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ARCA DISCOVERY ANNOUNCES DATA DEMONSTRATING POTENTIAL FOR BUCINDOLOL AS TARGETED THERAPY IN HEART FAILURE, ATRIAL FIBRILLATION, AND VENTRICULAR ARRHYTHMIA

-- New Data Presented at American Heart Association Scientific Sessions 2007 --

Orlando, FL, November 6, 2007 – ARCA Discovery, a privately held biopharmaceutical company, announced today that investigators presented new data analyses on ARCA Discovery's lead product candidate bucindolol, a next-generation beta-blocker and vasodilator for heart failure, atrial fibrillation, and arrhythmia, from the Beta-blocker Evaluation of Survival Trial (BEST) at the American Heart Association's (AHA) Scientific Sessions 2007 Orlando, Florida.

"The data presented today provided us with more evidence supporting the potential of bucindolol as a targeted therapy for the treatment of heart failure," said Michael R. Bristow, M.D., Ph.D., chief science and medical officer of ARCA. "Importantly, we are encouraged by the data demonstrating bucindolol's effect in preventing atrial fibrillation and life threatening ventricular arrhythmia, showing the promise for bucindolol in additional indications. In addition, the BEST trial investigators were able to extend the observation of pharmacogenetic targeting of bucindolol to benefits on cardiovascular hospitalizations, which in effect gives the drug and targeting concept a broader application."

"Effects of Bucindolol on Cardiovascular Mortality and Morbidity Determined by the Beta-1 389 Arg/Gly Receptor Polymorphism Data from a sub-study analysis of the BEST cohort" (Presentation #901) presented by Michel White, M.D. from the Montreal Heart Institute, demonstrated for the first time that in the entire 2,708 patient cohort of BEST chronic administration of bucindolol results in a significant reduction in cardiovascular hospitalizations, as well as in the previously reported heart failure hospitalizations and cardiovascular mortality. In addition, results were reported from the large (1,040 patient) DNA substudy of BEST, a hypothesis-driven, prospectively-designed study initiated during the trial that examined the effects of bucindolol in beta-1 adrenergic receptor gene variants (beta-1 389 Arg/Arg and Gly carriers).

In the adrenergic receptor genetic substudy, chronic administration of bucindolol resulted in a significant reduction in cardiovascular hospitalizations and mortality. Effects on both were strikingly beta-1 389 Arg/Gly specific, with the higher functioning, Arg/Arg version of the receptor associated with large treatment effects (compared to placebo, reduction in time to event CV hospitalizations by 34% (p = 0.003), CV hospitalizations/patient by 35% (p = 0.005), number of days CV hospitalized/patient by 36% (p = 0.005), and cardiovascular mortality by 46% (p = 0.015)). The presentation

concluded that genetic targeting of the beta-1 AR 389 polymorphism may improve the clinical responses to bucindolol for CV mortality and morbidity.

“Effect of β_1 389 Arg/Gly α_{2c} 322-325 Wt/Del Genotypes on Adjudicated Hospitalizations in the BEST Trial” (Presentation #2912) presented, in an oral presentation by Dr. Peter Carson of the Virginia Medical Center, data from a recent adjudication by the BEST nine member endpoints committee (EPC), in which they reviewed all 5,086 hospitalizations from the study, recognized by the FDA as an important endpoint in evaluating heart failure drugs.

The analysis revealed that the EPC method – due to its level of specificity – adjudicated fewer hospitalizations due to worsening heart failure as compared to the investigator/CRF method. In addition, the EPC adjudication tended to increase effect size, although the CRF method of identifying heart failure hospitalizations yielded similar qualitative results.

The results presented by Dr. Carson demonstrated both the beta-1 389 Arg/Arg adrenergic receptor polymorphism and the alpha-2c wild type gene variant are positively correlated with certain major clinical responses to bucindolol (all-cause mortality, cardiovascular mortality and days each patient was hospitalized for cardiovascular of heart failure causes). Moreover, Dr. Carson presented data that the pairing of these two favorable genotypes produces an even greater clinical response than either monotype alone. With this pairing, all-cause mortality was reduced by 41% ($p = 0.032$), cardiovascular mortality by 48% ($p = 0.017$), adjudicated time to first cardiovascular or heart failure hospitalizations by respectively 33% ($p = 0.008$) and 45% ($p = 0.002$), and days hospitalized/patient by 32% (cardiovascular, $p = 0.012$) or 36% (heart failure, $p = 0.003$). Such patients, termed the “very favorable diplotype,” comprising over 40% of the general population, will be the highest priority for treatment with bucindolol.

New Data on Bucindolol in Atrial Fibrillation and Ventricular Arrhythmia Data from the Phase 3 BEST clinical trial (Presentation #2867) demonstrated a positive effect of bucindolol on clinically important arrhythmic conditions—atrial fibrillation (AF) and life threatening ventricular arrhythmias (VT/VF). In the presentation by Christopher Lowery, M.D. of the University of Colorado, subjects with chronic heart failure (CHF) and Arg/Arg 389 beta-1 or wild type alpha-2c adrenergic receptors treated with bucindolol had a lower rate of new onset AF than those randomized to placebo. This treatment effect was not observed in the population of beta-1 Gly389 or the alpha-2c deletion carriers, indicating a pharmacogenetic interaction. Moreover, the “Very Favorable” diplotype pairing of these two favorable gene variants produced even greater positive treatment effects (reduction by 52%, $p = <0.048$), similar to the pharmacogenetic findings observed with heart failure endpoints.

As demonstrated in a presentation (Presentation #2021/C32) by William Sauer, M.D. of the University of Colorado, subjects with CHF and Arg/Arg 389 beta-1 or wildtype alpha2c adrenergic receptors treated with bucindolol had a lower rate of VT/VF than those randomized to placebo. This treatment effect was not observed in the population of

beta-1 Gly389 or the alpha-2c deletion carriers, indicating a pharmacogenetic interaction. As for AF prevention and CHF endpoints, patients with the favorable diplotype had treatment effects that were enhanced (reduction by 64% (p =0.001) in VT/VF occurrence by bucindolol as compared to placebo) over those for each individual favorable monotype.

About Bucindolol

Bucindolol is a next-generation beta-blocker and vasodilator for heart failure and other indications, which promises to be the first genetically-targeted cardiovascular drug. Extensive Phase 3 data show that bucindolol is likely to be an effective and well-tolerated therapy for many heart failure patients that can be targeted to those patients most likely to respond favorably, thereby overcoming a major problem with current treatment approaches. ARCA's founding scientists have confirmed genetic polymorphisms that interact with bucindolol's unique pharmacology to modify patient response.

A large substudy from a Phase 3 trial published in the July 25, 2006 edition of the Proceedings of the National Academy of Sciences shows that a common genetic variation in the beta-1 adrenergic receptor may help doctors identify heart failure patients who may benefit most from bucindolol. Data presented at the 2005 American Heart Association Meeting from the same DNA substudy demonstrates further enhancement of bucindolol's efficacy by targeting both the beta-1 variant and a variant of the alpha-2c-adrenergic receptor. A patient's response to bucindolol appears to be affected by genetic variations in two cardiovascular receptors.

ARCA is planning to submit a New Drug Application to the FDA for bucindolol in order to gain approval of the drug with a genetic test to assist physicians in determining whether bucindolol is an appropriate therapy for their heart failure patients. The Company has exclusive, worldwide rights to bucindolol.

About ARCA Discovery, Inc.

ARCA Discovery, Inc. is a privately held biopharmaceutical company developing genetically-targeted therapies for heart failure and other cardiovascular diseases. The Company has conducted private financings totaling over \$34 million, including a Series A Preferred financing in February 2006 led by Atlas Venture, Boulder Ventures and Pequot Capital Management and a Series B Preferred financing in May 2007 led by Skyline Ventures and InterWest Partners.