

**KABASURA KUDINEER IN TABLET DOSAGE FORM –A PERFECT FIT FOR
CONVENIENCE AND REDUCING COVID PANDEMIC**

Amruthavalli G. V.* and Gayathri Rajagopal

Dr. JRK's Research and Pharmaceuticals Pvt., Ltd., 19 and 20, Perumal Koil Street, Kundrathur, Chennai 600069.

*Corresponding Author: Amruthavalli G. V.

Dr. JRK's Research and Pharmaceuticals Pvt., Ltd., 19 and 20, Perumal Koil Street, Kundrathur, Chennai 600069.

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ABSTRACT

Dr JRK's has brought out Kabasura kudineer in tablet dosage form to enhance the treatment option of COVID with Kabasura kudineer so that with the help of Siddha system of medicine, several life can be saved and also the visibility of Siddha system of medicine can be achieved. The kudineer preparation is quite cumbersome and also the kudineer is quite bitterish in taste and hence many people avoid the preparation despite knowing fully well that Kanbasurakudineer is the only proven herbal preparation available for COVID. The solid dosage form must be similar and identical to the conventional preparation. We have employed TLC and HPTLC analysis to establish the same. Our mission to take Siddha system of medicine with tablet dosage form of Kabasura kudineer at the time of COVID pandemic assumes high significance. Details of the study are presented in the paper.

INTRODUCTION

Kabasura Kudineer is a classical siddha formulation which has gained apex importance in the era of covid pandemic.^[1-3] due to the proven anti-viral and anti-pyretic effect of Kabasura kudineer. The formulation is comprised of 15 important medicinal herbs and each of the herbs is scientifically proven individually to have multi various pharmacological benefits.

One of the major limiting factors of Kabasura kudineer acceptance by public is the cumbersome preparation involved in preparing the kudineer.^[3] Further the herbalish, bitter taste of kabasura kudineer also cause of some degree of its avoidance by younger age group.^[1]

However the vast majority of people in India and several parts of the world have started to recognize the medicinal

value of ancient healing practices in India such as Siddha and Ayurveda and also the enormous therapeutic potential of Kabasura kudineer to deal COVID pandemic.

To offer the best preventive option to people from siddha system of medicine against COVID JRK's has decided to bring out kabasura kudineer in tablet dosage form so that the acceptance and compliance of kabasura kudineer can be increased, the user base can be broadened and so shall the preventive hope from COVID can be achieved.

We have studied the microscopic characteristics, the organic matter on ashing and finally the HPTLC analysis of the extract of Kabasura kudineer used in tablet dosage form is similar and identical to that of the conventional kabasura kudineer. Details are presented in the paper.

MATERIALS AND METHODS**Kabasura kudineer Composition**

Chukku	(<i>Zingiber officinale</i>)	: 1 part (6.67%)
Tippili	(<i>Piper longum</i>)	: 1 part (6.67%)
Ilavangam	(<i>Syzygium aromaticum</i>)	: 1 part (6.67%)
Cirukancori	(<i>Tragia involucrate</i>)	: 1 part (6.67%)
Akkirakaram	(<i>Anacyclus pyrethrum</i>)	: 1 part (6.67%)
Mulli ver	(<i>Hygrophilia auriculata</i>)	: 1 part (6.67%)
Kadukkaithol	(<i>Terminalia chebula</i>)	: 1 part (6.67%)
Adathodai	(<i>Adathoda vasica</i>)	: 1 part (6.67%)
Karpooravalli	(<i>Anisochilus carnosus</i>)	: 1 part (6.67%)
Kostam	(<i>Costus speciosus</i>)	: 1 part (6.67%)
Seenthil	(<i>Tinospora cordifolia</i>)	: 1 part (6.67%)
Siru thekku	(<i>Clerodendrum serratum</i>)	: 1 part (6.67%)

Nilavembu	(<i>Andrographis paniculata</i>): 1 part (6.67%)
Vattathiruppi	(<i>Sida acuta</i>) : 1 part (6.67%)
Koraikizhangu	(<i>Cyperus rotundus</i>) : 1 part (6.67%)

Preparation of Kabasura kudineer as per conventional preparation

35 g of Kabasura Kudineer chooranam is weighed and is then boiled in three liters (3000ml) of water and the volume is reduced to 1/12th (250 ml). The dosage to be consumed is 30ml.

Preparation of Kabasura kudineer tablet

Kabasura kudineer choornam extract in aqua base equivalent of 30 ml was incorporated with standard excipients used for preparing tablet dosage form. The formulation was then stamped using tablet compression machine.

Microscopy and organic matter on ashing

The extract concentrate used for the tablet dosage form and the conventional kudineer were examined under a microscope and also both the samples were ashed to test the residue of the organic matter.

HPTLC analysis of Kabasura kudineer prepared as per conventional method and the extract concentrate used for tablet

Both the extracts were separated by thin layer chromatography by using different solvent systems and then viewed under visible light (250 and 366 nm) and the

number of bands and the respective Rf values between Kabasura kudineer as per conventional method and the extract used for tablet preparation were compared. The TLC plates were subjected to HPTLC analysis and HPTLC profiles between the two extracts were compared.

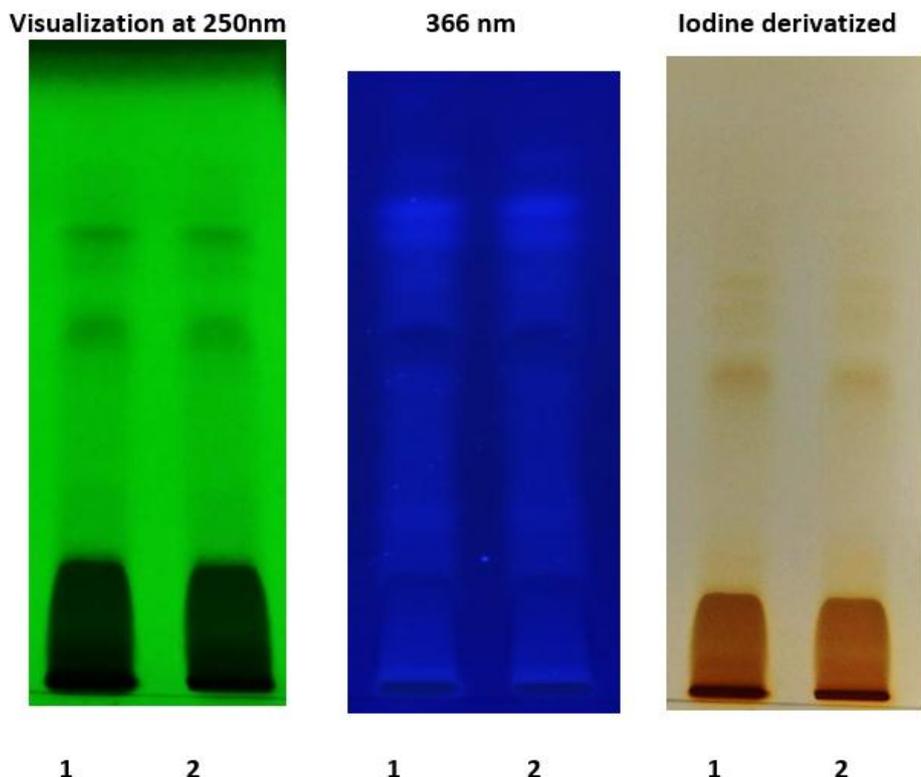
RESULTS

I. Microscopy and organic matter on ashing

The microscopic analysis has revealed that the amount of micro-fibers in both the samples were almost the same as well as the organic ash obtained was also equal between the two samples.

II. TLC and HPTLC analysis

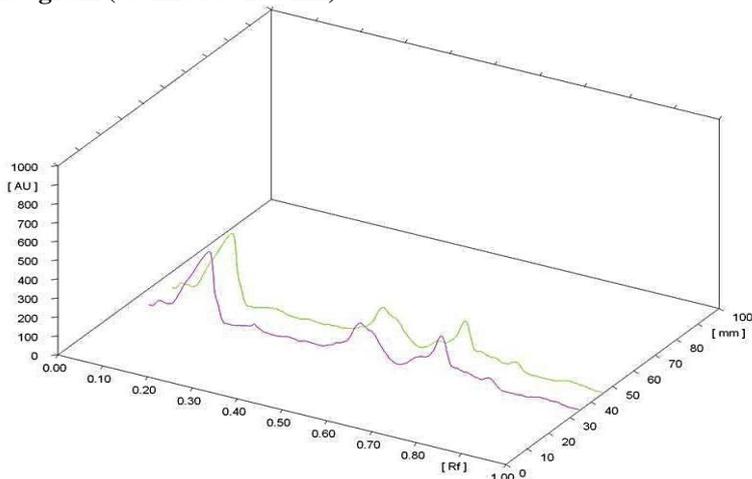
The TLC and HPTLC analysis between the Kabasura kudineer prepared as per the conventional method and the extract concentrate prepared for the tablet dosage form showed similar profile in the number of phytoactives as well as their respective Rf values and further the profile of the above were absolutely comparable in visible light and UV light 250nm and 366 nm respectively. Fig 1 and 2 Mobile phase for TLC and HPTLC: Dichloromethane: Toulene: Ethanol (6:3:1)



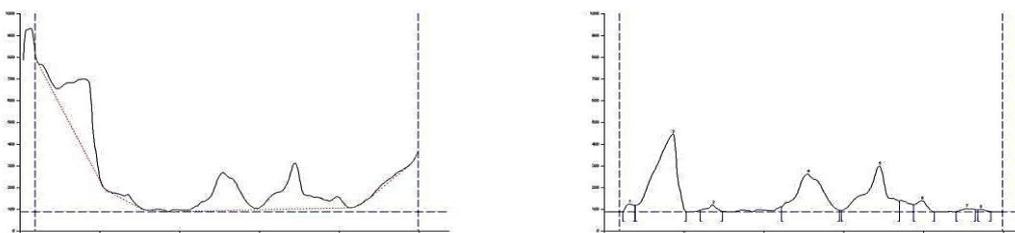
Track 1: Kabasura conv- Kabasura kudineer conventional

Track 2: Kabasura extract 2- Extract used in JRK's Kabasura kudineer concentrate used in in tablet

HPTLC analysis Chromatogram (scanned at 250 nm)

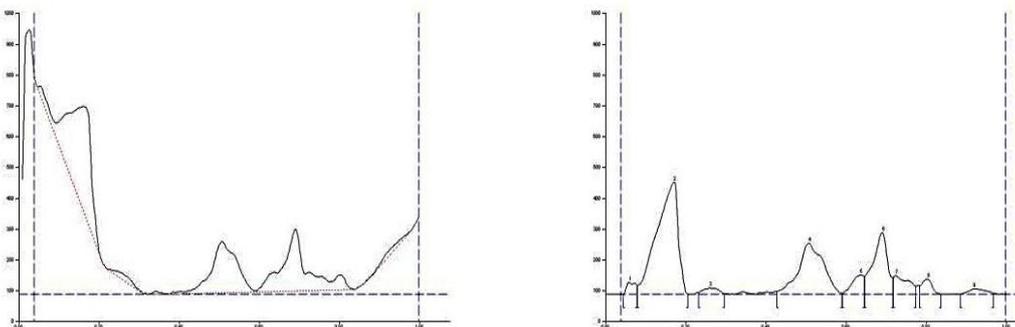


Track 1, ID: Kabasura conv- Kabasura kudineer conventional



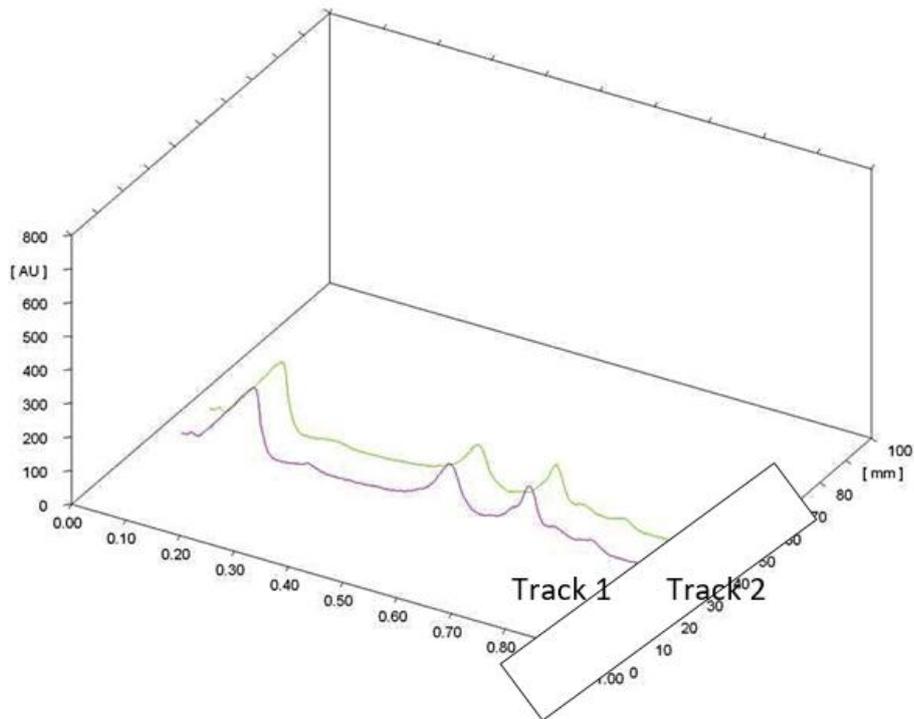
Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.05	0.9	0.06	35.8	4.00	0.08	30.1	560.3	1.65	unknown *
2	0.08	30.6	0.17	358.7	40.03	0.21	1.1	14524.4	42.69	unknown *
3	0.24	8.4	0.27	33.8	3.77	0.30	3.4	609.4	1.79	unknown *
4	0.44	23.7	0.51	175.4	19.58	0.59	7.6	8490.3	24.95	unknown *
5	0.60	7.2	0.69	211.6	23.62	0.74	50.4	8227.3	24.18	unknown *
6	0.78	33.3	0.80	52.3	5.83	0.83	0.3	1082.4	3.18	unknown *
7	0.88	0.3	0.91	16.0	1.79	0.93	10.9	361.7	1.06	unknown *
8	0.94	10.8	0.94	12.4	1.39	0.97	1.5	171.1	0.50	unknown *

Track 2, ID: Kabasura extract 2- Extract used in JRK's Kabasura kudineer concentrate

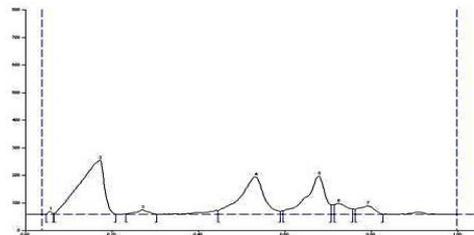
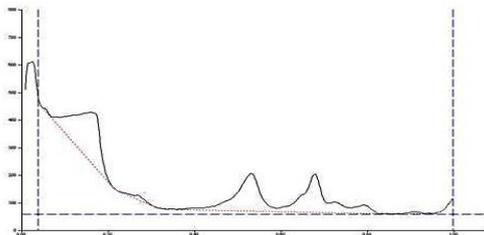


Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.04	0.2	0.06	38.2	3.89	0.08	29.9	652.1	1.93	unknown *
2	0.08	30.0	0.17	364.4	37.12	0.21	0.2	14554.9	42.97	unknown *
3	0.23	6.4	0.26	20.8	2.12	0.30	3.4	622.7	1.84	unknown *
4	0.43	10.0	0.51	166.2	16.93	0.59	4.4	7887.7	23.29	unknown *
5	0.59	4.5	0.64	63.2	6.43	0.65	60.1	1380.2	4.07	unknown *
6	0.65	60.2	0.69	200.8	20.45	0.72	55.6	5477.2	16.17	unknown *
7	0.72	56.6	0.73	60.6	6.17	0.78	27.3	1708.6	5.04	unknown *
8	0.78	28.6	0.81	49.2	5.01	0.84	0.7	988.8	2.92	unknown *
9	0.89	0.2	0.92	18.4	1.88	0.97	3.3	599.6	1.77	unknown *

HPTLC analysis Chromatogram (scanned at 350 nm)

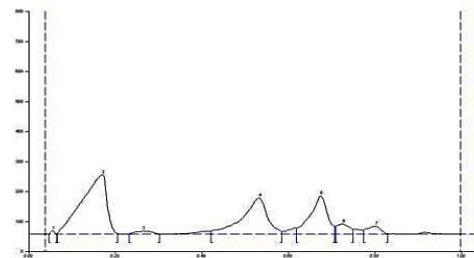
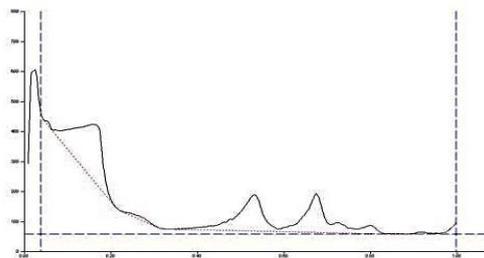


Track 1, ID: Kabasura conv- Kabasura kudineer conventional



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.05	0.1	0.06	10.8	1.88	0.06	4.0	77.1	0.37	unknown *
2	0.07	4.0	0.17	196.5	34.37	0.21	0.1	8521.0	40.85	unknown *
3	0.23	1.7	0.27	18.0	3.15	0.30	0.1	373.2	1.79	unknown *
4	0.45	14.7	0.53	136.1	23.81	0.59	11.7	5626.1	26.97	unknown *
5	0.60	14.0	0.68	138.9	24.29	0.71	35.3	4504.7	21.59	unknown *
6	0.72	35.1	0.72	39.9	6.98	0.76	19.6	908.5	4.36	unknown *
7	0.76	18.8	0.79	31.6	5.53	0.83	0.3	850.2	4.08	unknown *

Track 2, ID: Kabasura extract 2- Extract used in JRK's Kabasura kudineer concentrate



Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %	Assigned substance
1	0.05	0.1	0.06	11.8	2.23	0.06	1.2	75.3	0.39	unknown *
2	0.07	2.2	0.17	198.3	37.40	0.21	2.0	8613.1	44.28	unknown *
3	0.23	0.9	0.26	10.6	1.99	0.30	0.8	311.0	1.60	unknown *
4	0.42	10.1	0.53	121.2	22.85	0.59	8.8	5256.8	27.03	unknown *
5	0.62	20.6	0.68	127.7	24.09	0.71	26.9	3808.7	19.58	unknown *
6	0.71	26.9	0.73	34.0	6.42	0.75	16.3	749.1	3.85	unknown *
7	0.78	13.4	0.80	26.7	5.03	0.83	1.9	636.8	3.27	unknown *

DISCUSSION

Kabasura Kudineer if made available to the world in tablet dosage form than conventional choornam form will certainly increase the acceptance and user base of kabasura kudineer. The cumbersome preparation and woody bitter taste of kabasura kudineer limits the acceptance of the same when presented in choornam form.

Compliance and storage inconvenience also would limit the acceptance of Kabasura kudineer in choornam form. Kabasura kudineer is proven to be very effective against many viral infections including COVID and also may increase immunity against possible fungal infection like mucor.

When the allopathic medical fraternity all over the world is grappling with no medicine to deal COVID, we need to enhance the benefit of Kabasura kudineer to people both for preventive and treatment purpose against COVID.

In order to achieve the same, we need to present the Kudineer in a much more acceptable, easy to use, familiar and compliance friendly form. The present generation would accept Kabasura kudineer enthusiastically due to its proven and undoubted clinical efficacy as established by Siddha practitioners.^[1-8] provided if it is presented in tablet dosage form. Tablet dosage form offers ease of use, easy to store, greater compliance and also helps the user to avoid the bitter taste.

In order to increase the visibility and therapeutic benefit of Siddha system of medicine to mitigate COVID pandemic we have decided to bring out Kabasura choornam in tablet dosage form. We took every care to ensure the herbal presence of all 15 herbs in tablet dosage form and the tablet dosage form delivers the same therapeutic value what the kudineer might offer without any compromise at phyto-active level.

To confirm the above quality compliance between the conventional kudineer and the extract concentrate used in tablet dosage form, we have performed TLC and HPTLC analysis and established that the extract concentrate used in the tablet dosage form is similar and identical with that of the conventional kudineer.

We hope that the tablet dosage form of Kabasura kudineer will not only revolutionize the COVID therapy from Siddha stream of medicine but also will give great edge to siddha system of medicine in new world to acclaim more laurels and recognition.

REFERENCES

1. Thillaivanan S. Parthiban P. Kanakavalli K. Sathiyarajeshwaran P. A review on “kapa sura kudineer”-a siddha formulary prediction for swine

flu. International Journal of Pharmaceutical sciences and drug research, 2015; 7.

2. Bathala Ananya, Lakshminarayanan Arivarasu. Role of kabasura kudineer against covid-19 – A review. International Journal of Psychosocial Rehabilitation, 2019; 23.
3. Gangarapu Kiran, L. Karthik, M.S. Shree Devi, P. Sathiyarajeshwaran, K.Kanakavalli, K.M. Kumar, and D. Ramesh Kumar. *In Silico* computational screening of *Kabasura Kudineer* - Official Siddha Formulation and JACOM against SARS-CoV-2 spike protein. J. Ayurveda Integr. Med, 2020. PMID: PMC7247487.
4. Dharani Bala Attitudes, beliefs, and self-use of Kabasura Kudineer among urban and rural population in Tamil Nadu, India. A comparative cross-sectional study., Jorunal of Family Medicine and Primary care, 2021; 10.
5. J. Ezhil Ramya, G. Subash Chandran, S. Alagesan, M. Ravichandran, S. Victoria, M. Rathi Devi, S. Justus Antony, K. Shantaraman. A Prospective Observational Study of the Outcome of Treatment with Kabasura Kudineer among Patients with SARS-nCOV-2 infection. International journal of Nutrition, pharmacology and neurological diseases, 2021; 11.
6. Anurag Srivastava, Manickavasagam, Rengaraju, Saurabh Srivastava, Vimal Narayan, Vivek Gupta and Rashmi Upadhyay. A double blinded placebo controlled comparative clinical trial to evaluate the effectiveness of Siddha medicines, Kaba Sura Kudineer (KSK) & Nilavembu Kudineer (NVK) along with standard Allopathy treatment in the management of symptomatic COVID 19 patients – a structured summary of a study protocol for a randomized controlled trial. BMC <https://doi.org/10.1186/s13063-021-05041-x>, 2021.
7. Natarajan, S., Anbarasi, C., Sathiyarajeshwaran, P. *et al.* The efficacy of Siddha Medicine, *Kabasura Kudineer* (KSK) compared to Vitamin C & Zinc (CZ) supplementation in the management of asymptomatic COVID-19 cases: A structured summary of a study protocol for a randomised controlled trial. *Trials*. <https://doi.org/10.1186/s13063-020-04823-z>, 2020.
8. Savariar Vincent, Selvaraj Arokiyaraj, Muthupandian Saravanan and Manoj Dhanraj. Molecular Docking Studies on the Anti-viral Effects of Compounds From Kabasura Kudineer on SARS-CoV-2 3CLpro. *Front. Mol. Biosci.* <https://doi.org/10.3389/fmolb.2020.613401>, 2020.