REPORT

ACUTE ORAL TOXICITY STUDY OF SARVATOBHADRA VATI IN WISTAR RATS

SPONSOR

SHREE DHOOTAPAPESHWAR LIMITED

MUMBAI

PERFORMING LABORATORY

ANIMAL HOUSE

SHREE DHOOTAPAPESHWAR AYURVEDIC RESEARCH FOUNDATION

PANVEL-410206

MAHARASHTRA

STUDY DIRECTOR

DR. R.V.GUDI

REPORT SUBMISSION DATE: 02/02/2022

SHREE DHOOTAPAPESHWAR AYURVEDIC RESEARCH FOUNDATION
PANVEL
DIST. RAIGAD
M.S.

REPORT ON

NON-CLINICAL PHARMACOLOGY

Single dose acute oral toxicity of Sarvatobhadra Vati in Wistar rats

PROJECT START DATE: 05/01/2022

PROJECT END DATE: 18/01/2022

DATE OF REPORT SUBMISSION: 02/02/2022

TITLE OF THE PROJECT	Single dose acute oral toxicity of Sarvatobhadra Vati in Wistar rats.
PRINCIPAL INVESTIGATOR	MR. SANTOSH YADAV
PERFORMING LABORATORY & INSTITUTE NAME	ANIMAL HOUSE, SHREE DHOOTAPAPESHWAR AYURVEDIC RESEARCH FOUNDATION, PANVEL-410206 MAHARASHTRA
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ANIMAL ETHICS COMMITTEE PROTOCOL NUMBER	SDARF/2021/AT/13

STATEMENT OF COMPLIANCE

Test substance: Sarvatobhadra Vati

We hereby attest to the authenticity of the study and guarantee that the data is correct and accurate to the best of our knowledge and that the study was performed by the procedure described in the Standard Operating Procedures of Animal House, Shree Dhootapapeshwar Ayurvedic Research Foundation, Panvel.

The study complies with the protocol mutually agreed under the regulations of the Committee for the Purpose of Control and Supervision of Experiment on Animals (CPCSEA) Registration No. 136/PO/RcBi/S/99/CPCSEA.

Study Director	Signature & Date
Dr. R.V. Gudi	02/02/2022

SHREE DHOOTAPAPESHWAR AYURVEDIC RESEARCH FOUNDATION
PANVEL
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ETHICAL COMMITTEE PERMISSION AND CONFIDENTIALITY

We hereby confirm that research protocol was approved by Institutional Animal Ethics Committee (IAEC), Protocol No. SDARF/2021/AT/13 (Copy of approval Certificate is enclosed).

All the animals were euthanized after the completion of the study. The study was conducted using recommended/ approved anaesthetics and under the supervision of a veterinarian.

The report is confidential in nature and access restricted to authorized person only.

Study Director	Signature & Date
Dr. R.V. Gudi	02/02/2022

SHREE DHOOTAPAPESHWAR AYURVEDIC RESEARCH FOUNDATION
PANVEL
DIST. RAIGAD
M.S.

CERTIFICATE ON COMPLETION OF PROJECT

Project Title	Single dose acute oral toxicity of Sarvatobhadra Vati in Wistar rats
Sponsored by	Shree Dhootapapeshwar Limited, Mumbai
Research Conducted at	Animal House, Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel
Project Completed by	Ms. Chaitali S. Waghmare, Scientist In-charge of Animal House Facility, SDARF, Panvel

We hereby confirm that research project is successfully completed and report has been submitted.

Study Director	Signature & Date
Dr. R.V. Gudi	02/02/2022

SHREE DHOOTAPAPESHWAR AYURVEDIC RESEARCH FOUNDATION
PANVEL
DIST. RAIGAD
M.S.

CERTIFICATE OF PERSONNEL INVOLVED

This is to certify that the presented work in this report entitled "Single dose acute oral toxicity of Sarvatobhadra Vati in Wistar rats" is carried in the Animal House of Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel. The relevant documentation is maintained in the department.

Personnel involved	
Report prepared by	Ms. Chaitali S. Waghmare
Report approved by	Dr. R.V. Gudi

02/02/2022

(Signature of Study Director)

Dr. R. V. Gudi

SHREE DHOOTAPAPESHWAR AYURVEDIC RESEARCH FOUNDATION ★ PANVEL DIST. RAIGAD M.S.

Abstract

Objective: To study acute oral toxicity of Sarvatobhadra Vati in wistar rats

Material and Method: Animals were acclimatized for 7 days prior to study and acute oral toxicity was conducted according to the OECD guideline 423. Animal was divided in to two groups i.e. normal control and test group. Test group received single oral dose of Sarvatobhadra Vati 2000mg/kg according to their body weight and normal control group received water *ad.libitum*. Animals were observed for mortality as well as for any toxicological alteration for 14 days.

Result: No mortalities and clinical alterations was observed in wistar rats after oral administration of Sarvatobhadra Vati at dose of 2000mg/kg. No significant difference in body weight and food consumption was observed in test group. This implying that Sarvatobhadra Vati is non-toxic.

Conclusion: The result suggest that, the single dose oral administration of Sarvatobhadra Vati did not produce any significant toxicity in rats. The tablet was found to be safe at dose of 2000mg/kg in wistar rats.

1. Introduction

Sarvatobhadra Vati is an Ayurvedic herbo-mineral formulation. It contains Suvarna Bhasma, Rajat Bhasma, Abhrak Bhasma, Loha Bhasma, Shodhit Shilajatu, Shodhit Gandhak, and Suvarnamakshik Bhasma all this ingredients processed in Varuna stem bark (Crataeva nurvala) Kwath quantity sufficient. It is mainly recommended for disorders associated with kidney and urinary bladder, other than Bright's disease, kidney & bladder stones. Toxicity is an expression of being poisonous which has an interaction between toxicants and cells that shows the state of adverse effects. Depending on the chemical properties of the toxicants and the cell membrane, the interaction may vary, as it may occur on the cell surface, within the cell body, or in the tissues beneath as well as at the extracellular matrix. Evaluation of toxic properties of a substance is crucial, because this toxicants has the affinity to bind vital organs such as liver and kidneys [1]. The main aim of these study is to determine the acute oral toxicity of Sarvatobhadra Vati in animal models. The acute oral toxicity was carried on Female Wistar rats as per Organization for Economic Cooperation and Development (OECD-423) guidelines to determine the Lethal dose (LD50) of the drug [2].

2. Material and Method

2.1 Collection of drug

The tablets of Sarvatobhadra Vati was collected from Shree Dhootapapeshwar Limited, Panvel.

2.2 Animals

The experiments were carried out in accordance of the Institutional Animal Ethics Committee (Protocol No. SDARF/2021/AT/13). Female Wistar rats weighing 150- 250 g was selected for the study. The animals were housed in CPCSEA approved animal house facility of Shree

Dhootapapeshwar Ayurvedic Research Foundation, Panvel. The animals were maintained at 22 ± 03°C with constant humidity (30-70%) and 12 hrs day and night cycle. Animals were fed with Amrut brand rat pellet feed and water *ad libitum*.

2.3 Acute Oral Toxicity

The Acute oral toxicity study was performed according to the OECD Guidelines-423. Nulliparous and Non-pregnant female wistar rats of 8-12 weeks of age and 150-250g body weight (falling within ± 20% of the mean initial body weights of each sex) were used [3]. The animals were randomly divided in to two groups such as Normal control and Test group. Each group contain three animals [4, 5, 6, 7]. Animals should be kept for fasting prior to dosing (food but not water should be withheld for 3-4 hours). Powder of Sarvatobhadra Vati was mixed with freshly prepared 1% CMC (Carboxy Methyl Cellulose). Single oral dose of freshly prepared immiscible suspension of Sarvatobhadra Vati was administered orally to the test group animals. Individual body weight of animals should be determined before the administration of the test substance and at termination thereafter. Changes in weight should be recorded. At the end of the study surviving animals should be weighed and killed humanely. After dosing, individual animal should be observed during first 30 minutes, periodically during first 24 hours also gives special attention for further 4 hours, and daily thereafter for complete 14 days [8]. The animals should be observed for behavioral changes, changes in skin, fur, eyes. Attention to be given to observed tremors, convulsions, salivation, diarrhea, sleep and coma [7]. Gross necropsies should be performed on animals, including those sacrificed moribund, found dead, or terminated after 14 days [9].

2.4 Statistical Analysis

The data was analyzed using Graph pad prism software. The results were analyzed with one way ANOVA followed by Dunnett's Multiple Comparison test. All results were expressed as Mean ± SD.

3. Result

The main aim of the present study was to investigate the acute oral toxicity Sarvatobhadra Vati. All the animals of test group was administered with tablets at the dose of 2000mg/kg according to the body weight. No morbidity or mortality as well as no sign of toxicity was observed in treated animals. All animals showed similar food consumption, gain in body weight, and general appearance as that of normal control group. The survived animals were observed for further 14 days, there was no changes observed in behavioral pattern. No abnormalities or pathological changes were observed in the necropsy.

Table: 1 General appearance and behavioral observation of the survived animals (For 14 days) Normal control group (A) and Test group (B)

(A) Normal Control Group					
Parameters	**30 mins**	**2hrs**	**4 hrs**	**24hrs**	**14th Day**
Fur & Skin	NAD	NAD	NAD	NAD	NAD
Eyes	NAD	NAD	NAD	NAD	NAD
Salivation	NAD	NAD	NAD	NAD	NAD
Urine Colour	NAD	NAD	NAD	NAD	NAD
Faeces consistency	NAD	NAD	NAD	NAD	NAD
Sleep	NAD	NAD	NAD	NAD	NAD
Convulsions	NAD	NAD	NAD	NAD	NAD
Tremors	NAD	NAD	NAD	NAD	NAD
Itching	NAD	NAD	NAD	NAD	NAD
Behaviour pattern	NAD	NAD	NAD	NAD	NAD
Coma	N.F	N.F	N.F	N.F	N.F
NAD= No abnormality detected, N.F= Not found					

(B) Test Group					
Parameters	**30 mins**	**2hrs**	**4 hrs**	**24hrs**	**14th Day**
Fur & Skin	NAD	NAD	NAD	NAD	NAD
Eyes	NAD	NAD	NAD	NAD	NAD
Salivation	NAD	NAD	NAD	NAD	NAD
Urine Colour	NAD	NAD	NAD	NAD	NAD
Faeces consistency	NAD	NAD	NAD	NAD	NAD
Sleep	NAD	NAD	NAD	NAD	NAD
Convulsions	NAD	NAD	NAD	NAD	NAD
Tremors	NAD	NAD	NAD	NAD	NAD
Itching	NAD	NAD	NAD	NAD	NAD
Behaviour pattern	NAD	NAD	NAD	NAD	NAD
Coma	N.F	N.F	N.F	N.F	N.F
NAD= No abnormality detected, N.F= Not found					

Table: 2 Effect on body weight in wistar rats

Day	Normal Control Group	Test Group
Zero Day	214.7 ± 14.05	231.0 ± 12.17
14th Day	219.3 ± 14.01	235.0 ± 13.23

Values are expressed as mean± SD; n = 3; Data analyzed by One-way ANOVA test followed by Dunnett's multiple test for comparison.

4. Conclusion

Sarvatobhadra Vati is an Ayurvedic herbo-mineral formulation. The presence of metals and minerals in Ayurvedic medicines is a matter of great concern for human health [10]. The result suggest that, the oral administration of Sarvatobhadra Vati did not produce any significant toxicity in rats. The tablet was found to be safe at dose of 2000mg/kg in wistar rats.

IAEC Approval Certificate

Protocol No SDARF/2021/AT/13
Project Title: Single dose acute oral toxicity of Sarvatobhadra Vati in Wistar rats.
Name of PI: Mr. Santosh Yadav

Certificate

This is to certify that the project proposal no. SDARF/2021/AT/13 entitled Single dose acute oral toxicity of Sarvatobhadra Vati in Wistar rats. submitted by Mr. Santosh Yadav has been approved/ recommended by the IAEC of Shree Dhootapapeshwar Ayurvedic Research Foundation (Organization) in its meeting held on 23rd October 2021 (Date) and 15 Wistar Rats (Number and Species of animals) have been sanctioned under this.

Authorized by	Name	Signature	Date
Chairman	Dr. R. V. Gudi		20/11/2021
Member Secretary	Ms. Chaitali S.W.		20/11/2021
Main Nominee of CPCSEA	Dr. Vikas Dighe		22/11/2021

5. References

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