
Biogen
July 14, 2026
BIOGEN AT AAIC 2026

FORWARD-LOOKING STATEMENTS

This presentation contains forward-looking statements that are being made pursuant to the provisions of the Private Securities Litigation Reform Act of 1995 (the PSLRA) with the intention of obtaining the benefits of the "Safe Harbor" provisions of the PSLRA. This presentation and discussions during this conference call contain forward-looking statements, relating to: our strategy and plans; potential of, and expectations for, the potential, benefits, safety and efficacy of diranersen; the potential clinical effects of diranersen; the clinical development program, clinical trials, data readouts and presentations related to diranersen; the treatment of Alzheimer's disease and the relation between tau protein and Alzheimer's disease; regulatory discussions, submissions, filings, and approvals; the potential of Biogen's commercial business and pipeline programs, including diranersen; and risks and uncertainties associated with drug development and commercialization. These forward-looking statements may be accompanied by such words as "aim," "anticipate," "assume," "believe," "contemplate," "continue," "could," "estimate," "expect," "forecast," "goal," "guidance," "hope," "intend," "may," "objective," "outlook," "plan," "possible," "potential," "predict," "project," "prospect," "should," "target," "will," "would," and other words and terms of similar meaning. Drug development and commercialization involve a high degree of risk, and only a small number of research and development programs result in commercialization of a product. Results in early-stage clinical trials may not be indicative of full results or results from later stage or larger scale clinical trials and do not ensure regulatory approval. You should not place undue reliance on these statements.

The potential, benefits, safety and efficacy of diranersen; the potential clinical effects of diranersen; the clinical development program, clinical trials, data readouts and presentations related to diranersen; the treatment of Alzheimer's disease and the relation between tau protein and Alzheimer's disease; the potential of Biogen's commercial business and pipeline programs, including diranersen; and risks and uncertainties associated with drug development and commercialization

Given their forward-looking nature, these statements involve substantial risks and uncertainties that may be based on inaccurate assumptions and could cause actual results to differ materially from those reflected in such statements. These forward-looking statements are based on management's current beliefs and assumptions and on information currently available to management. Given their nature, we cannot assure that any outcome expressed in these forward-looking statements will be realized in whole or in part.

We caution that these statements are subject to risks and uncertainties, many of which are outside of our control and could cause future events or results to be materially different from those stated or implied in this document, including, among others, factors relating to: uncertainty of success in the development and potential commercialization of diranersen; unexpected concerns may arise from additional data, analysis or results obtained during the CELIA study; our substantial dependence on revenue from our products and other payments under licensing, collaboration, acquisition or divestiture agreements; uncertainty of long-term success in developing, licensing, or acquiring other product candidates or additional indications for existing products; expectations, plans, prospects and timing of actions relating to product approvals, approvals of additional indications for our existing products, sales, pricing, growth, reimbursement and launch of our marketed and pipeline products; the potential impact of increased product competition in the biopharmaceutical and healthcare industry, as well as any other markets in which we compete, including increased competition from new originator therapies, generics, prodrugs and biosimilars of existing products and products approved under abbreviated regulatory pathways; our ability to effectively implement our corporate strategy; the successful execution of our strategic and growth initiatives, including acquisitions; the drivers for growing our business; difficulties in obtaining and maintaining adequate coverage, pricing, and reimbursement for our products; the drivers for growing our business, including our dependence on collaborators and other third parties for the development, regulatory approval, and commercialization of products and other aspects of our business, which are outside of our full control; risks associated with current and potential future healthcare reforms; risks related to commercialization of biosimilars, which is subject to such risks related to our reliance on third-parties, intellectual property, competitive and market challenges and regulatory compliance; failure to obtain, protect, and enforce our data, intellectual property, and other proprietary rights and the risks and uncertainties relating to intellectual property claims and challenges; the risk that positive results in a clinical trial may not be replicated in subsequent or confirmatory trials or success in early stage clinical trials may not be predictive of results in later stage or large scale clinical trials or trials in other potential indications; risks associated with clinical trials, including our ability to adequately manage clinical activities, unexpected concerns that may arise from additional data or analysis obtained during clinical trials, regulatory authorities may require additional information or further studies, or may fail to approve or may delay approval of our drug candidates; the occurrence of adverse safety events, restrictions on use with our products, or product liability claims; risks relating to technology, including our incorporation of new technologies such as artificial intelligence into some of our processes; risks related to use of information technology systems and potential impacts of any breakdowns, interruptions, invasions, corruptions, data breaches, destructions and/or other cybersecurity incidents of our systems or those of connected and/or third-party systems; problems with our manufacturing capacity, including our ability to manufacture products efficiently or adequately address global bulk supply risks; risks relating to management, personnel and other organizational changes, including our ability to attracting, retaining and motivating qualified individuals; risks related to the failure to comply with current and new legal and regulatory requirements, including judicial decisions, accounting standards, and tariff or trade restrictions; the risks of doing business internationally, including geopolitical tensions, acts of war and large-scale crises; risks relating to investment in our manufacturing capacity; risks relating to the distribution and sale by third parties of counterfeit or unfit versions of our products; risks relating to the use of social media for our business, results of operations and financial condition; fluctuations in our operating results; risks related to investment in properties; risks relating to access to capital and credit markets to finance our present and future operations and business initiatives and obtain funding for such activities on favorable terms; risks related to indebtedness; the market, interest, and credit risks associated with our investment portfolio; risks relating to share repurchase programs; change in control provisions in certain of our collaboration agreements; fluctuations in our effective tax rate and obligations in various jurisdictions in which we are subject to taxation; environmental risks; and any other risks and uncertainties that are described in other reports we have filed with the U.S. Securities and Exchange Commission, which are available on the SEC's website at www.sec.gov.

These statements speak only as of the date of this presentation and the discussions during this conference call and are based on information and estimates available to us at this time. Should known or unknown risks or uncertainties materialize or should underlying assumptions prove inaccurate, actual results could vary materially from past results and those anticipated, estimated or projected. Investors are cautioned not to put undue reliance on forward-looking statements. A further list and description of risks, uncertainties and other matters can be found in our Annual Report on Form 10-K for the fiscal year ended December 31, 2025 and in our subsequent reports on Form 10-Q, in each case including in the sections thereof captioned "Note Regarding Forward-Looking Statements" and "Item 1A. Risk Factors," and in our subsequent reports on Form 8-K. Except as required by law, we do not undertake any obligation to publicly update any forward-looking statements whether as a result of any new information, future events, changed circumstances or otherwise.

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CALL PARTICIPANTS

Priya Singhal, M.D., M.P.H.

Head of Development

Diana Gallagher, M.D.

Head of Immune Mediated and Neurodegeneration Development

OPENING REMARKS

Priya Singhal, M.D., M.P.H.

Head of Development

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WE CONTINUE TO DEMONSTRATE LEADERSHIP IN ALZHEIMER'S DISEASE WITH A NEW MECHANISM – DIRANERSEN

Encouraging emerging profile for 60mg Q24W:

- CDR-SB effect showed clinical **decline by 0.54 points or 26%**
- Substantial signal on cognition (**50% on MMSE, >40% on ADAS-COG 13**)
- Potential twice yearly administration
- Generally well tolerated with ARIA not observed in CELIA and not anticipated based on MoA

All diranersen dose groups demonstrated target engagement and robust reductions in tau pathology

- Differentiated approach to tau

LEQEMBI (lecanemab-irmb) is being developed in collaboration with Eisai Co; Diranersen is licensed from Ionis Pharmaceuticals, Inc; AD = Alzheimer's disease; ADAS-COG 13 = Alzheimer's Disease Assessment Scale–Cognitive Subscale; ARIA = amyloid-related imaging abnormalities; CDR-SB = Clinical Dementia Rating-Sum of Boxes; MMSE = Mini-Mental State Examination; MoA = mechanism of action; Q24W = every 24 weeks

DIRANERSEN AND THE CELIA STUDY

Diana Gallagher

Head of Immune Mediated and Neurodegeneration Development

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DIRANERSEN: A DIFFERENTIATED APPROACH IN TARGETING TAU

Tau is a potentially attractive target in Alzheimer's disease

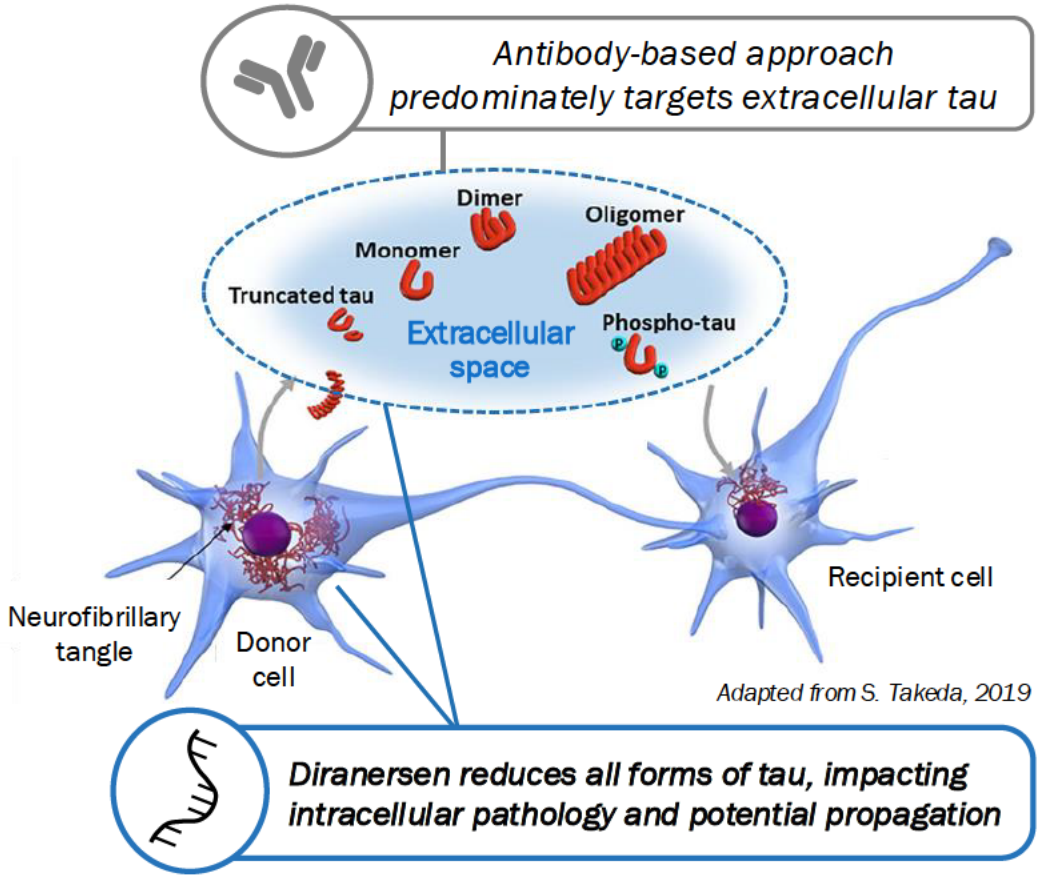
- AD is a progressive neurodegenerative disease characterized by cerebral accumulation of amyloid plaques and tau NFTs[1]
  - The burden of tau NFTs is closely linked to neurodegeneration and clinical decline[2]

To date, antibody approaches for tau have not shown clinical benefit

- Antibodies target tau predominately outside the cell
- No reduction in baseline tau PET has been demonstrated by anti-tau antibodies

Diranersen is designed to reduce the production of all forms of tau within the neuron

- Diranersen reduces the translation of MAPT into tau protein
- Addresses both extracellular and intracellular tau
- Enables downstream reduction of tau pathology in the brain



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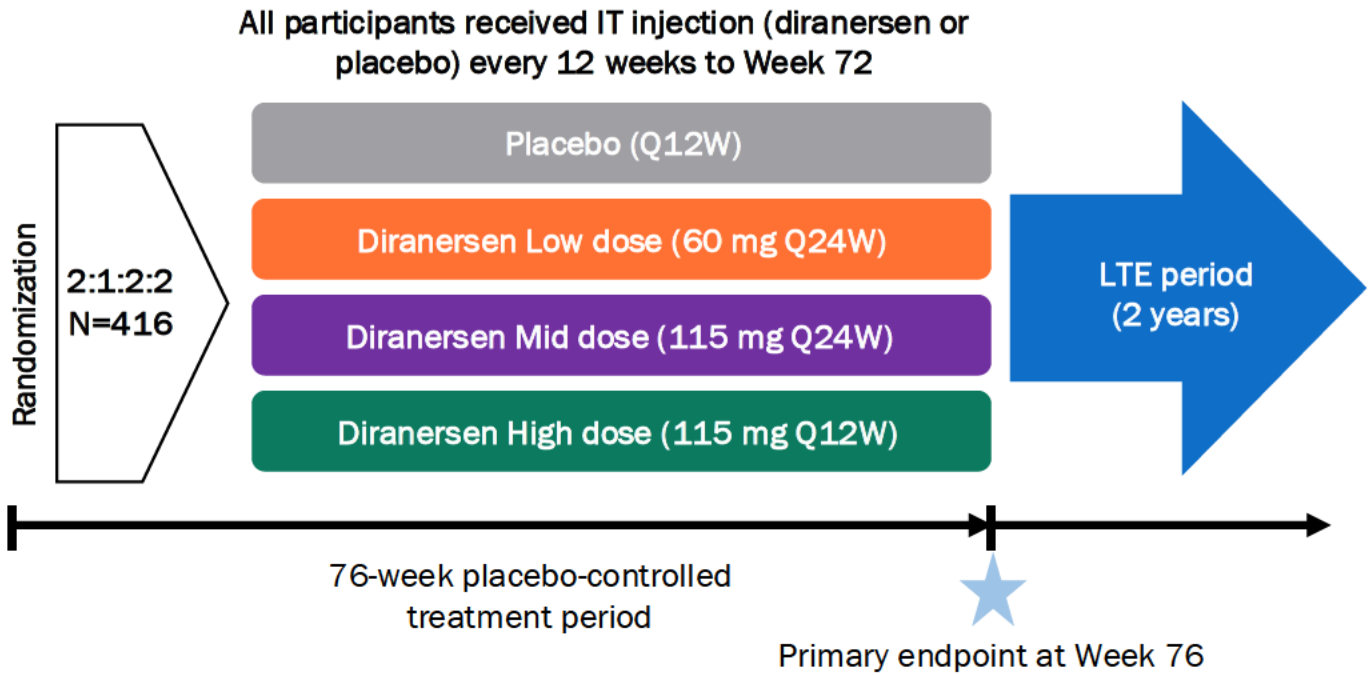
Diranersen is licensed from Ionis Pharmaceuticals, Inc; 1. Selkoe DJ, Hardy J. EMBO Mol Med. 2016;8(6):595-608. 2. Bejanin A, et al. Brain. 2017;140(12):3286-3300. AD = Alzheimer's disease; MAPT = microtubule-associated protein tau; NFT= neurofibrillary tangles; PET = positron emission tomography

PHASE 2 CELIA STUDY DESIGNED FOR DOSE RESPONSE FOR CDR-SB AT 18 MONTHS



- Study designed to detect a signal and identify a dose
- Primary endpoint of a pre-specified dose response on CDR-SB at 76 weeks assumed increasing efficacy with higher doses
- Secondary endpoints included CDR-SB, ADCS-ADL-MCI, ADAS-Cog 13, MMSE, and others, as well as safety

1 Primary endpoint

- Dose response in change from baseline to Week 76 on CDR-SB (MCP-Mod)

2 Secondary endpoints

- Change from baseline to Week 76 on CDR-SB, ADAS-Cog 13, MMSE, ADCS-ADL-MCI, modified iADRS, and ADCOMS
- TEAEs and SAEs

Longitudinal substudies

- Tau PET (^{18}F-MK-6240, n=131): Screening, Week 54, Week 76
- Amyloid PET (^{18}F-florbetapir, n=48): Screening, Week 76

^{18}F = fluorine-18; ADAS-Cog 13 = Alzheimer's Disease Assessment Scale–Cognitive Subscale; ADCOMS = Alzheimer's Disease Composite Score; ADCS-ADL-MCI = Alzheimer's Disease Cooperative Study–Activities of Daily Living Scale for Mild Cognitive Impairment; CDR-SB = Clinical Dementia Rating-Sum of Boxes; iADRS = Integrated Alzheimer's Disease Rating Scale; LTE = long-term extension; MCP-Mod = Multiple Comparison Procedure-Modeling; MMSE = Mini-Mental State Examination; PET= positron emission tomography; Q12W = every 12 weeks; Q24W = every 24 weeks; SAE = serious adverse event; TEAE = treatment emergent adverse event. CELIA study (NCT05399888) clinicaltrials.gov. https://clinicaltrials.gov/ct2/show/NCT05399888. Accessed June 5, 2026.

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BASELINE DEMOGRAPHICS AND CHARACTERISTICS WERE WELL BALANCED[1] AND CONSISTENT WITH OTHER AD TRIALS[2,3]

Demographic	Placebo Q12W (n=115)	Diranersen Low 60 mg Q24W (n=60)	Diranersen Mid 115 mg Q24W (n=115)	Diranersen High 115 mg Q12W (n=116)
Age (years), mean (SD)	68.6 (7.4)	67.9 (7.4)	67.3 (7.9)	69.2 (6.6)
Female, n (%)	61 (53.0)	27 (45.0)	57 (49.6)	63 (54.3)
Race, n (%)				
Asian	4 (3.5)	2 (3.3)	4 (3.5)	5 (4.3)
Black or African American	1 (0.9)	1 (1.7)	1 (0.9)	0
Native Hawaiian or Other Pacific Islander	0	0	0	1 (0.9)
White	102 (88.7)	55 (91.7)	99 (86.1)	98 (84.5)
Other	0	0	2 (1.7)	3 (2.6)
ApoE ε4 genotype, n (%)	76 (66.1)	42 (70.0)	75 (65.2)	85 (73.3)
Homozygote	24 (20.9)	10 (16.7)	27 (23.5)	31 (26.7)
Heterozygote	52 (45.2)	32 (53.3)	48 (41.7)	54 (46.6)
Non-carrier	37 (32.2)	18 (30.0)	38 (33.0)	31 (26.7)
MCI due to AD, n (%)/Mild AD dementia, n (%)	68 (59.1)/47 (40.9)	36 (60.0)/24 (40.0)	70 (60.9)/45 (39.1)	70 (60.3)/46 (39.7)
Years since first AD diagnosis, mean (SD)	1.3 (2.1)	1.1 (1.1)	1.4 (1.3)	1.2 (1.0)
Baseline AD symptomatic medication use, n (%)	73 (63.5)	38 (63.3)	77 (67.0)	76 (65.5)
CDR global score, n (%)				
0.5	97 (84.3)	45 (75.0)	103 (89.6)	102 (87.9)
1	18 (15.7)	15 (25.0)	12 (10.4)	14 (12.1)
CDR-SB, mean (SD)	3.1 (1.5)	3.4 (1.7)	3.0 (1.4)	3.1 (1.3)
ADAS-Cog 13, mean (SD)	24.8 (7.2)	26.2 (7.6)	24.6 (7.2)	25.2 (7.0)
ADCS-ADL-MCI, mean (SD)	41.8 (6.1)	40.4 (7.4)	41.4 (6.4)	41.8 (5.2)
MMSE, mean (SD)	24.6 (3.1)	24.5 (3.2)	24.9 (2.7)	24.5 (3.2)
RBANS delayed memory, mean (SD)	56.1 (12.9)	56.5 (12.5)	57.9 (13.7)	56.7 (14.3)
Amyloid PET Centiloid, mean (SD), n	93.2 (35.8), 84	85.2 (32.1), 41	95.2 (35.8), 84	94.2 (34.1), 79
α-synuclein positive, n (%)	38 (33.0)	16 (26.7)	28 (24.3)	35 (30.2)

1. Full Analysis set. 2. van Dyck C, et al. N Engl J Med. 2023;388(1):9-21; 3. Sims J, et al. 2023;330(6):512-527.
AD = Alzheimer's disease; ADAS-Cog 13 = Alzheimer's Disease Assessment Scale–Cognitive Subscale; ADCS-ADL-MCI = Alzheimer's Disease Cooperative Study–Activities of Daily Living Scale for Mild Cognitive Impairment; ApoE = apolipoprotein E; α-synuclein, alpha synuclein; CDR-SB = Clinical Dementia Rating-Sum of Boxes; MCI = mild cognitive impairment; MMSE = Mini-Mental State Examination; PET = positron emission tomography; Q12W = every 12 weeks; Q24W = every 24 weeks; RBANS = Repeatable Battery for the Assessment of Neuropsychological Status; SD = standard deviation.

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DIRANERSEN WAS FAVORED FOR MOST ENDPOINTS AT EVERY DOSE

Measure	Result
Dose Response on CDR-SB	Did not meet primary endpoint assessing dose response
Tau-PET	Favors diranersen
Tau-CSF	Favors diranersen
CDR-SB	Favors diranersen – including cognitive and functional subdomains
ADAS-Cog 13	Favors diranersen
MMSE	Favors diranersen
Modified iADRS	Favors diranersen
ADCOMS	Favors diranersen
ADCS-ADL MCI	Separation not seen at 18 months – follow-up continues*
Safety	Generally well tolerated

*Separation not seen in the 60mg dose, with inconsistent decline observed across doses. ADAS-Cog 13 = Alzheimer's Disease Assessment Scale–Cognitive Subscale; ADCOMS = Alzheimer's Disease Composite Score; ADCS-ADL-MCI = Alzheimer's Disease Cooperative Study–Activities of Daily Living Scale for Mild Cognitive Impairment; CDR-SB = Clinical Dementia Rating-Sum of Boxes; iADRS = Integrated Alzheimer's Disease Rating Scale; MMSE = Mini-Mental State Examination; PET= positron emission tomography

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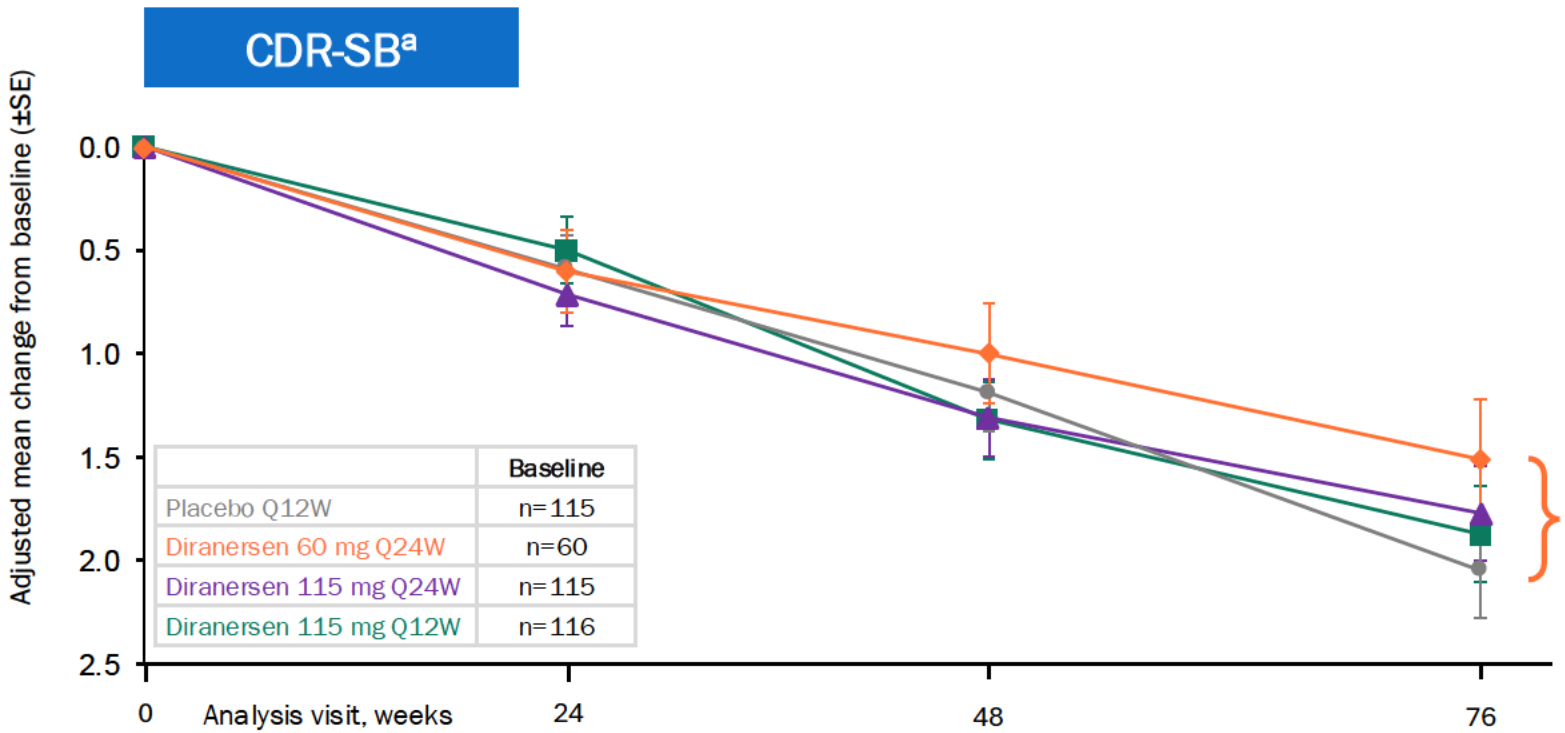
CDR-SB EFFECT COMPARABLE TO ANTI-AMYLOID THERAPIES AT THE 60mg Q24W DOSE



Diranersen 60mg (low) dose slowed decline 26% vs placebo at Week 76

- **0.54 point or 26% difference from placebo at 60mg Q24W**
- **Lower effect size at higher dose levels**

The most pronounced treatment effect on clinical decline by CDR-SB was observed with low-dose diranersen; Slowing was observed across cognitive and functional subdomains of the CDR

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a) MMRM with treatment, visit, and treatment by visit; adjusted for baseline covariates (outcome, outcome by visit, MMSE, ADAS-Cog 13, AD symptomatic medication use, region, and clinical stage).
CDR-SB = Clinical Dementia Rating-Sum of Boxes; MMRM = Mixed Models for Repeated Measures; Q12W = every 12 weeks; Q24W = every 24 weeks.

60mg Q24W DEMONSTRATED A PROMISING EFFICACY PROFILE ACROSS MULTIPLE ENDPOINTS

Diranersen 60mg Q24W	CDR-SB	ADAS-COG*	MMSE	ADCS-ADL-MCI	ADCOMS	iADRS
	26%	42%	50%	0%	23%	30%

Anti-Amyloids	CDR-SB	ADAS-COG*	MMSE	ADCS-ADL-MCI	ADCOMS	iADRS
Emerge *NCT02484547*	22%	27%	18%	42%	NA	NA
Engage *NCT02477800*	12%	11%	6%	18%	NA	NA
Clarity AD *N Engl J Med 2023;388:9-21*	27%	26%	NA	36%	24%	NA
Trailblazer ALZ 2 *NCT04437511*	29%	20%	16%	NA	NA	22%

- CDR-SB and ADCOMS inline with anti-amyloid agents[1]
- Robust cognitive effects – markedly higher improvements than anti-amyloid treatments
  - ✓ 42% for ADAS-COG 13
  - ✓ 50% for MMSE
  - ✓ 30% for iADRS
- No separation on ADCS-ADL-MCI at 76 weeks– follow up continues

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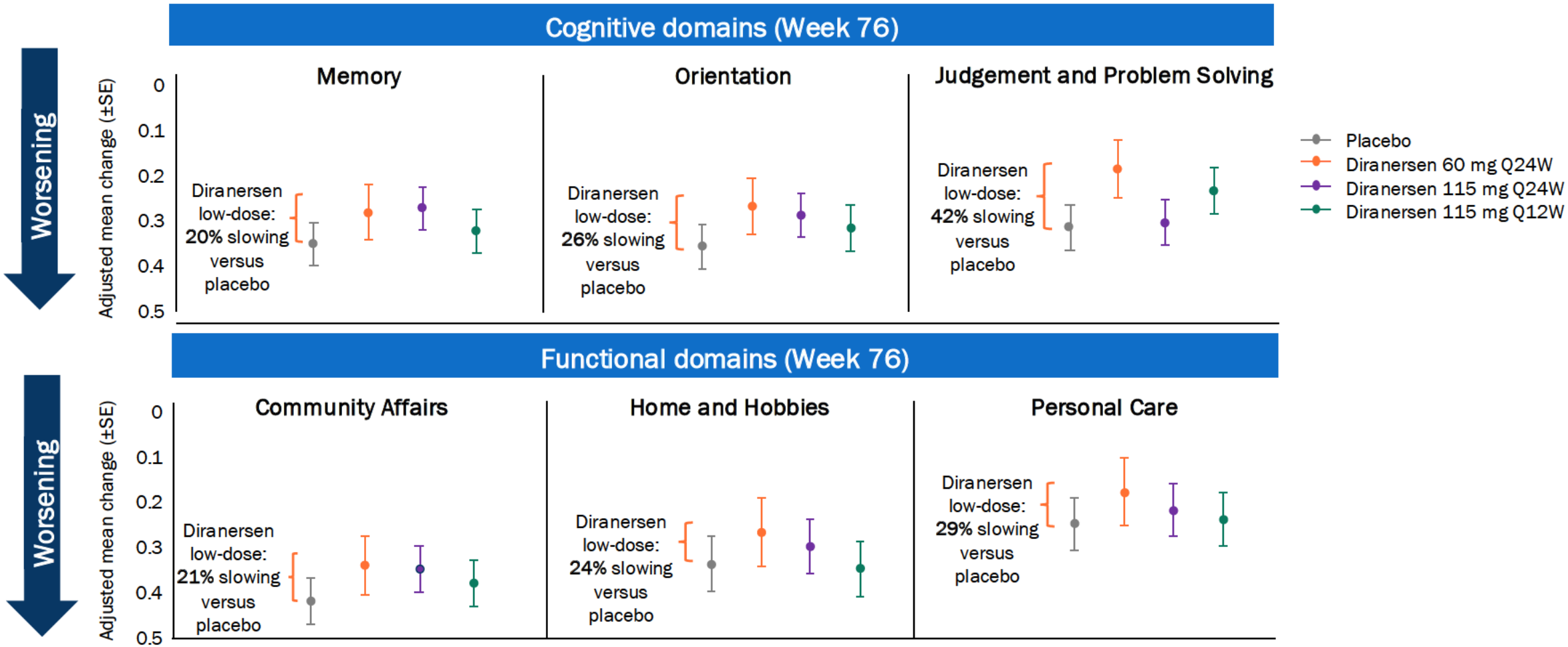
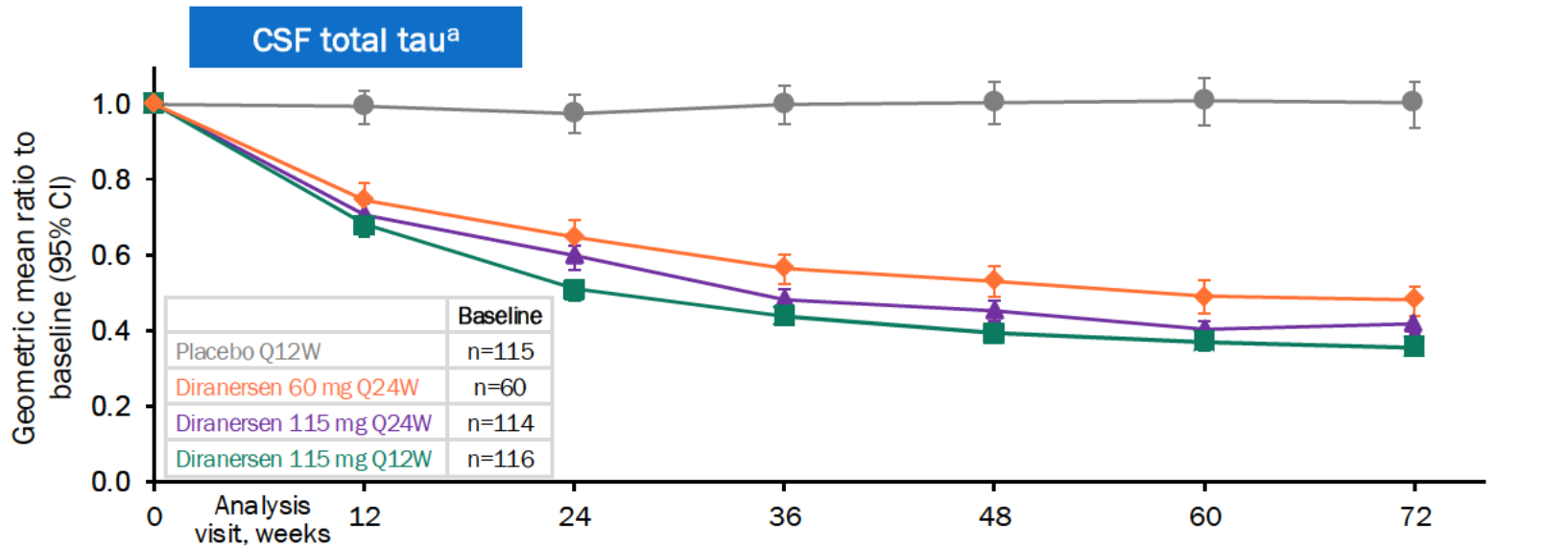
*All are ADAS-COG13 except for ADAS-COG14 in CLARITY_AD; 1) Based on historical data, not a direct comparison based on head-to-head studies; iADRS = modified Integrated Alzheimer's Disease Rating Scale

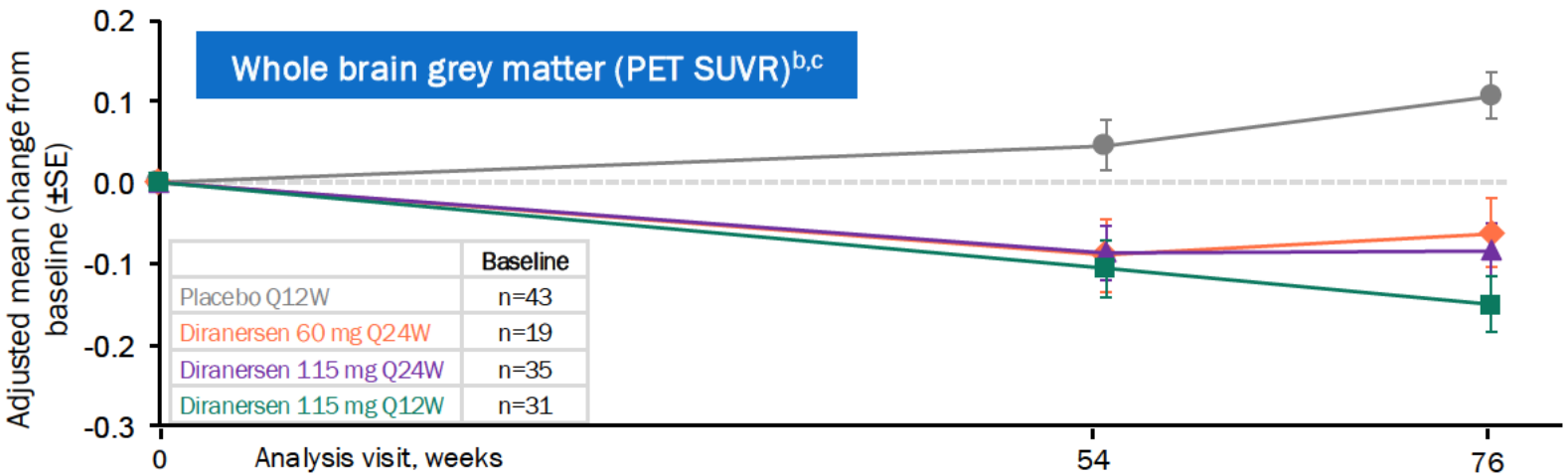
SLOWING OF DECLINE WAS OBSERVED ACROSS COGNITIVE AND FUNCTIONAL SUBDOMAINS OF CDR IN ALL DOSES



CDR = Clinical Dementia Rating; Q12W = every 12 weeks; Q24W = every 24 weeks.

DIRANERSEN IS THE ONLY TAU DIRECTED AGENT TO SHOW SUBSTANTIAL TAU REDUCTION IN THE CSF AND BRAIN





- **50-65% reduction** from baseline in soluble total tau in CSF across dose arms at Week 72
- Confirms target engagement

- **First reported substantial reduction in tau PET** by an anti-tau agent in a Phase 2 study
- Suggests reduction in tau pathology in the brain

MMRM with treatment, visit, and treatment by visit; adjusted for baseline biomarker, baseline biomarker by visit, MMSE, clinical stage, and age. a) Lumipulse CSF t-tau assay. b) MK-6240 was the tau PET tracer; reference region was inferior cerebellum. d) Brain regions assessed: medial temporal cortex, lateral temporal cortex, temporal cortex, frontal cortex, parietal cortex, anterior cingulate cortex, posterior cingulate cortex, occipital cortex, whole brain grey matter. CSF = cerebrospinal fluid; MMRM = Mixed Models for Repeated Measures; PET = positron emission tomography; Q12W = every 12 weeks; Q24W = every 24 weeks; SUVR = standardized uptake value ratio.

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DIRANERSEN WAS GENERALLY WELL TOLERATED

Number of participants with variable, n (%)	Placebo Q12W (n = 114)	Diranersen 60 mg Q24W (n = 61)[c]	Diranersen 115 mg Q24W (n = 115)	Diranersen 115 mg Q12W (n = 116)
Any AE	106 (93.0)	60 (98.4)	113 (98.3)	113 (97.4)
Mild	52 (45.6)	29 (47.5)	44 (38.3)	37 (31.9)
Moderate	46 (40.4)	24 (39.3)	58 (50.4)	62 (53.4)
Severe	8 (7.0)	7 (11.5)	11 (9.6)	14 (12.1)
Treatment-related AEs[a]	28 (24.6)	23 (37.7)	47 (40.9)	67 (57.8)
AE related to LP/IT administration[a]	66 (57.9)	37 (60.7)	67 (58.3)	82 (70.7)
Drug withdrawal due to AEs	3 (2.6)	3 (4.9)	9 (7.8)	8 (6.9)
Study withdrawal due to AEs	3 (2.6)	2 (3.3)	3 (2.6)	4 (3.4)
SAEs	17 (14.9)	8 (13.1)	18 (15.7)	27 (23.3)
Treatment-related SAEs[a]	0	2 (3.3)	3 (2.6)	12 (10.3)
Fatal AEs[b]	1 (0.9)	0	1 (0.9)	0

- Most AEs were mild or moderate in severity, and did not result in study drug withdrawal
- The most common AEs were procedural pain, post lumbar puncture syndrome, and confusional state
  - Most AEs of confusional state were mild or moderate in severity, non-serious, occurred within 7 days of dosing, resolved within 7 days of onset, and did not lead to study drug discontinuation
  - Higher incidence of confusional state AEs was observed at higher doses
- ARIA is not anticipated with this MoA and results are consistent with that expectation

Data presented as n (%). Only TEAEs were included. A participant can appear in more than one category. Placebo-controlled period data. Data cut date: 11MAR2026. a) Related as assessed by the investigator. B) Within the placebo-controlled period of CELIA, two participants died: 1 cardiac arrythmia in a placebo and 1 pulmonary embolism in a diranersen 115 mg Q24W participant; no deaths were related to study treatment, as assessed by the Investigator. C) Data analyzed according to study medication received. One patient randomized to placebo received diranersen 60 mg Q24W.
AE = adverse event; LP = lumbar puncture; IT, intrathecal; Q12W = every 12 weeks; Q24W = every 24 weeks; SAE = serious adverse event; TEAE = treatment emergent adverse event.

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CLOSING REMARKS

Priya Singhal, M.D., M.P.H.

Head of Development

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NEXT STEPS FOR THE DIRANERSEN PROGRAM

- An ongoing long-term extension study is continuing to evaluate the long-term safety, tolerability and durability of diranersen in early Alzheimer's disease
- Ongoing analyses of the data expected to be presented at key upcoming medical congresses and in the literature
- Continued engagement with medical community and regulators on Phase 3 trial planning

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PHASE 2 CELIA DATA ESTABLISHES PROOF OF CONCEPT AND SUPPORTS MOVING DIRANERSEN TO REGISTRATIONAL STUDIES

Diranersen:

- Encouraging emerging clinical profile with unprecedented impact on tau reduction and cognition
  - *With 94% of patients who completed the study continuing to the LTE*
- A well tolerated safety profile where ARIA is not anticipated with a tau-targeting MoA
- The potential for twice yearly administration

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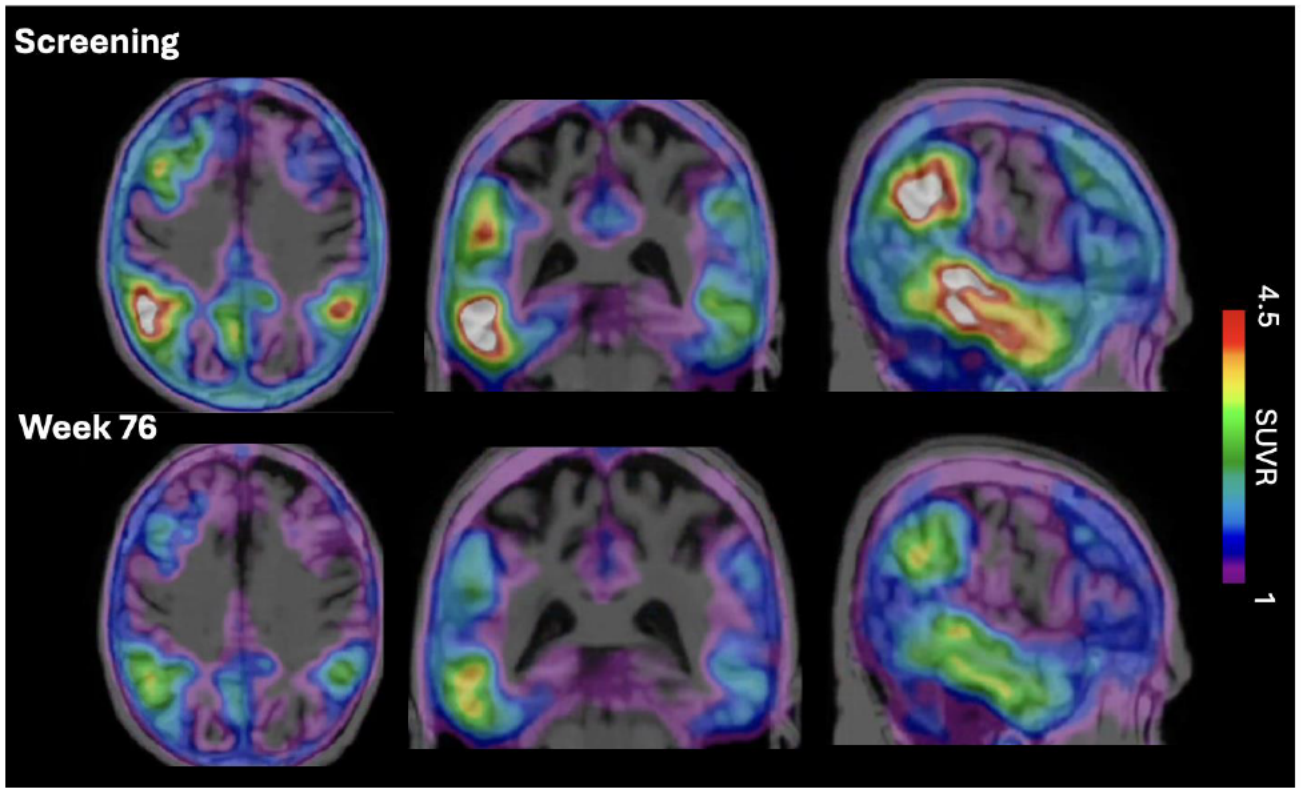
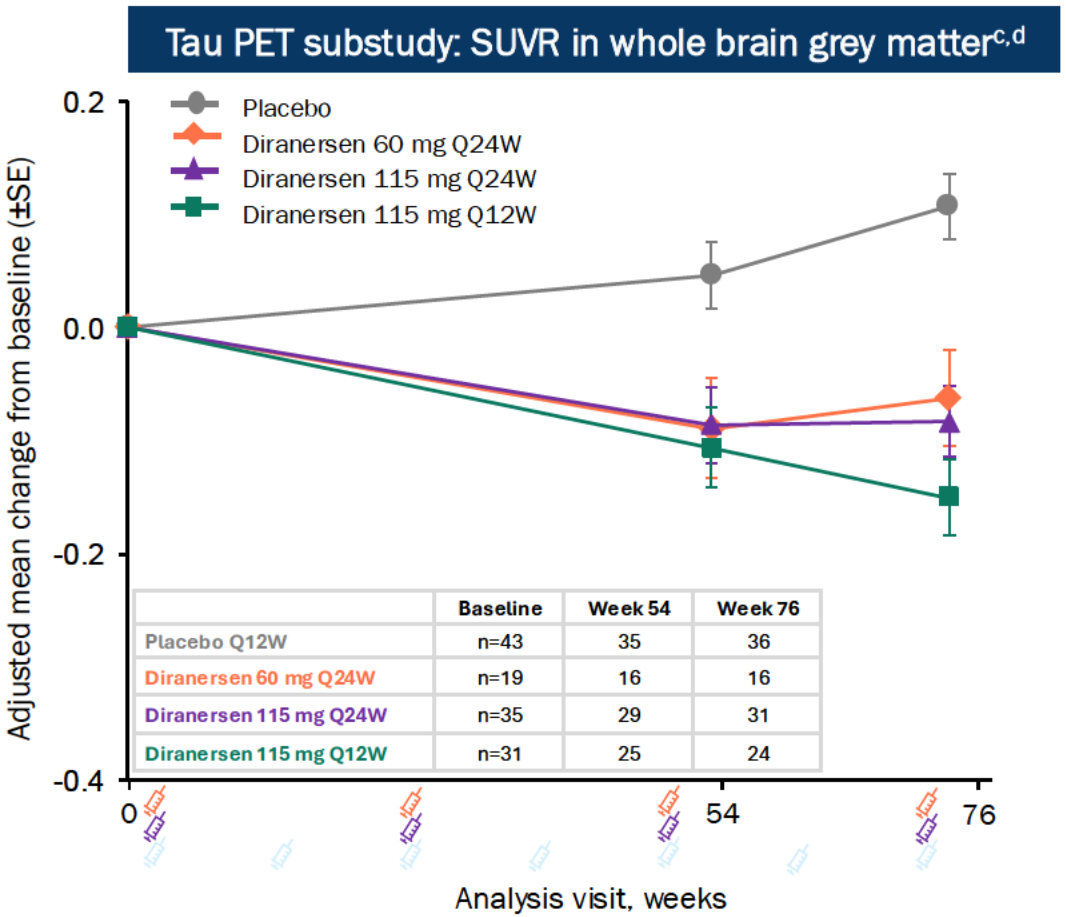
APPENDIX

UNPRECEDENTED REDUCTIONS FROM BASELINE IN CSF TOTAL TAU AND TAU PET SUVR WERE OBSERVED ACROSS ALL DOSE GROUPS

Target engagement and a reduction in tau pathology as measured by tau PET were seen across all diranersen dose groups. Similar effects on tau PET SUVR were observed across all brain composites assessed.



Example participant from 60mg Q24W dose group



[a]MMRM with treatment, visit, and treatment by visit; adjusted for baseline biomarker, baseline biomarker by visit, MMSE, clinical stage, and age. [b]Lumipulse CSF t-tau assay. [c]MK-6240 was the tau PET tracer; reference region was inferior cerebellum. [d]Brain regions assessed: medial temporal cortex, lateral temporal cortex, temporal cortex, frontal cortex, parietal cortex, anterior cingulate cortex, posterior cingulate cortex, occipital cortex, whole brain grey matter. CSF = cerebrospinal fluid; MMRM = Mixed Models for Repeated Measures; PET = positron emission tomography; Q12W = every 12 weeks; Q24W = every 24 weeks; SUVR = standardized uptake value ratio.

Study treatment administration