

**PHARMACEUTICO-ANALYTICAL PROFILING AND EXPERIMENTAL ASSESSMENT
OF NISHADI GHRITA AND CHAITASA GHRITA****Dr. Amatul Khair Khutija I. S.^{*1}, Dr. Laxmibai Kurle²**¹Postgraduate Scholar, Department of Rasashastra and Bhaishajya Kalpana, Taranath Government Ayurvedic Medical College and Hospital, Ballari, Karnataka, India.²Professor and Head, Department of Rasashastra and Bhaishajya Kalpana, Taranath Government Ayurvedic Medical College and Hospital, Ballari, Karnataka, India.***Corresponding Author: Dr. Amatul Khair Khutija I. S.**Postgraduate Scholar, Department of Rasashastra and Bhaishajya Kalpana, Taranath Government Ayurvedic Medical College and Hospital, Ballari, Karnataka, India. DOI: <https://doi.org/10.5281/zenodo.23033056>**How to cite this Article:** Dr. Amatul Khair Khutija I. S.^{*1}, Dr. Laxmibai Kurle². (2026). Pharmaceutico-Analytical Profiling And Experimental Assessment of Nishadi Ghrita And Chaitasa Ghrita. World Journal of Pharmaceutical and Medical Research, 12(10), 118-124.This work is licensed under [Creative Commons Attribution 4.0 International license](https://creativecommons.org/licenses/by-nc/4.0/).

Article Received on 19/08/2026

Article Revised on 09/09/2026

Article Published on 01/10/2026

ABSTRACT

Background: Unmada is one among the major Manasika Rogas described in Ayurveda, characterized by derangement of Manas, Buddhi, Smriti, Sheela, Cheshta and Achara. Contemporary psychiatric disorders exhibit several features comparable to Unmada. Ayurvedic classics advocate the use of Ghrita preparations in Manasika Vikaras due to their Medhya, Yogavahi and Sukshma properties. **Objectives:** To evaluate and compare the pharmaceutico-analytical characteristics and antipsychotic activity of Nishadi Ghrita and Chaitasa Ghrita in experimental animal models. **Methodology:** Nishadi Ghrita and Chaitasa Ghrita were prepared according to classical references and subjected to pharmaceutical and analytical evaluation. Physicochemical parameters including specific gravity, refractive index, acid value, saponification value, iodine value and HPTLC profiling were assessed. Experimental antipsychotic activity was evaluated using D-amphetamine induced stereotypy in Swiss albino mice. Animals were randomly divided into control, standard and test groups. Statistical analysis was performed using ANOVA followed by Dunnett's test. **Results:** Both formulations complied with analytical standards. HPTLC studies demonstrated characteristic phytochemical fingerprints. Experimental evaluation showed significant reduction in stereotypic behaviour in treated groups compared to disease control. Nishadi Ghrita exhibited comparatively better antipsychotic activity than Chaitasa Ghrita. **Conclusion:** Nishadi Ghrita and Chaitasa Ghrita possess significant antipsychotic activity. Nishadi Ghrita demonstrated superior efficacy, supporting its classical indication in Unmada and related psychiatric disorders.

KEYWORDS: Chaitasa Ghrita, D-Amphetamine, Nishadi Ghrita, Stereotype Behaviour, Unmada.**INTRODUCTION**

Psychotic disorders are characterized by disturbances in perception, thought, behaviour and the ability to interpret reality.^[1] Contemporary management primarily relies on antipsychotic medicines; however, treatment may be associated with adverse effects and variable therapeutic response. This has encouraged continued investigation of complementary and traditional medicinal approaches with potential neuropsychopharmacological activity.

In Ayurveda, Unmada is described as a disorder involving impairment of mental functions including buddhi (intellect), jnana (knowledge), smriti (memory), sheela (conduct), cheshta (behaviour) and achara

(activities).^[2] The present study adopts an experimental correlation between Unmada and psychosis-like behavioural manifestations rather than equating the two conditions diagnostically.

Nishadi Ghrita^[3] and Chaitasa Ghrita^[4] are classical polyherbal formulations described for Unmada and related disorders. Nishadi Ghrita contains ingredients including Haridra, Daruharidra, Triphala, Trivrit, Vacha, Hingu, Sirisha, Jyotishmati, Shweta Aparajita, Manjishta, Trikatu and Devadaru, while Chaitasa Ghrita contains Trivrit, Murva, Rasna, Devadaru, Shatavari, Gokshura and Dashamoola drugs.

The use of Ghrita as a lipid-based pharmaceutical vehicle is an important feature of these preparations.^[5] Proper pharmaceutical processing, including Murchana and Sneha Paka, is traditionally considered essential for obtaining the desired quality characteristics of Ghrita formulations.

Although these formulations have classical indications in mental disorders, experimental evidence comparing their pharmacological effects is limited. Therefore, the present study was designed to combine pharmaceutical and analytical standardization with an in vivo evaluation of antipsychotic activity.

AIM

To comparatively evaluate the pharmaceutical, analytical and experimental characteristics of Nishadi Ghrita and Chaitasa Ghrita, with particular emphasis on their activity in a D-amphetamine-induced stereotypy model.

OBJECTIVES

1. To prepare Nishadi Ghrita and Chaitasa Ghrita according to classical pharmaceutical procedures.
2. To evaluate the Analytical characteristics of the formulations.
3. To comparatively assess their effects on D-amphetamine-induced stereotypic behaviour in Swiss albino mice.

MATERIALS AND METHODS

Study design

The study comprised three components:

1. Pharmaceutical preparation of Murchita Ghrita, Nishadi Ghrita and Chaitasa Ghrita.
2. Analytical evaluation of the prepared formulations.
3. Experimental evaluation of antipsychotic-like activity using D-amphetamine-induced stereotypy in Swiss albino mice.

Pharmaceutical Preparation

➤ Murchita Ghrita^[6,7,8]

Murchita Ghrita was prepared using Go-Ghrita processed with Haritaki, Vibhitaki, Amalaki, Musta and Haridra along with Matulunga Swarasa and water. The preparation was carried out over mild heat until the classical Sneha Siddhi Lakshanas were achieved. A total of 3000 mL Ghrita was used and 2800 mL Murchita Ghrita was obtained, corresponding to a process loss of 6.67%.

➤ Nishadi Ghrita

17 Kalka Dravyas were processed with Murchita Ghrita and Gomutra according to the classical procedure. A total of 1000 mL Murchita Ghrita, 4000 mL of Gomutra and approximately 250 g Kalka material were used. Sneha Paka was conducted over approximately 10 hours under mild heat until the desired Siddhi Lakshanas were obtained. The final yield was 750 mL, representing a process loss of 25%.

➤ Chaitasa Ghrita

Chaitasa Ghrita was prepared using 16 Kalka ingredients and Dashamoola-containing Kashaya with Murchita Ghrita. The preparation involved approximately 11.5 hours of Sneha Paka, with continuous observation of classical Siddhi Lakshanas. A total of 1500 mL Murchita Ghrita and 6000 mL Kashaya as the principal liquid components. The final yield was 1000 mL, representing a process loss of 33.33%.

Analytical evaluation

The formulations were examined for: Organoleptic characteristics, Loss on drying, Saponification value, Iodine value, Acid value, Ester value, Refractive index, Specific gravity, Viscosity, Rancidity, Total bacterial count, Total fungal count, TLC, HPTLC, Unsaponifiable matter. TLC was performed on silica gel F254 plates, while HPTLC fingerprinting was conducted on chloroform-soluble fractions of the formulations.

Experimental study^[9,10]

Thirty healthy adult Swiss albino mice of either sex, weighing 20–30 g, were obtained from the SDM Centre for Research in Ayurveda & Allied Sciences, Udupi. The animals were acclimatized to standard laboratory conditions and provided free access to standard pellet diet and water. The experimental protocol was approved by the Institutional Animal Ethics Committee (IAEC) vide approval No. SDMCRA/IAEC/TGA-B-06.

The animals were divided into five groups, with six animals in each group. The groups comprised a normal control group, D-amphetamine control group, Nishadi Ghrita-treated group, Chaitasa Ghrita-treated group, and diazepam-treated standard group. Nishadi Ghrita (3.12 mL/kg), Chaitasa Ghrita (6.24 mL/kg) and Diazepam (1.02 mg/kg) were administered orally as the test and standard formulations. D-amphetamine was administered intraperitoneally at a dose of 2.05 mg/kg, one hour after administration of the test formulations, to induce stereotypic behaviour.

Stereotypic behaviour was assessed at 20, 40, 60, 120, 180, and 240 minutes following D-amphetamine administration. The intensity of stereotypic behaviour was scored on a 0–3 scale. The behavioural parameters assessed included grooming, rearing, sniffing, licking, gnawing, and scratching. Body weight was also monitored during the study.

Statistical analysis

Results were expressed as mean $\pm$ SEM. One-way analysis of variance followed by Dunnett's multiple comparison test was used for statistical analysis. A probability value of $P < 0.05$ was considered statistically significant, with $P < 0.01$ indicating a highly significant difference were reported in the dissertation.

Ethical considerations

The experimental protocol was approved by the Institutional Animal Ethics Committee (IAEC) vide approval No. SDMCRA/IAEC/TGA-B-06.

RESULTS**Pharmaceutical study**

The preparation of Murchita Ghrita yielded 2800 mL from 3000 mL starting Ghrita. Nishadi Ghrita yielded 750 mL from 1000 mL Murchita Ghrita, while Chaitasa Ghrita yielded 1000 mL from 1500 mL starting Ghrita.

Table no. 01: Yield of Ghrita Preparations During Pharmaceutical Processing.

Sl. no	Preparation	Initial quantity of Ghrita (mL)	Final quantity of Ghrita (mL)	Percentage yield
01	Murchita Ghrita	3000	2800	93.33%
02	Nishadi Ghrita	1000	750	75.00%
03	Chaitasa Ghrita	1500	1000	66.67%

Analytical study

The analytical values demonstrate distinguishable Organoleptic, Physicochemical profiles for the two formulations.

Microbiological evaluation

The total bacterial counts were 7 CFU/mL for Murchita Ghrita, 9 CFU/mL for Nishadi Ghrita and 8 CFU/mL for Chaitasa Ghrita. Total fungal counts were 8 CFU/mL, 8 CFU/mL and 7 CFU/mL, respectively.

Chromatographic evaluation

TLC demonstrated distinct chromatographic profiles.

Nishadi Ghrita showed spots at R_f 0.59 and 0.82 under 254 nm and at 0.47 and 0.59 under 365 nm. Chaitasa Ghrita demonstrated R_f values of 0.47 and 0.62 under white light, 0.35 and 0.61 under 254 nm, and 0.24, 0.35, 0.56 and 0.61 under 365 nm.

HPTLC further demonstrated characteristic chromatographic fingerprints for both formulations.

A. ORGANOLEPTIC CHARACTERS: Color, odour, taste of the given sample was tested using sensory organs, and the same were noted.

Table no. 02: Showing organoleptic characters of MG, NG and CG.

Sl. no	Organoleptic character	MG	NG	CG
1	Colour	Canary Yellow	Yellowish brown	Light greenish
2	Odour	Characteristic	Characteristic	Characteristic
3	Taste	Astringent, slightly bitter	Unctuous	Unctuous
4	Texture	Greasy	Greasy	Greasy

B. PHYSICO-CHEMICAL PARAMETERS**Table no. 03: Showing Results of Standardization parameters.**

Sl.NO	Standardization Parameter	Results <i>n</i> = 3%w/w		
		MG	NG	CG
1.	Loss on Drying at 110°C	0.32%	0.61%	0.53%
2.	Saponification value (mg KOH/g)	182.32	265.07	222.26
3.	Iodine value (g I ₂ /100g)	5.07	13.57	13.32
4.	Acid value (mg KOH/g)	1.9	2.01	3.14
5.	Peroxide value (meq O ₂ /kg)	11.2	11.2	11.2
5.	Ester value	180.416	263.05	219.6
6.	Refractive index	1.476	1.47	1.47
7.	Specific gravity	0.90	0.91	0.91
8.	Viscosity (mPasc)	39.48	67.36	97.94
9.	Rancidity test (Kreis test)	Negative	Negative	Negative

C. TOTAL MICROBIAL COUNT**Table no. 04: Showing results of Total bacterial count of MG, NG AND CG.**

Test	MG	NG	CG
Total bacterial count	7 CFU (limit<10 CFU/ML)	9 CFU (limit<10 CFU/ML)	8 CFU (limit<10 CFU/ML)

D. TOTAL FUNGAL COUNT**Table no. 05: Showing results of total fungal count of MG, NG AND CG.**

Test	MG	NG	CG
Total Fungal count	8 CFU (limit<10 CFU/ML)	8 CFU (limit<10 CFU/ML)	7 CFU (limit<10 CFU/ML)

E. THIN LAYER CHROMATOGRAPHY**Table no 06: Showing results of TLC – Under Visible light.**

	MG	NG	CG
Under white light	0.562	Nil	0.47 0.62
Under short UV (254nm)	0.562	0.59 0.82	0.35 0.61
Under Long UV (365nm)	0.237 0.51 0.56 0.687	0.47 0.59	0.24 0.35 0.56 0.61

Table no. 07: Showing result of Unsaponifiable matter of NG and CG

Parameter	Nishadi ghrita	Chaitasa ghrita
Unsaponifiable matter	1.10%	1.23%

F. HPTLC

Showing results of HPTLC of NG and CG.

Table no. 08: Showing observation under UV 254 nm.

Rf values	Color observed	Inference
NISHADI GHRITA		
0.11	Green	Steroidal or alkaloid compound
CHAITASA GHRITA		
0.11	Green	Steroidal or alkaloid compound
0.26	Green	Steroidal or alkaloid compound

Table no. 09: Showing Observation under UV 356nm (Before derivatisation).

Rf value	Color observed	Inference
NISHADI GHRITA		
0.06	Fluorescent Blue	Flavonoid or phenolic compound
0.14	Fluorescent Blue	Curcumin derivative
CHAITASA GHRITA		
0.17	Fluorescent Green	Phenolic or flavonoids

Table no. 10: Observation under UV 356nm (Post derivatisation).

Rf value	Color observed	Inference
NISHADI GHRITA		
0.13	Purple	Indicate presence of phenolic or glycosides compounds
0.28	Purple	Alkaloid or Glycoside
CHAITASA GHRITA		
0.13	Purple	Indicate presence of phenolic or glycosides compounds
0.28	Purple	Alkaloid or Glycoside

Experimental study

The experimental findings showed that both Nishadi Ghrita and Chaitasa Ghrita reduced D-amphetamine-induced stereotypic behavioural responses across most of the evaluated parameters. Nishadi Ghrita showed greater reduction in licking (56.05%) and gnawing (56.83%), whereas Chaitasa Ghrita demonstrated comparatively

higher reductions in sniffing (26.32%) and scratching (31.33%). The standard group showed marked reductions particularly in grooming (80.12%) and sneezing (62.51%). Overall, both formulations demonstrated potential anti-stereotypic activity, with Nishadi Ghrita showing a comparatively stronger effect on selected repetitive behaviours.

Table no. 11: Showing reduced behavioural changes.

Sl. no	Behavioural findings	Nishadi Ghrita	Chaitasa Ghrita	Standard group
01	Sneezing	31.27%	18.75%	62.51%
02	Grooming	17.65%	23.51%	80.12%
03	Rearing	29.40%	23.51%	23.63%
04	Sniffing	20.16%	26.32%	53.31%

05	Licking	56.05%	34.08%	35.18%
06	Gnawing	56.83%	47.74%	7.34%
07	Scratching	26.24%	31.33%	23.21%

DISCUSSION

The present investigation combined pharmaceutical standardization with an in vivo behavioural model to compare Nishadi Ghrita and Chaitasa Ghrita. The analytical results demonstrated distinct organoleptic, physicochemical and chromatographic profiles, supporting differentiation of the two polyherbal formulations.

Both formulations showed negative rancidity tests. The reported microbial counts were low, suggesting satisfactory microbiological quality of the prepared batches.

The D-amphetamine-induced stereotypy model provides a behavioural paradigm for investigating compounds that modulate stimulant-induced hyperactivity and stereotypic responses. In the present study, both formulations reduced several behavioural manifestations associated with D-amphetamine administration.

The most prominent effect of Nishadi Ghrita was observed in licking and gnawing. Licking decreased by 56.05% and gnawing by 56.83%, both reaching statistical significance. These findings indicate a comparatively stronger effect of Nishadi Ghrita on selected repetitive stereotypic behaviours.

Chaitasa Ghrita also demonstrated activity, particularly against gnawing and scratching. Gnawing decreased by 47.74% and scratching by 31.33%, with the former reaching statistical significance and the latter showing a significant peak-time effect.

The comparative behavioural findings therefore suggest that the two formulations may have overlapping but not identical pharmacological profiles. Nishadi Ghrita appeared more effective for selected repetitive behaviours such as licking and gnawing, whereas

Chaitasa Ghrita demonstrated a relatively notable effect on scratching.

The polyherbal composition of Nishadi Ghrita includes ingredients traditionally described as Medhya and Manasroga-hara, while several constituent plants have been investigated for antioxidant, anti-inflammatory or neuropharmacological activities. The study therefore provides preliminary preclinical evidence of efficacy in psychotic disorders.

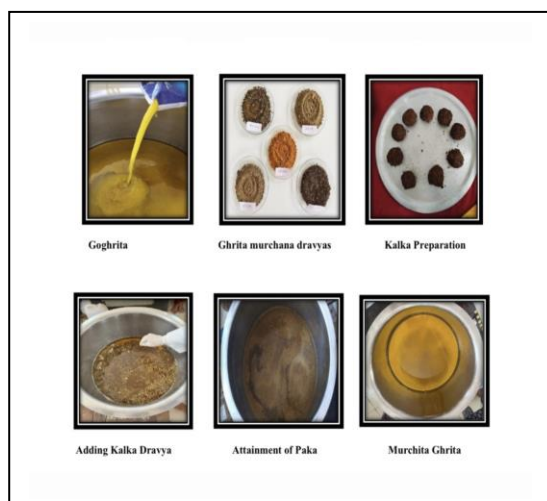
CONCLUSION

Nishadi Ghrita and Chaitasa Ghrita were successfully prepared according to the classical pharmaceutical procedures described in Bharata Bhaishaja Ratnakara and demonstrated distinguishable organoleptic, physicochemical and chromatographic profiles.

Both formulations produced reductions in D-amphetamine-induced stereotypic behaviours in Swiss albino mice. Nishadi Ghrita demonstrated statistically significant reductions in licking and gnawing, while Chaitasa Ghrita demonstrated a statistically significant reduction in gnawing and a notable effect on scratching.

Overall, Nishadi Ghrita showed comparatively stronger activity across selected behavioural endpoints, whereas Chaitasa Ghrita also demonstrated measurable activity with a somewhat different behavioural profile.

The findings support further investigation of both formulations as potential sources of neuropsychopharmacological activity. However, additional studies incorporating larger sample sizes, validated antipsychotic comparators, dose-response evaluation, biochemical and molecular endpoints, and appropriate toxicity studies are required before any conclusions regarding clinical antipsychotic efficacy can be drawn.



PREPARATION OF NISHADI GHRITA





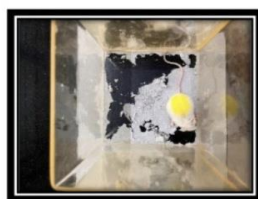
Placing Of Mice



Observation of Mice



Stereotypy behaviour



Biting activity



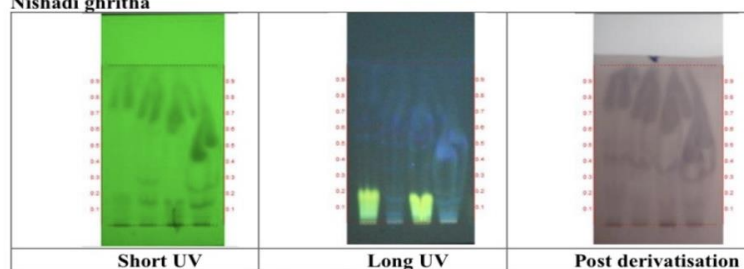
Grooming activity



Rearing activity

ANALYTICAL STUDY**HPTLC RESULTS**

Fig. 1: HPTLC photo documentation of chloroform fraction of Chaitasa ghritha and Nishadi ghritha



Track 1 – Chaitasa ghritha – 4µl

Track 2 – Nishadi ghritha – 4µl

Track 3 – Chaitasa ghritha – 8µl

Track 4 – Nishadi ghritha – 8µl

Solvent system – Toluene: Ethyl acetate: formic acid (5:4:1)

REFERENCES

1. Golwalla SA. Golwalla's medicine for students: A reference book for the family physician. 25th ed. Edited by Nadkar MY: The Health Sciences Publisher. Chapter 13, Psychiatry, 840.
2. Agnivesha. Charaka Samhita, elaborated by Charaka and Drdhabala, with Ayurveda Dipika commentary of Chakrapani Datta. Acharya YT, editor. Varanasi: Chaukhambha Surabharati Prakashana; 2009. Nidana Sthana, Chapter 7, Verse 5. 528.
3. Shah NC, Bhishagratna G, editors. Bharata Bhaishaja Ratnakara. Vol. 3. Reprint ed. New Delhi: Jain Publishers, 2005; Verse 3491; 191.
4. Shah NC, Bhishagratna G, editors. Bharata Bhaishaja Ratnakara. Vol. 2. Reprint ed. New Delhi: Jain Publishers, 2005; Verse 1984; 172.
5. Agnivesha. Charaka Samhita, elaborated by Charaka and Drdhabala, with Ayurveda Dipika commentary of Chakrapani Datta. Acharya YT, editor. Varanasi: Chaukhambha Surabharati Prakashana; 2009. Sutra Sthana, Chapter 13, Verse 13. 182.
6. Govind Das. Bhaishajya Ratnavali. Mishra SN, editor. Reprint ed. Varanasi: Chaukhambha Surbharati Prakashan, 2015; Chapter 5, Verse 1286, 185.
7. Apte HN, translator. Brihat Yoga Tarangini. Varanasi: Chaukhambha Publications. Panchama Taranga, Taila Sadhana, 29.
8. Agnivesha. Charaka Samhita. Shastri PK, editor. 5th ed. Varanasi: Chaukhambha Sanskrit Sansthan; 1997. Kalpa Sthana, Chapter 12, Verse 103. 872.
9. Nair AB, Jacob S. A simple practice guide for dose conversion between animals and human. J Basic Clin Pharm., 2016; 7(2): 27-31.
10. Valame SP, Gupta KG. Effect of clonidine on amphetamine induced stereotype. Indian J Pharmacology, 1981; 13: 203-204.