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A Phase IIa study to evaluate EDP-323 in the virus challenge model

Submission date	Recruitment status	[_] Prospectively registered
29/06/2023	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
13/10/2023	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
11/07/2025	Infections and Infestations	

Plain English summary of protocol

Background and study aims
The aim of this study is to test the effects of an experimental drug called EDP-323 that may be useful in treating patients infected with Respiratory Syncytial Virus. RSV infection can cause a range of respiratory diseases such as bronchitis and lower respiratory infections including bronchiolitis and pneumonia. These serious illnesses affect infants and certain adults who are older (especially if they are over 65), have chronic heart or lung disease or have a weakened immune system.

Who can participate?
Healthy volunteers aged 18-55 years

What does the study involve?
Each participant will be in the study for about 4 months or 16 weeks from Screening to the last clinic visit. The study will consist of three phases:
Screening phase: Screening will occur for up to 90 Days before the start of the study. Informed consent will be obtained before any study specific procedures are performed.
Quarantine phase: The quarantine phase is when participants will be inoculated (infected) with RSV and stay in the unit for evaluation and treatment with study treatment (EDP-323 or placebo). Participants will stay in the quarantine unit for approximately 15 days. One to two days prior to the day of inoculation with RSV, participants will be admitted to quarantine where their eligibility will be reassessed before inoculation on Day 0. Participants will undergo a range of clinical assessments and safety monitoring for the entirety of their stay in quarantine. Participants will be discharged from the quarantine unit on from Day 12 (an extended stay may be required).
Follow-up phase: Final follow-up visit 28 days (±3 days) after the day they receive the virus. Their symptoms will be reassessed, and a complete safety examination performed.

What are the possible benefits and risks of participating?
Potential participants will be fully informed of the risks and requirements of the study and, during the study, participants will be given any new information that may affect their decision to continue participation.
The full risk profile of the study drug is not yet known. Mild adverse events, deemed possibly

related to the study drug (headache and frequent stools) were observed during the first trial in healthy volunteers.
EDP-323 has not previously been tested in human subjects with RSV and may not confer any antiviral protection against RSV in humans despite encouraging preclinical evidence. Participant safety data will be monitored throughout the study, including but not limited to physical exams, vital signs, 12-lead ECG, and clinical laboratory results. Participants will be monitored for severe RSV-related disease by qualified medical and nursing staff in the quarantine unit throughout the study and any symptoms managed accordingly with supportive measures. Participants may be withdrawn from the study at the investigator's discretion at any time.
The study virus can cause symptoms such as runny nose, stuffy nose, sneezing, sore throat, fever, tiredness, malaise, muscle ache, shortness of breath and wheezing. In healthy adults, the illness usually resolves without any treatment, with relief of symptoms occurring naturally within 7 to 10 days. RSV, like many viruses, can cause more substantial health issues such as myocarditis (inflammation or damage to the heart muscle) but severe complications are not expected as, these tend to occur almost exclusively in infants and the elderly. The safety profile of the RSV-A Memphis 37b is well characterized in healthy adults as this has been used for over 15 years by hVIVO. At hVIVO more than 1700 healthy adults aged 18 to 60 years have been challenged with the RSV challenge strain.
Strict inclusion and exclusion criteria will apply to ensure only healthy adults are enrolled in this study.
The study virus is usually absent from the nose by the time participants are discharged from quarantine. This may be confirmed by testing a nasal sample by using a qualitative virus antigen test to determine participants' suitability for departure.
Collection of nasal samples may cause discomfort, sneezing, watery eyes, irritated nose or nose bleeding. Sample collection will be performed by appropriately qualified and trained study staff to minimise the discomfort.
If a participant ever had a herpes infection (e.g., cold sores, genital herpes, or shingles), there is a small possibility that this infection could return after given the study RSV virus.
Participants will be instructed to inform the study staff if they currently have an active herpes infection or have had one during the 30 days before enrolment.

Where is the study run from?
hVIVO (UK)

When is the study starting and how long is it expected to run for?
June 2023 to March 2024

Who is funding the study?
Enanta Pharmaceuticals, Inc. (USA)

Who is the main contact?
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Integrated Research Application System (IRAS)
1007761

Protocol serial number
EDP 323-101

Study information

Scientific Title
A randomised, Phase IIa, double-blind, placebo-controlled study to evaluate the safety, pharmacokinetics and antiviral activity of multiple doses of orally administered EDP-323 against respiratory syncytial virus infection in the virus challenge model in healthy adults

Study objectives
The primary statistical hypothesis is that treatment with EDP-323 will show an antiviral effect demonstrated by a significant reduction in RSV VL-AUC (measured by qRT-PCR in nasal samples) compared to placebo.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approval pending, ref: 23/LO/0636

Primary study design
Interventional

Study design
Double-blind randomized placebo-controlled parallel-group trial

Study type(s)
Safety, Efficacy

Health condition(s) or problem(s) studied
Respiratory Syncytial Virus (RSV) infection

Interventions
Participants will be randomized 1:1:1 into one of three treatment groups to receive EDP-323 (at two different doses) or placebo. EDP-323 will be administered orally.
The interventions selected for this study are as follows:
Dose 1 EDP-323 once daily for 5 days
Dose 2 EDP-323 once daily for 5 days
Placebo once daily for 5 days

Intervention Type
Drug

Phase
Phase II

Drug/device/biological/vaccine name(s)
EDP-323

Primary outcome(s)
Reduction in RSV area under the viral load-time curve (VL-AUC) measured by quantitative reverse transcription-polymerase chain reaction (qRT-PCR) from the first viral load measurement post initial dose of EDP-323 or placebo through day 12.

Key secondary outcome(s)

1. Change in viral load measurements by qRT-PCR from the first viral load measurement post initial dose of EDP-323 or placebo through day 12.
2. Change in viral load measurements by cell culture (plaque assay) from the first viral load measurement post initial dose of EDP-323 or placebo through day 12.
3. Change of baseline symptoms measured by total symptom score (TSS) and nasal discharge produced post initial dose of EDP-323 or placebo through Day 12.
4. Pharmacokinetics:
4.1. EDP-323 (and metabolites) concentrations and PK parameters in blood samples: maximum plasma concentration (Cmax), time to maximum plasma concentration (tmax), terminal half-life (t1/2), apparent systemic clearance (CL/F), terminal elimination rate constant (λz), volume of distribution (Vd/F), plasma concentration at 12 hours (C12h), plasma concentration at 24 hours (C24h), area under the concentration time curve from time 0 to time of last quantifiable concentration (AUClast), area under the concentration time curve over the dosing interval (AUC0-tau), and area under the concentration time curve from time 0 to infinity (AUC0-∞)
4.2. Plasma PK (area under the curve [AUC]) correlations with VL-AUC (e.g., qRT-PCR) and TSS-AUC
5. Safety assessed by the occurrence of AEs/SAEs from initial administration of EDP-323 or placebo through Day 28

Completion date
31/03/2024

Eligibility

Key inclusion criteria
1. Written Informed Consent
2. Aged 18-55 years on the day prior to signing the consent form.
3. A total body weight ≥50 kg and body mass index (BMI) ≥18 kg/m² and ≤35 kg/m²
4. Participants must be in good health with no history, or current evidence, of clinically significant medical conditions, and no clinically significant test abnormalities that will interfere with participants' safety, as defined by medical history, physical examination, (including vital signs), ECG, and routine laboratory tests as determined by the Investigator
5. Documented medical history either prior to entering the study or following medical history review with the study physician at screening.
6.1. Females of childbearing potential must have a negative pregnancy test prior to enrolment.
6.2. Females of non-childbearing potential:
6.2.1. Postmenopausal females defined as amenorrhea for 12 months or greater with no alternative medical cause. A high follicle-stimulating hormone (FSH) level, within appropriate postmenopausal range, may be used to confirm postmenopausal state in the absence of combined hormonal contraception or hormone replacement therapy. If there is less than 12 months of amenorrhea 2 FSH samples are required at least 4 - 6 weeks apart.
6.2.2. Documented status as being permanently sterile (e.g., tubal ligation, hysterectomy, bilateral salpingectomy, and bilateral oophorectomy).
7. The following criteria apply to female and male participants:
7.1. Female participants of childbearing potential must use one form of highly effective contraception. Hormonal methods must be in place from at least 2 weeks prior to the first study visit. The contraception use must continue until 90 days after the date of last dosing with IMP. Highly effective contraception described as:
7.1.1. Established use of hormonal methods of contraception described below (for a minimum of 2 weeks prior to the first study visit). When hormonal methods of contraception are used, male partners are required to use a condom with a spermicide:

7.1.1.1. Combined (estrogen and progestogen containing) hormonal contraception associated with inhibition of ovulation:
7.1.1.1.1. Oral
7.1.1.1.2. Intravaginal
7.1.1.1.3. Transdermal
7.1.1.2. Progestogen-only hormonal contraception associated with inhibition of ovulation:
7.1.1.2.1. Oral
7.1.1.2.2. Injectable
7.1.1.2.3. Implantable
7.1.2. Intrauterine device
7.1.3. Intrauterine hormone-releasing system
7.1.4. Bilateral tubal ligation
7.1.5. Male sterilization (with the appropriate post-vasectomy documentation of the absence of sperm in the ejaculate) where the vasectomized male is the sole partner for that woman.
7.1.6. True abstinence – sexual abstinence is considered a highly effective method only if defined as refraining from heterosexual intercourse during the entire period of risk associated with the study treatments. The reliability of sexual abstinence needs to be evaluated in relation to the duration of the clinical trial and the preferred and usual lifestyle of the participant.
7.2. Male participants must agree to the contraceptive requirements below at entry to quarantine and continuing until 90 days after the date of last dosing with IMP:
7.2.1. Use a condom with a spermicide to prevent pregnancy in a female partner or to prevent exposure of any partner (male and female) to the IMP.
7.2.2. Male sterilization with the appropriate post-vasectomy documentation of the absence of sperm in the ejaculate (please note that the use of condoms with spermicide will still be required to prevent partner exposure). This applies only to males participating in the study.
7.2.3. In addition, for female partners of childbearing potential, that partner must use another form of contraception such as one of the highly effective methods mentioned above for female participants.
7.2.4. True abstinence – sexual abstinence is considered a highly effective method only if defined as refraining from heterosexual intercourse during the entire period of risk associated with the study treatments. The reliability of sexual abstinence needs to be evaluated in relation to the duration of the clinical trial and the preferred and usual lifestyle of the participant.
7.3. In addition to the contraceptive requirements above, male participants must agree not to donate sperm following discharge from quarantine until 90 days after the date of last dosing with IMP.
8. Serosuitable for the challenge virus. The serology result obtained from the RSV antibody assay suggests that the participant is sensitive to RSV infection (i.e., they are likely to be infected following inoculation with the challenge virus).

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 Years

Upper age limit
55 Years

Sex
All

Total final enrolment
142

Key exclusion criteria
1. History of, or currently active, symptoms or signs suggestive of upper or lower respiratory tract infection within 4 weeks prior to the first study visit.
2. Any history or evidence of any clinically significant or currently active cardiovascular, respiratory, dermatological, gastrointestinal, endocrinological, hematological, hepatic, immunological (incl. immunosuppression), metabolic, urological, renal, neurological, or psychiatric disease and/or other major disease that, in the opinion of the PI/investigator, may interfere with a participant completing the study and necessary investigations. The following conditions apply:
2.1. Participants with a history of resolved depression and/or anxiety may be included at the discretion of the PI.
2.2. Rhinitis (including hay fever) which is clinically active or a history of moderate to severe rhinitis, or history of seasonal allergic rhinitis likely to be active at the time of inclusion into the study and/or requiring regular nasal corticosteroids on an at least weekly basis, within 30 days of admission to quarantine will be excluded. Participants with a history of currently inactive rhinitis (within the last 30 days) or mild rhinitis may be included at the PI's discretion.
2.3. Atopic dermatitis/eczema which is clinically severe and/or requiring moderate to large amounts of daily dermal corticosteroids will be excluded. Participants with mild to moderate atopic dermatitis/eczema, taking small amounts of regular dermal corticosteroids may be included.
2.4. Any concurrent serious illness including history of malignancy that may interfere with a participant completing the study. Basal cell carcinoma within 5 years of initial diagnosis or with evidence of recurrence is also an exclusion.
2.5. Participants reporting physician-diagnosed migraine can be included provided there are no associated neurological symptoms such as hemiplegia or visual loss. Cluster headache/migraine or prophylactic treatment for migraine is an exclusion.
2.6. Participants with physician-diagnosed mild irritable bowel syndrome not requiring regular treatment can be included at the discretion of the PI.
3. Any participants who have smoked ≥10 pack years at any time (10 pack years is equivalent to one pack of 20 cigarettes a day for 10 years).
4. Females who:
4.1. Are breastfeeding, or
4.2. Have been pregnant within 6 months prior to the study, or
4.3. Have a positive pregnancy test at any point during screening or prior to viral challenge.
5. Lifetime history of anaphylaxis and/or a lifetime history of severe allergic reaction. Significant intolerance to any food or drug in the last 12 months, as assessed by the PI.
6. Venous access deemed inadequate for the phlebotomy and cannulation demands of the study.
7.1. Any significant abnormality altering the anatomy of the nose in a substantial way or nasopharynx that may interfere with the aims of the study and, in particular, any of the nasal assessments or viral challenge, (historical nasal polyps can be included, but large nasal polyps causing current and significant symptoms and/or requiring regular treatments in the last month will be excluded).

7.2. Any clinically significant history of epistaxis (large nosebleeds) within the last 3 months of the first study visit and/or history of being hospitalized due to epistaxis on any previous occasion.
7.3. Any nasal or sinus surgery within 3 months prior to the first study visit.
8.1. Evidence of vaccinations within the 4 weeks prior to the planned date of viral challenge.
8.2. Intention to receive any vaccination(s) before the last day of follow-up.
9. Receipt of blood or blood products, or loss (including blood donations) of 550 mL or more of blood during the 3 months prior to the planned date of viral challenge or planned during the 3 months after the final visit.
10.1. Receipt of any investigational drug within 3 months prior to the planned date of viral challenge.
10.2. Receipt of 3 or more investigational drugs within the previous 12 months prior to the planned date of viral challenge.
10.3. Prior inoculation with a virus from the same virus family as the challenge virus.
10.4. Prior participation in another human viral challenge study with a respiratory virus in the preceding 3 months, taken from the date of viral challenge in the previous study to the date of expected viral challenge in this study.
11. Use or anticipated use of concomitant medications to include vitamins or herbal and dietary supplements within the specified windows defined in the protocol, unless in the opinion of the study physician/PI, the medication will not interfere with the study procedures or compromise participant safety.
12. Confirmed positive drugs of abuse test.
13. A forced expiratory volume in 1 second (FEV1) <80%.
14. Positive HIV, hepatitis B, or hepatitis C test.
15. Presence of fever on Day -2, Day -1, and/or pre-challenge on Day 0.
16. hVIVO Employees or immediate relatives.
17. Medical opinion of PI

Date of first enrolment
15/09/2023

Date of final enrolment
15/09/2023

Locations

Countries of recruitment
United Kingdom

Study participating centre
-
United Kingdom
-

Sponsor information

Organisation

Enanta Pharmaceuticals (United States)

ROR
https://ror.org/04fpkm116

Funder(s)

Funder type
Industry

Funder Name
Enanta Pharmaceuticals, Inc.

Results and Publications

Individual participant data (IPD) sharing plan
The data-sharing plans for the current study are unknown and will be made available at a later date

IPD sharing plan summary
Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Other unpublished results	version 1.0	09/07/2025	11/07/2025	No	No