Clene Presents Preliminary Data for CNM-Au8® as a Potential Treatment for Rett Syndrome

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- CNM-Au8 demonstrated neuroprotective effects in an *in vitro* model of Rett Syndrome, a rare pediatric neurodevelopmental disease
- CNM-Au8 also demonstrated rescue of mitochondrial deficits in induced astrocytes derived from Rett patients
- Invited oral presentation and poster presented on June 19, 2024, at the International Rett Syndrome Foundation 2024 Annual Meeting in Westminster, Colorado

SALT LAKE CITY, June 21, 2024 (GLOBE NEWSWIRE) -- Clene Inc. (Nasdaq: CLNN) (along with its subsidiaries, “Clene”) and its wholly-owned subsidiary Clene Nanomedicine Inc., a clinical-stage biopharmaceutical company focused on improving mitochondrial health and protecting neuronal function to treat neurological diseases, including amyotrophic lateral sclerosis (ALS) and multiple sclerosis (MS), today announced it presented new, preliminary data demonstrating the potential of CNM-Au8 as a treatment for Rett Syndrome. Karen Ho, Ph.D., Clene’s vice president of translational medicine, unveiled the data in oral and poster presentations on June 19th at the International Rett Syndrome Foundation 2024 Annual Meeting in Westminster, Colorado. The presentation was titled, “CNM-Au8, a Candidate First-in-Class Nanotherapeutic for Treatment of Rett Syndrome.”

Rett Syndrome is a severe, rare pediatric neurologic disorder caused by mutations in the X chromosome-linked gene, methyl-CpG binding protein 2 (MECP2). The disorder primarily affects females, with an incidence of ~1:10,000 live female births. Children with mutations in MECP2 develop normally until about 6 months of age, after which they exhibit a regression in acquired skills and begin to display a wide range of neurological and developmental impairments that include hand-wringing with loss of purposeful hand movement, abnormal gait, respiratory dysregulation, autism spectrum features, motor dysfunction, loss of verbal communication skills, seizures, and Parkinson-like features. Microcephaly and white matter (myelin) loss are pathological features of the Rett brain. There is currently only one approved drug for the treatment of Rett Syndrome, trofinetide, which was approved by the U.S. Food and Drug Administration in 2023.

CNM-Au8 is an orally administered, catalytic nanotherapeutic that targets energy metabolism via mitochondria in nervous system cells, including neurons and oligodendrocytes, to enhance neuronal survival and function as well as to support remyelination. To date, Clene has focused on the development of CNM-Au8 for the treatment of ALS and MS.

The novel mechanism of CNM-Au8, with its catalytic ability to bolster mitochondrial function to aid in the survival and function of neurons, as well as the remyelinating properties of CNM-Au8, led Clene to also consider Rett Syndrome as a possible indication for treatment by CNM-Au8.

The project was conducted in collaboration with Dr. Kathrin Meyer, formerly of Nationwide Children’s Hospital in Columbus, Ohio, now Chief Scientific Officer of Alcyone Therapeutics, and her former postdoctoral researchers, Drs. Meysam Ganjibakhsh and Andrea Sierra Delgado. Dr. Delgado was former Chief Research Associate in the Meyer lab and is now Research Assistant Professor at the University of Missouri. The study’s main preliminary findings are:

- **Statistically significant improvement in neuronal health ($p<0.01$), neuron survival ($p<0.0001$), and neurite lengths ($p<0.05$)** in an *in vitro* model of Rett Syndrome, and;
- **Improvements in the mitochondrial respiration deficits associated with Rett patient-derived astrocytes with CNM-Au8 treatment *in vitro*, with full rescue ($p<0.0001$) of both basal and ATP-linked respiration observed in one Rett line, and partial rescue observed in a second Rett line (ns change in basal respiration; $p<0.001$ improvement in ATP-linked respiration) at one concentration of CNM-Au8 treatment for 24 hours.** All statistical analyses were done using one-way ANOVA, and all conditions were performed with a minimum of three replicates.

“Rett Syndrome has a disease mechanism that shares some common features with both ALS and MS,” said Dr. Ho. “Dysfunctional energy metabolism, glutamate excitotoxicity, demyelination, and mitochondrial dysfunction are all hallmarks of challenges faced by the nervous system in all three of these diseases. These preliminary data suggest that CNM-Au8 may treat Rett syndrome by potential rescue of mitochondrial dysfunction, thereby promoting neuronal health, survival, and synaptic structure. If CNM-Au8 proves to be a successful treatment for Rett syndrome, this will add further affirmation to Clene’s central thesis: that CNM-Au8—with its versatile and unique catalytic mechanism—holds promise as a potential treatment for multiple diseases of the nervous system, beyond its current targets of ALS and MS. It’s a truly rewarding time to participate in the development of CNM-Au8, which has strong potential to make a difference to the millions of people living with difficult-to-treat neurologic diseases.”

Support for the study from the Baby Eleanor Foundation, and the donation of Rett and healthy control cells from anonymous individuals, were gratefully acknowledged by the study team.

About Clene

Clene Inc., (Nasdaq: CLNN) (along with its subsidiaries, “Clene”) and its wholly owned subsidiary Clene Nanomedicine Inc., is a late clinical-stage biopharmaceutical company focused on improving mitochondrial health and protecting neuronal function to treat neurodegenerative diseases, including amyotrophic lateral sclerosis, Parkinson’s disease, and multiple sclerosis. CNM-Au8 ® is an investigational first-in-class therapy that improves central nervous system cells’ survival and function via a mechanism that targets mitochondrial function and the NAD pathway while reducing oxidative stress. CNM-Au8® is a federally registered trademark of Clene Nanomedicine, Inc. The company is based in Salt Lake City, Utah, with R&D and manufacturing operations in Maryland. For more information, please visit www.clene.com or follow us on X (formerly Twitter) and LinkedIn.

Forward-Looking Statements

This press release contains “forward-looking statements” within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and Section 27A of the Securities Act of 1933, as amended, which are intended to be covered by the “safe harbor” provisions created by those laws. Clene’s forward-looking statements include, but are not limited to, statements regarding our or our management team’s expectations, hopes, beliefs, intentions or strategies regarding our future operations. In addition, any statements that refer to projections, forecasts or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. The words “anticipate,” “believe,” “contemplate,” “continue,” “estimate,” “expect,” “intends,” “may,” “might,” “plan,” “possible,” “potential,” “predict,” “project,” “should,” “will,” “would,” and similar expressions may identify forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking. These forward-looking statements represent our views as of the date of this press release and involve a number of judgments, risks and uncertainties. We anticipate that subsequent events and developments will cause our views to change. We undertake no obligation to update forward-looking statements to reflect events or circumstances after the date they were made, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws. Accordingly, forward-looking statements should not be relied upon as representing our views as of any subsequent date. As a result of a number of known and unknown risks and uncertainties, our actual results or performance may be materially different from those expressed or implied by these forward-looking statements. Some factors that could cause actual results to differ include our ability to demonstrate the efficacy and safety of our drug candidates; the clinical results for our drug candidates, which may not support further development or marketing approval; actions of regulatory agencies, which may affect the initiation, timing and progress of clinical trials and marketing approval; our ability to achieve commercial success for our drug candidates, if approved; our limited operating history and our ability to obtain additional funding for operations and to complete the development and commercialization of our drug candidates; and other risks and uncertainties set forth in “Risk Factors” in our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q. In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this press release, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and you are cautioned not to rely unduly upon these statements. All information in this press release is as of the date of this press release. The information contained in any website referenced herein is not, and shall not be deemed to be, part of or incorporated into this press release.

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