



**PRESS RELEASE**  
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**CALANDO PHARMACEUTICALS ANNOUNCES COMPLETION OF IT-101 PHASE 1 CLINICAL STUDY**

PASADENA, Calif.— October 23, 2008 — Calando Pharmaceuticals, a majority-owned subsidiary of Arrowhead Research Corporation (NASDAQ: ARWR), announced today completion of the IT-101 Phase I clinical study conducted at City of Hope in Duarte, California. The company expects the entire study data to be published in early 2009. IT-101 is an experimental, nanoparticle therapeutic that consists of the drug camptothecin (CPT) conjugated to a cyclodextrin polymer. IT-101, the first drug candidate in Calando's proprietary CycloSert™ pipeline, has now successfully completed a Phase I trial designed to evaluate its safety, tolerability, and pharmacokinetics in patients with inoperable or metastatic tumors.

Initially, the trial utilized a weekly dosing schedule. However, because of the excellent pharmacokinetic characteristics observed for the drug, including a half-life of approximately 40 hours, a subsequent Phase Ib was conducted utilizing a twice monthly dosing schedule. The Phase Ia and Phase Ib studies are now completed, and all trial endpoints have been successfully achieved. The drug was found to be well tolerated in both the Phase Ia and Ib studies of the trial.

A high proportion of patients displayed stable disease following treatment thereby showing evidence of IT-101's cytostatic activity. This activity is consistent with several published clinical studies reporting improved outcomes when lower doses of topotecan were administered on a continuous regimen compared to traditional intermittent schedules. Topotecan is an FDA-approved a cytotoxic chemotherapeutic that is an analog of CPT.

Based on these Phase I results, Calando has initiated a multi-center Phase II clinical trial in ovarian carcinoma patients. The Phase II trial is designed to determine whether IT-101 treatment can delay disease progression in stable disease patients who have completed a standard second line course of platinum chemotherapy. The concept of providing minimally toxic cytostatic therapy following traditional cytoreductive therapy to extend progression free survival, has become a promising avenue of treatment in clinical oncology. Several cancer

therapeutics are approved for cancer maintenance therapy. These drugs are increasingly being implemented by oncologists as a relatively new option for patient care, with annual revenues in excess of \$ 5 billion a year.

Successful completion of the IT-101 Phase I study opens numerous avenues for its further clinical investigation. In addition to the Phase II trial in ovarian cancer, other clinical trials, including testing IT-101 in lymphoma patients, are planned.

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#### **About Calando Pharmaceuticals Inc.**

Calando Pharmaceuticals Inc. ([www.calandopharma.com](http://www.calandopharma.com)), a majority-owned subsidiary of Arrowhead Research Corporation (NASDAQ: ARWR), is a biopharmaceuticals company using proprietary technologies developed at Caltech to create targeted siRNA-based therapeutics and small molecule nanoparticle drug conjugates. Calando uses its innovative Cyclosert™ and RONDEL™ nanoparticle systems to solve the long-standing obstacle of effective delivery and targeting for oligonucleotide and small molecule therapeutics.

Calando's Cyclosert™ technology uses cyclodextrins as building blocks to create an entirely new class of biocompatible materials - linear cyclodextrin-containing polymers that are non-toxic and non-immunogenic at therapeutic doses. The Company leverages Cyclosert™ to design, develop and commercialize drug-delivery-enhanced small-molecule therapeutics. IT-101 is Calando's lead small molecule Cyclosert conjugate, which recently completed a phase I study in solid tumors at City of Hope Comprehensive Cancer Center.

Calando's RONDEL™ technology involves the use of cyclodextrin-containing polymers that form the foundation for its two-part siRNA delivery system. The first component is a linear, cyclodextrin-containing polycation that, when mixed with small interfering RNA (siRNA), binds to the anionic "backbone" of the siRNA. The polymer and siRNA self-assemble into nanoparticles smaller than 100 nm in diameter that fully protect the siRNA from nuclease degradation in serum. The siRNA delivery system has been designed to allow for intravenous injection. Upon delivery to the target cell, the targeting ligand binds to membrane receptors on the cell surface and the RNA-containing nanoparticle is taken into the cell by endocytosis. There, chemistry built into the polymer functions to unpackage the siRNA from the delivery vehicle. Based upon this breakthrough in siRNA delivery enabled by the RONDEL™ system, the promise of using siRNA in new systemic therapies may finally be realized.

#### **Forward-Looking Statements**

*This news release, and any oral statements made with respect to the information contained in this news release, contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements include statements which express plans, anticipation, intent, contingency, goals, targets, future development and are otherwise not statements of historical fact. These statements are based on Calando's management current expectations and are subject to risks and uncertainties that could cause actual results or developments to be materially different from historical results or from any future results expressed or implied by such forward-looking statements. Factors that may cause actual results or developments to differ materially include, among others: the risk that CALAA-01 or IT-101 may appear promising in early research and clinical trials but may not demonstrate safety and/or efficacy in larger-scale or later stage clinical trials, the risks that the regulatory approvals may not be obtained, the risks associated with dependence upon key personnel, the risks associated with reliance on collaborative partners and others for further clinical trials, development, manufacturing and commercialization of our product candidates; the cost, delays and uncertainties associated with our scientific research, product development, clinical trials and regulatory approval process; our history of operating losses since our inception; competition; litigation; and risks associated with our ability to protect our intellectual property and raise the necessary financing to fund our operations*

*and research activities. You are cautioned not to place undue reliance on any forward-looking statements, any of which could turn out to be wrong due to inaccurate assumptions, unknown risks or uncertainties or other risk factors.*

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