

**ELIMINATION OF GASTRIC IRRITATION BY KABASURA KUDINEER**

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**ABSTRACT**

Kabasura kudineer is a sastric siddha medicine, widely explored during the pandemic for its anti-viral and immune boosting activity. Kabasura kudineer is recommended as preventive as well as for treatment. In our coherent study usage of Kabasura kudineer for more than a 10days caused gastric irritation in many. Dr.JRK's kabasura kudineer formulation was tested for its profile at various pH and its effect on mucin and casein hydrolysis and results showed that it is stable at various pH will not cause gastric irritation. Study details are presented in the paper.

**INTRODUCTION**

With the advent of novel coronavirus, the generic siddha preparation Kabasura kudineer has gained an important position in managing COVID 19.<sup>[1,2]</sup> In the siddha system of healing, Kabasura kudineer is used for the treatment of Aiyasuram (fever associate with phlegm).<sup>[3,4]</sup>

Coronavirus primarily affects the respiratory sites and lungs and then would invade various other organs of the body. Antiviral therapy may offer limited benefit because even an 'immune privileged sites', the virus can invade and hide.<sup>[5]</sup> Therefore, eliciting the immune defense mechanism of the host alone may prove a near permanent solution to the pandemic posed by the virus.

Based on the traditional use and legacy of Kabasura kudineer in siddha stream of healing for the treatment of Aiyasuram which is clinically relatable with COVID 19, govt. of India and many states adopted Kabasura kudineer for preventing the possible episode of corona contraction. Further the corona positive people were given Kabasura kudineer both for the purpose of preventing and treating COVID 19.

Due to the pungent or spicy characteristics of some of the herbs used in Kabasura kudineer, often people complain of mild to severe gastric irritation. In our cohort study that we have conducted, received a stereotyped feedback that all the 20 volunteers who consumed Kabasura kudineer for 30 continuous days complained of gastric irritation from day 10 onwards. In order to enhance the acceptance of Kabasura kudineer and to prevent the possible rejection of the same due to its gastric irritation property we have studied whether we can employ the pH matrix of the delivery end of Kabasura kudineer and thereby we can minimize the gastric irritation.<sup>[6]</sup>

We have studied the stability of phyto-active constituents of Kabasura kudineer individually (each herb) and collectively in wide range of pH matrix and found that all the herbs and kabasura kudineer showed no pH sensitivity. Therefore we assume that modifying/altering the matrix of Kabasura kudineer to higher pH may reduce the gastric irritation. Further we have studied the different pH matrix system of Kabasura kudineer and its mucin and protein hydrolysis property and thereby we have identified the ideal, optimal and the required levels of pH matrix modification of Kabasura kudineer. The details are presented in paper.

**MATERIALS AND METHODS**

**Product description:** Kabasura kudineer is a sastric siddha medicine, prepared with 15 herbs which constitute equal proportion.

**Extraction of Kabasura kudineer choornam**

The coarsely powdered Kabasura Kudineer Chooranam is weighed to 35 g and then is boiled with three liters (3000ml) of water and then reduced to 1/12<sup>th</sup> of the initial volume and used for the study. Similarly, all the individual herbs in kabasura kudineer choornam were weighed as above and extracted as per the method described above.

**HPTLC study of kabasura kudineer vis-a vis pH diversity**

The Kabasura kudineer prepared as described above were treated with different pH matrix such as 6.5, 7.5, 8 & 8.5.

Then HPTLC profile of the kabasura kudineer was captured at 366nm and 540nm. Similarly the individual herbs were also exposed to the above pH matrix and then HPTLC profile was studied.

**Mucin hydrolysis**

The egg yolk was used for the above study. Kabasura kudineer exposed to different pH matrix were treated with egg yolk solution at 3% and then incubated for 15 minutes. After treatment the viscosity was measured using Brookfield viscometer. Untreated egg yolk in phosphate buffer (20:80) was kept as negative control and N- acetyl cysteine treatment was used as positive control. Difference in the viscosity of the test was compared with positive and negative control.

**Casein hydrolysis**

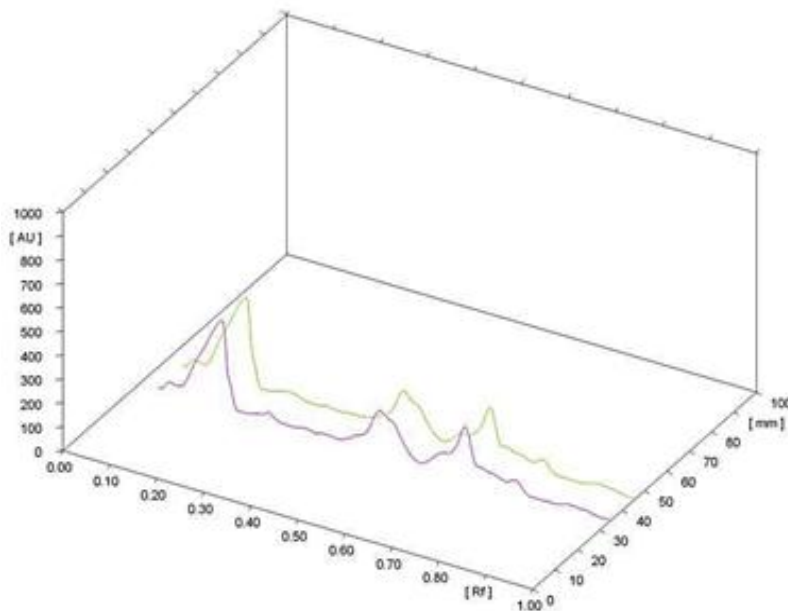
The effect of the exposure of kabasura kudineer to various pH matrixes on protein was studied by casein hydrolysis method. The end product of casein hydrolysis - tyrosine was assayed spectro-photometrically.

**RESULT****HPTLC study of Kabasura kudineer vis-a vis pH diversity**

The HPTLC profile of the kabasura kudineer exposed to different pH matrix were similar and identical. The pH matrix did not alter or modified the structure and or the function of the phytoactive constituents of Kabasura kudineer in toto (Table-1) & Fig-1.

**Table: 1: Organoleptic and HPTLC profile of Kabasura kudineer in different pH matrix.**

Details	pH matrix	Observation			HPTLC profile
		Colour	Odour	Taste	
Kabasura kudineer	6.5	No change	No change	No change	Complies
	7.5	No change	No change	No change	Complies
	8	No change	No change	No change	Complies
	8.5	No change	No change	No change	Complies



**(a) HPTLC profile –chromatogram.**

Note: track 1 and track 2: Kabasura kudineer exposed to pH 6.5 and 8.5 respectively.



**(b) HPTLC profile.**

**Fig: 1: HPTLC profile of Kabasura kudineer exposed to pH 6.5 and 8.5 matrix.**

**Mucin hydrolysis**

The kabasura kudineer exposed to different pH matrix did not alter the viscosity of egg yolk solution and the viscosity was comparable with that of the untreated control, Table-2.

**Table-2: Effect of Kabasura kudineer vis-à-vis pH matrix Vis-à-vis mucin hydrolysis.**

Details	pH matrix	Viscosity /RPM		
		12	30	60
Kabasura Kudineer	6.5	3001	2605	2502
	7.5	3008	2620	2509
	8	3011	2630	2507
	8.5	3007	2625	2508
N-acetyl cysteine treatment (0.5%)	-	1580	1250	1042
Negative control	-	3060	2680	2510
Conventional	5.3	1200	1102	942

**Casein hydrolysis**

Kabasura kudineer exposed to different pH matrix did not induce casein hydrolysis.

**DISCUSSION**

Although the global acceptance for kabasura kudineer is gaining due to its preventive value for the global pandemic – COVID 19, the gastritis and gastric irritation due to several pungent ingredients of the formulation can deter the vast majority of people from using the same. Therefore, the gastric irritation potential of Kabasura kudineer needs to be addressed without altering the structure and function of the phyto active constituents of Kabasura kudineer.

In order to achieve the above, we have employed the pH matrix exposure method and then studied the effect of kabasura kudineer on mucin and casein. Mucin, we have used to mimic a system similar to the epithelium of intestine. When mucin was exposed to kabasura kudineer treated in different pH matrix revealed that kabasura kudineer exposed to different pH matrix such as 6.5, 7.5, 8 and 8.5 did not cause mucin hydrolysis, resulting in no change in the viscosity, whereas the kabasura kudineer prepared conventionally caused significant mucin hydrolysis and a drop in viscosity. The above findings clearly suggest that the pH matrix treatment may be reducing the mucin corrosion effect of kabasura kudineer which can be interpreted as reduced gastric irritation property.

When we subjected the above for casein hydrolysis assay, we did not find any protein hydrolysis versus pH matrix exposure of kabasura kudineer. The above findings clearly suggest that pH matrix exposure even at pre-extraction level may possibly scuttle the gastric irritation potential.

The HPTLC profile also showed greater similarity between the pH treatments. However, the kabasura kudineer exposed to different pH matrix did not increase the pH of water even at concentration dependent manner.

The above possibility indicates that the pH matrix may be doing some course correction at the phyto active molecule level but such correction seems to have no impact on either the structure or function of the phyto-actives of the 15 herbs individually and collectively. Therefore, the above treatment reduces the gastric

irritation property of kabasura kudineer which is achieved not by neutralizing the acid but may be due a mechanism which we have to explore.

The early findings on docking experiment of Kabasura kudineer exposed to different pH matrix on intestinal protein revealed that the docking was similar, identical and competitive amongst treated and untreated (data not included).

Dr.JRK's research and Pharmaceuticals may be the first organization to work on how to impede even the miniscule side-effects of siddha formulation if any without compromising the therapeutics in order to achieve the superior therapeutic benefit, greater acceptance and least side effects.

**REFERENCES**

1. <https://www.businessinsider.in/india/news/siddha-research-papers-throw-light-on-efficacy-of-kabasura-kudineer-in-managing-covid-19/articleshow/76460376.cms>
2. <https://www.thehindu.com/news/national/tamil-nadu/government-to-distribute-herbal-concoction-to-boost-immunity/article31415335.ece>
3. Anti-Inflammatory, Antipyretic and Antibacterial Study of Kabasura Kudineer Chooranam, Saravanan J et al. International Journal of Current Advanced Research, 2018; 07(2): pp. 9992-9997.
4. A Review on "Kapa Sura Kudineer"-A Siddha Formulary Prediction for Swine Flu. Thillaivanan. S, Parthiban. P, Kanakavalli. K, Sathiyarajeshwaran. P International Journal of Pharmaceutical Sciences and Drug Research, 2015; 7(5): 376-383.
5. Coronavirus Spike (S) Glycoprotein Targeted Siddha Medicines Kabasura Kudineer and Thonthasura Kudineer –In silico Evidence for Corona Viral Drug. Asian Journal of Pharmaceutical Research and Health Care, 2019; 11(2): 1-9.
6. Amruthavalli G V. Kabasura Kudineer for Global Pandemic - Insight on 'Quality Trap' and its Effect on Efficacy. Int J Ayu Pharm Chem, 2020; 13: 293-299.