Lyra Therapeutics Presents New Positive Phase 2 LANTERN 6-Month Follow-Up and LYR-210 Pharmacokinetic Data, and LANTERN Manuscript Wins Award at the 67th Annual Meeting of the American Rhinologic Society

October 4, 2021

Approximately 50% of treated CRS patients experienced durable symptom improvement six months after treatment with LYR-210 (7500µg)

LYR-210 pharmacokinetics indicate a constant and steady daily dose of Mometasone Furoate is delivered to patients

LANTERN study manuscript wins ARS Annual Meeting 2021 Clinical Science Maurice Cottle Award

WATERTOWN, Mass., Oct. 4, 2021 /PRNewswire/ -- Lyra Therapeutics, Inc. (Nasdaq: LYRA), a clinical-stage therapeutics company leveraging its proprietary XTreo™ platform to enable precise, sustained, and local delivery of medications to the ear, nose and throat (ENT) passages and other diseased tissues, announced that new, positive LYR-210 data from the LANTERN 6-month post-treatment evaluation and recently completed pharmacokinetic study, were the subject of two oral presentations at the 67th Annual Meeting of the American Rhinologic Society (ARS) on October 1-2. The PK study was selected as a top clinical presentation at the meeting; additionally, the LANTERN Phase 2 manuscript won the ARS Annual Meeting 2021 Clinical Science Maurice Cottle Award.

Joanne Rimmer, MBBS, MA, FRCS (ORL-HNS), FRACS, Clinical Associate Professor and Otolaryngologist at Monash University in Melbourne, Australia, and an investigator in the LANTERN study, presented the LANTERN 6-month post-treatment outcomes, which showed continued safety and that about half of treated chronic rhinosinusitis (CRS) patients experienced a durable response six months post LYR-210 removal.

"The LANTERN 6-month post-treatment outcomes indicate a lasting treatment effect post-removal of LYR-210, while the control group showed worsening CRS symptoms from the Week 24 baseline," commented A/Prof. Rimmer. "A lack of strong rebound in CRS symptoms post-treatment and removal is very exciting, with potential long-term benefit for CRS patients. LYR-210 is a promising new treatment alternative for this chronic disease."

Randall A. Ow, MD, FACS, FARS, FAAOA, FAPCR, Otolaryngologist at Sacramento Ear, Nose & Throat, and principal investigator in the LYR-210 pharmacokinetic study, presented the PK study outcomes, which showed that Mometasone Furoate (MF) blood levels were constant over the 56 days, providing further evidence that LYR-210 delivers a consistent and steady daily dose of MF with accompanying rapid symptom relief during this time period.

"There is a need for long-acting, local CRS treatments that deliver a targeted and constant therapeutic dose to the site of the disease, while alleviating need for daily adherence," said Dr. Ow. "This release profile is exactly what I would want in an anti-inflammatory implant and the symptom improvement observed with LYR-210 is quite meaningful. LYR-210 is highly convenient to administer and remove in a routine office visit and has the potential to provide an impactful treatment option for a broad CRS patient population."

"The LANTERN follow-up and PK data presented at ARS underscore our belief in LYR-210's potential to disrupt the CRS treatment landscape for the millions of U.S. CRS patients who fail medical management each year," said Maria Palasis, PhD, President and Chief Executive Officer of Lyra Therapeutics. "We are extremely proud that the LANTERN Phase 2 manuscript was recognized with the 2021 Maurice Cottle Award, granted by ARS for the best clinical rhinologic research paper of the year. We look forward to advancing the clinical development of LYR-210, and our second candidate, LYR-220 for post-surgical CRS patients, into the Phase 3 ENLIGHTEN program and Phase 2 BEACON program, respectively, around the end of this year."

LANTERN Study and 6-Month Post-Treatment Safety Follow-up

In the Phase 2, multicenter, blinded, randomized, controlled, dose-ranging LANTERN study of LYR-210 in surgically naïve adult CRS patients who had failed previous medical management, LYR-210 was shown to be safe and well-tolerated over the 24-week treatment period. LYR-210 (7500µg) demonstrated significant, rapid, durable, dose-dependent, global symptom improvement, based on composite Cardinal Symptoms (CS) scores and Sino-Nasal Outcome Test (SNOT-22), achieving statistical significance as early as 8 weeks and out to 24 weeks compared with control.

After 24 weeks, LYR-210 drug matrices were removed, and patients then underwent a 24-week post-treatment follow-up. The main objective of the post-treatment period was to assess long-term safety post-removal. Key results include:

- LYR-210 continued to show strong safety through 24 weeks post-treatment with no increased incidence of treatment-related AEs.
- Approximately 50% of patients experienced a durable response post-removal of LYR-210 (7500µg), with no worsening of Cardinal Symptom scores from the Week 24 baseline, compared to approximately 90% of control patients who either experienced a worsening of Cardinal Symptom scores from the Week 24 baseline or required a rescue treatment.

LYR-210 Pharmacokinetic Study

The study was designed to characterize the early PK profile and systemic exposure of mometasone furoate (MF) of two doses (7500µg and 2500µg) of LYR-210 for up to 56 days. Plasma MF concentrations were evaluated at nine different time points throughout the study: one hour post-placement of LYR-210 (Day 1), and Days 2, 3, 7, 14, 21, 28, 42, and 56. Key results include:

- LYR-210 was safe and well-tolerated with zero serious adverse events, and achieved 100% placement success.
- LYR-210 delivered a constant and steady daily dose of MF over the 56 days. The steady state MF plasma concentration

was 41.2pg/ml and 12.2 pg/ml over the treatment duration for 7500µg and 2500µg, respectively.
- Approximately 20% of the drug was released from LYR-210 during the 56-day study period, supporting the established 24-week drug profile.
- LYR-210 achieved clinically relevant improvement in SNOT-22 within 2 weeks of treatment, with 37.5% of patients reporting a normal SNOT-22 score (< 8) on Day 56.

About LYR-210 for Chronic Rhinosinusitis

LYR-210 is an investigational product candidate that utilizes Lyra's proprietary XTreo™ platform to enable six months of local, intra-nasal, anti-inflammatory therapy from a single administration for chronic rhinosinusitis (CRS). LYR-210 is designed as a non-invasive alternative to sinus surgery for the millions of CRS patients who have failed medical management. It is a bioresorbable polymeric matrix administered in a brief, non-invasive, in-office procedure and is intended to deliver up to six months of continuous mometasone furoate drug therapy to the sinonasal passages. In the LANTERN Phase 2 study, LYR-210 (7500µg) demonstrated rapid, clinically meaningful and durable symptom improvement as measured by the SNOT-22 score and a cardinal symptom score over six months. The LANTERN study, winner of the 2021 American Rhinology Society 2021 Maurice Cottle Award, has been published in the International Forum of Allergy & Rhinology. There are approximately 14 million patients with CRS in the US, approximately 4 million of whom fail current standard of care medical management.

About Lyra Therapeutics

Lyra Therapeutics, Inc. is a clinical-stage therapeutics company leveraging its proprietary XTreo™ platform to enable precise, sustained, local delivery of medications to diseased tissues not accessible with conventional therapeutic approaches. Lyra's XTreo™ platform is comprised of a biocompatible mesh scaffold, an engineered elastomeric matrix and a versatile polymer-drug complex. The company's current pipeline of therapeutics target tissues deep in the ear, nose and throat passages and are designed to deliver continuous drug therapy for up to six months following a single non-invasive, in-office administration. Lyra's lead product candidate, LYR-210, is entering Phase 3 clinical development for the treatment of chronic rhinosinusitis (CRS) as an alternative to primary sinus surgery. Lyra's second product candidate, LYR-220, is entering Phase 2 development and is designed to be an alternative to revision CRS sinus surgery and post-surgical medical management. For more information, please visit www.lyratherapeutics.com and follow us on LinkedIn and Twitter.

Forward-Looking Statement

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained in this press release that do not relate to matters of historical fact should be considered forward-looking statements, including statements regarding the company's clinical advancement and efficacy of LYR-210 for the treatment of CRS and our expectations regarding the upcoming Phase 3 ENLIGHTEN program and Phase 2 BEACON program. These statements are neither promises nor guarantees, but involve known and unknown risks, uncertainties and other important factors that may cause the company's actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements, including, but not limited to, the following: the fact that the company has incurred significant losses since inception and expects to incur losses for the foreseeable future; the company's need for additional funding, which may not be available; the company's limited operating history; the fact that the company has no approved products; the fact that the company's product candidates are in various stages of development; our the fact that the company may not be successful in its efforts to identify and successfully commercialize its product candidates; the fact that clinical trials required for the company's product candidates are expensive and time-consuming, and their outcome is uncertain; the fact that the FDA may not conclude that certain of the company's product candidates satisfy the requirements for the Section 505(b)(2) regulatory approval pathway; the company's inability to obtain required regulatory approvals; effects of recently enacted and future legislation; the possibility of system failures or security breaches; effects of significant competition; the fact that the successful commercialization of the company's product candidates will depend in part on the extent to which governmental authorities and health insurers establish coverage, adequate reimbursement levels and pricing policies; failure to achieve market acceptance; product liability lawsuits; the fact that the company relies on third parties for the manufacture of materials for its research programs, pre-clinical studies and clinical trials; the company's reliance on third parties to conduct its preclinical studies and clinical trials; the company's inability to succeed in establishing and maintaining collaborative relationships; the company's reliance on certain suppliers critical to its production; failure to obtain and maintain or adequately protect the company's intellectual property rights; failure to retain key personnel or to recruit qualified personnel; difficulties in managing the company's growth; effects of natural disasters; the fact that the global pandemic caused by COVID-19 could adversely impact the company's business and operations, including the company's clinical trials; the fact that the price of the company's common stock may be volatile and fluctuate substantially; significant costs and required management time as a result of operating as a public company and any securities class action litigation. These and other important factors discussed under the caption "Risk Factors" in the company's Quarterly Report on Form 10-Q filed with the SEC on August 9, 2021 and its other filings with the SEC could cause actual results to differ materially from those indicated by the forward-looking statements made in this press release. Any such forward-looking statements represent management's estimates as of the date of this press release. While the company may elect to update such forward-looking statements at some point in the future, it disclaims any obligation to do so, even if subsequent events cause its views to change.

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