



# Forward-Looking Statements & Other Notices

*Cassava Sciences is in the business of new drug discovery and development. Our research and development activities are long, complex, costly and involve a high degree of risk. Holders of our common stock should carefully read our Annual Report on Form 10-K in its entirety, including the risk factors therein. Because risk is fundamental to the process of drug discovery and development, you are cautioned to not invest in our publicly traded securities unless you are prepared to sustain a total loss of the money you have invested. Only a small number of research and development programs result in regulatory approval and subsequent commercialization of a product. In addition, our clinical results from earlier-stage clinical trials may not be indicative of full results or results from later-stage or large-scale clinical trials and do not ensure or imply regulatory approval. You should not place undue reliance on our earlier-stage clinical trial results we present or publish.*

*Simufilam is our investigational drug product candidate. It is not approved by any regulatory authority in any jurisdiction and its safety, efficacy or other desirable attributes, if any, have not been established in patients. Data from our clinical studies to date are all inherently exploratory in nature, should be interpreted with caution and should not be interpreted as clinical evidence of therapeutic safety or benefit for simufilam.*

*This presentation contains forward-looking statements, including statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, relating to: the design, scope, conduct or intended purpose of our two-year, open-label safety study or our Phase 3 program of simufilam in patients with Alzheimer's disease; the ability of simufilam to provide patients with beneficial drug effects; the apparent ability of simufilam to favor patients with mild Alzheimer's disease; the apparent safety or tolerance of simufilam in our open-label clinical trials; our current expectations regarding timing of clinical data for our Phase 3 studies; any expected clinical results of Phase 3 studies; the treatment of people with Alzheimer's disease dementia; the interim safety or efficacy of simufilam, if any, in people with Alzheimer's disease dementia; any findings or recommendations by the DSMB relating to the interim safety of simufilam in our on-going Phase 3 clinical trials; interim MRI safety data for the Phase 3 program, including ARIA; the risk of current or future findings of treatment-emergent ARIA in our clinical program of simufilam; the suitability of clinical data from our Phase 3 program to support the filing of an NDA; our ability to obtain FDA approval for simufilam, even with a potential NDA filing and positive clinical Phase 3 results and data; comments made by our employees regarding simufilam, drug effect, and the treatment of Alzheimer's disease; and potential benefits, if any, of our product candidates. These statements may be identified by words such as "may," "anticipate," "believe," "could," "expect," "would", "forecast," "intend," "plan," "possible," "potential," and other words and terms of similar meaning.*

*Such statements are based largely on our current expectations and projections about future events. Such statements speak only as of the date of this presentation and are subject to a number of risks, uncertainties and assumptions, including, but not limited to, those risks relating to our ability to conduct or complete clinical studies on expected timelines, to demonstrate the specificity, safety, efficacy or potential health benefits of our product candidates, if any, and including those described in the section entitled "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2023, and subsequent reports filed with the SEC. The foregoing sets forth some, but not all, of the factors that could cause actual results to differ from expectations in any forward-looking statement. In light of these risks, uncertainties and assumptions, the forward-looking statements and events discussed in this presentation are inherently uncertain and may not occur, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. Accordingly, you should not rely upon forward-looking statements as predictions of future events. Except as required by law, we disclaim any intention or responsibility for updating or revising any forward-looking statements contained in this presentation. For further information regarding these and other risks related to our business, investors should consult our filings with the SEC, which are available on the SEC's website at [www.sec.gov](http://www.sec.gov).*

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# Introduction to Cassava Sciences



**We are a biotechnology company based in Austin, Tx.**

**We are developing an innovative drug candidate for people with Alzheimer's disease.**

**Our science is based on stabilizing—but not removing—a critical protein in the brain.**

***Our lead drug candidate, simufilam, is in Phase 3 clinical testing in patients with Alzheimer's disease.***

# Cassava Sciences - Senior Management

*Years of experience with scientific and drug innovations.*



Remi Barbier - Chairman, President & CEO



Lindsay H. Burns, PhD – SVP, Neuroscience



Jim Kupiec, MD – Chief Medical Officer



Michael Zamloot – SVP, Technical Operations



Eric Schoen - Chief Financial Officer



Michael Marsman, PharmD – SVP, Regulatory Affairs



Chris Cook – SVP, General Counsel



# Alzheimer's Disease: a Significant Unmet Need

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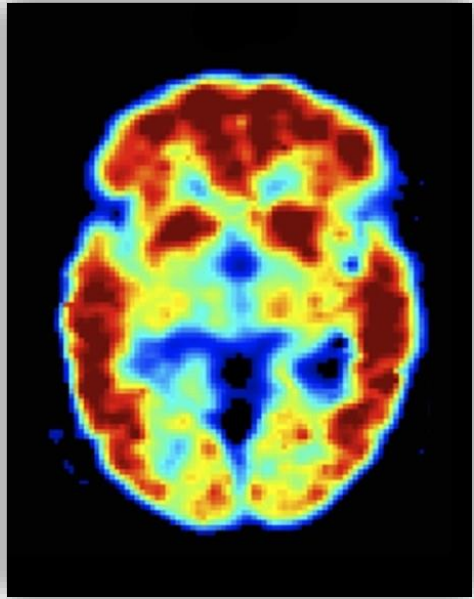
A handwritten signature in black ink, appearing to read 'Alzheimer', with a small dot above the 'i'.

Signature of Alois Alzheimer, circa 1915

**Alzheimer's disease outranks cancer, stroke and heart attack as most-feared chronic disease by retirees, according to a study.<sup>1</sup>**

**Cassava Sciences sees an opportunity to serve patients, create value for stakeholders.**

# Ultimately, a Fatal Disease



Alzheimer's disease (AD) is a chronic, progressive neurological disorder.

AD causes memory loss, difficulty speaking & understanding, behavior changes, other issues.

*Eventually, the AD patient is unable to perform daily functions.*

# Simufilam Is Our Lead Drug Candidate For Alzheimer's<sup>1</sup>

**Simufilam** is a novel small molecule (oral) drug.

**Our drug targets altered filamin A protein, which is found in the Alzheimer's brain.**

➤ Importantly, our drug does not seek to clear amyloid out of the brain.

**Cassava Sciences owns exclusive, worldwide rights to simufilam and related technologies, without financial obligations to any third party.**



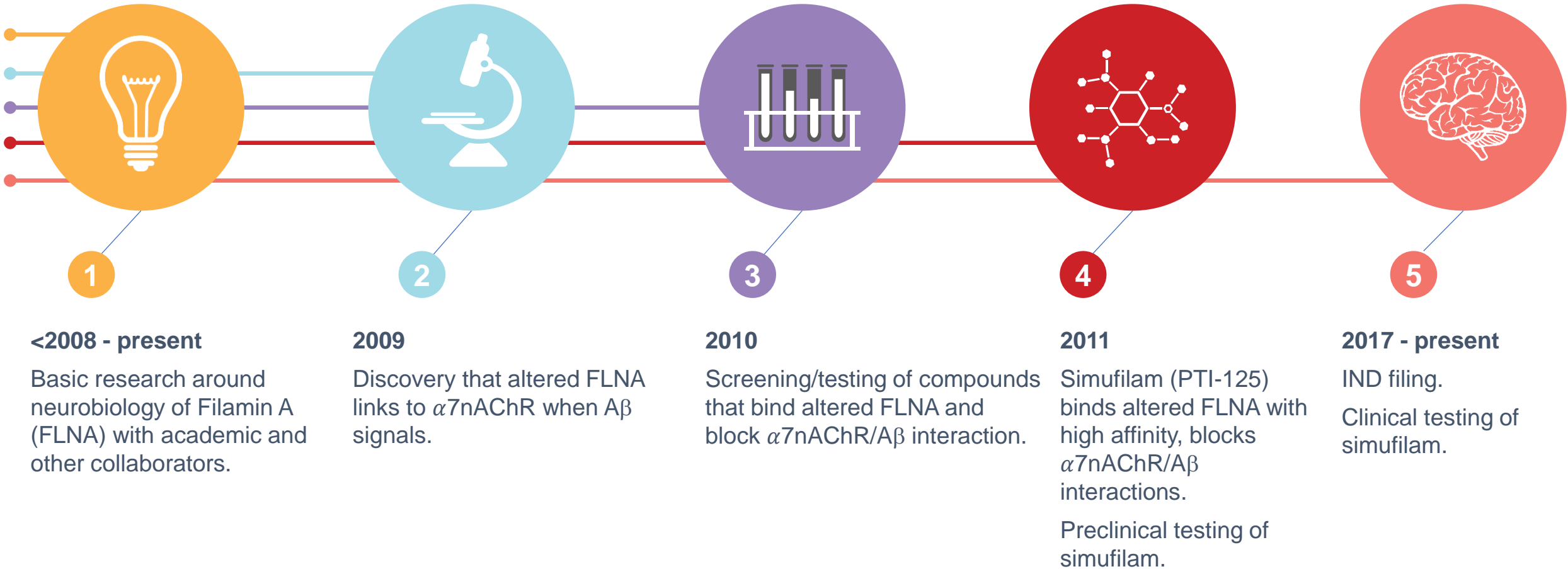
Not actual photo of simufilam tablet.

# Science and Basic Research



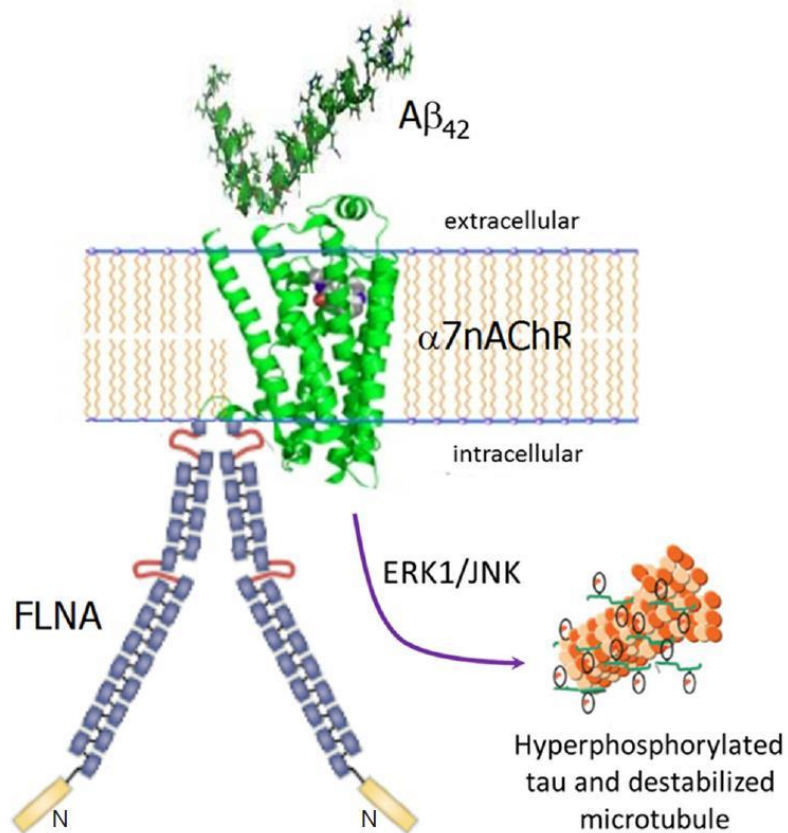


# In-house Discovery/Development Program



# Mechanism of Action, Simplified

*Simufilam targets an altered form of filamin A protein found in the Alzheimer's brain.*



- i. Scaffolding proteins, such as filamin A (FLNA), link other proteins into stable, healthy conformations.
- ii. The AD brain has an altered form of FLNA – Aβ<sub>42</sub> binds α7nAChR and recruits FLNA, altering its shape.
- iii. Altered FLNA *enables* Aβ neurotoxicity – altered FLNA linkage to α7nAChR enables high-affinity binding of Aβ<sub>42</sub> for α7nAChR and cell signaling that hyperphosphorylates tau.
- iv. Simufilam *disables* Aβ neurotoxicity by binding to altered FLNA, restoring its proper shape/function – disrupts its linkage to α7nAChR, stops Aβ<sub>42</sub> signaling and tau hyperphosphorylation.

# Filamin A Research - an Emerging Area of Neuroscience



Molecular Neurobiology (2023) 60:1021–1039  
<https://doi.org/10.1007/s12035-022-03121-w>

## Direct and Indirect Effects of Filamin A on Tau Pathology in Neuronal Cells

Stéphanie Levert<sup>1,2</sup> · Julie Pilliod<sup>1,2</sup> · Étienne Aumont<sup>3,4</sup> · Sandrine Armanville<sup>1,2</sup> · Cyntia Tremblay<sup>5,6</sup> · Frédéric Calon<sup>5,6</sup> · Nicole Leclerc<sup>1,2</sup>

Received: 24 August 2022 / Accepted: 4 November 2022 / Published online: 18 November 2022  
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## Science Translational Medicine

### EPILEPSY

## Filamin A inhibition reduces seizure activity in a mouse model of focal cortical malformations

Longbo Zhang<sup>1,2</sup> · Tianxiang Huang<sup>1,2</sup> · Shannon Teaw<sup>1</sup> · Lena H. Nguyen<sup>1</sup> · Lawrence S. Hsieh<sup>1</sup> · Xuan Gong<sup>1,2</sup> · Lindsay H. Burns<sup>3</sup> · Angélique Bordey<sup>1\*</sup>

Epilepsy treatments for patients with mechanistic target of rapamycin (mTOR) disorders, such as tuberous sclerosis complex (TSC) or focal cortical dysplasia type II (FCDII), are urgently needed. In these patients, t

## Science Advances

SCIENCE ADVANCES | RESEARCH ARTICLE

### DISEASES AND DISORDERS

## Actin-binding protein filamin-A drives tau aggregation and contributes to progressive supranuclear palsy pathology

Koyo Tsujikawa<sup>1,2,3</sup>, Kohei Hamanaka<sup>4</sup>, Yuichi Riku<sup>1,3</sup>, Yuki Hattori<sup>6</sup>, Norikazu Hara<sup>7</sup>, Yohei Iguchi<sup>1</sup>, Shinsuke Ishigaki<sup>1,8</sup>, Atsushi Hashizume<sup>1,9</sup>, Satoko Miyatake<sup>4,10</sup>, Satomi Mitsuhashi<sup>4,11</sup>, Yu Miyazaki<sup>1</sup>, Mayumi Kataoka<sup>1</sup>, Li Jiayi<sup>1</sup>, Kelzo Yasui<sup>2</sup>, Satoshi Kuru<sup>3</sup>, Haruki Koike<sup>1</sup>, Kenta Kobayashi<sup>12</sup>, Naruhiko Sahara<sup>13</sup>, Norio Ozaki<sup>14</sup>, Mari Yoshida<sup>3</sup>, Akiyoshi Kakita<sup>13</sup>, Yuko Saito<sup>10</sup>, Yasushi Iwasaki<sup>3</sup>, Akinori Miyashita<sup>7</sup>, Takeshi Iwatsubo<sup>17</sup>, Japanese Alzheimer's Disease Neuroimaging Initiative (J-ADNI)<sup>†</sup>, Takeshi Ikeuchi<sup>7</sup>, Japanese Longitudinal Biomarker Study in PSP and CBD (JALPAC) Consortium<sup>‡</sup>, Takaki Miyata<sup>6</sup>, Gen Sobue<sup>8</sup>, Naomichi Matsumoto<sup>4</sup>, Kentaro Sahashi<sup>1</sup>, Masahisa Katsuno<sup>1,9\*</sup>

While amyloid- $\beta$  lies upstream of tau pathology in Alzheimer's disease, key drivers for other tauopathies, including progressive supranuclear palsy (PSP), are largely unknown. Various tau mutations are known to facilitate tau aggregation, but how the nonmutated tau, which most cases with PSP share, increases its propensity to aggre-

# Biological Activity of Simufilam

**Four academic institutions have generated data in support of simufilam using different models and lab techniques.**

- 2023 – Scientists at The Cochin Institute (Paris, France) used a highly precise cell-based assay based on TR-FRET to show that simufilam interrupts a pathogenic signaling pathway in Alzheimer's, i.e., amyloid binding to  $\alpha 7$ nAChR.
- 2023 – Our academic collaborator at CUNY showed simufilam suppresses overactive mTOR and restores its sensitivity to insulin in Alzheimer's disease patient lymphocytes. The anti-inflammatory mechanism was expanded to include other inflammatory receptors.
- 2023 – Scientists at the University of Milan (Italy) showed that simufilam reduced FLNA phosphorylation and enhanced the effects of a pituitary cancer treatment in experiments using both patient tumor biopsies and a rat cell line.
- 2020 – Scientists at Yale University showed that simufilam reduced seizure frequency and alleviated neuronal abnormalities in a mouse model of a rare form of epilepsy associated with FLNA overexpression.
- < 2008 to date – Our academic collaborator at CUNY first showed the effects of simufilam on FLNA and on the signaling pathways of amyloid beta in Alzheimer's disease models and postmortem brain tissue.



# SavaDx: an Investigational Diagnostic for Alzheimer's

- The underlying science for simufilam supports the development of a diagnostic technology to detect Alzheimer's in blood.
- SavaDx is an early-stage product candidate and is still a 'research-use only' exploratory biomarker.
- Working with third parties, we are evaluating the use of mass spectrometry to detect FLNA.
- SavaDx is a lower priority program compared to simufilam.



# Clinical Proof-of-Concept



# Open-label Study Results

## 12-month Open-label Study

January 24, 2023 Press Release<sup>1</sup>

Long-term Safety &  
Cognition Study in  
Alzheimer's Patients (N=220)



### Cassava Sciences Announces Positive Top-Line Clinical Results in Phase 2 Study Evaluating Simufilam in Alzheimer's Disease

- ADAS-Cog mean scores changed minimally over 1 year in patients with mild-to-moderate Alzheimer's disease treated with open-label simufilam tablets.
- 47% of patients improved on ADAS-Cog over 1 year, and this group improved by 4.7 points. An additional 23% of patients declined less than 5 points on ADAS-Cog over 1 year, and this group declined by 2.5 points.
- Mild patients responded better than patients with moderate Alzheimer's disease.
- Simufilam was safe, well tolerated.

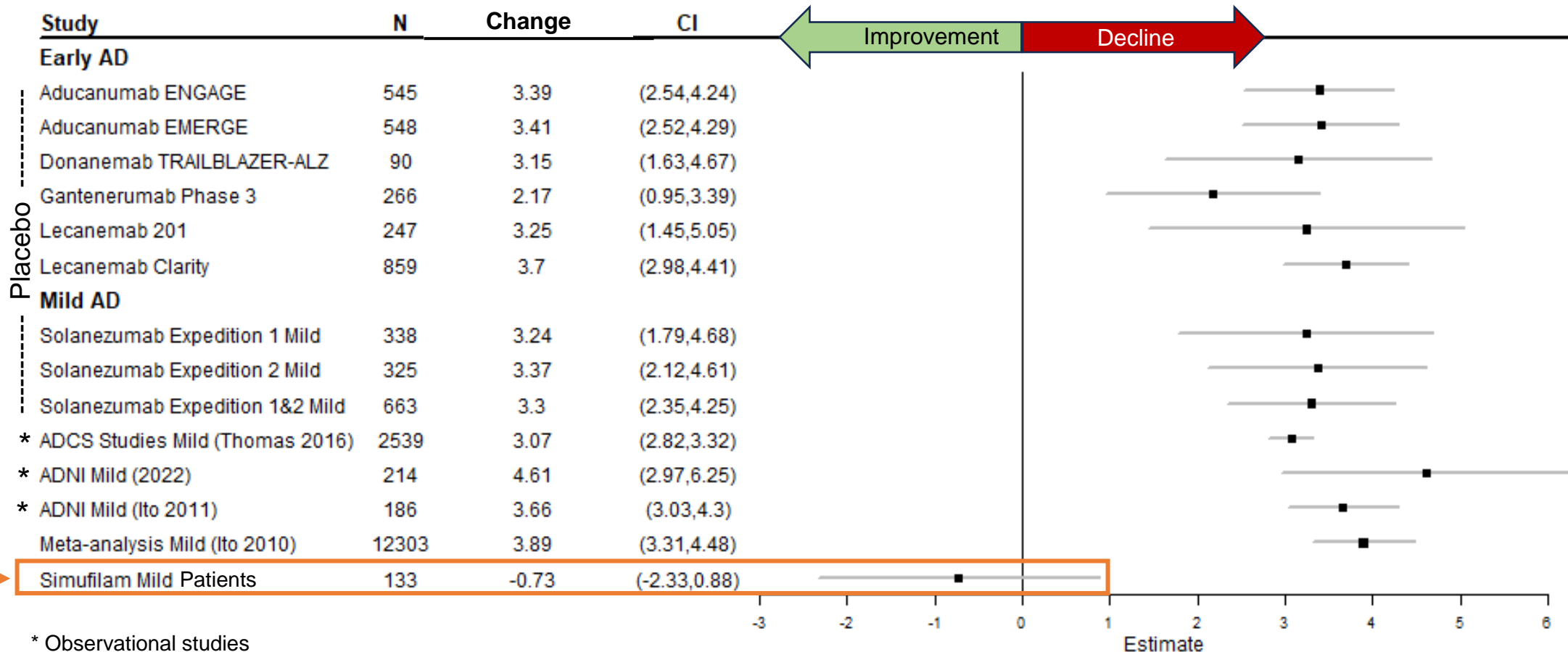
**AUSTIN, Texas – January 24, 2023** – Cassava Sciences, Inc. (Nasdaq: SAVA), a biotechnology company, today announced positive top-line Phase 2 results for simufilam, its oral drug candidate for Alzheimer's disease dementia. This was an open-label safety study with exploratory efficacy endpoints. The study enrolled over 200 patients with mild-to-moderate Alzheimer's disease (MMSE 16-26). Study participants were administered open-label simufilam tablets 100mg twice daily for 1 year or more. Endpoints were measured at baseline (study entry) and month 12.

**Top-line Results – mean scores, baseline to month 12** (*lower is better, except for MMSE*):

- ADAS-Cog11 scores changed from 19.1 (±9.2) to 19.6 (±13.3)
- MMSE scores changed from 21.5 (±3.6) to 20.2 (±6.4)

# Open-label Study Results – mild AD patients

## Simufilam vs. Historical Placebo in Patients with Early or Mild AD<sup>1</sup> Change in ADAS-Cog, baseline to 12 months



\* Observational studies



# Randomized Withdrawal Study Results

## 6-month Randomized Withdrawal Study

(aka, Cognition  
Maintenance Study – CMS)

Randomized, Double-blind,  
Placebo-controlled Study in  
Alzheimer's Patients (N=157)

July 5, 2023 Press Release<sup>1</sup>



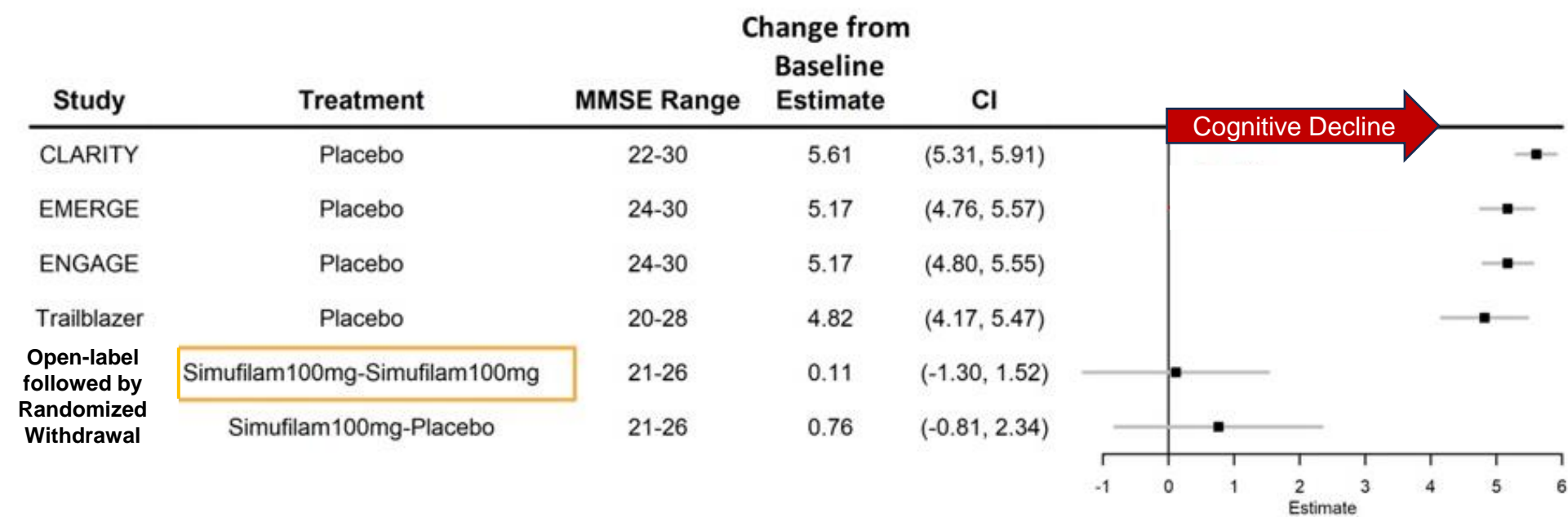
### Oral Simufilam Slowed Cognitive Decline in a Randomized Withdrawal Trial of Mild-to-Moderate Alzheimer's Disease

- Simufilam Slowed Cognitive Decline by 38% Versus Placebo Over 6 months in Patients with Mild-to-Moderate Alzheimer's Disease.
- Drug Effects Favored Mild Alzheimer's Disease.
- In Mild Alzheimer's, Simufilam Improved Cognition Scores Over 6 Months.
- In Mild Alzheimer's, Simufilam Stabilized Cognition Scores Over 18 Months.
- Oral Simufilam Continues to be Safe, Well Tolerated.

**AUSTIN, Texas – July 5, 2023** – Cassava Sciences, Inc. (Nasdaq: SAVA), a biotechnology company, today announced top-line clinical results from its Cognition Maintenance Study (CMS). The CMS is a small proof-of-concept study designed to demonstrate the effects of drug versus placebo in a randomized withdrawal trial design. The study enrolled 157 patients with mild-to-moderate Alzheimer's disease, a more advanced and difficult-to-treat stage of disease.

# Randomized Withdrawal (CMS) Study Results – mild patients

Mild AD patients (MMSE 21–26) on simufilam for 18 months showed no material decline in ADAS-Cog scores as a group, indicating stable cognition.<sup>1</sup>



Forest plot of historical declines on ADAS-Cog over 18 months in mild Alzheimer's (MMSE 20-30), placebo arms vs simufilam treatment.<sup>2</sup>

<sup>1</sup>'Simufilam100mg-Simufilam100mg' refers to mild AD patients (N=76) who received simufilam in both the 12-month open-label phase and the 6-month randomized withdrawal study/CMS; 'Simufilam100mg-Placebo' refers to patients who received simufilam in the open-label phase and placebo in the randomized withdrawal study/CMS.

<sup>2</sup> Forest plot by Pentara Corporation. Data was sourced from the placebo groups in randomized, controlled trials of monoclonal antibodies conducted by other sponsors in mild Alzheimer's disease (MMSE 20-30). Results shown for CLARITY P3 trial of lecanemab; EMERGE and ENGAGE P3 studies of aducanumab; and TRAILBLAZER P3 trial of donanemab.

# No Decline in Cognition Scores in Mild AD Over 24 Months

- *Patients with mild Alzheimer's disease who received simufilam treatment continuously for two years (n=47) had no decline in ADAS-Cog scores ( $\pm 1.51$  SE) as a group.*
- *Patients with mild Alzheimer's who received simufilam treatment non-continuously (n=40) declined 1 point on ADAS-Cog ( $\pm 1.65$  SE) as a group. Non-continuous treatment consisted of one year on open-label drug, six months on placebo and six months back on open-label drug.*

From Feb 7, 2024, Press Release<sup>1</sup>



## No Decline in Cognition Scores in Patients with Mild Alzheimer's Disease Who Received Simufilam Continuously For 24 Months

- ADAS-Cog Scores Were Stable in a Group of Patients with Mild Alzheimer's Who Received Drug Candidate Simufilam Continuously, Baseline to Month 24.
- Mild Alzheimer's Patients Who Received Simufilam Non-Continuously Declined a Group Average of 1 Point on ADAS-Cog, Baseline to Month 24.
- Oral Simufilam Safe, Well-Tolerated.

**AUSTIN, Texas – February 7, 2024** – Cassava Sciences, Inc. (Nasdaq: SAVA), a biotechnology company, today reported top-line results of a two-year clinical safety study of simufilam, an investigational oral drug for the proposed treatment of Alzheimer's disease dementia. The study enrolled over 200 patients with mild to moderate Alzheimer's and consisted of two open-label treatment phases and a randomized, placebo-controlled withdrawal phase. Average changes in ADAS-Cog scores, baseline to month 24, indicate the following:

# Phase 3 Program





# Phase 3 Program Overview

- Simufilam is a small molecule (oral) drug candidate under clinical evaluation in two on-going, pivotal Phase 3 trials in Alzheimer's disease dementia.

rethinkALZ is a 12-month study (NCT04994483)

refocusALZ is an 18-month study (NCT05026177)

- Over 1,900 patients with mild-to-moderate Alzheimer's disease who also meet other study eligibility criteria are randomized into the Phase 3 trials.
  - All patient data goes directly from physician sites to the electronic data vendor
- ~ 70% of patients in each Phase 3 trial entered with mild AD (MMSE 20-27).
  - Over 555 study participants have completed a Phase 3 study

# Phase 3 Study Design

Clinical sites are in the U.S., Puerto Rico, Canada, Australia and South Korea.

rethinkALZ

804 Patients  
Randomized (1:1)

52 Weeks Simufilam 100  
mg

52 Weeks Placebo

refocusALZ

1,125 Patients  
Randomized (1:1:1)

76 Weeks Simufilam 50  
mg

76 Weeks Simufilam 100  
mg

76 Weeks Placebo

52-week Open-label Study

# Phase 3 Study Design

rethinkALZ

804 Patients  
Randomized (1:1)

52 Weeks Simufilam 100  
mg

52 Weeks Placebo

refocusALZ

1,125 Patients  
Randomized (1:1:1)

76 Weeks Simufilam 50  
mg

76 Weeks Simufilam 100  
mg

76 Weeks Placebo

## Efficacy Outcomes, Both Trials:

ADAS-Cog12 (Cognition)

ADCS-ADL (Health Function)

iADRS (Composite of Cognition + Function)

## Sub-studies:

Plasma biomarkers

CSF biomarkers

Amyloid PET

Tau PET

Volumetric MRI

} ReFOCUS only

*ADAS-Cog* = The Alzheimer's Disease Assessment Scale – Cognitive Subscale.

*ADCS-ADL* = Alzheimer's Disease Cooperative Study – Activities of Daily Living.

*iADRS* = integrated Alzheimer's Disease Rating Scale, a composite measure of ADAS-Cog and ADCS-ADL.

# Key Eligibility Criteria

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- Age 50-87
- Clinical Stage 4 or 5 of the Alzheimer's continuum (NIA/AA criteria 2018)
- MMSE  $\geq 16$  and  $\leq 27$
- CDR-Global Score of 0.5, 1 or 2
- Elevated plasma p-tau181 or prior evidence of AD pathology by PET or CSF
- Background AD medications stable for 12 weeks prior to randomization
- Not more than 2 doses of anti-amyloid antibodies
- Other inclusion/exclusion criteria



# Preliminary Baseline Characteristics

	ReTHINK (n=797)	ReFOCUS (n=1,123)
Mild AD (N,%)	569, 71.4%	797, 71.0%
APOE $\epsilon$ 4 carrier (N,%)	472, 59.2%	645, 57.4%
One APOE $\epsilon$ 4 allele (N,%)	383, 48.1%	529, 47.1%
$\epsilon$ 4 homozygotes (N,%)	89, 11.2%	116, 10.3%
AChEI and/or memantine use for AD symptoms (N,%)	508, 63.7%	627, 55.8%
MMSE (mean, SD)	21.7 (3.2)	22.0 (3.5)
ADAS-Cog12 (mean, SD)	25.1 (8.7)	24.7 (9.5)
ADCS-ADL (mean, SD)	65.0 (9.2)	65.4 (9.2)
CDR – Global (mean, SD)	0.79 (0.36)	0.75 (0.3)
CDR – SB (mean, SD)	4.7 (2.2)	4.31 (2.1)

# Drug Safety – Interim Data

- **The Phase 3 Data Safety and Monitoring Board (DSMB) is composed of independent clinical research experts who periodically review interim patient safety data.**
  - Two routine, scheduled meetings of the DSMB recommended that both Phase 3 trials continue as planned, without modification.
- **A key risk associated with anti-amyloid antibody drugs is amyloid related imaging abnormalities, or ARIA, which can be serious.**
  - Blinded, interim MRI data announced in October 2023 suggests simufilam is not associated with treatment-emergent amyloid-related imaging abnormalities (ARIA).
  - Week-40 MRIs were examined by independent, outside experts for 180 of 222 Alzheimer's patients enrolled in our 76-week Phase 3 study ('volumetric MRI sub-study').
- **Final drug safety data are expected at the conclusion of the Phase 3 program.**

# Top-line Phase 3 Results Expected Year-end 2024

## rethinkALZ

- Patient enrollment completed October 2023.
- Last patient last visit expected October 2024.
- Top-line results expected approximately year-end 2024.

## refocusALZ

- Patient enrollment completed November 2023.
- Last patient last visit expected May 2025.
- Top-line results expected approximately mid-year 2025.

*The statistical analysis plans (SAP) for our Phase 3 trials will be prospectively defined, documented and finalized prior to unblinding of data.*

# Financials

**Eric Schoen - Chief Financial Officer**

# Financial Snapshot

Nasdaq ticker: SAVA

Shares Outstanding

≈ 43.2 million

Unaudited Financials at December 31, 2023

Cash Balance

≈ \$121.1 million

Debt

none

*Note: Cash balance excludes an additional \$21.8 million raised from the exercise of warrants through February 26, 2024.*

***Cash Use for Operations is expected to be in the range of \$35 - \$45 million in the 1st Half of 2024.***



# Warrant Distribution Completed

- In January 2024, we completed a dividend distribution of warrants to shareholders.
- Warrants allow the holder to purchase additional shares of common stock.
  - Warrants trade on Nasdaq (ticker: SAVAW), separate from our common stock (ticker: SAVA).
  - \$21.8 million raised from cash exercise of warrants through February 26, 2024.
- Terms & conditions of our warrant distribution are on file with the SEC.
  - The foregoing does not purport to be a complete summary of Cassava Sciences' warrant distribution and is qualified in its entirety by reference to the full text of the warrant distribution related agreements and other relevant documents filed with the SEC and incorporated by reference herein in their entirety.

## **No Offer or Solicitation**

*This presentation shall not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of, these securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction. A Form 8-A registration statement and prospectus supplement describing the terms of the warrants has been filed with the Securities and Exchange Commission (the "SEC") and is available on the SEC's website located at <http://www.sec.gov>. Warrant holders and holders of Company common stock should read the prospectus supplement carefully, including the Risk Factors section included and incorporated by reference therein. This presentation contains a general summary of the warrants. Please read the full text of the warrant agreement carefully as it contains important information about the terms of the warrants.*

# Intellectual Property

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- **Simufilam is a novel molecule. We own exclusive, worldwide rights to simufilam and related technologies, without financial obligations to any third party.**
- **Composition of matter patent protection for simufilam and other novel filamin-binding molecules includes nine issued patents.**
- **In the U.S., we believe SavaDx may be protected by trade secrets, know-how and other proprietary rights technology.**

# Thank you!

Corporate Overview  
First Quarter 2024



# Appendix: Science Publications

## ***Simufilam reverses aberrant receptor interactions in Alzheimer's disease***

International Journal of Molecular Sciences 2023; DOI: 10.3390/ijms241813927

<https://www.mdpi.com/1422-0067/24/18/13927>

## ***Simufilam suppresses overactive mTOR and restores its sensitivity to insulin in Alzheimer's disease patient lymphocytes***

Frontiers in Aging 2023; DOI: 10.3389/fragi.2023.1175601

<https://www.frontiersin.org/articles/10.3389/fragi.2023.1175601/full>

## ***Targeting $\alpha 7$ nicotinic acetylcholine receptors and their protein interactions in Alzheimer's disease drug development***

Drug Development Research 2023; DOI: 10.1002/ddr.22085

<https://onlinelibrary.wiley.com/doi/10.1002/ddr.22085>

## ***PTI-125 Reduces Biomarkers of Alzheimer's Disease In Patients:***

Journal of Prevention of Alzheimer's Disease, 2020; DOI: 10.14283

<http://link.springer.com/article/10.14283/jpad.2020.6>

## ***Altered filamin A enables amyloid beta induced tau hyperphosphorylation and neuroinflammation in Alzheimer's disease***

Neuroimmunology and Neuroinflammation, 2017;4:263-71:

<http://nnjournal.net/article/view/2313>

## ***PTI-125 binds and reverses an altered conformation of filamin A to reduce Alzheimer's disease pathogenesis:***

Neurobiology of Aging, (Volume 55) July 2017, Pages 99—114)

[http://www.neurobiologyofaging.org/article/S0197-4580\(17\)30087-8/](http://www.neurobiologyofaging.org/article/S0197-4580(17)30087-8/)

***Erratum: Figure 12 contains an image showing 12 control bands; it should show 13. This visual error was not caught in proofing. The data analysis was based on all 13 control bands. This error does not impact data conclusions.***

## ***Reducing amyloid-related Alzheimer's disease pathogenesis by a small molecule targeting filamin A***

Journal of Neuroscience, 18 July 2012, 32 (29) 9773-9784

<http://www.jneurosci.org/content/32/29/9773.short>

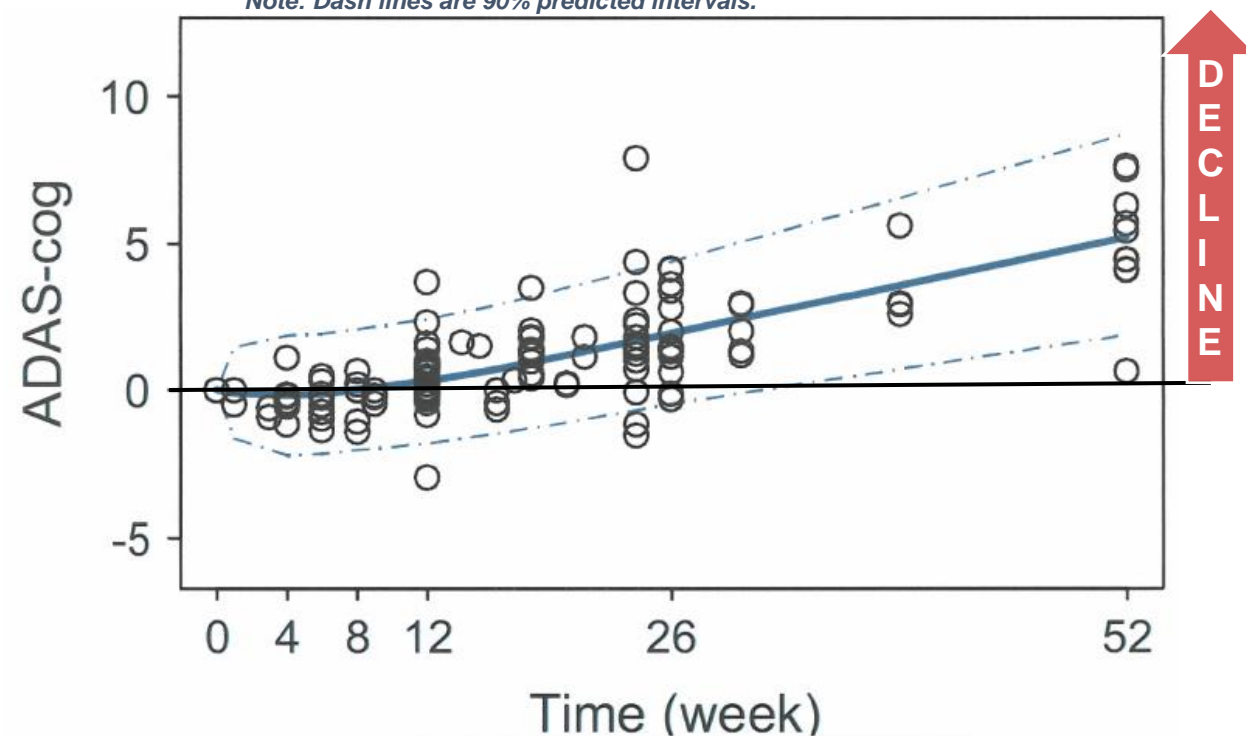
***Erratum: There is one duplicated panel in Figure 8; the publisher printed a correction. This error does not impact data conclusions.***



# Expected Rate of Cognitive Decline in AD – Literature<sup>1</sup>

## Meta-analysis Of Placebo Group Decline

Note: Dash lines are 90% predicted intervals.



Cognitive decline on ADAS-Cog was reported in a meta-analysis of 20,000 patients with mild-to-moderate AD enrolled in randomized, controlled trials<sup>2</sup>.

*5.5 point average decline over a year on ADAS-Cog in the group of study subjects who were administered placebo in randomized, controlled trials.*

# Anti-amyloid Antibodies for Alzheimer's Disease

- **Aggregate efficacy data from Phase 3 trials of anti-amyloid antibodies suggest benefits in early AD.**
  - Twice-monthly IV infusions of lecanemab (Leqembi®/Eisai-Biogen) slowed cognitive decline on average by ~25% over 18 months compared to placebo in the Clarity-AD trial.<sup>1</sup> Efficacy results varied by gender and APOE genotype.
  - Monthly IV infusions of donanemab (Lilly) slowed decline on iADRS, a cognitive/functional composite, on average by ~35% over 18 months compared to placebo in low-medium tau AD patients and by ~22% in all patients in the Trailblazer-Alz trial.<sup>2</sup>
- **Aggregate safety data from these trials suggest a complex risk-benefit profile.**
  - The entire class of drugs is associated with amyloid-related imaging abnormalities (ARIA), such as brain bleeding or swelling.
  - Frequent MRI scans are needed to monitor for ARIA, a risk especially elevated in APOE4 gene carriers.
  - Other possible side effects (brain shrinkage, infusion reactions, interactions with anti-coagulants, etc.) may add risks.
- **Burden of treatment logistics suggest health inequity and access to care disparities.**
  - Timely IV infusions, frequent MRIs and APOE genotyping require access to infusion centers, imaging centers and integrated care.
  - Treatment logistics may limit access in rural areas; co-pays, non-reimbursed expenses, etc. may drive affordability issues.
  - Precise diagnosis of early AD dementia, judicious selection of appropriate patients, etc. may be challenging outside of specialist clinics.

*Alzheimer's is a complex, chronic disorder.*

*We believe reducing the burden of AD will require novel drugs and combination therapy.*

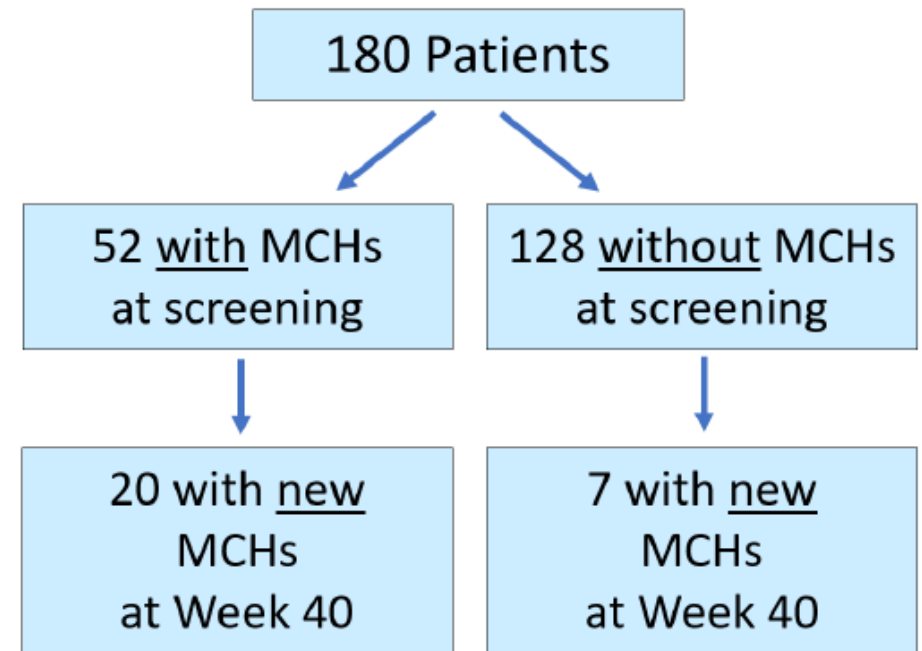


# Interim Phase 3 Safety Data on ARIA

A key risk associated with anti-amyloid antibody drugs is amyloid related imaging abnormalities, or ARIA, which can be serious.

## Blinded interim MRI safety analysis suggests simufilam is NOT associated with treatment-emergent ARIA.

- Week-40 MRIs were examined by outside experts for 180 of 222 Alzheimer's patients enrolled in our 76-week Phase 3 study ('volumetric MRI sub-study').
- ARIA-E was not observed in any patient.
- ARIA-H (microhemorrhages or MCHs) was a common finding at screening (29%).
- Incidence of new ARIA-H was similar to other placebo reports.
- 85% of patients did not develop new MCHs.



# Rx Drugs for Alzheimer's Disease



## Older drugs can address clinical symptoms for some time.

- donepezil (e.g., Aricept®) – oral cholinesterase inhibitor, FDA approval 1996, all stages of disease
- galantamine (e.g., Razadyne®) – oral cholinesterase inhibitor, FDA approval 2001, mild-to-moderate disease
- rivastigmine (e.g., Exelon®) – cholinesterase inhibitor, oral or patch, FDA approval 1997, mild-to-moderate disease
- memantine (e.g., Namenda®) – oral NMDA antagonist, FDA approval 2003, moderate-to-severe disease



## More recently, antibody drugs slow disease progression by targeting amyloid in the brain.

- aducanumab (Aduhelm®/Biogen) – IV infusion, MCI/mild AD, FDA approval June 2021, withdrawn from market 2024
- lecanemab (Leqembi® – Eisai/Biogen) – 2x month IV infusion, FDA approval Jan 2023, MCI/mild disease
- donanemab (Eli Lilly) – monthly IV infusion, FDA Advisory Meeting expected 2024

***We believe simufilam, if approved, may add to the available therapies for Alzheimer's disease.***

# Open-label Study Results – mild-to-moderate AD patients

## Simufilam vs. Historical Placebo Controls in Patients with Mild-to-moderate AD<sup>1</sup>

Change in ADAS-Cog, baseline to 12 months

