



## STUDY THE EXTRACTION & ANTIMICROBIAL EFFICACY OF TRIPHALA

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**Abstract:** In the present study we have to deal with Triphala extraction and its antibiotic efficacy. Triphala is an herbal formula, contains equal proportion of the three important fruits viz. *Emblica officinalis*, *Terminalia chebula*, & *Terminalia bellerica*, this preparation is known to be a safe hypoglycemic agent. Its fruit is olive green in colour. From powdered crude drug using methanol as solvent, separating active material is extraction. Soxhlet assembly is used for extracting the phytochemicals. Antibiotic activity can be found by the preparation of inoculums of *E.coli* and *S.aureus* strains in NAM media. The result of present study shows that the Triphala extraction has pharmacognostic activity.

**Key words:** Triphala extraction, antibiotic efficacy, pharmacognostic, fruits, crude drug.

**Introduction:** Triphala is an herbal preparation of three fruits in equal proportion viz *Emblica officinalis* (amla), *Terminalia chebula* (haritaki), *Terminalia bellerica* (bahera). Triphala helps to rejuvenate digestive tract lining, purify blood, detoxifies liver, & it also helps to lower the high cholesterol level. It also used to treat the raised uric acid level. Extraction is the processes in which active principle get separated from powdered crude drugs. The basic principle behind extraction is the exceptional behaviour of

the active principles towards the solvent system. Plant collected (fruit) then dry, subjected to powdering and finally subjected to suitable method of extraction.

Amla manages pitta and also supports liver & immune system functions. Bahera supports respiratory system as well as kapha accumulation. Haritaki is good for all doshas and helps to remove toxins. Triphala has antimicrobial activity which was even comparable with standard antibiotics like Penicillin G & Ofloxacin.

M. Rasool & Sabina studied the anti inflammatory effect of the Indian ayurvedic herbal formulation Triphala on adjuvant induced arthritis in mice.

**Material and Method:** Triphala is an antimicrobial agent used in the treatment of

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Received on: December 2017

Accepted after revision: January 2018

DOI: <https://doi.org/10.30876/johr.6.1.2018.17-19>

infectious diseases. Triphala as a powdered drug is extracted. The basic principle behind extraction is the exceptional behaviour of the active principles towards the solvent system. Extraction method for Triphala is- Infusion, Decoction, Maceration, Digestion, Percolation, Successive extraction, Supercritical fluid extraction, and Steam distillation. After Soxhalation methodology, solvent can be recovered by rotatory vacuum evaporator. The extracted residue further mixed with chloroform water & resulted extract were stored in a refrigerator.

Phytochemical examinations were carried out for all the extracts as per the standard method. Plant constituent- Alkaloids, Test/reagent used-

Table 2:-Pharmacognostic characteristics of the sample-

Scientific Name	Common Name	Part used	Colour	Odour	Taste	Texture
Triphala	Triphala	Fruit	Olive green	Sour	Salty	Rust

**Result and Discussion:** From the above study we can assess that the powdered drug was subjected to extraction protocol Soxhalation. Obtained extract shows positive results for phytochemicals like glycoside, alkaloid, and phenolic compounds. With the help of methanol extract antimicrobial activity was found due to phytochemicals in Triphala. Triphala shows positive results for phenolic component in the methanolic extract thus it confirms that the phenol is responsible for the antimicrobial activity.

Table 3:- Antimicrobial activity of drug extract from soxhlate extraction (Methanol extraction)-

Drug	Microorganisms	Zone of inhibition (in mm)
Triphala	E.coli	24
	S.aureus	17

Table 4:- Phytochemical analysis of drug extract-

Phytochemicals test	Result
Alkaloids (Mayers reagent)	+
Carbohydrates & glycoside (Fehling solution)	+
Phenolic compounds & tannins (Ferric chloride solution)	+
Proteins/Amino acids (Ninhydrin test)	-

Myers reagent. a) 1.36 g of mercuric chloride in 60 ml of D.W, b) 5 g of potassium iodide in 20 ml of D.W. Antimicrobial activity by Disc Diffusion Method: - Inoculum is prepared by using E.coli & S.aureus. 50 ml of nutrient broth was prepared, sterilized and then inoculated with inoculum. It is then kept in incubator at 37 c for sufficient period of time for organism to grow. With the help of antibiotic zone scale the zone of inhibition is measured.

Table 1:- Colour of extract-

Name of Reagent	Name of Drug	Color of Extract
Methanol	Triphala	Dark Brown

**Conclusion:** In the present study of extraction and antibiotic efficacy of Triphala the presence of Alkaloids, glycoside, phenolic compounds, and tannins are found. The antimicrobial activity of the powder extract was done with Methanol which confirms the antibiotic efficacy of Triphala. The antimicrobial activity of Triphala was even comparable with standard antibiotics like Penicillin G & Ofloxacin.

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