NEWS RELEASE

Coya Therapeutics Announces Subcutaneously Administered COYA 302 Elicits Direct Anti-Inflammatory Effect in Brain in a Preclinical Inflammatory Mouse Model of Parkinson's Disease

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A key aspect of Parkinson's disease (PD) pathophysiology is decreased systemic regulatory T cell (Treg) function with associated neuroinflammation in the nigrostriatal pathway of the brain, including the presence of reactive astrocytes and microglia that have an initiating and progressing role in PD;

Subcutaneous injection of COYA 302, an anti-inflammatory, Treg-enhancing combination biologic (comprising low dose interleukin-2 and CTLA-4 Ig fusion protein), in an inflammatory mouse model of PD resulted in significant reductions in microglia and astrocyte activation in the nigrostriatal pathway in the brain;

Importantly, study illustrates that peripheral administration of COYA 302 is directly immunomodulatory in the brain and associated with significant downregulation of neuroinflammation

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 the direct CNS anti-inflammatory effect of subcutaneously administered COYA 302 in a preclinical inflammatory associated mouse model of Parkinson's Disease (PD).

Coya's Chief Business Officer and incoming Chief Executive Officer Arun Swaminathan, Ph.D. stated: "We believe that the ability of peripherally administered biologics (COYA 302) that potently and directly ameliorate the inflammatory milieu in the brain translates to strategies to suppress CNS neuro-inflammation beyond PD, including

other inflammatory mediated neurodegenerative diseases such as Alzheimer's disease (AD) and Frontotemporal Dementia (FTD)."

Parkinson's disease is characterized by the selective loss of dopaminergic neurons in brain regions responsible for motor control (nigrostriatal pathway), while inflammation and immune dysfunction from the associated loss of systemic Treg function are currently recognized as critical mediators of disease and subsequent progression of PD. Targeting the sustained proinflammatory mechanisms that progress the disease and enhance immunosuppressive cells, such as Tregs, may have the potential to provide disease-modifying benefits in patients with PD.

In an inflammatory mouse model of PD, subcutaneous injections of COYA 302 significantly reduced inflammation and microglial activation in nigrostriatal brain regions responsible for motor control (dorsal striatum and substantia nigra). Microglial activation is an important mediator of PD and plays an important role in PD pathology and neurodegeneration. Microglial inhibition may hold promise as a therapeutic strategy to delay the progression of PD. Additionally, subcutaneous injections of COYA 302 resulted in reductions in astrocyte numbers and their activation (astrogliosis) in the nigrostriatal pathway. It is known that pathogenic astrocyte activation leads to neurodegeneration in PD, and mitigating its damage may be another therapeutic target. COYA 302's direct effect in reducing neuroinflammatory constituents known to drive neurodegeneration is promising and warrants clinical translation into additional preclinical models and, ultimately, into patients. The Company anticipates presenting and/or publishing these data in a peer reviewing setting.

About Parkinson's Disease

Parkinson's disease (PD) is the most common movement disorder and the second most common neurodegenerative disease, affecting approximately 1% of individuals over the age of 60. Its prevalence increases significantly with age, and as the global population continues to age, the incidence of PD is expected to rise further. The hallmark of PD is the progressive degeneration of dopaminergic neurons, particularly in the substantia nigra, a region of the brain integral to the nigrostriatal pathway, which plays a crucial role in coordinating motor control. This neuronal loss leads to the characteristic motor symptoms of PD, such as bradykinesia, rigidity, and tremors, while patients also exhibit non-motor manifestations, such as cognitive decline, mood disturbances, and sleep disorders.

While the exact cause of the dopaminergic neuron loss is not fully understood, growing evidence highlights chronic neuroinflammation and immune dysfunction as central drivers of PD pathogenesis and progression. A key aspect of PD pathophysiology is neuroinflammation in the nigrostriatal pathway, including the presence of reactive astrocytes. This neuroinflammation has long been considered a downstream response to the death of dopaminergic neurons. However, increased evidence suggests that astrocytes have an initiating role in PD

pathophysiology. Regulatory T cells (Tregs), a subset of T cells responsible for maintaining immune homeostasis and preventing excessive immune responses, are decreased and impaired in PD patients and preclinical models. Subsequently, chronic pro-inflammatory immune cell activation, oxidative stress, and mitochondrial dysfunction all contribute to neuronal damage. The combination of targeting the chronic, proinflammatory activation and enhancing the Treg immunosuppressive function offers promising therapeutic potential for a disease-modifying therapy that could effectively alter the course of the disease, reduce neuronal loss, and improve patient outcomes.

References

1. Kouli, Torsney, and Kuanl. Chapter 1 - Parkinson's Disease: Etiology, Neuropathology, and Pathogenesis; Parkinson's Disease: Pathogenesis and Clinical Aspects , Codon Publications, 2018

2. Booth, Hirst, and Wade-Martins. The Role of Astrocyte Dysfunction in Parkinson's Disease Pathogenesis; Trends in Neuroscience , 2017 June, 40(6): 358-370

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 CTLA4-Ig fusion protein and is being developed for subcutaneous administration for the treatment of patients with ALS, AD, FTD, and PD. 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 CTLA4-Ig fusion protein 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) were 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 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 impact of COVID-19; 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 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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