

Clinical Trial Protocol

Iranian Registry of Clinical Trials

18 Sep 2026

In vivo bioequivalence study of Citalopram 40 mg tablet of Hakim pharmaceutical Co. compared to innovator product

Protocol summary

Study aim

In vivo fasted-state bioequivalence study of Citalopram tablet

Design

The clinical trial has control and test groups with crossover, randomized design, without blinding. Twenty-four healthy volunteers will participate randomly in the study as two twelve-person study groups. To randomly assign participants in two groups, the lottery method will be used.

Settings and conduct

After oral administration of one Citalopram 40 mg tablet, the blood samples will be collected in predetermined time intervals up to 72 hours. The samples will be stored in freezer -4 degrees centigrade until analysis. The concentration of drug in blood samples will be measured by liquid chromatography equipped with mass spectroscopy detector. The study will be performed in Faculty of Pharmacy, Tabriz University of Medical Sciences. This study will be conducted without blinding.

Participants/Inclusion and exclusion criteria

Inclusion criteria: General Health (in terms of Liver, Heart and Kidney), Age (18-59 years old) Exclusion criteria: Smoking, History of cardiovascular, liver and kidney disease, Pregnancy, Alcohol and drug addiction, History of drug allergy

Intervention groups

Intervention group will receive a single oral dose of test product (Citalopram tablet of Hakim Co.) and Control group will receive a single dose of reference product (Citalopram tablet of Lundbeck Co., Netherland). Blood samples will be taken for 72 hours at the mentioned time points and the plasma will be stored in freezer until analysis. In both groups, breakfast and lunch will be served two and six hours after drug administration, respectively.

Main outcome variables

Drug plasma concentration

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220211053992N13**

Registration date: **2023-09-25, 1402/07/03**

Registration timing: **prospective**

Last update: **2023-09-25, 1402/07/03**

Update count: **0**

Registration date

2023-09-25, 1402/07/03

Registrant information

Name

Hadi Valizadeh

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 41 3334 8801

Email address

valizadehh@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-10-12, 1402/07/20

Expected recruitment end date

2024-05-20, 1403/02/31

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

In vivo bioequivalence study of Citalopram 40 mg tablet of Hakim pharmaceutical Co. compared to innovator product	
Public title	Investigating bioequivalence of Citalopram tablet
Purpose	Other
Inclusion/Exclusion criteria	
Inclusion criteria:	General Health (in terms of Liver, Heart and Kidney) Age (18-59 years old)
Exclusion criteria:	Smoking History of cardiovascular, liver and kidney disease Pregnancy Alcohol and drug addiction History of drug allergy
Age	From 18 years old to 59 years old
Gender	Both
Phase	Bioequivalence
Groups that have been masked	No information
Sample size	Target sample size: 24
Randomization (investigator's opinion)	Randomized
Randomization description	To randomly assign participants in two groups, 24 cards with numbers 1 to 24 will be used in closed envelopes that are arranged irregularly. Each candidate will pick up an envelope. Numbers 1-12 will be in group A and numbers 13-24 will be in group B. Group A will receive intervention 1 and group B will receive intervention 2, and after the first period, the interventions of both groups will change for the second period.
Blinding (investigator's opinion)	Not blinded
Blinding description	
Placebo	Not used
Assignment	Crossover
Other design features	
Secondary Ids	empty
Ethics committees	
<u>1</u>	
Ethics committee	
Name of ethics committee	Ethics Committee of Tabriz University of Medical Sciences
Street address	No.2 Central Building 3rd Floor, Tabriz University of Medical Sciences, Daneshgah st.
City	Tabriz
Province	East Azarbaijan
Postal code	51664-14766
Approval date	2023-09-04, 1402/06/13
Ethics committee reference number	IR.TBZMED.REC.1402.455
Health conditions studied	
<u>1</u>	
Description of health condition studied	In the present study, the products will be administered to healthy volunteers.
ICD-10 code	
ICD-10 code description	
Primary outcomes	
<u>1</u>	
Description	Plasma concentration of drug
Timepoint	0.5-72 hours in predetermined time intervals after drug administration
Method of measurement	HPLC (High performance liquid chromatography)
Secondary outcomes	empty
Intervention groups	
<u>1</u>	
Description	Intervention group: Intervention group will receive a single oral dose of test product (Citalopram 40 mg tablet manufactured by Hakim Co.) in fasted state. Blood samples will be collected for 72 hours at the mentioned times after drug administration and the concentration of drug in blood samples will be stored in freezer until analysis. Breakfast and lunch will be served two and six hours after drug administration, respectively.
Category	Treatment - Drugs
<u>2</u>	
Description	Control group: Control group will receive a single oral dose of reference product (Citalopram 40 mg tablet manufactured in Netherland) in fasted state. Blood samples will be collected for 72 hours at the mentioned times after drug administration and the concentration of drug in blood samples will be stored in freezer until analysis. Breakfast and lunch will be served two and six

hours after drug administration, respectively.

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

Faculty of Pharmacy, Tabriz University of Medical Sciences

Full name of responsible person

Hadi Valizadeh

Street address

Faculty of Pharmacy, Tabriz University of Medical Sciences, Attar Neishaboori St., Golgash St.

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valizadehh@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tabriz University of Medical Sciences

Full name of responsible person

Parviz Shahabi

Street address

No.2 Central Building, 3rd Floor, Tabriz University of Medical Sciences, Daneshgah st.

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Email

shahabip@tbzmed.ac.ir

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

No

Title of funding source

Hakim Pharmaceutical Co.

Proportion provided by this source

100

Public or private sector

Private

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Industry

Person responsible for general inquiries

Contact

Name of organization / entity

Tabriz University of Medical Sciences

Full name of responsible person

Hadi Valizadeh

Position

Professor

Latest degree

Ph.D.

Other areas of specialty/work

Medical Pharmacy

Street address

Faculty of Pharmacy, Tabriz University of Medical Sciences, Attar Neishaboori st.,Golgash st.

City

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Person responsible for scientific inquiries

Contact

Name of organization / entity

Tabriz University of Medical Sciences

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Person responsible for updating data

Contact

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Not applicable

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Not applicable

Data Dictionary

Not applicable