

ACUSPHERE

FOR IMMEDIATE RELEASE

ACUSPHERE ANNOUNCES CLOSING OF \$10 MILLION FINANCING TO SUPPORT CONTINUED DEVELOPMENT OF IMAGIFY

Funds to be used towards submission of a Marketing Authorisation Application in Europe and a Special Protocol Assessment in the United States

Cambridge, MA, June 30, 2010 — Acusphere, Inc. (ACUS.PK) today announced the closing of a definitive agreement with Burrill & Company's venture capital group to provide up to \$10 million in debt financing through the sale of a senior secured note and warrant. Seven Hills Partners, LLC provided financial advisory and investment banking services for this transaction.

The initial tranche will be \$5 million and the resulting senior secured note will have a five year term and an interest rate of 10%, compounded annually and accrued on the principal amount of the note payable in cash on the maturity date. Accompanying the note will be a warrant to purchase 83,333,333 common shares at an exercise price of \$0.12 per share. The warrant will be exercisable immediately and have a term of 5 years.

Acusphere also has the option to draw on two additional \$2.5 million tranches upon filing a Marketing Authorisation Application (MAA) to the European Medicines Agency (EMA) for Imagify™ (Perflubutane Polymer Microspheres) for Injectable Suspension and upon reaching agreement with the United States Food and Drug Administration (FDA) under the Special Protocol Assessment (SPA) process on the design of an FDA-required Phase 3 study demonstrating that stress ultrasound with Imagify has benefits relative to stress ultrasound without Imagify. These tranches will be on similar terms as the initial tranche with the exception of the warrant coverage, which, for each tranche, will be a warrant to purchase 27,777,778 common shares at an exercise price of \$0.12 per share.

Special Protocol Assessment

The SPA process creates a written agreement between the FDA and a sponsor concerning the clinical trial design, clinical endpoints and other clinical trial issues that can be used to support regulatory approval of a drug candidate. The process is intended to provide assurance that if the agreed upon clinical trial protocol is followed, the clinical trial endpoints are achieved and there is a favorable risk benefit profile, the data may serve as the primary basis of an efficacy claim in support of a New Drug Application (NDA).

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About Acusphere, Inc.

Acusphere (ACUS.PK) is a specialty pharmaceutical company that develops new drugs and improved formulations of existing drugs using its proprietary microsphere technology. We are focused on developing proprietary drugs that can offer significant benefits such as improved safety and efficacy, increased patient compliance, greater ease of use, expanded indications or reduced cost. Our lead product candidate, Imagify™ (Perflubutane Polymer Microspheres) for Injectable Suspension, is a cardiovascular drug for the detection of coronary artery disease, the leading cause of death in the United States, for which a New Drug Application (NDA) was submitted to the U.S. Food & Drug Administration (FDA) in April 2008 and filed in June 2008. Imagify and the Company's other product candidates were created using proprietary technology that enables Acusphere to control the porosity and size of nanoparticles and microspheres in a versatile manner that allows them to be customized to address the delivery needs of a variety of drugs. For more information about Acusphere visit the Company's web site (www.acusphere.com).

About Burrill & Company

Founded in 1994, Burrill & Company is a San Francisco-based global leader in life sciences with activities in venture capital, private equity, merchant banking and media. The Burrill family of venture capital funds has over \$950 million under management and its merchant banking business is one of the industry leaders in life sciences transactions. Visit <http://www.burrillandco.com> for more information.

Forward-looking Statements

The above press release contains forward-looking statements, including statements regarding, the NDA submission for Imagify and likelihood of regulatory approval and the commercial opportunity for Imagify. There can be no assurance that Imagify will be approved for the indication the Company is seeking, or at all. The Company's actual results may differ materially from those anticipated in these forward-looking statements based upon a number of factors, including anticipated operating losses and existing capital obligations, uncertainties associated with research, development, testing and related regulatory approvals, including uncertainties regarding regulatory evaluation of the Company's statistical analysis plan and clinical trial results and uncertainties regarding the potential effects of not achieving clinical endpoints, limited time to date for the Company to review the details of the clinical trial results, capital needs and uncertainty of additional financing, uncertainties regarding the cost, timing and ultimate success of the qualification of the Company's commercial manufacturing facility in accordance with applicable regulatory requirements, complex manufacturing, high quality requirements, lack of commercial manufacturing experience, dependence on third-party manufacturers, suppliers and collaborators, uncertainties associated with intellectual property, competition, loss of key personnel, uncertainties associated with market acceptance and adequacy of reimbursement, technological change and government regulation. The Company notes that effective as of March 3, 2009, pursuant to a Form 15

filing made with the SEC, it is not currently required to file periodic reports with the SEC, including annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K. Readers are cautioned not to place undue reliance on any forward-looking statements, which speak only as of the date of this press release. The Company undertakes no obligation to publicly release the results of any revisions to these forward-looking statements that may be made to reflect events or circumstances that occur after the date of this press release or to reflect the occurrence of unanticipated events.

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Contact:

Kelley Wharff

Acusphere, Inc.

Tel: (617) 925-3444

IR@acusphere.com