

PHARMACEUTICAL EVALUATION OF EKAVIMSHATIKA GUGGULU

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ABSTRACT

Ekavimshatika guggulu is an Ayurvedic formulation explained in the context of Kushtha roga prakarana. In the present study the evaluation on analytical parameter are done on Ekavimshatika guggulu. The organoleptic character, physico-chemical parameter and qualitative estimation of guggulu tablet and powder are done. All the analysis are carried out based on standard procedure.

KEYWORD: Ekavimshatika guggulu, tablet test, qualitative test.**INTRODUCTION**

Ekavimshatika guggulu is an unique drugs mentioned in Kushtha Chikitsa Prakarana in Chakradatta. The name of formulation indicates it contain 21 herbs including Guggulu. All 21 drugs mentioned here are having vata-kapha har properties, hence helpful in Kustha and also one of its type Ekakushtha. Here all the herbs are pounded into fine powder separately and taken in equivalent quantity. Then shuddh guggulu is added an amount equivalent to the sum of powder of all the herbs and powdered. Then all drugs are mixed and ghee is added after which tablets are made. Guggulu is used in Ayurveda for its anti-inflammatory action and deeply penetrating property. Guggulu is having strong detoxifying and rejuvenation quality which can upgrade the benefits of other herbs when utilized in combination.

The present study has been carried out to establish the use of ekvimshatika guggulu on the basis of pharmaceutical and analytical study.

MATERIALS AND METHODS**PHARMACEUTICAL STUDY**

For the preparation of Ekavimshatika Guggulu raw drugs was collected from local market. Each raw drug collected separately, packed and labelled with name, part and date of collection. Then they were shaded dried and went through pharmacognostical review for confirmation.

Ekavimshatika Guggulu was prepared as per chakradatta kushta chikitsa prakarana 50/84-88. The drugs were powdered separately in pulverizer and filtered through mess no.120 and then each is measured and taken in equal quantity. Then shuddh guggulu is added an amount equivalent to sum of powder of all drugs and pounded into a homogenous compound. Further ghee is added and mixed in a khalwa yantra and tablets are made. The ingredients are mentioned in Table no. 1.

Table No. 1: Ingredients of Ekavinshatika Guggulu.

Sr. No	Drugs	Latin name	Part used	Ratio
1.	Citraka	Plumbago zeylanica	Root	1 part
2.	Haritaki	Terminalia chebula	Fruit	1 part
3.	Bibhitaki	Terminalia bellerica	Fruit	1 part
4.	Amalaki	Emblica officinalis	Fruit	1 part
5.	Shunti	Zingiber officinalis	Rhizome	1 part
6.	Maricha	Piper nigrum	Fruit	1 part
7.	Pippali	Piper longum	Fruit	1 part
8.	Krishna Jeeraka	Carum carvi linn	Seed	1 part
9.	Sweta Jeeraka	Cuminum cyminum	Seed	1 part
10.	Vacha	Acorus calamus	Rhizome	1 part
11.	Saindhav Lavan	Sodii chloridum		1 part

12.	Atisa	Aconitum heterophyllum	Rhizome	1 part
13.	Kustha	Saussurea lappa	Root	1 part
14.	Chavya	Piper chaba	Root	1 part
15.	Chota Ela	Elettaria cardamonum	Seed	1 part
16.	Yava Kshara	Kalium phosphoricum		1 part
17.	Vidanga	Embelia ribes	Root	1 part
18.	Ajamoda	Carum roxburghianum	Fruit	1 part
19.	Nagarmotha	Cyperus rotundus	Rhizome	1 part
20.	Devadaru	Cedrus deodara	Bark	1 part
21.	Shuddh Guggulu	Commiphora mukul	Resin	20 parts
22.	Ghrita	Clarified butter		As required

Crude drugs



CHITRAKA



HARITAKI



VIBHITAKI



AMALAKI



SHUNTI



MARICHA



PIPPALI



KRISHNA JIRAKA



SWETA JIRAKA



VACHA



SAINDHAVA LAVANA



ATIVISHA



KUSTHA



CHAVYA



SUKSHMA ELA



YAVA KSHARA



VIDANGA



AJAMODA



MUSTHA



DEVADARU



GUGGULU



GHRITA

ANALYTICAL STUDY

Ekavimshatika guggulu was analysed by adopting various related analytical parameters like.

Organoleptic Characteristics

Colour, odour, taste and appearance of guggulu both in tablet and powder form were observed and mentioned in Table no. 2.

Table no. 2.

Colour	Brownish black	Brown
Odour	Aromatic	Aromatic
Taste	Astringent, Bitter, Salty	Astringent, Bitter, Salty
Appearance	Tablet	Powder

Physico-chemical Parameter

Loss on drying at 105° c, total ash value, acid insoluble ash, water insoluble ash, alcohol soluble extractives,

water soluble extractives, pH value was carried out for both tablet and powder form and results are mentioned in table no. 3.

Table no. 3.

	Ekvimshatika Guggulu Tablet	Ekvimshatika Guggulu Powder
Loss on drying at 105°C	18.78%	3.85%
Total Ash	13.14%	6.22%
Acid insoluble Ash	0.087%	0.03%
water insoluble ash	7.83%	2.43%
Alcohol soluble extractives	9.77%	4.44%
Water soluble extractives	28.69%	18.43%
pH(5%aqueous solution)	5.20±0.10	5.31±0.1

Tablet tests for Ekvimshatika Guggulu

Test for Tablet form of guggulu done and result are mentioned in table no. 4.

Table no. 4.

Hardness	5 gm/c m ²
Friability percentage	0.10%
Disintegration time	4.25 minutes

QUALITATIVE TEST

Qualitative analysis for various functional groups were done and result was asserted in table no. 5.

Table no. 5.

Carbohydrate	Present	Present
Protein	Present	Present
Alkaloid	Present	Present

Cardiac glycoside	Present	Present
Flavonoids	Present	Present
Tannins	Present	Present
Triterpenoides	Present	Present

Fluorescent tests

Fluorescent test done for both tablet and powder form of guggulu and result mentioned in table no. 6(a) and 6(b).

Table no. 6(a): Fluorescent tests of Ekavimshatika Guggulu Tablet.

	Under Visible Light	Under Long UV
Sample + water	Ash green	Fluorescent yellow
Sample + MeOH	Creamish white	Fluorescent cream
Sample + 10% NaCl	Orange	Fluorescent green
Sample + 10% HCL	Greyish green	Fluorescent green
Sample + 10% HNO₃	Ash green	Fluorescent yellow
Sample + 10% H₂SO₄	Orangish green	Fluorescent green
Sample + 10% NH₃	Light Orange	Fluorescent green

Table no. 6(b): Fluorescent tests of Ekavimshatika Guggulu Powder.

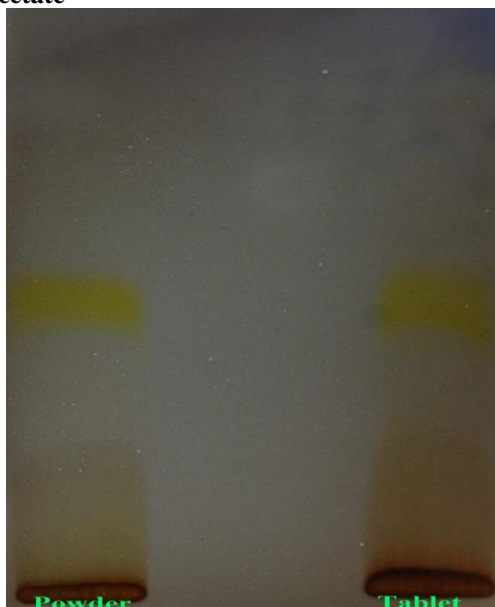
	Under Visible Light	Under Long UV
Sample + water	Brownish green	Fluorescent green
Sample + MeOH	Creamish white	Fluorescent cream
Sample + 10% NaOH	Brownish orange	Fluorescent green
Sample + 10% HCL	Greyish green	Fluorescent green
Sample + 10% HNO₃	Greenish orange	Fluorescent green
Sample + 10% H₂SO₄	Ash green	Fluorescent yellow
Sample + 10% NH₃	Brownish orange	Fluorescent green

TLC PROFILE

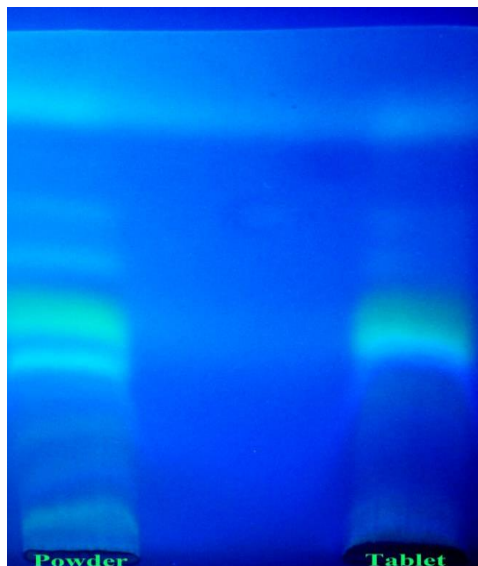
TLC profile was done for both tablet and powder form.

Toluene: Ethyl acetate was selected as solvent system. The developed plate was visualised under long UV and visible light. The R_f value are recorded in table no. 7.

Solvent Agent – Toluene : Ethyl acetate



Under Visible Light



Under Long UV

Table no. 7: Ekvimshatika guggulu tablet Ekvimshatika guggulu powder.

Rf	Under Long UV	Under Visible Light	Under Long UV	Under Visible Light
0.09	Fluorescent green	---	Fluorescent green	---
0.17	Fluorescent green	---	---	---
0.23	Fluorescent green	---	---	---
0.33	Fluorescent green	---	Fluorescent green	---
0.36	Bright Fluorescent green	Orange	Bright Fluorescent green	Orange
0.45	Bright Fluorescent green	orange	Bright Fluorescent green	Orange
0.55	Fluorescent green	---	Fluorescent green	---
0.64	Fluorescent green	---	Fluorescent green	---
0.76	Fluorescent green	---	Fluorescent green	---
0.84	Fluorescent green	---	Fluorescent green	---

MICROBIAL CONTAMINATION

Microbial contamination test has been done and result has been recorded in Table no. 8.

Table no. 8: Ekavimshatika Guggulu Tablet ekavimshatika Guggulu Powder.

Total Aerobic count	Nil	Nil
Total Fungal count	Nil	Nil

DISCUSSION

Oranoleptic characters of Ekavimshatik Guggulu reveals its colour is brownish black in tablet form and brown in powder form. The taste was kashaya, tikta, lavana due to maximum of its content having the taste. Hardness of tablet is in satisfactory limit. In microbial test no such contamination was noticed.

Ash values are the measures to identify the purity of drugs used. Total ash 13.14%, water insoluble ash 7.83% and acid insoluble 0.087% are considered for study. The value reveals the formulation does not contain any unwanted organic compound. Alcohol soluble extractives 9.77%, water soluble extractives 28.69% indicates the formulation has good solubility. PH value was favourable for early absorption in stomach.

Qualitative analysis reveals carbohydrate, protein, alkaloid, cardiac glycoside, flavonoids, tannins, triterpenoids were present which is considered as health promoting components of various plant. TLC helps identifying the compounds and its functional component.

CONCLUSION

On present study the formulation was subjected to pharmacological study reveals the authentication of ingredients. The study reveals the formulation meets minimum quality standards for use in ekakushtha.

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