

MULTIFACETED ACTIONS OF EKAVIMSHATIKA GUGGULU AN ANALYTICAL REVIEW

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ABSTRACT

According to ancient Ayurvedic scholars, a precise analysis of any medication is essential for achieving desirable outcomes before it is prescribed to patients. Ayurvedic physicians have successfully practised numerous classical formulations for treating various ailments; however, there is often a lack of data regarding their detailed mechanism of action. One such classical multidrug formulation is *Ekavimshatika Guggulu*. *Gutika Kalpana* is the most considerable and most used form of Ayurvedic pharmaceutical formulations. It is a herbal formulation explained in *Bhavaprakasha Kushtadikara*. It consists of 21 ingredients. This review aims to elucidate the multiple modes of action of *Ekavimshatika Guggulu* in various diseases by analysing the pharmacological properties of its ingredients. Analysis of the mode of action gives a deep insight into the usage of formulations with a better understanding.

Keywords: *Ekavimshatika Guggulu*, *Kushtadikara*, *Gutika Kalpana*

INTRODUCTION

In Ayurveda, *Oushadha* is considered one of the four-fold constituents of *Chikitsa Chatuspada* and can break the *Samprapthi*. The main aim of treatment is to create or maintain the equilibrium of *Dosha*, Dhatu, Mala and *Agni*. The modern scientific community

requires explanation and logical reasoning behind *Ekavimshatika Guggulu*'s mechanism of action concerning each specific disease. Understanding the mechanisms provides deeper insight into the formulation's use and enhances comprehension of its

therapeutic effects. Many of the formulations are being prepared based on the availability of drugs, keeping their *Rasa Panchaka* and *Samprapthi Vighatana* in mind. For the selection of the drugs for clinical research work, the drugs to be tried must have some authentic background, either in the form of classical reference or the successful clinical experience of previous researchers. *Dravya* should be *Bahukalpam* (Susceptible to many modes of application), *Bahugunam* (possessed of many qualities), *Sampannam* (Wholesome), & *Yogyam* (readily used). On analysing the properties of the ingredients, it was found that *Ekavimshatika Guggulu* is predominant in *Katu Tiktha Kashaya Rasa Tikshna Guna*, *Ushna veerya*, and *Katu Vipaka*. These properties are responsible for the

ANALYSIS OF THE FORMULATION

various pharmacological actions of the formulation in Ayurvedic terms. *Ekavimshatika Guggulu* is a Traditional Formulation explained in *Bhavaprakasha Kush-tadikara*, indicated in eighteen kinds of *Kushta*, *Krimi*, *Dushta vrana*, *Grahani*, *Arshas*, *Mukarogas*, *Galaroga*, *Gridrasi*, *Bhagna*, *Gulma* and other *Koshtagata Rogas*.

AIM AND OBJECTIVES

To explain the probable mode of action of *Ekavimshatika Guggulu* detailed in each of its indications

MATERIALS AND METHODS

Material is taken from the Classical text *Bhavaprakasha*.

BOTANICAL NAME, FAMILY NAME OF INGREDIENTS

NO	DRUGS	BOTANICAL NAME/ENGLISH NAME	FAMILY
1.	<i>Chitraka</i>	<i>Plumbago indica</i>	Plumbaginaceae
2.	<i>Hareetaki</i>	<i>Terminalia chebula</i>	Combretaceae
3.	<i>Bibhitaki</i>	<i>Terminalia bellerica</i>	Combretaceae
4.	<i>Amalaki</i>	<i>Phyllanthus emblica</i>	Euphorbiaceae
5.	<i>Shunti</i>	<i>Zingiber officinale</i>	Zingiberaceae
6.	<i>Maricha</i>	<i>Piper nigrum</i>	Piperaceae
7.	<i>Pippali</i>	<i>Piper longum</i>	Piperaceae
8.	<i>Ajaji</i>	<i>Cuminum cyminum</i>	Umbelliferae
9.	<i>Chavya</i>	<i>Piper chaba</i>	Piperaceae
10.	<i>Ela</i>	<i>Elettaria cardamomum</i>	Scitaminae
11.	<i>Karavi</i>	<i>Carum carvi</i>	Umbelliferae
12.	<i>Vacha</i>	<i>Acorus calamus</i>	Arecaceae
13.	<i>Saindhava Lavana</i>	Sodium chloride	
14.	<i>Ativisha</i>	<i>Aconitum heterophyllum</i>	Ranunculaceae
15.	<i>Kushta</i>	<i>Saussurea lappa</i>	Asteraceae
16.	<i>Yavashakam</i>	<i>Alhagi pseudalhagi</i>	Fabaceae
17.	<i>Vidanga</i>	<i>Embelia ribes</i>	Primulaceae
18.	<i>Ajamoda</i>	<i>Trachyspermum ammi</i>	Umbelliferae
19.	<i>Musta</i>	<i>Cyperus rotundus</i>	Cyperaceae
20.	<i>Amaradharu</i>	<i>Cedrus deodara</i>	Pinaceae
21.	<i>Guggulu</i>	<i>Commiphora mukul</i>	Burseraceae
22.	<i>Ghrtam</i>	Clarified old butter	

RASA, GUNA, VEERYA, VIPAKA OF INGREDIENTS

Drug	Rasa	Guna	Veerya	Vipaka	Karma
<i>Chitraka</i>	<i>Katu</i>	<i>Laghu</i> , <i>Ruksha</i> , <i>Tik-</i> <i>shna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Deepana</i> , <i>Pachana</i> , <i>Krimigna</i> , <i>Vata KaphaShamaka</i>

<i>Haritaki</i>	<i>Kashaya, Tikta, Madhura, Katu, Amla</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridoshashamaka mainly Vata shamaka, Vatanulomana</i>
<i>Amalaki</i>	<i>Madhura, Amla, Katu, Tikta, Kashaya</i>	<i>Guru, Ruksha, Sheeta</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Tridoshashamaka Sarvadhaturvardaka</i>
<i>Bibhitaki</i>	<i>Kashaya</i>	<i>Ruksha, Laghu</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridoshashamaka, Dhaturvardhaka</i>
<i>Shunti</i>	<i>Katu</i>	<i>Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Vata Kaphahara, Deepana</i>
<i>Maricha</i>	<i>Katu</i>	<i>Laghu, Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavata Hara, Vatanulomana</i>
<i>Pippali</i>	<i>Katu</i>	<i>Laghu, Snighda, Tikshna</i>	<i>Anushna Sheeta</i>	<i>Madhura</i>	<i>Tridoshashamaka, Rasayana</i>
<i>Ajaji</i>	<i>Katu</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha-Vatahara, Dipana, Pachana, Balya</i>
<i>Karavi</i>	<i>Katu</i>	<i>Lagu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>KaphaVata hara, Vatanulomana</i>
<i>Vacha</i>	<i>Katu, Tikta</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha Vata Shamaka, Rasayana</i>
<i>Saindhava</i>	<i>Lavana Alpa Mahura</i>	<i>Laghu, Snighda, Tikshna</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Tridoshagna, Deepana</i>
<i>Ativisha</i>	<i>Katu, Tikta</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Pachana, Kapha pittahara, Balya</i>
<i>Kushta</i>	<i>Katu, Tikta, Madhura</i>	<i>Laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vata Kaphahara, Rasayana</i>
<i>Chavya</i>	<i>Katu</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha Vata Shamana, Deepana, Pachana</i>
<i>Ela</i>	<i>Katu, Tikta</i>	<i>Laghu, Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Tridoshashamaka, Deepana, Anulomana</i>
<i>Yavashaka</i>	<i>Katu, Tikta</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphahara, Balya</i>
<i>Vidanga</i>	<i>Katu, Kashaya</i>	<i>Laghu, Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha Vata Shamaka, Aamahara</i>
<i>Ajamoda</i>	<i>Katu, Tikta</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha vata hara, Vatanulomana</i>
<i>Musta</i>	<i>Katu, Tikta, Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kapha Pittashamaka, Deepana, Krimigna</i>
<i>Devadaru</i>	<i>Tikta</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vata Kapha hara, Kushtagna, Krimigna</i>
<i>Guggulu</i>	<i>Tikta, Katu, Kashaya</i>	<i>Laghu, Ruksha, Tikshana</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridoshashamaka, Rasayana</i>

CHEMICAL CONSTITUENTS, PARTS USED, PHARMACOLOGICAL ACTION

DRUG NAME	CHEMICAL CONSTITUENTS	PART USED	PHARMACOLOGICAL ACTION
<i>CHITRAKA</i>	Flavonoids, Terpenes, Sterols, Plumbagin	Root	Anti-inflammatory, Antiarthritic
<i>HAREETAKI</i>	Chebolic acid, Chebularin, Tannin, Gallic acid	Fruit	Immunomodulatory, Antiarthritic
<i>BIBHITAKI</i>	Gallic acid, Ellagic acid,	Fruit	Immunomodulatory
<i>AMALAKI</i>	Linolic acid, terchebin, Phyllembin, Ellagic acid	Fruit	Anti-inflammatory, Neuroprotective
<i>SHUNTI</i>	Zingerone, gingerols, Gingerdiol	Rhizome	Anti-inflammatory, Neuroprotective
<i>MARICHA</i>	Pepamide, Piperamine, Piperettine	Fruit	Analgesic, Anti-inflammatory
<i>PIPPALI</i>	Essential oil, Piperine, Piplartine	Fruit	Analgesic, Anti-inflammatory Anti- Obesity
<i>AJAJI</i>	Cuminin, apigenin, Cuminaldehyde	Seed	Anti-inflammatory, Analgesic
<i>CHAVYA</i>	Sitosterol, Piperine, Piplartine	Root	Anti-inflammatory, Analgesic
<i>ELA</i>	Phenols, alkaloids, terpenoids	Seed	Anti-inflammatory, Analgesic
<i>KARAVI</i>	Essential oil, Volatile oil, Sterol	Seed	Antioxidant, Immunomodulatory
<i>VACHA</i>	Calamenol, calamine, Acaromone	Rhizome	Anti-inflammatory
<i>ATIVISHA</i>	Atisine, hetisine	Rhizome	Analgesic, Anti-inflammatory
<i>KUSHTA</i>	Alkaloids, steroids, Flavonoids	Root	Analgesic, Anti-inflammatory
<i>YAVASHAKA</i>	Galacto catechin, Epigallocatechin	Whole Plant	Anti-inflammatory
<i>VIDANGA</i>	Embelin, Tanin, Bromoembelin	Fruit	Analgesic, anti-inflammatory
<i>SAINDHAVA LAVANA</i>	Nacl, Kcl, CaSo ₄ , Mgcl ₂	Lavana	Antioxidant
<i>AJAMODA</i>	Luteolin, myristicic acid,	Seed	Analgesic
<i>MUSTA</i>	Cyperenone, Copadiene, Cyperol	Tuber	Anti-inflammatory
<i>AMARADHARU</i>	Deodarone, Atlantone, Centdarol	Heart wood	Anti- Inflammatory, Analgesic
<i>GUGGULU</i>	E -guggulusterone, Z - Guggulusterone	Resin	Analgesic, Anti-inflammatory

PREPARATION

Guggulu's Shodana (purification) must be done in *Triphala Kashaya*. *Chitraka*, *Triphala*, *Vyosha*, *Ajaji*, *Karavi*, *Saindhava*, *Ativisha*, *Kushta*, *Chavya*, *Ela*, *Yavashaka*, *Vidanga*, *Ajamoda*, *Musta* and *Amaradharu* are added with *Guggulu* equal to the total of all are made into nice powder, then mixed with ghee half of its quantity and rolled into *Gutika* form.

DISCUSSION

PROBABLE MODE OF ACTION

The action of *Ekavimshatika Guggulu* on its various indications will be discussed. Drugs are predominant in *Katu Rasa*, *Tiktha*, and *Kashaya Rasa*. *Laghu*

Ruksha Guna, Ushna veerya and *Katu Vipaka*. *Katu Rasa, Ruksha Guna, Katu Vipaka* mitigates *Kapha*. *Tiktha Rasa* Possess *Deepana Pachana* action. As *Pradhana Virya* of *Ekavimshatika Guggulu* is *Ushna*, it has *Vata Kaphahara* property and acts as *Deepana* and *Pachana*. Chemical constituents such as Elagic acid, Galic acid, Quercetin, Piplartine, Guggulsterone, and Embelin present in *Ekavimshatika Guggulu* contribute to the anti-inflammatory, analgesic, antioxidant, and antimicrobial properties of the drug.

PROBABLE MODE OF ACTION IN GRIDRASI

Ekavimshatika Guggulu possesses action on both *Vata Kaphaja* and *Vatika* types of *Gridhrasi*. In the *Vata Kaphaja* type of *Gridhrasi Deepana karma* of *Hareetaki, Shunti, Maricha, Pippali, Ajaji, Chavya, Musta,* and *Amaradharu* increases *Agni*, which in turn corrects the *Rasa Dhatu* and thus reduces symptoms such as *Gaurava, Tandra, Aruchi, Laghu, Ushna Veerya,* and *Katu Vipaka* of *Chitraka, Hareetaki, Bibhithaki, Shunti, Ajaji, Chavya, Vacha, Vidanga,* and *Guggulu* help to reduce the *Vaikritha Guru Guna* of *Kapha*. The *Ushna Virya* of *Chitraka, Hareetaki, Bibhithaki, Shunti, Maricha, Pippali, Ajaji, Chavya, Karavi, Vacha,* and *Guggulu* mitigates the *Sheeta Guna* of *Vata*. The *Anulomana* property of *Hareetaki, Karavi, Maricha,* and *Ajamoda* also helps normalise the *Chala Guna* of *Vata*. The obstruction of *Vata* by *Kapha* has hence been removed. *Guggulu* also possesses *Rasayana* property and helps in the *Poshana* of *Kandaras* associated with *Asthi, Majja Dhathu*. In *Vatika* type of *Gridhrasi Sheeta Guna* of *Vata* might be reduced by *Ushna Veerya* of most of the drugs in *Ekavimshatika Guggulu* like *Chitraka, Hareetaki, Bibhithaki, Shunti, Maricha, Pippali, Chavya, Karavi Vacha, Athivisha, Kushta, Guggulu*. *Anulomana* property of drugs makes the normal *Gati* of *Vata*, hence involved in *Shoola Prashamana*. *Rasayana* Property of *Triphala* and *Guggulu* also strengthens *Kandara*.

In *Ekavimshatika Guggulu*, chemical constituents such as Gallic acid and Ellagic acid are present in *Haritaki, Bibhithaki,* and *Amalaki,* and Piplartine in *Pippali* and *Chavya*, along with Quercetin and E-Guggulsterone in *Guggulu*, possess analgesic properties. Ellagic acid and Gallic acid influence pain-related

neurotransmitter pathways, including inhibition of NMDA receptors in pain signal transmission. Quercetin inhibits enzymes like cyclooxygenase-2 (COX-2) and lipoxygenase (LOX), reducing the synthesis of prostaglandins and leukotrienes, which mediate pain. Guggulsterone interacts with pain-related receptors, such as transient receptor potential vanilloid 1 (TRPV1), in nociceptive (pain-sensing) pathways. This modulates the transmission of pain signals, and hence, it acts as an analgesic.

PROBABLE MODE OF ACTION ON GRAHANI

Analysing the *Samprapthi* of *Kaphaja Grahani* caused by the consumption of *Guruahara* (heavy, hard-to-digest foods), *Atisnigdha Ahara* (excessively oily foods), and *Sheeta Ahara* (refrigerated food) leads to *Mandagni* (reduced digestive fire), resulting in *Grahani Dushti*. This condition further causes either *Pakva* (properly digested) or *Apakva* (undigested) *Anna Nirharana* (elimination of food).

As *Agni* plays an essential role in *Grahani*, measures to correct *Agni* have to be carried out. Drugs are of *Laghu, Ruksha Guna, Katu, Tikta Rasa, Kashaya Rasa Katu Vipaka* (dominant with *Agni, Vayu* and *Akasha Maha Bhuta*), it subsides the aggravated *Kapha*. *Ekavimshatika Guggulu*, endowed with *Deepana* (digestive enhancing) property drugs such as *Chitraka, Shunti, Maricha, Karavi,* and *Pippali*, stimulates *Jataragni*. Due to its *Laghu, Ruksha, Tikshna Guna* and *Ushna veerya*, it removes *Sroto Rodha*. Once the *Agni* is corrected, the *Samprapthi Vighatana* will be done. Guggulsterone inhibits NF- κ B and suppresses inflammatory cytokines like TNF- α , IL-6, and IL-1 β . Reduces gut inflammation caused by irritation due to undigested lactose, relieving bloating, cramping, and diarrhoea. While not directly probiotic, Guggulsterone supports gut health by inhibiting harmful bacterial overgrowth and balancing the gut microbiota.

PROBABLE MODE OF ACTION IN KRIMI

In *Krimi Roga*, due to *Kapha Prakopa Ahara*, there is *Agnimandhya* with *Kledamshavidhi*, which causes *Ajirna* and is involved in the *Sankleda* of *Pureesha* results in *Pureesha vridhi* and, in turn results in *Krimi Utpatti* in *Pakvashaya*. *Kashaya, Ushna, Laghu*

Ruksha Guna acts on *Dushita Kapha* and *Katu, Kashaya, Laghu Ruksha, Tikshna guna* reduces the *Kledamshavidhi*. By going through the *Samprapthi* of *Krimi Roga*, it is evident that *Krimi Roga* is a *Kapha Dosha* predominant *Vyadhi* with the involvement of *Vata* and *Dooshya* are *Rasa, Raktha*. A drug which opposes the *Kapha* does *Shodhana* of obstructed *Srotas*, which, in turn, corrects the status of *Agni*, should be ideally selected. *Ushna Veerya* of drug helps in *Agni Deepana*; hence, it corrects *Dushta Kapha*. It also acts as *Kapha Vata hara*. The presence of *Katu Vipaka* and *Katu Rasa* also helps in *Srotoshodhana*. Thus, the drug stimulates the *Agni* and relieves *Agni Mandhya* and *Srotorodha*. All are opposite the *Guna* of *Kapha* and work as *Kapha Vata Shamaka*. *Ekavimshatika Guggulu* contains *Vidanga*, which is considered to be *Krimigna, Deepana, Pachana, and Anulomana*. Chemical constituents like *Embelin* in *Vidanga*, *Plumbagin* in *Chitraka*, and *Guggulsterone* in *Guggulu* possess antimicrobial properties. *Embelin* is a lipophilic compound that integrates into microbial cell membranes, disrupting lipid bilayers and increasing membrane permeability. It leads to leakage of intracellular contents, causing cell death. *Plumbagin* induces the production of *ROS* within microbial cells. The increased *ROS* causes oxidative stress, damaging cellular components such as *DNA, proteins, and lipids*. This disrupts essential cellular functions, leading to cell death.

PROBABLE MODE OF ACTION IN KUSHTA

Ekavimshatika Guggulu possess action on *Vata Kaphaja Kushta*. While analysing the properties, drugs are predominant in *Ushna veerya*. *Ushna Veerya* acts against the *Sheeta Guna* of *Kapha* and *Vata*. *Tikta* and *Kashaya Rasa* of drugs like *Amalaki, Hareetaki, and Musta* decrease the *Kleda Guna* of *Rakta* and *Kapha*. *Tikta Rasa Dravya* acts as *Rasa Dhatu* and *Rakta Dhatu prasadana* by pacifying *Vitiated Kapha* and *Pitta Dosha*. Most medicines have *Kushtagna* and *Rasayana* properties. *Elagic acid* in *Haritaki, Bibhitaki, and Amalaki* possess Antioxidant properties. *Ellagic acid* donates electrons or hydrogen atoms to reactive oxygen species (*ROS*), such as superoxide anions, hydroxyl radicals, and hydrogen peroxide,

stabilizing them and reducing oxidative damage. It also prevents the oxidation of lipids in cell membranes, protecting cells from structural damage caused by oxidative stress.

PROBABLE MODE OF ACTION IN ARSHAS

The drug acts on *Kaphaja Arshas*. *Guggulu* is considered to be the main ingredient of *Kaphahara* and *Kledahara*. By analysing the drug *Tikta, Kashaya Rasa, and Laghu Ruksha Guna*, it mitigates *Kapha*.

Ingredients such as *Pippali, Haritaki, Shunti, Chavya, Chitraka, and Ajaji* have the property of *Deepana, Vatanulomana, and Ushna Guna*; hence it is considered to be *Shoolaprashamana*. Drugs like *Haritaki* help to relieve constipation and decrease the pressure on pile mass. Both *ellagic and gallic acids* in *Haritaki, Bibhitaki, and Amalaki* reduce inflammation by suppressing pro-inflammatory cytokines like *TNF- α , IL-6, and COX-2* enzymes. They inhibit the *NF- κ B* signalling pathway, reducing swelling and discomfort in hemorrhoidal tissues. *Quercetin* in *Guggulu* modulates pain pathways by reducing prostaglandins and other pain-inducing molecules, reducing pain in piles.

PROBABLE MODE OF ACTION IN GULMA

Gulma is a *Tridoshaja Vata* predominant *Vyadhi*. The drug has got action on *Kaphaja Gulma*. *Gulma* originated by *Kapha* subsides by the action of drugs like *Shunti, Maricha, Pippali, and Karavi* due to their *Katu Rasa, Ushna veerya* it enhances the *Agni* and hence results in *Sroto Shodana*.

Ingredients such as *Pippali, Haritaki, Shunti, Chavya, Chitraka, and Ajaji* have the property of *Deepana, Vatanulomana, and Ushna Guna*; hence it is considered to be *Shoolaprashamana*. *Guggulsterone* has spasmolytic properties, helps relax intestinal muscles, and alleviates cramps. It decreases the release of inflammatory mediators like *TNF- α , IL-6, and IL-1 β* , reducing pain and swelling in the abdominal region.

PROBABLE MODE OF ACTION IN DUSHTA VRANA

Symptoms like *Durgandha, Vedhanayuktha Pooyayuktha, Atipooya Srava* characterise *Dushta Vrana*. *Guggulu* possesses *Vranaropana* and *Vedhansthapana* properties. Due to *Tikta Rasa, Laghu* and *Ruksha*

Guna, it works as *Kleda* and *Vikrita Meda Upashoshana*, *Vranashodaka*. *Tikta* and *Kashaya Rasa* decrease the *Kleda Guna* of *Rakta* and *Kapha* and help in *Rasa Dhatu* and *Rakta Dhatu prasadana*. *Dushta vrana* can be correlated to Non-healing ulcers. Neutrophils in chronic ulcers release inflammatory cytokines in their fight against pathogens, which release reactive oxygen species to kill microbes. Still, their myeloperoxidase is lethal to microbes and host cells. This damages the host cell's DNA, lipids, proteins, and extracellular matrix. The too-long presence of neutrophils in chronic wounds gives the wound a higher level of inflammatory cytokines. Even the wound discharge contains excess proteases and ROS. Hence, this fluid itself may inhibit cell growth by breaking down factors in ECM. At the same time, the chemical constituents in *Ekavimshatika Guggulu* were. Gallic acid, Ellagic acid present in *Haritaki*, *Bibhithaki*, *Amalaki*. Piplartine in *Pippali*, *Chavya*. E-Guggulsterone in *Guggulu* possesses anti-inflammatory properties that act against *Dusta Vrana*.

PROBABLE MODE OF ACTION IN BHAGNA

Guggulu is considered to be the main ingredient in *Ekavimshatika Guggulu*. It possesses *Sandhaniya Property* and *Ropana Karma*. It enhances the healing of *Bhagna*. Hence, *Ekavimshatika Guggulu* can be administered with external treatment for a combined effect. Guggulsterone in *Guggulu* reduces inflammation by inhibiting nuclear factor-kappa B (NF-κB), a key regulator of inflammation. This action helps to control the inflammatory phase of fracture healing, promoting a favourable environment for repair. Guggulsterone enhances osteoblast activity, supporting new bone formation. It stimulates collagen production, which is essential for developing the bone matrix during healing.

PROBABLE MODE OF ACTION IN MUKHA ROGA AND GALA ROGA

Shothahara, *Sandhaniya*, *Ropana*, and *Vedana sthapana* properties make the drug act on *Muka* and *Gala Rogas*. Guggulsterone has antibacterial, antiviral, and antifungal properties by disrupting microbial cell walls and inhibiting biofilm formation. It also helps combat infections causing tonsillitis, such as *Streptococcus pyogenes*.

CONCLUSION

Ekavimshatika Guggulu possess an action on *Rasa*, *Raktha*, *Mamsa*, *Meda*, *Asthi*, *Majja Srotas*. Drugs are mainly of *Kapha Vata Shamaka*. It also possesses *Rasayana* properties. The drug is endowed with anti-inflammatory, antioxidant, antimicrobial and analgesic action by analysing the chemical constituents. Specifically, it has got action on *Vataja* and *Vata Kaphaja* type of *Gridrasi*, *Kaphaja Grahani*, *Gulma*, *Arshas*, *Krimi*, *Vata-Kaphaja Kushta*, *Dushta Vrana*, *Healing stage of Bhagna*, *Mukha Rogas* and *Gala Rogas*. Analysis of the mode of action has given a deep insight into the usage of formulation with a better understanding.

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