GlobalData.

Clinical Trial Information			
Trial Title	Prospective Randomized Study of Cell Transfer Therapy for Metastatic Melanoma Using Tumor Infiltrating Lymphocytes Plus IL-2 Following Non-Myeloablative Lymphocyte Depleting Chemo Regimen Alone or in Conjunction With 12Gy Total Body Irradiation (TBI...		
Drug(s)/Molecule(s)	lifileucel;	**Trial Identifier**	GDCT0109263
Secondary ID(s)	NCT01319565; 110123;11-C-0123;CDR697721;GDC30001420;GDCT0177830;GDC30006284;GDCT0231674		
Sponsor (s)	National Cancer Institute US	**Indication**	Metastatic Melanoma, Skin Cancer
Trial Status	Completed	**Trial Phase**	Phase II
Secondary Intervention	aldesleukin, cyclophosphamide, fludarabine		

Clinical Trial Details	
Trial Title	Prospective Randomized Study of Cell Transfer Therapy for Metastatic Melanoma Using Tumor Infiltrating Lymphocytes Plus IL-2 Following Non-Myeloablative Lymphocyte Depleting Chemo Regimen Alone or in Conjunction With 12Gy Total Body Irradiation (TBI...
Official Title	A Prospective Randomized Study of Cell Transfer Therapy for Metastatic Melanoma Using Short-term Cultured Tumor-infiltrating Lymphocytes plus Il-2 Following Either a Non-myeloablative Lymphocyte Depleting Chemotherapy Regimen Alone or in Conjunction with 12gy Total Body Irradiation (Tbi)
Study Type	Interventional
Therapy Type	Combination Therapy
Actual Start Date	24 Mar 2011
Actual End Date	16 Sep 2015
Trial Duration (in Months)	54.57
Study Designs	
Purpose	The purpose of this study was to compare the effectiveness and safety of cell therapy given with chemotherapy to cell therapy given with chemotherapy and total body irradiation in subjects with metastatic melanoma.

<table>
<tr><td>Primary Outcome Measure(s)/Objective(s)</td><td>

Response rate - 6 and 12 weeks after cell infusion, then every 3 months x3, every 6 months x5 years, then per PI discretion
Percentage of subjects who have a clinical response to treatment (objective tumor regression)
Overall survival - Time to death
Time to death following the start of treatment

</td></tr>
<tr><td>Secondary Outcome Measure(s)/Objective(s)</td><td>

Progression-free survival - Time to progression
Time to disease progression following the start of treatment
Frequency and severity of treatment-related adverse events - 30 days after end of treatment
Aggregate of all adverse events, as well as their frequency and severity

</td></tr>
<tr><td>Trial Description</td><td>
This was an interventional, phase II, randomized, open-label, controlled, parallel assignment, treatment, prospective and single-centered study to assess safety and efficacy of cell therapy given with chemotherapy to cell therapy given with chemotherapy and total body irradiation in individuals with metastatic melanoma.

Subjects were screened with a physical examination, medical history, blood tests and tumor imaging studies. Subjects were randomized into two cohorts:
<table>
<tr><th>Arms</th><th>Type</th><th>Intervention</th><th>Description</th></tr>
<tr><td>I</td><td>Experimental</td><td>Non-myeloablative lymphodepleting preparative regimen of cyclophosphamide and fludarabine + young TIL + highdose aldesleukin</td><td>Arm 1 and Arm 2 subjects received aldeskeukin 720,000 IU/kg IV (based on total body weight) over 15 minutes every eight hours (+/- 1 hour) for up to 5 days (maximum 15 doses), Cyclophosphamide 60 mg/kg/day X 2 days IV in 250 mL D5W with Mesna 15 mg/kg /day X 2 days over 1 hr, Fludarabine 25 mg /m2/day IVPB daily over 15-30 minutes for 5 days. Cells were infused intravenously (IV) on the Patient Care Unit over 20-30 minutes on day 0</td></tr>
<tr><td>II</td><td>Experimental</td><td>Non-myeloablative lymphodepleting preparative</td><td>Arm 1 and Arm 2 subjects received Aldeskeukin 720,000 IU/kg IV (based on total body weight) over 15 minutes every eight hours (+/- 1</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td></td><td></td><td>regimen of cyclophosphamide and fludarabine + young TIL + highdose aldesleukin + TBI</td><td>hour) for up to 5 days (maximum 15 doses), Cyclophosphamide 60 mg/kg/day X 2 days IV in 250 mL D5W with Mesna 15 mg/kg /day X 2 days over 1 hr, Fludarabine 25 mg /m2/day IVPB daily over 15-30 minutes for 5 days, Cells were infused intravenously (IV) on the Patient Care Unit over 20-30 minutes. Ondansetron 0.15 mg/kg IV x 1 dose pre-TBI. Patients then received 2 Gy TBI twice a day for 3 days (total dose 12 Gy) using a linear accelerator in Radiation Oncology.</td></tr>
</table>
For both Arms: Cells were infused intravenously (i.v.) on the Subject Care Unit over 20 to 30 minutes via non-filtered tubing,gently agitating the bag during infusion to prevent cell clumping (minimum 1 X $10e^9$ and up to a maximum of 2 X $10e^{11}$ lymphocytes). All subjects provide a tumor sample from either surgery or a tumor biopsy for white blood cell collection. Subjects had leukapheresis to collect additional white blood cells for cell growth and future testing, and TBI group subjects also provide stem cells to help them recover after radiation. (TBI subjects who cannot provide enough stem cells are moved to the non-radiation treatment group.) Subjects had chemotherapy with cyclophosphamide (60 mg/kg/day IV two treatments for 2 days) and fludarabine (25 mg/m^2/day IVPB daily over 15-30 minutes for 5 days) starting 7 days before the cell therapy. Subjects in the TBI group also had TBI for the 3 days immediately before the cell therapy.

All subjects received the white blood cells, followed by high-dose aldesleukin 720,000 IU/kg IV over 15 minutes every eight hours (+/- 1 hour) for up to 5 days after the cell infusion to help keep the therapy cells alive and active. Subjects were prospectively randomized to receive ACT with young TIL (administered intravenously over 20 to 30 minutes (minimum 1 X 10^9 and up to a maximum of 2 X 10^{11} lymphocytes)) plus aldesleukin following either a non-myeloablative chemotherapy preparative regimen or this same regimen plus TBI.

A total of 102 subjects were enrolled in the study.</td></tr>
<tr><td>Trial Notes</td><td>As of Apri 2016, TIL studies conducted by the NCI were suspended except this ongoing study continues without interruption. As of April 2014, Differences between the two treatment groups calculated after all subjects evaluated later this year.
http://www.lbio.com/news-media/press-releases/detail/15/lion-biotechnologies-lead-program-with-national-cancer</td></tr>
</table>

Sponsor(s)/Collaborator(s)

Sponsor(s) - Type & Details

Sponsor	National Cancer Institute US (Subsidiary of U.S. National Institutes of Health)

Drug Details

Primary Interventions(s)

Generic Name	Route of Administration
lifileucel	Intravenous; Intravenous Drip

Secondary Interventions(s)

Generic Name	Route of Administration
aldesleukin	Intravenous; Subcutaneous
cyclophosphamide	
fludarabine	

Drug Name	lifileucel (Pipeline Drug)
Drug Description	Lifileucel (Amtagvi) is a tumor-derived autologous T cell immunotherapy agent. It is formulated as suspension for intravenous infusion. Amtagvi is indicated for the treatment of adult patients with unresectable or metastatic melanoma previously treated with a PD-1 blocking antibody, and if BRAF V600 mutation positive, a BRAF inhibitor with or without a MEK inhibitor. Lifileucel (LN-144) is under development for the treatment of endometrial cancer, relapsed/refractory metastatic melanoma, recurrent head and neck cancer squamous cell carcinoma and non-small cell lung cancer. It is administered through intravenous route. The therapeutic candidate comprises of autologous tumor infiltrating lymphocytes (TILs) isolated from the patient's tumor further expanded and then infused back to the patient enabling the patient robust immune response.
Mechanism of Action	Lifileucel (LN-144) comprises of patient's tumor infiltrating lymphocytes (TILs). TILs exhibit strong anti-tumor effector functions. When antigen-specific CD8+ T cells are exposed to processed antigens presented in association with human leukocyte antigen (HLA) class I proteins, they are activated. They expand clonally and differentiate. Differentiation process induces the formation of a large number of modified lysosomes loaded with lytic components such as perforin and several types of granzymes. In case of direct cell-cell interaction, activated CTLs release lytic components leading to specific destruction of tumor cells expressing specific antigens. These components cause cell death by disruption of cell membrane and activation of the apoptotic pathway. CD4+ T cells respond to antigens presented by the HLA class II proteins expressed by antigen-presenting cells also mediate antitumor immunity. Natural killer cells express several ligands

	of the tumor necrosis factor family and can induce apoptosis of malignant cell targets.
ATC Classification	L01XL Antineoplastic cell and gene therapy
Drug Name	lifileucel (Marketed Drug)
Mechanism of Action	Lifileucel (LN-144) comprises of patient's tumor infiltrating lymphocytes (TILs). TILs exhibit strong anti-tumor effector functions. When antigen-specific CD8+ T cells are exposed to processed antigens presented in association with human leukocyte antigen (HLA) class I proteins, they are activated. They expand clonally and differentiate. Differentiation process induces the formation of a large number of modified lysosomes loaded with lytic components such as perforin and several types of granzymes. In case of direct cell-cell interaction, activated CTLs release lytic components leading to specific destruction of tumor cells expressing specific antigens. These components cause cell death by disruption of cell membrane and activation of the apoptotic pathway. CD4+ T cells respond to antigens presented by the HLA class II proteins expressed by antigen-presenting cells also mediate antitumor immunity. Natural killer cells express several ligands of the tumor necrosis factor family and can induce apoptosis of malignant cell targets.
ATC Classification	L01XL Antineoplastic cell and gene therapy

Patient Details

Age	**Minimum Age Eligibility**: 18 Years **Maximum Age Eligibility**: 66 Years
Gender	Both
Healthy Subject(s)	No
Subject(s) Type	Adults, Advanced Disease, Brain Metastases, Eastern Cooperative Oncology Group (ECOG or WHO or Zubrod) Performance Status
Participant Criteria (Inclusion)	• Stage IV Measurable metastatic melanoma with at least one lesion that is resectable for TIL generation. The lesion must be of at least 1cm in diameter that can be surgically removed with minimal morbidity (defined as any operation for which expected hospitalization less than or equal to 7 days) • Subjects with 3 or less brain metastases are eligible • Greater than or equal to 18 years of age and less than or equal to 66 years of age • Willing to practice birth control during treatment and for four months

	after receiving all protocol related therapy
	• Life expectancy of greater than three months
	• Willing to sign a durable power of attorney
	• Able to understand and sign the Informed Consent Document
	• Clinical performance status of ECOG 0 or 1
	• Hematology
	  o Absolute neutrophil count greater than 1000/mm^3
	  o Hemoglobin greater than 8.0g/dl
	  o Platelet count greater than 100,000/mm^3
	• Serology
	
	  o Seronegative for HIV antibody. (The experimental treatment being evaluated in this protocol depends on an intact immune system. subjects who are HIV seropositive can have decreased immune competence and thus be less responsive to the experimental treatment and more susceptible to its toxicities)
	  o Seronegative for hepatitis B antigen, or hepatitis C antibody or antigen
	• Chemistry
	
	  o Serum ALT/AST less than three times the upper limit of normal
	  o Calculated creatinine clearance (eGFR) > 50ml/min
	  o Total bilirubin less than or equal to 2 mg/dl, except in subjects with
	• Gilbert s Syndrome who must have a total bilirubin less than 3 mg/dl
	• More than four weeks must have elapsed since any prior systemic therapy at the time of randomization, and subjects toxicities must have recovered to a grade 1 or less (except for alopecia or vitiligo). subjects must have stable or progressing disease after prior treatment
	• Six weeks must have elapsed since any prior anti-CTLA4 antibody therapy to allow antibody levels to decline
	• Note: subjects who have previously received ipilimumab or tremelimumab, anti- PD1 or anti-PD-L1 antibodies, and have documented GI toxicity must have a normal colonoscopy with normal colonic biopsies
	• Subjects with advanced metastatic melanoma including subjects who are refractory to other therapies and have few other treatment options

Participant Criteria (Exclusion)	• Prior cell transfer therapy which included a non-myeloablative or myeloablative chemotherapy regimen • Women of child-bearing potential who are pregnant or breastfeeding because 10 of the potentially dangerous effects of the preparative chemotherapy on the fetus or infant • Systemic steroid therapy requirement • Active systemic infections, coagulation disorders or other active major

	medical illnesses of the cardiovascular, respiratory or immune system, as evidenced by a positive stress thallium or comparable test, myocardial infarction, cardiac arrhythmias, obstructive or restrictive pulmonary disease • Any form of primary immunodeficiency (such as Severe Combined Immunodeficiency Disease and AIDS) • Opportunistic infections (The experimental treatment being evaluated in this protocol depends on an intact immune system. subjects who have decreased immune competence may be less responsive to the experimental treatment and more susceptible to its toxicities.) • History of severe immediate hypersensitivity reaction to any of the agents used in this study • History of coronary revascularization or ischemic symptoms • Any subjects known to have an LVEF less than or equal to 45% • In subjects> 60 years old, documented LVEF of less than or equal to 45% • Documented FEV1 less than or equal to 60% predicted tested in subjects with o A prolonged history of cigarette smoking (20 pk/year of smoking within the past 2 years) o Symptoms of respiratory dysfunction • Prior radiation therapy that, in the judgment of the radiation oncologist, precludes the administration of total body irradiation

Trial Results	
No. of Subjects Planned	118
No. of Subjects Enrolled	102
No. of Subjects Analyzed	101
Endpoint Classification	Efficacy, Safety
End Point Status	Achieved
Efficacy Results	**September 30, 2013** Lion Biotechnologies Provides Update on Phase II Results for Metastatic Melanoma Based on the study results announced by Lion Biotechnologies in the press release, GlobalData inferred that, objective response (Partial Response (PR) plus Complete Response (CR)) of 49% was reported in patients treated with tumor-infiltrating lymphocyte (TIL)s alone. Out of the 43 patients in the cohort 12% reported the complete response and the same patients continued to live more than 7 years without ny measurable disease. In the cohort

of patients receiving TILs plus 200 Gy total body irradiation (TBI) reported 52% Objective Response (OR) and 20% complete response (CR) and the patients in the group continue to live for seven years without any measurable disease. Patients in the cohort receiving TILs therapy and 1200 Gy TBI reported 72% OR and 40% CR. Out of ten patients nine patients in this group reporting complete response continue to live more than six years without any measurable disease. Overall patients in three cohorts reported 22% CR and out of this 95% continue to live without measurable disease for 6 to 9 years. http://lbio.com/press_releases/lion-biotechnologies-provides-update-on-phase-ii-results-for-metastatic-melanoma/ **September 16, 2015** Lion Biotechnologies Announces Positive Updated Data From NCI's Phase 2 Study of TIL Therapy in the Treatment of Metastatic Melanoma Based on the results announced by Lion Biotechnologies in the press release, GlobalData inferred that 101 subjects were analyzed in the study.

Findings:

Parameters	**Observations**
Overall response rate (ORR), %	54
Complete responses CR, %	24
Durability of response at 30 to 47 months, n (%)	23 (96)
Median follow-up time, months	35
Overall survival (OS), %	80
Median progression-free survival, months	10
Subjects without disease progression, %	35

Significant differences in clinical outcomes were not observed in subjects who received total body irradiation and those who did not receive irradiation. Tumor-infiltrating lymphocytes (TIL) treatment was associated with high, durable objective response rates (ORR) in subjects with metastatic melanoma. https://globenewswire.com/news-release/2015/09/16/768774/10149582/en/Lion-Biotechnologies-Announces-Positive-Updated-Data-From-NCI-s-Phase-2-Study-of-TIL-Therapy-in-the-Treatment-of-Metastatic-Melanoma.html

December 08, 2014 Lion Biotechnologies Announces Positive New Data From Lead TIL Melanoma Program at ASH Based on the study results announced by Lion Biotechnologies, Inc., in the press release, GlobalData inferred that, high and durable objective response rates (ORR) were reported with tumor-infiltrating lymphocytes in subjects with metastatic melanoma. In the study objective response rates (ORR) of 54% was observed, that indicated significant improvement. Complete response rate was observed in 14 subjects, out of it 13 subjects were ongoing beyaond two years. Partial response was observed in 41 subjects, out of this 22 were ongoing beyaond one year and 15 were ongoing beyond two years. Additionally objective response rate in 19 of 45 (42%) in ipilimumab refractory subjects and in 5 of 10 subjects (50%) previously progressed on anti-PD1 respectively. http://globenewswire.com/news-release/2014/12/08/689393/10111325/en/Lion-Biotechnologies-Announces-Positive-New-Data-From-Lead-TIL-Melanoma-Program-at-ASH.html?print=1

June, 2016

Presented at the Annual Meeting of the American Society of Clinical Oncology (ASCO), June 03 - 07, 2016, Chicago, Illinois, USA A randomized, prospective evaluation comparing intensity of lymphodepletion prior to adoptive transfer of tumor infiltrating lymphocytes for patients with metastatic melanoma
Session:Developmental Therapeutics—Immunotherapy
Abstract No:3006 Stephanie L Goff et al.

Based on the results presented, GlobalData inferred that complete response rates were observed to be 24% in both the groups (12/50 *v* 12/51) and overall survival (OS) was observed to be similar (median overall survival, 38.2 *v* 36.6 months with an hazard ratio [HR] of 1.11; 95% CI, 0.65 to 1.91, and P= .71). Total median potential follow-up period of 40.9 months, only one of the 24 complete responders were recurred. Adoptive cell transfer along with tumor-infiltrating lymphocytes which can mediate the durable complete regressions nearly 24% of subjects with metastatic melanoma as well as with a median survival greater than 3 years. http://meetinglibrary.asco.org/content/162743-176 **June 08, 2016**
Presented at the Jefferies 2016 Healthcare Conference, June 07-10, 2016, New York, US Based on the results presented, GlobalData inferred that LN-144 was observed to be effective in subjects with metastatic melanoma.
http://wsw.com/webcast/jeff97/lbio/?lobby=true (Slides 11, 12) **April 07, 2014**
Lion Biotechnologies' Lead Program With National Cancer Institute Demonstrates Positive Results in Patients With Stage 4 Metastatic Melanoma
Based on the results announced by Lion Biotechnologies, Inc., in the press release, GlobalData inferred that by the time of analysis, out of 101 subjects treated with tumor infiltrating lymphocytes, 11 subjects achieved complete response and 44 had achieved partial response. Subjects with prior checkpoint failures (n=4) had complete responses and continue to be disease free.
http://www.lbio.com/news-media/press-releases/detail/15/lion-biotechnologies-lead-program-with-national-cancer **June 06, 2017**

Presented at the Jefferies 2017 Global Healthcare Conference, June 06-09, 2017, New York, USA

Based on the results presented, GlobalData inferred that a total of 101 subjects were analyzed during the study. Median overall survival not reached.

Parameter	Observation
Overall response rate, %	56
Overall survival at 12 months, %	80

http://wsw.com/webcast/jeff105/lbio/?lobby=true&day=1 (Slides 12,13,14,15,16)
Based on the results reported, tumor-infiltrating lymphocyte was effective in subjects with metastatic melanoma.

<table>
<tr>
<td>Safety Result</td>
<td>
June, 2016

Presented at the Annual Meeting of the American Society of Clinical Oncology (ASCO), June 03 - 07, 2016, Chicago, Illinois, USA A randomized, prospective evaluation comparing intensity of lymphodepletion prior to adoptive transfer of tumor infiltrating lymphocytes for patients with metastatic melanoma Session: Developmental Therapeutics—Immunotherapy Abstract No:3006 Stephanie L Goff et al. Based on the results presented, GlobalData inferred that thrombotic microangiopathy was observed to be an adverse event unique to the total body irradiation arm and occurred in 13/48 treated subjects. http://meetinglibrary.asco.org/content/162743-176 Jan 2017 Corporate Presentation Lion Biotechnologies, Inc. Based on the study results, GlobalData inferred that safety results were tabulated.
<table>
<tr><th>Adverse Event</th><th>NMA (n=5 I)</th><th>TBI (n=50)</th></tr>
<tr><td>Grade 3 and 4 toxicities</td><td></td><td></td></tr>
<tr><td>Febrile neutropenia</td><td>25</td><td>36</td></tr>
<tr><td>Bacteremia</td><td>13</td><td>5</td></tr>
<tr><td>Urinary tract infection</td><td>0</td><td>2</td></tr>
<tr><td>Atrial fibrillation</td><td>2</td><td>3</td></tr>
<tr><td>Thrombotic microangiopathy</td><td>0</td><td>13</td></tr>
<tr><td>ICU transfer on index admission</td><td></td><td></td></tr>
<tr><td>Planned observation</td><td>0</td><td>2</td></tr>
<tr><td>Cytokine-related symptoms</td><td>0</td><td>6</td></tr>
<tr><td>Sepsis</td><td>2</td><td>1</td></tr>
<tr><td>Cardiac arrhythmia</td><td>2</td><td>3</td></tr>
<tr><td>Treatment-related death</td><td>0</td><td>1</td></tr>
</table>
http://c.eqcdn.com/_e05c3f35ad3f18a8dfe6b487716f1d1d/lbio/db/230/543/pdf/Lion+Investor+Pres-+Jan+2017-+FINAL+1.7+9am.pdf(Slide No. 7, 13, 14) June 06, 2017

Presented at the Jefferies 2017 Global Healthcare Conference, June 06-09, 2017, New York, USA

Based on the results presented, GlobalData inferred that the treatment toxcities were largely associated with known side effects of nonmyeloblative chemotherapy or total body radiation and administration of high dose IL-2. http://wsw.com/webcast/jeff105/lbio/?lobby=true&day=1 (Slides 12,13,14,15,16)
</td>
</tr>
<tr>
<td>Conclusion</td>
<td>The trial was completed. Based on the results reported, GlobalData concluded that tumor-infiltrating lymphocyte (TIL) technology is effective in treatment of</td>
</tr>
</table>

	subjects with metastatic melanoma.

Trial Cost Overview

Trial Cost By Year

Trial Cost By Components

Investigators Information			
Name	David N Danforth Jr	Role	Co-Author
Specialty	Surgery	Board Certification	
Primary Designation	Physician	Associated Organization	National Cancer Institute US
Contact Number	1-240-2765810; 1-240-7606213	Email	david_danforth@nih.gov
State	Maryland	Country	United States

Investigators Information			
Name	Deborah E Citrin	Role	Co-Author
Specialty	Radiation Oncology	Board Certification	
Primary Designation	Deputy Director	Associated Organization	National Cancer Institute US
Contact Number	1-301-4965457	Email	citrind@mail.nih.gov
State	Maryland	Country	United States

Similar studies done by Investigator

Investigators Information			
Name	Marybeth S Hughes	Role	Co-Author
Specialty	Surgical Oncology; Surgery	Board Certification	
Primary Designation	Professor	Associated Organization	Eastern Virginia Medical School
Contact Number	1-757-6898139; 1-757-4468960; 1-757-4468950	Email	hughesms@evms.edu

State	Virginia	Country	United States

Similar studies done by Investigator

Investigators Information			
Name	Steven A Rosenberg	Role	Principal Investigator
Specialty	Surgery	Board Certification	
Primary Designation	Professor	Associated Organization	Uniformed Services University of the Health Sciences
Contact Number	1-301-4964164; 1-301-2953033; 1-240-8583080	Email	sar@nih.gov; sar@mail.nih.gov
State	Maryland	Country	United States

Similar studies done by Investigator

Investigators Information			
Name	James C Yang	Role	Co-Author
Specialty	Hematology; Medical Oncology; Surgery	Board Certification	
Primary Designation	Assistant Professor	Associated Organization	Uniformed Services University of the Health Sciences
Contact Number	1-301-4961574; 1-240-7606223	Email	james_yang@nih.gov; jamesyang@mail.nih.gov
State	Maryland	Country	United States

Similar studies done by Investigator

Location(s) (1)

Region	Country	State	Trial Site	Address	Status
North America	United States	Maryland	National Institutes of Health Clinical Center	National Institutes of Health Clinical	Completed

				Center, Bethesda, Maryland, United States, 20892	

Investigator Affiliated Site(s)(15)					
Region	**Country**	**State**	**Trial Site**	**Address**	**Status**
North America	United States	Maryland	Anne Arundel Medical Center	2001 Medical Parkway, Annapolis, Md. 21401	
North America	United States	Virginia	Eastern Virginia Medical School	825 Fairfax Avenue, Suite 310, Norfolk, VA, 23507	
North America	United States	Washington DC	George Washington University	Washington DC, 20037, United States	
North America	United States	Virginia	Sentara Medical Group	830 Kempsville RoadNorfolk, VA 23502	
North America	United States	Virginia	Sentara Norfolk General Hospital	600 Gresham Drive, Norfolk, VA, 23507	
North America	United States	Maryland	Uniformed Services University of the Health Sciences	4301 Jones Bridge Road, Bethesda, Maryland 20814	
North America	United States	Pennsylvania	University of Pittsburgh	230 McKee Place, Suite 600 Pittsburgh, PA 15213	
North America	United States	Pennsylvania	UPMC Hillman Cancer Center	5150 Centre Avenue, Pittsburgh, PA 15232	

North America	United States	Pennsylvania	University of Pittsburgh Medical Center	Falk Medical Building Seventh Floor 3601 Fifth Ave. Pittsburgh, PA 15213	
North America	United States	Maryland	Warren Grant Magnuson Clinical Center	10 Center Drive, Bethesda, MD 20892	
North America	United States	Georgia	Emory University	201 Dowman Drive, Atlanta, Georgia 30322	
North America	United States	Maryland	National Cancer Institute US	9000 Rockville Pike, Bethesda, MD 20892	
Europe	Sweden	Stockholm	Karolinska Institute	S1, VO Cardiology, South Hospital, Stockholm, 11883	
North America	United States	Maryland	Surgery Branch of the National Cancer Institute	Building 10, Room 3-3940, Bethesda, MD, 20892	
North America	United States	Virginia	Sentara Healthcare Inc	1950 Glenn Mitchell Drive, Suite 300, Virginia Beach, VA 23456	

Contact Detail(s)

Contact Person Name	Phone Number	Email ID	Address	State	Country	Region
Steven A Rosenberg	No references available	No references available	National Cancer Institute (NCI)	No references available	No references available	No references available

Site Coordinator Detail(s)					
Site Coordinator Name	Email	Phone	Address	Organization	Site Name
Steven A Rosenberg			National Cancer Institute (NCI)	National Cancer Institute US	National Cance Institute US, Bethesda, 2089

Key Trial Events (9)			
Event Date	**Event Brief**	**Event Type**	**Source**
31 Aug 2017	Iovance Biotherapeutics Announces FDA Fast Track Designation for LN-144 for Treatment of Advanced Melanoma	Trial Update	http://ir.lbio.com/phoenix.zhtml?c=254507&p=RssLanding&cat=news&id=2297863
06 Jun 2017	The Jefferies 2017 Global Healthcare Conference Results updated	Results	http://wsw.com/webcast/jeff105/lbio/?lobby=true&day=1
15 Nov 2016	Lion Biotechnologies, Inc., "Corporate Presentation (Slide No: 7)", Nov 2016 Trial Status changed from "Ongoing-not recruiting" to "Completed"	Trial Status	http://c.eqcdn.com/_20bd70a21ba0b232e63b6095307647e2/lbio/db/230/543/pdf/Lion+Investor+Pres-9+Nov+2016-+FINAL.pdf
03 Jun 2016	A randomized, prospective evaluation comparing intensity of lymphodepletion prior to adoptive transfer of tumor infiltrating lymphocytes for patients with metastatic melanoma	Results	Stephanie L Goff, "A randomized, prospective evaluation comparing intensity of lymphodepletion prior to adoptive transfer of tumor infiltrating lymphocytes for patients with metastatic melanoma", The Annual Meeting of the American Society of Clinical Oncology (ASCO), Session: Developmental Therapeutics—Immunotherapy, Abstract No:3006, 03 - 07 Jun 2016
17 Apr 2016	Lion Biotechnologies Manufacturing Capabilities and Research Programs Unaffected by Review of National Cancer Institute Manufacturing Facilities	Enrollment Status;Trial Status;Trial Update	http://www.lbio.com/news-media/press-releases/detail/70/lion-biotechnologies-manufacturing-capabilities-

			and
05 Nov 2015	Lion Biotechnologies Announces Third Quarter 2015 Financial Results	Trial Update	http://lbio.com/press_releases/lion-biotechnologies-announces-third-quarter-2015-financial-results/
16 Sep 2015	Lion Biotechnologies Announces Positive Updated Data From NCI's Phase 2 Study of TIL Therapy in the Treatment of Metastatic Melanoma	Trial Update	http://globenewswire.com/news-release/2015/09/16/768774/10149582/en/Lion-Biotechnologies-Announces-Positive-Updated-Data-From-NCI-s-Phase-2-Study-of-TIL-Therapy-in-the-Treatment-of-Metastatic-Melanoma.html
07 Apr 2014	Lion Biotechnologies' Lead Program With National Cancer Institute Demonstrates Positive Results in Patients With Stage 4 Metastatic Melanoma Results updated	Results	http://www.globenewswire.com/news-release/2014/04/07/625135/10075600/en/Lion-Biotechnologies-Lead-Program-With-National-Cancer-Institute-Demonstrates-Positive-Results-in-Patients-With-Stage-4-Metastatic-Melanoma.html
30 Sep 2013	Lion Biotechnologies Provides Update on Phase II Results for Metastatic Melanoma	Results	http://lbio.com/press_releases/lion-biotechnologies-provides-update-on-phase-ii-results-for-metastatic-melanoma/

Insights (1)

Published Date	Headline
07-Nov-2014	Lion Bio to run second Phase II advanced melanoma trial instead of advancing TIL into Phase III – CEO

History of changes

Modified Date	Update Type	Description	From Data	To Data	Source Date	Source Type	Source
24-Jan-2024	Trial Date	Trial Estimated	01 Jun 2024	01 Jun 2025	23-Jan-2024	Clinical Trial	https://classic.clinicaltrials.gov/ct2/history/NCT01319

		End Date Changed from **"01 Jun 2024"** to **"01 Jun 2025"**				Registry	565?A=255&B=256&C=Side-by-Side#StudyPageTop
14-May-2022	Trial Locations	Trial Locations Updated			12-May-2022	Clinical Trial Registry	https://www.clinicaltrials.gov/ct2/history/NCT01319565?A=130&B=178&C=Side-by-Side#StudyPageTop
13-May-2022	Trial Locations	Trial Locations Updated					
06-Jan-2022	Primary/ Secondary outcomes	Primary Outcome Measures Updated			03-Jan-2022	Clinical Trial Registry	https://www.clinicaltrials.gov/ct2/history/NCT01319565?A=129&B=130&C=Side-by-Side#StudyPageTop
05-Apr-2021	Trial Date	Trial Estimated End Date Changed from **"01 Jan 2016"** to **"01 Jun 2024"**	01 Jan 2016	01 Jun 2024			https://clinicaltrials.gov/ct2/history/NCT01319565?A=105&B=107&C=Side-by-Side#StudyPageTop
05-May-2020	Trial Date	Trial Actual Start Date Updated					https://clinicaltrials.gov/ct2/history/NCT01319565?A=91&B=92&C=Side-by-Side#StudyPageTop
29-Jul-2019	Trial Contacts	Trial Contacts Updated					
17-Jul-2019	Trial Date	Trial Estimated End Date Updated					https://meetinglibrary.asco.org/record/125782/abstract
10-Jul-2019	Sponsor/ Collaborator/CR	Trial Collaborators					

	O	Updated					
02-May-2019	Primary/ Secondary outcomes	Secondary Outcome Measure Updated					
17-Apr-2019	Primary/ Secondary outcomes	Primary Outcome Measure Updated					
17-Apr-2019	Study Design/ Trial Description	Trial Description Updated					
25-May-2018	Primary/ Secondary outcomes	Primary Outcome Measure Updated					
25-May-2018	Study Design/ Trial Description	Trial Description Updated					
25-May-2018	Subjects	Exclusion Criteria Updated					
25-May-2018	Subjects	Inclusion Criteria Updated					
21-May-2018	Study Design/ Trial Description	Trial Description Updated					
15-May-2018	Primary/ Secondary outcome	Primary Outcome Measure Updated					

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15-May-2018	Primary/ Secondary outcomes	Secondary Outcome Measure Updated					
15-May-2018	Study Design/ Trial Description	Trial Description Updated					
11-May-2018	Trial Contacts	Trial Contacts Updated					
09-May-2018	Trial Contacts	Trial Contacts Updated					
24-Apr-2018	Study Design/ Trial Description	Trial Description Updated					
09-Mar-2018	Subjects	Trial Subjects Updated					
09-Mar-2018	Trial Result	Trial Results Updated					
01-Dec-2017	Trial Date	Trial Estimated Start Date Changed from **"09 Mar 2011"** to **"18 Mar 2011"**	09 Mar 2011	18 Mar 2011			
12-Jul-2017	Trial Result	Trial Results Updated					http://wsw.com/webcast/jeff105/lbio/?lobby=true&day=1
22-Jun-	Primary/	Primary					

2017	Secondary outcomes	Outcome Measure Updated					
22-Jun-2017	Primary/ Secondary outcomes	Secondary Outcome Measure Updated					
22-Jun-2017	Study Design/ Trial Description	Trial Description Updated					
18-May-2017	Study Design/ Trial Description	Trial Description Updated					
18-May-2017	Study Design/ Trial Description	Study Design Updated					
25-Apr-2017	Study Design/ Trial Description	Trial Description Updated					
25-Apr-2017	Study Design/ Trial Description	Study Design Updated					
20-Feb-2017	Study Design/ Trial Description	Trial Notes Updated					http://www.lbio.com/news-media/press-releases/detail/15/lion-biotechnologies-lead-program-with-national-cancer
20-Feb-	Subjects	Inclusion					http://www.lbio.com/news-

2017		Criteria Updated					media/press-releases/detail/15/lion-biotechnologies-lead-program-with-national-cancer
20-Feb-2017	Subjects	Trial Subjects Updated					http://www.lbio.com/news-media/press-releases/detail/15/lion-biotechnologies-lead-program-with-national-cancer
20-Feb-2017	Trial Result	Trial Results Updated					http://www.lbio.com/news-media/press-releases/detail/15/lion-biotechnologies-lead-program-with-national-cancer
10-Feb-2017	Trial Date	Trial Estimated Start Date Changed from **"01 Mar 2011"** to **"09 Mar 2011"**					
18-Jan-2017	Miscellaneous,Trial Date,Trial Result	Trial notes updated; Trial end date updated; Trial results updated					http://c.eqcdn.com/_e05c3f35ad3f18a8dfe6b487716f1d1d/lbio/db/230/543/pdf/Lion+Investor+Pres-+Jan+2017-+FINAL+1.7+9am.pdf
13-Dec-2016	Miscellaneous	Contact details updated					https://clinicaltrials.gov/archive/NCT01319565/2016_12_11/changes
04-Oct-2016	Subjects	Subjects type updated					
25-Aug-2016	Indications,Subje	Trial Indication					

	cts	updated; Subject type updated					
05-Aug-2016	Subjects	Subjects type updated					https://clinicaltrials.gov/archive/NCT01319565/2016_08_01/changes
07-Jul-2016	Trial Result	Trial results updated					http://wsw.com/webcast/jeff97/lbio/?lobby=true
30-Jun-2016	Drug/Intervention	Trial intervention updated					
22-Jun-2016	Trial Result	results updated					http://meetinglibrary.asco.org/content/162743-176
19-Apr-2016	Miscellaneous	Description added					http://www.lbio.com/news-media/press-releases/detail/70/lion-biotechnologies-manufacturing-capabilities-and
21-Mar-2016	Drug/Intervention,Trial Result	Results and Intervention Updated					http://globenewswire.com/news-release/2014/12/08/689393/10111325/en/Lion-Biotechnologies-Announces-Positive-New-Data-From-Lead-TIL-Melanoma-Program-at-ASH.html?print=1
21-Sep-2015	Trial Result	Study results updated					http://lbio.com/press_releases/lion-biotechnologies-announces-positive-updated-data-from-ncis-phase-2-study-of-til-therapy-in-the-treatment-of-metastatic-melanoma/
18-Aug-2015	Trial Date	Trial end date updated "2019-06";					

23-Feb-2015	Trial End Date	Trial end date changed to "01-Jun-2020"					
04-Feb-2015	Trial End Date	Trial End date changed to "2019-06"					
08-Sep-2014	Miscellaneous	Checked and validated					
13-Jun-2014	Trial End Date	Trial end date changed from 2014-05 to 2019-05;Enrollment and status date updated					
26-May-2014	Efficacy Evaluation,Efficacy Result,Result source	Study results updated					http://lbio.com/press_releases/lion-biotechnologies-provides-update-on-phase-ii-results-for-metastatic-melanoma/
22-Mar-2014	Miscellaneous	Updated: study design					
21-Feb-2014	Miscellaneous	Subject type added;					
24-Dec-2013	Contacts-Contact Person Name	Contact added					
03-Dec-2013	Trial secondary Id	Trial secondary Id updated					

02-Oct-2013	Miscellaneous	Trial description modified, Biomarker tagged					
22-Aug-2013	Miscellaneous	Checked and Validated					
23-Jul-2013	Miscellaneous	Checked and validated					
17-Jul-2013	Age Eligibility,Participants Criteria (Inclusion)	Subjects age criteria changed to 18 Years to 66 Years ; Trial inclusion/exclusion criteria modified					
12-Jun-2013	Miscellaneous	Checked and validated					
13-Mar-2013	Miscellaneous	Checked and validated					
14-Dec-2012	Miscellaneous	Checked and validated					
19-Nov-2012	Miscellaneous	Checked and validated					
01-Jul-2012	Miscellaneous	Checked and validated					
04-Jan-2012	Trial Description	Modified					
21-Nov-	Miscella	Informatio					

2011	neous	n Verified					
13-May-2011	Trial Description	Modified					

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Last Reviewed on 24 Jan 2024