

Impact of bepirovirsen on immune response in chronic hepatitis B patients

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| Submission date 30/10/2025 | Recruitment status Recruiting | <input checked="" type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol |
| Registration date 30/10/2025 | Overall study status Ongoing | <input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results |
| Last Edited 30/10/2025 | Condition category Infections and Infestations | <input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year |

Plain English summary of protocol

Background and study aims

This study is looking at how the immune system reacts to a potential new treatment for chronic hepatitis B called Bepirovirsen. Researchers want to understand why some people respond better to the treatment than others, especially those who continue to have lower levels of the virus after treatment. To do this, they'll study stored blood samples from people who took part in an earlier clinical trial called B-Well.

Who can participate?

No new participants are needed for this study. It will only use samples from people who already took part in the previous trial and gave permission for their samples to be used in future research.

What does the study involve?

There is no involvement required from participants. The study will use previously collected and anonymised blood samples, so no one will be contacted or asked to do anything new.

What are the possible benefits and risks of participating?

Since no new participation is required, there are no direct risks or benefits for individuals. However, the research could help improve future treatments for hepatitis B by helping scientists understand how the immune system responds to Bepirovirsen.

Where is the study run from?

Chang Gung Memorial Hospital in Taiwan.

When is the study starting and how long is it expected to run for?

October 2025 to October 2027.

Who is funding the study?

GlaxoSmithKline Research & Development Ltd.

Who is the main contact?

Professor Wen-Juei (Rachel) Jeng, rachel.jeng@gmail.com

Contact information

Type(s)

Public, Scientific, Principal investigator

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Additional identifiers

Clinical Trials Information System (CTIS)

Nil known

ClinicalTrials.gov (NCT)

Nil known

Protocol serial number

Nil known

Study information

Scientific Title

The impact of bepirovirsen on host HBV-specific immune response in relation to HBsAg decline and its durability

Study objectives

To explore the changes in HBV-specific T-cell phenotype during Bepirovirsen administration and their association with HBsAg decline and durability.

Secondary objectives include investigating (1) changes in innate-like CD8 T cells and their relationship with ALT elevation, (2) phenotype alterations in monocytes, and (3) plasma cytokine patterns (IL-12, IL-15, IL-18) during treatment.

Ethics approval required

Ethics approval required

Ethics approval(s)

approved 17/07/2025, Chang Gung Medical Foundation Institutional Review Board (199, Tung Hwa North Road, Taipei, 10507, Taiwan; +886-3-3196200; irb@cgmh.org.tw), ref: 202500942B0

Study design

Observational single-centre retrospective cohort sub-study

Primary study design

Observational

Study type(s)

Efficacy, Other

Health condition(s) or problem(s) studied

Chronic Hepatitis B (CHB) infection; functional cure; HBsAg seroclearance; immune reconstitution after Bepirovirsen.

Interventions

Drug (interventional parent trial with Bepirovirsen); this sub-study is observational using biological samples.

Brief methodology of the parent trial:

The parent trial is a Phase 2b randomized controlled study (B-Well) evaluating Bepirovirsen, an antisense oligonucleotide (ASO) targeting all HBV mRNAs.

-Design: 1:3 randomization (Bepirovirsen 300 mg vs placebo).

-Dose and duration: Participants receive weekly subcutaneous injections of 300 mg Bepirovirsen for 24 weeks, followed by a 24-week off-treatment observation period.

-Comparator: Placebo administered on the same schedule.

-Population: Chronic hepatitis B (CHB) patients with long-term nucleos(t)ide analogue (Nuc) suppression.

-Sub-study (current project): Retrospective observational analysis of immunologic changes in 20 participants (10 cross-sectional and 10 longitudinal) from the B-Well cohort to evaluate Bepirovirsen's impact on HBV-specific and innate-like T-cell responses and cytokine signatures.

Intervention Type

Other

Primary outcome(s)

HBV-specific CD8 T-cell phenotype measured using multicolor flow cytometry (Symphony) and single-cell RNA sequencing of PBMC samples at baseline (before IP/placebo), Week 7–10, Week 21–23 (end of IP treatment), and Week 40–46 (24 weeks post-treatment follow-up)

Key secondary outcome(s)

1. Innate-like CD8 T-cell frequency and activation status (CD38HLA-DR CD8 T cells) measured by flow cytometry and scRNA-seq at baseline, Week 7–10, Week 21–23 and Week 40–46.
2. Innate immunity status measured by flow cytometry and scRNA-seq at baseline, Week 7–10, Week 21–23 and Week 40–46.
3. Plasma cytokines (IL-12, IL-15, IL-18) measured by BD Cytometric Bead Array at baseline, Week 7–10, Week 21–23 and Week 40–46.

Completion date

29/10/2027

Eligibility

Key inclusion criteria

1. Adults with chronic hepatitis B enrolled in the Bepirovirsen-based B-Well trial
2. Provided informed consent for optional immunologic sub-study
3. Available peripheral blood mononuclear cell (PBMC) and plasma samples collected at predefined time points

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 years

Sex

All

Total final enrolment

20

Key exclusion criteria

1. Hemoglobin < 10 g/dL
2. Withdrawal of consent for B-Well sub-study
3. Insufficient sample quality or quantity for immune analysis

Date of first enrolment

31/10/2025

Date of final enrolment

11/10/2027

Locations

Countries of recruitment

Taiwan

Study participating centre

Chang Gung Memorial Hospital Linkou Chang Gung Memorial Hospital, Linkou Medical Center

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Sponsor information

Organisation

Chang Gung Memorial Hospital

ROR

<https://ror.org/02verss31>

Funder(s)

Funder type

Industry

Funder Name

GlaxoSmithKline Research & Development Ltd

Results and Publications

Individual participant data (IPD) sharing plan

De-identified data will be shared in aggregated form with GlaxoSmithKline Research & Development Ltd and may be made available to qualified researchers upon reasonable request, following institutional and IRB approval. No individual-level identifiers will be released publicly.

IPD sharing plan summary

Available on request

Study outputs

| Output type | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|-------------------------------|--------------|------------|----------------|-----------------|
| Participant information sheet | Participant information sheet | 11/11/2025 | 11/11/2025 | No | Yes |
| Protocol file | version 1.1 | 07/07/2025 | 30/10/2025 | No | No |