धूतपापेश्वर

आयुर्वेद श्रेष्ठता के १५० से अधिक वर्ष

Over 150 Years

# Evidence Based "AYURVED"

## Compilation of Published Abstracts

# Preface

teamSDL constantly strives to achieve better and better Vaidya and Rugna satisfaction, through **Authentic, Standardised, Safe** and **Efficacious** Ayurved formulations. Our **Research & Development** centre constantly supports in-house production facilities to guarantee quality products consistently. In this era of **Evidence Based Medicine**, we have proven and published that **Suvarna Bhasma** manufactured by **Shree Dhootapapeshwar Limited (SDL)**, adheres to cited Ayurved references. Through our collaboration with esteemed institutes like **Indian Institute of Technology (IIT)**, Mumbai and **National Institute of Research in Reproductive and Child Health (NIRRCH)**, Mumbai we could establish **safety** [biochemical safety, histopathological safety, non-neurotoxic, non-mutagenic and non-genotoxic potential] of **Suvarna Bhasma**. Our pioneer work on protection against rotenone-induced Parkinsonism in *zebra-fish* is under review in journal of international repute. We have also established cardio-protective and pancreato-protective potential of our classical and proprietary formulations. Recently we have published data on chondroprotective mode of action for our proprietary formulation.

Our research is not just limited to quality control laboratories and experimental animals. We are also engaged in conducting rigorous clinical trials in reputed Ayurved and Allopathy institutes. In designing clinical trials on our products, we always consider inclusion of Ayurved parameters like Amlapitta Symptom Rating Scale score, Pandurog Assessment Scale, Ayurved Symptom Score for Asthikshaya etc. Our clinical research on Pandurog (Iron Deficiency Anemia) and Amlapitta (Endoscopic Gastritis) have found worthwhile place in PubMed indexed journals. We have recently established immunostimulant potential of our Avaleha preparation and are on verge of completing a multi-centric study involving 200 participants in Amlapitta.

This compilation of our published abstracts is a small attempt to highlight our research work to revalidate the Ayurved manufacturing process and establish efficacy and non-toxicity of our formulations to enhance confidence of Vaidya fraternity.

Thank you

Sincerely yours,

**Dr. Mukesh B Chawda**
Senior Manager - Medical Services

# Index

# Index

# Evaluation of chronic toxicological profile of herbo-mineral formulations: Shwaskas Chintamani Rasa and its marketed formulation namely Kas Shwas Hari Rasa

**Cite as:**

Waghmare CS, Bidve S, Gudi RV, Yadav S, Chawda MB, Nalawade ML. Evaluation of chronic toxicological profile of herbo-mineral formulations: Shwaskas Chintamani Rasa and its marketed formulation namely Kas Shwas Hari Rasa. J Ayurveda Integr Med. 2022 Jul-Sep;13(3):100615. doi: 10.1016/j.jaim.2022.100615. Epub 2022 Sep 8. PMID: 36088824; PMCID: PMC9471453.

**Publication Year:**

2022

**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.

## ABSTRACT:

**Background:** Shwaskas Chintamani Rasa (SKC) and Kas Shwas Hari Rasa (KSH) are the Ayurvedic herbo-mineral formulations. These Ayurvedic formulations contain heavy metals which is the reason of concern and might bring up the safety issue.

**Objective:** This research article is aimed to study chronic toxicity of SKC and KSH for safety aspect in Wistar rats.

**Material and method:** A study group of 220 healthy rats were divided into six groups. These rats were administered with SKC and KSH formulations where both the formulations were administered for 180 consecutive days. SKC was administered at doses of 58 mg/kg (equivalent to therapeutic dose i.e. TD), 145 mg/kg (2.5 TD), 290 mg/kg (5 TD) and KSH was administered at dose of 58 mg/kg (TD). According to OECD guideline 452, the effect of these formulations was examined on hematology, serum biochemistry and histopathology of various organs.

**Results:** Both the formulations did not produce any signs or symptoms of treatment related toxicity in both male and female Wistar rats at therapeutic dose (TD), 2.5 times TD and 5 times TD.

**Conclusion:** Based on these findings, the NOAEL (No observed adverse effect level) for test formulations SKC and KSH tablets in male and female wistar rats concluded to be preclinically safe.

# Cardioprotective effect of Hrudroga Chintamani Rasa in isoproterenol induced cardiotoxicity in male Sprague Dawley rats

**Cite as:**

Laddha, A.P., Chawda, M.B. & Kulkarni, Y.A. Cardioprotective effect of Hrudroga Chintamani Rasa in isoproterenol induced cardiotoxicity in male Sprague Dawley rats. J Diabetes Metab Disord (2022). https://doi.org/10.1007/s40200-022-01012-4.

**Publication Year:**

2022

**Collaborating Institute(s):**

Shobhaben Pratapbhai Patel School of Pharmacy & Technology Management, SVKM's NMIMS, Department of Pharmacology, V.L. Mehta Road, Vile Parle (West), Mumbai 400 056, Maharashtra.

## ABSTRACT:

**Purpose:** Ayurvedic system, a traditional medicinal system has mentioned a preparation Bruhat Vata Chintamani Rasa (Suvarnayukta) for management of heart diseases. Hrudroga Chintamani Rasa (HCR) is a formulation containing Bruhat Vata Chintamani Rasa and a few additional ingredients having beneficial effects in heart diseases. The present study was designed to investigate the cardioprotective activity of the Hrudroga Chintamani Rasa in isoproterenol (ISO)-induced myocardial infarction in rats.

**Methods:** Male Sprague Dawley rats were treated with HCR at a dose of 56.16 and 112.32 mg/kg for 30 days. Animals received ISO (85 mg/kg. s.c.) on 28$^{th}$ and 29$^{th}$ day at an interval of 24 h.

**Result:** Disease control animals treated with HCR at a dose of 56.16 mg/kg and 112.32 mg/kg to rats showed a significant reduction in elevated levels of aspartate aminotransferase (AST), lactate dehydrogenase (LDH), and creatine phosphokinase MB (CK-MB), and prevented loss of depleted antioxidant enzymes from the cardiac tissue. ISO-altered electrocardiogram pattern and haemodynamic parameters were also brought about to normal by treatment with HCR. HCR treatment also improved the levels of 5' adenosine monophosphate-activated protein kinase (AMPK) and Silent information regulator 1 (SIRT1) which have potent role in antioxidant defence mechanism. Histopathological findings also showed HCR treatment prevented cardiac tissue from damage.

**Conclusion:** HCR treatment showed a significant cardioprotective effect in ISO-induced cardiotoxicity in rats probably because of the potent antioxidant activity.

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# Characterization of Copper-based ayurved medicine Tamra bhasma produced by various manufacturers and its pharmacokinetic profiling in Wistar rat

**Cite as:**

Waghmare C. S., Bidve S., Gudi R. V., Chawda M. B., Yadav S. (2022). Characterization of Copper-based Ayurved Medicine Tamra bhasma produced by various manufacturers and its Pharmacokinetic profiling in Wistar rat. International Journal of Ayurvedic Medicine,13(2),487-494.

**Publication Year:**

2022

**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel,
Navi Mumbai - 410 206, Maharastra.

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## ABSTRACT:

**Background:** Tamra bhasma (TB) is copper based herbo-metallic preparation which is used extensively by Ayurvedic practitioners. Tamra bhasma is endorsed for different disorders of liver, abdominal pain, heart disease, colitis, tumors, anemia, loss of appetite, tuberculosis, as well as eye problems.

**Objective:** Our aim is to characterize 5 commercial TB preparations from 5 different manufacturers by using modern scientific techniques and to study there bioavailability in Wistar rat.

**Materials and Methods:** Tamra bhasma was characterized by X-ray diffraction (XRD), Scanning electron microscope (SEM), Energy Dispersive X-ray analysis (EDAX), Nanoparticle tracking analyzer (NTA), Inductively coupled plasma optical emission spectroscopy (ICP-OES). Bioavailability of Tamra bhasma was studies using non compartmental rat model with daily dose of 6.45 mg/kg according to their body weight.

**Results:** The colour of one of the TB preparation was different from other 4 TB samples. The chemical phase and particle size is significantly different for all the 5 TB's. Pharmacokinetic model confirms difference in various PK parameters such as peak concentration ($C_{max}$), half-life ($t_{1/2}$) and terminal elimination slope (λz) for all 5 TB's. TB-A showed highest $C_{max}$ (82.21 mg/L), whereas TB-E showed lowest $C_{max}$ (48.69 mg/L). The highest bioavailability of TB is may be due to specific chemical moiety and morphology. Based on XRD and elemental analysis, it was found that manufacturing route followed for one of the preparation is not as per ayurvedic text reference.

**Conclusions:** The morphology as well as chemical phase of the five TB's studied were different from each other, which might be responsible for different pharmacokinetic profiles in Wistar rat model.

# Phytochemical and elemental profiling and standardization of some ayurveda medicines used in COVID-19 Pandemic


## ABSTRACT:

Tribhuvankirti Rasa is a herbo-mineral Ayurvedic medicine regularly used to treat different types of fever. It has antipyretic and analgesic activities. It is an effective medicine for the common cold, flu and other Vata kapha problems. Laghumalini Vasanta is also Ayurvedic medicine, used to treat chronic fever and effective in pitta disorders. Ministry of AYUSH, Government of India also recommended these medicines to prevent the severe conditions of Cov-2 infection. Review of literature suggested that phytochemical and elemental characterization parameters of Tribhuvankirti Rasa and Laghumalini Vasant are not reported. The objective of this study is to report phytochemical and elemental profiling and to standardize Tribhuvankirti Rasa (TKR) and Laghumalini Vasant (LMV) to confirm quality and purity. Tribhuvankirti Rasa and Laghumalini Vasant evaluated for phytochemical and elemental parameters by HPTLC and ICP-OES respectively. HPTLC analysis confirms LMV contains Piperine and TKR contains Piperine and 6-Gingerol. The solvent systems toluene: ethyl acetate (7: 3) v/v for Piperine & Hexane: Ethyl acetate: Formic acid (4 : 6 : 0.1) v/v for 6-Gingerol were optimized. ICP-OES analysis confirms presence of Zn in LMV and Hg in TKR. HPTLC and ICP-OES methods were validated successfully for Tribhuvankirti Rasa and Laghumalini Vasant. The characterization and method validation parameters presented in this paper may serve as standard reference for quality control analysis of Tribhuvankirti Rasa and Laghumalini Vasant.



**Cite as:**

Priyanka Patil, Madhuree Gawhankar, Shivcharan Bidve, R V Gudi and Atul Lavand. Phytochemical and elemental profiling and standardization of some Ayurveda Medicines used in COVID-19 Pandemic. Int. J. Res. Ayurveda Pharm. 12(4),2021

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2021



**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel,
Navi Mumbai - 410 206, Maharastra.


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Shree Dhootapapeshwar Standards
SDS Monograph No. 0800234
Tribhuvankeerti Rasa

# Evaluation of anti-osteoporotic activity of Asthiposhak Tablets in ovariectomized rats


## ABSTRACT:

Osteoporosis is a condition that makes the bones porous, fragile, and prone to fractures. Although it is very prevalent in elderly people, it is more common in women, especially after menopause. The present study aimed to evaluate the effect of Asthiposhak Tablets on their anti-osteoporotic activity in ovariectomized (OVX) rats. Thirty-two female albino Wistar rats were randomly divided into four groups (n=8). Group 1 served as sham-operated control. Group 2 rats were ovariectomized (OVX) and served as a negative control. Group 3 received raloxifene (5.4 mg/kg i.p.) and served as the standard control, and Group 4 received Asthiposhak (405 mg/kg p.o.) and served as treatment control. After 60 days of ovariectomy, animals were treated with Asthiposhak for the next 45 days. At the end of the study, femur bone length, weight, bone ash calcium level, and bone mineral density (BMD) were estimated. The levels of serum alkaline phosphatase (ALP), calcium, and phosphorous, and bone histopathology were also evaluated. OVX-induced increased serum ALP, calcium, and phosphorous levels were significantly attenuated in Asthiposhak-treated rats. Asthiposhak treatment significantly prevented an OVX-induced increase in body weight. The calcium content in bone ash was significantly increased on Asthiposhak treatment indicating remineralization of bones. OVX-induced decrease in BMD was significantly reversed in Asthiposhak-treated animals. Femur bone histopathology revealed increased trabecular thickness and decreased osteoclast formation in Asthiposhak-treated animals. Asthiposhak exhibited a significant anti-osteoporotic effect in the experimental model of OVX-induced osteoporosis in rats. These results indicate Asthiposhak can be beneficial in postmenopausal osteoporosis.



**Cite as:**

Mrinal Sanaye, Bhavna Bora, Mukesh Chawda & Viplav Kshirsagar. Evaluation of anti-osteoporotic activity of Asthiposhak Tablets in ovariectomized rats. IJPSR, 2021; Vol. 12(6):3498-3507.

**Publication Year:**

2021



**Collaborating Institute(s):**

Prin. K. M. Kundnani College of Pharmacy, Department of Pharmacology, Cuffe Parade, Colaba, Mumbai - 400 005, Maharastra.


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# Evaluation of the effect of an ayurvedic formulation Myostaal Forte tablets on chondroprotective biomarkers in an experimental model of osteoarthritis in rats

**Cite as:**

Shetty YC, Singh VK, Manjesh PS, Vetrivel Babu Nagarajan, Patil P, Chawda M, Rege NN, Evaluation of the effect of an ayurvedic formulation Myostaal Forte tablets on chondroprotective biomarkers in an experimental model of osteoarthritis in rats, Phytomedicine Plus,Volume 1, Issue 3, 2021, 100082,ISSN 2667-0313,https://doi.org/10.1016/j.phyplu.2021.100082.

**Publication Year:**

2021

**Collaborating Institute(s):**

Seth G. S. Medical College & K.E.M Hospital, Department of Pharmacology & Therapeutics, Parel, Mumbai - 400 012, Maharastra.

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## ABSTRACT:

**Background:** Osteoarthritis is a chronic progressive disease commonly affecting the hip and knee joints. Although many drugs are available and afford symptomatic relief, their side effects pose limitations to their continuous use. **Introduction:** Myostaal forte (MF) is a poly herbal Ayurvedic formulation that has shown protection against damage to the chondrocyte layer on histopathological examination in previous studies. But biomarkers which are indicative of chondroprotection have not been assessed. So, the present study was planned to reconfirm the protective effect of MF in osteoarthritic rats by histopathology and create a more substantial evidence by assessing the levels of Cartilage oligomeric matrix protein (COMP) and matrix metalloproteinase-13 (MMP-13). **Methods:** 32 rats were divided into four groups ( n = 8 each group); sham control (SC), disease control (DC), positive control (PC) and a MF group. Behavioural tests were compared from baseline to 7th day, 14th day, 21st day and on 28th day. Histopathology and bone markers were compared on the 28th day. $p < 0.05$ was considered as statistically significant. Analysis of Variance (ANOVA) with post hoc Tukey's test was used for parametric data. Non-parametric data was analysed using Kruskal Wallis test with post hoc Dunn's test. **Results:** On measurement of locomotor activity, number of squares crossed was significantly higher in MF group when compared to DC group & there was a significant decrease in the immobility time in MF group when compared DC group. Number of falls on Rota rod test was significantly lower in MF group when compared to DC on day 28. Hot Plate Analgesiometer showed no significant difference in the MF group compared to DC group but over the period of time till day 28, the latency time to lick hind paw was higher in the MF group compared to DC group. In histopathology grading, the scores in MF group were significantly reduced compared to DC group. MMP-13 levels and COMP levels in MF group were significantly decreased as compared to the DC and were statistically significant ($p<0.05$). **Conclusion:** Myostaal Forte has shown antiarthritic effect by virtue of its chondroprotective action.

# Physicochemical variation in nanogold based ayurved medicine Suvarna Bhasma produced by various manufacturers lead to different *in vivo* bioaccumulation profiles

**Cite as:**

Biswas S, Chawda M, Thakur K, Gudi R, Bellare J. Physicochemical Variation in Nanogold-Based Ayurved Medicine Suvarna Bhasma Produced by Various Manufacturers Lead to Different *in vivo* Bioaccumulation Profiles. J Evid Based Integr Med. 2021 Jan-Dec;26:2515690X211011064. doi: 10.1177/2515690X211011064. PMID: 33906452; PMCID: PMC8743929.

**Publication Year:**

2021

**Collaborating Institute(s):**

Indian Institute of Technology, Department of Chemical Engineering, Powai, Mumbai - 400 076, Maharashtra.



## ABSTRACT:

Suvarna Bhasma (SB) is a gold particle-based medicine that is used in Ayurved to treat tuberculosis, arthritis and nervous diseases. Traditionally, the Ayurved preparation processes of SB do exist, but they are all long, tedious and involve several steps. Due to this, there is a possibility of bypassing the necessary Ayurved processes or non-adherence to all steps or use of synthetic gold particles. Our aim is to characterize 5 commercial SB preparations from 5 different manufacturers. A comparative physicochemical, pharmacokinetic (PK) and bioaccumulation study was carried out on all the 5 SB preparations. The general appearance such as color and texture of these 5 samples were different from each other. The size, shape and gold concentration (from 32-98 wt%) varied among all the 5 SBs. The accumulation of ionic gold in zebrafish and gold concentration profiles in rat blood were found to be significantly different for all the 5 SBs. Non-compartmental PK model obtained from the concentration-time profile showed significant differences in various PK parameters such as peak concentration ($C_{max}$), half-life ($t_{1/2}$) and terminal elimination slope ($\lambda_z$) for all the 5 SB preparations. SB-B showed the highest $C_{max}$ (8.55 µg/L), whereas SB-D showed the lowest $C_{max}$ (4.66 µg/L). The dissolution of ionic gold from SBs in zebrafish tissue after the oral dose had a 5.5-fold difference between the highest and lowest ionic gold concentrations. All the 5 samples showed distinct physicochemical and biological properties. Based on characteristic microscopic morphology, it was found that 2 preparations among them were suspected of being manufactured by nonadherence to the mentioned Ayurved references.

# An evaluation of the efficacy, safety, and tolerability of Abhraloha compared with oral Ferrous Ascorbate on Iron Deficiency Anemia in women: A randomized controlled, parallel-group, assessor-blind clinical trial

**Cite as:**

Gajbhiye S, Koli PG, Harit M, Chitrakar M, Bavane V, Chawda M. An Evaluation of the Efficacy, Safety, and Tolerability of Abhraloha Compared With Oral Ferrous Ascorbate on Iron Deficiency Anemia in Women: A Randomized Controlled, Parallel-Group, Assessor-Blind Clinical Trial. Cureus. 2021 Apr 7;13(4):e14348. doi: 10.7759/cureus.14348. PMID: 33972905; PMCID: PMC8104902.

**Publication Year:**

2021

**Collaborating Institute(s):**

D.Y. Patil Deemed to be University, School of Ayurveda, Stree Roga and Prasuti Tantra (Obstetrics and Gynaecology) OPD, Nerul, Navi Mumbai - 400 706, Maharastra.

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## ABSTRACT:

**Background and objective:** Iron deficiency anemia (IDA) is a common condition in women for which ferrous ascorbate (FA) is often prescribed, which can lead to multiple side effects. Abhraloha is an Ayurvedic medicine that has been used for decades in India to treat IDA. In this study, we aimed to evaluate the efficacy and safety of Abhraloha with regard to change in hemoglobin (Hb) levels as compared to the standard treatment using FA in participants with IDA. **Materials and methods:** We conducted a single-center, pragmatic, prospective, randomized, active-controlled, two-arm, parallelgroup, assessor-blind study to evaluate the efficacy and safety of Abhraloha with regard to change in Hb levels as compared to the standard treatment using FA in participants suffering from IDA. The eligible participants were randomized and were advised to take either Abhraloha (two tablets twice a day) or FA (one tablet twice a day) for eight weeks; they were asked to follow up after 14 days for re-evaluation. On visit 1 and during the study period, the physician assessed the participants on the Pandurog scale and subjective variables. Descriptive statistics were used with unpaired T-test/Mann-Whitney U test for comparison between the groups. The Wilcoxon signed-rank test was used for within-group analysis, and the chi-square test/Fisher's exact test was employed for categorical data. **Results:** Based on our findings, Abhraloha tablets significantly increased all the variables including the Pandurog scale after eight weeks of treatment. Abhraloha reduced total iron-binding capacity (TIBC) and peripheral smear lymphocyte (PSL), which is consistent with an improvement in IDA. There was a statistically significant increase in Hb, red blood cell (RBC) count, packed cell volume (PCV), mean corpuscular volume (MCV), and mean corpuscular hemoglobin (MCH) in the Abhraloha group as compared with the FA group at eight weeks. The Abhraloha group also exhibited a statistically significant improvement in all the subjective variables. Abhraloha was found to be safe and well-tolerated among the participants. **Conclusions:** Abhraloha possesses hematinic activity and it improves all the blood indices. It is associated with significantly fewer adverse effects compared to oral iron therapy, which proves that it can be safely used for the treatment of IDA.

# The effect of Madhumeha Kusumakar Rasa - an ayurved medicine - in insulin resistance

**Cite as:**

Kavishwar S, Sanaye M, Nair M, Chawda M, Kshirsagar V, Kulkarni YA. The effect of Madhumeha Kusumakar Rasa - an Ayurved medicine - in insulin resistance. J Complement Integr Med. 2021 Jul 15;19(2):353-363. doi: 10.1515/jcim-2021-0090. PMID: 34265886.

**Publication Year:**

2021

**Collaborating Institute(s):**

Prin. K. M. Kundnani College of Pharmacy, Department of Pharmacology, Cuffe Parade, Colaba, Mumbai - 400 005, Maharashtra. Shobhaben Pratapbhai Patel School of Pharmacy & Technology Management, SVKM's NMIMS, Department of Pharmacology, V.L. Mehta Road, Vile Parle (West), Mumbai 400 056, Maharashtra.

## ABSTRACT:

**Objectives:** Madhumeha Kusumakar Rasa (MKR) is an Ayurved formulation having a strong pharmacological base for diabetes management. This study aimed to validate MKR's efficacy in dexamethasone-induced insulin resistance (IR).

**Methods:** Albino Wistar rats were divided into four groups. Group 1 served as the normal control, Group 2 received dexamethasone 1.5 mg/kg (i.p.), Group 3 received dexamethasone and metformin 200 mg/kg (p.o.), and Group 4 received dexamethasone and MKR 236 mg/kg (p.o.). Animals were evaluated for serum glucose levels and glucose tolerance, serum insulin, Homeostatic model assessment of insulin resistance (HOMA-IR), Homeostatic model assessment of insulin sensitivity (HOMA-IS), fasting glucose to insulin ratio (FGIR), and lipid parameters. Pancreas, liver, and kidneys were evaluated for reduced Glutathione (GSH) and Malondialdehyde (MDA) levels. These tissues were also evaluated for histopathological changes.

**Results:** MKR showed significant improvement in serum glucose and glucose tolerance, serum insulin and HOMA-IR, HOMA-IS, and FGIR. It also showed a significant improvement in lipid parameters as compared to the dexamethasone-treated group. It prevented depletion of GSH levels and elevation in MDA levels. These effects were supported by histopathological analysis.

**Conclusions:** MKR treatment significantly attenuated dexamethasone-induced IR. This study validates the mechanism of the anti-diabetic potential of MKR.

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# Physicochemical characterization of Suvarna Bhasma, its toxicity profiling in rat and behavioural assessment in zebrafish model

**Cite as:**

Biswas S, Dhumal R, Selkar N, Bhagat S, Chawda M, Thakur K, Gudi R, Vanage G, Bellare J. Physicochemical characterization of Suvarna Bhasma, its toxicity profiling in rat and behavioural assessment in zebrafish model. J Ethnopharmacol. 2020 Mar 1;249:112388. doi: 10.1016/j.jep.2019.112388. Epub 2019 Nov 12. PMID: 31730889.

**Publication Year:**

2020

**Collaborating Institute(s):**

Indian Institute of Technology, Department of Chemical Engineering, Powai, Mumbai - 400 076, Maharashtra.

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## ABSTRACT:

**Ethnopharmacological relevance:** Suvarna Bhasma is a gold-based Ayurved medicine that has a wide range of therapeutic indications like tuberculosis, diabetes mellitus, rheumatoid arthritis and nervous diseases. Suvarna Bhasma is also used in Suvarnaprashana, an Ayurved advocated therapy being practised to improve immunity in children. **Aim of the study:** To augment traditional understanding, here we present an evidence-based study on Suvarna Bhasma regarding its physicochemical properties, toxicity and efficacy. **Materials and methods:** Suvarna Bhasma was characterised by physicochemical characterization techniques such as scanning electron microscope (SEM), transmission electron microscopy (TEM), X-ray diffraction (XRD) and atomic emission spectroscopy (ICP-AES). Toxicity of Suvarna Bhasma was studied in Holtzman rats with daily oral dose from 3 mg/kg (therapeutic dose, TD) up to 30 mg/kg (10 TD) body weight for 90 days. Behavioural study, such as motor and geotactic behaviour were examined in zebrafish model to find out any sign of neurotoxicity or behavioural changes due to Suvarna Bhasma administration. **Results:** Suvarna Bhasma has two types of gold particles, large ones (~60 μm) having irregular shapes, and nanosized spherical particles (starting from ~10 nm), the latter coated with Fe, Si, O, P and Na. XRD study revealed that all the peaks of Suvarna Bhasma match well with pure gold (face centred cube) with crystallites size 45 ± 2.8 nm. In rat studies, some change in biochemical parameters such as urea, creatinine and alanine aminotransferase (ALT) was observed mainly at the higher therapeutic dose; however, those parameters were within the normal range. There were no significant macroscopic as well as microscopic treatment-related alteration observed, in any of the organs and tissues evaluated. In zebrafish behavioural study, the motor parameters of Suvarna Bhasma treated fish showed normal behaviour analogous to the vehicle control group. Interestingly, the geotactic behaviour showed anxiolytic effects of Suvarna Bhasma as evidenced by the time spent in the upper zone, and average swimming height. The anxiolytic effects persisted for more than 30 days after withdrawing the Suvarna Bhasma treatment. **Conclusions:** Suvarna Bhasma contained spherical gold nanoparticles. It was nontoxic in rat model at the does tested. Suvarna Bhasma has anxiolytic effects in zebrafish behavioural model.

# Physicochemical characterization and antimicrobial properties of Mahamanjishthadi Kadha: An Ayurvedic formulation

**Cite as:**

Kapil Thakur, P. Mini Mol, Madhuree Gawhankar, Himanshu Gupta, Priyanka Patil and Mansee Thakur. Annals of Phytomedicine 9(1): 78-90, 2020. DOI: http://dx.doi.org/10.21276/ap.2020.9.1.9

**Publication Year:**

2020

**Collaborating Institute(s):**

MGM School of Biomedical Sciences, MGMIHS, Kamothe-410206, Navi Mumbai, Maharashtra, India.
Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.

## ABSTRACT:

Skin infections are common throughout the world. With high infectivity amongst skin pathogens, approximately 300 million people are affected worldwide. The increasing rate of failure of chemotherapeutics and antibiotic resistance exhibited by pathogenic microbial infectious agents, has increased the use of Ayurvedic medicines. This study aims to standardize an Ayurvedic formulation, Mahamanjisthadi kadha and to evaluate its antimicrobial properties against skin infection, causing pathogens. Physicochemical analysis such as organoleptic tests, pH, alcohol content, Brix and Specific gravity was done. Phytochemical screening was performed for various bioactive compounds. Heavy metals, aflatoxins and microbial load were checked for contaminants. Chromatographic analysis was performed to estimate lupeol, ellagic acid and gallic acid, using high performance thin layer chromatography (HPTLC). Antimicrobial activity was determined against five common pathogens causing skin infections, using well-diffusion method. Organoleptic tests confirmed brown color and characteristic odor of self generated alcohol with bitter and astringent taste. Phytochemical screening showed the presence of alkaloids, steroids, triterpenoids, tannins, phenolic compounds, saponins and flavonoids. HPTLC analysis confirmed the presence of lupeol, ellagic acid and gallic acid. Heavy metals, aflatoxins and microbial load were found within the permissible limit. Antimicrobial study showed the formulation could inhibit growth of Staphylococcus aureus, Candida albicans, Pseudomonas aeruginosa, Staphylococcus epidermidis and Escherichia coli. The study presented has completely characterized the formulation will serve as reference to develop quality control profile of Mahamnjishtadi kadha and help in validating therapeutic efficacy of this formulation.

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# Assessment of immunomodulatory potential of an ayurvedic formulation, Nirocil Syrup in Wistar rats

**Cite as:**
Ghadigaonkar, Dinesh; Chawda, Mukesh & Thakur, Kapil. (2020). Assessment of immunomodulatory potential of an ayurvedic formulation, Nirocil Syrup in Wistar rats. Asian Journal of Pharmaceutical and Clinical Research. 154-158. 10.22159/ajpcr.2020.v13i10.38826.

**Publication Year:**
2020

**Collaborating Institute(s):**
Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF),
Panvel,
Navi Mumbai - 410 206,
Maharastra.

## ABSTRACT:

**Objective:** This study aims to assess the immunomodulatory potential of an Ayurvedic formulation, Nirocil syrup, in Wistar rats.

**Methods:** The experiments were conducted on Wistar rats with prior approval from the Institutional Animal Ethics Committee. Nirocil syrup was administered for 6 weeks to experimental animals. Parameters such as hemagglutination titer, histopathology of immunological organs, complete blood count, differential leukocyte count, and immunological paw edema were recorded and compared with controlled (untreated) and becozinc treated groups.

**Results:** Nirocil treated group significantly enhanced the antibody titer in comparison to the control group. The results are supported by the increase in blood lymphocyte count and antigenic stimulation in immunological organs (spleen). Nirocil syrup enhanced antibody formation and suppressed the immunological edema in experimental animals.

**Conclusions:** The study concludes that the Ayurvedic formulation Nirocil syrup has immunopotentiating activity.

# Standardization of ayurvedic formulation "Arjunarishta" in terms of physicochemical, spectroscopy and chromatographic techniques


## ABSTRACT:

**Objective:** Arjunarishta is an important Ayurvedic formulation with chief ingredient Arjuna (*Terminalia arjuna*), which is excellent "Hrudya" Dravya. It nourishes & strengthens heart muscles & promotes cardiac functioning by regulating blood pressure and cholesterol level. This study aims to established quality parameters for standardization of Ayurvedic formulation "Arjunarishta" on the basis of various techniques viz. Physico-chemical screening, Chromatography & IR Spectroscopy.

**Method:** Conventional analysis such as Organoleptic tests, pH, Alcohol content, Brix, and Specific gravity was done. Chromatographic analysis was performed to estimate Arjungenin, Ellagic acid, and Gallic acid using High-Performance Thin Layer Chromatography (HPTLC). IR fingerprint was done using Fourier transform infrared (FT-IR) spectrometer.

**Result:** The above analysis showed the pH of tested formulation ranges between 3.0-5.0, Brix 25-30%, and Alcohol content 6-10% v/v. Organoleptic tests confirmed characteristic odor of self-generated alcohol with sweet, astringent & slightly bitter taste. HPTLC analysis confirmed the presence of Arjungenin, Ellagic acid, and Gallic acid. FT-IR reveals unique transmittance spectra in the range of 4000 - 600 $cm^{-1}$.

**Conclusion:** This study can be used for qualitative evaluation of Arjunarishta in terms of modern parameters, which may help in the authenticity of the drug and to compile suitable information for the better utility and safe use of this formulation in therapeutics.



**Cite as:**

Thakur KS, Patil P and Gawhankar M: Standardization of ayurvedic formulation "Arjunarishta" in terms of physicochemical, spectroscopy and chromatographic techniques. Int J Pharm Sci & Res 2020; 11(12): 6237-42. doi: 10.13040/IJPSR.0975-8232.11(12).6237-42.

**Publication Year:**

2020



**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.


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Shree Dhootapapeshwar Standards
SDS Monograph No. 100001
Arjunarishta

# Evaluation of hypolipidemic activity of Arogyavardhini and Zpter Tablet in cholesterol-rich high fat diet (HFD) induced hyperlipidemia in Wistar rats

**Cite as:**

Ghadigaonkar, D. D.; Chawda, M. B.; Thakur, K. S.; Kushwah, P. K. Evaluation of hypolipidemic activity of Arogyavardhini and Zpter Tablet in cholesterol-rich high fat diet (HFD) induced hyperlipidemia in Wistar rats. Int J Pharm Pharm Sci;2019 Jun; 11(6):1-5, doi:10.22159/ijpps.2019v11i6.30805.

**Publication Year:**

2019

**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.

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## ABSTRACT:

**Objective:** The present research work aims to evaluate the hypolipidemic activity of arogyavardhini and zpter tablet in high fat diet (HFD) induced hyperlipidemia in wistar rats.

**Methods:** Wistar rats were divided in 5 groups. The normal control group received standard pellet diet. The HFD group received HFD rich in cholesterol. The HFD+Arogyavardhini group received HFD rich in cholesterol along with Arogyavardhini treatment. The HFD+zpter group received HFD rich in cholesterol along with zpter treatment. The standard Control group received HFD rich in cholesterol and treatment with Atorvastatin. Serum Lipid profile estimation and histopathological estimations done at end treatment. Group means were compared with Analysis of Variance (ANOVA) followed by Tukey's post-hoc analysis ($P<0.05$).

**Result:** HFD group shows significant ($P<0.05$) increase in total cholesterol (TC) levels (207.15 mg/dl) and triglyceride (TG) levels (223.83 mg/dl) when compared with standard pellet fed rats (TC=151.05 mg/dl and TG=164.67 mg/dl). Treatment with Arogyavardhini significantly ($P<0.05$) reduces the increased levels of TC (160.123 mg/dl) and TG (189.5 mg/dl) in hyperlipedimic rats. Treatment with Zpter significantly ($P<0.05$) reduces the increased levels of TC (163.89 mg/dl) and TG (193.167 mg/dl) in hyperlipedimic rats, which is comparable to standard treatment atorvastatin (TC= 155.81 mg/dl, TG=180.33 mg/dl).

**Conclusion:** The observations in this study suggest that, herbal formulations arogyavardhini and zpter have the potential to overcome hyperlipidemia.

# Qualitative evaluation and impact of Vishesh Shodhana process on Guggul (*Commiphora mukul*)


## ABSTRACT:

**ABSTRACT: Objective:** Guggulu is one of the important dravya (drug) used in Ayurvedic formulations since ancient time which means "Protection against diseases". Ashuddha guggulu has physical and chemical impurities which need to be eliminated before using in formulation by shodhana. The present study was conducted to evaluate and compare the effect of different shodhana processes i.e. Samanya shodhana and Vishesh shodhana on properties of guggul by employing various physicochemical and chromatographic methods.

**Method:** Physicochemical screening was done by evaluating ash, Acid Insoluble Ash (AIA), Loss on Drying (LOD), Water Soluble Extractive (WSE), Alcohol Soluble Extractive (ASE) and Ethyl acetate Soluble Extractive (EASE). Chromatographic analysis was performed to estimate guggulsterone (E and Z) content and to confirm the presence of ellagic acid and gallic acid, tinosporaside and diosgenin after shodhana with Triphala kwath, Gulvel kwath and Dashmool kwath respectively, using High Performance Thin Layer Chromatography (HPTLC).

**Result:** The Physico-chemical studies showed decrease in LOD, Ash and AIA content and increase in extractive values such as ASE and EASE of guggul after shodhana process. The HPTLC analysis showed no significant change in guggulsterone (E and Z) content in guggul after shodhana process. The peak of ellagic acid and gallic acid, tinosporaside and diosgenin was observed in Triphala shodhit Guggul, Gulvel shodhit Guggul and Dashmool Shodhit Guggul respectively.

**Conclusion:** This study helps to understand the effect of Vishesh shodhana on the efficacy of drug. In this study, we established qualitative profile of Vishesh Shodhit Guggul in terms of physicochemical parameters and phytochemical content by HPTLC.



**Cite as:**

Thakur KS, Patil P and Gawhankar M: Qualitative evaluation and impact of Vishesh Shodhana process on Guggul (Commiphora mukul). Int J Pharm Sci & Res 2018; 9(10): 4243-47. doi: 10.13040/IJPSR.0975-8232.9(10).4243-47.

**Publication Year:**

2018



**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.


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# Standardization of an ayurvedic drug - Madhumeha Kusumakar Rasa by HPTLC


## ABSTRACT:

Madhumeha Kusumakar Rasa (MKR) is an Ayurvedic medicine having ingredients of Vasantkusumakar Rasa, Shuddha Shilajeet, Jasad Bhasma, Extract of Mamajjaka (*Enicostemma littorale*), Haridra (*Curcuma longa*), Amalaki (*Emblica officinalis*) and Guduchi (*Tinospora cordifolia*) indicated for complications of madhumeha (Diabetes). The purpose of this work was to develop and validate HPTLC method for quantification of marker compound Swertiamarin which is expressed in formulation through one of its major ingredient (Pradhan dravya) Mamajjaka (*Enicostemma littorale*). The formulation was subjected to methanol extractions and extracted samples were applied on TLC plate precoated with Silica Gel 60GF254. The detection and quantification was performed at a wavelength of 240 nm. The method validation was carried out as per ICH guidelines. Calibration curve plotted was found to be linear in the range of 200 – 900 ng. The linear regression equation was found to be Y = 3.50 X + 670.5, while correlation coefficient (r2) was 0.9996 with high reproducibility and accuracy. LOD and LOQ were found to be 67.8 and 205.6 ng respectively. Madhumeha Kusumakar Rasa samples MKR-1, MKR-2 and MKR-3 were found to contain Swertiamarin 15.08 mg/tab, 14.95 mg/tab and 14.30 mg/tab respectively. This method was thus found to be linear, precise and accurate for quantitative determination of Swertiamarin in MKR.



**Cite as:**

Thakur, K.S., Pimpalkar, P., Gawhankar, M., & Gudi, R. (2017). Standardization of an ayurvedic drug - Madhumeha Kusumakar Rasa by HPTLC.IAMJ: Volume 5; Issue 1; January- 2017.

**Publication Year:**

2017



**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.


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# Preparation and characterization of Suvarna Bhasma Parada Marit


## ABSTRACT:

**Objectives:** The goal of this study was to characterize Suvarna Bhasma Parada Marit by using the Ayurvedic test parameters, physico-chemical tests, and various instrumentation techniques.

**Methods:** Suvarna Bhasma, an Ayurvedic formulation manufactured as per Bharat Bhaishajya Ratnakar 5/8357 (BBR), has been studied using various instrumentation techniques: X-ray diffraction (XRD), scanning electron microscopy (SEM), energy dispersive X-ray analysis (EDAX), laser particle size distribution (PSD) analysis, fourier transform infrared spectroscopy (FT-IR), and atomic absorption spectroscopy (AAS), and physico-chemical parameters, such as the loss on drying (LOD), loss on ignition (LOI), and acid insoluble Ash (AIA) were determined. In addition, Ayurvedic tests, such as Rekhapurnatva (enterable in the furrows of the fingers), Varitaratwa (floatable over water), Nirdhoomta (smokeless), Dantagre Kach-Kach (gritty particle feeling between the teeth), were performed.

**Results:** The XRD study showed Suvarna Bhasma to be crystalline in nature and to contain more than 98% gold. The mean size of the gold crystallites was less than 10 microns, and the morphology was globular and irregular. Suvarna Bhasma contains gold as its single and major element, with EDAX and FT-IR spectra showing that it is more than 98% pure gold. The moisture content (LOD) is less than 0.5%, the LOI is less than 2%, and the AIA is not less than 95%. The Ayurvedic tests, as specified above, helped to confirm the quality of Suvarna bhasma prepared as per the text reference (BBR).

**Conclusion:** This chemical characterization of Suvarna Bhasma performed in this study by using modern instrumentation techniques will be helpful in understanding its pharmacological actions and will help in establishing quality protocols and specifications to substantiate the safety, efficacy & quality of Suvarna Bhasma.



**Cite as:**

Kapil Thakur, Ramacharya Gudi, Mahesh Vahalia, Shekhar Shitut, Shailesh Nadkarni. Preparation and characterization of Suvarna Bhasma Parada Marit. Journal of Pharmacopuncture 2017;20[1]:036-044

**Publication Year:**

2017



**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.


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# Quality standardization of a traditional ayurvedic formulation Panchamrut Loha Guggul Tablet


## ABSTRACT:

Panchamrut Loha Guggul is herbo mineral ayurvedic preparation indicated in treatment of cervical spondylitis, neuromuscular conditions, Gridhrasi (Sciatica), pain in waist and knees, and other Vata vyadhi (diseases caused by aggravated Vata dosha). The present research work was conducted to standardize Panchamrut Loh a Guggul Tablets on the basis of Physico chemical screening, Elemental analysis, Chromatographic and IR spectroscopic study. Physico-chemical screening was done by evaluating Ash, Acid insoluble ash (AIA), Loss on Drying (LOD), Water Soluble Extractive (WSE) and Alcohol Soluble Extractive (ASE). The Atomic Absorption Spectrophotometric method (AAS) was applied to determine the Iron (Fe), Silver (Ag) and Copper (Cu) content. Chromatographic analysis was performed to estimate Guggulsterone (E & Z) content using High Performance Thin Layer Chromatography (HPTLC). The chemical fingerprint was taken by using Fourier transform infra red spectroscopy (FT-IR). The Physico-chemical studies showed Ash content less than 50%, AIA less than 25%, LOD less than 6%, WSE more than 25% and ASE more than 15%. FT-IR reveals unique transmittance spectra in the range of 4000-600 $cm^{-1}$. Iron (Fe), Silver (Ag) and Copper (Cu) content found to be more than 20 mg/tab, 10 mg/tab and 1.5 mg/tab respectively. The HPTLC analysis showed the Guggulsterone (E & Z) content more than 0.50 mg/tab. This study will help to develop quality control profile for Panchamrut Loha Guggul Tablet for future reference in determining the quality of Panchamrut Loha Guggul Tablets.



**Cite as:**

K S Thakur, Priyanka Patil, Madhuree Gawhankar, Shivcharan Bidve, R V Gudi. Quality standardization of a traditional ayurvedic formulation Panchamrut Loha Guggul Tablet. Int. J. Res. Ayurveda Pharm. 8 (4), 2017

**Publication Year:**

2017

**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.


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# Optimization and validation of microwave digestion method for determination of Copper (Cu) and Iron (Fe) in an classical ayurvedic medicine-Arogyavardhini

**Cite as:**

Thakur K.S, Shivcharan Bidve, Priyanka Patil, Madhuree Gawhankar, Maral A.B, Khare R.V. Optimization and validation of microwave digestion method for determination of Copper (Cu) and Iron (Fe) in an classical ayurvedic medicine-Arogyavardhini. ) Int. J. Res. Pharm. Sci., 8(3), 298-303.

**Publication Year:**

2017

**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.

## ABSTRACT:

The main objective of this study was to optimize and validate an efficient microwave digestion method for determination of Copper (Cu) and Iron (Fe) in Arogyavardhini sample. The samples were digested in Aquaregia (a mixture of HNO3 and HCl - 1:3) for Copper (Cu) and HCl for Iron (Fe) with closed vessel microwave digestion system. The digested samples were subjected to Atomic absorption spectrophotometer for determination of Copper (Cu) and Iron (Fe). The method validation was carried out as per ICH guidelines and can be adopted for the routine analysis of Copper (Cu) and Iron (Fe). The method was validated for precision, accuracy, linearity, limit of detection and limit of quantification. The optimized method showed good regression ($r^2$= 0.9997). The limit of detection and limit of quantification were found to be 0.02 PPM and 0.05 PPM for Copper (Cu) and 0.28 PPM and 0.83 PPM for Iron (Fe) respectively. Accuracy of the method was checked by recovery study of three different levels with the average percentage recovery of 99.76% for Copper (Cu) and 104.66% for Iron (Fe).

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# Efficacy and safety evaluation of Myostaal Forte, a polyherbal formulation, in treatment of Knee Osteoarthritis: A randomised controlled pilot study

**Cite as:**

Tripathi RK, Vaidya PH, Raote S, Desai MM, Chawda MB, Uchil D, Rege NN. Efficacy and safety evaluation of Myostaal Forte, a polyherbal formulation, in treatment of Knee Osteoarthritis: A randomised controlled pilot study. J Clin of Diagn Res.2017; 11(10):FC06-FC10. https://www.doi.org/10.7860/JCDR/2017/27644/10759

**Publication Year:**

2017

**Collaborating Institute(s):**

Seth G. S. Medical College & K.E.M Hospital, Department of Pharmacology & Therapeutics and Department of Orthopedics, Parel, Mumbai - 400 012, Maharastra.

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## ABSTRACT:

**Introduction:** Myostaal Forte, a proprietary poly-herbal formulation, is mixture of nine herbal plant extracts which possess analgesic, anti-inflammatory and chondroprotective properties. **Aim:** A prospective, randomised, active controlled, 2-arm, parallel group, assessor blind study was planned to evaluate clinical efficacy and safety of Myostaal Forte in patients of knee osteoarthritis. **Materials and Methods:** Idiopathic knee osteoarthritis cases as per American College of Rheumatology (ACR) clinical criteria were screened and recruited. A total of sixty patients were assigned to receive Myostaal Forte TDS (n=30) or Paracetamol 650 mg TDS (n=30) for six weeks. Naproxen was rescue analgesia. Modified Western Ontario and McMaster Universities Arthritis Index (WOMAC), Visual Analogue Scale (VAS), global assessment scores determined by orthopaedic physician at baseline, two, four, six weeks and telephonically at eight weeks. Safety was assessed through laboratory investigations at baseline and six weeks, adverse events and tolerability. Data were expressed as Mean±SD and analysed by Chi-square and unpaired t-test. $p<0.05$ was considered significant. **Results:** Myostaal Forte and Paracetamol showed significant reduction in osteoarthritis disease activity. Myostaal Forte produced significant improvement compared to Paracetamol, in the pain, stiffness and physical function from baseline to eight weeks ($p<0.05$). Significant reduction in WOMAC pain score was seen within two weeks in Myostaal Forte group ($p<0.05$), but not in Paracetamol group. From baseline to two weeks, the pain severity reduced in 8/8 patients in Myostaal Forte group, whereas in 4/8 patients in Paracetamol group. After treatment cessation at six weeks, symptomatic relief was sustained over two weeks in Myostaal Forte group, whereas in Paracetamol, relapse of pain and physical disability occurred within two weeks ($p>0.05$). No significant adverse events, changes in the laboratory parameters and excellent compliance to treatment were seen in both the groups. **Conclusion:** Earlier onset analgesic effect with sustained chondroprotection after treatment cessation makes Myostaal Forte, a safe and effective alternative for treatment of knee osteoarthritis.

# Genotoxic and Mutagenic activity of Suvarna Bhasma

**Cite as:**

Nilakash Selkar, Sharad Bhagat, Mukesh Chawada, Mahesh K Vahalia, Anand Puranik and Geeta Vanage. Genotoxic and Mutagenic activity of Suvarna Bhasma. Toxicology International, Sept-Dec 2016 / Vol-23/Issue-3, 221-228. DOI: 10.22506/ti/2016/v23/i3/146714

**Publication Year:**

2016

**Collaborating Institute(s):**

National Centre for Preclinical Reproductive and Genetic Toxicology, ICMR-National Institute for Research in Reproductive and Child Health, J. M. Street, Parel, Mumbai - 400 012, Maharastra.

## ABSTRACT:

Genetic toxicity and mutagenicity of Suvarna Bhasma (SB), an Ayurvedic drug, was determined using a battery of tests. The results of *in-vivo* Micronucleus assay and COMET assay did not reveal any significant increase in % Micronucleus frequency (MN) in bone marrow cells of mice and DNA damage in blood lymphocytes respectively after the oral administration of SB at various concentrations (3,-30 mg/kg bw) in treated animals as compared to vehicle control in either sex. The *in-vitro* chromosome aberration (CA) assay carried out with and without metabolic activation at different concentrations of SB in human lymphocyte culture did not cause any effect on structural or numerical chromosome aberrations. Suvarna Bhasma did not induce any mutagenic activity in presence and absence of S9 fractions in Ames assay employing three strains of salmonella typhimuriumTA98, TA100 and TA102. These results demonstrated that Suvarna Bhasma preparation evaluated in this study is not genotoxic and mutagenic at the concentrations tested under the experimental conditions.

# Confirmation and optimization of Bhavana Vidhi in Tribhuvankeerti Ras - An ayurvedic formulation

**Cite as:**

KS Thakur, Mukesh Chawda, Nitin Mundhe, Priyanka Pimpalkar, Madhuree Gawhankar and RV Gudi. Confirmation and optimization of Bhavana Vidhi in Tribhuvankeerti Ras - An Ayurvedic formulation. J Pharmacogn Phytochem 2016;5(6):205-213.

**Publication Year:**

2016

**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.

## ABSTRACT:

The present study carried out to analyze the effect of bhavana in standardisation of Tribhuvankeerti Ras. An attempt has also been made to correlate the analytical test results with the efficacy study. The standardization of Tribhuvankeerti Ras was carried out using HPTLC and FT-IR. Also, the therapeutic efficacy of Tribhuvankeerti Ras was carried out on Swiss albino mice. The HPTLC fingerprint profile depicts the presence of all three bhavana dravyas Tulasi Ras, Adrak Ras and Dhatura Ras. The result showed that all the bhavanas in Tribhuvankeerti Ras formulation has exactly same Rf values as they had in alone and FT-IR analysis confirms unique transmittance peak in range of 4000 $cm^{-1}$ to 600 $cm^{-1}$. The pharmacological result elaborates the anti-pyretic effect of Tribhuvankeerti Ras in mice. The HPTLC and FT-IR methods developed for confirmation of bhavana dravyas in Tribhuvankeerti Ras will help in establishing the specifications and need for presence of bhavana dravyas.

# Evaluation of wound healing activity of Radona® Tablet in Wistar rats

## ABSTRACT:

Wound healing is an important aspect in surgical procedures. Only antibiotics and local management may not be sufficient for proper wound healing. Skin care has always been the strength of Ayurveda and management of wounds has been described in depth in Ayurvedic texts. This study was aimed to evaluate the wound healing potential of Radona® Tablets in the excision and incision model in Wistar Rats. 36 Wistar Rats of either sex weighing around 150-200 g were divided equally for excision and incision models. Animals in each model were divided into three groups of 6 animals per each viz. Normal control (1 ml/kg, p.o.), Radona® Tablet (648 mg/kg, p.o.) and Soframycin (1% w/w, topical). The test drug was administered for 21 days in excision model and for 9 days in incision model. In excision model, a wound area of about 250 $mm^2$ and about 2 mm in depth was studied by tracing the raw wound area on the subsequent days 1, 4, 8, 12, 16 and 21 on graph paper for wound contraction. The scar area and time for complete epithelization was also evaluated. In incision model, on $10^{th}$ day the tensile strength was measured. The results showing p values < 0.05 were considered significant and all values are expressed as mean ± S.E.M. Significant decrease in epithelization period ($p<0.05$ and $p<0.01$), scar width ($p<0.05$ and $p<0.01$) and wound contraction ($p<0.05$ and $p<0.01$) on $21^{st}$ day in excision model and significant increase in tensile strength ($p<0.05$ and $p<0.01$) in incision model was observed in treated groups (Radona® Tablet and Soframycin) as compared to control group. The result suggests that Radona® Tablet has significant wound-healing activity nearly equal to standard Soframycin ointment.

**Cite as:**

Mundhe, Nitin. (2015). Evaluation of Wound Healing Activity of Radona® Tablets in wistar rats. International Journal of Pharmaceutical Sciences Review and Research. 31. 8.

**Publication Year:**

2015

**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.

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# Efficacy and safety of a polyherbal formulation in hemorrhoids

## ABSTRACT:

**Background:** The medical management of hemorrhoids should include an integrated approach. This integrated approach can be achieved by polyherbal formulations containing anti-inflammatory, styptics, analgesics, and laxative effect which reduce inflammation, pain, and bleeding, and increase gastro-intestinal motility and soften stools. One such polyherbal kit is "Arshkeyt™, a 7 day kit," which consists of oral tablets and powder along with topical cream.

**Objective:** Efficacy and safety of Arshkeyt™, a 7 day kit, a marketed polyherbal formulation was evaluated in comparison with conventional therapy practiced in surgery outpatient departments.

**Materials and Methods:** Patients (n = 90) with hemorrhoids were randomly allocated to receive either Arshkeyt™ or standard therapy (combination of oral Isabgul powder and 2% lidocaine gel) for 14 days. Assessment on the basis of rectal symptoms and proctoscopic examination was done on day 0, 7, and 14 to derive a "composite score" which ranged from 0 to 25 by a blinded evaluator. The primary endpoint was number of patients achieving composite score 0 at the end of therapy (day 14). Inter-group analysis was done using Chi-square test.

**Results:** On day 14, the composite score of 0 was achieved in 15 patients of Arshkeyt™ group versus 6 patients receiving standard therapy. The symptoms and signs which showed significant improvement in Arshkeyt™ group compared to standard treatment group were the tenesmus (visual analog score) score ($P = 0.047$), anal sphincter spasm ($P = 0.0495$) and a decrease in the grade of hemorrhoids ($P = 0.0205$) on day 14. Arshkeyt™ was also more beneficial in case of bleeding hemorrhoids as compared to nonbleeding hemorrhoids ($P < 0.05$). The incidence of adverse drug reactions in both groups was comparable and no patient required any treatment for the same.

**Conclusion:** "Arshkeyt™, a 7 day kit," was effective in the treatment of hemorrhoids and had a good safety profile.

**Cite as:**

Tripathi RK, Bolegave SS, Shetty PA, Uchil DA, Rege NN, Chawda MB, Rege SA. Efficacy and safety of a polyherbal formulation in hemorrhoids. J Ayurveda Integr Med. 2015 Oct-Dec;6(4):225-32. doi: 10.4103/0975-9476.172382. PMID: 26834421; PMCID: PMC4719482.

**Publication Year:**

2015

**Collaborating Institute(s):**

Seth G. S. Medical College & K.E.M Hospital, Department of Pharmacology & Therapeutics and Department of Surgery, Parel, Mumbai - 400 012, Maharastra.

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# Anti-ulcer activity of Plantacid® Suspension in Wistar rats: A pilot study

**Cite as:**
Mukesh B Chawda, Nitin A Mundhe, Venu Gopal Jonnalagadda, Kapil S Thakur, MK Vahalia, Shekhar S Shitut. Anti-ulcer activity of Plantacid® Suspension in Wistar rats: A pilot study. J Pharmacogn Phytochem 2015;4(4):175-178.

**Publication Year:**
2015

**Collaborating Institute(s):**
Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.

## ABSTRACT:

**Background:** The main intent of this study is to evaluate the antiulcer activity of Plantacid® suspension on non-steroidal anti-inflammatory drugs (NSAID's) -induced ulcers in the rat model.

**Methods:** 24 Wistar Rats weighing around 180-200g were fasted for 12 hours before the study and arbitrarily divided into 4 groups of 6 animals each. The 4 groups were: Vehicle (1 ml/kg, p.o), indomethacin (100 mg/kg, p.o), Plantacid® suspension (2.7 ml/kg, p.o), and Ranitidine (100 mg/kg, p.o) groups respectively. The treatment was given 60 minutes before the administration of indomethacin. Effect of Plantacid® suspension was studied by calculating the ulcer score, total number of ulcers, ulcer index and percentage inhibition. The results showing p values <0.05 were considered significant and all values are expressed as mean ± S.E.M.

**Results:** Significant decrease in ulcer score ($p<0.05$), total number of ulcers ($p<0.0001$), ulcer index ($p<0.001$), and % inhibition of ulcer was reduced by 82.06%, and 90.04 % in Plantacid® suspension and Ranitidine treated groups respectively, as compared to the indomethacin group.

**Conclusion:** The results indicate that Plantacid® suspension has showed antiulcer activity in experimental animals and corroborates Ayurvedic use of Plantacid® suspension in gastric ulcers.

# Evaluation of structural, chemical characterisation and safety studies of Samagandhak Kajjali, an Indian traditional ayurvedic drug

**Cite as:**

K.S. Thakur , Mahesh K. Vahalia, Venu Gopal Jonnalagadda, Khare Rashmi, Shailesh D. Nadkarni, R.V. Gudi, Shekhar S. Shitut. Evaluation of structural, chemical characterisation and safety studies of Samagandhak Kajjali, an Indian traditional ayurvedic drug. J Pharmacogn Phytochem 2014;2(6):57-67.

**Publication Year:**

2014

**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.

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## ABSTRACT:

Ayurveda, literally means "science of life" and it is practised over 5000 years back onwards. In Ayurveda, several compounds of Mercury (Parada) and Sulphur (Gandhaka) are extensively used in Ayurvedic therapeutics for a wide variety of ailments and conditions. Kajjali is one such compound which is the most predominant amongst them. Kajjali, an Indian traditional drug has been used in the treatment of various disorders. In our study, processing and chemical characterization of this drug using various techniques, viz. X-ray diffraction (XRD), Scanning electron microscopy (SEM), X-ray photoelectron spectroscopy (XPS), Particle size analyzer, Thermo-gravimetry analysis (TGA), and Energy dispersive X-ray fluorescence (EDXRF) have been reported. In the perspective of safety concerns In vitro bovine shrimp assay and Osmotic fragility test also have been performed. XRD pattern of preparation delineats its cubic and hexagonal form with 2θ position at 23.08, 26.42,27.76 28.80,30.46, 31.25, 43.78, 51.86, and 54.30 with d-spacing of 3.83, 3.37, 3.21, 3.09, 2.93, 2.86, 2.06, 1.76 and 1.68 A$^{o}$ respectively. SEM photomicrograph of Samagandhak Kajjali particles shows the appearance of particles of 10 um and less than 5 um size particles i.e. Upto 0.237 um in size. Drug contains Mercury in the Mercury Sulphide (HgS) form with free Sulphur and associated with organic contents, whereas EDAX showed the presence of Hg (49.4 %), S (48.70 %), Zn (12.39 ppm), P (0.67%) and Selenium (0.04 ppm) in the final preparation of Kajjali. There is no significant ($p< 0.05$) difference in the In vitro toxicity and Osmotic fragility of control group with treated ones. These findings help in understanding the therapeutic value, safety aspect and standardization of Ayurvedic drug- Kajjali. Though the metallic Mercury is known to be toxic to the biological system, no compelling evidence has been put forth to suggest any toxic effects of Kajjali. By observing the results of structural and chemical characterisation of the study, clearly delineats in crystal view manner of its safety concern.

# Evaluation of safety and efficacy of Maa-Lact in lactating Holtzman rats


## ABSTRACT:

**Objective:** To evaluate the safety & efficacy of Maa-Lact granules for its galactogougue activity in Holtzman rats and its effect on suckling pups.

**Methods:** Group I rats were treated as control, group II and III rats were treated with 500 mg/kg, 1 000 mg/kg of Maa-Lact granules for 21 days. Weekly body weights of dams and pups were collected, litter survivability for 22 days and ocular blood samples were collected on 1st day of parturition and 21st day of post parturition for the estimation of prolactin levels. On 21st day blood samples were collected from retro-orbital sinus for haemotological and biochemical estimations. On the same day of weaning rats were sacrificed and subjected to necropsy and individual organ weights were recorded

**Results:** No significant difference in weekly food weight consumption, body weights between control & treated groups with normal clinical signs. There is no mortaly in dams throught the study period with no significant difference in pups weights. The percentage mortality in pups was 14.43 %, 14.07 %, and 13.42% in group I, group II and group III, respectively. The histopathological finding has shown that treated groups have less convulution and adipose tissue deposition along with increase in length and branching of lactiferous duct and alveolar size.

**Conclusion:** Based on above results, it can be concluded that Maa-Lact posseses significant galctogogue activity.



**Cite as:**

Dhumal, Rohit & Selkar, Nilakash & Chawda, M.B. & Thakur, Kapil & Vahalia, M.K. & Gopal, Venu & Vanage, Geeta. (2014). Evaluation of safety and efficacy of Maa-Lact in lactating Holtzman rats. Asian Pacific Journal of Reproduction. 3. 8–12. 10.1016/S2305-0500(13)60177-3.

**Publication Year:**

2014

**Collaborating Institute(s):**

"National Centre for Preclinical Reproductive and Genetic Toxicology, ICMR-National Institute for Research in Reproductive and Child Health, J. M. Street, Parel Mumbai - 400 012, Maharastra."


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# Abrogation of carbon tetrachloride ($CCl_4$) induced hepatotoxicty by Arogyavardhani in Wistar rats


## ABSTRACT:

From long back Arogyavardhani, a herbo-mineral preparation is used in the affections of liver & spleen disorders as an ayurvedic preparation. The present study was aimed to evaluate the hepatoprotective effect of Arogyavardhani in carbon tetrachloride ($CCl_4$) induced liver damage in wistar rats. In the present study Arogyavardhani A (65 mg/kg, p.o) and Arogyavardhani B (65 mg/kg, p.o) were used to screen the hepatoprotective activity. Hepatotoxicity was induced by the $CCl_4$ (3 ml/kg, p.o), and silymarin (50 mg/kg, p.o) was taken as a standard. Biochemical parameters like serum glutamate oxaloacetate transaminase (SGOT), serum glutamate pyruvate trasaminase (SGPT), alkaline phosphatase (ALP), total bilirubin and direct bilirubin levels were estimated. Histapathological examination of liver samples were also done. $CCl_4$ treated groups showed the elevated levels of biochemical parameters like SGOT, SGPT, ALP, total bilirubin, and direct bilirubin levels. In-case of Arogyavardhani treated groups significantly ($p<0.01$) prevented this hepatotoxicity. Histopathological examinations revealed the post-treatment of Arogyavardhani exhibited the protection of liver tissue from $CCl_4$ induced hepatotoxicity. The observed results strongly support the hepatoprotective activity of Arogyavardhani against $CCl_4$ induced hepatotoxicity.



**Cite as:**

Gopal, Venu & Selkar, Nilkash & Vemula, Sampath & M.B.Chawda, & Thakur, Kapil & Shitut, Shekhar. (2014). Abrogation of carbon tetrachloride (CCl4) induced hepatotoxicty by arogyavardhani in wistar rats. Asian Journal of Pharmaceutical and Clinical Research. 07. 183-185.

**Publication Year:**

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**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF),
Panvel,
Navi Mumbai - 410 206,
Maharastra.


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Shree Dhootapapeshwar Standards
SDS Monograph No. 0800044
Arogyavardhani

Experimental Study

# Evaluation of the chondroprotective effect of an ayurvedic formulation Myostaal Forte tablet in experimental model of osteoarthritis in rats

## ABSTRACT:

**Background:** Osteoarthritis is one of the prevalent and degenerative disorders of the joints that causes significant pain and functional disability. It is a disease in which not only the articular cartilage of the synovial joint is affected, but also the adjacent bone, ligaments, capsule, synovial membrane, and even peri-articular muscles are distressed.

**Purpose:** The purpose was to evaluate the chondroprotective effect of the formulation on the monosodium iodoacetate (MIA) induced arthritis in rats.

**Materials and Methods:** Osteoarthritis was induced in rats by giving a single intra-articular injection of 1 mg MIA. Three groups' viz. normal group, control group, and a test group were used to study the chondroprotective effect of myostaal forte in MIA induced osteoarthritis in rats. Each group had eight animals of either sex. Four animals from each treatment group were sacrificed and examined for the histopathological examinations on 14$^{th}$ day of treatment and remaining on the 28$^{th}$ day of treatment.

**Results:** In the Myostaal forte treated group, the chondrocytes were present up to 50% and no synovial proliferation was observed which shows the protective effect of myostaal forte against chondrocytes damage. The swelling in the knee of the myostaal forte treated group was found significantly lower.

**Conclusions:** Myostaal forte has chondroprotective effect and palliates the inflammation and discomfort of the osteoarthritis.

**Cite as:**

"Lahkar M, Chawda MB, Selkar NA, Allakonda L. Evaluation of the Chondroprotective Effect of an Ayurvedic Formulation Myostaal Forte Tablet in Experimental Model of Osteoarthritis in Rats. Int J Sci Stud 2014;2(6):37-41."

**Publication Year:**

2014

**Collaborating Institute(s):**

Gauhati Medical College and Hospital, Department of Pharmacology and National Institute of Pharmaceutical Eductaion and Research, Guwahati - 781 032, Assam.

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# Acute and sub-chronic toxicity (90-Day) study of Swamala (SWA)® in Wistar rats


## ABSTRACT:

**Background:** Swamala (SWA)® is an Ayurvedic proprietary product used in the treatment of general debility and in immune-compromised conditions. Despite its usefulness, there is no published data on toxicity profile of SWA®.

**Objective:** The main objective of the present study was to evaluate safety of SWA® in an acute and 900 day repeated dose toxicity studey in Wistar rats.

**Methods:** SWA® at the doses of 0, 3, 6, and 15 g/kg was administered for 90 consecutive days. Body weights and feed consumption were recorded and analyzed. At termination of the study rats were sacrificed and observed for gross pathological changes. All organ parts were collected, weighed and preserved for histopathological examination and blood was collected from retro-orbital sinus for clinical biochemical analysis.

**Results:** After 90 days of oral administration SWA® did not show any gross toxicological signs and histopathology also when compared with normal. All animals in Group IV showed significant increase in body weight as compared to that of control group animals. No mortality was observed throughout the period.

**Conclusion:** Finally, it was concluded that SWA® having no toxico-pathological effects at a dose of 15 g/Kg which is equivalent to five times the therapeutic dose administered orally for 90 days.



**Cite as:**

Nilakash, S. & Jonnalagadda, G. & Chawda, M.B. & Thakur, Kapil & Vahalia, M.K. & Shitut, S.S.. (2014). Acute and sub-chronic toxicity (90-Day) study of Swamala (SWA)® in Wistar rats. Pharmaceutical Sciences. 20. 52-60.

**Publication Year:**

2014



**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel, Navi Mumbai - 410 206, Maharastra.

# Efficacy and safety of a herbo-mineral ayurvedic formulation 'Afrodet Plus®' in male rats

**Cite as:**

Dhumal R, Vijaykumar T, Dighe V, Selkar N, Chawda M, Vahlia M, Vanage G. Efficacy and safety of a herbo-mineral ayurvedic formulation 'Afrodet Plus®' in male rats. J Ayurveda Integr Med. 2013 Jul;4(3):158-64. doi: 10.4103/0975-9476.118706. PMID: 24250145; PMCID: PMC3821190.

**Publication Year:**

2013

**Collaborating Institute(s):**

National Centre for Preclinical Reproductive and Genetic Toxicology, ICMR-National Institute for Research in Reproductive and Child Health, J. M. Street, Parel, Mumbai - 400 012, Maharastra.

## ABSTRACT:

**Background:** Reverse pharmacology for drug development has been highly productive and cost-effective in recent past as it is based on the documented therapeutic effects of plants in ancient texts. Afrodet Plus® is formulated for the treatment of male infertility, which contains ancient herbo-minerals. Its efficacy and safety are validated through this animal study in reverse pharmacology mode.

**Objectives:** This study was undertaken to evaluate efficacy and safety of an Ayurvedic formulation Afrodet Plus® in adult male rats.

**Materials and Methods:** Twelve male rats (Holtzman) between 8 and 10 weeks of age were randomly selected and animals were assigned to a control and two treatment groups. Dosing was performed daily. Various parameters such as weekly body weight, hematology, serum testosterone levels, epididymal sperm count, and efficiency of Daily Sperm Production (DSP) were evaluated.

**Results:** It was found that epididymal sperm count had significantly increased in both low-dose (+27.39%) and high-dose (+40.5%) groups as compared to control group. The DSP also showed an increase of 43.7% at high dose of 180 mg/kg body weight as compared to the control group. An increase in sperm motility and especially progressive motility was observed when evaluated by Computer Assisted Semen Analyzer. Histological evaluation of testicular tissue for spermatogenic index revealed that the index had increased in treatment group as compared to control group.

**Conclusion:** This study revealed that oral administration of Afrodet Plus® resulted in significant increase in DSP in the testis along with increase in epididymal sperm count and progressive motility as compared to control group without producing any treatment-related adverse effects. These findings provide the documentary evidence that the use of Afrodet Plus® at 90 and 180 mg/kg body weight is effective and safe for the treatment of male infertility especially to improve sperm count and progressive motility.

# Sub-chronic safety evaluation of ayurvedic immunostimulant formulation 'immuforte' in rats in reverse pharmacology

**Cite as:**

Dhumal R, Patil P, Selkar N, Chawda M, Vahlia M, Vanage G. Sub-chronic safety evaluation of ayurvedic immunostimulant formulation 'immuforte' in rats in reverse pharmacology. Toxicol Int. 2013 Jan;20(1):87-94. doi: 10.4103/0971-6580.111543. PMID: 23833443; PMCID: PMC3702133.

**Publication Year:**

2013

**Collaborating Institute(s):**

National Centre for Preclinical Reproductive and Genetic Toxicology, ICMR-National Institute for Research in Reproductive and Child Health, J. M. Street, Parel, Mumbai - 400 012, Maharastra.

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## ABSTRACT:

**Objective:** The present study was undertaken to determine target organ safety of "Immuforte" to establish relationship between dose or exposure and response and also to identify potential parameters for monitoring adverse effects of "Immuforte" in clinical studies, if any. **Materials and methods:** A total of 40 males and 40 females were randomly assigned to the four groups, namely group I (vehicle control; gum acacia), group II (120 mg/kg BW of Immuforte in gum acacia), group III (360 mg/kg BW of Immuforte in gum acacia), and group IV (600 mg/kg BW of Immuforte in gum acacia) consisting of 10 males and 10 females in each group. Additionally, a recovery group (600 mg/kg BW of Immuforte in gum acacia) containing 5 males and 5 females was included. **Results:** The results showed significant decrease in percent lymphocyte count of high and mid dose groups as compared to control group. The percent neutrophil counts in all the three treated groups of male and female rats were found to be significantly higher than that of control group ($P < 0.05$). In females MCV values in low dose and mid dose were significantly higher as compared to control ($P < 0.05$). The males from low dose group showed significant decrease in total serum protein, globulin, electrolytes, direct bilirubin, creatinine levels, whereas in mid dose group along with albumin, globulin. A significant decrease in AST and cholesterol was observed. In females, significant decrease was observed in total protein and globulin of low dose and mid dose of Immuforte-treated rats ($P < 0.05$). Though few hematological and biochemical parameters were different from control group, no does related response was observed and further, all these values were comparable with historical control data of the colony. Terminal body weight, organ weight, gross, and histopathology did not reveal any toxicity-related any adverse effects. Heavy metal analysis of the blood samples collected from terminally sacrificed animals did not show presence of heavy metals viz. lead (Pb), mercury (Hg), cadmium (Cd), and arsenic (As). **Conclusion:** The results of the present study demonstrated that Immuforte does not cause any observable toxicity at doses used in the study when administered for the period of 90 days and is safe for the human use and thus, Immuforte could be used safely for therapeutic use in humans.

# Antiulcer activity of Amlapitta Mishran suspension in rats: A pilot study


## ABSTRACT:

**Context:** Amlapitta Mishran suspension is a poly herbal ayurvedic formulation, which has been traditionally used for acidity and gastric ulcers.

**Aim:** The aim of this study is to evaluate the antiulcer activity of Amlapitta Mishran on non-steroidal anti-inflammatory drugs (NSAID's) -induced ulcers in the rat model.

**Subjects and Methods:** The antiulcer activity of Amlapitta Mishran was investigated on indomethacin (100 mg/kg) NSAID's induced ulcers in rats. Effect of two different doses of Amlapitta Mishran was studied by calculating the total number of ulcers, ulcer index and percentage inhibition.

**Statistical Analysis Used:** Data was analyzed by the Student's t-test ($P < 0.05$).

**Results:** Amlapitta Mishran treated rats have shown significant ($P < 0.0001$) decrease in the total number of ulcers and ulcer index and significant increase in % inhibition of ulcers as compared with positive control group.

**Conclusion:** The results indicate that Amlapitta Mishran has showed a dose dependent antiulcer activity in experimental animals and confirms ayurvedic use of Amlapitta Mishran in gastric ulcers.



**Cite as:**

Vemula SK, Chawada MB, Thakur KS, Vahalia MK. Antiulcer activity of Amlapitta Mishran suspension in rats: A pilot study. Anc Sci Life. 2012 Oct;32(2):112-5. doi: 10.4103/0257-7941.118551. PMID: 24167338; PMCID: PMC3807954.

**Publication Year:**

2012



**Collaborating Institute(s):**

Shree Dhootapapeshwar Ayurvedic Research Foundation (SDARF), Panvel,
Navi Mumbai - 410 206, Maharastra.

# Therapeutic profile of an ayurvedic formulation Ashotone in dysfunctional uterine bleeding (D.U.B.)

**Cite as:**

Shringi M, Galvankar P, Vaidya R, Shankari K, Butt M, Joshi B, et al. Therapeutic profile of an ayurvedic formulation Ashotone in dysfunctional uterine bleeding (DUB). Indian Practitioner 2000;53:193-8.

**Publication Year:**

2000

**Collaborating Institute(s):**

Bharatiya Vidya Bhavan's Swami Prakashananda Ayurvedic Research Centre, JVPDS, 13th North South Road, Juhu, Mumbai - 400 049, Maharastra.

## ABSTRACT:

Tablet Ashotone® with *Saraca indica* as the main ingredient was studied for the control of dysfunctional uterine bleeding (DUB). This multicentric study was conducted in 30 patients of DUB drawn from three participating centres. The preparation was found to be effective in 18 patients i.e. 81.8 °/o out of 22 patients of ovulatory DUB. In 6 cases of anovulatory DUB there was no response with short term treatment. Response to the treatment was judged by the total number of sanitary pads used and number and size of clots passed during bleeding episode in pretreatment and three treatment cycles. A significant reduction in the number of sanitary pads was observed in the 1st cycle and continued through the 3rd cycle ($p < 0.001$; paired 't' test). The duration or number of days of bleeding was also reduced in all treatment cycles ($P < 0.02$: $P < 0.01$: $P < 0.05$). In ovulatory DUB cases cyclicity was maintained and irregular bleeding or spotting did not occur. None of the women had significant side effects and none discontinued the treatment for the same. Only 4 out of 30 cases had minor transient gastrointestinal complaints in the form of mild abdominal pain and discomfort.

Additional observations showed relief of dysmenorrhoea and premenstrual tension syndrome in two cases each.

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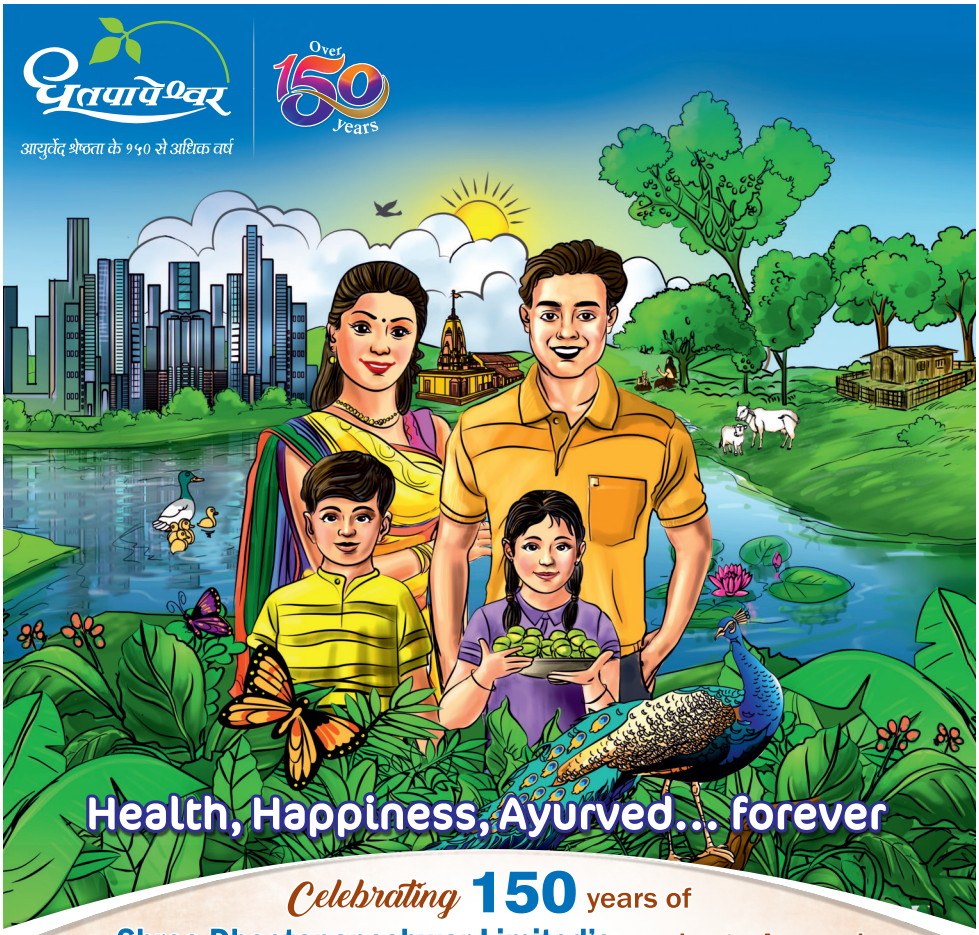


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