Forward-Looking Statements

This presentation and the accompanying oral commentary contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based on our management's beliefs and assumptions and on information currently available to our management. Forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "could," "expect," "plan," "anticipate," "believe," "estimate," "predict," "intend," "potential," "would," "continue," "ongoing" or the negative of these terms or other comparable terminology. Forward-looking statements include all statements other than statements of historical fact contained in this presentation, including information concerning our future financial performance, business plans and objectives, timing and success of our planned development activities, our ability to obtain regulatory approval, the potential therapeutic benefits and economic value of our product candidates, potential growth opportunities, competitive position, industry environment and potential market opportunities, the anticipated reporting of data; the potential learnings from the ACT-AD trial and LIFT-AD unblinded interim efficacy and futility analysis and their ability to inform and improve future clinical development plans, regulatory authorities' response to protocols, amendments and other submissions, and the impact of the COVID-19 pandemic on our business and operations.

Forward-looking statements are subject to known and unknown risks, uncertainties, assumptions and other factors. 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. These factors, together with those that are described in greater detail in our filings with the Securities and Exchange Commission ("SEC") may cause our actual results, performance or achievements to differ materially and adversely from those anticipated or implied by our forward-looking statements.

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 presentation, and although 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 a thorough inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and readers are cautioned not to unduly rely upon these statements. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

By attending or receiving this presentation you acknowledge that you will be solely responsible for your own assessment of the market and our market position and that you will conduct your own analysis and be solely responsible for forming your own view of the potential future performance of our business. This presentation contains estimates, projections and other information concerning market, industry and other data. We obtained this data from our own internal estimates and research and from academic and industry research, publications, surveys, and studies conducted by third parties, including governmental agencies. These data involve a number of assumptions and limitations, are subject to risks and uncertainties, and are subject to change based on various factors, including those discussed in our filings with the SEC. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us. While we believe such information is generally reliable, we have not independently verified any third-party information.

The ACT-AD trial was supported by a grant from the National Institute on Aging of the National Institutes of Health under Award Number R01AG06268. The information presented in this presentation is solely the responsibility of Athira and does not necessarily represent the official views of the National Institutes of Health.

This presentation concerns drug candidates that are under clinical investigation and which have not yet been approved for marketing by the U.S. Food and Drug Administration. The drug candidates are currently limited by federal law to investigational use, and no representation is made as to their safety or effectiveness for the purposes for which they are being investigated.

We announce material information to the public through a variety of means, including filings with the SEC, press releases, public conference calls, our website (www.athira.com/), our investor relations website (investors.athira.com), and our news site (investors.athira.com/news-and-events/press-releases). We use these channels, as well as social media, including our Twitter account (@athirapharma) and Facebook page (https://www.facebook.com/athirapharmainc), to communicate with investors and the public about Athira, our products, and other matters. Therefore, we encourage investors, the media, and others interested in Athira to review the information we make public in these locations, as such information could be deemed to be material information.
Phase 2/3 LIFT-AD Study Advances

INDEPENDENT UNBLINDED INTERIM ANALYSIS SUPPORTS POTENTIAL CLINICALLY MEANINGFUL ACTIVITY OF FOSGONIMETON WITHOUT BACKGROUND THERAPY AND MITIGATES PROGRAM RISK

• Phase 2 exploratory ACT-AD study results suggested congruent positive effects
  • Cognition (ADAS-Cog11); Function (ADCS-ADL23); Neurodegeneration (neurofilament light chain or NfL)

• Data driven approach was used to determine best path forward to optimize ongoing Phase 2/3 LIFT-AD study in the same patient population as in ACT-AD

• Analysis of ~100 patients supports potential clinically meaningful effects of cognition and function and informs the sample size required to power LIFT-AD
  • Enrollment target of <150 additional patients enables LIFT-AD to be well-powered for the primary endpoint
  • Enrollment completion target by mid 2023 with topline data in early 2024
Hans Moebius, M.D., Ph.D
Chief Medical Officer
Summary of Phase 2 ACT-AD Study Results

EXPLORATORY STUDY TO INFORM LARGER LIFT-AD IN PATIENTS WITHOUT BACKGROUND THERAPY

Favorable safety and tolerability profile

Fosgonimeton signals without background therapy compared to placebo (limited subgroup size)

- Reduced ERP P300 latency (n.s.)
- Improved cognition as measured by ADAS-Cog11 (n.s.)
- Improved function as measured by ADCS-ADL23 (n.s.)
- Showed a statistically significant improvement in plasma levels of NfL (p=0.018)

NfL at week 26 (fosgonimeton without background therapy)\(^1\)

\(\begin{array}{|c|c|}
\hline
\text{NfL change from baseline, pg/mL} & \text{Placebo} & \text{Fosgonimeton} \\
\hline
\text{Baseline mean}\(^2\) & 23.81 (5.07) & 21.35 (2.08) \\
\text{p = 0.018} & n = 6 & n = 13 \\
\hline
\end{array}\)

\(^{1}\) Data presented are least squares mean ± SE. \(^{2}\) Data shown as mean NfL concentration (SEM).

ACT-AD was a similar study design to LIFT-AD to help inform larger LIFT-AD
Both are randomized, double-blind, placebo-controlled, parallel-group studies of fosgonimeton for patients with mild-to-moderate Alzheimer’s disease

ADAS-Cog11, Alzheimer’s Disease Assessment Scale–Cognitive Subscale; ADCS-ADL23, Alzheimer’s Disease Cooperative Study–Activities of Daily Living; ERP, event related potential; NfL, neurofilament light chain.
Fosgonimeton Phase 2/3 LIFT-AD Study Design

LEARNINGS FROM ACT-AD INFORM STUDY DESIGN OPTIMIZATION

<table>
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<th>POPULATION</th>
<th>TREATMENT DURATION</th>
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<td>LIFT-AD: Target N=TBD, informed by interim analysis Mild-to-moderate AD subjects • 55-85 years • CDR 1 and 2 • MMSE 14-24 • Approximately 40% of patients not on background AChEI</td>
<td>26-week randomized, double-blind treatment, + optional 18-month OLEX</td>
<td>PRIMARY ENDPOINT • Global Statistical Test (GST) – unbiased composite of data from two key co-secondary endpoints (ADAS-Cog11 and ADCS-ADL23) • Safety</td>
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<td>Path Forward: • Exclusion criterion added for subjects on background AChEIs (Sept 2022) • Independent, unblinded interim analysis to inform sample size for primary endpoint (Oct 2022)</td>
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<td>SECONDARY ENDPOINTS • Cognition: ADAS-Cog11 • Function: ADCS-ADL23 • Global clinical change: ADCS CGIC – Clinician</td>
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<td>EXPLORATORY ENDPOINTS • Fluid biomarkers (e.g., NfL)</td>
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<td>TIMELINE • Enrollment ongoing</td>
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AChEI, acetylcholinesterase inhibitor; ADAS-Cog11, Alzheimer's Disease Assessment Scale–Cognitive Subscale; ADCS-ADL23, Alzheimer's Disease Cooperative Study–Activities of Daily Living; ADCS-CGIC, Alzheimer's Disease Cooperative Study–Clinical Global Impression of Change; CDR, clinical dementia rating; GST, global statistical test; MMSE, mini-mental state examination; NfL, neurofilament light chain; OLEX, open-label extension.
Systematic and Data-driven Process to Support LIFT-AD

Steps completed since ACT-AD readout in June 2022

- Additional analysis of ACT-AD
- DSMB unblinded adjudication of LIFT-AD
- Blinded analysis of LIFT-AD
- Proactively amended Phase 2/3 LIFT-AD in September
- Independent unblinded interim analysis in October

Development plan optimized with mitigated risk
LIFT-AD Sample Size Well Powered for Primary Endpoint

STRINGENT CRITERIA APPLIED TO INCREASE PROBABILITY OF DEMONSTRATING A CLINICALLY MEANINGFUL EFFECT SIZE FOR COGNITION AND FUNCTION

**DMC Recommendation:** "Continue LIFT-AD Study"
- **Promising Zone** confirmed
- **<150** patients needed to complete study
- Target enrollment complete **by mid 2023 with data in early 2024**

### Pre-specified Decision Framework

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Mark Litton, Ph.D
President and Chief Executive Officer
Moving Forward

Target enrollment completion by mid 2023 with data in early 2024

Continued focus on LIFT-AD recruitment and completion to meet timelines

Strong cash and cash equivalents of approximately $282M* provides support through key data points and beyond

*As of June 30, 2022
Fosgonimeton – A New Potential Therapy for Alzheimer’s Disease

35 million
Estimated Alzheimer’s cases worldwide\(^1\)

Over 100 million globally by 2050
~900,000 new patients diagnosed annually in the US alone\(^1,2\)

Multi-Billion $ Market
Despite generic entries

6.2 million treatment eligible patients in the US in 2021 based on prevalence data
Growing at 3% per year\(^2,3\)

Zero
New marketed products since 2003

Mild to Moderate comprises 81% of all patients with Alzheimer’s disease\(^3,4\)

Significant opportunity for fosgonimeton
Limited treatment options exist today for those with Alzheimer’s disease; novel approaches to improve cognition, function and neuroprotection are needed

\(^1\) https://www.who.int/news-room/fact-sheets/detail/dementia
\(^3\) GlobalData AD prevalence data access and analysis
\(^4\) https://www.nia.nih.gov/news/half-alzheimers-disease-cases-may-be-mild

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