NEWS RELEASE

Coya Therapeutics Presents ALS Biomarker Data at Society of Neuroimmune Pharmacology Conference

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4-Hydroxynonenal (4-HNE) levels strongly correlate with rate of Amyotrophic Lateral Sclerosis (ALS) disease progression and survival of patients from onset and diagnosis to death (91.7% sensitivity and 71.1% specificity)

4-HNE levels may serve as a potential surrogate biomarker to track efficacy of ALS disease modifying treatments, such as COYA 302

HOUSTON--(BUSINESS WIRE)-- Coya Therapeutics, Inc. (Nasdaq: COYA) ("Coya" or the "Company"), a clinical-stage biotechnology company developing biologics intended to enhance regulatory T cell (Treg) function, announces that Dr. Stanley Appel, M.D., Chairman of Coya's Scientific Advisory Board and Dr. David Beers, Ph.D., Associate Research Professor of Neurology, Houston Methodist, will present biomarker data today as part of a panel presentation at the Society of Neuroimmune Pharmacology Conference.

The data presented highlights the strong predictive value of levels of an oxidative stress biomarker (4-HNE) with the rate of disease progression and survival in 50 ALS patients from a longitudinal patient registry cohort. An additional analysis of another random 50 patients from the same patient registry cohort is being finalized and will be presented in the future. In a proof-of-concept study in patients with ALS, the combination of low dose interleukin-2 (LD IL-2) and CTLA-4 Ig appeared to lower 4-HNE and other proinflammatory biomarker levels. Coya intends to finalize the analysis of the initial 50 patients, as well as the additional 50 ALS patients, and publish the results in a peer review journal in the near future. Furthermore, Coya has filed patent applications relating to the use of the biomarker in ALS. The biomarker data can be viewed **here.**

Stanley Appel, M.D., Chairman of Coya's SAB, commented: "We believe these studies of the first set of 50 ALS patients from our database document the correlation of 4-HNE with the progression of disease and patient survival and support the potential importance of 4-HNE as a biomarker."

Fred Grossman, Chief Medical Officer at Coya, commented, "Based on the strength of the biomarker data, Coya plans to discuss with the FDA the goal of validating 4-HNE as a new potential biomarker for predicting progression and survival in patients with ALS."

4-HNE Relevance in Disease Pathophysiology

Reactive oxygen species (ROS) are generated mainly as byproducts of mitochondrial respiration and are tightly controlled by multiple anti-oxidant mechanisms. In neurodegenerative diseases, such as ALS, when the antioxidant system is overwhelmed by overproduction of ROS, oxidative stress occurs. 4-HNE, an abundant and reactive oxygen species, is thought to exert neuronal toxicity ultimately through formation of toxic protein aggregates, such as those seen in ALS patients. Additionally, 4-HNE appears to be causally involved in multiple pathophysiologic events associated with disease pathophysiology, including motor neuron death.

Summary of Study Results

Data was collected from a previously established biobank at Houston Methodist to monitor and track ALS patient outcomes with biomarkers. Serial longitudinal sampling of serum was assessed in 50 patients over the duration of their journeys from diagnosis to death. 4-HNE was identified in previous studies as a biomarker of interest relevant to ALS pathophysiology. Thus, serum 4-HNE levels were tracked and monitored during the patients' treatment journeys, while healthy patients were measured as controls. Results demonstrate that:

- 4-HNE serum levels are significantly elevated in ALS patients compared to healthy controls
- 4-HNE serum levels correlate with the rate of disease progression in ALS patients (ALSFRS points/month) - The higher the 4-HNE serum level, the faster the progression
- 4-HNE serum levels correlate with survival from onset and diagnosis to death -The higher the 4-HNE serum level, the shorter the survival
- A receiver operating characteristic curve (ROC) analysis documents a 91.7% sensitivity and 71.1% specificity in predicting 24-month survival based on a threshold 4-HNE level of 8 ug/ml: If 4-HNE serum levels are > 8 ug/ml, there is a 91.7% chance that patient survival will be less than or equal to 24 months. If 4-HNE serum level is < 8 ug/ml, there is a 71.1% chance that patient survival is greater than 24 months
- Based on a proof-of-concept study, COYA 302 (combination of LD IL-2 and CTLA-4 Ig) may lower 4-HNE levels and levels of other relevant biomarkers that correlate with disease progression.

About COYA 302

COYA 302 is an investigational and proprietary biologic combination therapy with a dual immunomodulatory mechanism of action intended to enhance the anti-inflammatory function of regulatory T cells (Tregs) and suppress the inflammation produced by activated monocytes and macrophages. COYA 302 is comprised of proprietary low dose interleukin-2 (LD IL-2) and CTLA-4 Ig (abatacept) and is being developed for subcutaneous administration for the treatment of patients with ALS, Frontotemporal Dementia (FTD), Parkinson's Disease (PD), and Alzheimer's Disease (AD). These mechanisms may have additive or synergistic effects.

In February of 2023, Coya announced results from a proof-of-concept, open-label clinical study evaluating commercially available LD IL-2 and CTLA-4 Ig in a small cohort of patients with ALS conducted at the Houston Methodist Research Institute (Houston, Texas) by Stanley Appel, M.D., Jason Thonhoff, M.D., Ph.D., and David Beers, Ph.D.. This study was the first-of-its-kind evaluating this dual-mechanism immunotherapy for the treatment of ALS. Patients in the study received investigational treatment for 48 consecutive weeks and were evaluated for safety and tolerability, Treg function, serum biomarkers of oxidative stress and inflammation, and clinical functioning as measured by the ALSFRS-R scale.

During the 48-week treatment period, the therapy was well tolerated. The most common adverse event was mild injection-site reactions. No patient discontinued the study, and no deaths or other serious adverse events were reported.

Patients' disease progression was measured using the ALSFRS-R scale, a validated rating tool for monitoring the progression of disability in patients with ALS. The mean (±SD) ALSFRS-R scores at week 24 (33.75 ±3.3) and week 48 (32 ±7.8) after initiation of treatment were not statistically different compared to the ALSFRS-R score at baseline (33.5 ±5.9), suggesting significant amelioration in the progression of the disease over the 48-week treatment period.

Treg suppressive function, expressed as percentage of inhibition of proinflammatory T cell proliferation, showed a statistically significant increase over the course of the treatment period and was significantly reduced at the end of the 8-week washout post-treatment period. Treg suppressive function at 24 weeks (79.9 ±9.6) and 48 weeks (89.5 ±4.1) was significantly higher compared to baseline (62.1 ±8.1) ($p<0.01$), suggesting enhanced and durable Treg suppressive function over the course of treatment. In contrast, Treg suppressive function (mean ±SD) was significantly decreased at the end of the 8-week washout period compared to end-of-treatment at week 48 (70.3 ±8.1 vs. 89.5 ±4.1, $p <0.05$).

The study also evaluated serum biomarkers of inflammation, oxidative stress, and lipid peroxides. The available data up to 16 weeks after initiation of treatment suggest a decrease in these biomarker levels, which is consistent with the observed enhancement of Treg function. The evaluation of the full biomarker data is ongoing.

COYA 302 is an investigational product not yet approved by the FDA or any other regulatory agency.

About Amyotrophic Lateral Sclerosis

Amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's Disease, is a rare neurological disease that affects motor neurons, the nerve cells in the brain and spinal cord that control voluntary muscle movement. About 20,000 people live with ALS in the United States and approximately 5,000 new cases are diagnosed every year. The disease is progressive, meaning the symptoms get worse over time. The functional status of ALS patients declines about 1 point per month on average, as measured by the Revised ALS Function Rating Scale1, or ALSFRS-R, a validated tool to monitor the progression of the disease.

ALS has no cure, and the currently approved drug treatments provide limited benefit to patients. ALS is a type of motor neuron disease. As motor neurons degenerate and die, they stop sending messages to the muscles, which causes the muscles to weaken, start to twitch (fasciculations), and waste away (atrophy). Eventually, the brain loses its ability to initiate and control voluntary movements. Most people with ALS die from respiratory failure, usually within three to five years from when the symptoms first appear.2

References

1. Atassi N, et al. The PRO-ACT database: design, initial analyses, and predictive features. Neurology, 2014;83:1719–1725. doi: 10.1212/WNL.0000000000000951.
2. National Institutes of Health (NIH) Website (**https://www.ninds.nih.gov**), accessed on January 8, 2024.

About Coya Therapeutics, Inc.

Headquartered in Houston, TX, Coya Therapeutics, Inc. (Nasdaq: COYA) is a clinical-stage biotechnology company developing proprietary treatments focused on the biology and potential therapeutic advantages of regulatory T cells (“Tregs”) to target systemic inflammation and neuroinflammation. Dysfunctional Tregs underlie numerous conditions, including neurodegenerative, metabolic, and autoimmune diseases, and this cellular dysfunction may lead to sustained inflammation and oxidative stress resulting in lack of homeostasis of the immune system.

Coya’s investigational product candidate pipeline leverages multiple therapeutic modalities aimed at restoring the anti-inflammatory and immunomodulatory functions of Tregs. Coya’s therapeutic platforms include Treg-enhancing biologics, Treg-derived exosomes, and autologous Treg cell therapy.

COYA 302 – the Company’s lead biologic investigational product or "Pipeline in a Product" – is a proprietary combination of COYA 301 (Coya’s proprietary LD IL-2) and CTLA4-Ig for subcutaneous administration with a unique

dual mechanism of action that is now being developed for the treatment of Amyotrophic Lateral Sclerosis, Frontotemporal Dementia, Parkinson's Disease, and Alzheimer's Disease. Its multi-targeted approach enhances the number and anti-inflammatory function of Tregs and simultaneously lowers the expression of activated microglia and the secretion of pro-inflammatory mediators. This synergistic mechanism may lead to the re-establishment of immune balance and amelioration of inflammation in a sustained and durable manner that may not be achieved by either low-dose IL-2 or CTLA4-Ig alone.

For more information about Coya, please visit **www.coyatherapeutics.com**

Forward-Looking Statements

This press release contains "forward-looking" statements that are based on our management's beliefs and assumptions and on information currently available to management. Forward-looking statements include all statements other than statements of historical fact contained in this presentation, including information concerning our current and future financial performance, business plans and objectives, current and future clinical and preclinical development activities, timing and success of our ongoing and planned clinical trials and related data, the timing of announcements, updates and results of our clinical trials and related data, our ability to obtain and maintain regulatory approval, the potential therapeutic benefits and economic value of our product candidates, competitive position, industry environment and potential market opportunities. The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect," and similar expressions are intended to identify forward-looking statements.

Forward-looking statements are subject to known and unknown risks, uncertainties, assumptions and other factors including, but not limited to, those related to risks associated with the success, cost and timing of our product candidate development activities and ongoing and planned clinical trials; our plans to develop and commercialize targeted therapeutics; the progress of patient enrollment and dosing in our preclinical or clinical trials; the ability of our product candidates to achieve applicable endpoints in the clinical trials; the safety profile of our product candidates; the potential for data from our clinical trials to support a marketing application, as well as the timing of these events; our ability to obtain funding for our operations; development and commercialization of our product candidates; the timing of and our ability to obtain and maintain regulatory approvals; the rate and degree of market acceptance and clinical utility of our product candidates; the size and growth potential of the markets for our product candidates, and our ability to serve those markets; our commercialization, marketing and manufacturing capabilities and strategy; future agreements with third parties in connection with the commercialization of our product candidates; our expectations regarding our ability to obtain and maintain intellectual property protection; our dependence on third party manufacturers; the success of competing therapies or products that are or may become available; our ability to attract and retain key scientific or management personnel; our ability to identify

additional product candidates with significant commercial potential consistent with our commercial objectives; ; and our estimates regarding expenses, future revenue, capital requirements and needs for additional financing.

We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. Moreover, we operate in a very competitive and rapidly changing environment, and new risks may emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed herein may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. Although our management believes that the expectations reflected in our forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances described in the forward-looking statements will be achieved or will occur. We undertake no obligation to publicly update any forward-looking statements, whether written or oral, that may be made from time to time, whether as a result of new information, future developments or otherwise.

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