

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): November 16, 2023

VIGIL NEUROSCIENCE, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

001-41200
(Commission
File Number)

85-1880494
(I.R.S. Employer
Identification No.)

Vigil Neuroscience, Inc.
100 Forge Road, Suite 700
Watertown, Massachusetts 02472
(Address of principal executive offices, including zip code)

(857) 254-4445
(Registrant's telephone number, including area code)

Not Applicable
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trade Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.0001 par value per share	VIGL	The Nasdaq Global Select Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 7.01 Regulation FD Disclosure.

On November 16, 2023, Vigil Neuroscience, Inc. (the “Company”) issued a press release and held a webcast announcing interim data analyses of its Phase 2 IGNITE Clinical Trial evaluating iluzanebart (VGL101) as a treatment for adult-onset leukoencephalopathy with axonal spheroids and pigmented glia (“ALSP”) and its ILLUMINATE natural history study of ALSP. A copy of the press release and a copy of the presentation are furnished herewith as Exhibits 99.1 and 99.2, respectively.

The information set forth under Item 7.01 and in Exhibits 99.1 and 99.2 attached hereto is intended to be furnished and shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934 (the “Exchange Act”) or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933 or the Exchange Act, except as expressly set forth by specific reference in such filing.

Item 8.01 Other Events.

On November 16, 2023, the Company announced an interim data analysis of its Phase 2 IGNITE Clinical Trial evaluating iluzanebart (formerly referred to as VGL101) as a treatment for ALSP representing the first six patients following six months of treatment with 20 mg/kg of iluzanebart (VGL101) – the announcement included:

- Favorable safety and tolerability profile, including no hematologic adverse events.
- Predictable pharmacokinetic and brain penetration profile consistent with Phase 1 data in healthy volunteers.
- Clear target engagement, based on soluble TREM2 (“sTREM2”) levels, and downstream pharmacological activity, based on soluble colony stimulating factor 1 receptor (“sCSF1R”) and osteopontin levels, at 20 mg/kg, consistent with Phase 1 data in healthy volunteers.
- Directionally supportive changes in both neurofilament light (“NFL”) and magnetic resonance imaging (“MRI”) measurements on ventricular volume and gray matter volume in individual patients.
- The Company believes the quality and consistency of the interim data further support the continuation of IGNITE without modification.

The Company also announced additional interim data at 12 months from ILLUMINATE, a natural history study of ALSP patients – the announcement included:

- sCSF1R and NFL levels are remarkably altered in ALSP, supporting the Company’s hypothesis that these are key biomarkers of disease pathology.
- Totality of the data, including longitudinal progression observed on selected MRI measures and clinical endpoints, support engagement with regulatory authorities.
- The Company believes the quality and consistency of data in this interim analysis support chosen biomarkers for pharmacological activity.
- MRI measurements on ventricular volume and gray matter volume are emerging as key indicators of disease progression.
- Interim Montreal Cognitive Assessment and Cortical Basal Ganglia Functional Scale data support use as clinical endpoints in ALSP at 12 months.

Forward-Looking Statements

The disclosure under this Item 8.01 contains “forward-looking statements” of the Company that are made pursuant to the safe harbor provisions of the federal securities laws, including, without limitation, express or implied statements regarding the potential of iluzanebart as a novel treatment option for patients with ALSP and the Company’s beliefs about TREM2 agonism’s importance in ALSP. Factors that could cause actual results to differ include the risks whether results from preclinical studies and interim data from clinical trials will be predictive of the

results of final data from clinical trials; as well as the risks and uncertainties identified in the Company's filings with the Securities and Exchange Commission (SEC), including the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2023 and in any subsequent filings it may make with the SEC. All disclosure under this Item 8.01 is as of the date of this Form 8-K, and the Company undertakes no duty to update this information unless required by law.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Press release dated November 16, 2023
99.2	Slide Presentation dated November 16, 2023
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Vigil Neuroscience, Inc.

Date: November 16, 2023

By: /s/ Ivana Magovčević-Liebisch

Ivana Magovčević-Liebisch
President and Chief Executive Officer



Vigil Neuroscience Reports Positive Interim Data from Phase 2 IGNITE Proof-of-Concept Clinical Trial Evaluating Iluzanebart (VGL101) as a Treatment for ALSP and from Ongoing Natural History Study ILLUMINATE

- *Iluzanebart demonstrated favorable safety and tolerability, including no hematologic adverse events -*
- *Clear CNS target engagement and downstream pharmacological activity at 20 mg/kg consistent with Phase 1 data; Directionally supportive changes in individual patients at 6 months on MRI and NfL biomarkers -*
- *Natural History Study continued to provide critical insights on MRI and NfL biomarkers; sCSF1R emerging as key biomarker of ALSP disease pathology -*
- *Company expects to report Phase 2 IGNITE results from all patients in 20 mg/kg and 40 mg/kg cohorts at 6 months in third quarter of 2024 -*
- *Company to host webinar today at 4:30 p.m. ET -*

WATERTOWN, Mass. – November 16, 2023 – Vigil Neuroscience, Inc. (Nasdaq: VIGL), a clinical-stage biotechnology company committed to harnessing the power of microglia for the treatment of neurodegenerative diseases, today announced positive interim data from the Company's Phase 2 IGNITE proof-of-concept clinical trial in patients with adult-onset leukoencephalopathy with axonal spheroids and pigmented glia (ALSP). The interim data, representing the first six patients following six months of treatment with 20 mg/kg of iluzanebart (formerly referred to as VGL101), further support the favorable safety and tolerability profile as was previously seen in healthy volunteers. In addition, these data demonstrated clear target engagement and downstream pharmacological activity at 20 mg/kg consistent with the Company's previously reported Phase 1 data in healthy volunteers. Directionally supportive changes at 6 months on magnetic resonance imaging (MRI) and neurofilament light (NfL) biomarkers of disease progression in individual patients with ALSP were also observed.

The Company also reported findings from its ongoing natural history study, ILLUMINATE, which continued to provide critical insights on MRI and NfL biomarkers and supports soluble colony stimulating factor 1 receptor (sCSF1R) as a potential key biomarker of ALSP disease pathology.

"The positive interim results from our Phase 2 IGNITE trial represent the first clinical data reported from an interventional study in patients with ALSP and reaffirm our belief in the potential of iluzanebart as a novel treatment option. Importantly, we are the first company to show clinical data on TREM2 agonism as a potential therapeutic approach in patients with a neurodegenerative disease," said Ivana Magovčević-

Liebisch, Ph.D., J.D., President and Chief Executive Officer of Vigil. “In the 6 patients observed in the interim analysis, iluzanebart demonstrated a favorable safety and tolerability profile, compelling pharmacological activity, and positive quantifiable trends in NfL and MRI biomarkers in individual patients.”

“In addition, our ongoing natural history study ILLUMINATE continues to provide critical insights into ALSP and biomarkers that we believe correlate with disease progression,” continued Dr. Magovčević-Liebisch. “We expect to use the promising findings from IGNITE and ILLUMINATE to engage with the FDA to initiate discussions regarding a potential accelerated development pathway. We look forward to further executing on our precision medicine strategy in neurodegenerative diseases – because patients cannot wait.”

Key Highlights from Phase 2 IGNITE Interim Data:

- Favorable safety and tolerability profile, including no hematologic adverse events.
- Predictable pharmacokinetic and brain penetration profile consistent with Phase 1 data in healthy volunteers.
- Clear target engagement, based on sTREM2 levels, and downstream pharmacological activity, based on sCSF1R and osteopontin levels, at 20 mg/kg, consistent with Phase 1 data in healthy volunteers.
- Directionally supportive changes in both NfL and MRI measurements on ventricular volume and gray matter volume in individual patients.
- We believe the quality and consistency of the interim data further support the continuation of IGNITE without modification.

Key Updates from Natural History Study ILLUMINATE:

- sCSF1R and NfL levels are remarkably altered in ALSP, supporting our hypothesis that these are key biomarkers of disease pathology.
- Totality of the data, including longitudinal progression observed on selected MRI measures and clinical endpoints, support engagement with regulatory authorities.
- We believe the quality and consistency of data in this interim analysis support chosen biomarkers for pharmacological activity.
- MRI measurements on ventricular volume and gray matter volume are emerging as key indicators of disease progression.
- Interim Montreal Cognitive Assessment (MoCA) and Cortical Basal Ganglia Functional Scale data support use as clinical endpoints in ALSP at 12 months.

“ALSP is a rare, devastating and fast-progressing disease with no approved treatments that target the underlying cause of the disease or slow its progression,” said Zbigniew Wszolek, M.D., Neurologist at Mayo Clinic. “These interim results are a great step forward for patients and caregivers impacted by ALSP and I am encouraged by the progress the Vigil team has made developing a potential novel treatment option for this autosomal dominant disease. To date, iluzanebart has been well-tolerated, and the data seem to suggest that we are seeing directional changes in CSF1R and positive trends in NfL and MRI measurements. This is an important milestone for the underserved ALSP community of patients and caregivers.”

“Today’s results are a reflection of the dedication and expertise of our incredible team who brings an unwavering commitment to patients to their work,” concluded Dr. Magovčević-Liebisch. “We extend a sincere thank you to all who have contributed to this progress, including our trial participants, their caregivers, and the clinical investigators. We look forward to sharing additional data from the IGNITE trial, including results from all patients in both the 20 mg/kg and 40 mg/kg cohorts at 6 months, in the third quarter of 2024.”

The Company also announced that it will host a virtual webinar to discuss the Phase 2 IGNITE interim data today, Thursday, November 16, 2023, from 4:30 p.m. to 5:30 p.m. ET.

The event will include prepared remarks by the Vigil management team who will be joined by David S. Lynch, M.D., Ph.D., Consultant Neurologist National Hospital for Neurology & Neurosurgery, Queen Square & UCL Institute of Neurology, London & Clinical Lead, Adult Inherited White Matter Disorders Highly Specialist Service, NHS England.

To access the live webinar, please [register here](#) or visit “[Events & Presentations](#)” in the “Investors” section of the Vigil website at www.vigilneuro.com. An archived replay of the webinar will be available for approximately 90 days following the event.

About Phase 2 IGNITE Clinical Trial

IGNITE is a global Phase 2, open-label proof-of-concept trial evaluating iluzanebart in approximately 15 patients with symptomatic ALSP who have a confirmed *CSF1R* gene mutation. The primary objective of the IGNITE trial is to evaluate the safety and tolerability of iluzanebart. Secondary outcome measures include evaluating the effects of iluzanebart on target engagement and on MRI and NfL biomarkers of disease progression. Exploratory outcome assessments include the evaluation of clinical efficacy measures using standard cognitive, motor and functional assessments of iluzanebart in patients with ALSP. Patients enrolled in the trial will receive an intravenous (IV) infusion of iluzanebart at 20 mg/kg or 40 mg/kg approximately every four weeks for a treatment duration of one year.

About Iluzanebart (VGL101)

Iluzanebart, Vigil’s lead clinical candidate, is a fully human monoclonal antibody targeting human triggering receptor expressed on myeloid cells 2 (TREM2), which is responsible for maintaining microglial cell function. TREM2 deficiency is believed to be a driver of certain neurodegenerative diseases. Iluzanebart is in development for rare microgliopathies, such as ALSP, as well as other neurodegenerative diseases for which TREM2 and/or microglia deficiency is believed to be a key driver of disease pathway.

About ALSP

ALSP is a rare, inherited, autosomal dominant neurological disease with high penetrance. It is caused by a mutation to the *CSF1R* gene and affects an estimated 10,000 people in the United States, with similar prevalence in Europe and Japan. The disease generally presents in adults in their forties, is diagnosed through genetic testing and established clinical/radiologic criteria and is characterized by cognitive dysfunction, neuropsychiatric symptoms, and motor impairment. These symptoms typically exhibit rapid progression with a life expectancy of approximately six to seven years on average after diagnosis, causing significant patient and caregiver burden. There are currently no approved therapies for the treatment of ALSP, underscoring the high unmet need in this rare indication.

About Vigil Neuroscience

Vigil Neuroscience is a clinical-stage biotechnology company focused on developing treatments for both rare and common neurodegenerative diseases by restoring the vigilance of microglia, the sentinel immune cells of the brain. Vigil is utilizing the tools of modern neuroscience drug development across multiple therapeutic modalities in its efforts to develop precision-based therapies to improve the lives of patients and their families. Iluzanebart, Vigil's lead clinical candidate, is a fully human monoclonal antibody agonist targeting human triggering receptor expressed on myeloid cells 2 (TREM2) in people with adult-onset leukoencephalopathy with axonal spheroids and pigmented glia (ALSP), a rare and fatal neurodegenerative disease. Vigil is also developing VG-3927, a novel small molecule TREM2 agonist, to treat common neurodegenerative diseases associated with microglial dysfunction, with an initial focus on Alzheimer's disease (AD) in genetically defined subpopulations.

Forward-Looking Statements

This press release includes certain disclosures that contain "forward-looking statements" of Vigil Neuroscience ("Vigil" or the "Company") that are made pursuant to the safe harbor provisions of the federal securities laws, including, without limitation, express or implied statements regarding: the potential of iluzanebart as a novel treatment option for patients with ALSP; Vigil's beliefs about TREM2 agonism's importance in Alzheimer's disease and ALSP; the progress and timing of the clinical development of Vigil's programs, including the availability of, and expected timing for reporting, interim and final data from both the IGNITE Phase 2 clinical trial; and the success and timing of the Company's interactions with regulatory authorities, including with the FDA regarding an accelerated development pathway. Forward-looking statements are based on Vigil's current expectations and are subject to inherent uncertainties, risks and assumptions that are difficult to predict. Factors that could cause actual results to differ include, but are not limited to, risks and uncertainties related to uncertainties inherent in the identification and development of product candidates, including the conduct of research activities and the conduct of clinical trials; uncertainties as to the availability and timing of results and data from clinical trials; whether results from preclinical studies and interim data from clinical trials will be predictive of the results of final data from clinical trials; the timing and content of additional regulatory information from the FDA; whether Vigil's cash resources will be sufficient to fund its foreseeable and unforeseeable operating expenses and capital expenditure requirements; as well as the risks and uncertainties identified in the Company's filings with the Securities and Exchange Commission (SEC), including Vigil's Quarterly Report on Form 10-Q for the quarter ended September 30, 2023 and in any subsequent filings Vigil makes with the SEC. Forward-looking statements contained in this announcement are made as of this date, and Vigil undertakes no duty to update such information except as required under applicable law. Readers should not rely upon the information on this page as current or accurate after its publication date.

Internet Posting of Information

Vigil Neuroscience routinely posts information that may be important to investors in the "Investors" section of its website at <https://www.vigilneuro.com>. The company encourages investors and potential investors to consult our website regularly for important information about Vigil Neuroscience.

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Interim Analyses of
ILLUMINATE Natural History Study &
IGNITE Phase 2 Trial for Iluzanebart (VGL101)
in ALSP
November 16, 2023



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Today's Agenda

4:30 - 4:35 PM (5 min)

Opening Remarks and Corporate Overview

Ivana Magovčević-Liebisch, PhD, JD

President & Chief Executive Officer, Vigil Neuroscience, Inc.

4:35 - 5:05 PM (30 min)

Presentation of Iluzanebart (VGL101) Interim Data from Phase 2 IGNITE Study in ALSP & Ongoing ILLUMINATE Natural History Study

David Gray, PhD

Chief Science Officer, Vigil Neuroscience, Inc.

5:05 - 5:15 PM (10 min)

ALSP Disease Overview & Perspective on Interim Results

David S. Lynch, MD, PhD

Consultant Neurologist, National Hospital for Neurology & Neurosurgery, Queen Square & UCL Institute of Neurology, London

Clinical Lead, Adult Inherited White Matter Disorders Highly Specialist Service, NHS England

5:15 - 5:30 PM (15 min)

Closing Remarks and Q&A Session

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Reminders



- Webinar scheduled to end at 5:30pm ET
- Presentation is available in investors section under Events & Presentations at www.vigilneuro.com
- Moderated Q&A session following prepared remarks
- To submit a written question, fill out form on webcast home page
- Webcast replay available later today on Vigil website under "Events & Presentations"

FORWARD-LOOKING STATEMENTS

This presentation contains “forward-looking statements,” which are made pursuant to the safe harbor provisions of the federal securities laws, including the Private Securities Litigation Reform Act of 1995. Any statements that are not statements of historical fact may be deemed to be forward-looking statements. Such statements may contain words such as “may,” “might,” “will,” “could,” “should,” “would,” “expect,” “intend,” “plan,” “prepare,” “look,” “seek,” “anticipate,” “believe,” “estimate,” “predict,” “potential,” “possible,” “continue,” “ongoing” or the negative of these terms, or other comparable words. These forward-looking statements include, among others, statements relating to: our plans to deliver precision-based therapies to improve the lives of patients and their families and to target a broad range of neurodegenerative diseases; plans to discover and develop novel therapeutics to leverage microglial biology, such as VGL101, VG-3927 and current or future product candidates, and to enable success in clinical development including demonstrating favorable safety and tolerability profiles and achieving therapeutic benefits for patients; beliefs about TREM2 agonism’s importance in ALSP and Alzheimer’s disease; beliefs about the profiles and potential, including the commercial potential, of our pipeline and the strength of our intellectual property position; our analyses and beliefs about data, including pathology and disease biomarkers and the signaling, engagement and potency as an agonism of TREM2 in microglia; plans and upcoming milestones, including estimated timelines, for our pipeline program development activities and pipeline expansion opportunities; expected timing and next steps regarding data announcement, clinical trial design and activities, and regulatory filings and potential approvals; expectations regarding our ability to develop and advance our current and future product candidates and discovery programs; and the belief that we are well-positioned to execute on our mission.

These forward-looking statements, which are only predictions, involve risks and uncertainties, many of which are beyond our control and are based on our current beliefs, expectations and assumptions regarding our business. As such, you should not place undue reliance on any forward-looking statements because such risks and uncertainties could cause actual results, performance or achievement to differ materially and adversely from those anticipated or implied in the forward-looking statements. Factors that could cause actual results to differ from those predicted in our forward-looking statements include, among others, risks and uncertainties related to product development, including delays or challenges that may arise in the development and regulatory approval of our current and future product candidates or programs; uncertainties as to the availability and timing of results and data from preclinical and clinical studies; the timing of our ability to submit and obtain regulatory clearance for investigational new drug applications and initiate additional clinical trials; our ability to initiate and complete our current and expected clinical trials; our ability to establish and maintain collaborations, strategic relationships and supply arrangements, or that we will not realize the intended benefits from such relationships or arrangements; whether our cash resources will be sufficient to fund our foreseeable and unforeseeable operating expenses and capital expenditure requirements; our ability to raise additional funding on favorable terms, or at all; the rate and degree of market acceptance and clinical utility of our product candidates; the ability and willingness of our third-party collaborators to continue research and development activities relating to our product candidates; the accuracy of our data analyses or estimates for the potential and market for our products; our ability, and the ability of our collaborators, to protect our intellectual property and to conduct activities for the development and commercialization of our candidates in view of third party intellectual property positions; our financial performance; our ability to retain and recruit key personnel, as well as the potential contribution of our employees and board to our growth and success as a Company; developments and projections relating to our competitors or our industry; our ability to work with the FDA to successfully remove the partial clinical hold on VG-3927; changes in general economic conditions and global instability, in particular economic conditions in the markets on which we or our suppliers operate; changes in laws and regulations; and those risks and uncertainties identified in our filings with the Securities and Exchange Commission (SEC), including under the heading “Risk Factors” in our most-recently filed Annual Report on Form 10-K or Quarterly Report on Form 10-Q, and such other risks and uncertainties that may be described in subsequent filings we may make with the SEC.

You should not rely upon forward-looking statements as predictions of future events or performance, or as a representation or warranty (express or implied) by us or any other person that we will achieve our objectives and plans in any specified time frame, on such specified terms, or at all. Although our management believes that the expectations reflected in our statements are reasonable, we cannot guarantee that the future results, performance or events and circumstances described in the forward-looking statements will be achieved or occur. These forward-looking statements speak only as of the date such statements are made. New risks and uncertainties may emerge from time to time, and it is not possible to predict all risks and uncertainties. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise.

A photograph of a man and a child walking together in a grassy field under a cloudy sky. The man is on the right, wearing a plaid shirt and dark pants, and the child is on the left, wearing a light-colored shirt and dark pants. They are holding hands. The image is overlaid with two large, semi-transparent blue circles. The text "vigilant for you®" is superimposed on the right circle.

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Corporate Overview

Ivana Magovčević-Liebisch, PhD, JD
Chief Executive Officer
Vigil Neuroscience, Inc.

Overall Summary

IGNITE & ILLUMINATE interim analyses provide further support for continued development of iluzanebart (VGL101) as potential ALSP therapy

- ILLUMINATE NHS continues to provide important insights and a rich dataset on biomarkers and clinical measures of disease progression in ALSP
 - Totality of data, including longitudinal progression observed on selected MRI measures and clinical endpoints, support engagement with regulatory authorities
- IGNITE Phase 2 interim analysis provides further support on safety and PK/PD profiles, and clinical strategy for VGL101 in ALSP
 - Favorable safety and tolerability data
 - CNS target engagement and downstream pharmacological activity consistent with VGL101 Phase 1 data for 20 mg/kg; increases in sCSF1R CSF levels, a key biomarker of ALSP disease pathology
 - Directionally supportive changes at 6 months for individual subjects on MRI and NfL biomarkers of disease progression
- Quality and consistency of data support continuation of IGNITE and ILLUMINATE without modification
- Vigil plans to engage with FDA to initiate discussions regarding potential accelerated development pathway for VGL101
- Data on all patients in 20 mg/kg and 40 mg/kg cohorts at 6 months expected in Q3 2024

Vigil Neuroscience



Vigil Neuroscience is a clinical-stage microglia-focused therapeutics company

- Founded ~3 years ago in July 2020
- Our purpose: to treat rare and common neurodegenerative diseases by restoring the vigilance of microglia, the brain's sentinel immune cells
- Precision-based strategy for developing microglia therapeutics
- Only company known to have 2 modalities for TREM2 agonism – monoclonal antibody and small molecule
- First company to show clinical data on TREM2 agonism as potential therapeutic approach in patients with neurodegenerative disease
- >60 highly dedicated team members

Featured Key Opinion Leader (KOL)



David S. Lynch, MD, PhD

*Consultant Neurologist, National Hospital for Neurology & Neurosurgery, Queen Square & UCL Institute of Neurology, London
Clinical Lead, Adult Inherited White Matter Disorders Highly Specialist Service, NHS England*

ILLUMINATE Natural History Study
Updated Interim Analysis

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ILLUMINATE Updated Interim Analysis: Executive Summary

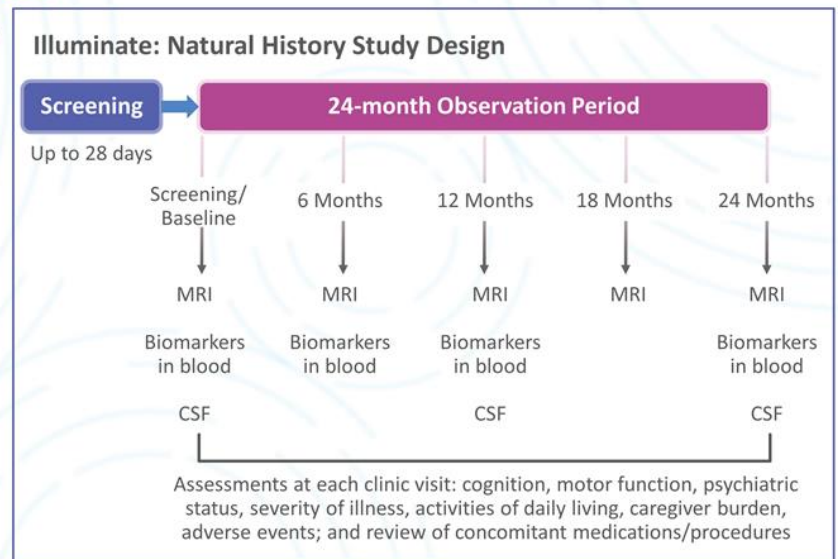
ILLUMINATE continues to provide important insights and a rich dataset on biomarkers and clinical measures of disease progression in ALSP over 12 months

- sCSF1R and NfL levels are remarkably altered in ALSP, which are key biomarkers of disease pathology
- Totality of data, including longitudinal progression observed on selected MRI measures and clinical endpoints, support engagement with regulatory authorities
- Quality and consistency of data in this interim analysis support chosen biomarkers for pharmacological activity
- MRI measurements on ventricular volume and gray matter volume are emerging as key indicators of disease progression
 - White matter lesion volume and corpus callosum MRI measurements are variable and less sensitive over 6 months
- Interim MoCA and CBFS data support their use as clinical endpoints in ALSP at 12 months

First ALSP Natural History Study: Design

ILLUMINATE – setting up for clinical success in ALSP

- **First ever multicenter[†], natural history study of ALSP patients with confirmed CSF1R gene mutation**
- **Sample size:** ~50 subjects (globally)
- **Objectives:**
 - Characterize biomarkers & clinical measures of disease progression in ALSP
 - Possibility for external comparator arm for interventional studies
 - Observation period: 24 months
- **Key assessments:**
 - MRI: Baseline & every 6 months
 - CSF biomarkers: Baseline, 12- & 24-months
 - Clinical assessments: Baseline, every 6 months



Key Eligibility Criteria

- ≥18 years of age with evidence of *CSF1R* gene mutation
- Symptomatic (Definitive) ALSP
 - Subjects who fulfill both of the following criteria:
 - More than two findings of clinical signs or symptoms in any of the following categories:
 - Cognitive impairment or psychiatric problem
 - Pyramidal signs on neurological examination
 - Extrapyrmidal signs, such as rigidity, tremor, abnormal gait, or bradykinesia
 - Epilepsy
 - MRI findings consistent with ALSP: specifically, bilateral cerebral white matter lesions
- Prodromal ALSP
 - MRI findings consistent with ALSP (bilateral cerebral white matter lesions)
 - Prodromal subjects may have none or up to 2 ALSP-related clinical signs or symptoms

Natural History Study Baseline Demography

	Prodromal (N=18)	Symptomatic (N=14)
Age at Screening (yrs.)		
number	18	14
Mean (SE)	45.7 (4.0)	44.1 (2.8)
Median	40.5	44
Sex		
Female: number (%)	11 (61.1%)	8 (57.1%)
Male: number (%)	7 (38.9%)	6 (42.9%)
Race		
White: number (%)	17 (94.4%)	14 (100.0%)
Black: number (%)	1 (5.6%)	0
Ethnicity		
Hispanic or Latino: number (%)	2 (11.1%)	1 (7.1%)
Not Hispanic or Latino: number (%)	16 (88.9%)	12 (85.7%)
Not Stated: number (%)	0	1 (7.1%)
Time from Diagnosis (yrs.)		
number	9	14
Mean (SE)	0.86 (0.39)	0.76 (0.33)
Median	0.17	0.38

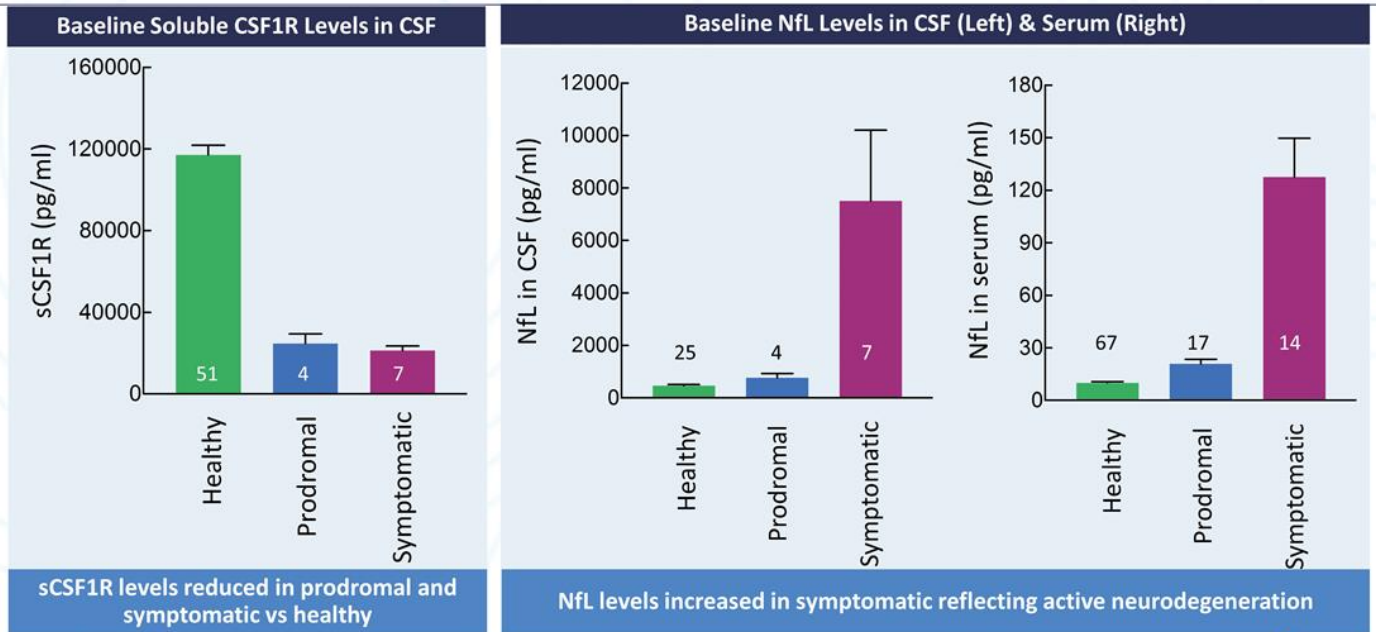


ILLUMINATE:

Updated Interim Analysis on Fluid Biomarkers

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Fluid Biomarker Baseline Levels Altered in ALSP



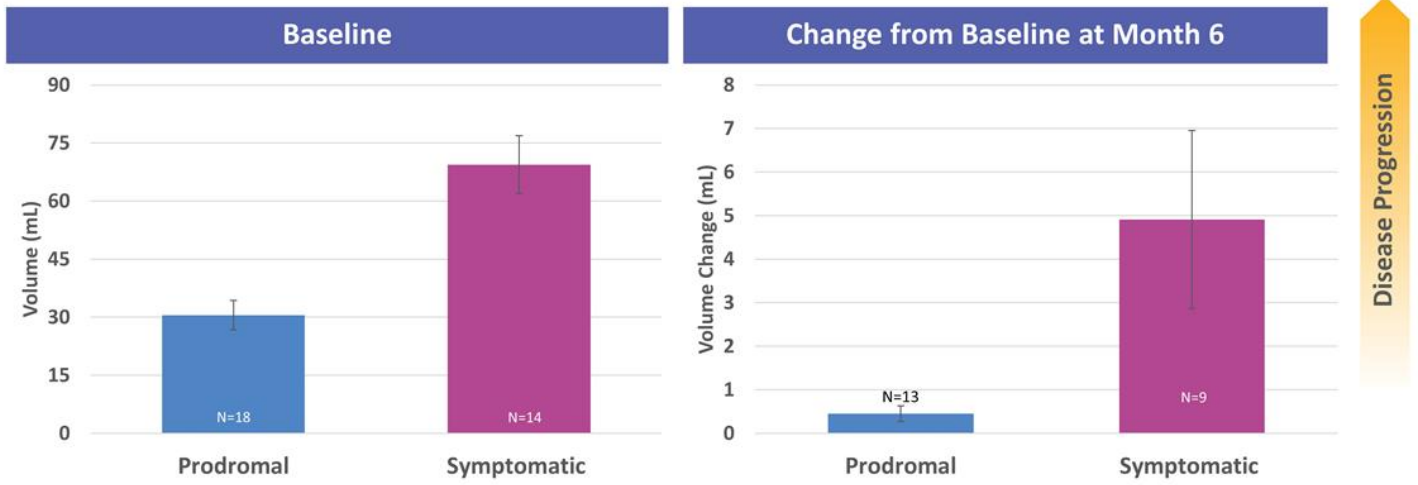


ILLUMINATE:
Updated Interim Analysis on MRI

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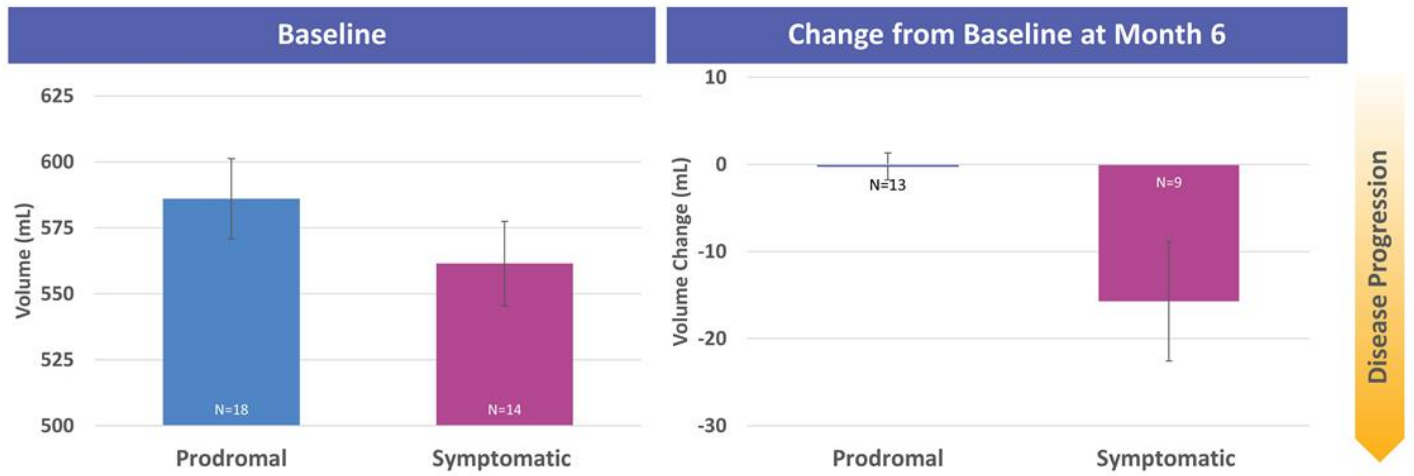
ILLUMINATE MRI Markers of Disease Progression: Ventricular Volume

Symptomatic participants demonstrated greater ventricular expansion at baseline and progression over 6 months relative to prodromal participants



ILLUMINATE MRI Markers of Disease Progression: Gray Matter Volume

Symptomatic participants demonstrated greater gray matter atrophy at baseline and progression over 6 months relative to prodromal participants



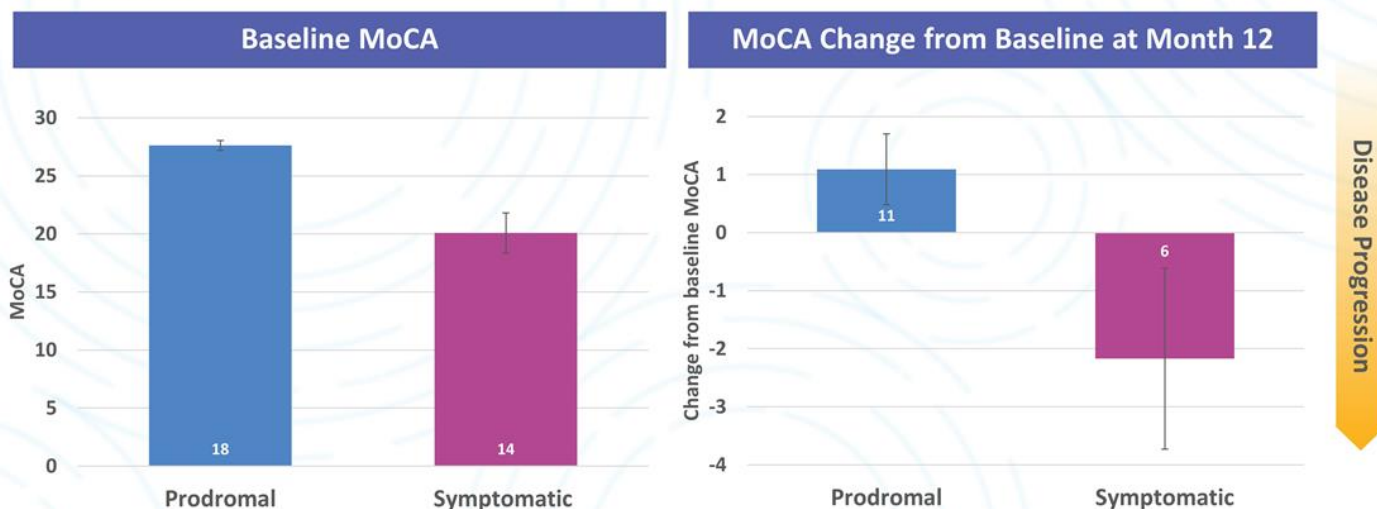


**ILLUMINATE:
Interim Analysis on Clinical Endpoints**

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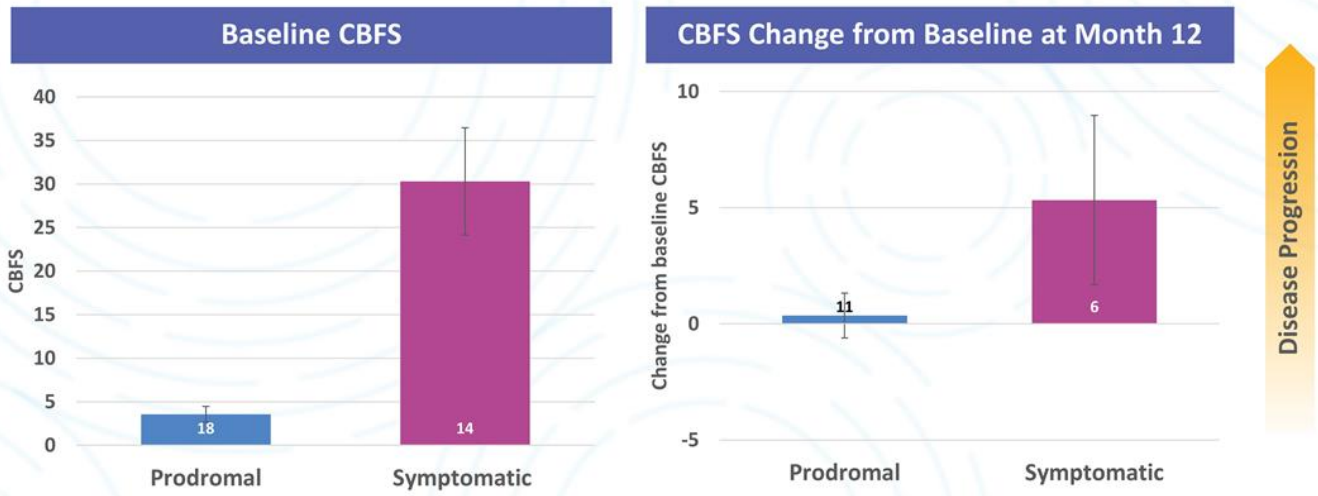
ILLUMINATE Clinical Endpoint: Montreal Cognitive Assessment (MoCA)

Symptomatic participants demonstrated greater impairment at baseline and progression at 12 months



ILLUMINATE Clinical Endpoint: Cortical Basal Ganglia Functional Scale (CBFS)

Symptomatic participants demonstrated greater impairment at baseline and progression at 12 months



**IGNITE Phase 2 Proof-of-Concept Trial of
Iluzanebart (VGL101) in ALS
1st Interim Analysis**



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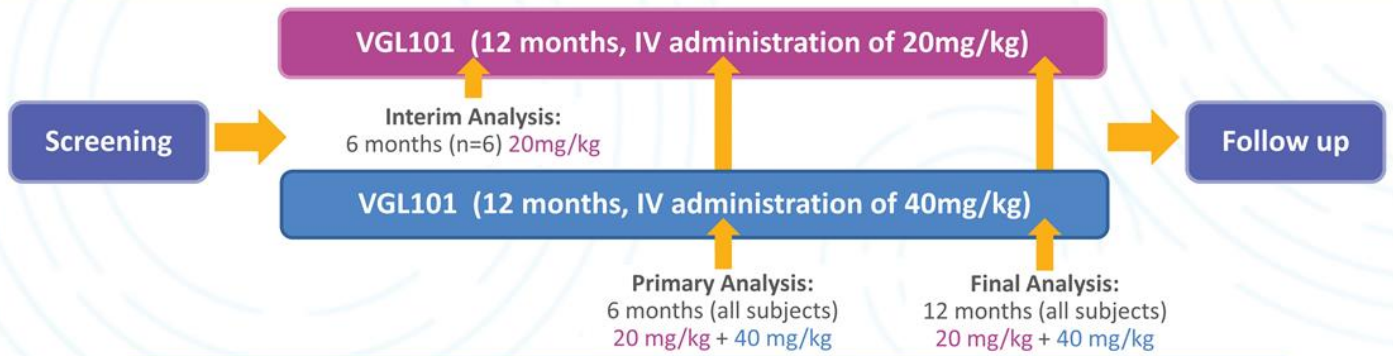
Iluzanebart (VGL101) is an investigational therapy and has not been reviewed or approved by any regulatory authority

IGNITE Phase 2 Trial 1st Interim Analysis: Executive Summary

IGNITE interim analysis on 6 patients at 6 months (20 mg/kg) further supports iluzanebart (VGL101) safety and PK/PD profiles, and clinical strategy

- Favorable safety and tolerability data
 - Most patients did not report treatment-related adverse events (AEs)
 - No treatment-related severe or serious AEs
 - No discontinuations due to AEs
- Predictable PK and brain penetration profile consistent with VGL101 Phase 1 data in healthy volunteers
- CNS target engagement and downstream pharmacological activity consistent with VGL101 Phase 1 data in healthy volunteers for 20 mg/kg
 - Reduction in sTREM2 CSF levels and increase in osteopontin CSF levels, indicating CNS target engagement
 - Increases in sCSF1R CSF levels, a key biomarker of ALSP disease pathology
- Directionally supportive changes at 6 months for individual subjects on MRI and NfL biomarkers of disease progression
- Quality and consistency of data on 6 subjects after 6 months support continuation of IGNITE and ILLUMINATE without modification

Iluzanebart (VGL101) ALSP Phase 2 Open-Label Proof-of-Concept Trial Design



Study Population	<ul style="list-style-type: none"> Patients with symptomatic ALSP related to <i>CSF1R</i> gene mutation
Study Design	<ul style="list-style-type: none"> Open-label, ~15 patients
Treatment Duration	<ul style="list-style-type: none"> 12 months (with opportunity for further extension), monthly IV administration
Outcome Assessments	<ul style="list-style-type: none"> Safety and tolerability of VGL101 MRI-based assessment of brain volume and white matter lesions CSF biomarkers for neurodegeneration and target engagement Clinical outcome measures and PK

Iluzanebart (VGL101) ALSP Phase 2 Patient Population

Key Clinical Inclusion Criteria

- Documentation of a *CSF1R* gene mutation
- Clinical symptoms consistent with ALSP
- MRI findings consistent with ALSP
- Mild and early-moderate stages defined by cognitive and ambulation status

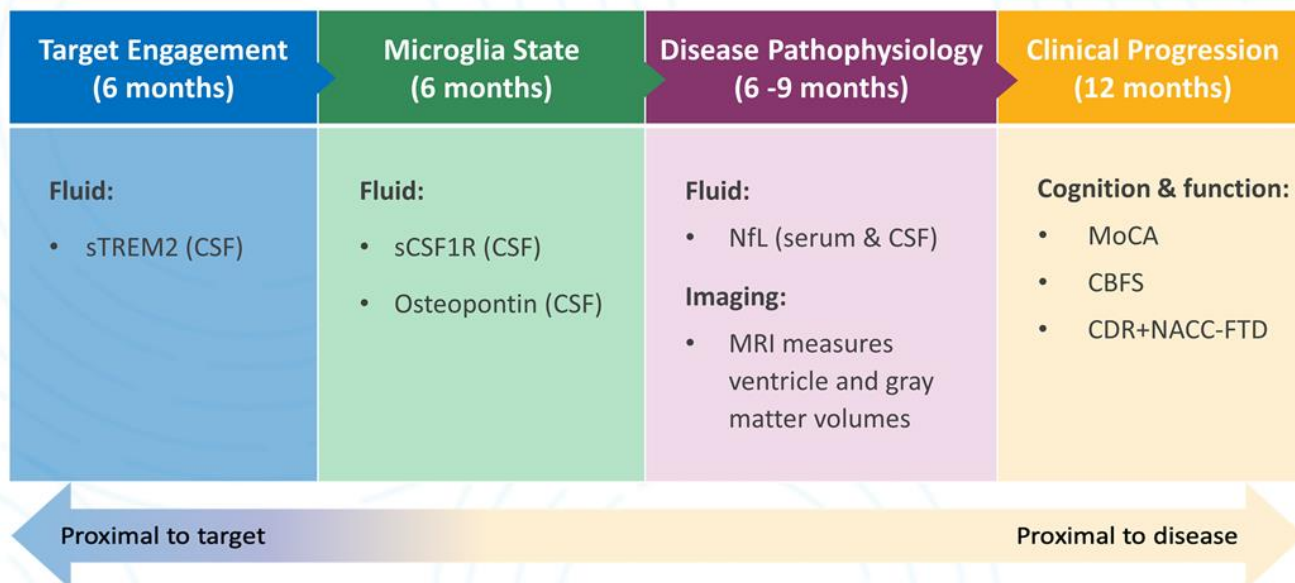
Key Clinical Exclusion Criteria

- Any neurological disease that poses a risk to the participant or produces symptoms like ALSP
- Patients unable to complete study procedures
- Comorbidities not permitting safe study participation

Phase 2 Baseline Demographics

	Phase 2 Baseline (N=6)
Age at Screening (yrs.)	
n	6
Mean (SE)	40.3 (3.3)
Median	41
Sex	
Female: n (%)	2 (33.3%)
Male: n (%)	4 (66.7%)
Race	
White: n (%)	5 (83.3%)
Black: n (%)	1 (16.7%)
Ethnicity	
Hispanic or Latino: n (%)	0
Not Hispanic or Latino: n (%)	5 (83.3%)
Not Stated: n (%)	1 (16.7%)
Time from Diagnosis (yrs.)	
Mean (SE)	0.94 (0.33)
Median	0.71

IGNITE Biomarkers of Pharmacology, Disease Progression and Clinical Endpoints



IGNITE Interim Safety Data Summary

Favorable safety & tolerability profile

Summary of Safety Outcomes (N=6) ^a	
	Patients with TEAEs
Any AE, n (%)	4 (66.7)
Treatment-related AEs, n (%)	2 (33.3)
Mild ^c	2 (33.3)
Moderate ^c	1 (16.7)
Severe	0
Treatment-related AEs occurring in ≥2 participants, n (%)	0
SAEs, n (%)	1 (16.7)
Treatment-related serious AEs, n (%)	0
Discontinuation of study drug due to AEs, n (%)	0

^aIGNITE Ph2 interim data cut as of 22 September 2023

^bEvents determined by investigator to be "related" to study drug.

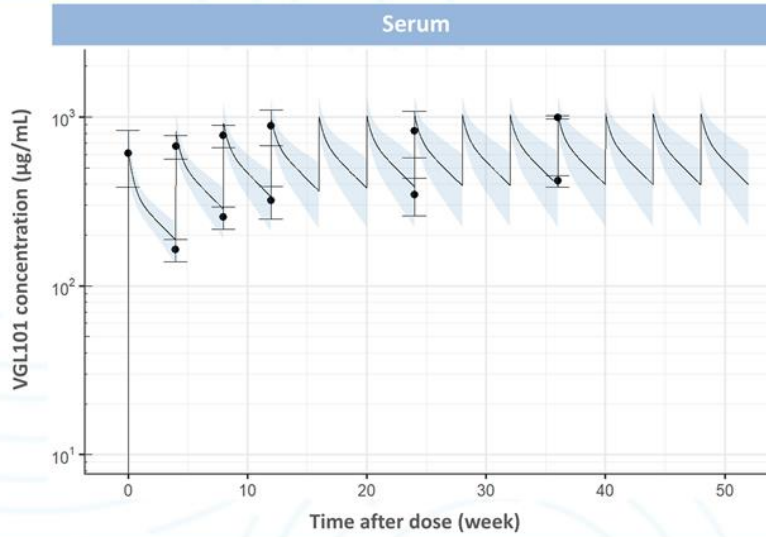
^cMild to moderate AEs include 1 patient with mild hepatic enzyme increase and; 1 patient with both mild irritability, tremor and lethargy, and moderate pruritus, lethargy and amnesic disorder (memory loss)

AE: adverse event; SAE: serious adverse event; TEAE: treatment emergent adverse event

Overview of Safety & Tolerability:

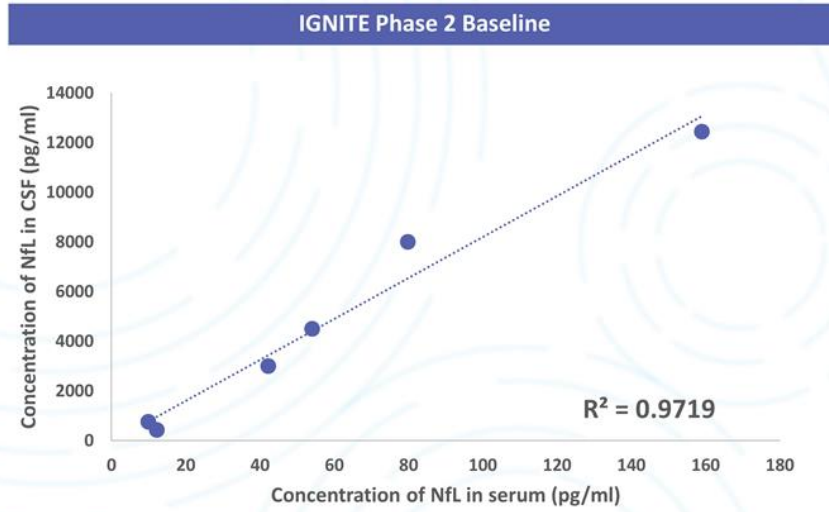
- VGL101 was generally well tolerated
- Majority of patients did not report treatment-related AEs
- No treatment-related severe AE or SAE
- No discontinuations due to AE
- One patient was briefly hospitalized for non-treatment related SAEs of abdominal pain, asthenia, vomiting, and diarrhea
- No hematological AEs
- No imaging-related abnormalities

Iluzanebart (VGL101) PK in IGNITE: Predictable and Consistent with Phase 1



Brain penetration and achieving projected CSF therapeutic exposures:
~0.5% CSF-to-serum ratio for ALSP patients (vs 0.1 – 0.2% for healthy subjects in Phase 1)

NfL levels in CSF and Serum were Highly Correlated

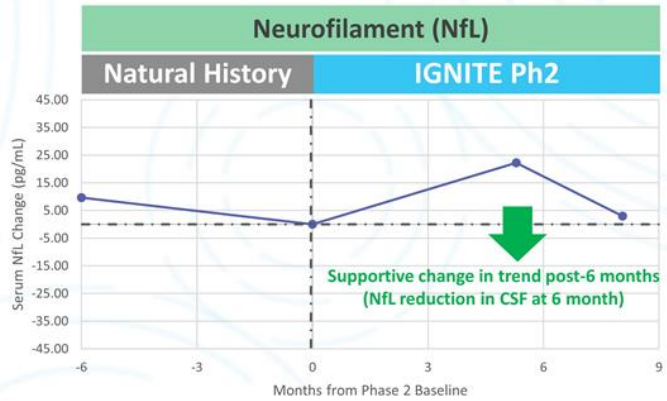


Fluid Biomarker Data: Patient A

Demonstrated directionally supportive changes in all fluid biomarkers

CSF Biomarker	Treatment effect	
	Hypothesized*	Observed**
sTREM2	↓	-26%
sCSF1R	↑	+34%
Osteopontin	↑	+32%

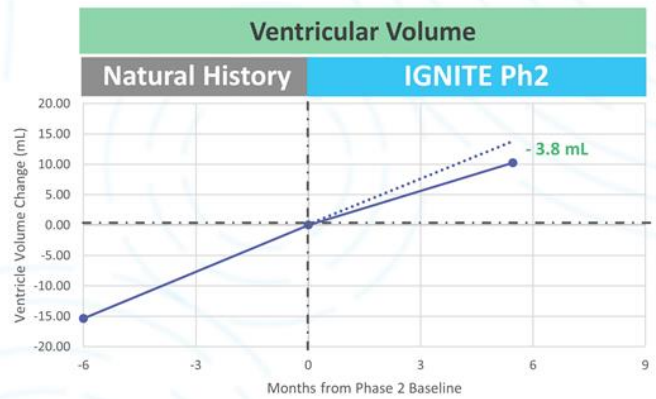
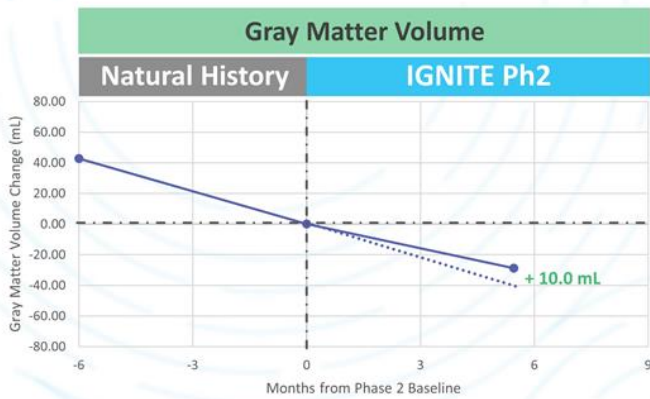
*Arrows denote directional change hypothesized to be consistent with target engagement and increased microglial activity
 **Change from baseline at 6-month visit



Serum NfL at Phase 2 baseline: 80 pg/mL
 Serum NfL change in Natural History is estimated using patient's own subject-level regression of ILLUMINATE and IGNITE baseline data

MRI Biomarker Data: Patient A

Demonstrated directionally supportive changes in both MRI measures



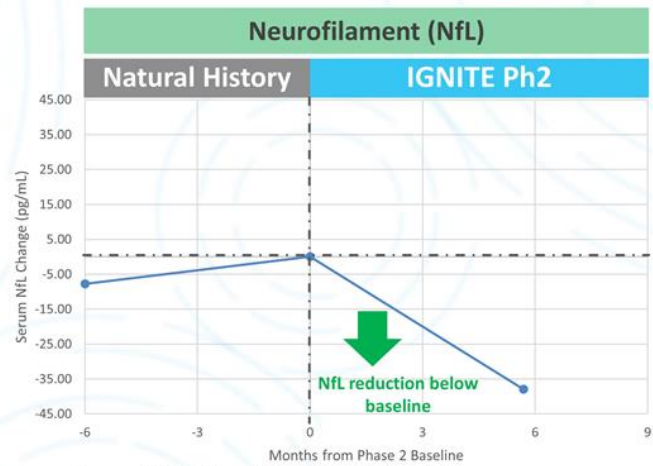
..... MRI change in Natural History estimated using patient own's subject-level regression of ILLUMINATE data

Fluid Biomarker Data: Patient B

Demonstrated directionally supportive changes in most fluid biomarkers

CSF Biomarker	Treatment effect	
	Hypothesized*	Observed**
sTREM2	↓	+60%
sCSF1R	↑	+32%
Osteopontin	↑	+7%

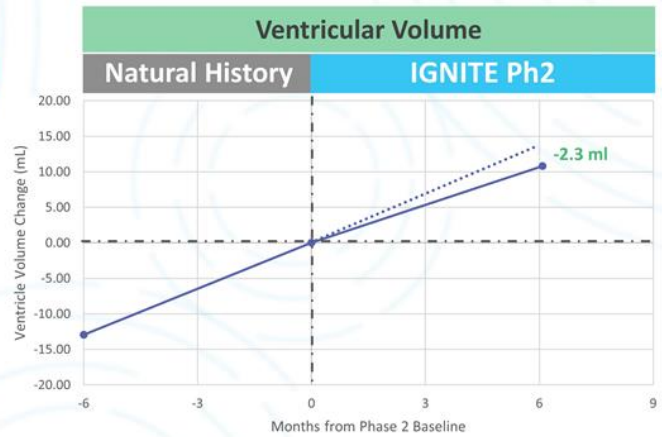
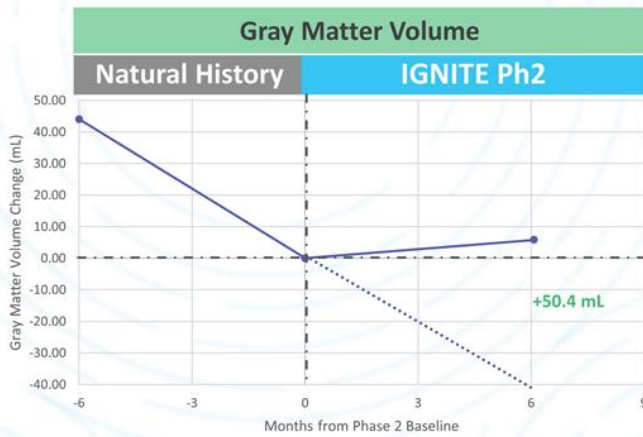
*Arrows denote directional change hypothesized to be consistent with target engagement and increased microglial activity
 **Change from baseline at 6-month visit



Serum NfL at Phase 2 baseline: 159 pg/mL
 Serum NfL change in Natural History is estimated using patient's own subject-level regression of ILLUMINATE and IGNITE baseline data

MRI Biomarker Data: Patient B

Demonstrated directionally supportive changes in both MRI measures



..... MRI change in Natural History estimated using patient own's subject-level regression of ILLUMINATE data

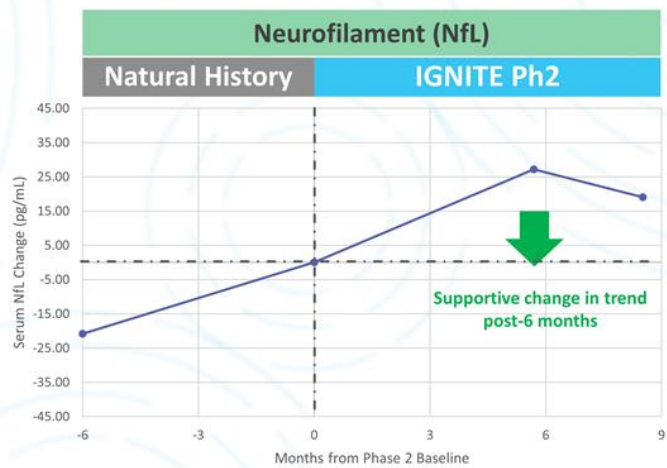
Fluid Biomarker Data: Patient C

Demonstrated directionally supportive changes in most fluid biomarkers

CSF Biomarker	Treatment effect	
	Hypothesized*	Observed**
sTREM2	↓	-5%
sCSF1R	↑	-5%
Osteopontin	↑	+20%

*Arrows denote directional change hypothesized to be consistent with target engagement and increased microglial activity

**Change from baseline at 6-month visit



Serum NfL at Phase 2 baseline: 42 pg/mL

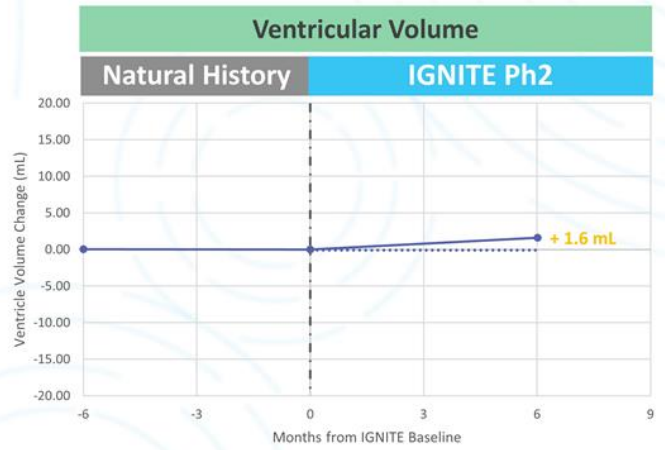
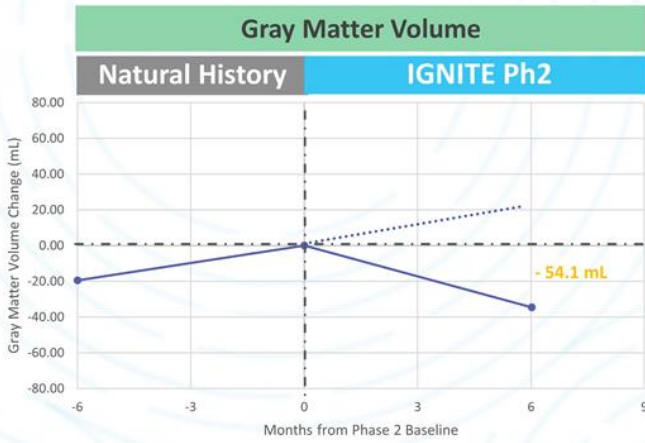
Serum NfL change in Natural History is estimated using patient's own subject-level regression of ILLUMINATE and IGNITE baseline data



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MRI Biomarker Data: Patient C

Did not demonstrate supportive changes in MRI measures



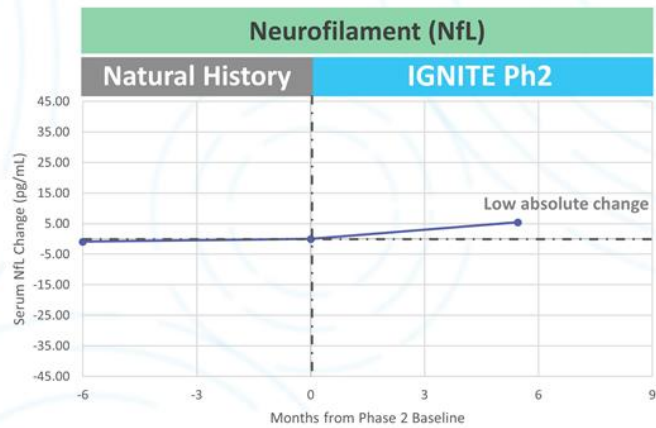
..... MRI change in Natural History estimated using patient own's subject-level regression of ILLUMINATE data

Fluid Biomarker Data: Patient D

Demonstrated directionally supportive changes in all fluid biomarkers

CSF Biomarker	Treatment effect	
	Hypothesized*	Observed**
sTREM2	↓	-20%
sCSF1R	↑	+16%
Osteopontin	↑	+18%

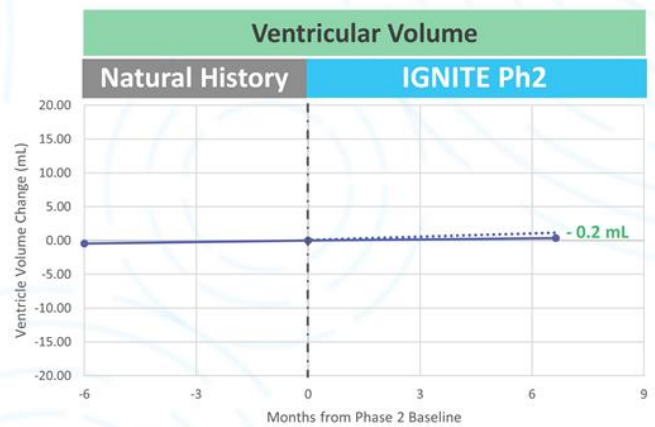
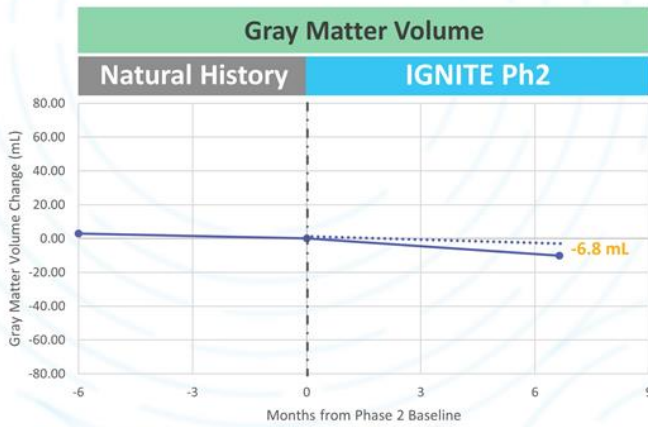
*Arrows denote directional change hypothesized to be consistent with target engagement and increased microglial activity
 **Change from baseline at 6-month visit



Serum NfL at Phase 2 baseline: 10 pg/mL
 Serum NfL change in Natural History is estimated using patient's own subject-level regression of ILLUMINATE and IGNITE baseline data

MRI Biomarker Data: Patient D

Demonstrated directionally supportive change in ventricular volume



..... MRI change in Natural History estimated using patient own's subject-level regression of ILLUMINATE data

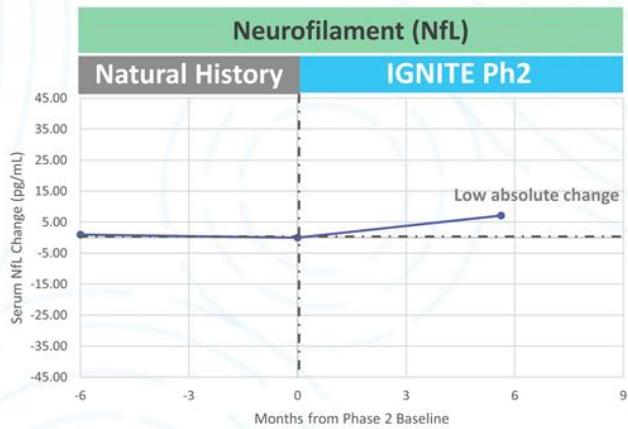
Fluid Biomarker Data: Patient E

Demonstrated directionally supportive changes in most fluid biomarkers

CSF Biomarker	Treatment effect	
	Hypothesized*	Observed**
sTREM2	↓	-26%
sCSF1R	↑	+0%
Osteopontin	↑	+9%

*Arrows denote directional change hypothesized to be consistent with target engagement and increased microglial activity

**Change from baseline at 6-month visit

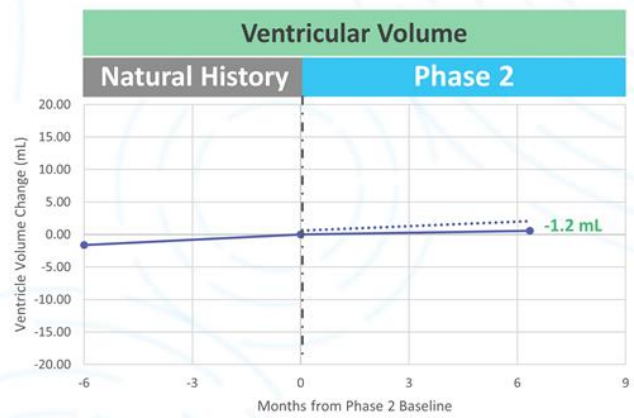
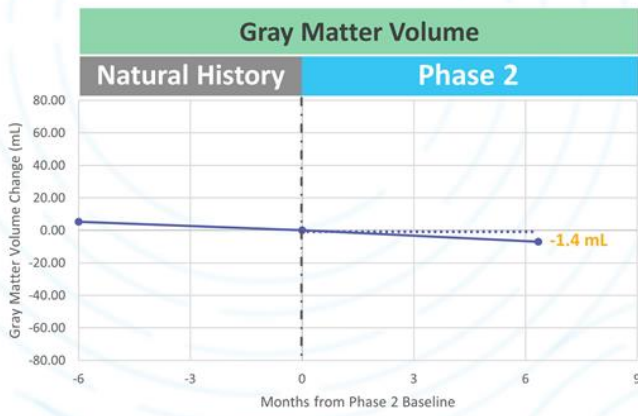


Serum NfL at Phase 2 baseline: 12 pg/mL

Serum NfL change in Natural History is estimated using patient's own subject-level regression of ILLUMINATE and IGNITE baseline data

MRI Biomarker Data: Patient E

Demonstrated directionally supportive change in ventricular volume



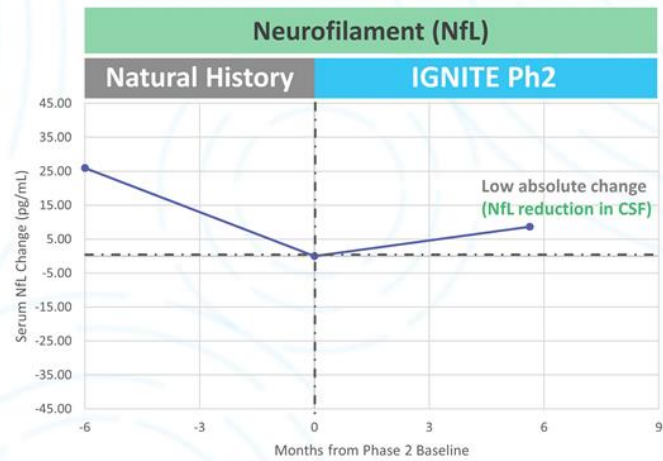
..... MRI change in Natural History estimated using patient own's subject-level regression of ILLUMINATE data

Fluid Biomarker Data: Patient F

Demonstrated directionally supportive changes in most fluid biomarkers

CSF Biomarker	Treatment effect	
	Hypothesized*	Observed**
sTREM2	↓	+14%
sCSF1R	↑	+24%
Osteopontin	↑	+118%

*Arrows denote directional change hypothesized to be consistent with target engagement and increased microglial activity
 **Change from baseline at 6-month visit



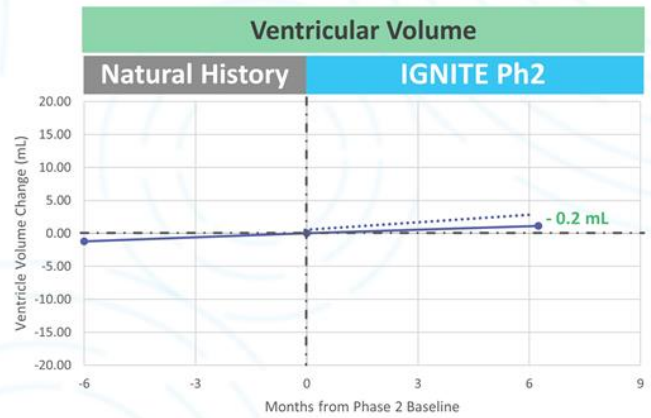
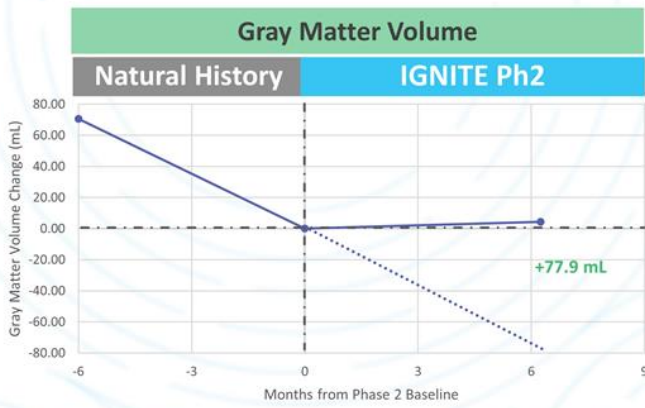
Serum NfL at Phase 2 baseline: 54 pg/mL
 Serum NfL change in Natural History is estimated using patient's own subject-level regression of ILLUMINATE and IGNITE baseline data



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MRI Biomarker Data: Patient F

Demonstrated directionally supportive changes in both MRI measures



..... MRI change in Natural History estimated using patient own's subject-level regression of ILLUMINATE data

MRI Changes on Gray Matter and Ventricular Volumes

Directional change indicating reduced progression rate in ventricular expansion and gray matter atrophy in certain patients post-iluzanebart (VGL101) treatment vs. pre-treatment

Region	Rate of Progression
Ventricles	5 out of 6 patients had directional change supporting reduced rate of ventricular expansion ¹
Gray Matter Volume	3 out of 6 patients had directional change supporting reduced rate of atrophy ²

1. Patients A, B, D, E and F; 2. Patients A, B and F

Changes in Biomarker Levels in CSF and Serum

Encouraging directional changes in CSF and serum levels of biomarkers in certain patients post-iluzanebart (VGL101) treatment vs. pre-treatment

Region	Response on Fluid Biomarkers
sCSF1R	4 out of 6 patients showed an increase over baseline (range: 16 – 34 %)¹
NfL	3 out of 6 patients showed changes in serum NfL trajectory including: <ul style="list-style-type: none">▪ 1 patient showed reduced serum NfL at 6 months from baseline²▪ 2 patients showed reduced serum NfL between 6 and 9 months³ 2 patients out of 6 patients with low serum NfL baseline (age-normal range) showed low absolute changes in serum NfL at 6 months⁴ 2 out of 6 patients showed reduced CSF NfL at 6 months⁵

1. Patients A, B, D and F; 2. Patient B; 3. Patients A & C; 4. Patients D & E; 5. Patients A & F

Overall Summary

IGNITE & ILLUMINATE interim analyses provide further support for continued development of iluzanebart (VGL101) as potential ALSP therapy

- ILLUMINATE NHS continues to provide important insights and a rich dataset on biomarkers and clinical measures of disease progression in ALSP
 - Totality of data, including longitudinal progression observed on selected MRI measures and clinical endpoints, support engagement with regulatory authorities
- IGNITE Phase 2 interim analysis provides further support on safety and PK/PD profiles, and clinical strategy for VGL101 in ALSP
 - Favorable safety and tolerability data
 - CNS target engagement and downstream pharmacological activity consistent with VGL101 Phase 1 data for 20 mg/kg; increases in sCSF1R CSF levels, a key biomarker of ALSP disease pathology
 - Directionally supportive changes at 6 months for individual subjects on MRI and NfL biomarkers of disease progression
- Quality and consistency of interim data support continuation of IGNITE and ILLUMINATE without modification
- Vigil plans to engage with FDA to initiate discussions regarding potential accelerated development pathway for VGL101
- Data on all patients in 20 mg/kg and 40 mg/kg cohorts at 6 months expected in Q3 2024

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ALSP Background & Perspectives on ILLUMINATE & IGNITE Interim Data



David S. Lynch, MD, PhD

Consultant Neurologist

National Hospital for Neurology & Neurosurgery, Queen Square & UCL Institute of Neurology, London

Clinical Lead

Adult Inherited White Matter Disorders Highly Specialist Service, NHS England

Adult-onset Leukoencephalopathy with Axonal Spheroids and Pigmented Glia (ALSP)

- Rare autosomal dominant neurodegenerative disorder caused by mutation in the CSF1R gene¹⁻⁷
 - Primarily causing degeneration of brain white matter
 - Now recognized as ALSP ICD-10-CM Code G93.44
 - Estimated to affect 10%-25% of known patients with adult-onset leukoencephalopathies
- Adult onset with rapid disease progression¹⁻²
 - Incapacitation: 3-4 years from disease onset (average)
 - Death: 6-8 years from disease onset (average)
- No approved therapies

CSF1R, colony stimulating factor-1 receptor.

1. Konno T, et al. *Eur J Neurol*. 2017;24(1):37-45. 2. Papapetropoulos S, et al. *Front Neurol*. 2022;12:788168. 3. Lynch DS, et al. *J Neurol Neurosurg Psychiatry*. 2016;87(5):512-519. 4. Lynch DS, et al. *J Neurol Neurosurg Psychiatry*. 2019;90(5):543-554. 5. Marotti JD, et al. *Acta Neuropathol*. 2004;107(6):481-488. 6. Wider C, et al. *Neurology*. 2009;72(22):1953-1959. 7. NORD. Accessed Oct 14, 2023. <https://rarediseases.org/rare-diseases/adult-onset-leukoencephalopathy-with-axonal-spheroids-and-pigmented-glia/>.

ALSP Symptoms^{1,2}

Cognitive

- Personality change
- New anxiety, depression
- Difficulty in work, decision making
- Inappropriate behavior
- Memory problems
- Word-finding and speech problems

Motor

- Gait and balance problems
- Stiffness, slowness of movement
- Incoordination, tremor
- Swallowing and speech difficulty

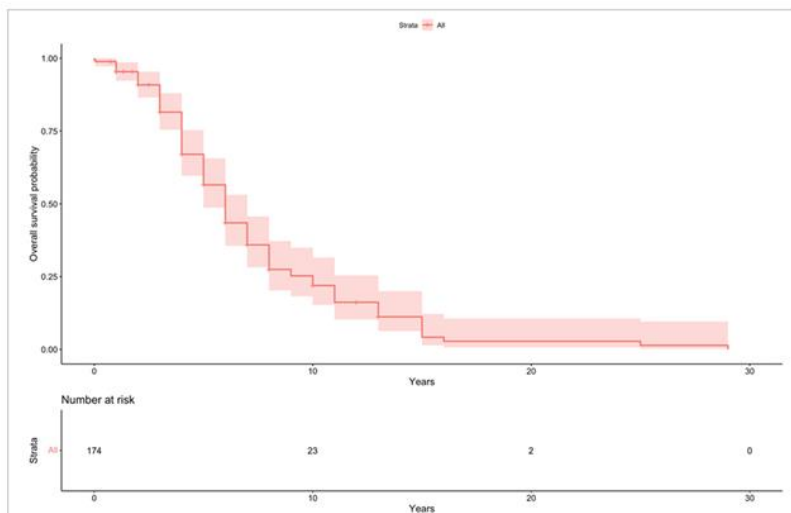
As the disease progresses, symptoms multiply and patients become more immobile, to the point of being bedbound and totally dependent for care

1. Sundal C, et al. CSF1R-Related Adult-Onset Leukoencephalopathy with Axonal Spheroids and Pigmented Glia. In: Adam MP MG, et al, ed. *GeneReviews*® [Internet]. Seattle, WA: University of Washington, Seattle; 1993-2023. 2. Konno T, et al. *Eur J Neurol*. 2017;24(1):37-45.

ALSP Progression

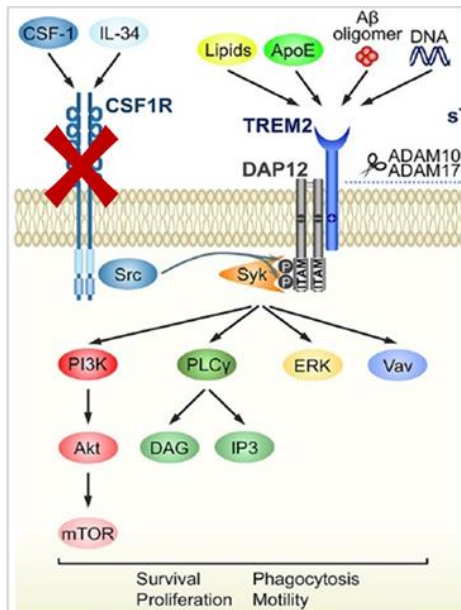
Relentlessly Progressive

- 75% survival for approximately 3 years, 50% for 5 years, 25% for 10 years and < 5% for 30 years



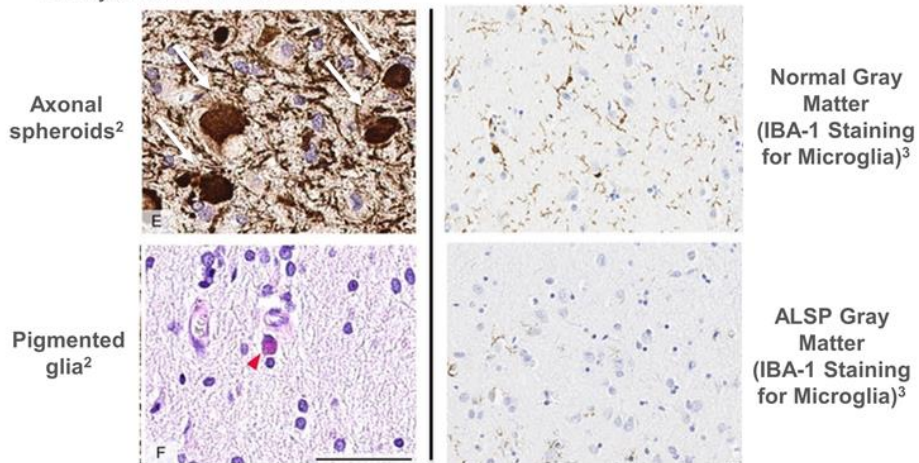
Kaplan-Meier estimates of survival probability (%) and number of patients at risk of death following diagnosis at 10-year intervals were performed with survival time and disease duration related to age of onset of symptoms in patients with ALSP¹

ALSP Pathophysiology – Genetically Caused¹



Loss of function mutations in the *CSF1R* gene leading to

- Microglia loss and dysfunction
- Structural and pathophysiological abnormalities of axons
- Demyelination of white matter



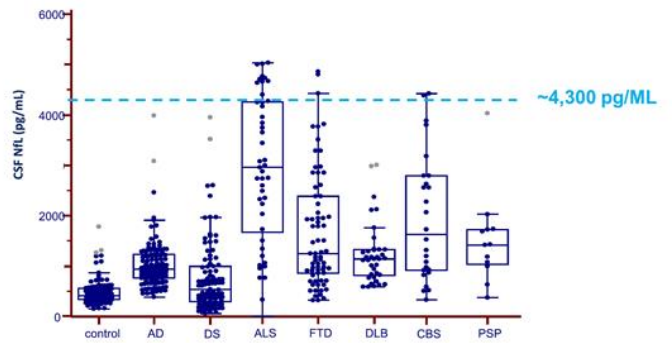
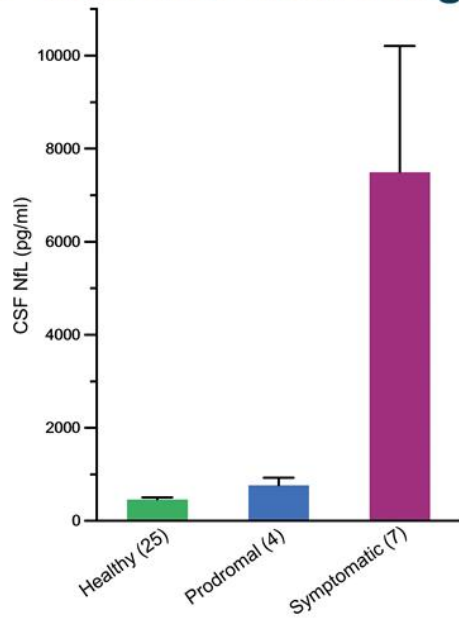
Left figure: Konishi & Kiyama Front. Cell. Neurosci. 2018; 1. Papapetropoulos S, et al. Front Neurol. 2022; 2. Lynch DS, et al. J Neurol Neurosurg Psychiatry. 2016; 3. Kempthorne et al. Acta Neuropathologica. 2020

Demonstration of ALSP Progression on MRI

MRI scans of a symptomatic participant in Vigil's ALSP natural history study, ILLUMINATE



Significantly Elevated Serum NfL Levels in Symptomatic ALSP vs Other Neurodegenerative Diseases



Left figure: Interim data from Vigil's Natural History Study in ALSP, ILLUMINATE; right figure: Delaby et al Scientific Reports 2020; control: cognitively healthy participants; AD: Alzheimer's Disease; DS: Down Syndrome; ALS: Amyotrophic Lateral Sclerosis; FTD: Frontotemporal Dementia; DLB: Dementia with Lewy Bodies; CBS: Corticobasal Syndrome; PSP: Progressive Supranuclear Palsy

Vigil's ILLUMINATE & IGNITE Interim Data – Key Takeaways

- ILLUMINATE & IGNITE represent 1st ever trials of their kind in ALSP
 - Increasing overall understanding of disease pathophysiology, and biomarkers for disease progression and treatment response
- Positive interim data on VGL101's potential as treatment for ALSP, a devastating disease with no approved therapy
 - Favorable safety and tolerability with an accessible once monthly IV administration
 - Observed differential sCSF1R response in ALSP patients (vs HVs), indicating rescue of microglial activity in ALSP setting
 - Very encouraging changes in MRI and NfL at 6 months compare favorably vs HSCT
 - Indicating impact on disease progression
 - 5 out of 6 patients showed reduction in rate of ventricular expansion
 - Slowing or reduction in ventricular expansion are clinically relevant
 - Even when it works, HSCT needs at least 1 year for observable MRI changes with significant safety/tolerability risks
 - 4 out of 6 patients showed reduction in NfL trajectory in serum or CSF, indicating an impact on neuronal degeneration
 - 1st targeted therapeutic candidate with clinical data in ALSP patients
 - 1st data on TREM2 agonism as a therapeutic approach in a neurodegenerative disease setting
- Excited to continue to participate in IGNITE to generate more data and further evaluate this candidate

A photograph of a man and a child walking together in a grassy field under a cloudy sky. The man is on the right, wearing a plaid shirt and dark pants, and the child is on the left, wearing a light-colored shirt and dark pants. They are walking away from the camera. The image is overlaid with two large, semi-transparent blue circles.

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Closing Remarks

Ivana Magovčević-Liebisch, PhD, JD
Chief Executive Officer
Vigil Neuroscience, Inc.

Iluzanebart (VGL101): The Only Targeted Therapeutic in Development for ALS



- ✓ First company to show clinical data on TREM2 agonism as a potential therapeutic approach in patients with a neurodegenerative disease
- ✓ VGL101 demonstrated favorable safety and tolerability, including no hematologic adverse events
- ✓ Clear CNS target engagement and downstream pharmacological activity at 20 mg/kg consistent with Phase 1 data
- ✓ Directionally supportive changes in individual patients at 6 months on MRI and NfL biomarkers
- ✓ Natural History Study continued to provide critical insights on MRI and NfL biomarkers; sCSF1R emerging as key biomarker of ALS disease pathology
- ✓ Phase 2 IGNITE results from all patients in 20 mg/kg and 40 mg/kg cohorts at 6 months expected in Q3 2024



Q&A

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