Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Bioequivalence study of Mirabegron 50 mg Extended-Release tablets manufactured by Faran Shimi Pharmaceutical Company vs. Betmiga ® tablets manufactured by Astellas Company in healthy volunteers

Protocol summary

Study aim

Examining the bioequivalency of domestically produced Mirabegron Extended-Release tablets formulations with brand name ®Betmiga

Design

A cross over, not blinded, randomized, bioequivalence clinical trial on 24 healthy volunteers.

Settings and conduct

Study place: Drug Applied Research Center affiliated to Tabriz University of Medical Science. The number of 24 volunteers in the age range of 18-55 years and the Body Mass Index range of 18-30, who are voluntarily selected through public notification. One extended-release tablet is taken fasting and blood is taken at 15 time points. Two weeks later, the process is repeated for the brand medicine.

Participants/Inclusion and exclusion criteria

Inclusion criteria: The weight range of 60-100 kg; being a non-smoker; being healthy in terms of physical examination, ECG, and the laboratory tests; Volunteers who have agreed to an informed consent form. Exclusion criteria: History of allergic or adverse reaction to Mirabegron or any similar product; blood pressure less than 60/90 mm Hg or higher than 90/140 mm Hg; Individuals who have donated whole blood during the previous 2 months of the study or donated blood components within 2 weeks before taking the first dose of the drug.

Intervention groups

Intervention group 1: Mirabegron Extended-Release tablets manufactured by Faran Shimi Pharmaceutical Company is the test product. Intervention group 2: Betmiga® tablets manufactured by Astellas Company is the reference product. In each period, 12 of 24 subjects will be given single dose of this product and for up to 72 hours, 3 ml of blood will be collected from the volunteer at 15 time points each time. After the washout period (Two weeks), the volunteers are placed in the opposite group

Main outcome variables

Plasma concentration of the drug

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20130313012810N159**
Registration date: **2026-10-30, 1405/08/08**
Registration timing: **prospective**

Last update: **2026-10-30, 1405/08/08**
Update count: **0**

Registration date

2026-10-30, 1405/08/08

Registrant information

Name

Hamed Hamishehkar

Name of organization / entity

Drug Applied Research Center, Tabriz University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 41 1336 3311

Email address

hamishehkar.hamed@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2026-11-05, 1405/08/14

Expected recruitment end date

2026-11-07, 1405/08/16

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Bioequivalence study of Mirabegron 50 mg Extended-Release tablets manufactured by Faran Shimi Pharmaceutical Company vs. Betmiga ® tablets manufactured by Astellas Company in healthy volunteers

Public title

Mirabegron Extended-Release tablet Bioequivalence

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

The weight range of participating candidates should be between 60-100 kg. All candidates must be non-smokers. Candidates should be healthy in terms of physical examination, ECG and the following laboratory tests: Hemoglobin, Hematocrit, Red and White Blood Count, MCV (Mean Body Volume), MCH (Mean Body Hemoglobin), Routine Urinalysis, Total Cholesterol, Triglyceride, Total Proteins, albumin, uric acid, total bilirubin, alkaline phosphatase, gamma glutamyl transpeptidase (γ-GT), aspartate aminotransferase (AST), alanine aminotransferase (ALT), urea, creatinine and fasting blood glucose. Volunteers who have agreed to an informed consent form. All candidates should not consume caffeine-containing drinks and chocolate during two days before the prescription, and this restriction must be followed until the last blood draw.

Exclusion criteria:

History of allergic or adverse reaction to Mirabegron or any similar product. Volunteers with blood pressure less than 90/60mm Hg or higher than 140/90mm Hg. Individuals who have donated whole blood during the last 2 months. Individuals who have donated blood components, such as platelets, within the past 2 weeks.

Age

From **18 years** old to **55 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 people in two groups, 24 cards with numbers 1 to 24 will be used in closed envelopes arranged irregularly. Each candidate will pick up an envelope after entering the study, and 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

1

Ethics committee

Name of ethics committee

Ethics committee of Tabriz University of Medical Sciences

Street address

Tabriz University of Medical Sciences, Daneshgah Street, Tabriz

City

Tabriz

Province

East Azarbaijan

Postal code

5165665811

Approval date

2026-10-05, 1405/07/13

Ethics committee reference number

IR.TBZMED.REC.1405.494

Health conditions studied

1

Description of health condition studied

Bioequivalence study in healthy volunteers

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Plasma concentration of the drug

Timepoint

15 time points 0, 1, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 8, 10, 24, 48 and 72 hours after drug administration

Method of measurement

Liquid Chromatography with tandem mass spectrometry (LC-MS-MS)

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Intervention group 1: In this group, volunteers are given a single oral dose of Mirabegron 50 mg Extended-Release tablets manufactured by Faran Shimi Pharmaceutical Company. In each period, 12 of 24 subjects will be given a single oral dose of this product. After the washout period (Two weeks), the volunteers are placed in the Intervention group 2.

Category
Treatment - Drugs

2

Description
Intervention group 2: In this group, volunteers are given a single oral dose of the Mirabegron 50 mg Extended-Release tablets manufactured by Astellas Pharmaceutical Company. In each period, 12 of 24 subjects will be given a single oral dose of this product. After the washout period (Two weeks), the volunteers are placed in the Intervention group 1.

Category
Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center
Drug Applied Research Center, Tabriz University of Medical Sciences

Full name of responsible person
Hamed Hamishehkar

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Drug Applied Research Center, Tabriz University of Medical Sciences, Daneshgah Street, Tabriz

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hamishehkar.hamed@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Faran Shimi Pharmaceutical Co.

Full name of responsible person
Ali Mortazavi Tabrizi

Street address
Tuyserkan Industrial Park, 7 km from Kermanshah Road, Tuyserkan, Hamedan Province, Iran

City
Hamedan

Province
Hamadan

Postal code
6583117698

Phone
+98 21 5794 1000

Fax
+98 21 5794 1499

Email
nfo@faranshimi.com

Web page address
https://faranshimi.com/

Grant name

Grant code / Reference number

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

Title of funding source
Faran Shimi 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
Hamed Hamishehkar

Position
professor

Latest degree
Ph.D.

Other areas of specialty/work
Medical Pharmacy

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Person responsible for scientific inquiries

Contact

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Full name of responsible person

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Person responsible for updating data

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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

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available