Iovance Biotherapeutics Announces Clinical Data for Lifileucel in Combination with Pembrolizumab in Advanced Cancers at Society for Immunotherapy of Cancer (SITC) Annual Meeting

November 13, 2021

Tumor Infiltrating Lymphocyte (TIL) Cell Therapy in Combination with Pembrolizumab in Immune-Checkpoint Inhibitor Naïve Patients Shows Overall Response Rate (ORR) of 57% in Cervical Cancer, 60% in Melanoma with 30% Complete Response (CR) and 39% in Head and Neck Cancer

SITC Update Conference Call and Webcast on Saturday, November 13 at 5:30 pm ET

SAN CARLOS, Calif. and WASHINGTON, Nov. 13, 2021 (GLOBE NEWSWIRE) -- Iovance Biotherapeutics, Inc. (NASDAQ: IOVA), a late-stage biotechnology company developing novel T cell-based cancer immunotherapies, today announced clinical data for lifileucel in combination with pembrolizumab in patients with advanced cancers were presented in an oral session at the Society for Immunotherapy of Cancer (SITC) Annual Meeting. A slide presentation is also available on the Iovance website.

Clinical data in the presentation show encouraging response rates after lifileucel plus pembrolizumab in patients with immune checkpoint inhibitor (ICI)-naïve cervical cancer, advanced melanoma, and head and neck squamous cell carcinoma (HNSCC). The clinical data also demonstrated that lifileucel can be safely combined with pembrolizumab and warrant continued investigation of tumor infiltrating lymphocyte (TIL) cell therapy combinations as early-line treatment in advanced solid tumor cancers.

David M. O'Malley, M.D., Professor, Department of Obstetrics and Gynecology, The Ohio State University College of Medicine, Director of the Division of Gynecologic Oncology, The Ohio State University Comprehensive Cancer Center (OSUCCC – James) and investigator in the C-145-04 study, stated, “Immune checkpoint inhibitors are standard-of-care in the treatment of several types of advanced cancer, including cervical cancer, melanoma, and head and neck cancer. Unmet needs remain to help more patients respond and to enhance the depth and durability of responses. I was impressed by the increase in overall response rate for lifileucel in combination with pembrolizumab in cervical cancer patients, which was consistent with higher response rates in head and neck cancer and melanoma patients. Taken together the clinical data show great promise for TIL in combination with pembrolizumab across multiple solid tumors.”

Early-line treatment with single-agent pembrolizumab achieves an overall response rate (ORR) of 33% in patients with advanced melanoma[1] and 17% in patients with HNSCC.[2] Cervical cancer patients previously treated with standard-of-care systemic therapy achieve an ORR of 11%-14% with pembrolizumab monotherapy.[3] Novel early-line combination therapies are needed to improve the rate and depth of responses with manageable long-term safety. Clinical data in the SITC oral presentation included cervical cancer patients who were ICI- and chemotherapy-naïve as well as patients with ICI-naïve advanced melanoma and HNSCC. Patients across all three cohorts had high tumor burden at baseline. The ORR in all cohorts was assessed by investigator using RECIST 1.1 as follows (September 22, 2021 data cutoff):

- **57.1% ORR in cervical cancer (Cohort 3 in C-145-04 cervical cancer study, n=14):** Eight out of 14 patients had an objective response, including one complete response (CR), six partial responses (PR), one unconfirmed PR (uPR), and five best responses of stable disease (SD). 71.4% (5/7 patients) have ongoing confirmed responses at a median study follow up of 7.6 months.
- **60.0% ORR in melanoma (Cohort 1A in IOV-COM-202 study, n=10)**: Six out of 10 patients had a confirmed objective response, including three CRs (30% CR rate) and three PRs. Three patients achieved best response of SD. One prior unconfirmed CR (uCR) and two complete metabolic responses previously reported at ASCO 2021 converted to confirmed CRs per RECIST 1.1 as presented at SITC 2021. 66.7% (4/6 patients) have ongoing confirmed responses at a median study follow up of 11.5 months. These results compare to a 33% ORR (6% CR rate) for pembrolizumab monotherapy in metastatic melanoma.[1] Iovance plans to expand enrollment in this cohort.
- **38.9% ORR in HNSCC (Cohort 2A in IOV-COM-202 study, n=18):** Seven out of 18 patients had an objective response, including one CR, one uCR, four PRs, one uPR, and seven best responses of SD. 50.0% (3/6 patients) have ongoing confirmed responses at a median study follow up of 7.8 months.
- **Safety:** The treatment-emergent adverse event (TEAE) profile across all three cohorts was consistent with the underlying disease and known adverse event (AE) profiles of pembrolizumab, nonmyeloablative lymphodepletion (NMA-LD), and IL-2.

Friedrich Graf Finckenstein, M.D., Chief Medical Officer of Iovance, stated, “The encouraging results for Iovance TIL plus pembrolizumab across several tumor types validate the combination of checkpoint inhibition and TIL cell therapy as a potential platform approach in solid tumors. We observed response rates that are approximately double compared to what was seen with single-agent pembrolizumab in early-line melanoma and head and neck cancers as well as second-line cervical cancer. We are eager to continue our investigation of TIL combinations in melanoma, head and neck, cervical and non-small cell lung cancer patients in need of treatment options that provide higher response rates, and deeper responses with more complete responses.”

Iovance Posters and Presentations at SITC Annual Meeting (November 12-14, 2021)

Title: Phase 2 efficacy and safety of autologous tumor-infiltrating lymphocyte (TIL) cell therapy in combination with pembrolizumab in immune

checkpoint inhibitor-naïve patients with advanced cancers
Authors: D O'Malley, *et al.*
Presentation Type: Oral Presentation
Date and Time: Saturday, November 13, 2021 at 4:30 p.m. ET
Abstract ID: 492

Title: First phase 2 results of autologous tumor-infiltrating lymphocyte (TIL; LN-145) monotherapy in patients with advanced, immune checkpoint inhibitor-treated, non-small cell lung cancer (NSCLC)
Authors: A Schoenfeld, *et al.*
Presentation Type: Poster
Abstract ID: 458

Title: Successful generation of tumor-infiltrating lymphocyte (TIL) product from renal cell carcinoma (RCC) tumors for adoptive cell therapy
Authors: B Halbert, *et al.*
Presentation Type: Poster
Abstract ID: 176

Title: Expansion of tumor-infiltrating lymphocytes (TIL) using static bag for the clinical manufacturing rapid expansion protocol (REP) process
Authors: K Onimus, *et al.*
Presentation Type: Poster
Abstract ID: 101

Conference Call and Webcast on Saturday, November 13, 2021 at 5:30 p.m. ET
Iovance will host a webcast and conference call on Saturday, November 13, at 5:30 p.m. ET to discuss SITC clinical data updates for Iovance TIL in advanced, immune checkpoint inhibitor-treated, non-small cell lung cancer as well as Iovance TIL in combination with pembrolizumab in patients with advanced cancers.

Iovance senior leadership will be joined by the following key opinion leaders and principal investigators in Iovance clinical studies:

- Omid Hamid, M.D., Chief of Research/ImmunoOncology, The Angeles Clinic and Research Institute; Co-Director, Cutaneous Malignancy Program, Cedars Sinai CANCER
- David M. O'Malley, M.D., Professor of Obstetrics and Gynecology at The Ohio State University College of Medicine; Director of the Division of Gynecologic Oncology, The Ohio State University Comprehensive Cancer Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute (OSUCCC – James)
- Adam J. Schoenfeld, M.D., Medical Oncologist, Memorial Sloan Kettering Cancer Center

The conference call dial-in numbers are 1-844-646-4465 (domestic) or 1-615-247-0257 (international) and the access code is 3263399. The live webcast can be accessed in the Investors section of the company's website at www.iovance.com. The archived webcast will be available for one year following the event.

About Iovance
Iovance Biotherapeutics aims to be the global leader in innovating, developing and delivering tumor infiltrating lymphocyte (TIL) cell therapies for patients with cancer. We are pioneering a transformational approach to cure cancer by harnessing the human immune system's ability to recognize and destroy diverse cancer cells in each patient. Our lead late-stage TIL product candidate, lifileucel for metastatic melanoma, has the potential to become the first approved one-time cell therapy for a solid tumor cancer. The Iovance TIL platform has demonstrated promising clinical data across multiple solid tumors. We are committed to continuous innovation in cell therapy, including gene-edited cell therapy, that may extend and improve life for patients with cancer.

Forward-Looking Statements

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," "plans," "intends," "forecast," "guidance," "outlook," "may," "could," "might," "will," "should" or other words that convey uncertainty of future events or outcomes and are intended to identify forward-looking statements. Forward-looking statements are based on assumptions and assessments made in light of management's experience and perception of historical trends, current conditions, expected future developments and other factors believed to be appropriate. Forward-looking statements in this press release are made as of the date of this press release, and we undertake no duty to update or revise any such statements, whether as a result of new information, future events or otherwise. Forward-looking statements are not guarantees of future performance and are subject to risks, uncertainties and other factors, many of which are outside of our control, that may cause actual results, levels of activity, performance, achievements and developments to be materially different from those expressed in or implied by these forward-looking statements. Important factors that could cause actual results, developments and business decisions to differ materially from forward-looking statements are described in the sections titled "Risk Factors" in our filings with the Securities and Exchange Commission, including our most recent Annual Report on Form 10-K and Quarterly Reports on Form 10-Q, and include, but are not limited to, the following substantial known and unknown risks and uncertainties inherent in our business: the effects of the COVID-19 pandemic; risks related to the timing of and our ability to successfully develop, submit, obtain and maintain U.S. Food and Drug Administration ("FDA") or other regulatory authority approval of, or other action with respect to, our product candidates, and our ability to successfully commercialize any product candidates for which we obtain FDA approval; preliminary and interim clinical results, which may include efficacy and safety results, from ongoing clinical trials or cohorts may not be reflected in the final analyses of our ongoing clinical trials or subgroups within these trials or in other prior trials or cohorts; 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 forecasts and increase our estimated capital requirements; and other factors, including general economic conditions and regulatory developments, not within our control.

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[1]Robert C, et al. *N Engl J Med* 2015; 372:2521-2532.
[2]Burtness B, et al. *Lancet 2019*; 394:1915-1928.
[3]KEYTRUDA (pembrolizumab) USPI

Source: Iovance Biotherapeutics, Inc.