P5211

The Efficacy, Safety, and Pharmacokinetics of ABI-1179, a Novel, Oral, Long-Acting HSV Helicase-Primase Inhibitor for Recurrent Genital Herpes: Interim Results From a Phase 1b Study

Andrew Edwards[1], Wayne Hayter[2], Rebecca Dunsmoor-Su[3], Martha Sue Fanning[4], Claire Thurlow[5], Victoria Siriett[6], James Stanley[7], King Cheung[8], Tim Humphrey[9], Cory Sellwood[10], Joseph Sasadeusz[11,12], Grace Wang[13], Jieming Liu[13], Steven J Knox[13], Katie Zomorodi[13], Yiannis Koullias[14], Yoshihiko Murata[14], Kathryn M Kitrinos[13], Anuj Gaggar[13], Mark Bloch[15,16], Edward J Gane[17], Christine Johnston[18,19]

[1]Momentum Kapiti, Waikanae Beach, New Zealand; [2]Momentum Palmerston North, Palmerston North, New Zealand; [3]Seattle Clinical Research Center, Seattle, WA, USA; [4]Alliance for Multispecialty Research, Kansas City, MO, USA; [5]Pacific Clinical Research Network – Tasman, Nelson, New Zealand; [6]Pacific Clinical Research Network – Hamilton, Hamilton, New Zealand; [7]Pacific Clinical Research Network – Rotorua, Rotorua, New Zealand; [8]Momentum Sunshine, Melbourne, VIC, Australia; [9]Pacific Clinical Research Network – Wellington, Upper Hutt, New Zealand; [10]New Zealand Clinical Research, Christchurch, New Zealand; [11]University of Melbourne at the Doherty Institute for Infection and Immunity, Melbourne, VIC, Australia; [12]The Royal Melbourne Hospital at the Doherty Institute for Infection and Immunity, Melbourne, VIC, Australia; [13]Assembly Biosciences, Inc., South San Francisco, CA, USA; [14]Gilead Sciences, Inc., Foster City, CA, USA; [15]Momentum Clinical Research – Darlinghurst, Sydney, NSW, Australia; [16]Kirby Institute, University of New South Wales, Sydney, NSW, Australia; [17]University of Auckland, Auckland, New Zealand; [18]University of Washington Medical Center, Seattle, WA, USA; [19]Fred Hutchinson Cancer Center, Seattle, WA, USA

Conclusions

- Once-weekly ABI-1179 at 20 or 50 mg was associated with statistically significant >90% reductions in herpes simplex virus type 2 shedding rate, high viral load herpes simplex virus type 2 shedding rate, and virologically confirmed herpes simplex virus type 2 genital lesions compared with placebo
- At both doses, ABI-1179 was associated with a shorter duration of viral shedding compared with placebo
- ABI-1179 was generally safe and well tolerated when administered as once-weekly doses up to 50 mg compared with placebo in participants seropositive for herpes simplex virus type 2
- Pharmacokinetic assessment of ABI-1179 supported a once-weekly dosing regimen, with a mean terminal half-life of 92 to 106 hours across both dosing cohorts

Plain Language Summary

- Herpes simplex virus type 2 is a virus that causes recurrent genital herpes, a common chronic infection that can cause sores or blisters in the genital area
- ABI-1179 is a drug that is being developed to suppress recurrent genital herpes
- In this study, ABI-1179 was tested in people with herpes simplex virus type 2 infection and recurrent genital herpes to determine whether it can safely and effectively suppress the infection with a once-weekly dose
- People who received ABI-1179 had reduced lesions and viral shedding compared with those who received placebo
- People who received ABI-1179 had similar safety results as those who received placebo
- These early results suggest that ABI-1179 is a promising new drug for the treatment of recurrent genital herpes

Introduction

- Herpes simplex virus type 2 (HSV-2) is the most common cause of recurrent genital herpes (RGH), with approximately 520 million people worldwide having HSV-2 in 2020[1]
- Nucleoside analogues, which inhibit viral polymerase, are the current standard of care for management of HSV-2 infection[2,3]
  - These agents are taken intermittently to treat recurrences or daily as chronic suppressive therapy but are only partially effective at preventing recurrence and transmission[2,3]
  - New HSV-2 therapies are needed to improve management of RGH
- Herpes simplex virus (HSV) helicase-primase inhibitors target the viral helicase-primase enzyme complex, which is essential for viral replication and has no human equivalent[4,5]
  - Helicase-primase inhibition has demonstrated clinical efficacy over nucleoside analogues for the treatment of RGH[6]
- ABI-1179[a] is an investigational, long-acting HSV helicase-primase inhibitor in development for the treatment of RGH

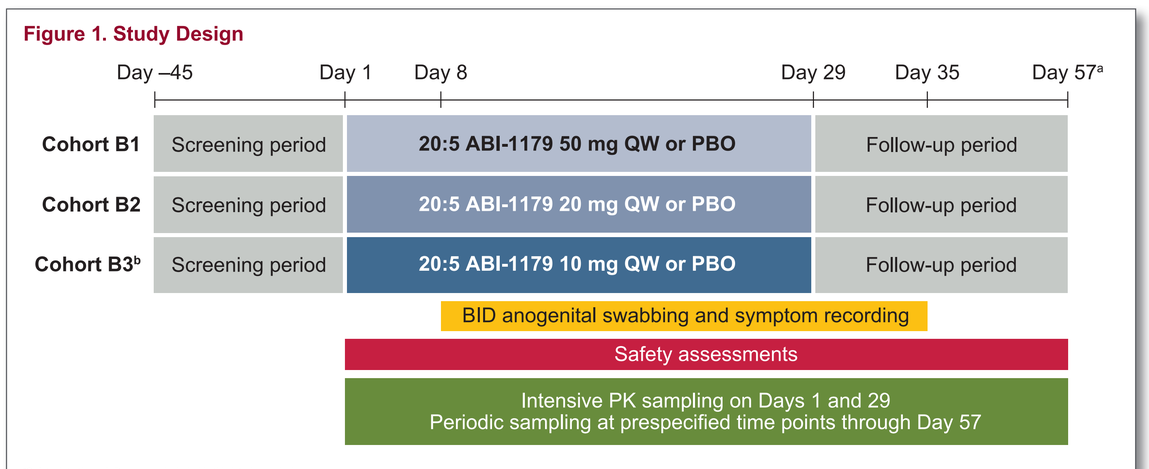
Objective

- To report interim results of a placebo-controlled, Phase 1b study evaluating the safety and efficacy of ABI-1179 in participants with HSV-2 and RGH

Methods

- This was a randomised, blinded, placebo-controlled study (ClinicalTrials.gov Identifier: NCT06698575) enrolling participants seropositive for HSV-2 with RGH; results from the first 2 cohorts enrolled are reported here (**Figure 1**)
  - Participants in each cohort were randomised 20:5 to receive once-weekly (QW) ABI-1179 (20 or 50 mg) or placebo for 29 days
- To measure HSV-2 shedding, anogenital swabs were self-collected twice daily from Day 8 to 35
  - HSV DNA was quantified using a validated real-time polymerase chain reaction assay
  - High viral load shedding was defined as HSV DNA >4 $\log_{10}$ copies/mL
- Participants recorded RGH symptoms twice daily from Day 8 to 35
- HSV-2 shedding and genital lesion rates were compared between placebo and dosing cohorts using Poisson regression models
- Participants were monitored through Day 57 for safety evaluations, including physical examinations, adverse event (AE) reporting, and laboratory testing
- Intensive plasma pharmacokinetic sampling was conducted on Days 1 and 29
  - Periodic sampling was also conducted at additional prespecified time points during the study

Figure 1. Study Design



[a]Safety data through Day 57 are included in this interim analysis.
[b]Cohort B3 was not included in this interim analysis.
BID, twice-daily; PBO, placebo; PK, pharmacokinetic; QW, once weekly.

Results

Participants

- A total of 50 participants were enrolled in 2 dosing cohorts with placebo controls (**Table 1**)
  - Three participants discontinued the study, with 1 participant lost to follow-up and 2 participants discontinuing for reasons not related to AEs or study treatments
  - One participant was enrolled in the 20 mg/placebo cohort but did not receive treatment

Table 1. Participant Demographic and Baseline Characteristics

Characteristic	ABI-1179 20 mg QW or PBO[a] (n = 24[b])	ABI-1179 50 mg QW or PBO[a] (n = 25)
Sex at birth, n (%)		
Male	13 (54)	7 (28)
Race, n (%)		
White	21 (88)	23 (92)
Mean (SD) age, y	40.7 (10.6)	38.3 (11.7)
Mean (SD) number of recurrences[c]	5.5 (1.1)	6.1 (1.3)
On suppressive therapy at baseline, n (%)	18 (75)	20 (80)

[a]Participants from dosing and PBO cohorts are combined here to maintain study blinding.
[b]One participant was enrolled in the ABI-1179 20 mg/PBO cohort but did not receive treatment.
[c]Number of recurrences was defined as the number of lesions in the past 12 months or prior to suppressive therapy.
PBO, placebo; QW, once weekly.

Efficacy Outcomes

- In both ABI-1179 dosing cohorts, statistically significant reductions in HSV-2 shedding rate, HSV-2 high viral load shedding rate, and virologically confirmed HSV-2 genital lesion rate were observed compared with placebo (**Table 2**)
  - Genital lesion rate and mean duration of viral shedding were numerically lower in both ABI-1179 dosing cohorts compared with placebo

Table 2. Antiviral Activity and Clinical Outcomes Among Participants Receiving ABI-1179 Versus PBO

Outcome	PBO QW (n = 9)	ABI-1179 20 mg QW (n = 20)			ABI-1179 50 mg QW (n = 20)		
	Summary Statistic	Summary Statistic	Reduction vs PBO, %	*P* Value[a]	Summary Statistic	Reduction vs PBO, %	*P* Value[a]
HSV-2 shedding rate, %[b]	16.9	1.4	92	<0.01	0.4	98	<0.01
HSV-2 high viral load shedding rate, %[c]	11.8	0.5	96	<0.01	<0.1	>99	–[f]
Genital lesion rate, %[d]	9.6	1.8	82	0.06	2.6	73	0.09
Virologically confirmed HSV-2 genital lesion rate, %[e]	8.4	<0.1	>99	–[f]	0.7	91	<0.01
Mean (SD) duration of viral shedding, d	4.2 (4.4)	1.0 (0.9)	NA	NA	0.5 (0)	NA	NA
Mean (SD) duration of genital lesions, d	3.4 (2.5)	3.3 (1.2)	NA	NA	4.7 (0.6)	NA	NA

[a]Statistical analysis was conducted using Poisson regression models, and the corresponding *P* values were estimated accordingly.
[b]HSV-2 shedding rate was calculated as the number of positive HSV-2 anogenital swabs divided by the total number of swabs collected.
[c]HSV-2 high viral load shedding rate was calculated as the number of positive HSV-2 anogenital swabs with >10^4 HSV-2 copies/mL divided by the total number of swabs collected.
[d]Genital lesion rate was calculated as the number of days with genital lesions of any kind present divided by the total number of days assessed.
[e]Virologically confirmed HSV-2 genital lesion rate was calculated as the number of days with genital lesions with HSV-2 detected divided by the total number of days assessed.
[f]*P* value could not be reliably calculated using the protocol-specified Poisson regression model due to 0 observed events in the dosing cohort. The observed difference (>99% reduction compared with PBO) was consistent with a highly significant effect.
HSV-2, herpes simplex virus type 2; NA, not applicable; PBO, placebo; QW, once weekly.

Safety Outcomes

- ABI-1179 was well tolerated at QW doses of 20 or 50 mg (**Table 3**)
  - Treatment-emergent AEs (TEAEs) were reported in 80% of participants receiving ABI-1179 and in 89% of participants receiving placebo
  - TEAEs were reported in 71% of participants in the ABI-1179 20 mg/placebo cohort and in 92% of participants in the ABI-1179 50 mg/placebo cohort
  - Of participants experiencing any TEAE, 98% reported a TEAE of Grade 1 or 2, with one Grade 3 TEAE of migraine reported in a participant with history of migraines enrolled in the ABI-1179 50 mg/placebo cohort
  - The most common TEAEs were headache (8% and 36% of participants in the ABI-1179 20 mg/placebo and 50 mg/placebo cohorts, respectively) and upper respiratory tract infection (4% and 20% of participants in the ABI-1179 20 mg/placebo and 50 mg/placebo cohorts, respectively)
  - There were no serious AEs reported
  - Treatment-related TEAEs were reported in 33% of participants in the ABI-1179 20 mg/placebo cohort and in 40% of participants in the ABI-1179 50 mg/placebo cohort
  - The most common treatment-related TEAE was headache, which was reported in 8% of participants in the ABI-1179 20 mg/placebo cohort and in 24% of participants in the ABI-1179 50 mg/placebo cohort
- Treatment-emergent laboratory abnormalities were reported at a lower rate among participants receiving ABI-1179 (33%) versus those receiving placebo (44%)
  - Treatment-emergent laboratory abnormalities were observed in 38% of participants in the ABI-1179 20 mg/placebo cohort and in 32% of participants in the ABI-1179 50 mg/placebo cohort
  - All treatment-emergent laboratory abnormalities were Grade 1 or 2

Table 3. TEAEs and Laboratory Abnormalities

AE, n (%)	ABI-1179 20 mg QW or PBO[a] (n = 24[b])	ABI-1179 50 mg QW or PBO[a] (n = 25)
Any TEAE	17 (71)	23 (92)
Grade 2	5 (21)	14 (56)
Grade ≥3	0	1 (4)
Any TEAE leading to study drug discontinuation	0	0
Any TE serious AE	0	0
Any TE laboratory abnormality	9 (38)	8 (32)
Grade 2	2 (8)	3 (12)
Grade ≥3	0	0

[a]Participants from dosing and PBO cohorts are combined here to maintain study blinding.
[b]One participant was enrolled in the ABI-1179 20 mg/PBO cohort but did not receive treatment.
AE, adverse event; PBO, placebo; QW, once weekly; TE, treatment-emergent; TEAE, treatment-emergent adverse event.

Pharmacokinetics

- ABI-1179 was rapidly absorbed, with a median time to reach maximum plasma concentration of 1 hour across both cohorts (**Table 4**)
- The mean terminal half-life of ABI-1179 was 91.5 hours and 106.3 hours among participants receiving ABI-1179 20 mg and 50 mg, respectively

Table 4. Summary of Day 29 ABI-1179 Plasma PK Parameters by Cohort

PK Parameter	ABI-1179 20 mg QW (n = 15[a])	ABI-1179 50 mg QW (n = 18[b])
$T_{max,ss}$, h, median (min-max)	1.0 (0.5-4.0)	1.0 (0.5-4.0)
$t_{1/2}$, h	91.5 (26.8)	106.3 (31.4)
$C_{max,ss}$, ng/mL	2106 (25.5)	4568 (15.9)
C_{tau}, ng/mL	470.8 (42.5)	1239 (40.5)
AUC_{tau}, h·ng/mL	183,500 (27.1)	410,900 (19.2)

All values are mean (CV%) unless otherwise stated.
Tau was defined as 168 hours, or 7 days.
[a]Four participants were excluded from summary statistics due to insufficient PK samples on Day 29. One participant was excluded from summary statistics due to quantifiable concentration at 0 hours on Day 1.
[b]Two participants were excluded from summary statistics due to missing Day 29 dose.
AUC_{tau}, area under the concentration-time curve over tau; $C_{max,ss}$, maximum plasma concentration at steady state; C_{tau}, plasma concentration at time tau; CV, coefficient of variation; max, maximum; min, minimum; PK, pharmacokinetic; QW, once weekly; $t_{1/2}$, terminal half-life; $T_{max,ss}$, time of maximum plasma concentration at steady state.

References: **1.** Harfouche M, et al. *Sex Transm Infect*. 2025;101:214-23. **2.** VALTREX (valacyclovir) tablets, for oral use [package insert]. GSK; 2025. **3.** Corey L, et al. *N Engl J Med*. 2004;350:11-20. **4.** Bermek O, Williams RS. *Open Biol*. 2021;11:210011. **5.** Yao Q, et al. *Nat Microbiol*. 2025;10:3191-201. **6.** Wald A, et al. *JAMA*. 2016;316:2485-503.

[a]In December 2025, Gilead Sciences, Inc., exercised its combined option to exclusively license Assembly Biosciences, Inc.'s HSV helicase-primase inhibitor programmes, including long-acting investigational candidate ABI-1179 for RGH.

Acknowledgements: We express our gratitude to all the participants, investigators, and site staff who participated in the study. This study was funded by Assembly Biosciences, Inc. Medical writing and editorial support were provided by Jane Abolafia, PhD, of Lumanity Communications Inc., and were funded by Gilead Sciences, Inc.

Correspondence: Yiannis Koullias, yiannis.koullias@gilead.com

Disclosures: **RD-S** provides consultative services for Bayer, Eli Lilly, and Novo Nordisk. **CS** received funding from Assembly Biosciences, Inc., and Gilead Sciences, Inc., to attend scientific meetings. **J Sasadeusz** received research funding from Aicuris, Moderna, Takeda, and Vedanta Biosciences; and served on advisory boards for Gilead Sciences, Inc., Merck, and Takeda. **GW**, **JL**, **SJK**, **KZ**, **KMK**, and **AG** are stockholders and employees of Assembly Biosciences, Inc. **YK** and **YM** are stockholders and employees of Gilead Sciences, Inc. **MB** received funding from Assembly Biosciences, Inc., Gilead Sciences, Inc., and ViiV Healthcare to attend scientific meetings; and received funding from Gilead Sciences, Inc., GSK, and ViiV Healthcare for lectureships and medical advisory boards. **EJG** is a member of scientific advisory boards for Aligos, Assembly Biosciences, Inc., AusperBio, Epigenics, Gilead Sciences, Inc., GSK, IntegerBio, nChroma, OrsoBio, Precision Bio, Tune Therapeutics, Virion, and Vir Biotechnology. **CJ** is a consultant for Aicuris, Assembly Biosciences, Inc., GSK, Oximio, and Pfizer; and received research funding from Assembly Biosciences, Inc., GSK, Moderna, and Pfizer. **AE**, **WH**, **MSF**, **CT**, **VS**, **JS**, **KC**, and **TH** have no disclosures to report.

Congress of the European Society of Clinical Microbiology and Infectious Diseases (ESCMID Global); 17-21 April 2026; Munich, Germany