Rocket Pharmaceuticals Announces Positive Updates from Phase 1 Clinical Trial for RP-A501 in Danon Disease at the Heart Failure Society of America (HFSA) Annual Scientific Meeting 2022

September 30, 2022

—Pediatric efficacy data for both patients show initial improvements across clinical, functional and biomarker endpoints with six to nine months of follow-up; positive results including protein expression obtained at three and six months consistent with adult cohorts at similar timeframe —

—Results demonstrate sustained clinical benefit across all parameters in adult patients with up to 36 months of follow-up —

—All adult and pediatric patients with closely monitored immunomodulatory regimen showed improvement in New York Health Association (NYHA) class (from II to I) with follow-up of six to 36 months; patients are no longer afflicted with cardiac disease symptoms during regular activity or cardiac-related limitations in physical activity—

—RP-A501 was generally well tolerated with manageable safety profile across pediatric and adult cohorts—

—Strength of clinical data presented to date expected to support Phase 2 pivotal study; FDA feedback on pivotal study design and endpoints anticipated later this year—

—Webcast to be held at 8:00 a.m. ET today, Sept. 30—

CRANBURY, N.J.--(BUSINESS WIRE)--Sep. 30, 2022-- Rocket Pharmaceuticals, Inc. (NASDAQ: RCKT), a leading late-stage biotechnology company advancing an integrated and sustainable pipeline of investigational genetic therapies for rare childhood disorders with high unmet need, today announces positive clinical updates from its Phase 1 Danon Disease Trial for RP-A501 through an oral poster session at the Heart Failure Society of America (HFSA) Annual Scientific Meeting 2022. This includes updated safety and efficacy data from patients in the pediatric and adult cohorts which demonstrate that RP-A501 was generally well tolerated and conferred clinical benefit.

“Today’s Danon Disease trial results, the most comprehensive investigational gene therapy dataset for any cardiac condition, demonstrate positive early findings in pediatric patients and continued robust activity in adults that represent potential freedom from the devastating effects of this disease, including those that lead to heart transplantation or death,” said Gaurav Shah, M.D., Chief Executive Officer of Rocket Pharma. “Results showed RP-A501 was generally well tolerated with evidence of durable treatment effect and improvement of Danon Disease, including for both pediatric patients with up to nine months of follow-up and four adult patients with up to 36 months of follow-up. Further, efficacy data from the pediatric patients are following similar or more favorable positive trends as in the adults at a similar timeframe. Pediatric patients showed vacuole clearance and marked reductions in brain natriuretic peptide (BNP) and troponin. We also observed improvement in New York Heart Association (NYHA) class and early improvements in the Kansas City Cardiomyopathy Questionnaire (KCCQ) for both patients.”

Dr. Shah continued, “Data collected in adults from biomarker, clinical and functional parameters trend towards improvement in the initial months following gene therapy and appear durable for two to three years after treatment. I am particularly excited that five out of five currently enrolled pediatric and adult patients with a closely monitored immunomodulatory regimen showed improvement in NYHA class (from II to I) with a follow-up of six to 36 months. Simply put, these data indicate that these patients are no longer afflicted with cardiac disease symptoms during regular activity or cardiac-related limitations in physical activity. In this devastating disease with markedly shortened life span, stabilization alone may be considered meaningful, so the sustained improvements we’ve seen exceed our expectations and could be transformative for patients receiving gene therapy.”

“Taken together, we believe the totality of data from the six patients currently enrolled in the Phase 1 trial will support advancement toward a Phase 2 pivotal study,” said Dr. Shah. “We recently convened an advisory board of international experts who endorsed our planned Phase 2 study design and endpoints, and we look forward to further discussions with the FDA later this year.”

Safety Profile of the First Pediatric Cardiomyopathy Gene Therapy Trial: RP-A501 (AAV9:LAMP2B) for Danon Disease and Extended Results from Phase 1

The data described in this oral poster presentation (data cut-off September 27, 2022, with source data verification through July 11, 2022) and in this press release are from the ongoing first-in-human Phase 1 clinical trial evaluating a single intravenous infusion of RP-A501, the Company’s investigational gene therapy for the treatment of Danon Disease. The presentation includes early efficacy data with updated safety data from the low-dose (6.7 x 10^{13}GC/kg; n=2) pediatric cohort, as well as updated efficacy and safety data from young adult and adolescent patients in the

low-dose (6.7 x 10^{13} GC/kg; n=3) and high-dose (1.1 x 10^{14} GC/kg; n=2) cohorts.

- Early pediatric efficacy data are consistent with initial improvements observed in adult patients at a similar timeframe of up to nine months follow-up and sustained clinical benefit across biomarker, clinical and functional parameters in currently enrolled adult patients at 24 to 36 months of follow-up.
    - **Gene expression**: In the pediatric cohort, *LAMP2B* gene expression by immunohistochemistry was 21.1% in patient 1008 at six months and 34.7% in patient 1009 at three months. Evidence of durable and meaningful cardiac *LAMP2B* protein expression as read at a centralized core lab was achieved in all patients across pediatric and adult cohorts at three months and sustained through six to nine months in the pediatric cohort and 24 months in the adult cohorts in patients with a closely monitored immunomodulatory regimen.

- The following assays were performed, validated and reported for patients with at least six months of follow-up.
    - **Vacuolar area** :In the first pediatric patient (1008), vacuolar area as assessed by an automated method in representative biopsy samples was found to have decreased by 77% at six months. Six-month biopsy results are not yet available for the second pediatric patient (1009). All adult patients have also seen meaningful decreases in vacuolar area ranging from 26% to 74% at most recent available timepoints.
    - **Brain natriuretic peptide (BNP)**: In the pediatric cohort, BNP, a key marker of heart failure, decreased from a pretreatment baseline by 78% in patient 1008 at nine months and by 62% in patient 1009 at six months. All patients in the pediatric and adult cohorts showed stabilization or meaningful decreases in BNP, with the most dramatic decreases observed in patients with higher baseline BNP (90% for patient 1002 in the adult cohort at 30 months and 78% for patient 1008 in the pediatric cohort at nine months). Adult patients demonstrated reduction in BNP of greater than 75% from mean pretreatment baseline compared to mean values at 18 to 24 month timepoints.
    - **Troponin**: The pediatric patients, despite a more limited six and nine months of follow-up, were observed to have meaningful decreases in high sensitivity troponin I (hsTnI), a protein in the blood showing signs of cardiac injury, of 90% and 85%, respectively. Patients in the adult cohorts demonstrated significant decreases in hsTnI. Notably, the four adult patients were observed to have a reduction in troponin of greater than 75% from mean pretreatment baseline to mean values at 18 to 24 months that was sustained in the three adult patients who are currently 30 to 36 months post-treatment.
    - **New York Heart Association (NYHA) Class**: In the pediatric cohort, an improvement (from Class II to I) in NYHA class, a measure of the symptoms and functional limitations resulting from heart failure, was observed in both patients. In the adult cohorts, all three patients treated with a closely monitored immunomodulatory regimen showed improvement in NYHA class (from II to I). Stabilization of NYHA class was observed in one adult patient treated at the low dose without a closely monitored regimen.
    - **Kansas City Cardiomyopathy Questionnaire (KCCQ)**: Patients in the pediatric cohort showed significant improvement in KCCQ Overall Score, a measure (0-100) of physical and social limitations, symptoms and quality of life in patients with heart failure. Specifically, patient 1008 demonstrated improvement from a pretreatment baseline of 50 to 93 at nine months and patient 1009 demonstrated improvement from a pretreatment baseline of 52 to 81 at three months. All patients treated in pediatric and adult cohorts with a closely monitored immunomodulatory regimen showed improvements ranging between three and 43 points when comparing baseline to the most recent available timepoint.
    - **Left ventricular (LV) wall thickness**: In the pediatric cohort, patient 1008 demonstrated reduction in maximum LV wall thickness by 3% from treatment baseline after six months of follow-up. In the adult cohort, all four patients demonstrated a reduction of greater than 15% and greater than 20% from mean baseline in both LV posterior wall thickness in diastole and maximum LV wall thickness, respectively, compared to mean values at 18 to 24 months, which represents improvement of the ventricular hypertrophy.

- RP-A501 was observed to be generally well tolerated at the low dose with a manageable safety profile across pediatric and adult cohorts.
    - In the pediatric cohort, RP-A501 was well tolerated in both patients with six to eleven months follow-up. The patients were observed to have normal-range platelets, minimal complement activation and no complement-related adverse events. The two patients received a modified immunomodulatory regimen to mitigate adverse events. No significant immediate or delayed toxicities, significant skeletal myopathy, or late transaminase elevations have been observed to date.

- Taken together, these results are consistent with a positive benefit/risk profile for RP-A501 in Danon Disease.
    - Phase 1 enrollment and treatment are complete.
    - RP-A501 together with the enhanced immunomodulatory regimen appears well tolerated and effective in the pediatric cohort.
    - In the adult cohort, RP-A501 stabilizes and potentially improves Danon Disease cardiomyopathy.
    - Early pediatric data are encouraging and consistent with improvements at similar or earlier timepoints compared to

the adult cohorts.
- Findings are supportive of Phase 2 evaluation of RP-A501 in Danon Disease.

Investor Webcast Information

Company management will discuss the Danon Disease data via webcast today, Sept. 30, 2022 , at 8:00 a.m. ET . To access the webcast, please register online at: https://ir.rocketpharma.com/events-presentations. Participants are requested to register a minimum of 15 minutes before the start of the call.

A simultaneous webcast of the presentation will be available under “Events” in the Investors section of the Company’s website at: https://ir.rocketpharma.com/. The webcast replay will be available on the Rocket website upon completion of the event.

About RP-A501

RP-A501 is an investigational gene therapy product being developed for Danon Disease and the first potential gene therapy for monogenic heart failure. It consists of a recombinant adeno-associated serotype 9 (AAV9) capsid containing a functional version of the human LAMP2B transgene (AAV9.LAMP2B). RP-A501 is currently being evaluated in a Phase 1 clinical trial; preliminary data from this study’s low-dose cohort showed that RP-A501 was generally well tolerated and conferred evidence of improved cardiac function.

About Danon Disease

Danon Disease is a rare X-linked inherited disorder caused by mutations in the gene encoding lysosome-associated membrane protein 2 (LAMP-2), an important mediator of autophagy. This results in accumulation of autophagosomes and glycogen, particularly in cardiac muscle and other tissues, which ultimately leads to heart failure, and for male patients, frequent death during adolescence or early adulthood. It is estimated to have a prevalence of 15,000 to 30,000 patients in the U.S. and Europe . The only available treatment option for Danon Disease is cardiac transplantation, which is associated with substantial complications and is not considered curative. There are no specific therapies available for the treatment of Danon Disease.

About Rocket Pharmaceuticals, Inc.

Rocket Pharmaceuticals, Inc. (NASDAQ: RCKT) is advancing an integrated and sustainable pipeline of investigational genetic therapies designed to correct the root cause of complex and rare childhood disorders. The Company’s platform-agnostic approach enables it to design the best therapy for each indication, creating potentially transformative options for patients afflicted with rare genetic diseases. Rocket's clinical programs using lentiviral vector (LVV)-based gene therapy are for the treatment of Fanconi Anemia (FA), a difficult to treat genetic disease that leads to bone marrow failure and potentially cancer, Leukocyte Adhesion Deficiency-I (LAD-I), a severe pediatric genetic disorder that causes recurrent and life-threatening infections which are frequently fatal, and Pyruvate Kinase Deficiency (PKD), a rare, monogenic red blood cell disorder resulting in increased red cell destruction and mild to life-threatening anemia. Rocket’s first clinical program using adeno-associated virus (AAV)-based gene therapy is for Danon Disease, a devastating, pediatric heart failure condition. For more information about Rocket, please visit www.rocketpharma.com.

Rocket Cautionary Statement Regarding Forward-Looking Statements

Various statements in this release concerning Rocket’s future expectations, plans and prospects, including without limitation, Rocket’s expectations regarding its guidance for 2022, the safety and effectiveness of RP-A501 for the potential treatment of Danon Disease, trends for RP-A501 safety and efficacy based on the adult patients treated to date, the expected timing and outcome of Rocket’s regulatory interactions and planned submissions, including in connection with the potential advancement toward a Phase 2 pivotal study for RP-A501, Rocket’s plans for the advancement of its Danon Disease program and the safety, effectiveness and timing of related pre-clinical studies and clinical trials, may constitute forward-looking statements for the purposes of the safe harbor provisions under the Private Securities Litigation Reform Act of 1995 and other federal securities laws and are subject to substantial risks, uncertainties and assumptions. You should not place reliance on these forward-looking statements, which often include words such as "believe," "expect," "anticipate," "intend," "plan," "will give," "estimate," "seek," "will," "may," "suggest" or similar terms, variations of such terms or the negative of those terms. Although Rocket believes that the expectations reflected in the forward-looking statements are reasonable, Rocket cannot guarantee such outcomes. Actual results may differ materially from those indicated by these forward-looking statements as a result of various important factors, including, without limitation, Rocket’s ability to monitor the impact of COVID-19 on its business operations and take steps to ensure the safety of patients, families and employees, the interest from patients and families for participation in each of Rocket’s ongoing trials, our expectations regarding the delays and impact of COVID-19 on clinical sites, patient enrollment, trial timelines and data readouts, our expectations regarding our drug supply for our ongoing and anticipated trials, actions of regulatory agencies, which may affect the initiation, timing and progress of pre-clinical studies and clinical trials of its product candidates, Rocket’s dependence on third parties for development, manufacture, marketing, sales and distribution of product candidates, the outcome of litigation, and unexpected expenditures, as well as those risks more fully discussed in the section entitled "Risk Factors" in Rocket’s Annual Report on Form 10-K for the year ended December 31, 2021 , filed February 28, 2022 with the SEC and subsequent filings with the SEC including our Quarterly Reports on Form 10-Q. Accordingly, you should not place undue reliance on these forward-looking statements. All such statements speak only as of the date made, and Rocket undertakes no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

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