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): April 9, 2021

IOVANCE BIOTHERAPEUTICS, INC. (Exact Name of Registrant as Specified in Charter)

Delawa	ire .
(State of Incor	poration)
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 Numb	er, 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:
$\hfill \Box$ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425).	
$\hfill \Box$ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12).	
$\begin{tabular}{ll} \Box & Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b)). \end{tabular}$	
$\begin{tabular}{ll} \Box & Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c)). \end{tabular}$	
Indicate by check mark whether the registrant is an emerging growth company as defined in as defined in Rule 405 of th ($\$240.12b-2$ of this chapter). Emerging growth company \square	e Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934
If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition per the Exchange Act. \Box	eriod for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of

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 \$0.00041666 per value	IOVA	The Nasdaq Stock Market, LLC

Item 8.01 Other Events.

On April 12, 2021, Iovance Biotherapeutics, Inc. (the "Company") updated its corporate slide deck 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.

On April 9, 2021, the Company issued a press release announcing updated clinical data from Cohort 2 in its C-144-01 study of lifileucel in advanced melanoma, which will be part of an oral presentation in a clinical trials plenary session at the American Association for Cancer Research (AACR) 2021 Annual Meeting. The full text of the press release is attached hereto as Exhibit 99.2 and incorporated herein by reference.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

 Exhibit No.
 Description

 99.1
 Iovance Biotherapeutics. Inc., Corporate Presentation – April 2021.

 99.2
 Press Release of Iovance Biotherapeutics, Inc., dated April 9, 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: April 12, 2021 IOVANCE BIOTHERAPEUTICS, INC.

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



Forward Looking Statements

Certain matters discussed in this presentation are "forward-looking statements" of lovance 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. Forwardlooking 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.



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Iovance: Developing to commercialize TIL Cell Therapy 400+ Patients Treated with Iovance TIL Using Proprietary Process



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 non-small cell lung carcinoma (NSCLC)
- Combinations with immune-checkpoint inhibitors in earlier lines
- Academic collaborations in new indications



Assets



• ~\$635M cash (12/31/20)

- Global rights to all programs, IP and technology
- lovance manufacturing facility (iCTC)



MDAnderson Cancer Network™







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Investment Highlights

Leading cell therapy company focused on treatment of solid tumors



- Initial focus in post-checkpoint solid tumors
- Expansion into combinations and earlier lines of therapy
- Five company-sponsored programs in melanoma, cervical, head & neck, NSCLC, and chronic lymphocytic leukemia (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 submission expected 2021
- Melanoma: RMAT, Orphan Drug, and Fast Track
- Cervical: BTD, Orphan Drug, and Fast Track

Efficient & scalable proprietary manufacturing

- US and EU capacity with contract manufacturers
- lovance Cell Therapy Center (iCTC) under construction in Philadelphia
- Rapid 22-day Gen 2 manufacturing with 90%+ success rate
- 400+ patients treated with lovance proprietary process

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2020 Accomplishments; Anticipated 2021 Milestones

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

2019: Melanoma Data update at SITC ••

Melanoma Cohort 2 showed 36.4% ORR

by investigator and

34.8% ORR

as read by independent review committee (IRC) (N=66) April 2021: Updated Cohort 2 Data at AACR Plenary Session⁽²⁾

36.4% ORR

by investigator

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

Responses deepened over time

(1) Sarnaik et al., SITC 2019 (2) Chesney, et. al. AACR 2021. Abstract #5329. Presentation #CT008



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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)

Lymphodepletion & Infusion

Remove Tumor Sample

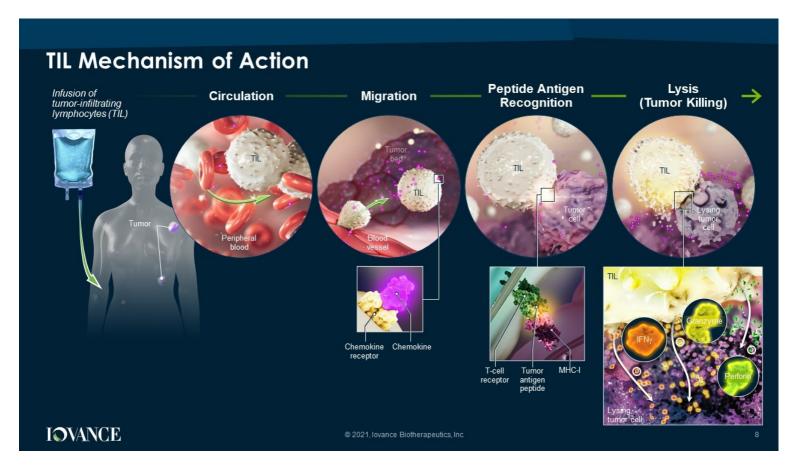
Expand & Rejuvenate Patient-specific T Cells

Simpson-Abelson et al., ESMO 2020



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30.



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 tumor 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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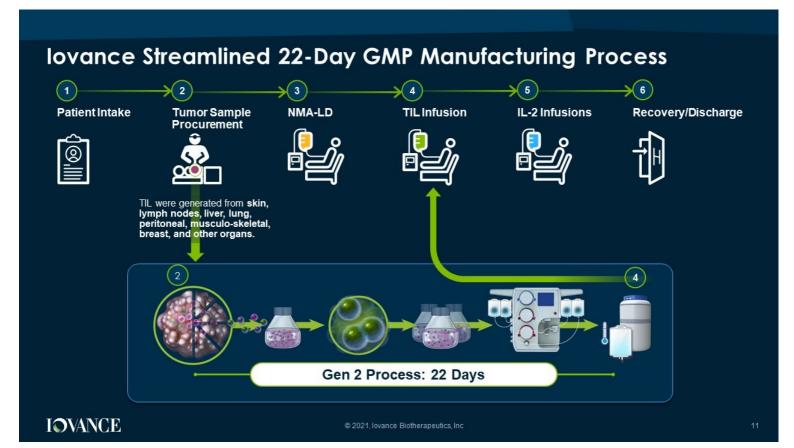
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Manufacturing Process

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lovance Cell Therapy Center: iCTC



- Build-to-suit custom facility in Philadelphia
- ~136,000 ft², \$85M investment
- First set of clean rooms occupied
- Clinical supply planned in 2021
- Commercial GMP planned 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

Clinical, Manufacturing, and Regulatory

Registration & Commercialization

2011

TIL therapy conducted by Steven Rosenberg/NCI published promising results in melanoma^(1,2)

2016

Melanoma: First patient dosed for Gen 1 lifileucel

Gen 2 manufacturing developed and transferred to CMOs

2017

Melanoma: FDA Fast Track designation for lifileucel received

Cervical and head and neck studies began

2018

Melanoma: Lifileucel Cohort 2 clinical data (N=47, 38% ORR by investigator)

Melanoma: FDA RMAT designation for lifileucel in advanced melanoma received

Melanoma: FDA EOP2 meeting for lifileucel held

2019

Melanoma: First patient dosed in registrational cohort

Melanoma: IRC data from Cohort 2 presented (35% ORR)

Cervical: FDA Fast Track and BTD received, EOP2 held

2020

Melanoma: Last patient dosed in pivotal cohort 4

Cervical: Last patient dosed in the pivotal Cohort 1

NSCLC: Moffitt TIL shows durable CRs in post-PD1 NSCLC

HNSCC: First TIL + pembro data at SITC

2021

Melanoma: Continue discussions with US FDA about potency assays

Cervical: Fully enroll Cohort 2. Meet with FDA to discuss the program.

NSCLC and head and neck: New Cohort for NSCLC with TIL + ipi/nivo; expansion of head and neck combination with TIL+ pembro cohort

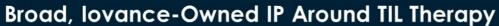
Pre-BLA meeting with FDA

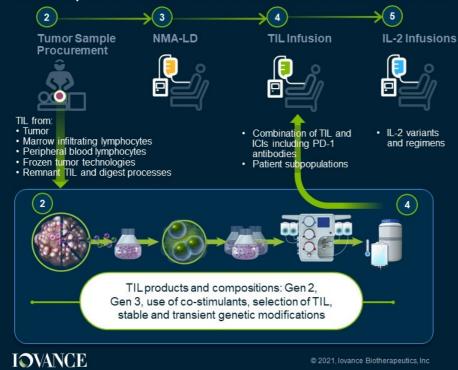
BLA submission for lifileucel

(1) Rosenberg et al., Clin Cancer Res 2011 (2) Goff et al., J Clin Oncol 2016



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- √ >25 granted or allowed US and international patents
- ✓ Compositions of matter for TIL products
- ✓ Methods of treatment in a broad range of cancers
- ✓ Manufacturing processes

Significant Market Potential in Solid Tumors

Expandinto other indications

90% of all cancer cases are solid tumors

1.6 M New cases of solid tumors in the U.S.⁽¹⁾ Move into earlier line of therapy

Solid Tumor Indication	Deaths ⁽¹⁾	New Cases ⁽¹⁾
Solid fullior indication	Deaths. /	New Cases.
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.accessed March 2021



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Current Clinical Pipeline and Select Collaboration Studies

	Regimen	Trial	Indication	N	Partner	Phase 1	Phase 2	Pivotal
	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				
Company sponsored studies	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	MDA TIL	NCT03610490	Ovarian, colorectal, pancreatic	~54	MDAnderson Cancer Network			
sponsored proof-of-concept studies	LN-145	NCT03449108	Ovarian, sarcomas, thyroid	~54	MDAnderson Cancer Network			
	Moffitt TIL + nivolumab	NCT03215810	Non-small cell lung	20	MOFFITT (1)			

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 inufacturing 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

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Potential Market for Metastatic Melanoma

- Estimated 7,000⁽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 62k Deaths WW **New Cases WW** 309k each year(3) each year(3) **7k** Deaths... each year⁽¹⁾ Diagnoses in U.S. Deaths in U.S. 100k each year(1) BRAF/MEK 1st line: Chemotherapy inhibitors for ORR 4-10%(2) **Immuno BRAF** OS ~7-8 mons(4) -therapy positive





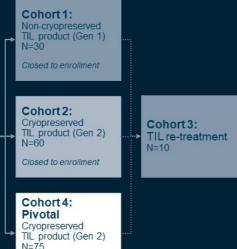
⁽¹⁾ https://seer.cancer.gov accessed March 2021 (2) Keytruda USPI accessed Mar 2021 (4%) and Weber et al., Lancet Oncol 2015 (ICC 10%) (3) Global Burden of Disease Cancer Collaboration, JAMA Oncol 2019 (4) Kirchburger et al., Eur J Cancer 2016 and Goldinger et al., J Clin Oncol 2018

C-144-01: Phase 2 Study Design

Closed to enrollment

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

Unresectable or metastatic melanoma treated with 1 systemic prior therapy including a PD-1 blocking antibody and if BRAF V600 mutation positive, a BRAF or BRAF/MEK



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
 - · April 2021: updated cohort 2 data at AACR
 - Data Extract: 14 Dec 2020 for Cohort 2

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C-144-01 Cohort 2 Patient Characteristics

Characteristics	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 / anti-PD-L1	66 (100)
anti-CTLA-4 ¹	53 (80)
BRAFi/MEKi	15 (23)
Progressive Disease for at least 1 prior ther	apy, n (%)
Anti-PD-1	65 (99)
Anti-CTLA-4	41 (77 ⁽¹⁾)
Baseline ECOG score, n (%)	
0	37 (56)
1	29 (44)

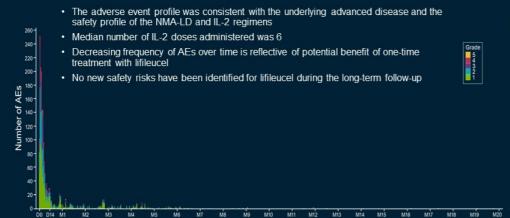
Cohort	2 pa	tient	s have	i
Conton	LPU	COLLE	Jiluito	•

- 3.3 mean prior therapies, ranging from 1-9
 High tumor burden at baseline

Chamastanistia	Cahart 2 Nacc
Characteristic	Cohort 2, N=66
BRAF Status, n (%)	
Mutated V600E or V600K	17 (26)
Wild Type	45 (68)
Unknown	3 (5)
Other	1 (2)
Tumor PD-L1 expression, n (%)	
PD-L1 Positive (TPS ≥ 5%)	23 (35)
PD-L1 Negative (TPS < 5%)	26 (39)
Baseline LDH (U/L)	
Median	244
1-2 times ULN, n (%)	19 (29)
> 2 times ULN, n (%)	8 (12)
Target Lesions Sum of Diameter (mm)	
Mean (SD)	106 (71)
Min, Max	11, 343
Number of Target and Non-Target Lesions (at Base	eline)
>3, n (%)	51 (77)
Mean (SD)	6 (2.7)
Liver and/or Brain Lesions n (%)	28 (42)



Iovance C-144-01 Cohort 2 Safety: Treatment Emergent Adverse Events (≥ 30%)



Time from TIL dose

	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		

*One death was due to intra-abdominal hemorrhage considered possibly related to TIL, second was due to acute respiratory failure assessed as not related to TIL per Investigator assessment.

— Patients with multiple events for a given preferred term are counted only once using the maximum grade under each preferred term

— Treatment-Emergent Adverse Events refer to all AEs starting on or after the first dose date of TIL up to 30 days





C-144-01 Cohort 2 Efficacy

- After a median study follow-up of 28.1 months, median DOR was still not reached (range 2.2, 35.2+)
- Mean number of TIL cells infused: 27.3 x 109
- Responses were demonstrated:
 - In patients who received prior anti-CTLA-4 or BRAF/MEK inhibitors
 - · Regardless of BRAF mutational status
 - Regardless of Tumor PD-L1 expression
 - In patients with various LDH levels
 - In patients with various baseline tumor burden
 - · In patients with liver and/or brain lesions
 - Regardless of time from stop of anti-PD-1/L1 to TIL infusion

Response	Patients, n=66 N (%)
Objective Response Rate	24 (36.4)
Complete Response	3 (4.5)
Partial Response	21 (31.8)
Stable Disease	29 (43.9)
Progressive Disease	9 (13.6)
Non-Evaluable ⁽¹⁾	4 (6.1)
Disease Control Rate	53 (80.3)
Median Duration of Response	Not Reached
Min, Max (months)	2.2, 35.2+

Not evaluable (NE) due to not reaching first assessment



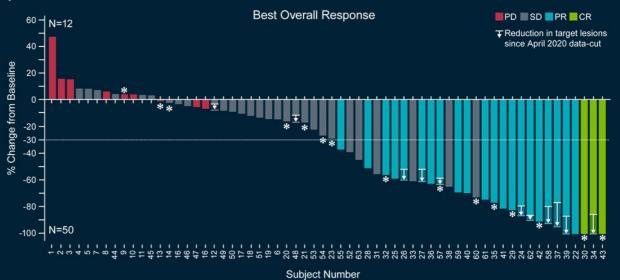
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C-144-01 Cohort 2 Efficacy

Best Overall Response

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

> 11 patients (17.7%) had further SOD reduction since previous data cut (23 April 2020) 8



*Patients with BRAF V600 mutation Three subjects had no post TIL disease assessment due to early death, and one due to start of new anti-cancer therapy

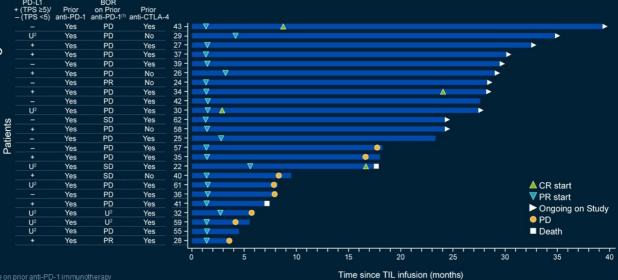


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C-144-01 Cohort 2 Efficacy

Time to Response for Evaluable Patients (PR or Better)

- > 79% of responders had received prior ipilimumab
- One PR
 converted
 to CR after
 24 months
 post-lifileucel



(1) BOR is best overall response on prior anti-PD-1 immunotherapy

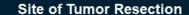
(3) Patient 22 BOR is PR

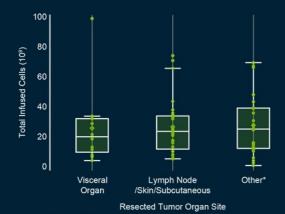


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C-144-01 Cohort 2 Biomarkers

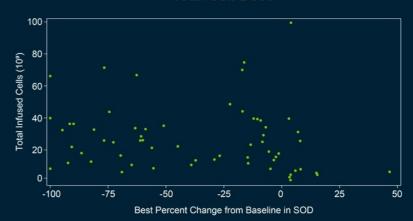
Site of Tumor Resection





Appropriate amount of TIL was manufactured from tumors regardless of location of resection

Total Cell Dose



Target lesion SOD reductions were seen across the range of TIL total cell dose



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C-144-01 Cohort 2: Conclusions

- In heavily pretreated metastatic melanoma patients who progressed on multiple prior therapies, including anti-PD-1 and BRAFi/MEKi, if BRAFV600 mutant, lifileucel treatment resulted in:
 - 36.4% ORR
 - · Median DOR not reached at 28.1 months of median study follow up
- · Responses deepened over time:
 - 11 patients (17.7%) demonstrated further reduction in SOD since prior data cut in April 2020
 - One patient converted from PR to CR at 24 months post lifileucel infusion
- · Lifilecuel was successfully manufactured regardless of the organ site of the resected tumor
- Target lesion SOD reduction were not associated with CD4+ or CD8+ cell doses
- Lifileucel has demonstrated efficacy and durability of response for patients with metastatic melanoma and represents a viable therapeutic option warranting further investigation



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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
	Checkpoints				
Anti-PD-1	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%
iti	TLR9 agonists, TKI, oncolytic virus				
	IMO-2125 (Idera) + ipi	8.8% (combination) 8.6% (ipilimumab alone) (N=481) (2)	Phase 3, post-PD-1 Primary endpoint (ORR) was not met		ECOG ≤1, intratumoral injection DCR (combination): 34.5%
Combination with	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
ŭ	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+	
ant	Cytokines				
Agent	HD IL-2	8% (N=9) ⁽⁶⁾		1+	HD IL-2 post anti-PD1
Single	Cell therapy				
Sin	TIL	36.4% (N=66) ⁽⁷⁾	Phase 2, Cohort 2	3.3	All post anti-PD1, 80% post anti-CTLA-4





Cervical Cancer

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Potential Market for Cervical Cancer

IIL 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⁾

14k Diagnoses in U.S. each year(2)

260k Deaths WW each year(1)

> 4k Deaths in each year⁽²⁾ Deaths in U.S.

Available care: Chemo -therapy as first line option For PD-L1+ patients, postchemo 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)



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Global Burden of Disease Cancer Collaboration, JAMA Oncol 2019
 https://seer.cancer.gov.accessed.Mar.2020
 Keytruda USPI accessed.Mar.2021
 Schilder et al., Gynecol Oncol 2005
 Weiss et al., Gynecol Oncol 1990
 McLachlan et al., Clin Oncol 2017

Pivotal Phase 2 Study of TIL Therapy Lifileucel (Formerly LN-145) in Recurrent, Metastatic or Persistent Cervical Carcinoma (NCT03108495)



Endpoints

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

Study Updates

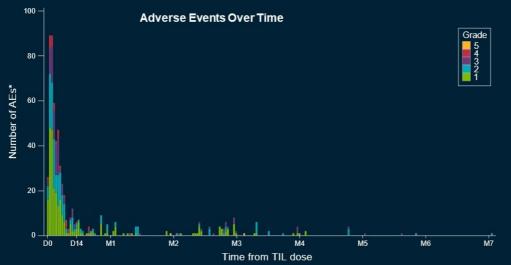
- · 3Q 2020: Last patient dosed in Cohort 1
- 1Q 2021: Enrollment closed and last patient dosed in Cohort 2 - may be supportive of registration due to changing landscape of care

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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)



	(N=27)		
Preferred Term	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
Нурохіа	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%)

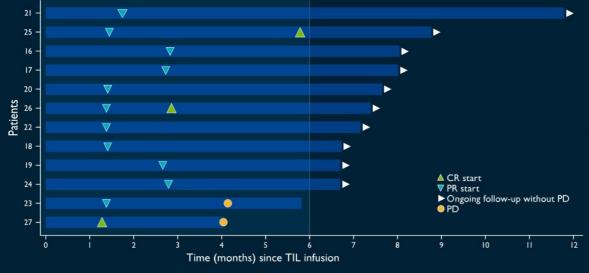
- Median DOR not reached at 7.4 months median follow up
- Adverse event profile consistent with underlying advanced disease and safety profile of lymphodepletion and IL-2
- Mean TIL cells infused: 28 x 109
- Median number of IL-2 doses: 6.0



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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

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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

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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 conjuga	te				
tisotumab vedotin (TV) (Genmab/Seagen)	24% (N=101) ⁽¹⁾	Phase 2	1+	Recurrent or metastatic cervical cancer that progressed on standard therapy ≤2 prior systemic regimens mDOR= 8.3 mons, mOS= 12.1 mons	
Anti-PD-1 alone 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 1 Phase 3 read out	2+	Recurrent or metastatic cervical cancer resistant to, or intolerant of, platinum therapy. Ph 3 mOS 12.0 mons	
Cell therapies					
TIL (lifileucel)	44% (N=27) ⁽⁴⁾	Phase 2	2.4 (mean)	mDOR not reached at median study follow up of 7.4 mons	

⁰ Coleman etal., ESMO 2020 ⁽²⁾ O'Malley etal., ESMO 20 ⁰ Rischin etal., ESMO 2018 ⁽⁴⁾ Jazaeri etal., ASCO 2019





HNSCC & NSCLC

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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 A Phase 2, N up to 27 (Simon's two-stage) multicenter study 2A:Head and Neck of autologous PD-1/ PD-L1 Naïve LN-145 + Pembrolizumab Tumor Infiltrating Lymphocytes in patients with solid 3A: NSCLC tumors PD-1/ PD-L1 Naïve LN-145 + Pembrolizumab 3B: NSCLC ≥ 1 prior systemic therapies LN-145 N=12 3C: NSCLC 1 prior systemic therapy LN-145 + 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 in 1Q21
- Sample size for cohort 2A was increased



Head and Neck Squamous Cell Carcinoma (HNSCC)

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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.

— 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)						
Available C	Care (NCCN)	ORR	DOR			
Available C	Care (NCCN)	ORR	DOR			
		ORR 16%	DOR 22.6 months			
First Line Anti PD-1 a						
First Line Anti PD-1 a Anti PD-1 a	ntibody ⁽³⁾	16%	22.6 months			
First Line Anti PD-1 a Anti PD-1 a	intibody ⁽³⁾ intibody + Chemo ⁽³⁾ apy (EXTREME) ⁽⁴⁾	16% 36%	22.6 months 6.7 months			

Abbreviations: ORR, objective response rate; TiL, tumor infiltrating lymphocytes.

(1) Global Burden of Disease Cancer Collaboration, JAMA Oncol 2019 (a) https://seer.cancer.gov.accessed Mar 2021

(2) Keytruda USP1 accessed Mar 2021 and Szturz et al., Ann Transl Med 2020 (4) Vermorken et al., NEJM 2008 (6) Bauml et al., J Clin Oncol 2017



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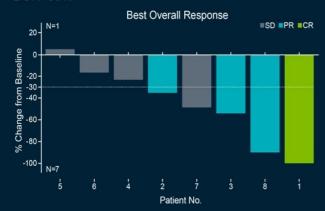
LN-145 in Anti-PD-1 Naive HNSCC: Cohort 2A

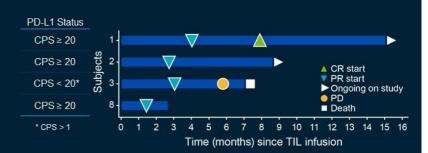
TEAE consistent with other indications

Efficacy (N=9)

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

DCR=89%







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Non-Small Cell Lung Cancer (NSCLC)

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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

Lung Cancer Facts New Cases WW Deaths WW 1.8M 2.1M each year(1) each year(1) Diagnoses in U.S. Deaths in U.S. 229k 136k each vear(2) each year(2) Available NSCLC 9% ORR for docetaxel Checkpoint in 2L NSCLC following progression on chemo (3) Inhibitor + Chemo as first line option



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Global Burden of Disease Cancer Collaboration, JAMA Oncol 2019
 https://seer.cancer.gov.accessed.Mar 2021
 Brahmer et al., NEJM 2015

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^{ΔEx19} post afatinib, osimertinib, nivolumab

· 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%)

(1) Creelan et al. AACR 2020



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Moffitt TIL in Post-Nivolumab NSCLC

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

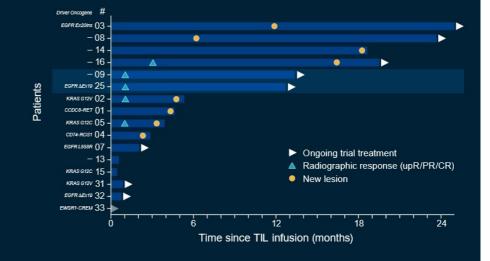
Post-TIL



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%

***Creeian et al., AACR 2020

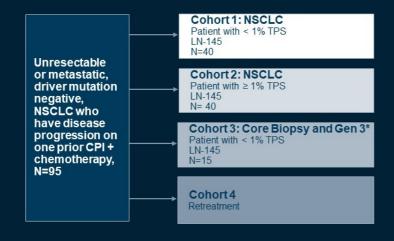




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IOV-LUN-202

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

· Ten sites are active

Cohort 3 patients unable to undergo surgical harvest, TIL grown from core biops;



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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

- lovance 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⁽¹⁾



Process optimization

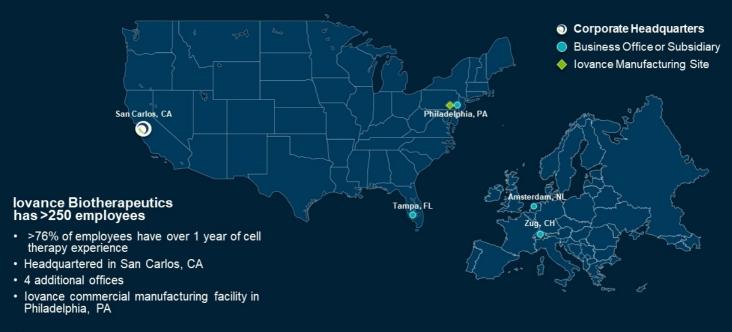
- Gen 3 (16-day) process (COM-202)
- Core biopsy (LUN-202 study)

(1) Ritthipichai et al., ESMO 2020



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lovance Global Reach and Scale



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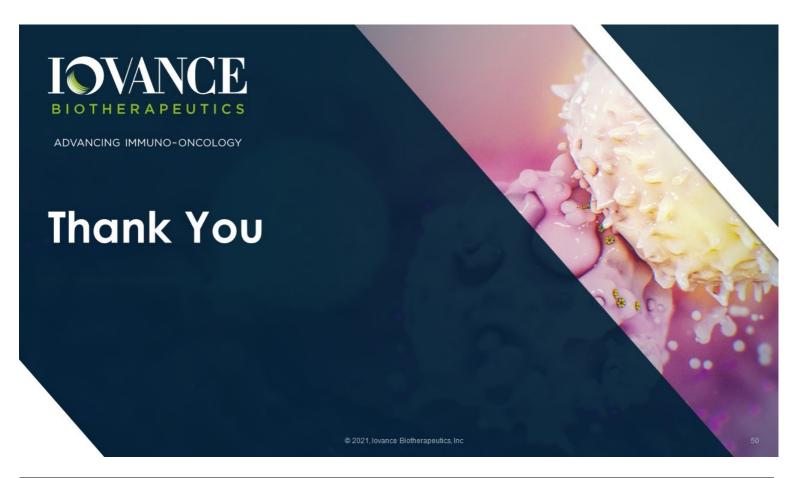
Well Capitalized in Pursuit of TIL Commercialization

December 31, 2020	In millions (unaudited)
Common shares outstanding	146.9
Preferred shares outstanding	3.6(1)
Options	12.6
Cash, cash equivalents, short-term investments, restricted cash	\$635.0(2)
Anticipated cash runway sufficient into 2023	
Debt	\$0

(1) Preferred shares are shown on an as-converted basis



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Iovance Biotherapeutics Announces Clinical Data Updates for Lifileucel in Advanced Melanoma During American Association for Cancer Research (AACR) 2021 Annual Meeting

April 9, 2021

Median Duration of Response Not Reached at 28.1 Months of Median Study Follow Up in Cohort 2 of C-144-01 Study

36.4% Overall Response Rate; Continued Deepening of Responses

SAN CARLOS, Calif., April 09, 2021 (GLOBE NEWSWIRE) -- Iovance Biotherapeutics, Inc. (NASDAQ: IOVA), a late-stage biotechnology company developing novel T cell-based cancer immunotherapies, today announced data from Cohort 2 in the C-144-01 study of lifileucel in advanced melanoma. These data will be part of an oral presentation in a Clinical Trials Plenary Session at the upcoming American Association for Cancer Research (AACB) 2021 Annual Meeting.

"We are very excited to report our latest Cohort 2 melanoma data in an oral presentation at AACR," said Maria Fardis, Ph.D., President and Chief Executive Officer of Iovance Biotherapeutics. "The long term follow up data show that median duration of response was not reached at 28.1 months of median study follow up. Furthermore, overall response rate remained at 36.4 percent and we saw a continued deepening of response in 17 percent of the patients. The data continue to demonstrate durability and depth of our lifileucel TIL therapy response after a one-time treatment, in a difficult to treat patient population with advanced melanoma. We are honored that AACR has chosen our melanoma Cohort 2 data to be featured in a clinical trials plenary session.

Jason Chesney, M.D., Ph.D., Director, James Graham Brown Cancer Center, University of Louisville and C-144-01 study investigator stated, "Melanoma patients who have progressed on immune checkpoint and BRAF/MEK inhibitors are among the most challenging patients for oncologists to treat. The updated results of the C-144-01 study continue to demonstrate that autologous tumor infiltrating lymphocytes (TILs; lifileucel) induce durable clinical responses in 36 percent of patients in the study. This study also creates opportunities for additional trials of TILs in many other cancer types and in combination with immunomodulatory agents.

The Cohort 2 data are available in the abstract titled, "Lifileucel (LN-144), a cryopreserved autologous tumor infiltrating lymphocyte (TIL) therapy in patients with advanced (unresectable or metastatic) melanoma: durable duration of response at 28-month follow up." Data highlights as of the December 14, 2020 data cut extract used for the abstract submitted to AACR were as follows:

- Lifileucel showed a 36.4% overall response rate (4.5% complete responses and 31.8% partial responses) and median duration of response (DOR) was not reached at 28.1 months of median study follow up as assessed by investigators (n=66).
- The Cohort 2 patients had heavily pretreated metastatic melanoma with high baseline disease burden. They have progressed on multiple prior therapies (3.3 mean prior therapies), including anti-PD1 and BRAF/MEK inhibitors if BRAFV600 mutation positive.
- The adverse event profile was consistent with the underlying advanced disease, lymphodepletion and IL-2 regimens, with no additional adverse events emerging over time.

The abstract is available in the AACR Online Meeting Planner at www aacr.org and on the Iovance website at www.iovance.com/our-science /publications. The data from the abstract will be highlighted in additional detail at the AACR 2021 Annual Meeting. Details of the oral presentation are as follows:

Abstract Title: Lifileucel (LN-144), a cryopreserved autologous tumor infiltrating lymphocyte (TIL) therapy in patients with advanced (unresectable or metastatic) melanoma: durable duration of response at 28-month

follow up

Authors: Jason Alan Chesney, MD, PhD, et al.

Abstract Number: 5329 Presentation Number: CT008

Session Title: Immunooncology and Cell Therapy Trials Session Date and Time: Saturday, April 10, 2021, 4:45 PM - 5:00 PM ET Location: AACR Virtual Annual Meeting 2021 at www.aacr.org

In addition to the oral presentation, three Iovance poster presentations at AACR will highlight the design of clinical trials in progress in solid tumors and chronic lymphocytic leukemia or small lymphocytic lymphoma (CLL/SLL). These posters are intended to educate physicians about study design and will not include clinical data. Posters will be available from 8:30 a.m. ET on Saturday, April 10 through Monday, June 21, 2021 in the Virtual ePoster Hall at www.aacr.org and on the Iovance website at www.iovance.com/our-science/publications.

• Abstract Title: A Phase 2, multicenter study of autologous tumor infiltrating lymphocytes (TIL) (LN-144/LN-145/LN-145-S1) in patients with solid tumors (IOV-COM-202) Authors: Scott Gettinger, MD, et al. Abstract Number: CT235

• Abstract Title: A Phase 1/2 study evaluating the safety and efficacy of IOV-2001 in patients with relapsed or refractory chronic lymphocytic leukemia (CLL) or small lymphocytic lymphoma (SLL) (IOV-CLL-01) Authors: Meixiao Long, MD, PhD, et al.

Abstract Number: CT244

• Abstract Title: A phase 2 multicenter study of autologous tumor infiltrating lymphocytes (TIL; LN-145) cell therapy in patients with metastatic non-small cell lung cancer (IOV-LUN-202) Authors: Erminia Massarelli, MD, PhD, et al.
Abstract Number: CT246

About Iovance Biotherapeutics, Inc.

Iovance Biotherapeutics aims to improve patient care by making T cell-based immunotherapies broadly accessible for the treatment of patients with solid tumors and blood cancers. Tumor infiltrating lymphocyte (TIL) therapy uses a patient's own immune cells to attack cancer. TIL cells are extracted from a patient's own tumor tissue, expanded through a proprietary process, and infused back into the patient. Upon infusion, TIL reach tumor tissue, where they attack cancer cells. The company has completed dosing in pivotal programs in patients with metastatic melanoma and cervical cancer. In addition, the company's TIL therapy is being investigated in a registration-supporting study for the treatment of patients with locally advanced, recurrent or metastatic non-small cell lung cancer. Clinical studies are also underway to evaluate TIL in earlier stage cancers in combination with currently approved treatments, and to investigate Iovance peripheral blood lymphocyte (PBL) T cell therapy for blood cancers. For more information, please visit www.jovance.com.

Forward-Looking Statement

Certain matters discussed in this press release 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"). All such written or oral statements made in this press release, 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," "inlands," "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

CONTACTS

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