

Clinical Trial Protocol

Iranian Registry of Clinical Trials

13 Jun 2026

Bioequivalence study of Metoprolol Succinate ER 47/5 mg Extended Release Tablet (Saponine Iran) versus Toprol XL 50 (Arelez pharmaceuticals) Tablet after single oral dosing in healthy volunteers

Protocol summary

Study aim

Bioequivalence study of Metoprolol Succinate ER 47/5 mg Extended Release Tablet (Saponine Iran) versus Toprol XL 50 (Arelez pharmaceuticals) Tablet after single oral dosing in healthy volunteers

Design

Bioequivalence study, with control group, double-blind, randomized, on 24 volunteers, from each volunteer 20 blood samples were taken. Sealed envelope is used for randomization.

Settings and conduct

The subject of this biopharmaceutical and pharmacokinetic study is the location of Blood collection center of Tam Pouya Company located in Tehran. The study was blinded to the study participants by removing the drugs from the original package and placing the test and reference drugs in the same package, and the participants were not aware of the type of drug they were taking. The crossover design is such that the Iranian drug will be prescribed to the first group in the first week and to the second group in the second week. Brand medicine, on the contrary, Iranian medicine will be prescribed.

Participants/Inclusion and exclusion criteria

Inclusion criteria: general health (liver, heart and kidneys), body mass index (18-28), informed consent, age (50-18) Exclusion criteria: smoking, history of cardiovascular disease, history of liver disease and Renal, alcohol and drug addiction, history of allergy to Metoprolol

Intervention groups

Intervention group: Receives one tablet of test drug (Metoprolol Succinate ER 47/5 mg tablet pharmaceutical company Saponine Iran). Control group: Receives one reference medicine Tablet (Toprol XL 50 mg tablet Arelez pharmaceuticals).

Main outcome variables

Determination of blood concentration profile parity of brand drug with generics. Metoprolol succinate brand Toprol XL 50 has an active ingredient of 5.47 mg of metoprolol.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220111053692N14**

Registration date: **2023-11-06, 1402/08/15**

Registration timing: **registered_while_recruiting**

Last update: **2023-11-06, 1402/08/15**

Update count: **0**

Registration date

2023-11-06, 1402/08/15

Registrant information

Name

Bardia Jamali

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 8897 4707

Email address

info@tampouya.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-11-01, 1402/08/10

Expected recruitment end date

2023-11-08, 1402/08/17

Actual recruitment start date

empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Bioequivalence study of Metoprolol Succinate ER 47/5 mg Extended Release Tablet (Saponine Iran) versus Toprol XL 50 (Arelez pharmaceuticals) Tablet after single oral dosing in healthy volunteers

Public title
Bioequivalence study of Metoprolol Succinate ER 47/5 mg

Purpose
Other

Inclusion/Exclusion criteria

Inclusion criteria:

18 to 55 years old Weight in range of 10 % proper body weight All volunteers should be in a good health condition on the basis of medical history ,physical examination , routine blood test. Possessing negative test for hepatitis B surface antigen (HBs-Ag), Antihepatitis-C antibody (anti-HCV) and anti-HIV. Gender: male

Exclusion criteria:

Volunteers with hypersensitivity to Metoprolol Succinate were excluded. Those with known history of drug abuse. alcohol consumer or cigarette smokers. Taking medications that have drug interactions with Metoprolol Succinate until one month before studying. Disinclination to take the test Blood donation or blood loss of more than 200 ml in the past month

Age
From **18 years** old to **55 years** old

Gender
Male

Phase
Bioequivalence

Groups that have been masked

- Participant
- Care provider

Sample size
Target sample size: **24**

Randomization (investigator's opinion)
Randomized

Randomization description
In order to randomly allocate people in two groups, 24 cards with numbers 1 to 24 will be used in closed envelopes that are placed in random order. After entering the study, each candidate will take 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 (test product) and group B will receive intervention 2 (reference product) and after the first period, the interventions of the two groups will be moved for the second period

Blinding (investigator's opinion)
Double blinded

Blinding description

This study is a Double-blind (participant) clinical trial. Metoprolol Succinate and Toprol XL tablets are removed from the package by the administrator and placed in similar and coded cans. Medicine and placebo are the same in terms of the method of administration

Placebo
Not used

Assignment
Crossover

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committees of The Institute of Pharmaceutical Sciences, Tehran University of Medical Sciences

Street address

Research Institute of Pharmaceutical Sciences, second floor of the old building, Faculty of Pharmacy, Enqelab Square, 16 Azar St.

City

Tehran

Province

Tehran

Postal code

1417613151

Approval date

2023-10-17, 1402/07/25

Ethics committee reference number

IR.TUMS.TIPS.REC.1402.093

Health conditions studied

1

Description of health condition studied

Bioequivalence study of Metoprolol Succinate ER 47/5 mg Extended Release Tablet (Saponine Iran) versus Toprol XL 50 (Arelez pharmaceuticals) Tablet after single oral dosing in healthy volunteers

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Drug concentration in plasma samples

Timepoint

In times 0 , 1, 2, 2/5 , 3, 3/5, 4, 4/5 , 5, 5/5 , 6, 6/5, 7, 7/5, 8, 9, 10, 18, 24, 30, 36 , 48 Hours after the start of the intervention

Method of measurement

chromatography

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Intervention group: Receives one tablet of test drug (Metoprolol Succinate ER 47/5 mg tablet pharmaceutical company Saponine Iran). Blood samples were taken from the volunteers for 48 hours at the mentioned times after drug administration and the drug concentration in plasma samples was measured by liquid chromatography with UV detector.

Category

Other

2

Description

Control group: Receives one reference medicine tablet (Toprol XL 50 mg tablet Arelez pharmaceuticals). Blood samples were taken from the volunteers for 48 hours at the mentioned times after drug administration and the drug concentration in plasma samples was measured by liquid chromatography with UV detector

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Tam Pouya Consulting & Research Company

Full name of responsible person

Bardia Jamali

Street address

No. 7 ,Navard Ave ,17 Shahrivar St., 5th Km Fat`h Highway

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Email

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Saponine Pharmaceutical Company

Full name of responsible person

Engineer Ali Shabestari Lor

Street address

Unit 4, 2nd floor, No. 5, (Palizi) 20th St, Shahid Ghandi St, North Sohrevardi St.,

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Email

info@saponine.com

Web page address

https://www.saponine.com

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Saponine Pharmaceutical Company

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

Other

Person responsible for general inquiries

Contact

Name of organization / entity

Tam Pouya Consulting & Research Company

Full name of responsible person

Bardia Jamali

Position

manager

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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Tam Pouya Consulting & Research Company

Full name of responsible person

Bardia Jamali

Position

manager

Latest degree

Ph.D.

Other areas of specialty/work

Medical Pharmacy

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Person responsible for updating data

Contact

Name of organization / entity

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Full name of responsible person

Motahareh Moafi

Position

Office worker

Latest degree

Master

Other areas of specialty/work

Office worker

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

No more information

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