

**MEDOHARA RASA: PHARMACEUTICO-ANALYTICAL STANDARDIZATION W.S.R
ANTIHYPERLIPIDAEMIC ACTIVITY**Dr. Ashwini H.*¹, Dr. Usha M. (Ayu)²¹Final Year PG Scholar, Department of Post Graduate Studies in Rasashastra and Bhaishajya Kalpana, TGAMC & H, Ballari, Karnataka.²Assistant Professor, Department of Post Graduate Studies in Rasashastra and Bhaishajya Kalpana, TGAMC & H, Ballari, Karnataka.***Corresponding Author: Dr. Ashwini H.**Final Year PG Scholar, Department of Post Graduate Studies in Rasashastra and Bhaishajya Kalpana, TGAMC & H, Ballari, Karnataka. DOI: <https://doi.org/10.5281/zenodo.19434917>**How to cite this Article:** Dr. Ashwini H.*¹, Dr. Usha M. (Ayu)². (2026). Medohara Rasa: Pharmaceutico-Analytical Standardization W.S.R Antihyperlipidaemic Activity. World Journal of Pharmaceutical and Medical Research, 12(4), 375–386.

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ABSTRACT

Background: Hyperlipidaemia is a prevalent metabolic disorder associated with obesity and cardiovascular diseases. In Ayurveda, it correlates with **Medoroga (Sthaulya)** arising from Kapha–Meda Dushti and impaired Agni. Medohara Rasa, a classical Kharaliya Rasayana described in *Rasa Kamadhenu*, is traditionally indicated for Medoroga. Due to the involvement of herbo-mineral components, pharmaceutico-analytical standardization is essential to ensure safety, stability, and therapeutic reliability. **Materials and Methods:** Medohara Rasa was prepared following classical procedures involving extraction of Parada from Hingula, Shodhana of *Parada* and *Gandhaka*, preparation of *Kajjali*, addition of *Vidanga Choorna*, and *Bhavana* with *Arka Dugdha*. Evaluation was carried out using classical Ayurvedic tests and modern analytical techniques including physicochemical analysis, X-ray diffraction (XRD), scanning electron microscopy with energy-dispersive spectroscopy (SEM-EDS), Fourier transform infrared spectroscopy (FTIR), particle size analysis, and HPTLC. **Results:** The formulation exhibited blackish-green colour, near-neutral pH, low ash values, and acceptable moisture content. XRD confirmed the presence of a stable mercuric sulphide (HgS) phase with absence of free mercury. SEM-EDS demonstrated mercury and sulphur as major elements. Particle size analysis revealed nanosized particles, suggesting enhanced bioavailability. FTIR and HPTLC identified bioactive functional groups and phytoconstituents such as embelin and polyphenols, associated with lipid metabolism. **Conclusion:** Pharmaceutico-analytical evaluation confirmed Medohara Rasa as a stable, safe, and standardized formulation with properties supporting its traditional use in **Medoroga and hyperlipidaemia**, providing a foundation for further pharmacological and clinical studies.

KEYWORDS: Medohara Rasa, Pharmaceutico-analytical study, Hyperlipidaemia, Medoroga, Kajjali.**INTRODUCTION**

Hyperlipidaemia is a major global health concern characterized by elevated levels of serum cholesterol, triglycerides, LDL, and VLDL, often accompanied by reduced HDL levels. It plays a central role in the pathogenesis of obesity, atherosclerosis, coronary artery disease, type-2 diabetes mellitus, and other metabolic disorders. According to global and Indian epidemiological data, the prevalence of dyslipidaemia is steadily increasing due to sedentary lifestyle, dietary habits, and metabolic imbalance.

In Ayurveda, hyperlipidaemia and obesity can be correlated with **Medoroga or Sthaulya**, which is described as a disorder of **Kapha and Meda Dushti** resulting from impaired Agni and accumulation of Ama. Classical Ayurvedic texts emphasize the seriousness of this condition through the dictum “*Karshyameva varam sthoulyat*”, highlighting obesity as more detrimental than leanness. Management of Medoroga focuses on **Lekhana, Medohara, Deepana, and Pachana** therapies.

Rasashastra and Bhaishajya Kalpana is a specialized branch of Ayurveda that deals with potent herbo-mineral

formulations processed through specific pharmaceutical techniques. These formulations are characterized by minimal dose, rapid action, and prolonged shelf life. However, due to the involvement of metals and minerals, pharmaceutico-analytical standardization becomes essential to ensure safety, stability, and therapeutic acceptability.

Medohara Rasa, a classical Kharaliya Rasayana described in *Rasa Kamadhenu*, contains **Shuddha Parada, Shuddha Gandhaka, and Vidanga**, processed with **Arka Dugdha Bhavana**. The formulation is traditionally indicated in Medoroga and conditions arising from deranged lipid metabolism. Despite its classical significance, there is limited scientific documentation regarding its pharmaceutico-analytical standardization.

Hence, the present study was undertaken to standardize Medohara Rasa using classical Ayurvedic parameters and modern analytical tools, thereby establishing a scientific foundation for its use in hyperlipidaemia and related metabolic disorders.

MATERIALS AND METHODS

Pharmaceutical Study

Rasoushadhis are known for their high potency, minimal dosage requirement, and prolonged shelf life. Their safety and therapeutic efficacy depend upon meticulous pharmaceutical processing. Hence, a systematic pharmaceutical study was undertaken to ensure standardization and quality of Medohara Rasa.

AIM

To carry out the pharmaceutical preparation of Medohara Rasa.

OBJECTIVES

- Selection and authentication of genuine raw materials
- Shodhana of Gandhaka and Parada
- Extraction of Parada from Hingula
- Preparation of Kajjali
- Addition of Vidanga Choorna
- Bhavana with Arka Dugdha
- Final preparation of Medohara Rasa

Materials

Hingula, Gandhaka, Vidanga, Nimbu Swarasa, Haridra Choorna, Godugdha, Goghrita, Arka Dugdha.

Equipment

Khalva Yantra, Urdhwapatana Yantra, Kurma Puta, Ulukhala Yantra, weighing balance, and associated apparatus.

Procedure

- Raw Gandhaka and Hingula are procured from vaidika mart, Ballari.

Gandhaka Shodhana

- An earthen pot was smeared with Goghrita and filled with 1.5 L of fresh cow's milk.
- The mouth of the pot was covered with a double-layered kora cloth and tightly secured with thread.
- Ashuddha Gandhaka was evenly spread over the cloth surface.
- The pot was placed in a pit up to neck level and covered with a Loha Sharava. Eleven cow dung cakes were arranged over the Loha Sharava and ignited using camphor.
- After complete combustion, the setup was allowed to cool naturally (Swanga Sheeta).
- The pot was removed from the pit and the cloth was carefully opened.
- The purified Gandhaka settled at the bottom was collected.
- Gandhaka was thoroughly washed with hot water to remove residual milk and odour.
- The material was shade-dried, finely powdered, and stored for further use.

Hingula Mardana

Procedure: ➤ Ashoditha Hingula was taken in a clean khalva yantra ➤ It was finely powdered by doing Mardana for an hour ➤ Later Nimbuswarasa was added and Mardana done for 12 hrs.

Extraction of parada from Hingula

- Nimbu Swarasa Mardita Hingula was finely powdered and evenly spread in the lower pot of the Urdhwapatana Yantra.
- An upper pot of equal size was placed over it and Sandhibandhana was done using seven layers of Mritlepita Vastra.
- A Toyadhara arrangement was made over the upper pot to maintain a cool condensation surface.
- The Urdhwapatana Yantra was placed on a gas stove and heated gradually (Kramagni) for 12 hours: Mandagni for 4 hours, Madhyamagni for 6 hours, and Tivragni for 2 hours.
- After completion of heating, the apparatus was allowed to self-cool overnight.
- On the next day, the Yantra was dismantled carefully.
- Sublimed and condensed Parada was scraped from the inner surface of the upper pot.
- Residual Parada present in the ash of the lower pot was also collected carefully.

Parada Shodhana

Hingulottha Parada was taken in a porcelain mortar and pestle. To this Haridra Churna (1/16th part of Parada) was added.

- The mixture was triturated continuously in the mortar.
- Mardana was continued for a total duration of 24 hours.
- After completion of Mardana, the mixture was filtered thrice, using a four-folded cloth.

➤ The Parada collected after filtration was silvery white in appearance.

Kajjali

Equal quantities of Shodhita Parada and finely powdered Shodhita Gandhaka were taken in a Khalva Yantra and triturated slowly and uniformly. Mardana was continued until Kajjali Siddhi Lakshanas were observed, including complete black coloration, fine and smooth texture, absence of lustre (Nischandra), and softness on touch.

Vidanga Choornikarana

Clean and dry Vidanga Beeja were selected after removing impurities and foreign matter. The seeds were coarsely powdered using Ulukhal Yantra and sieved through kora cloth. The coarse residue was re-pounded and sieved again to obtain a fine powder. The final Vidanga Choorna was stored in a clean, dry, airtight container with proper labeling.

Addition of vidanga choorna to Kajjali

Kajjali was taken in a Khalva Yantra, and Vidanga Choorna was added to it. The mixture was thoroughly mixed and triturated until a homogeneous mixture was obtained.

Bhavana with Arka Dugda for vidanga choorna misrita kajjali

Arka Dugda was added to vidanga misrita kajjali in a clean mortar and pestle. ➤ For Bhavana, due to limited

availability of Arka Dugdha, a combination of 80 ml Arka Dugdha and 60 ml Arka Patra Swarasa was used.

➤ Bhavana was carried out until the Subhavita lakshana was attained.

Analytical Study

Physico-chemical and instrumental analyses were performed to evaluate the chemical stability, safety, and standardization of the formulation.

Samples Analyzed

Hingula, Kajjali, and Medohara Rasa.

Parameters

- **Classical tests:** Organoleptic characters, Rekhapurnatva, Varitaratva, Nishchandravta
- **Physico-chemical tests:** pH, total ash, acid-insoluble ash, water-soluble ash, loss on drying
- **Instrumental analysis**
 - XRD (phase identification)
 - SEM-EDS (elemental composition)
 - FTIR (functional groups)
 - Particle size analysis (Zeta PALS)
 - HPTLC (phytochemical profiling)

All analyses were conducted at recognized research laboratories following standard protocols.

Experimental results

RESULTS

1. Pharmaceutical Results

Table no. 01: Showing results from *Hingula mardana with nimbu swarasa*.

Wt of <i>Hingula</i> before mardana	Wt of <i>Hingula</i> after mardana	Weight gain	Yield %
290gm	302gm	12gms	103%

Table no.02: Showing results from *Hingulotha Parada*.

Wt of mardita <i>Hingula</i> taken for <i>urdhwapatana</i>	Wt of <i>Parada</i> obtained	Loss	Yield %
302gm	210gm	92gm	69.5%

Table no.03: Showing results from *Hingulotha Parada Shodhana*.

Wt of <i>Ashoditha Parada</i> taken	Wt of <i>Shoditha Parada</i>	Loss	Yield %
210gm	200gm	10gm	95.23%

Table no.04: Showing results from *Gandhaka Shodhana*.

Wt of <i>Gandhaka</i> taken	Wt of <i>Shoditha Gandhaka</i> obtained	Loss	Yield %
350 g	338 g	12gm	96.57%

Table no. 05: Showing results from preparation of *Kajjali*.

Wt of <i>Parada</i>	Wt of <i>Gandhaka</i>	Wt of <i>Kajjali</i> obtained	Loss	Yield %
150gm	150gm	290gm	10gm	96.66%

Table no.06: Showing results from *Churnikarana of vidanga Drugs*.

Name of Drug	Initial weight	Weight after <i>Churnikarana</i>	Loss	% of Yield
<i>Vidanga</i>	50gm	38gm	12gm	76.14%

Table no.07: Showing results from *Bhavana* for *vidanga misrita kajjali*.

Quantity of <i>vidanga misrita kajjali</i> before <i>bhavana</i>	Quantity of <i>bhavana dravya</i> added	<i>Bhavana Dravya</i>	Quantity obtained after <i>bhavana</i>	Weight Gain	Yield %
75gms	80ml,60ml respectively	<i>Arka Ksheera, Arka patra swarasa</i>	81gms	6gms	106.14%

ANALYTICAL RESULTS

Table no. 08: Showing Results of Organoleptic characters of *Kajjali, Medohara rasa*.

Physical test	<i>Kajjali</i>	<i>Medohara rasa</i>
Colour	Black	Black
Odour	Odourless	Henna smell
Taste	Tasteless	Salty, sour and stringent after taste
Touch	Fine	<i>Soft and fine</i>

Table no.09: Showing Results of Physical tests of *Kajjali, medohara rasa*.

Parameter	<i>Kajjali</i>	<i>Medohara rasa</i>
pH (10 % Aqueous Solution)	6.45	4.5
Total Ash value	0.04%	1.2%
Acid insoluble ash	Nil	0.3%
Water soluble ash	Nil	1.8%
Loss on drying at 105 ⁰ C	0.67%	8.76±0.01

Table 10: Showing the Results of (HPTLC)*R_f* values of Methanolic extract of *Medohara rasa*.

Short UV	Long UV	White light	Post derivatisation (ASA)
-	0.18 (F. red)	-	-
0.32 (Green)	0.33 (F. red)	0.32 (Green)	0.32 (Green)
0.41 (Green)	0.42 (F. blue)	0.42 (Pink)	0.42 (Yellow)
-	-	-	0.58 (Purple)
0.67 (Green)	-	-	-
-	0.75 (F aqua. red)	-	0.73 (Purple)
-	-	-	0.90 (Purple)

RESULTS OF INSTRUMENTAL ANALYSIS

XRD analysis confirmed the presence of stable metacinnabar (HgS) with cubic crystal structure in *Hingula*, *Kajjali*, and *Medohara Rasa*, indicating chemical stability. SEM-EDS analysis demonstrated mercury and sulphur as major elements, confirming formulation integrity. Particle size analysis showed nanosized particles with mean diameters of **199.3 nm (*Hingula*)**, **427.8 nm (*Kajjali*)**, and **728.8 nm (*Medohara Rasa*)**. FTIR spectra revealed hydroxyl, alkane, carbonyl, nitro, ester, and aromatic functional groups, suggesting bioactive potential.

DISCUSSION

The present study aimed to evaluate *Medohara Rasa* through a comprehensive pharmaceutico-analytical approach and to substantiate its antihyperlipidaemic activity experimentally. The discussion integrates classical Ayurvedic concepts with modern scientific findings to establish the safety, stability, and efficacy of the formulation.

Pharmaceutical Interpretation

The pharmaceutical procedures adopted ensured safety, stability, and bioavailability of *Medohara Rasa*.

Shodhana of *Parada* and *Gandhaka* removed physical and chemical impurities while transforming them into therapeutically suitable forms. Extraction of *Parada* from *Hingula* through *Urdhwapatana* resulted in purified mercury, which upon trituration with *Gandhaka* formed stable *Kajjali* (HgS), eliminating free metallic mercury.

Bhavana with *Arka Dugdha* or *Arka Patra Swarasa* played a crucial role in enhancing *Sookshmatva*, facilitating deeper tissue penetration, and imparting *Ushna-Tikshna, Kapha-Meda Hara* properties. The preparation of *Kajjali* through prolonged *mardana* ensured complete amalgamation and formation of chemically stable mercuric sulphide, thereby reducing toxicity and improving therapeutic efficacy.

Analytical Interpretation

Analytical evaluation confirmed the quality and stability of the formulation. Slightly acidic to near-neutral pH supported *Deepana-Pachana* action and biological compatibility. Low ash values indicated minimal extraneous inorganic matter and good purity. XRD analysis confirmed the presence of stable HgS phases (α -HgS in *Hingula* and β -HgS in *Kajjali* and *Medohara*

Rasa), with absence of free elemental mercury, signifying detoxification.

SEM-EDS confirmed mercury and sulphur as principal elements, while FTIR revealed the presence of bioactive functional groups contributed by herbal components. Particle size analysis demonstrated nano- to submicron-range particles, supporting enhanced surface area, absorption, and controlled bioavailability. HPTLC profiling indicated the presence of embelin, flavonoids, and polyphenols, which are known for lipid-lowering and antioxidant activity.

Probable Mode of Action: The Tikta Rasa of Medohara Rasa contributes to Medohara effects, while its Laghu and Ruksha Guna helps in decreasing Snigdha and Kapha, addressing the metabolic imbalance in Medoroga. Its Ushna Virya enhances fat digestion and metabolism, and the Katu Vipaka promotes Medohara karma. Collectively, the Laghu, Ruksha, Ushna, and Teeksha guna acts on Kapha, and Meda dhatu dushti, facilitating reduction of excess adipose tissue, Shodhana and restoration of overall metabolic homeostasis, making it effectiveness in the management of Medoroga. Medohara Rasa exerts a multifaceted lipid-lowering effect through its herbo mineral components. Kajjali provides a bioavailable form of mercury sulfide, ensuring gradual systemic absorption and enhancing the metabolic activity of herbal constituents, thereby supporting lipid regulation and antioxidant protection. Embelin, the principal benzoquinone from Vidanga, modulates lipid metabolism enzymes, reduces total cholesterol, LDL, and triglycerides, and elevates HDL, while its antioxidant and anti-inflammatory effects protect hepatocytes and vascular tissues. Alkaloids contribute by enhancing lipid mobilization, reducing cholesterol synthesis, and improving the HDL/LDL ratio. Flavonoids and phenolics act as potent antioxidants, inhibiting “Pharmaceutico-Analytical Study of Medohara Rasa and Evaluation for its Anti Hyperlipidaemic Activity” Discussion cholesterol absorption, promoting bile acid excretion, and protecting against oxidative stress. Tannins reduce intestinal lipid absorption and serum LDL/triglycerides while safe guarding hepatic tissue. Volatile oils stimulate lipolysis, improve lipid metabolism, and enhance the bioavailability of co-administered phytochemicals. Even minor constituents like resins and sugars aid metabolic modulation, antioxidant defense, and optimize the solubility and absorption of active principles. Collectively, these components synergistically improve serum lipid profiles, protect hepatic function, and counteract oxidative stress, providing an effective approach to managing dyslipidaemia.

CONCLUSION

Medohara Rasa is a classical Kharaliya Rasayana described in *Rasa Kamadhenu* by Acharya Gulraj Sharma Mishra, formulated with Shuddha Parada, Shuddha Gandhaka, Vidanga, and processed through

Arka Dugdha Bhavana. The formulation exhibits a synergistic therapeutic action aimed at correcting Medoroga and Sthaulya.

Pharmaceutically, Shuddha Parada acts as a Yogavahi and Rasayana, enhancing the efficacy of associated drugs and maintaining balanced nourishment of Dhatus without excessive Medodhatu accumulation. Shuddha Gandhaka contributes through its Ama-pachana and detoxifying properties, while Vidanga, endowed with Katu-Tikta Rasa, Ushna Virya, and Katu Vipaka, performs Deepana-Pachana and Medohara karma, improving lipid metabolism. Arka Dugdha Bhavana further potentiates the formulation by imparting Tikshna, Ushna, and Lekhana properties, facilitating breakdown and mobilization of accumulated Meda.

Analytical evaluation confirmed the purity, stability, and safety of Medohara Rasa, evidenced by slightly acidic pH, low ash values, formation of a stable HgS phase, nanosized particles, and presence of multiple functional groups—collectively indicating improved bioavailability and therapeutic potential.

Overall, Medohara Rasa exhibits potent Medohara, Lekhana, and Rasayana actions with proven hypolipidemic efficacy and safety, validating its therapeutic utility in the management of Sthaulya and Medoroga.

**ANNEXURE-1
GANDHAKA SHODHANA**



Gandhaka shodhana by kurma puta method



Shodhita gandhaka

HINGULA MARDANA



Raw Hingula



Hingula Mardana with Nimbu Swarasa



Shodhita Hingula

HIGULOTTA PARADA EXTRACTION



Urdhwa patana vidhi



**Mercury Globules Sublimated At Upper Pot
FIG.**



parada obtained

PARADA SHODHANA WITH HARIDRA CHOORNA



Color During Initial Hrs

Changes After 6hr

After Completion of 24hr

Fig.

KAJJALI PREPARATION



Shudha Parada and Gandhaka



After 30min of Mardana



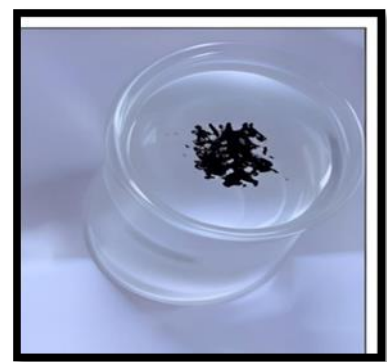
20 Hrs of Mardana



After 125 hr of Mardana



Rekhapurnata



Varitara of kajjali

Addition of vidanga to kajjali



Vidanga choorna



Samaguna Kajjali



Vidanga & Kajjali Mixture

Arka dugda bhavana for vidanga misrita kajjali



Arka Dugda



Bavana For Product
Fig.



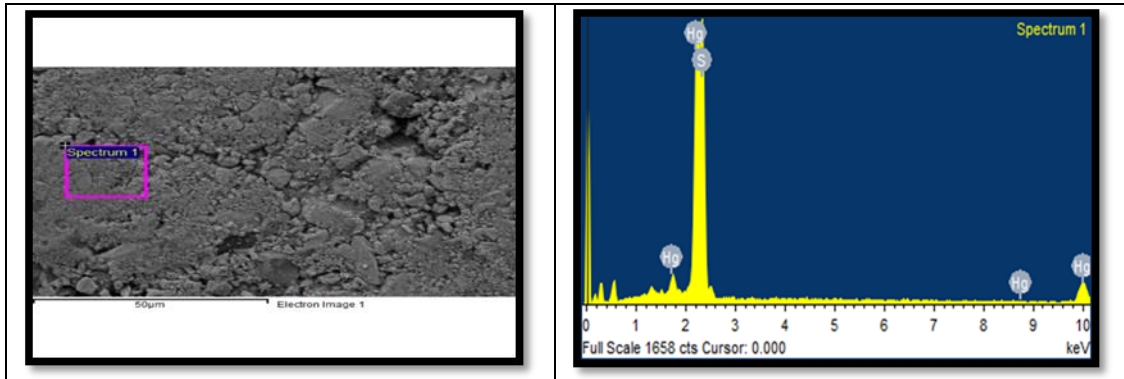
Subhavita Laxana

Subhavita Laxana

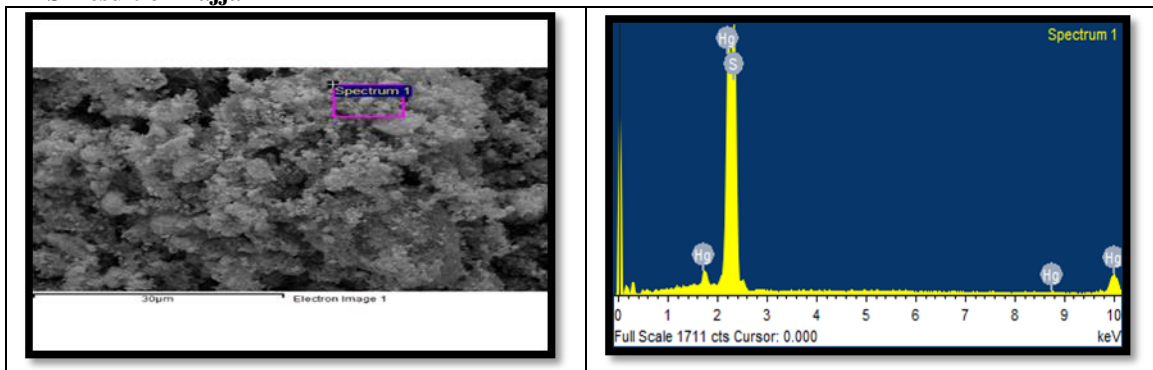


Medohara rasa obtainedi is stored in a airtight container
Fig.

ANALYTICAL STUDY RESULT



SEM-EDS Result of Kajjali



SEM-EDS Result of medohara rasa

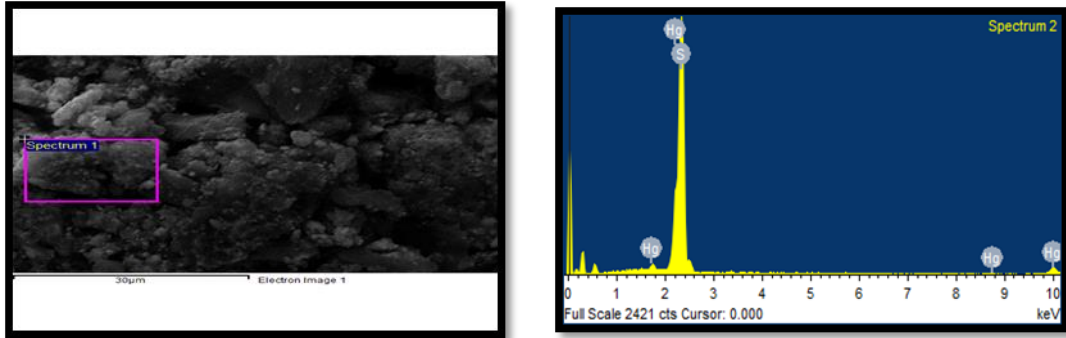
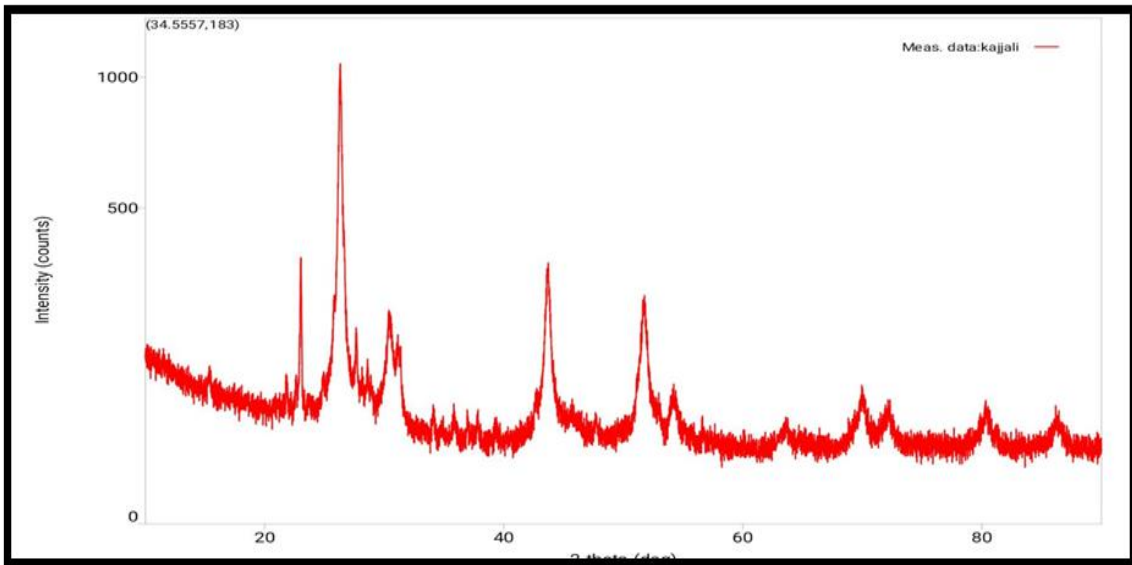
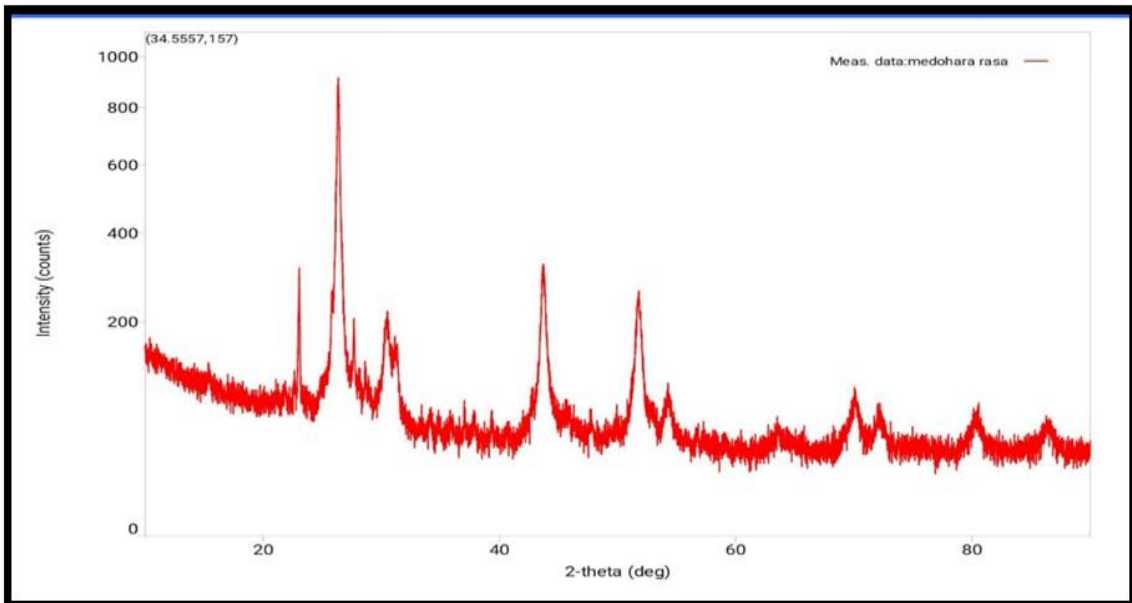


Fig. SEM-EDS Result of Hingula.

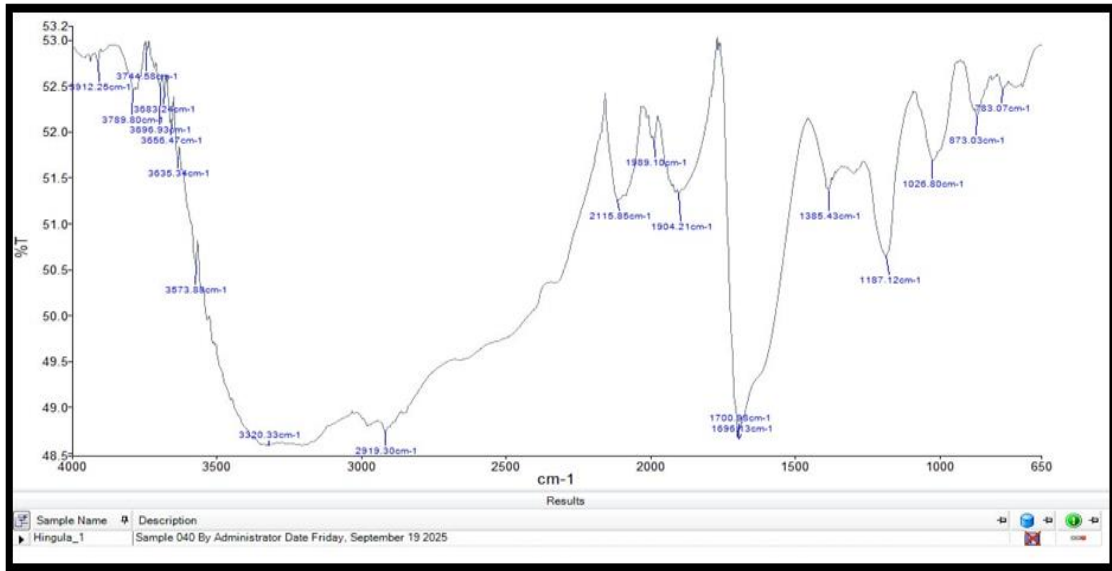
showing XRD Peaks of Kajjali



showing XRD Peaks of Medohara rasa

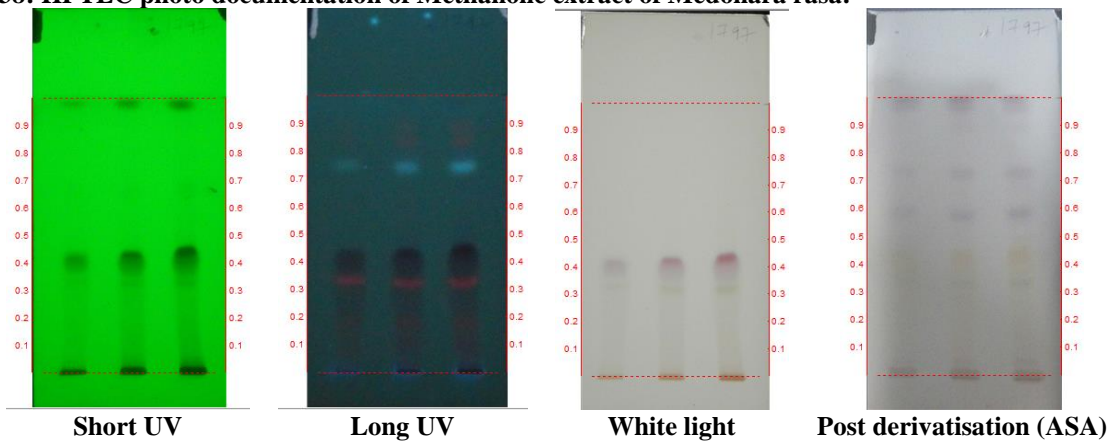


Showing FTIR Result of Hingula



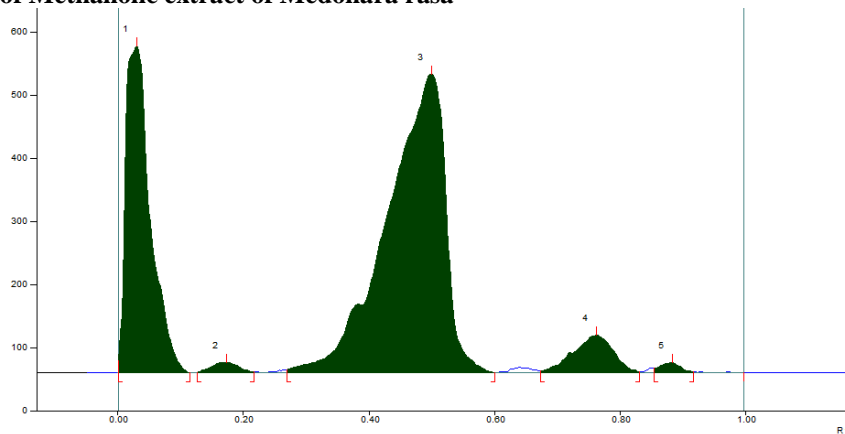
HPTLC

Figure 38: HPTLC photo documentation of Methanolic extract of Medohara rasa.



Solvent system - Toluene: Ethyl acetate: Glacial acetic acid (8:2:0.2)
 B-sitosterol R_f - 0.41-0.50, ASA - 510nm
 Track 1 – Medohara rasa – 3 μ l
 Track 2 – Medohara rasa – 6 μ l
 Track 3 – Medohara rasa – 9 μ l

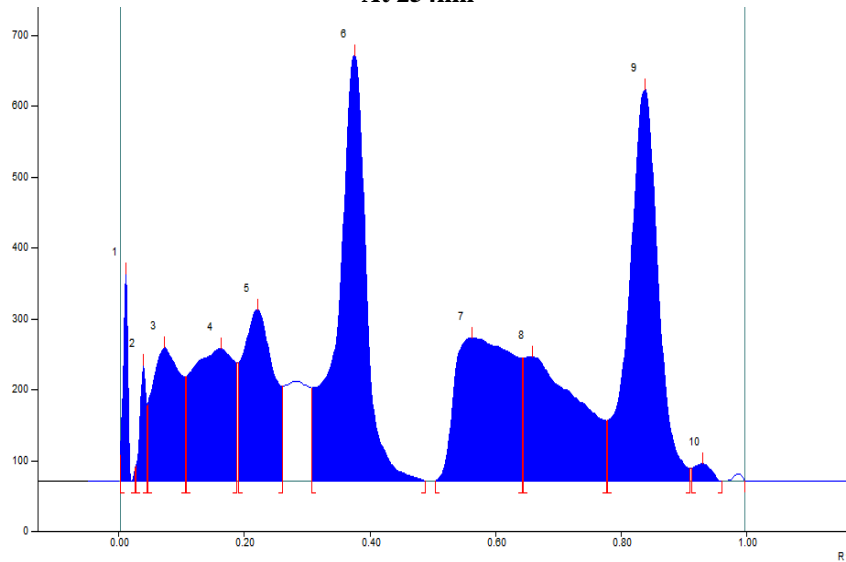
Densitometric scan of Methanolic extract of Medohara rasa



Track 3, ID: Medohara rasa

Peak	Start Position	Start Height	Max Position	Max Height	Max %	End Position	End Height	Area	Area %
1	0.00 Rf	18.9 AU	0.03 Rf	516.7 AU	47.85 %	0.11 Rf	0.1 AU	14674.4 AU	29.48 %
2	0.13 Rf	0.4 AU	0.17 Rf	16.1 AU	1.49 %	0.22 Rf	0.9 AU	504.3 AU	1.01 %
3	0.27 Rf	4.9 AU	0.50 Rf	471.7 AU	43.68 %	0.60 Rf	0.1 AU	31483.6 AU	63.25 %
4	0.67 Rf	2.3 AU	0.76 Rf	59.1 AU	5.48 %	0.83 Rf	1.5 AU	2737.3 AU	5.50 %
5	0.85 Rf	6.6 AU	0.88 Rf	16.3 AU	1.51 %	0.92 Rf	0.8 AU	378.4 AU	0.76 %

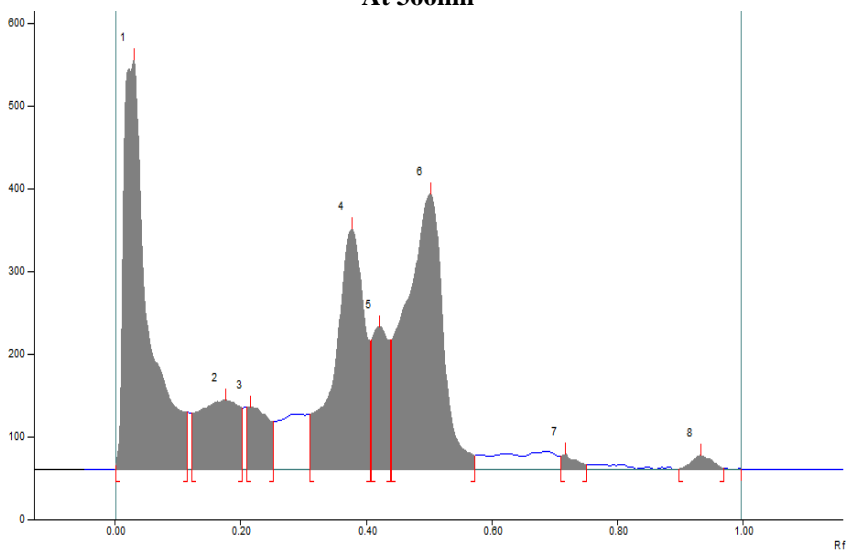
At 254nm



Track 3, ID: Medohara rasa

Peak	Start Position	Start Height	Max Position	Max Height	Max %	End Position	End Height	Area	Area %
1	0.00 Rf	35.8 AU	0.01 Rf	292.0 AU	11.12 %	0.03 Rf	17.4 AU	1570.4 AU	1.77 %
2	0.03 Rf	22.0 AU	0.04 Rf	163.0 AU	6.20 %	0.05 Rf	05.2 AU	1127.1 AU	1.27 %
3	0.05 Rf	106.9 AU	0.07 Rf	188.2 AU	7.16 %	0.11 Rf	47.1 AU	6079.9 AU	6.86 %
4	0.11 Rf	147.4 AU	0.16 Rf	186.4 AU	7.10 %	0.19 Rf	67.3 AU	8796.3 AU	9.93 %
5	0.19 Rf	167.6 AU	0.22 Rf	241.6 AU	9.20 %	0.26 Rf	33.7 AU	8564.6 AU	9.67 %
6	0.31 Rf	131.3 AU	0.38 Rf	600.8 AU	22.87 %	0.49 Rf	0.4 AU	19279.3 AU	21.76 %
7	0.50 Rf	0.2 AU	0.56 Rf	201.9 AU	7.69 %	0.64 Rf	73.2 AU	13480.7 AU	15.21 %
8	0.65 Rf	173.3 AU	0.66 Rf	175.6 AU	6.69 %	0.78 Rf	85.1 AU	10908.6 AU	12.31 %
9	0.78 Rf	85.2 AU	0.84 Rf	552.9 AU	21.05 %	0.91 Rf	18.2 AU	18298.8 AU	20.65 %
10	0.91 Rf	18.5 AU	0.93 Rf	24.4 AU	0.93 %	0.96 Rf	0.0 AU	499.9 AU	0.56 %

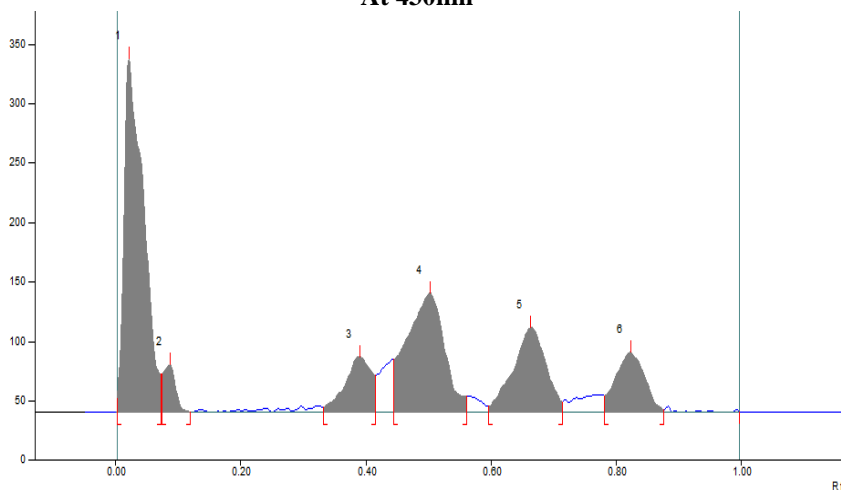
At 366nm



Track 3, ID: Medohara rasa

Peak	Start Position	Start Height	Max Position	Max Height	Max %	End Position	End Height	Area	Area %
1	0.00 Rf	4.7 AU	0.03 Rf	494.1 AU	33.29 %	0.11 Rf	68.7 AU	13820.6 AU	29.12 %
2	0.12 Rf	67.9 AU	0.18 Rf	83.7 AU	5.64 %	0.20 Rf	74.4 AU	3930.7 AU	8.28 %
3	0.21 Rf	74.6 AU	0.22 Rf	74.9 AU	5.04 %	0.25 Rf	57.4 AU	1860.5 AU	3.92 %
4	0.31 Rf	67.0 AU	0.38 Rf	290.3 AU	19.56 %	0.41 Rf	55.4 AU	9766.5 AU	20.58 %
5	0.41 Rf	156.4 AU	0.42 Rf	172.8 AU	11.64 %	0.44 Rf	55.5 AU	3287.7 AU	6.93 %
6	0.44 Rf	156.2 AU	0.50 Rf	333.2 AU	22.45 %	0.57 Rf	16.6 AU	14091.5 AU	29.69 %
7	0.71 Rf	16.0 AU	0.72 Rf	18.6 AU	1.25 %	0.75 Rf	5.8 AU	309.2 AU	0.65 %
8	0.90 Rf	0.7 AU	0.93 Rf	16.7 AU	1.13 %	0.97 Rf	1.6 AU	395.3 AU	0.83 %

At 430nm



Track 3, ID: Medohara rasa

Peak	Start Position	Start Height	Max Position	Max Height	Max %	End Position	End Height	Area	Area %
1	0.00 Rf	10.9 AU	0.02 Rf	297.6 AU	49.12 %	0.07 Rf	32.0 AU	6590.5 AU	38.19 %
2	0.07 Rf	32.4 AU	0.09 Rf	39.8 AU	6.57 %	0.12 Rf	0.3 AU	572.2 AU	3.32 %
3	0.33 Rf	4.0 AU	0.39 Rf	46.5 AU	7.68 %	0.42 Rf	31.2 AU	1423.2 AU	8.25 %
4	0.45 Rf	44.2 AU	0.50 Rf	100.5 AU	16.59 %	0.56 Rf	13.1 AU	4315.8 AU	25.01 %
5	0.60 Rf	5.0 AU	0.66 Rf	71.2 AU	11.75 %	0.71 Rf	8.7 AU	2682.9 AU	15.55 %
6	0.78 Rf	13.8 AU	0.82 Rf	50.3 AU	8.30 %	0.88 Rf	1.8 AU	1671.4 AU	9.69 %

At 510nm, β -sitosterol R_f - 0.41-0.50 (25.01%)