Autolus Therapeutics Presents Clinical Data Updates at the American Society of Hematology (ASH) Annual Meeting 2023

December 9, 2023 at 8:30 PM EST

- Pooled analysis of the FELIX Phase Ib/II study demonstrated prolonged event free survival and low overall immunotoxicity across all cohorts in r/r B-ALL, and particularly in patients with low leukemic burden at lymphodepletion
- Longer-term data from a pooled analysis from the ALLCAR19 study and FELIX Phase Ib in r/r B-ALL showed durable remissions with obe-cel as a stand-alone therapy in a subset of patients after a median follow up of >3 years
- Additionally, ALLCAR19 extension cohorts demonstrated long-term responses with low immunotoxicity and prolonged persistence in patients with aggressive and indolent r/r NHL and r/r CLL
- Initial data from the MCARTY Phase I study in multiple myeloma showed AUTO8 was well tolerated, with responses observed in all patients
- Autolus will host an in-person and webcast Analyst/Investor event to discuss the data on Sunday, December 10, 2023 at 8:00 AM PT / 4.00 PM GMT

LONDON, Dec. 09, 2023 (GLOBE NEWSWIRE) -- Autolus Therapeutics plc (Nasdaq: AUTL), a clinical-stage biopharmaceutical company developing next-generation programmed T cell therapies, announces two oral presentations and two poster presentations at the American Society of Hematology (ASH) Annual Meeting, December 9-12, 2023, including an oral presentation highlighting data from a pooled analysis of the FELIX Phase Ib/II study of obe-cel, an autologous fast off-rate CD19 CAR T therapy, in relapsed/refractory adult B-ALL; and as a poster presentation a long-term update on the pooled ALLCAR19 and FELIX phase 1b studies, evaluating obe-cel in adult patients with r/r B-ALL as well from the ALLCAR19 study patients with B-NHL and B-CLL. Finally, in an oral presentation pre-clinical and Phase I clinical data from AUTO8, a BCMA/CD19 co-targeting CAR T cell candidate, evaluated in patients with refractory multiple myeloma.

“The FELIX study, with 127 patients, is one of the largest CAR T cell studies in adults with r/r B-ALL. Obe-cel had a favorable safety profile with very low rates of severe CRS and ICANS, in a clinical setting where these toxicities tend to be frequent and severe. A high proportion of patients responded, with many responses sustained, particularly in patients with low or intermediate disease-burden at lymphodepletion. The FELIX study shows that obe-cel has the potential to become an important therapeutic option in adults with r/r B-ALL,” **said Dr. Claire Roddie, MD, PhD, FRCPath, Associate Professor Haematology and Honorary Consultant Haematologist, Cancer Institute, University College London (UCL).**

“The data we are sharing at ASH from our prior studies indicate that a subset of relapsed and refractory adult ALL patients treated with obe-cel as a single agent continue in remission with a median follow-up of more than three years. It is gratifying to see the excellent safety profile, high response rate and event-free survival we observed in our prior studies, reproduced in the FELIX study,” **said Dr. Christian Itin, Chief Executive Officer of Autolus.** “We have recently submitted a Biologics License Application (BLA) for obe-cel to the U.S. Food and Drug Administration (FDA) for the treatment of patients with relapsed/refractory (r/r) adult B-cell Acute Lymphoblastic Leukemia (ALL) and we look forward to working with the FDA through the regulatory approval process.”

Abstract #222 - oral presentation:

Title: Obecabtagene Autoleucel (obe-cel, AUTO1) for Relapsed/Refractory Adult B-cell Acute Lymphoblastic Leukemia (R/R B-ALL): Pooled Analysis of the Ongoing FELIX Phase Ib/II Study
Link to Presentation
Session Title: 704. Cellular Immunotherapies: Early Phase and Investigational Therapies: Expanding Disease Targets for CAR-T Cell Therapies
Session date and time: Saturday, December 9, 2023, 3:15 PM PT
Session room: San Diego Convention Center, Room 6B
Publication Number: 222
Presenting Author: Dr. Claire Roddie, MD, PhD, FRCPath, Associate Professor Haematology and Honorary Consultant Haematologist, Cancer Institute, University College London (UCL)

Summary:
Obe-cel is an autologous chimeric antigen receptor T cell product using a fast off-rate CD19 binding domain designed to reduce toxicity and increase long-term persistence. A pooled analysis of data from all patients across all cohorts in the FELIX Phase Ib/II study (morphologic disease, minimal residual disease (MRD), isolated extramedullary disease (EMD)) were presented (n=127, median follow-up time from first obe-cel infusion to data cut-off of 16.6 months). Median vein-to-release time was 22 days. Across all patients, treatment with obe-cel resulted in a high response rate with CR/CRi rate of 78% in evaluable patients. Additionally, obe-cel showed a favorable safety profile; grade ≥3 CRS was 2% and grade ≥3 ICANS was 7%, with most severe cases of immunotoxicity occurring in patients with high leukemic burden in the bone marrow (BM). The event free survival estimate (EFS) at 12-months was 50% across all patients, with only 17% of responders proceeding to stem cell transplant while in remission. For patients who had morphologic disease, defined as ≥5% BM blasts or presence of EMD regardless of BM blast status, at lymphodepletion, 74% responded with CR or CRi, and 95% of evaluated responders were MRD-negative‡. For patients who did not have morphologic disease at lymphodepletion, 100% were MRD-negative§ after obe-cel infusion. Subgroup analysis demonstrated that EFS and safety, particularly rate of CRS and ICANS, were better in patients with lower disease burden at lymphodepletion (see table below). Cellular kinetic data shows high expansion and long-term persistence of CAR T cells in most responders.

Table: Summary EFS and safety by bone-marrow blasts prior to lymphodepletion

	Overall (n=127)	<5% BM blasts (n = 36)	5−75% BM blasts (n = 51)	>75% BM blasts (n = 40)
12-month EFS	50%	65%	55%	27%
≥G3 CRS	2%	0%	4%	3%
≥G3 ICANS	7%	0%	6%	15%

Event free survival (EFS; the time from date of first infusion to the earliest of treatment failure, relapse, or death from any cause); measurable residual disease (MRD); Bone marrow (BM); Extramedullary disease (EMD); complete remission (CR); Complete remission with incomplete count recovery (CRi); ‡ MRD status available for 64/73 patients; § MRD status available for 27/29 patients.

Abstract #350 – oral presentation
Title: Development of a Phase I Study Evaluating the Activity of Modular CAR T for Multiple Myeloma (MCARTY) Targeting BCMA and CD19 for Improved Persistence
Link to Presentation
Session Title: 703. Cellular Immunotherapies: Basic and Translational: Cellular Immunotherapy: Preclinical and Translational Insights
Date and time: Saturday, December 9, 2023, 4:15 PM PT
Session room: San Diego Convention Center, Room 6A
Publication Number: 350
Presenting Author: Dr. Lydia Lee, Consultant Haematologist & Senior Clinical Research Fellow, University College London, Research Department of Haematology (UCLH).

Summary:
AUTO8 is a dual targeting autologous CAR T therapy targeting BCMA and CD19 using two independently expressed CARs (D8 BCMA CAR and AUTO1/obe-cel CAR respectively) for R/R multiple myeloma. The MCARTY study is an iterative, staggered design trial with two separate parallel cohorts for direct comparison of D8 BCMA CAR and AUTO8. As of November 13, 2023 (data cut-off), 11 patients have been infused with either BCMA CAR at 50 million (n=3) or 150 million (n=3) cells, or AUTO8 at 50 million (n=3) or 150 million (n=2). At a median follow-up of 6 months we observed 100% response rate (ORR), with 3 PR, 1 VGPR, 7 CR/sCR (all evaluable MRD negative). Two patients remained in ongoing sCR > 12 months. No cases of ICANS or CRS ≥ Gr 3 were observed across all subjects during the period. While persistence data from the dual targeting cohort is immature, it demonstrates expansion of three CAR populations and suggests a trend to increased persistence of D8 BCMA CAR expressing T cells. The MCARTY trial is ongoing and continues to recruit patients.

Poster Presentations:

Title: Long-Term Efficacy and Safety of Obecabtagene Autoleucel (obe-cel) in Adult Patients (pts) with Relapsed/Refractory B-cell Acute Lymphoblastic Leukemia ([R/R B-ALL]; Pooled Analysis from ALLCAR19 and FELIX Phase Ib Studies) or Other B-cell Malignancies (ALLCAR19 Extension Study)
Link to Poster
Session Title: 704. Cellular Immunotherapies: Early Phase and Investigational Therapies: Poster **Session date and time:** Saturday, December 9, 2023, 5:30 PM - 7:30 PM PT
Session room: San Diego Convention Center, Halls G-H
Publication Number: 2114
Presenting Author: Dr. Claire Roddie, MD, PhD, FRCPath, Associate Professor Haematology and Honorary Consultant Haematologist, Cancer Institute, University College London (UCL)

Summary:
The clinical activity of obe-cel has been explored in adults with R/R B-ALL in a Phase I study (ALLCAR19), and a Phase Ib/II study (FELIX). Additionally, obe-cel has been tested in patients with R/R B-cell chronic lymphocytic leukemia (B-CLL) and R/R B-cell non-Hodgkin lymphoma (B-NHL). Data from the pooled analysis of r/r ALL patients (n=36) treated with obe-cel in the ALLCAR19 and FELIX Ib studies demonstrate high remission rates of 81% (29/36). After a median follow-up of 3 years and without subsequent transplant 41% of patients continue in complete remission. The estimated EFS rate with censoring of subsequent transplant or new treatment was 45% at 36 months; all patients in ongoing remission were MRD negative at last assessment and median duration of response was not reached. In the CLL and NHL cohorts of the ALLCAR19 study and with >2 years follow up, high response rates and durable responses were observed. Low grade or low frequency grade >3 CRS/ICANS was observed across all indications and all dosing regimens. Excellent expansion and persistence of CAR T cells was evident across the studies. In summary, obe-cel shows durable remissions in a range of B-cell malignancies with a consistent safety profile.

Title: Delivery of Obecabtagene Autoleucel (obe-cel, AUTO1) for the FELIX Pivotal Study Demonstrating Robust Cell Processing, Robust Release Testing, and Reliable Logistics, Together with Readiness for Sustainable Patient (pt) Care
Session Title: 711. Cell Collection and Processing: Poster III
Session date and time: Monday, December 11, 2023, 6:00 PM - 8:00 PM PT
Session room: San Diego Convention Center, Halls G-H
Publication Number: 4892
Presenting Author: Michael Merges VP, Process Development, Autolus

Analyst/Investor Event:

Date: Sunday, December 10, 2023
Time: The presentation will be from 8:00 AM PT / 4:00 PM GMT to 9:00 AM PT / 5:00 PM GMT. Onsite access to the event available from 7:45 am PT
Venue: The Manchester Grand Hyatt, 1 Market Place, San Diego, CA 92101
Speakers: Dr. Claire Roddie, MD, Ph.D., FRCPath, Associate Professor Haematology and Honorary Consultant Haematologist, Cancer Institute, University College London (UCL); Dr. Christian Itin, Chief Executive Officer, Autolus.
Webcast Registration: A live webcast will be held alongside the event. To register for the webcast please follow this link.

A recording of the event together with the presentation materials will be available on the Company's website after the event.

Note that due to the ASH embargo policy details specific to Publication 4892 will not be included in the Analyst/Investor event.

About Autolus Therapeutics plc
Autolus is a clinical-stage biopharmaceutical company developing next-generation, programmed T cell therapies for the treatment of cancer and autoimmune disease. Using a broad suite of proprietary and modular T cell programming technologies, the Company is engineering precisely targeted, controlled and highly active T cell therapies that are designed to better recognize target cells, break down their defense mechanisms and eliminate these cells. Autolus has a pipeline of product candidates in development for the treatment of hematological malignancies, solid tumors and autoimmune diseases. For more information, please visit www.autolus.com.

About obe-cel (AUTO1)
Obe-cel is a CD19 CAR T cell investigational therapy designed to overcome the limitations in clinical activity and safety compared to current CD19 CAR T cell therapies. Obe-cel is designed with a fast target binding off-rate to minimize excessive activation of the programmed T cells. Clinical trials of obe-cel have demonstrated that this "fast off-rate" profile reduces toxicity and T cell exhaustion, resulting in improved persistence and leading to high levels of durable remissions in r/r Adult ALL patients. Autolus has filed a BLA with the FDA for obe-cel in relapsed/refractory adult B-ALL and is preparing a regulatory submission with EMA. In collaboration with Autolus' academic partner, UCL, obe-cel is currently being evaluated in a Phase I clinical trials for B-NHL.

About obe-cel FELIX clinical trial
Autolus' Phase Ib/2 clinical trial of obe-cel enrolled adult patients with relapsed / refractory B-precursor ALL. The trial had a Phase Ib component prior to proceeding to the single arm, Phase 2 clinical trial. The primary endpoint is overall response rate, and the secondary endpoints include duration of response, MRD negative CR rate and safety. The trial enrolled over 100 patients across 30 of the leading academic and non-academic centers in the United States, United Kingdom and Europe. [NCT04404660]

About AUTO8
AUTO8 is our next-generation product candidate for multiple myeloma which comprises two independent CARs for the multiple myeloma targets, BCMA and CD19. We have developed an optimized BCMA CAR which is designed for improved killing of target cell that express BCMA at low levels. This has been combined with fast off rate CD19 CAR from obe-cel. We believe that the design of AUTO8 has the potential to induce deep and durable responses and extend the durability of effect over other BCMA CARs currently in development.

Forward-Looking Statements
This press release contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are statements that are not historical facts, and in some cases can be identified by terms such as "may," "will," "could," "expects," "plans," "anticipates," and "believes." These statements include, but are not limited to, statements regarding the development of Autolus' product candidates, the status of clinical trials (including, without limitation, expectations regarding the data that is being presented, the expected timing of data releases and development, as well as completion of clinical trials) and development timelines for the Company's product candidates. Any forward-looking statements are based on management's current views and assumptions and involve risks and uncertainties that could cause actual results, performance, or events to differ materially from those expressed or implied in such statements. These risks and uncertainties include, but are not limited to, the risks that Autolus' preclinical or clinical programs do not advance or result in approved products on a timely or cost effective basis or at all; the results of early clinical trials are not always being predictive of future results; the cost, timing, and results of clinical trials; that many product candidates do not become approved drugs on a timely or cost effective basis or at all; the ability to enroll patients in clinical trials; and possible safety and efficacy concerns. For a discussion of other risks and uncertainties, and other important factors, any of which could cause Autolus' actual results to differ from those contained in the forward-looking statements, see the section titled "Risk Factors" in Autolus' Annual Report on Form 20-F filed with the Securities and Exchange Commission on March 7, 2023, as well as discussions of potential risks, uncertainties, and other important factors in Autolus' subsequent filings with the Securities and Exchange Commission. All information in this press release is as of the date of the release, and Autolus undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events, or otherwise, except as required by law.

Contact:

Julia Wilson
+44 (0) 7818 430877
j.wilson@autolus.com

Susan A. Noonan
S.A. Noonan Communications
+1-917-513-5303
susan@sanoonan.com

Lauren Williams
Investase
+44 23 9438 7760
lauren@investase.com