Idera Pharmaceuticals Completes Enrollment Into the ILLUMINATE-204 Trial of the Combination of Tilsotolimod and Ipilimumab for Unresectable or Metastatic Melanoma Following Failure of PD-1 Inhibitor Treatment

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- Results from the Phase 2 Expansion of ILLUMINATE-204 anticipated to be reported in the 4th Quarter of 2019 –

- December 2018 Interim Update of 34 efficacy evaluable patients demonstrated 32.4% achieved partial response (PR) or better; 76.5% of patients achieved disease control -

EXTON, Pa., Feb. 27, 2019 (GLOBE NEWSWIRE) -- Idera Pharmaceuticals, Inc. (NASDAQ: IDRA) today announced completion of enrollment into the ongoing phase 2 expansion of the ILLUMINATE-204 trial investigating tilsotolimod, Idera's intratumorally-delivered toll-like receptor 9 (TLR9) agonist, in combination with ipilimumab (Yervoy®*) in patients with unresectable or metastatic melanoma following failure of PD-1 inhibitor treatment.

52 patients have been dosed in the trial which included two separate patient groups. The company completed the targeted enrollment of 40 patients in the primary enrollment population, constituting patients who are naïve to prior ipilimumab treatment in the metastatic setting. This patient population mirrors the enrollment for the ILLUMINATE-301 phase 3 pivotal trial. The secondary exploratory enrollment population targeted up to 20 patients who had prior ipilimumab treatment in the metastatic setting.

The ILLUMINATE-204 trial is a multi-center trial being conducted at 10 sites throughout the United States.

The company is currently enrolling ILLUMINATE-301, a global, multi-center, randomized Phase 3 trial that compares effectiveness and safety between two treatment groups: tilsotolimod combined with ipilimumab versus ipilimumab given alone. This trial is being conducted at up to 100 centers with a target enrollment of 308 patients. Enrollment remains on track and is expected to be completed in the 4th quarter of 2019.

The company also recently received notice from the U.S. Food and Drug Administration that the company can proceed to implement the ILLUMINATE-206 clinical trial under a new Investigational New Drug (IND) Application. The ILLUMINATE-206 trial will test the safety and effectiveness of tilsotolimod in combination with ipilimumab and nivolumab in treating patients with Squamous Cell Carcinoma of the Head and Neck (SCCHN) and Microsatellite Stable Colorectal Cancer (MSS-CRC). The ILLUMINATE-206 trial is expected to initiate in the second quarter of 2019.

"We made tremendous progress with the clinical development of tilsotolimod in the second half of 2018, and enrollment in the phase 3 study in patients with melanoma progressing on PD-1 therapy is tracking to complete by the end of 2019." stated Joanna Horobin, M.B. Ch.B, Idera's Chief Medical Officer. "Oncologists are enthusiastic to extend the use of tilsotolimod to potentially improve the outcome of immuno-therapy for other patient populations, such as head and neck cancer, and in microsatellite stable CRC where so far immunotherapy outcomes have not been optimal."

As a reminder, the company provided an interim data update from the ILLUMINATE-204 trial in December 2018.

Summary of ILLUMINATE-204 Key Findings from the December 2018 Update:

- 37 patients dosed with 8 mg of tilsotolimod in combination with ipilimumab were evaluated for the December 2018 update;
- All 37 patients were evaluable for safety;
  - The combination regimen continues to be generally well tolerated. 9/37 subjects (24.3%) had immune-related toxicities indicating that tilsotolimod + ipilimumab does not appear to add immune-related toxicity versus ipilimumab alone;
  - Injection-related toxicities were grade 1-2 transient fever and flu-like symptoms lasting <48 hours;
- 34 patients were evaluable for efficacy;
  - Responses, including 3 Complete Responses (CR), were observed in 11 of the 34 evaluable patients (32.4%);
  - Duration of response ranges from > 1 month to > 30 months, with 36% of responses ongoing at the time of the report;
  - Per RECIST v1.1, the Overall Response Rate (ORR) is 29.4%; one patient with an unconfirmed Partial Response (uPR) at the end of treatment assessment progressed due to a new lesion at the 3-month follow-up disease assessment;
  - Overall, 26 patients out of 34 evaluable for efficacy (76.5%) experienced disease control (CR, PR, or Stable Disease [SD]);
  - Analysis of spider plots show tumor shrinkage in both injected and uninjected lesions,

indicating an abscopal effect;
    - Responding subjects include one patient with mucosal melanoma and one patient with acral melanoma, two forms of melanoma that are particularly difficult to treat; and
    - Importantly, 2 of 5 patients with prior ipilimumab experience achieved responses, further demonstrating a signal that tilsotolimod has the potential to help overcome prior ipilimumab resistance.

Additionally:

- A RECIST v1.1 PR of > 2.5 years is ongoing in 1 patient treated with tilsotolimod 4 mg in combination with ipilimumab; and
- A RECIST v1.1 CR of > 1 year is ongoing in 1 patient treated with tilsotolimod 16 mg in combination with pembrolizumab.

About Tilsotolimod (IMO-2125)
Tilsotolimod is a TLR 9 agonist that received Fast Track Designation from the US Food and Drug Administration (FDA) in 2017 for the treatment of anti-PD-1 refractory melanoma, in combination with ipilimumab as well as orphan drug designation from the FDA for the treatment of melanoma Stages IIb to IV. It signals the immune system to create and activate cancer-fighting cells (T-cells) to target solid tumors. Currently approved immuno-oncology treatments, specifically check-point inhibitors, work for some but not all, as many patients' immune response is missing or weak and thus they do not benefit from the checkpoint therapy. Intratumoral injections with tilsotolimod are designed to selectively enable the tumor-specific T-cells to recognize and attack cancers that remained elusive and unrecognized by the immune system exposed to checkpoint inhibitors alone, while limiting toxicity or impact on healthy cells in the body.

About ILLUMINATE-301
The ILLUMINATE-301 study (2125-MEL-301) is for patients who have metastatic melanoma for whom treatment with an anti-PD-1 drug like Keytruda® (pembrolizumab) or Opdivo® (nivolumab) has failed. ILLUMINATE-301 is a global, multi-center, randomized Phase 3 study that compares the effectiveness and safety between two treatment groups: IMO-2125 combined with ipilimumab (Yervoy®) versus ipilimumab given alone.

For additional details about ILLUMINATE-301, please go to clinicaltrials.gov and search for study identifier NCT03445533.

About ILLUMINATE-204
The ILLUMINATE-204 study (2125-204) is for patients who have metastatic melanoma for whom treatment with an anti-PD-1 drug like Keytruda®** (pembrolizumab) or Opdivo®* (nivolumab) has failed. ILLUMINATE-204 is a multi-center, two-arm Phase 1/2 study that tests the safety and effectiveness of tilsotolimod in combination with either ipilimumab (Yervoy®) or pembrolizumab (Keytruda®) for the treatment of patients with anti-PD-1 refractory metastatic melanoma.

For additional details about ILLUMINATE-204, please go to clinicaltrials.gov and search for study identifier NCT02644967.

About ILLUMINATE-206
The ILLUMINATE-206 study (2125-206) is a Phase 2 multi-center, multi-cohort study of intratumoral tilsotolimod in combination with nivolumab and ipilimumab in patients with Squamous Cell Carcinoma of the Head and Neck (SCCHN) who are either immunotherapy naïve and immunotherapy refractory and immunotherapy naïve patients with Microsatellite Stable Colorectal Cancer (MSS-CRC). The trial is expected to open for enrollment in the second quarter of 2019.

About Metastatic Melanoma
Although melanoma is a rare form of skin cancer, it comprises over 75% of skin cancer deaths. The American Cancer Society estimates that there were approximately 76,000 new invasive melanoma cases and 10,000 deaths from the disease in the USA in 2016. Additionally, according to the World Health Organization, about 132,000 new cases of melanoma are diagnosed around the world every year.

About Idera Pharmaceuticals
Harnessing the approach of the earliest researchers in immunotherapy and the Company's vast experience in developing proprietary immunology platforms, Idera's lead development program is focused on priming the immune system to play a more powerful role in fighting cancer, ultimately increasing the number of people who can benefit from immunotherapy. Idera also continues to focus on the acquisition, development and ultimate commercialization of drug candidates for both oncology and rare disease indications characterized by small, well-defined patient populations with serious unmet needs. To learn more about Idera, visit www.iderapharma.com.

Forward Looking Statements
This press release contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements, other than statements of historical fact, included or incorporated in this press release, including statements regarding the Company's strategy, future operations, collaborations, intellectual property, cash resources, financial position, future revenues, projected costs, prospects, clinical trials, plans, and objectives of management, are forward-looking statements. The words "believes," "anticipates," "estimates," "plans," "expects," "intends," "may," "could," "should," "potential," "likely," "projects," "continue," "will," and "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Idera cannot guarantee that it will actually achieve the plans, intentions or expectations disclosed in its forward-looking statements and you should not place undue reliance on the Company's forward-looking statements. There are a number of important factors that could cause Idera's actual results to differ materially from those indicated or implied by its forward-looking statements. Factors that may cause such a difference include: whether the Company's cash resources will be sufficient to fund the Company's continuing operations and the further development of the Company's programs for the period anticipated; whether interim results from a clinical trial, such as the preliminary results reported in this release, will be predictive of the final results of the trial; whether results obtained in preclinical studies and clinical trials such as the results described in this release will be indicative of the results that will be generated in future clinical trials, including in clinical trials in different disease indications; whether products based on Idera's technology will advance into or through the clinical trial process when anticipated or at all or warrant submission for regulatory approval; whether such products will receive approval from the U.S. Food and Drug Administration or equivalent foreign regulatory agencies; whether, if the Company's products receive approval, they will be successfully distributed and marketed; whether the Company's collaborations will be successful; and such other important factors as are set forth under the caption "Risk factors" in the Company's Annual Report filed on Form 10-K for

the period ended December 31, 2017 and the Company's Quarterly Report filed on Form 10-Q for the period ended September 30, 2018. Although Idera may elect to do so at some point in the future, the Company does not assume any obligation to update any forward-looking statements and it disclaims any intention or obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

*Yervoy (ipilimumab) and Opdivo (nivolumab) are registered trademarks of Bristol-Myers Squibb.

**Keytruda (pembrolizimab) is a registered trademark of Merck & Co., Inc.

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