Deciphera Pharmaceuticals Reports Updated Phase 1 Clinical Study Results with DCC-2618 at 2017 American Society of Clinical Oncology Annual Meeting

June 5, 2017

– Updated Data Demonstrate Encouraging, Durable Disease Control Rates in Heavily Pretreated GIST Patients –

– Dose Escalation Stage Completed and Study Expanding to Include GIST, Advanced Systemic Mastocytosis and Glioma Patient Cohorts –

Waltham, MA – Deciphera Pharmaceuticals, a clinical-stage biopharmaceutical company focused on addressing key mechanisms of tumor drug resistance, today reported updated results for DCC-2618, the company's pan-KIT and PDGFRα inhibitor, in an ongoing Phase 1 trial in patients with advanced malignancies. Results from the completed dose escalation stage of the Phase 1 trial with DCC-2618 demonstrated encouraging disease control with prolonged stable disease and objective responses in heavily pretreated patients with gastrointestinal stromal tumors (GIST). Based on these data, Deciphera is expanding the study to include additional patient cohorts with different stages of GIST, as well as patients with advanced systemic mastocytosis, gliomas and other solid tumors. Top-line results from these cohorts are expected in 2018 and the Company plans to initiate two pivotal Phase 3 trials in patients with fourth-line and second-line GIST.

“With the clinical activity observed to date, including durability of responses in patients who are resistant to other kinase inhibitor therapies, and a well-tolerated profile, we look forward to advancing DCC-2618 towards later-stage clinical development,” said Michael D. Taylor, Ph.D., President and CEO of Deciphera Pharmaceuticals. “Based on these data we are expanding the Phase 1 study to include additional cohorts in: GIST patients who have progressed on or are intolerant of imatinib; patients with advanced systemic mastocytosis; and patients with other KIT and PDGFRα driven diseases, including gliomas.”

“DCC-2618 continues to demonstrate good tolerability with early signs of clinical activity in heavily pretreated patients with GIST,” said Filip Janku, M.D., Ph.D., Assistant Professor, Department of Investigational Cancer Therapeutics, Division of Cancer Medicine, The University of Texas MD Anderson Cancer Center. “I believe the disease control rates, determined as objective responses and prolonged stable disease, seen in the Phase 1 trial are important indicators of clinical outcomes, and this encouraging clinical activity certainly warrants further exploration.”

Results from the completed dose escalation stage of the ongoing Phase 1 study in 38 heavily pretreated patients with KIT or PDGFRα driven GIST as of May 8, 2017 were presented on June 5 at the American Society of Clinical Oncology (ASCO) Annual Meeting 2017, in Chicago, IL. Highlights of the poster presentation include:

- At doses of 100 mg or greater daily, DCC-2618 produced a disease control rate (DCR) of 78% at 12 weeks (n=23) and a DCR of 60% at 24 weeks (n= 15) in GIST patients with KIT and PDGFRα driven disease. DCR is defined as patients with stable disease or partial response as assessed by Response Evaluation Criteria in Solid Tumors, or RECIST.
- A dose of 150 mg once per day has been selected for the expansion cohorts and planned Phase 3 pivotal trials.
- Compared to baseline values for cfDNA KIT mutant allele frequencies (MAF), extensive reductions were observed with DCC-2618, demonstrating pan-KIT activity across the spectrum of exons 9, 11, 13, 14, 17 and 18 mutations at starting doses as low as 30 mg BID.
- DCC-2618 was generally well tolerated at all dose levels studied with no

discontinuations due to a lack of tolerability or toxicity.

- A durable partial response of more than 18 months in one glioblastoma patient dosed at 20 mg twice per day (94% tumor reduction) as assessed by Revised Assessment in Neuro-Oncology or RANO was noted.

ASCO 2017 DCC-2618 Poster

About DCC-2618

DCC-2618 is currently in a first-in-human Phase 1 clinical trial. DCC-2618 is a pan-KIT and PDGFRα kinase switch control inhibitor in clinical development for the treatment of KIT and/or PDGFRα-driven cancers, including gastrointestinal stromal tumors, glioblastoma multiforme and systemic mastocytosis.

About Deciphera Pharmaceuticals

Deciphera Pharmaceuticals is a clinical-stage biopharmaceutical company focused on improving the lives of cancer patients by tackling key mechanisms of drug resistance that limit the rate and/or durability of response to existing cancer therapies. Our small molecule drug candidates are directed against an important family of enzymes called kinases, known to be directly involved in the growth and spread of many cancers. We use our deep understanding of kinase biology together with a proprietary chemistry library to purposefully design compounds that maintain kinases in a “switched off” or inactivated conformation. These investigational therapies comprise tumor-targeted agents designed to address therapeutic resistance causing mutations and immuno-targeted agents designed to control the activation of immunokinases that suppress critical immune system regulators, such as macrophages. We have used our platform to develop a diverse pipeline of tumor-targeted and immuno-targeted drug candidates designed to improve outcomes for patients with cancer by improving the quality, rate and/or durability of their responses to treatment.

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