

Alzamend Neuro®

CORPORATE PRESENTATION – JULY 2025



SAFE HARBOR STATEMENT

This presentation and other written or oral statements made from time to time by representatives of Alzamend Neuro, Inc. (the “Company” or “Alzamend”) contain “forward looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements reflect the current view about future events. Statements that are not historical in nature, such as forecasts for the industry in which we operate, and which may be identified by the use of words like “ expects,” “assumes,” “projects,” “anticipates,” “estimates,” “we believe,” “could be,” “future,” or the negative of these terms and other words of similar meaning, are forward-looking statements. Such statements include, but are not limited to, statements contained in this presentation relating to our business, business strategy, expansion, growth and product candidates and the timing of their development, sales and marketing strategy and capital outlook. Forward-looking statements are based on management’s current expectations and assumptions regarding our business, the economy and other future conditions and are subject to inherent risks, uncertainties and changes of circumstances that are difficult to predict and may cause actual results to differ materially from those contemplated or expressed. We caution you therefore against relying on any of these forward-looking statements.

These risks and uncertainties include those risk factors discussed in Part I, “Item 1A. Risk Factors” of our Annual Report on Form 10-K for the fiscal year ended April 30, 2025 (the “2025 Annual Report”) and other information contained in subsequently filed current and periodic reports, each of which is available on our website and on the Securities and Exchange Commission’s website (www.sec.gov). Any forward-looking statements are qualified in their entirety by reference to the risk factors discussed in the 2025 Annual Report. Should one or more of these risks or uncertainties materialize (or in certain cases fail to materialize), or should the underlying assumptions prove incorrect, actual results may differ significantly from those anticipated, believed, estimated, expected, intended or planned.

Important factors that could cause actual results to differ materially from those in the forward-looking statements include: risks related to performing clinical studies; the ability to initiate and complete clinical studies and report data therefrom; whether the results from clinical studies will validate and support the safety and efficacy of our product candidates; competition from other products; risks in product development; the ability to protect our intellectual property rights; impact of any litigation or infringement actions brought against us; market acceptance if we can commercialize our product candidates; inability to raise capital to fund clinical trials; and changes in government regulation.

Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We cannot guarantee future results, levels of activity, performance or achievements. Except as required by applicable law, including the securities laws of the United States, we do not intend to update any of the forward-looking statements to conform these statements to actual results. All forecasts are provided by management in this presentation and are based on information available to us at this time and management expects that internal projections and expectations may change over time. In addition, the forecasts are based entirely on management’s best estimate of our future financial performance given our product candidate development and market opportunities.



04

INTRODUCTION

Company Overview4-8

09

OVERVIEW OF INDICATIONS

Alzheimer’s Disease09

Bipolar Disease10

Major Depressive Disorder11

Post-Traumatic Stress Disorder12

13

OUR SCIENCE

General Scientific Overview13

AL001 (LISPRO) – Phase I Clinical Study and Results14-15

24

SPECIFIC DETAILS

Intellectual Property24

Market Opportunity for AL001 and ALZN00225

26

FINAL DETAILS

Our Team26-28

OUR SCIENCE (continued)

AL001 (LISPRO) – Phase IIA Clinical Study and Results16-17

ALZN002 (E22W) – Phase I/IIA Clinical Study18

AL001 (LISPRO) – Non-Clinical Study19-21

ALZN002 (E22W) – Non-Clinical Study22-23




Alzamend Neuro®

NASDAQ: ALZN

INDUSTRY:	Biopharmaceutical
SECTOR:	Small Molecule / Cell Theory
FOUNDED:	2016
IPO:	June 15, 2021
LOCATION:	Atlanta, Georgia (Corporate Headquarters)



LEAD DRUG CANDIDATE - IONIC COCRYSTAL OF LITHIUM (AL001)

MULTIPLE INDICATIONS	POTENTIAL REPLACEMENT TO MARKETING LITHIUM THERAPIES	MARKET OPPORTUNITY
<div><ul style="list-style-type: none">❑ AL001 is a patented ionic cocrystal of lithium for the potential treatment of Alzheimer’s Disease (“AD”), Bipolar Disorder (“BD”), Major Depressive Disorder (“MDD”) and Post-Traumatic Stress Disorder (“PTSD”)❑ Completed a Phase I Relative Bioavailability Study in healthy human subjects in March 2022 and Reported Final data sets of a Phase IIA Multiple Ascending Dose Study in patients with mild to moderate Alzheimer’s Disease and Healthy Adult Subjects in October 2024❑ Received “Study May Proceed” notifications in 2H 2023 from FDA to Initiate Phase II Clinical Trials for treatment of BD, MDD, and PTSD❑ Anticipate initiating Phase II clinical studies in BD, Alzheimer’s, MDD and PTSD patients in 2025</div>	<div><ul style="list-style-type: none">❑ Phase I and IIA Studies confirmed AL001 as a potential replacement to marketed lithium therapies❑ AL001 providing lithium at a lithium carbonate equivalent dose of 150 mg is bioequivalent to a marketed 300 mg lithium carbonate capsule❑ Identified a maximum tolerated dose (“MTD”), providing lithium at a lithium carbonate equivalent dose of 240-mg, designed to be unlikely to require therapeutic drug monitoring (“TDM”)❑ Safety aspects of AL001 development may qualify for (505)(b)(2) pathway for FDA approval</div>	<div><ul style="list-style-type: none">❑ 43.5 million U.S. patient population❑ 664 million global patient population</div>








Reference to AL001: Current Marketed Lithium – Lithium Carbonate

Usage For BD, MDD, PTSD	Challenges	Published Clinical Efficacy Studies For Alzheimer's
<ul style="list-style-type: none"> ❑ Approved by FDA for BD and utilized off-label for MDD, PTSD, and other neurodegenerative, neurological and neuropsychiatric disorders ❑ First mood stabilizer and first-line treatment for BD (Considered the gold standard treatment) ❑ 524 clinical trials conducted for multiple indications (www.clinicaltrials.gov) ❑ 5,444 published research articles (www.pubmed.gov) 	<ul style="list-style-type: none"> ❑ Narrow therapeutic window ❑ Chronic Toxicity ❑ Adverse Effects ❑ Requires Therapeutic Drug Monitoring 	<ul style="list-style-type: none"> ❑ Forlenza, 2011⁽¹⁾: Lithium significantly decrease CSF concentrations of P-tau and better performance on the cognitive subscale of the Alzheimer's Disease Assessment Scale ("ADAS-cog") (1). Forlenza, 2011: https://pubmed.ncbi.nlm.nih.gov/21525519 ❑ Matsunaga, 2015⁽²⁾: Lithium significantly decreased cognitive decline as compared to placebo (2). Matsunaga, 2015: https://pubmed.ncbi.nlm.nih.gov/26402004 ❑ Devanand, 2017⁽³⁾: All patients improved to varying degrees as determined by clinical judgment and/or objective rating scales, Clinical Global Impression Severity ("CGI-S") and Change ("CGI-C") scales, and the Neuropsychiatric Inventory ("NPI") (3). Devanand, 2017: https://pubmed.ncbi.nlm.nih.gov/27819842



PIPELINE

PRODUCT CANDIDATE	INDICATION*	PRE-CLINICAL	PHASE 1	PHASE 2	PHASE 3	FDA APPROVAL
AL001*	Alzheimer’s Disease					☐ Anticipate initiating a Phase II clinical study in Alzheimer’s patients in Q2 2026
	Bipolar Disorder					☐ Anticipate initiating a Phase II clinical study in BD patients in Q4 2025
	Major Depressive Disorder					☐ Anticipate initiating a Phase II clinical study in MDD patients in Q1 2026
	Post -Traumatic Stress Disorder					☐ Anticipate initiating a Phase II clinical study in PTSD patients in Q1 2026
ALZN002	Alzheimer’s Disease					☐ Initiated Phase I/IIA Clinical Trial in March 2023, paused in February 2024 and expected to resume in mid-2026

*We Initiated a Phase II clinical study in healthy subjects in May 2025





COMPANY HISTORY	CURRENT PIPELINE
<p>Clinical-stage biopharmaceutical company dedicated to:</p> <p>Researching, developing and commercializing preventions, treatments and cures for Alzheimer's Disease, Bipolar Disorder, Major Depressive Disorder, and Post-Traumatic Stress Disorder via the two therapeutics licensed from the University of South Florida Research Foundation, Inc., one of the top 20 institutions in the nation for patented research and their portfolio of proprietary solutions.</p>	<p><u>AL001 (aka LISPRO):</u></p> <p>a patented ionic cocrystal technology delivering a therapeutic combination of lithium, salicylate and proline for the treatment of Alzheimer's' Disease, BD, MDD and PTSD</p> <p><u>ALZN002 (aka E22W):</u></p> <p>a cell-based therapeutic vaccine that seeks to restore the ability of the patients' immunological system to combat Alzheimer's Disease.</p>



ALZHEIMER’S DISEASE	KEY STATISTICS
<p>Alzheimer’s Disease is an irreversible, progressive brain disorder that slowly destroys memory and cognitive skills, and eventually the ability to carry out the simplest tasks.</p> <p>In most people with Alzheimer’s Disease, symptoms first appear in their early to mid-60’s. Estimates vary, but per the Alzheimer’s Association, nearly 7 million Americans may have Alzheimer’s Disease, considered by many as “the most feared” disease. Between 2000 and 2019, deaths from heart disease have decreased 7.3% while deaths from Alzheimer’s Disease have increased 145%</p> <p>Alzheimer’s Disease has no current cure, and only few treatments for symptoms are available today while research continues.</p>	<p>7th leading cause of death in the United States</p> <p>13 million Americans are projected to be living with Alzheimer’s Disease by 2050</p> <p>In 2023, Alzheimer’s and other dementias will cost the nation \$345 Billion</p> <p><u>Lithium and Alzheimer’s:</u> Published clinical efficacy trials have reported that treatment with lithium carbonate have resulted in reduction of biomarkers, irritability, and cognitive decline, in patients with Alzheimer's.</p> <p><u>ALZN002 and Alzheimer’s:</u> Compared to passive immunization treatment approaches that use foreign blood products (such as monoclonal antibodies), active immunization with ALZN002 is anticipated to offer a more robust and long-lasting effect on the clearance of amyloid.</p>



BIPOLAR DISORDER	KEY STATISTICS
<p>Bipolar Disorder is a mental illness that causes unusual shifts in a person’s mood, energy, activity levels, and concentration.</p> <p>The three primary types of bipolar disorders are bipolar I disorder, bipolar II disorder, and cyclothymic disorder.</p> <p>Bipolar I: Characterized by episodes of mania that last at least seven days and may require hospitalization.</p> <p>Bipolar II: Defined by a pattern of depressive and hypomanic episodes. Hypomania is a mood elevation that increases energy, agitation, and pressured speech.</p> <p>Cyclothymic disorder: More frequent shifts between mood swings, which is called rapid cycling. The highs are consistent with hypomania symptoms and the lows are mild to moderate depression.</p>	<p>An estimated 7 Million adults in the US and over 45 Million globally experience Bipolar Disorder each year.</p> <p>Of adults who live with Bipolar Disorder, almost 83% experience significant disruption in their physical or mental abilities.</p> <p>The risk of suicide is extremely high in people with bipolar disorder with 15% to 17% committing suicide.</p> <p><u>Lithium and BD:</u> Lithium was the first mood stabilizer approved by FDA and is still a first-line treatment option (considered the “gold standard”) for BD but is underutilized perhaps because of the need for therapeutic drug monitoring and patent expiration.</p>



MAJOR DEPRESSIVE DISORDER

Major Depressive Disorder “(MDD)”, commonly known as **clinical depression**, is one of the most common mental disorders worldwide. Many different factors can contribute to a person’s depressive state and depression is often an **overlapping diagnosis** along with **other medical conditions and/or mental disorders**.

The most prominent **symptoms** of major depression are a **severe** and **persistent low mood, profound sadness, or a sense of despair**. A major depressive episode (MDE) is a time-period characterized by symptoms of **major depression**.

Depression is the cause of over **two-thirds** of the **30,000 reported suicides** in the U.S. each year.

KEY STATISTICS

An estimated **21 Million** adults in U.S. had at least one **major depressive episode** in 2021. This number represented **8.3%** of all U.S. adults.

An estimated **5.0 million adolescents aged 12 to 17** in the United States had at least one major depressive episode. This number represented **20.1% of the U.S. population aged 12 to 17**.

Lithium and MDD:

Although lithium products do not have an FDA approved indication for MDD, it has been **utilized off-label for MDD**.

While a wide variety of medications have been used historically for augmentation of an antidepressant in MDD, lithium is one of the few agents that has **demonstrated efficacy in multiple randomized controlled trials**.



POST-TRAUMATIC STRESS DISORDER	KEY STATISTICS
<p>PTSD is a mental and behavioral disorder that can develop because of exposure to a traumatic event, such as sexual assault, warfare, traffic collisions, child abuse, domestic violence, or other threats on a person’s life.</p> <p>Symptoms may include disturbing thoughts, feelings, or dreams related to the events, mental or physical distress in response to trauma-related cues, attempts to avoid trauma related cues, alterations in the way a person thinks and feels, and an increase in the fight-or-flight response.</p> <p>These symptoms last for more than a month after the event. A person with PTSD is at a higher risk of suicide and intentional self-harm.</p>	<p>About 5 out of every 100 adults (or 5%) in the U.S. has PTSD in any given year. In 2020, about 13 million Americans had PTSD.</p> <p>Veterans are more likely to have PTSD than civilians. Veterans who deployed to a war zone are also more likely to have PTSD than those who did not deploy.</p> <p><u>Lithium and PTSD:</u> Although lithium products do not have an FDA approved indication for PTSD, it has been utilized off-label for PTSD.</p> <p>Treatment with low doses (300–600 mg/day) of lithium carbonate have been reported to provide effective treatment in reduction of inappropriate anger, irritability, anxiety, and insomnia in patients with PTSD.</p>



AL001

SYNOPSIS

Use of patented ionic cocrystal technology delivering a therapeutic combination of Lithium, Proline, and Salicylate

Lithium as a treatment of agitation and other possible symptoms in patients with indication of Alzheimer’s Disease

Other potential indications: Amyotrophic Lateral Sclerosis (“ALS”), Huntington’s Disease, Multiple Sclerosis (“MS”), Parkinson’s Disease, Suicidality and Traumatic Brain Injury (“TBI”)

STRENGTH

Seeking a 505(b)(2) clinical trial pathway from FDA

Potential for “breakthrough therapy” designation from FDA for Alzheimer’s

Formulation could significantly broaden the scope of therapeutic categories suitable for lithium treatments, while also improving safety.

Has the potential of becoming the replacement for all lithium therapies on the market

STATUS

Reported Final data sets of Phase IIA Multiple Ascending Dose Clinical Trial in October 2024. (www.clinicaltrials.gov, identifier: NCT05363293)

Anticipate initiating a Phase II Clinical trial in patients with BD, Alzheimer’s, MDD, and PTSD in 2025. Initiated trial in healthy subjects Q2 2025

Partnered with Massachusetts General Hospital for upcoming Phase II Clinical Trials of AL001 for BD, Alzheimer’s, MDD, and PTSD

ALZN002

A patented method using a mutant peptide sensitized cell as a cell-based therapeutic vaccine that reduces beta-amyloid plaque and seeks to restore the ability of the patient’s immunological system to combat Alzheimer’s Disease

Adjuvant-free therapeutic vaccine designed for the treatment and prophylactics of Alzheimer’s Disease

Potential for “breakthrough therapy” designation from FDA

Inflammation cytokines like IL1 and TNF.alpha, which are considered being related to inflammation didn't increase with antibody level increase

Phase I/IIA Clinical Trial Initiated in March 2023 (www.clinicaltrials.gov, identifier: NCT05834296), paused in February 2024 and expected to resume in 2025



AL001 Phase I Trial

STUDY NO. AL001-ALZ01 (US)

STUDY TITLE

A randomized, balanced, Phase I, single-dose, open-label, two-treatment, two-period, two sequence, crossover, relative bioavailability study to investigate lithium pharmacokinetics and safety of AL001 formulation compared to a marketed immediate release lithium carbonate formulation in healthy subjects.

DESCRIPTION

To assess the relative bioavailability of the AL001 lithium formulation relative to a marketed lithium carbonate formulation in healthy subjects for the purpose of determining potential clinically safe and effective AL001 dosing in future studies.

To characterize safety and tolerability of the tested formulations under the conditions of this study.

STATUS Completed



SAFETY/TOLERABILITY: PRIMARY ENDPOINT MET

- ☐ AL001 was shown to be **safe** and **well-tolerated** in healthy adult subjects
- ☐ **No serious adverse events** and **no deaths** were reported during the trial
- ☐ The **safety profiles** of both **AL001** and the marketed **lithium carbonate capsule** were **benign**
- ☐ **No clinically significant abnormal findings in electrocardiograms** were noted during the trial
- ☐ **AL001 salicylate plasma concentrations** were observed to be **well tolerated** and **consistently within safe limits**
- ☐ Dose-adjusted relative bioavailability analyses of the rate and extent of lithium absorption in plasma indicated that **AL001 1050 mg** (lithium content equivalent to 150 mg lithium carbonate) is **bioequivalent to a marketed 300 mg lithium carbonate capsule** and the **shapes of the lithium plasma concentration versus time curves are similar**



AL001 Phase IIA Trial

STUDY NO. AL001-ALZ02 (US)

STUDY TITLE

A Multiple-dose, Steady-state, Double-blind, Ascending Dose Safety, Tolerability, Pharmacokinetic Study of AL001 in Patients with Mild to Moderate Alzheimer's Disease and Healthy Adult Subjects

DESCRIPTION

Primary: To evaluate the safety and tolerability of AL001 under multiple-dose, steady-state conditions in Alzheimer's subjects and healthy adult subjects

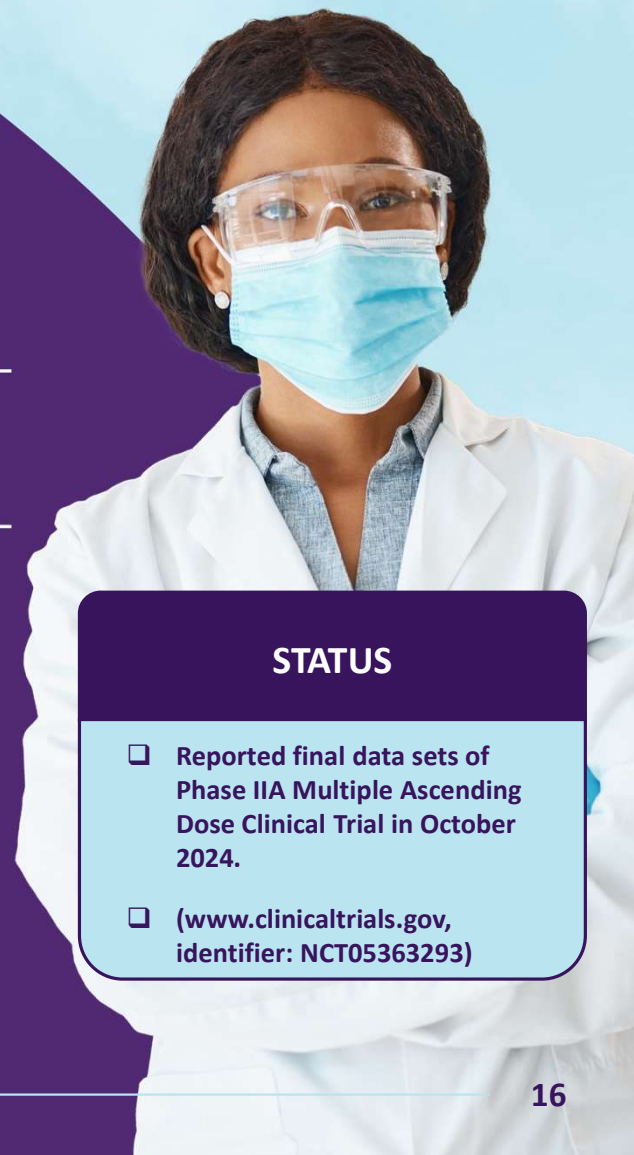
Secondary: To characterize the maximum tolerated dose ("MTD") of AL001 in subjects with mild to moderate Alzheimer's Disease and healthy adult subjects

Exploratory: To explore the difference in pharmacokinetic profile between the non-elderly vs. elderly subjects (healthy subjects only). For Alzheimer's Disease subject cohorts (Cohorts 1,2b, 3b, 4b, and 5b), determination of qualitative and quantitative evaluations of Alzheimer's Disease subject desirable characteristics for future Phase II and III clinical studies to:

- Facilitate recruitment into subsequent AL001 clinical trials
- Facilitate trial-adherence to completion of study requirements including treatment adherence

STATUS

- ☐ Reported final data sets of Phase IIA Multiple Ascending Dose Clinical Trial in October 2024.
- ☐ ([www.clinicaltrials.gov](https://www.clinicaltrials.gov/identifiers/NCT05363293), identifier: NCT05363293)



IDENTIFY MAXIMUM TOLERATED DOSE: ESTABLISHED

- ☐ **Identified dose of lithium** at a lithium carbonate equivalent dose of **240 mg 3-times a day (“TID”)**, is designed to be **unlikely** to require lithium **TDM**
- ☐ **No serious adverse events** and **no deaths** were reported during the trial
- ☐ **MTD is risk mitigated** for the purpose of **treating fragile populations**, such as **Alzheimer's patients**
- ☐ **Goal** is to replace a **300 mg TID lithium carbonate dose** for treatment of **BD** with a **240 mg TID AL001 lithium equivalent**, which represents a daily **decrease of 20% of lithium** given to a patient
- ☐ Results identified a **safe and appropriate dose** to explore the potential for AL001 to **distribute more lithium to the brain** but at a lower systemic exposure, resulting in an **improved safety profile** compared to **currently marketed lithium salts**



ALZN002 Phase I/IIA Trial

STUDY No. ALZN002-01 (US)

STUDY TITLE

A Randomized, Double-blind, Placebo-controlled, Parallel group, Phase I/IIA Study to Assess the Safety, Tolerability, and Efficacy of Autologous Amyloid Beta Mutant Peptide-Pulsed Dendritic Cells (ALZN002) in Subjects with Mild-to-Moderate Dementia of the Alzheimer's Type

DESCRIPTION

Primary: To assess the safety and tolerability of ALZN002 compared with placebo when administered as IV infusion and ID injection in subjects with mild to moderate AD

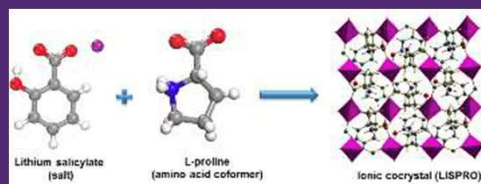
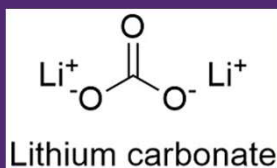
Secondary: To evaluate the immunogenicity of ALZN002 specific to generation of anti-A β antibodies. To determine the effect of ALZN002 on Amyloid- Related Imaging Abnormalities (ARIA) as a putative biomarker of treatment safety

Exploratory: To assess the utility of multiple immune biomarkers as surrogates for safety and efficacy of ALZN002. To assess the preliminary efficacy of ALZN002 treatment on amyloid markers as observed by amyloid positron emission tomography (PET).

STATUS

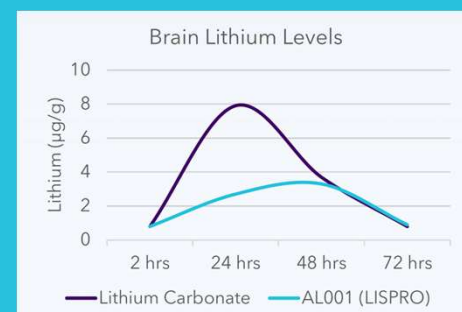
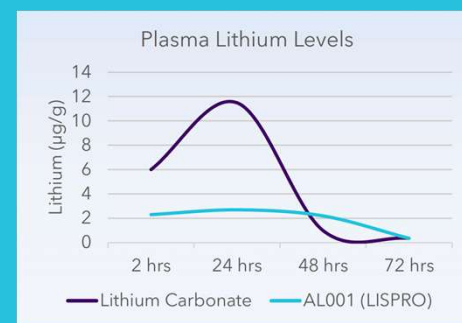
- ☐ Phase I/IIA Clinical Trial Initiated in March 2023
- ☐ (www.clinicaltrials.gov, identifier: NCT05834296)
- ☐ Paused in February 2024 and expected to resume in 2025





- ❑ **Narrow therapeutic window** that requires **regular blood monitoring** of plasma lithium levels and blood chemistry by a clinician to **mitigate adverse events**
- ❑ **Multiple administrations** throughout the day are required to safely reach therapeutic plasma concentrations
- ❑ **Suffer from chronic toxicity, poor physicochemical properties and poor brain bioavailability**

- ❑ AL001 is a patented ionic cocrystal technology delivering a therapeutic combination of **lithium, salicylate, and proline**
- ❑ AL001 exhibits **improved non-clinical pharmacokinetics and bioavailability** compared to the currently FDA approved lithium drugs on the market
- ❑ AL001 **exhibits improved non-clinical brain bioavailability**, without demonstrating an initial spike in lithium concentration that is associated with negative side effects of treatment
- ❑ AL001 **nonclinical brain penetration/ persistence** may translate to patients resulting in lithium dose sparing properties with enhanced overall safety and reduced or eliminated the need for therapeutic drug monitoring



THE RESULTS OF OUR PRECLINICAL STUDIES, CONDUCTED FROM MAY 2016 TO JUNE 2017, ARE SUMMARIZED BELOW:

- ❑ AL001 had no effect on renal COX2 activity (Tg-Ctrl vs. AL001: $p > 0.05$), a biomarker of renal toxicity, while markedly **reducing abnormal biomarkers** associated with Alzheimer's Disease by **50%; beta-amyloid pathology, tau phosphorylation and neuroinflammation** (Tg-Ctrl vs. AL001: $p < 0.01$)(FIGS. 14A/B-15A/B).
- ❑ AL001 treatment **did not induce tissue pathological damage in the heart, kidneys, liver or lungs** by a general autopsy (Tg-Ctrl vs. AL001: $p > 0.05$). In contrast, **equimolar doses** (using a similar structure of moles but different active pharmaceutical ingredient) **of lithium carbonate enhanced renal COX2 expression while having little or no impact on Alzheimer's Disease pathology** (Tg-Ctrl vs. LC: $p < 0.01$).
- ❑ AL001, at the effective dose, **yielded 50% higher lithium levels** (LC vs. AL001; $p < 0.01$) **in the brain** compared with equimolar doses of lithium carbonate (AL001 vs. LC; $p < 0.05$), while producing low nontoxic steady state levels in the body.

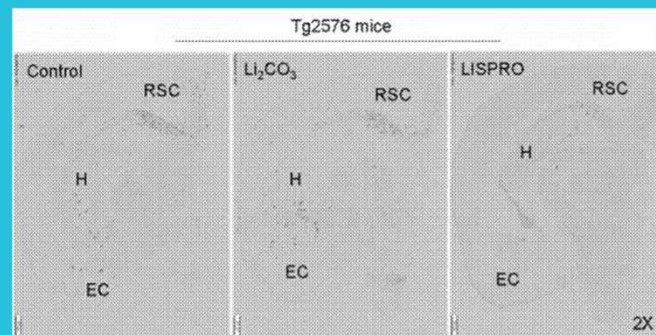


FIG. 14A

FIG. 14A & 14B: Beta Amyloid Burden

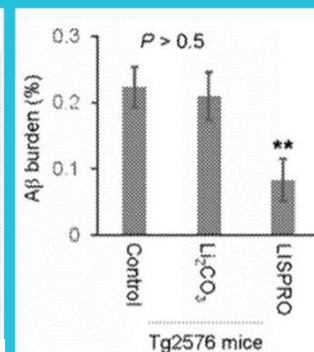


FIG. 14B

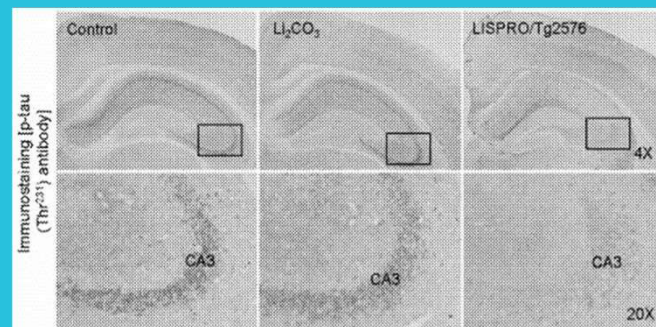


FIG. 15A

FIG. 15A & 15B: Tau Phosphorylation Burden

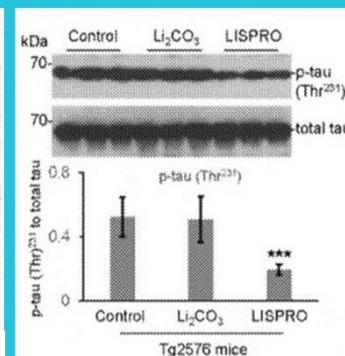
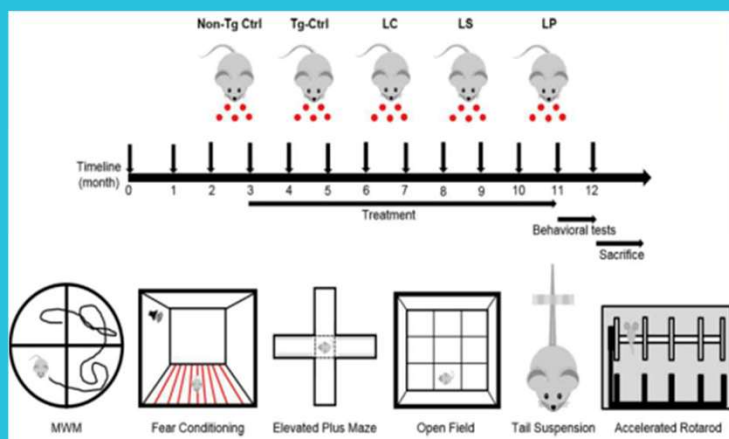


FIG. 15B





- Our pre-clinical studies encompassed the treatment of **28 transgenic** (or genetically modified) and **10 non-transgenic** mice with lithium carbonate and AL001.
- Female APPSWE/PS1dE9 mice** at 4 months of age were **orally treated** with LISPRO (LP), Lithium Salicylate (LS), or Lithium Carbonate (LC) for **9 months** followed by **determination of body weight, growth of internal organs, and cognitive and non-cognitive behavior**.
- Untreated age-matched non-transgenic littermates served as Wild-Type (WT) controls.

THE RESULTS

- No significant differences in **body weight, brain, heart, lung, spleen, liver or kidney** were found between lithium treated and untreated APPSWE/PS1dE9 cohorts (Tg-Ctrl vs. AL001: $p > 0.05$).
- AL001 treatment **improved cognitive function by 50%** (Tg-Ctrl vs. AL001: $p < 0.01$), in comparison with the control group, through **behavioral tests** administered to mice with Alzheimer's Disease. The tests resulted in **50% lower escape latency** (Tg-Ctrl vs. AL001: $p < 0.01$) during the training and probe trial of the Morris water maze test and **50% longer contextual freezing time** (Tg-Ctrl vs. AL001: $p < 0.05$) during the fear conditioning test.
- AL001 treatment **reduced depression by 25%** (Tg-Ctrl vs. AL001: $p < 0.001$), as assessed by the tail suspension test, and **irritability by 50%** (Tg-Ctrl vs. AL001: $p < 0.01$), as assessed by the touch escape test.
- Continued AL001 treatment **prevented cognitive deficits, depression and irritability** and compared to lithium carbonate treatments, was **superior in improving associative learning and memory** (LC vs. AL001: $p < 0.05$) and in **reducing irritability** (LC vs. AL001: $p < 0.01$), supporting the potential of this lithium formulation for the treatment of Alzheimer's Disease.



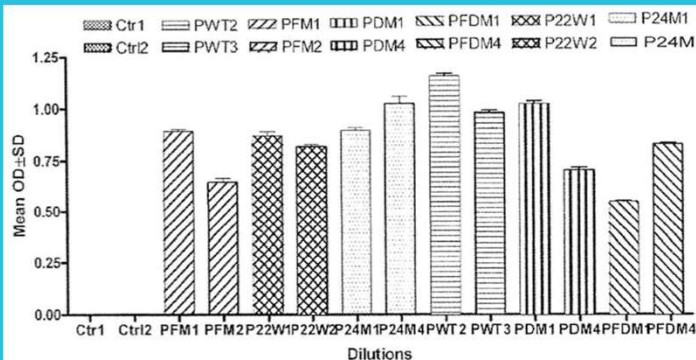


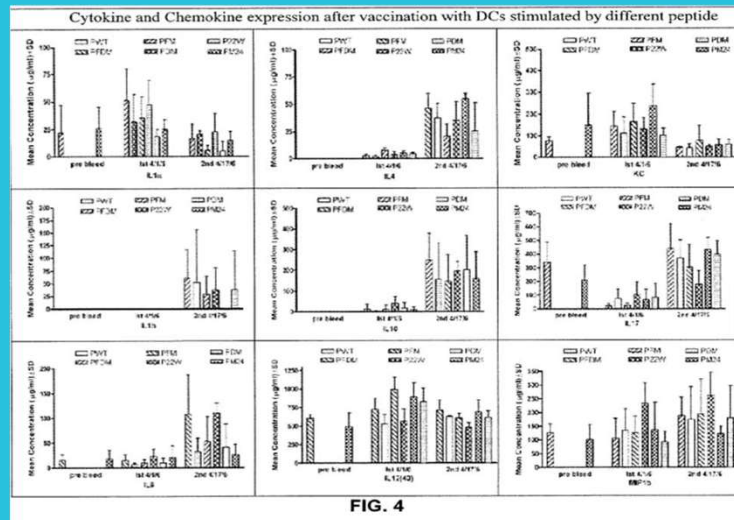
FIG. 5A

- Our goal is to **develop an Alzheimer's A β vaccine candidate that will be devoid of the problems associated with current vaccine therapies**. Our studies concluded the successful vaccination of mice with adjuvant-free mutated beta amyloid peptides have significant advantages over both native beta amyloid and the use of adjuvant.
- 10 weeks old female BALB/c mice were housed in Varian standard cages including amber igloos and vaccinated when 14 weeks old.
- Differently mutated A β 1-42 peptides were used for each group and a 1times.PBS (also containing 10% DMSO) as a control group.

THE RESULTS

- Mice vaccinated with various mutated A β 1-42 **peptides induce antibody responses** after two inoculations, while no antibody can be detected in the control group (FIG. 5A).
- All antibodies induced by the peptide injection **bind to the same epitope**. There is no difference in recognition between the various anti-sera and peptides such that all anti-sera recognize the 1-16 epitope on all peptides.
- Demonstrate definite advantages over previous vaccination protocols, which **strongly support our Adjuvant-Free Vaccine Hypothesis**.
- The data clearly show that wild type and mutated A β peptide administrated without adjuvant induce a **strong and long-lasting antibody response**.
- The **first use of adjuvant-free A β** as Alzheimer's vaccine and demonstration that T-cell epitope mutation will contribute to either Th1 or Th2 response. Those peptides will have outstanding promise for the treatment of Alzheimer's Disease.





- ❑ We illustrated our result by using Aβ peptide pulsed Dendritic Cells (“DC”) as a vaccine in Tg APP/PS1 mice.
- ❑ Aβ 1-42 with different mutation were synthesized and designed as PWT (Wild-Type Abeta1-42), PFM (Aβ with Flemish mutation), PDM (Aβ with Dutch mutation), PFDM (Aβ with both Flemish and Dutch mutation), P22W (Aβ with a new mutation at amino acid 22), P24G (Aβ with mutation at amino acid 24).

THE RESULTS

- ❑ There is no antibody production after two injections of DCs sensitized with Wild-Type Aβ peptide (PWT). However, all other groups that received DCs sensitized with mutant Aβ can **induce antibody response even with only one vaccination**. The antibody titer can reach as high as 1:16000 with only two inoculations.
- ❑ Our result indicated that the **antibody could last at least 4 months**.
- ❑ Inflammation has been considered as the very important safety issue in Alzheimer’s Disease vaccine. Therefore, we have checked the antibody level to these peptide vaccinated mice. There is no difference for both Th1 and Th2 cytokine among all these groups at the same time point ($P>0.05$). It is worth noting that inflammation cytokines like IL1 and TNF.alpha. which are considered being related to **inflammation didn't increase with antibody level increase**. However, Th2 cytokine as IL4 increase with the antibody increasing (See FIG. 4).



Alzamend Neuro, Inc. – **Alzamend Neuro’s Intellectual Property (Licensed Patents)**

TITLE OF PATENT	PATENT TYPE	THERAPUTIC DRUG	DATE FILED	DATE ISSUED	EXPIRATION DATE	PATENT #
<i>Lithium Cocrystals and an Additional Neuropsychiatric Agent for Treatment of Neuropsychiatric Disorders</i>	Method of use	AL001 (LISPRO)	05.21.2016	03.28.2017	05.21.2036	9,603,869
<i>Organic Anion Lithium Ionic Cocrystal Compounds and Compositions</i>	Composition of matter	AL001 (LISPRO)	04.18.2014	12.12.2017	04.18.2034	9,840,521
<i>Amyloid Beta Peptides and Methods of Use</i>	Composition of matter	ALZN002 (E22W)	10.12.2007	05.29.2012	02.12.2028	8,188,046





PATIENT POPULATION	UNITED STATES	GLOBAL (US INCLUDED)	SOURCES
<i>MDD</i>	21 Million	280 Million	<ul style="list-style-type: none"> Major Depressive Disorder: <ul style="list-style-type: none"> 1. https://www.nimh.nih.gov/health/statistics/major-depression 2. https://www.who.int/news-room/fact-sheets/detail/depression PTSD: <ul style="list-style-type: none"> 1. https://www.ptsd.va.gov/understand/common/common_adults.asp#:~:text=About%205%20out%20of%20every,some%20point%20in%20their%20life. 2. https://www.who.int/news-room/fact-sheets/detail/post-traumatic-stress-disorder#:~:text=Key%20facts%200A%20%20%200A%20,potential%20traumatic%20events%20do%20not%20develop%20PTSD. Alzheimer's: <ul style="list-style-type: none"> 1. https://www.alz.org/alzheimers-dementia/facts-figures#:~:text=Over%207%20million%20Americans%20have,older%20(11%25)%20has%20Alzheimer's. 2. https://www.alzint.org/about/dementia-facts-figures/dementia-statistics/ Bipolar Disorder: <ul style="list-style-type: none"> 1. https://www.nimh.nih.gov/health/statistics/bipolar-disorder 2. https://www.singlecare.com/blog/news/bipolar-disorder-statistics/#:~:text=46%20million%20people%20around%20the,U.S.%20population%2C%20have%20bipolar%20disorder.
<i>PTSD</i>	13 Million	300 Million	
<i>Alzheimer's Disease</i>	7.2 Million	55 Million	
<i>BD</i>	7 Million	46 Million	
<i>Total Patient Population</i>	<i>48.2 Million</i>	<i>681 Million</i>	



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