December 1, 2016

Aradigm Announces Top-Line Results from Two Phase 3 Studies Evaluating Pulmaquin for the Chronic Treatment of Non-Cystic Fibrosis Bronchiectasis Patients with Lung Infections with Pseudomonas aeruginosa

Company to host conference call at 4:30 pm ET today

HAYWARD, Calif.--(BUSINESS WIRE)-- **Aradigm Corporation (NASDAQ:ARDM)** (the "Company") today announced top-line results from its two Phase 3 clinical trials (ORBIT-3 and ORBIT-4) evaluating the safety and efficacy of Pulmaquin®, the Company's investigational proprietary formulation of once daily ciprofloxacin for inhalation, in patients with non-cystic fibrosis bronchiectasis ("non-CF BE") with chronic lung infections with *Pseudomonas aeruginosa (P. aeruginosa)*.

The ORBIT-3 and ORBIT-4 pivotal trials were identical in design except for a pharmacokinetics sub-study that was conducted in one of the trials. The primary endpoint in both ORBIT-3 and ORBIT-4 was an increase in the median time to first mild, moderate or severe pulmonary exacerbation ("PE"). The key secondary efficacy endpoint in both trials was the frequency of PE's over the 48-week double-blind treatment period.

In ORBIT-4 the median time to first mild, moderate or severe PE was 230 days in the Pulmaquin treatment group as compared to 163 days in the placebo group. This increase in the median time to first PE was statistically significant (p=0.0462) using non-stratified log-rank analysis. In the key secondary efficacy endpoint, there was a 37% reduction in the frequency of PE's over the 48-week treatment period in the Pulmaquin treatment group as compared to the placebo group. This result was statistically significant (p=0.0007) with a Hazard Ratio of Pulmaquin/placebo of 0.63 using non-stratified binomial regression.

In ORBIT-3 the median time to first mild, moderate or severe PE was 221 days in the Pulmaquin treatment group as compared to 136 days in the placebo group. This increase in the median time to first PE was similar to ORBIT-4 but was not statistically significant (p=0.8488) using non-stratified log-rank analysis. In the key secondary efficacy endpoint, there was a 13% reduction in the frequency of PE's over the 48-week treatment period in the Pulmaquin treatment group as compared to the placebo group. This result was not statistically significant (p=0.3125) with a Hazard Ratio of Pulmaquin/placebo of 0.87 using non-stratified binomial regression.

The analyses of combined data from both studies resulted in a statistically significant reduction in the number of PE's over the 48-week double-blind period (Hazard Ratio Pulmaquin/placebo: 0.73; p=0.0015), representing a 27% reduction in PE's over the period.

When the additional analyses of combined data from both studies were conducted taking into account only PE's that were moderate or severe (i.e., those that required interventions with antibiotics or hospitalization) the median time to first PE in the Pulmaquin group was 302 days vs. placebo 198 days (p=0.0217). There was also a statistically significant reduction in the number of moderate and severe PE's over the 48-week double-blind period (Hazard Ratio Pulmaquin/placebo: 0.67; p=0.0002) using non-stratified analysis, representing a 33% reduction in PE's over the period.

In each study, the treatment groups were stratified for gender, pre-trial frequency of exacerbations and smoking status. The Statistical Analysis Plan for the studies called for stratified analyses; however, since some strata were found to have no or very few subjects, both non-stratified and stratified analyses were conducted. The Company believes that due to the limited number of subjects in some strata the non-stratified analyses are more appropriate as strata that are too small can produce highly unstable estimated treatment effects with potential outliers. Using the stratified analyses, the median time to first PE in ORBIT-3 was Pulmaquin: 221 days; placebo: 136 days; p=0.7681 and for ORBIT-4 was Pulmaquin: 230 days; placebo: 163 days; p=0.0885.

Both studies demonstrated a statistically significant reduction in *P. aeruginosa* density at Day 28, the end of the first on-treatment period (ORBIT-3: p= < 0.0001; ORBIT-4: p= < 0.0001). For each study, the magnitude of this antibiotic effect remained persistent throughout all on-treatment periods.

Pulmaquin was safe and well tolerated in both studies. There were no differences in the changes of lung function (FEV1 % predicted and FVC % predicted) or symptoms of airway irritation between the Pulmaquin and placebo groups in the two studies. Overall, the incidence of all treatment emergent adverse events ("TEAE") was similar between the Pulmaquin and

placebo groups in both ORBIT-3 (Pulmaquin: 89.6%; placebo: 91.6%) and ORBIT-4 (Pulmaquin: 86.4%; placebo: 96.9%). In ORBIT-3 the rates of serious TEAEs were 30.6% with Pulmaquin and 25.3% with placebo while in ORBIT-4 the rates were 17.0% versus 28.6%.

For each study, the randomization rate of Pulmaquin treated subjects to placebo was 2 to 1. There were 8 deaths in ORBIT-3 (Pulmaquin: 5 (2.7%); placebo: 3 (3.2%)) and 6 deaths in ORBIT-4 (Pulmaquin: 2 (1.0%); placebo: 4 (4.1%)). None of the deaths was related to Pulmaquin or placebo. The most frequently observed treatment related TEAEs were of respiratory/thoracic/mediastinal nature and were reported in ORBIT-3 by 25.7% of subjects with Pulmaquin and in 21.1% of subjects with placebo, while the rates in ORBIT-4 were 16.5% with Pulmaquin versus 19.4% with placebo.

After the completion of the 48-week double-blind period, both Pulmaquin and placebo treated patients were given the opportunity to receive Pulmaquin in a 28-day open label extension period. Eighty-nine percent of the patients who completed ORBIT-3 and 91% percent of the patients who completed ORBIT-4 enrolled in the extension period.

"Patients with non-cystic fibrosis BE chronically infected with *P. aeruginosa* have a particularly severe form of this disease. It is exciting to see that after many setbacks in the development of inhaled antibiotics to treat these patients we are finally seeing results with good safety and efficacy," said Dr. Anne O'Donnell, MD, Professor of Medicine and Chief, Division of Pulmonary, Critical Care and Sleep Medicine, Georgetown University Medical Center, Washington DC, who was the Principal Investigator for the North American segment of the ORBIT-3 and ORBIT-4 trials.

"Chronic lung infections with *P. aeruginosa* are a growing global health care problem for patients with lung diseases like non-cystic fibrosis BE and COPD. In cystic fibrosis patients we have had success in treating chronic lung infections with inhaled antibiotics, and I am very pleased that Pulmaquin is demonstrating a reduction of pulmonary exacerbations in non-cystic fibrosis BE," said Dr. Charles Haworth MD FRCP, Director, Cambridge Centre for Lung Infection, Papworth Hospital, Cambridge, UK, who was the Principal Investigator for the Phase 3 studies for ex-North American regions.

The Company also announced that it has received the final statistical analysis report from the two year inhalation carcinogenicity study in rats with Pulmaquin; there were no differences in the rate of observed tumors between the Pulmaquin and control groups.

"We sincerely thank all of the patients and investigators who participated in these studies for their commitment. We are delighted that once daily inhaled Pulmaquin is demonstrating a compelling reduction of pulmonary exacerbations and persistent antibiotic activity against *P. aeruginosa* infections, together with a good tolerability and safety profile in our Phase 3 clinical trials, as well as no carcinogenicity in animal studies. We will review the next steps towards an application for approval of Pulmaquin in the U.S. at an upcoming meeting scheduled with FDA and are planning to engage soon in discussions of these results with the EMA as well," said Dr. Juergen Froehlich, MD, Aradigm's Chief Medical Officer.

Aradigm has been granted orphan drug designation for Pulmaquin for non-CF BE in the U.S. In addition, FDA has designated Pulmaquin as a Qualified Infectious Disease Product (QIDP). The QIDP designation is granted for treatment of non-CF BE patients with chronic lung infections with *P. aeruginosa* and made Pulmaquin eligible for Fast Track designation which was granted by the FDA in September 2014.

Further data from the Phase 3 studies will be presented in future publications and medical meetings.

Investor Conference Call Information

Aradigm will host a conference call for analysts and investors to discuss the results from the ORBIT-3 and ORBIT-4 trials today at 4:30 pm EST/1:30 pm PST. To participate in the conference call, please dial 888-632-5006 or 913-312-0850 for international callers. For both dial in numbers please use conference ID #1033645.

A replay of the call will also be available through the Aradigm website (www.aradigm.com) shortly after the call and will remain available for 30 days.

About Pulmaquin

Pulmaquin is a dual release formulation composed of a mixture of liposome encapsulated and unencapsulated ciprofloxacin. Ciprofloxacin, available in oral and intravenous formulations, is a widely prescribed antibiotic. It is used to treat acute lung infections and is often preferred because of its broad-spectrum antibacterial activity against various bacteria, such as *P. aeruginosa*. Pulmaquin was evaluated in two Phase 3 studies to determine its safety and effectiveness as a once-a-day inhaled formulation for the chronic treatment of patients with non-CF BE who have chronic lung infections with *P. aeruginosa*.

Following Phase 2a development of the liposomal portion of Pulmaquin (Lipoquin®) and Phase 1 development of Pulmaquin, the Phase 2b study ORBIT-2 with Pulmaquin was a 24-week multicenter, randomized, double-blind, placebo-controlled trial in 42 adult non-CF BE subjects. This study demonstrated a significant reduction in *P. aeruginosa* sputum density (p=0.002) and an increase in time to first exacerbation in the per protocol population (p=0.046) and the mITT (p=0.057) populations in the Pulmaquin treated subjects compared to placebo. Overall, the incidence of all treatment emergent adverse events was similar between groups. The most frequently reported treatment related adverse events (reported by ≥ 3 patients in either treatment group) included product taste abnormal and nausea in the Pulmaquin group and wheezing in the placebo group. No serious adverse events were considered treatment related. There were no deaths reported during ORBIT-2.

The Phase 3 clinical program for Pulmaquin in non-CF BE consisted of two worldwide, double-blind, placebo-controlled pivotal trials (ORBIT-3 and ORBIT-4) that are identical in design except for a pharmacokinetics sub-study that was conducted in one of the trials. Each trial enrolled patients (278 in ORBIT-3 and 304 in ORBIT-4) into a 48-week double-blind period consisting of 6 cycles of 28 days on treatment with Pulmaquin or placebo plus 28 days off treatment, followed by a 28 day open label extension in which all participants received Pulmaquin (total treatment duration, including the double-blind period, of approximately one year). The superiority of Pulmaquin vs. placebo during the double-blind period was evaluated in terms of the time to first PE (primary endpoint), while key secondary endpoints included the reduction in the number of PE's and improvements in quality of life measures. Lung function was monitored as a safety indicator.

Aradigm has been granted orphan drug designations for liposomal ciprofloxacin as well as for ciprofloxacin for inhalation for non-CF BE in the U.S. In addition, the U.S. Food and Drug Administration (FDA) has designated Pulmaquin as a Qualified Infectious Disease Product (QIDP). The QIDP designation is granted for treatment of non-CF BE patients with chronic lung infections with *P. aeruginosa*. The QIDP designation made Pulmaquin eligible for Fast Track designation which was granted by the FDA in September 2014.

In 2013, Aradigm granted an exclusive, world-wide license for the Company's inhaled liposomal ciprofloxacin product candidates for the indication of non-CF BE and other indications to Grifols S.A. More information on the terms of this license may be found in the Company's Annual Report on Form 10-K for the year ended December 31, 2013 filed with the SEC on March 13, 2014.

About Non-Cystic Fibrosis Bronchiectasis

Non-CF BE is a severe, chronic and rare disease characterized by abnormal dilatation of the bronchi and bronchioles, frequently associated with chronic lung infections. It is often a consequence of a vicious cycle of inflammation, recurrent lung infections, and bronchial wall damage. Non-CF BE represents an unmet medical need with high morbidity and mortality that affects more than 150,000 people in the U.S. and over 200,000 people in Europe. There is currently no drug approved for the treatment of this condition.

About Aradigm

Aradigm is an emerging specialty pharmaceutical company focused on the development and commercialization of drugs for the prevention and treatment of severe respiratory diseases. Aradigm is completing Phase 3 development of Pulmaquin (an investigational proprietary formulation of ciprofloxacin for inhalation) for the treatment of non-cystic fibrosis BE. Aradigm's inhaled ciprofloxacin formulations including Pulmaquin are also product candidates for treatment of patients with cystic fibrosis and non-tuberculous mycobacteria, and for the prevention and treatment of high threat and bioterrorism infections, such as inhaled tularemia, pneumonic plague, melioidosis, Q fever and inhaled anthrax. In addition, Aradigm has a pipeline composed of programs to prevent diseases in tobacco smokers through smoking cessation and a diagnostic program to detect aspirations of gastrointestinal fluid into the respiratory tract.

More information about Aradigm can be found at www.aradigm.com.

Forward-Looking Statements

Except for the historical information contained herein, this news release contains forward-looking statements that involve risk and uncertainties, including those related to the analyses of the results from the ORBIT-3 and ORBIT-4 clinical trials and the interpretation of those results by regulators, the ability of the Company to file for approval of Pulmaquin based on those results and the ability to continue successful product development of our potential product candidates, including Pulmaquin, as well as the other risks detailed from time to time in the Company's filings with the Securities and Exchange Commission (SEC), including the Company's Annual Report on Form 10-K for the year ended December 31, 2015 filed with the SEC on March 30, 2016, and the Company's Quarterly Reports on Form 10-Q.

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