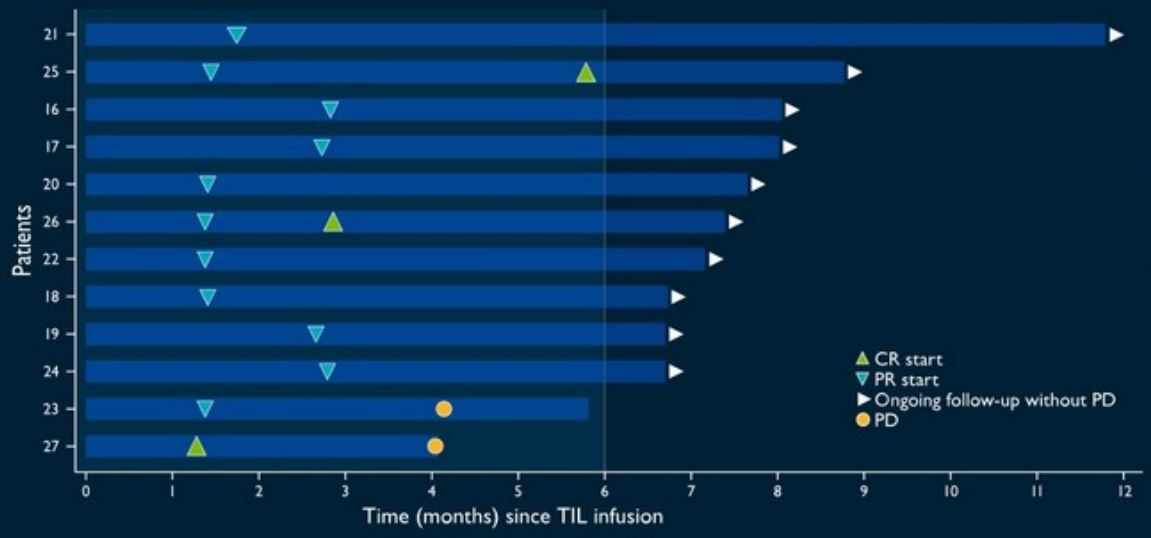
Responses Observed Early On and Consistent with Melanoma

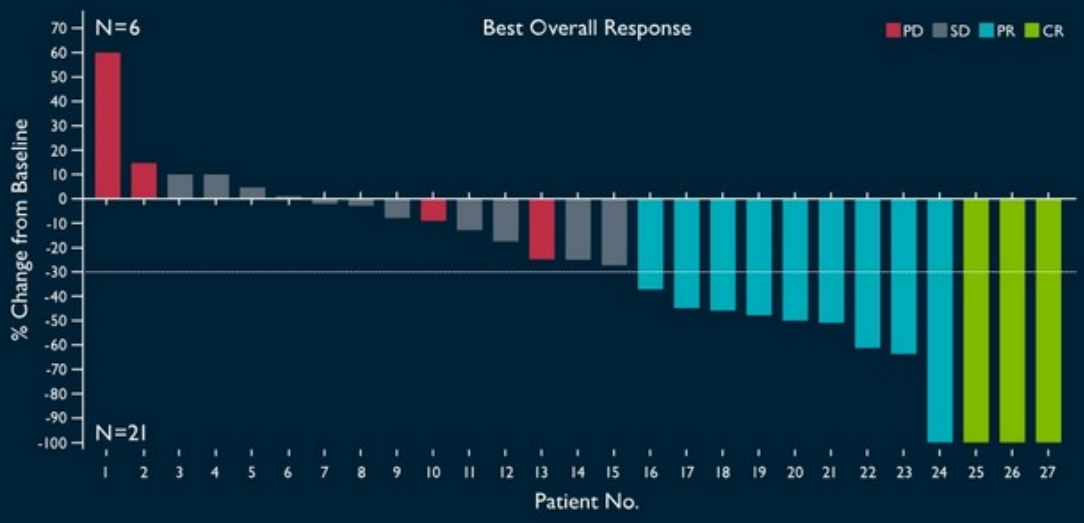
Lifileucel time to response and current duration for evaluable patients (partial response or better)



- Mean time to first response 1.9 months
- Mean time to best response 2.4 months

Three Complete Responses Observed with Lifileucel

Lifileucel best overall response rate



- 78% of patients had a reduction in tumor burden
- Mean time to response 1.9 months
- All assessments are by RECIST 1.1
- Responses are deep

IOVANCE

Development Efforts in Recurrent, Metastatic or Persistent Cervical Carcinoma

Recurrent, metastatic, or persistent cervical carcinoma has no current standard of care

Agent	ORR % (N)	Current Dev Status	Prior Line of Tx	Patient Characteristics
Antibody-drug conjugate				
tisotumab vedotin (TV) (Genmab/Seagen)	24% (N=101)[1]	Phase 2	1+	Recurrent or metastatic cervical cancer that progressed on standard therapy mDOR= 8.3 mons, mOS= 12.1 mons
Anti-PD-1 or combination with anti-CTLA4				
Balstilimab (Agenus)	14% (N=160)[2]	Phase 2	1+	Patients must have relapsed after a platinum-containing doublet administered for treatment of advanced disease, median DOR=15.4 months
Balstilimab + Zalifrelimab	22% (N=143)[2]	Phase 2	1+	
cemiplimab (Regeneron)	10% (N=10)[3]	Phase 3	2+	Recurrent or metastatic cervical cancer resistant to, or intolerant of, platinum therapy
Cell therapies				
TIL (lifileucel)	**44% (N=27)**	**Phase 2**	**2.4 (mean)**	**mDOR not reached at median study follow up of 7.4 mons**

[1] Coleman, et al., ESMO 2020; [2] O'Malley, et al. ESMO 2020; [3] Rischin, et al. ESMO 2018.

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HNSCC & NSCLC

IOV-COM-202: Global Phase 2 Study of TIL Therapy in Solid Tumors (NCT03645928)

A Phase 2, multicenter study of autologous Tumor Infiltrating Lymphocytes in patients with solid tumors

1A: Melanoma
PD-1/ PD-L1 Naïve
LN-144 + Pembrolizumab
N=12

1B: Melanoma
≥ 1 prior systemic therapies
LN-145-S1
N up to 27 (Simon's two-stage)

1C: Melanoma
≥ 1 prior systemic therapies
LN-144 Gen 3
N up to 27 (Simon's two-stage)

2A:Head and Neck
PD-1/ PD-L1 Naïve
LN-145 + Pembrolizumab
N=19

3A: NSCLC
PD-1/ PD-L1 Naïve
LN-145 + Pembrolizumab
N=12

3B: NSCLC
≥ 1 prior systemic therapies
LN-145
N=12

3C: NSCLC
1 prior systemic therapy
TIL+ ipi/nivo,
N up to 26 (Simon's two stage)

Endpoints

- Primary: Efficacy and safety: ORR (RECIST 1.1) assessed by investigator
- Secondary: Additional efficacy

Study Updates

- Additional cohorts 1C and 3C were added to the study
- Sample size for cohort 2A was increased

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Head and Neck Squamous Cell Carcinoma (HNSCC)

Potential Market for Head and Neck Squamous Cell Carcinoma (HNSCC)

> *"The majority of patients did experience a tumor shrinkage that in some cases met the criteria for an objective response. It is hard to generalize from such a small cohort, but with that caveat complete responses are relatively rare with PD-1 inhibition alone based on what has been reported in PD-1 inhibitor fist-line trials in PD-1 naïve patients with head and neck carcinoma."*
>
> — Antonio Jimeno M.D., Ph.D.
> Professor of Medicine/Oncology and Otolaryngology University of Colorado School of Medicine

HNSCC Facts

890k	**New Cases WW** each year(1)	**507k**	**Deaths WW** each year(1)
66k	**Diagnoses in U.S.** each year(2)	**15k**	**Deaths in U.S.** each year(2)

Available Care (NCCN)	ORR	DOR
First Line		
Anti PD-1 antibody(3)	16%	22.6 months
Anti PD-1 antibody + Chemo(3)	36%	6.7 months
Chemotherapy (EXTREME)(4)	36%	5.6 months
Second Line		
Anti PD-1 antibody(5)	16%	8 months

Abbreviations: ORR, objective response rate; TIL, tumor infiltrating lymphocytes.
(1) *JAMA Oncol.* 2019;5(12):1749-1768. doi:10.1001/jamaoncol.2019.2996. (2) https://seer.cancer.gov/statfacts/html/oralcav.html and https://seer.cancer.gov/statfacts/html/larvn.html
(3) Keytruda USPI and Szturz, P. et al., *Ann Transl Med*, 2020, 8 (15), 975. (4) Vermorken, J. B. et al., *NEJM*, 2008, 359, 1116. (5) Baum, et al., *J Clin Oncol.* 2017, 10;35(14):1542-1549.

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LN-145 in Anti-PD-1 Naive HNSCC: Cohort 2A

TEAE consistent with other indications

Efficacy (N=9) [1]

ORR=44% (11% CR and 33% PR)

DCR=89%

[1] Jimeno, et. al., Safety and efficacy of tumor infiltrating lymphocyte (TIL; LN-145) in combination with pembrolizumab for advanced, recurrent or metastatic HNSCC, SITC 2020, Abstract #353

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Non-Small Cell Lung Cancer (NSCLC)

Potential Market for Non-Small Cell Lung Cancer (NSCLC)

Addressing a Defined Unmet Need in Second Line NSCLC

"We're excited about carrying TILs further in lung cancer."

"Despite progression on nivolumab, we did see a decrease in tumor size for many patients, and the ORR was in around one-quarter of patients, and perhaps in a one-third of patients if our unconfirmed PR is confirmed…Clonotype and phenotype analyses suggested good persistence of the transferred TILs—going out to several months."

— Ben Creelan, M.D.
Thoracic Oncology Program at Moffitt Cancer Center

*OncLive, AACR 2020
"TIL Therapy Elicits Encouraging Activity in Advanced NSCLC"

Lung Cancer Facts

2.1M New Cases WW each year[1]

1.8M Deaths WW each year[1]

229k Diagnoses in U.S. each year[2]

136k Deaths in U.S. each year[2]

Available NSCLC care:
Checkpoint Inhibitor + Chemo
as first line option

9% ORR for docetaxel in 2L NSCLC following progression on chemo[3]

(1) JAMA Oncol. 2019; 5 (12):1749-1768. doi:10.1001/jamaoncol.2019.2996.
(2) https://seer.cancer.gov
(3) Brahmer J, et al., NEJM, 2015; 373 (2): 123-35.

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Efficacy Data Post Moffitt TIL Infusion

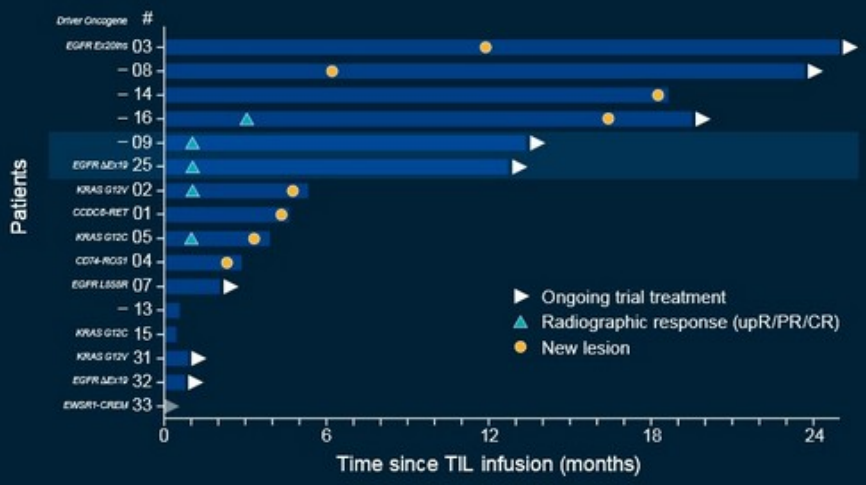
Responses	N=12 (%)
Objective Response Rate	**3 (25%)**
Complete Response	2 (17%)
Partial Response	1 (8%)

- **ORR 25%;**
  - 1 CR is noted in $EGFR^{\Delta Ex19}$ post afatinib, osimertinib, nivolumab
  - 1 additional uPR may confirm to increase the ORR to 33%
- **Median DOR not reached;**
  - All 3 responders on TIL were relapsed or refractory to monotherapy Nivo
  - The TIL CR responses were ongoing
  - 2/3 responders were PD-L1 low (TPS<5%)

Moffitt TIL in Post-Nivolumab NSCLC

Nivolumab and Tumor Infiltrating Lymphocytes (TIL) in Advanced Non-Small Cell Lung Cancer (NCT03215810)

Post-TIL



In 12 evaluable patients with advanced NSCLC who received nivolumab and TIL:

- Two CRs out to one year
  - (PD-L1 low=1, EGFR mutation=1)
- ORR 25%

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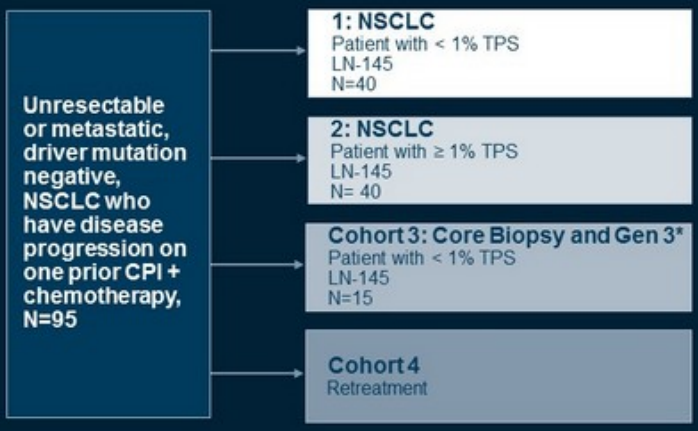
IOV-LUN-202

Phase 2, multicenter study of LN-145 in Patients with Metastatic Non-Small-Cell Lung Cancer, IOV-LUN-202 (NCT04614103)



Endpoints:

- Primary: Efficacy defined as ORR by IRC
- Secondary: Safety and efficacy

Study Updates

- Two sites are active

*Cohort 3 patients unable to undergo surgical harvest, TIL grown from core biopsy

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Research Focus into Next Generation TIL

Expand the TIL platform into new indications/regimens

- IOV-3001 IL-2 analog licensed from Novartis: IND enabling studies in 2021

Select more potent TIL

- Iovance PD-1 positive selected TIL
- PD-1 positive selected TIL also through collaboration with CHUM

Genetically modify to make a more tumor-reactive TIL

- Cellectis TALEN® collaboration agreement in place to support a clinical program (ESMO 2020)

Process optimization

- Gen 3 (16-day) process (COM-202)
- Core biopsy (LUN-202 study)

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Iovance Global Reach and Scale

Iovance Biotherapeutics has ~250 employees

- >76% of employees have over 1 year of cell therapy experience
- Headquartered in San Carlos, CA
- 3 additional offices
- Iovance commercial manufacturing facility in Philadelphia, PA

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Well Capitalized in Pursuit of TIL Commercialization

September 30, 2020	In millions (unaudited)
Common shares outstanding	146.6[1]
Preferred shares outstanding	3.6[2]
Options	12.8
Cash, cash equivalents, short-term investments, restricted cash	$719.7[3]
Anticipated year-end cash balance	>$630[3]
Debt	$0

[1] Includes June 2020 offering of 19,475,806 shares of common stock.
[2] Preferred shares are shown on an as-converted basis.
[3] Includes Restricted Cash of $5.5 million.

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Thank You