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

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 UNDER THE SECURITIES EXCHANGE ACT OF 1934

For the month of May, 2025.

Commission File Number: 001-40530

GH Research PLC

(Exact name of registrant as specified in its charter)

Joshua Dawson House
Dawson Street
Dublin 2
D02 RY95
Ireland
(Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:

Form 20-F ☒ Form 40-F ☐

INFORMATION CONTAINED IN THIS REPORT ON FORM 6-K

GH Research PLC (the "Company") recently announced its attendance at the American Society of Clinical Psychopharmacology ("ASCP") Annual Meeting, which is scheduled to take place from May 27-30, 2025, in Scottsdale, Arizona (the "Congress").

The Company will deliver a presentation as part of the Pharmaceutical Pipeline session during the Congress.

A copy of the presentation to be delivered during the Pharmaceutical Pipeline session, presented by Michael E. Thase, is attached hereto as Exhibit 99.1.

EXHIBIT INDEX

Exhibit No.	Description
99.1	Presentation to be delivered by Michael E. Thase with Title: Safety and Efficacy of GH001 in Treatment-Resistant Depression: Results From a Phase 2b, Double-Blind, Randomized Controlled Trial

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, thereunto duly authorized.

Date: May 27, 2025

GH Research PLC

By: /s/ Julie Ryan
Name: Julie Ryan
Title: Vice President, Finance

Safety and Efficacy of GH001 in Treatment-Resistant Depression: Results From a Phase 2b, Double-Blind, Randomized Controlled Trial

Michael E. Thase, MD
Department of Psychiatry, University of Pennsylvania, and Corporal Michael J. Crescenz Veterans Affairs Medical Center, Philadelphia, PA

Coauthors: Bernhard T. Baune, Narcís Cardoner, Rosa Maria Dueñas Herrero, Luboš Janů, John R. Kelly, Shane J. McInerney, Alexander Nawka, Tomáš Páleníček, Andreas Reif, Víctor Pérez Sola, Madhukar H. Trivedi, Velichka Valcheva, Eduard Vieta, Wiesław J. Cubała

Disclosures (1 of 2)

Author	Disclosures
Michael E. Thase	Grants – Acadia, Alkermes, Axsome, Intra-Cellular Therapies, Janssen, National Institute of Mental Health, Otsuka, Patient-Centered Outcomes Research Institute (PCORI), and Takeda. Advisory Boards – Autobahn Therapeutics, Axsome, Clexio Biosciences, Gerson Lehrman Group, GH Research, Lundbeck, Janssen, Johnson & Johnson, Luye Pharma, Merck, Object Pharma, Otsuka, Pfizer, Sage, Seelos Therapeutics, Sunovion, and Takeda. Royalties – American Psychiatric Association Foundation, Guilford Publications, Herald House, Wolters Kluwer, and W W Norton & Company
Bernhard T. Baune	Consultant – National Health and Medical Research Council (Australia). Honoraria – Angelini, AstraZeneca, Biogen, BMS, Boehringer Ingelheim, Johnson & Johnson, LivaNova, Lundbeck, Medscape, Otsuka, Pfizer, Roche, Servier, Sumitomo Pharma, Sunovion, Teva, and Wyeth. Advisory boards – Biogen, Boehringer Ingelheim, Janssen-Cilag, LivaNova, Lundbeck, Medscape, Novartis, Otsuka, and Teva. Research grants from private industries or nonprofit funds – AstraZeneca, BMBF (Germany), BMG (Germany), DFG (Germany), ERA PerMed, Fay Fuller Foundation, Horizon Europe (European Union), James & Diana Ramsay Foundation (Adelaide), Johnson & Johnson, Lundbeck, La Marató de TV3, National Health and Medical Research Council (Australia), Sanofi-Synthélabo, and Wellcome Trust (UK)
Narcís Cardoner	Grants – Spanish Ministry of Health, Spanish Ministry of Science and Innovation (CIBERSAM), Strategic Plan for Health Research and Innovation (PERIS) 2016–2020, Recercaixa, and La Marató de TV3. Honoraria – Adamed, Elsevier, Exeltis, Janssen, Lundbeck, Pfizer, and Servier. Advisory Boards – Angelini, Esteve, Janssen, Lundbeck, Novartis, Pfizer, and Viatris. Lectures/Meetings – Janssen, Lundbeck, and Pfizer
Rosa Maria Dueñas Herrero	Principal investigator – Beckley Psytech and GH Research. Subinvestigator – Compass
Luboš Janů	Principal investigator – GH Research
John R. Kelly	Principal investigator – Compass, GH Research, and Transcend Therapeutics. Consultant – Clerkenwell Health. Grant funding – Health Research Board (ILP-POR-2022-030, DIFA-2023-005, KTA-2024-002)
Shane J. McInerney	Principal investigator – GH Research and Transcend Therapeutics. Honoraria – Janssen and Lundbeck
Alexander Nawka	Principal investigator – GH Research

Disclosures (2 of 2)

Author	Disclosures
Tomáš Páleníček	Principal investigator – Compass, GH Research, MAPS, and Ketabon. Shares – Psychedelická klinika s.r.o., Společnost pro podporu neurovědního výzkumu s.r.o., and AVI-X Aviation Experts s.r.o. Founder – PSYRES (Psychedelic Research Foundation). Consultant – CB21 Pharma and GH Research
Andreas Reif	Honoraria for lectures and/or advisory boards – AbbVie, Boehringer Ingelheim, Cyclerion, Compass, GH Research, Janssen, LivaNova, Medice, MSD, Newron, Sage/Biogen, and Shire/Takeda. Research grants – Medice and Janssen
Víctor Pérez Sola	Consultant, honoraria, or grants – AB-Biotics, AstraZeneca, Bristol Myers Squibb, CIBERSAM, FIS-ISCiii, Janssen Cilag, Lundbeck, Medtronic, Otsuka, and Servier
Madhukar H. Trivedi	Advisory boards – Alto Neuroscience and Base Point Health Management. Consultant – Axsome, Biogen, Daiichi Sankyo, GH Research, Legion Health, Neurocrine Biosciences, Otsuka Pharmaceutical Europe, Otsuka Pharmaceutical Development & Commercialization, Otsuka Pharmaceutical, PureTech, and Takeda. Advisor – Cerebral Therapeutics, Circular Genomics, and Seaport Therapeutics. Scientific advisor – GreenLight VitalSign6. Board of Directors – Charities2Love
Velichka Valcheva	Employee and stock option holder of GH Research
Eduard Vieta	Grants – AB-Biotics, AbbVie, Almirall, AstraZeneca, Boehringer Ingelheim, Bristol Myers Squibb, Celon, Cephalon, Dainippon Sumitomo Pharma, Elan, Ferrer, GH Research, GlaxoSmithKline, Janssen, Lilly, Lundbeck, Orion, Otsuka, Pfizer, Sanofi Aventis, Servier, Sunovion, and Takeda. Honoraria – Abbott, AbbVie, Angelini, AstraZeneca, Bristol Myers Squibb, Cambridge University Press, Elsevier, Farmindustria, Ferrer, Galenica, GlaxoSmithKline, Janssen, Johnson & Johnson, Lilly, Lundbeck, Oxford University Press, Otsuka, Pfizer, Sanofi Aventis, and Viatris. Advisory boards – AbbVie, Angelini, AstraZeneca, Biogen, Biohaven, Bristol Myers Squibb, Celon, Compass, Ferrer, GH Research, Gedeon Richter, HMNC, Idorsia, Janssen, Johnson & Johnson, Jazz, Lilly, Lundbeck, Merck Sharp & Dohme, Novartis, Organon, Otsuka, Pfizer, Roche, Sage, Sanofi Aventis, Servier, Shire, Sunovion, Takeda, and Teva
Wiesław J. Cubała	Grants – Acadia, Angelini, Beckley Psytech, GH Research, HMNC Brain Health, Intra-Cellular Therapies, Janssen, MSD, Neumora, Novartis, Otsuka, Recognify Life Sciences. Honoraria – Angelini, GH Research, Janssen, and Novartis. Advisory boards – Douglas Pharmaceuticals, GH Research, Janssen, MSD, and Novartis (relationships reported within the last three years)

Background

- TRD affects approximately 30% of patients treated for MDD[1]
- Current therapies for TRD are limited and there is a large unmet need for treatments that offer rapid and sustained effects
- Mebufotenin (5-methoxy-N,N-dimethyltryptamine [5-MeO-DMT]) is a non-selective serotonin (5-HT) agonist with high affinity for several receptor subtypes, including the 5-HT_{1A} receptor[2]
- GH001 is a synthetic form of mebufotenin for pulmonary inhalation[3,4]
- Early-stage trials in healthy volunteers and patients with TRD suggest that GH001 is well tolerated and may have the potential to induce an ultra-rapid remission in depressive symptoms[3,4]

The aim of this double-blind, placebo-controlled trial was to investigate the safety and efficacy of GH001 in patients with TRD

MDD = Major depressive disorder; TRD = Treatment-resistant depression.

1. Kubitz N, et al. *PLoS One*. 2013;8(10):e76882. 2. Shen H, et al. *Curr Drug Metab*. 2010;11(8):659-66. 3. Reckweg J, et al. *Front Pharmacol*. 2021;12:760671. 4. Reckweg JT, et al. *Front Psychiatry*. 2023;14:1133414.

Eligibility Criteria

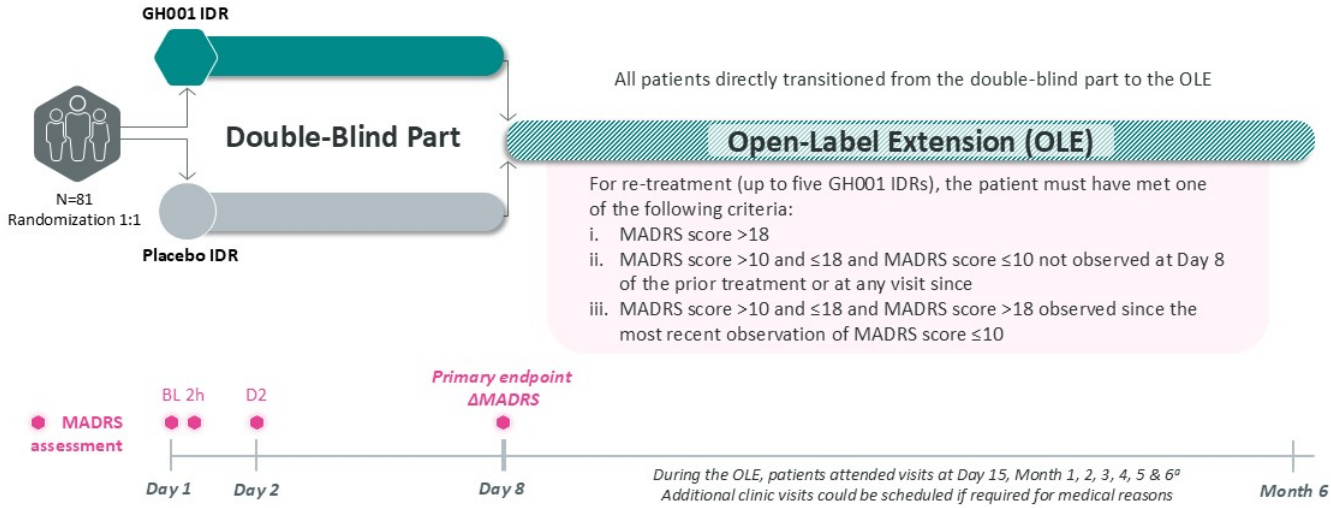
Patients were required to meet the trial criteria for TRD as assessed by a trial psychiatrist:

- Recurrent or single MDD episode (per DSM-5 criteria) without psychotic features, with current episode of ≤2 years[a]
- Current MDE validated based upon the MGH-SAFER criteria interview
- HAM-D-17 total score ≥20
- Nonresponse to ≥2 and ≤5 oral antidepressant treatments (assessed using the MGH-ATRQ)

[a]Current MDE confirmed by the MINI.

DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition; HAM-D-17 = 17-Item Hamilton Depression Rating Scale; MDD = Major depressive disorder; MDE = Major depressive episode; MGH-ATRQ = Massachusetts General Hospital Antidepressant Treatment Response Questionnaire; MGH-SAFER = Massachusetts General Hospital – Structured Assessment for Evaluation of Risk; MINI = Mini-International Neuropsychiatric Interview; TRD = Treatment-resistant depression.

Trial Schematic



This trial was conducted under the supervision of qualified healthcare professionals, providing psychological support per standard of care, but without any planned psychotherapeutic intervention before, during, or after dosing

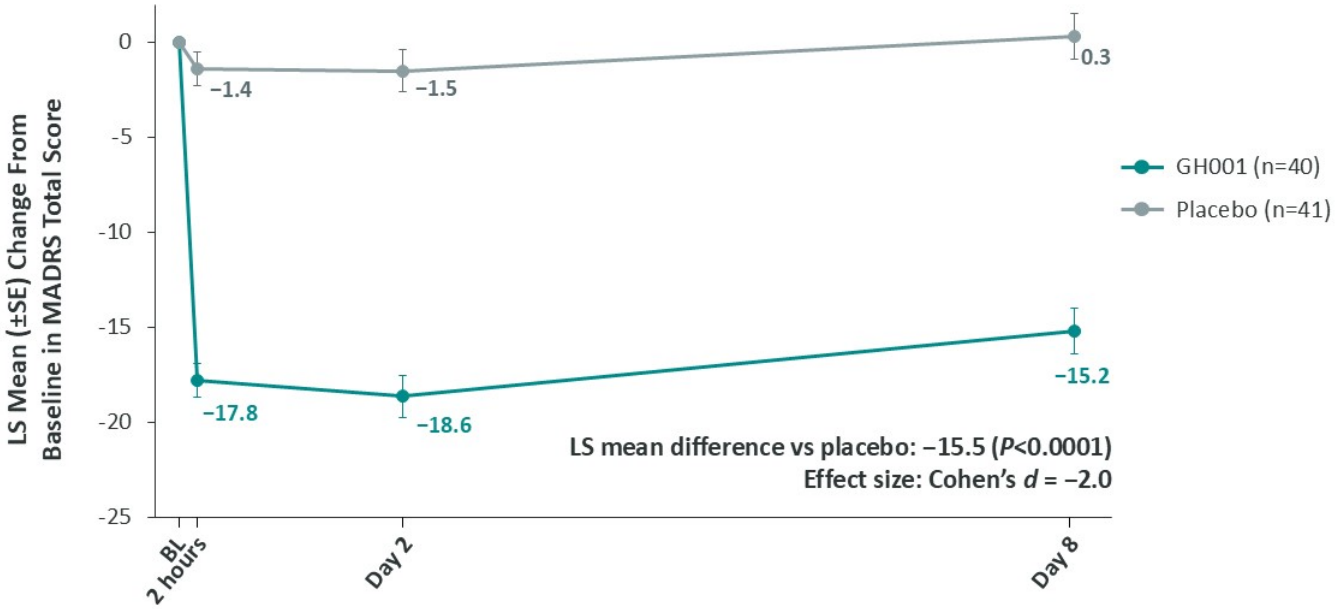
[a]Patients also attended assessment visits on Day 2 (phone call) and Day 8 after each re-treatment.
BL = Baseline; D = Day; h = Hour; IDR = Individualized dosing regimen; MADRS = Montgomery–Åsberg Depression Rating Scale.
ClinicalTrials.gov. https://clinicaltrials.gov/study/NCT05800860, Accessed March 13, 2025.

Patient Disposition and Characteristics in the Double-Blind Part

		GH001 (n=40)	Placebo (n=41)
Patient Disposition			
Completed double-blind part, n (%)		40 (100)	41 (100)
Patient Demographics			
Age, years, mean (SD)		41.6 (11.4)	43.9 (10.9)
Female, n (%)		24 (60.0)	22 (53.7)
Race, White, n (%)		40 (100)	41 (100)
BMI, kg/m^2, mean (SD)		24.8 (4.3)	27.5 (6.3)
Previously used any psychedelic (lifetime), n (%)		4 (10.0)	5 (12.2)
Baseline Disease Characteristics			
HAM-D-17 total score, mean (SD)		24.9 (2.7)	24.6 (2.3)
MADRS total score, mean (SD)		29 (5.4)	28.2 (4.6)
MDE History at Baseline			
Number of MDEs	Mean (SD)	2.1 (1.4)	2.0 (1.1)
	≥3, n (%)	14 (35.0)	13 (31.7)
Time since first depressive episode, years, mean (SD)		11.3 (9.7)	12.2 (8.4)
Duration of current MDE, weeks, mean (SD)		50.8 (28.3)	63.3 (106.9)
Patients Receiving IDR Doses[a]			
First dose (6 mg GH001 or one placebo dose), n (%)		9 (22.5)	0 (0)
Second dose (6+12 mg GH001 or two placebo doses), n (%)		21 (52.5)	0 (0)
Third dose (6+12+18 mg GH001 or three placebo doses), n (%)		10 (25.0)	41 (100)
Duration of PsE[b]			
6 mg (or placebo first dose), minutes, median (range)		9.0 (2–35)	0 (0–15)
12 mg (or placebo second dose), minutes, median (range)		14.0 (4–50)	0 (0–5)
18 mg (or placebo third dose), minutes, median (range)		11.5 (8–50)	0 (0–7)

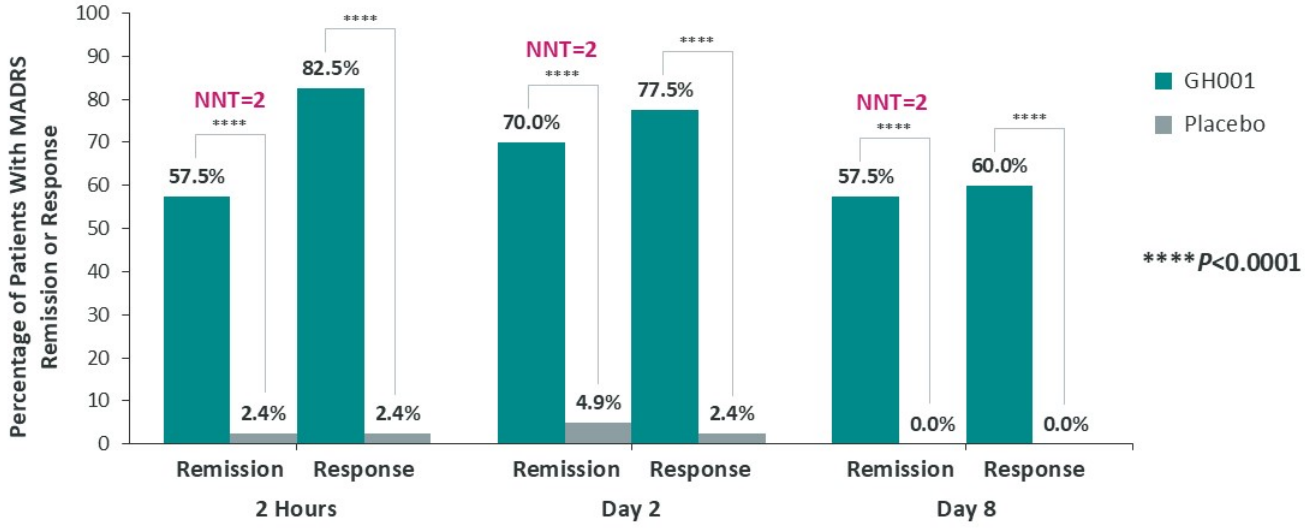
[a]Up to three doses of GH001 or placebo were administered to each patient. [b]Includes all patients who received respective dose of GH001 or placebo, irrespective of total dose.
BMI = Body mass index; HAM-D-17 = 17-item Hamilton Depression Rating Scale; IDR = Individualized dosing regimen; MADRS = Montgomery-Åsberg Depression Rating Scale; MDE = Major depressive episode; PsE = Psychoactive effects; SD = Standard deviation.

Primary Endpoint[a]: GH001 Led to Mean MADRS Reduction From Baseline of −15.5 on Day 8 vs Placebo



[a]FDA Guidance notes that efficacy with rapid-acting antidepressants generally should be demonstrated within 1 week, supporting a primary efficacy endpoint within this timeframe.
BL = Baseline; FDA = Food and Drug Administration; LS = Least squares; MADRS = Montgomery-Åsberg Depression Rating Scale; SE = Standard error.

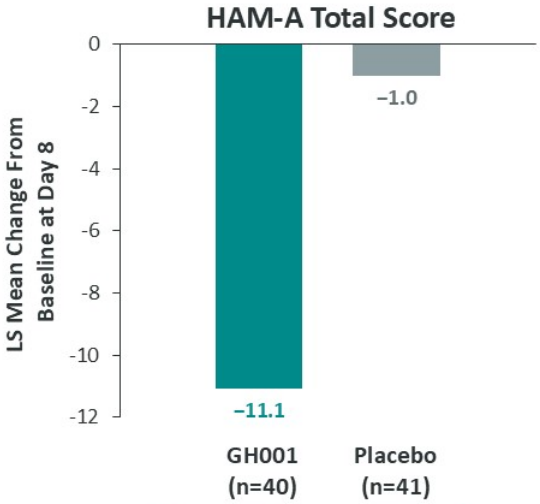
Secondary Endpoints: GH001 Led to 57.5% Remission Rate and 60.0% Response Rate at Day 8 vs 0% With Placebo



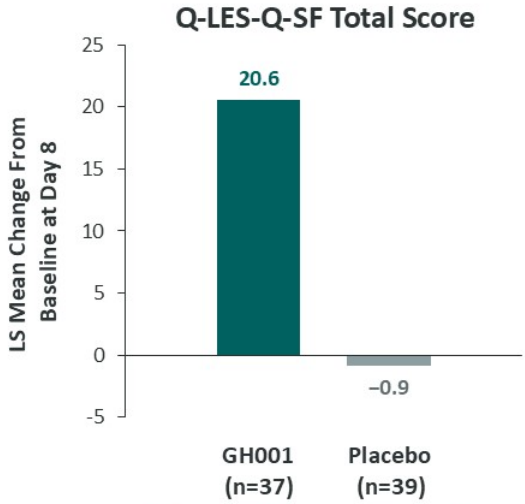
Remission: MADRS total score ≤10 | **Response:** ≥50% reduction from baseline in MADRS total score

MADRS = Montgomery-Åsberg Depression Rating Scale; NNT = Number needed to treat.

Secondary Endpoints: GH001 Led to Improvements in Anxiety and Quality of Life vs Placebo at Day 8



LS mean difference vs placebo: −10.0 (*P*<0.0001)

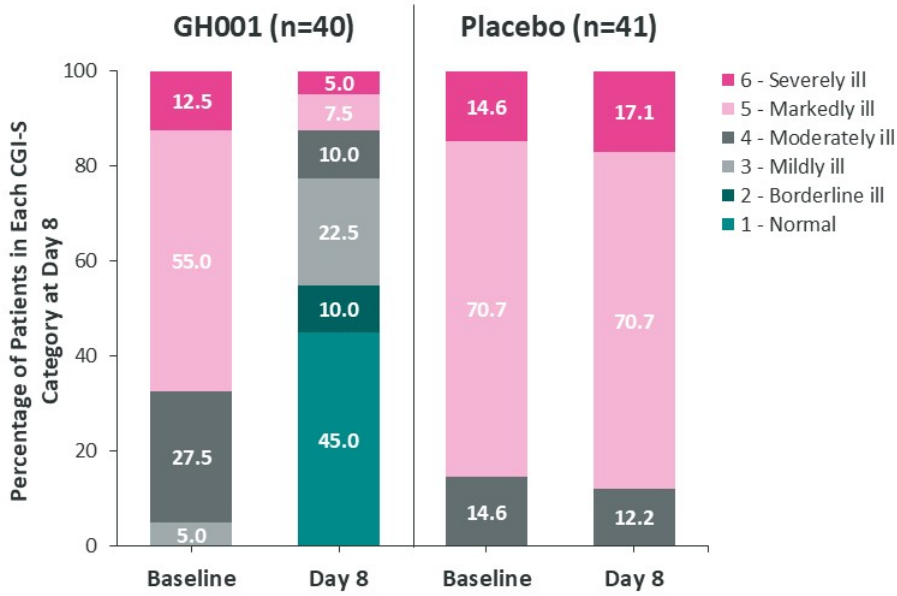


LS mean difference vs placebo: 21.5 (*P*<0.0001)

HAM-A = Hamilton Anxiety Rating Scale; LS = Least squares; Q-LES-Q-SF = Quality of Life Enjoyment and Satisfaction Questionnaire – Short Form.

More Patients Had Improvement in Global Illness Severity From Baseline at Day 8 With GH001 vs Placebo

LS Mean (SE) Change in CGI-S Score From Baseline at Day 8	
GH001 (n=40)	Placebo (n=41)
−2.4 (0.2)	0.1 (0.2)
LS mean difference vs placebo: −2.5 (*P*<0.0001)	



Percentages are for each baseline category within treatment.
CGI-S = Clinical Global Impression – Severity; LS = Least squares; SE = Standard error.

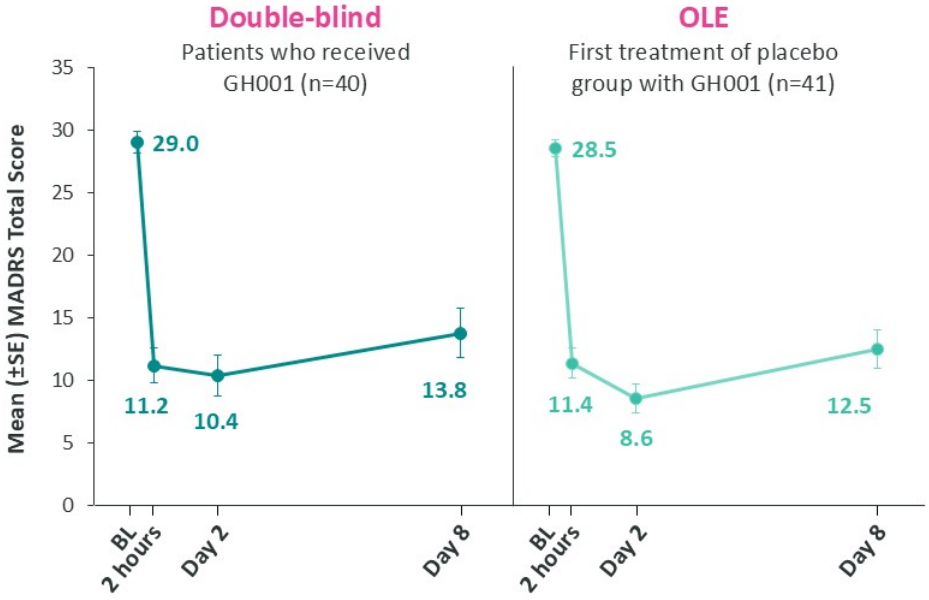
Overview of Adverse Events in the Double-Blind Part

Patients, n (%)	GH001 (n=40)	Placebo (n=41)
Overview of Adverse Events		
Any TEAE	29 (72.5)	3 (7.3)
Maximum severity of TEAEs		
Mild	14 (35.0)	2 (4.9)
Moderate	15 (37.5)	1 (2.4)
Severe	0 (0)	0 (0)
Treatment-related TEAEs	29 (72.5)	1 (2.4)
Device-related TEAEs	1 (2.5)	0 (0)
Serious TEAEs	0 (0)	0 (0)
Treatment-related serious TEAEs	0 (0)	0 (0)
TEAEs leading to study drug withdrawal	0 (0)	0 (0)
TEAEs leading to early withdrawal from trial	0 (0)	0 (0)
AESIs	8 (20.0)	0 (0)
Death	0 (0)	0 (0)
Most Common TEAEs (occurring in >5% of patients in either group) by Preferred Term		
Nausea	17 (42.5)	0 (0)
Salivary hypersecretion	8 (20.0)	0 (0)
Paresthesia	8 (20.0)	0 (0)
Headache	3 (7.5)	1 (2.4)
Dysgeusia	3 (7.5)	0 (0)

No TEAEs of flashbacks were reported

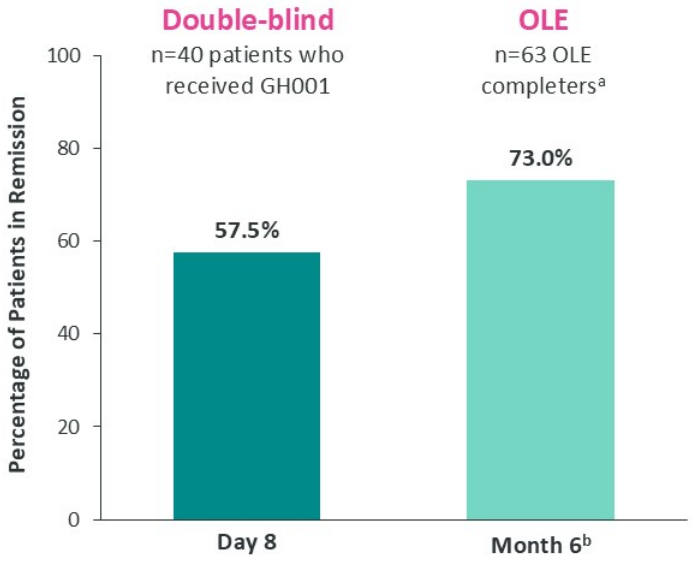
TEAEs were classified according to the Medical Dictionary of Regulatory Activities (MedDRA version 26.0).
AESI = Adverse event of special interest; TEAE = Treatment-emergent adverse event.

Reduction in MADRS With GH001 in Double-Blind Part Reproduced in Placebo Group With First GH001 Treatment in OLE



BL = Baseline; MADRS = Montgomery-Åsberg Depression Rating Scale; OLE = Open-label extension; SE = Standard error.

73.0% Remission Rate at 6 Months in OLE Completers



The OLE was completed in Q1 2025

- 63 completed, 18 early terminations (n=1 due to TEAE)

For patients who completed the OLE:

- **73.0%** (n=46) of patients were in remission[c] at 6 months (79.4% with clinical response)[d]
  - Of the 46 patients in remission, 23 were randomized to GH001 and 23 were randomized to placebo in the double-blind part
- Completers (n=63) had a mean MADRS total score of **9.4 at 6 months**
- **63.5%** (n=40) received **1–4 treatments** with GH001
- **No drug-related serious TEAEs were reported in the OLE**; one non-drug-related serious TEAE was reported during the OLE[e]

Note: data collection for the OLE has completed but data cleaning is ongoing. All analyses of OLE data are subject to change following database lock.

[a]63 patients who received active drug and completed the 6-month OLE per protocol (patients who terminated early are excluded). [b]Approximately 6 months post-study start (mean 168 days from Day 1 of double-blind period). [c]MADRS total score ≤10. [d]≥50% reduction from baseline in total MADRS score. [e]The non-drug-related serious TEAE reported was preferred term status migrainosus. Onset was 73 days after the patients most recent administration of the GH001 IDR.
MADRS = Montgomery-Åsberg Depression Rating Scale; OLE = Open-label extension; TEAE = Treatment-emergent adverse event.

Conclusions

Double-Blind Part

- The primary endpoint was met: GH001 administered as an IDR led to significant **MADRS reductions from baseline to Day 8** (−15.5 vs placebo)
- Secondary endpoints: **Remission rate of 57.5% at Day 8** (placebo, 0%), and improvements in anxiety, global disease severity, and quality of life were observed
- Safety: GH001 was well tolerated

Open-Label Extension

- GH001 can maintain long-term remission in TRD, with **73.0% of patients who completed the OLE in remission at 6 months**
- Durable effects with relatively infrequent treatment visits and ultra-rapid MADRS reduction
- No drug-related serious TEAEs were reported in the OLE

Data analysis has been completed for the OLE, but data cleaning is still ongoing.
IDR = Individualized dosing regimen; MADRS = Montgomery-Åsberg Depression Rating Scale; OLE = Open-label extension; TEAE = Treatment-emergent adverse event; TRD = Treatment-resistant depression.

Acknowledgments

- This trial was sponsored by GH Research
- The sponsor would like to thank the participants in the trial
- The sponsor would also like to thank the investigators who conducted this trial
- Under the guidance of the authors, medical writing and editorial support were provided by Brian Brennan, PhD, and Claire Sweeney, PhD, of GH Research, and Jane Phillips, PhD, of OPEN Health
- Primary analysis of the trial was conducted by the contract research organization Worldwide Clinical Trials. Additional analyses were conducted by Rachael MacIsaac, PhD, of GH Research