Arena Pharmaceuticals Reports Positive Phase 2a Results for Olorinab in Patients with Abdominal Pain Associated with Crohn's Disease

September 24, 2018

- Olorinab demonstrated a statistically significant improvement in abdominal pain over 8 weeks of treatment

- All patients with evaluable data at week 8 exhibited a pre-defined clinical response of ≥30% change from baseline in AAPS

- Treatment effects were demonstrated early and were consistent over the 8-week treatment period

- Olorinab appeared safe and generally well tolerated

- Arena intends to progress the olorinab clinical program targeting gastrointestinal pain

SAN DIEGO, Sept. 24, 2018 /PRNewswire/ -- Arena Pharmaceuticals, Inc. (Nasdaq: ARNA) today announced positive topline results from its Phase 2a trial of olorinab, an investigational, peripherally restricted, highly selective, full agonist of the cannabinoid receptor 2 (CB_2) in development for the treatment of gastrointestinal pain.

Phase 2a Trial Design
This was a randomized, open-label, 8-week study investigating two doses of olorinab (25 mg and 100 mg) administered TID (three times daily). All patients were diagnosed with quiescent to mild active Crohn's disease associated with chronic abdominal pain defined as a baseline Average Abdominal Pain Score (AAPS) ≥4. Fourteen patients were enrolled with a mean baseline AAPS of 5.6.

Topline Analyses
Reductions in pain were seen within the first week of treatment with olorinab and statistically significant improvement from baseline in AAPS was observed at weeks 4 and 8. In the 11 patients evaluable at 8 weeks of treatment (baseline AAPS of 6.0), there was an improvement in AAPS of -4.6 ($p<0.001$) from baseline at peak effect (1.5 hours post morning dose). At peak effect, 11 out of 13 patients (85%) with evaluable data at week 4, and 11 out of 11 patients (100%) with evaluable data at week 8, exhibited a clinically relevant improvement (≥30% change from baseline) in AAPS. Results in all patients randomized (intent-to-treat) demonstrated 11 out of 14 patients (79%) with clinically relevant improvement at both weeks 4 and 8. The improvement in pain was consistent at both the 25 mg and 100 mg olorinab dose levels and a statistically significant improvement in AAPS was also observed at trough levels (before the morning dose).

Olorinab appeared safe and generally well tolerated in this study with no clinically significant changes in heart rate or blood pressure, no psychotropic effects, and no discontinuations due to adverse events.

"There is a strong clinical need for non-opiate treatments for the management of chronic abdominal pain in patients with gastrointestinal disorders, including Crohn's disease, ulcerative colitis and irritable bowel syndrome," stated Bruce Yacyshyn, MD, Professor Medicine in the Division of Digestive Diseases at the University of Cincinnati College of Medicine and Medical Director for Inpatient Gastroenterology at UC Health University Hospital. "The exciting results from this initial Phase 2a study in patients with Crohn's disease leaves me optimistic for the potential of olorinab as a novel approach for the management of GI pain. I look forward to the further development of this interesting compound as an aid in the management of this complex group of patients."

Preston Klassen, MD, MHS, Chief Medical Offer of Arena, said, "The intent of this Phase 2a study of olorinab was to get directional information on the safety, tolerability and therapeutic potential to reduce gastrointestinal pain in patients with Crohn's disease and symptoms of chronic abdominal pain. Despite its small size and uncontrolled design, this trial provides early results that suggest a robust clinical response and supports continued, rapid development of olorinab, potentially targeting several diseases in which gastrointestinal pain is a hallmark. We look forward to providing additional detail on the development path forward during Arena's R&D Day on October 4th."

About the Trial
The Phase 2a study was a randomized, open-label, 8-week trial to assess the safety, tolerability, efficacy and pharmacokinetics of two orally administered doses (25 mg and 100 mg TID) of olorinab (APD371) in patients with Crohn's disease experiencing abdominal pain. The trial enrolled 14 patients with an Average Abdominal Pain Score (AAPS) ≥4. The safety assessment included adverse events, physical examination, clinical laboratory tests (including hematology, serum chemistry and urinalysis), ECGs and vital signs monitored throughout the study. The efficacy assessment included change in AAPS from baseline, and proportion of responders (defined as a ≥30% improvement in AAPS) determined at three time points (before the morning dose of olorinab, 1.5 hours after the morning dose, and before the evening dose) throughout the study. In addition, the impact of 8 weeks treatment with olorinab on inflammatory markers of Crohn's disease and Patient Reported Outcomes/Health Questionnaires was assessed.

About Olorinab
Olorinab (APD371) is an oral, peripherally restricted, highly selective, full agonist of the cannabinoid receptor 2 (CB_2) in development for the treatment of gastrointestinal-based visceral pain associated with gastrointestinal diseases, including Crohn's disease. Arena discovered and developed this drug candidate internally. Olorinab showed sustained efficacy in several preclinical models of chronic pain (including inflammatory bowel disease) and appeared safe and well tolerated in Phase 1 single and multiple dose studies. In a Phase 1 study of healthy volunteers, olorinab produced no psychotropic effects commonly seen with cannabinoids, supporting its potential application as an analgesic without risk of abuse or dependence.

Olorinab is an investigational compound that is not approved for any use in any country.

About Arena Pharmaceuticals
Arena Pharmaceuticals is focused on delivering novel, transformational medicines with optimized pharmacology and pharmacokinetics to patients

globally. Arena's proprietary pipeline includes multiple potentially first- or best-in-class programs with broad clinical utility. The most advanced investigational clinical programs are ralinepag (APD811), in a Phase 3 program for pulmonary arterial hypertension (PAH), and etrasimod (APD334), expected to commence a Phase 3 program for ulcerative colitis (UC) and a program in Crohn's disease (CD), and which has potential utility for a broad range of immune and inflammatory conditions. Arena is also evaluating olorinab (APD371) for the treatment of gastrointestinal pain, as well as other drug candidates in earlier research and development stages.

In addition, Arena has several collaborations including with Everest Medicines Limited (ralinepag and etrasimod in Greater China and select Asian countries), Axovant Sciences GmbH (nelotanserin - Phase 2), Boehringer Ingelheim International GmbH (undisclosed target - preclinical), Outpost Medicine, LLC (undisclosed target – preclinical), and Eisai Co., Ltd. and Eisai Inc. (BELVIQ® - marketed product).

Forward-Looking Statements
Certain statements in this press release are forward-looking statements that involve a number of risks and uncertainties. These forward-looking statements may be identified by introductory words such as "intends," "potential," "look forward to," "focused on," "evaluating," "expected," or words of similar meaning, or by the fact that they do not relate strictly to historical or current facts. Such forward-looking statements include, without limitation, statements regarding the intention and plan to progress olorinab's development; the need for non-opiate treatments; the importance of olorinab's Phase 2a results and data; olorinab's potential; plans to provide additional details; the potential of Arena's compounds in its pipeline, including to be first- or best-in-class programs and their utility; and Arena's focus, goals, strategy, clinical programs and collaborations. For such statements, Arena claims the protection of the Private Securities Litigation Reform Act of 1995. Actual events or results may differ materially from Arena's expectations. Factors that could cause actual results to differ materially from the forward-looking statements include the following: the topline data is based on preliminary analysis of key data, and such data or analysis may change following a more comprehensive review of the data, and such topline data may not accurately reflect the complete results of a particular study or trial; the reported on Phase 2a trial was not a placebo controlled study; results of clinical trials and other studies are subject to different interpretations and may not be predictive of future results; nonclinical and clinical data are voluminous and detailed, and regulatory agencies may interpret or weigh the importance of data differently and reach different conclusions than Arena or others, request additional information, have additional recommendations or change their guidance or requirements before or after approval; the timing and outcome of research, development and regulatory review is uncertain; we expect to need additional funds to advance all of our programs, and you and others may not agree with the manner we allocate our resources; our drug candidates may not advance in development or be approved for marketing; clinical trials and other studies may not proceed at the time or in the manner expected or at all; enrolling patients in our ongoing and intended clinical trials is competitive and challenging; unexpected or unfavorable new data; risks related to developing and commercializing drugs; risks related to relying on partners and other third parties; Arena's and third parties' intellectual property rights; and satisfactory resolution of litigation or other disagreements with others. Additional factors that could cause actual results to differ materially from those stated or implied by Arena's forward-looking statements are disclosed in Arena's filings with the Securities and Exchange Commission (SEC), including but not limited to Arena's most recent Annual Report on Form 10-K and Quarterly Report on Form 10-Q. These forward-looking statements represent Arena's judgment as of the time of this release. Arena disclaims any intent or obligation to update these forward-looking statements, other than as may be required under applicable law.

Corporate Contact:
Kevin R. Lind
Arena Pharmaceuticals, Inc.
Executive Vice President and
Chief Financial Officer
klind@arenapharm.com
858.210.3636

Media Contact:
Matt Middleman, M.D.
LifeSci Public Relations
matt.middleman@lifescipublicrelations.com
646.627.8384

View original content to download multimedia:http://www.prnewswire.com/news-releases/arena-pharmaceuticals-reports-positive-phase-2a-results-for-olorinab-in-patients-with-abdominal-pain-associated-with-crohns-disease-300717790.html

SOURCE Arena Pharmaceuticals, Inc.