



UNEARTHING THE PRODIGY OF AGELE MARMELOS C. : STUDY ON COPPER-COMPLEXES OF CIPROFLOXACIN

Shetiya Manasi Prashant

Research Student

Bhagat Sachin S.

Associate Professor

Department of Botany, S.S. and L.S. Patkar College, Goregoan (W).

Abstract:

Aegle marmelos C. (Fam. Citraceae), traditionally used as ethano-botanical drug, containing Fluoroquinolone which reacts with copper when kept over-night in water in copper container which is used as anti-bacterial, immunity booster crude drug. The studies exhibit that it improves digestion as it is affecting gastro-intestinal parasite. It was stated that the copper in any liquid is useful up to 2ppm and may be harmful if it is more than 3ppm. When analysed with Atomic Spectroscopy (AS), it was observed that the solution prepared contains 1.7ppm which is helping to improve gastro-intestinal problems. This formulation has helped many cancer patients, when surveyed. Further research is in progress.

Keywords: *Aegle marmelos C., Ciprofloxacin, Fluoroquinolone, immunity in cancer patients, UV spectrograph, Mass Spectrography*

Copyright © 2024 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

Introduction:

Aegle marmelos Correa common name Beal or Wood-apple, Family Citraceae (Rutaceae) Apart from its cultural importance; it holds an important position as therapeutic drug in Ayurvedic scriptures.

According to Ayurveda, its Rasa is Tikta and Kashay', its Vipak is 'Katu', Virya is 'Ushna', 'Ruksha' and 'Laghu, Prabhav is Grahi and it reduces 'Vata Dosha and Kapha Dosha'. We understand these properties of Beal by Shloka:

"श्रीफलस्तुबरस्तिकती ग्राही रूक्षोऽग्निपित्तकर, वातश्लेष्महरो बल्यो लघुरुच पाचनः" Bhavaprakasa Nighantu (Shloka no. 13)

The above shloka explains that Beal contains astringent and bitter taste. It is Grahi (absorbent), rough, agnivardhak, pitta karaka (increases bile), vata-kapha-samaka. Further research strength enhancer, laghu,

ushna-virya and digestive Metabolites like Skimmianine, Aegeline, Lupeol, Citronellal, Citrol, Floroquinone are some of the anticancer agents found in the Beal leaves Our study emphasis on the reaction of Floroquinone and Copper (Cu) which forms Copper complex of Ciprofloxacin, phytoconstituents occurring in leaves which is used in Cancer treatment.

This ayurvedic formulation can cure, gastrointestinal disease and improve health. It can also act as medicine for various bacterial infections like urinary tract infection, bone infection, skin infection etc which can be economical affordable solution for common problems.

Method and Materials: This drink was created by soaking 1 tridal of Beal leaves in copper vessel, filled with 100 ML of water, overnight. We had given this drink to adult cancer patients (Female) for 2 months

and we have obtained positive results. Materials; Tridal of bilva leaves collected from Mumbai, Maharashtra. Identification of compound ciprofloxacin is done by

using UV Spectra method. We have the for the copper toxicity in the drink by performing Mass Spectrography.

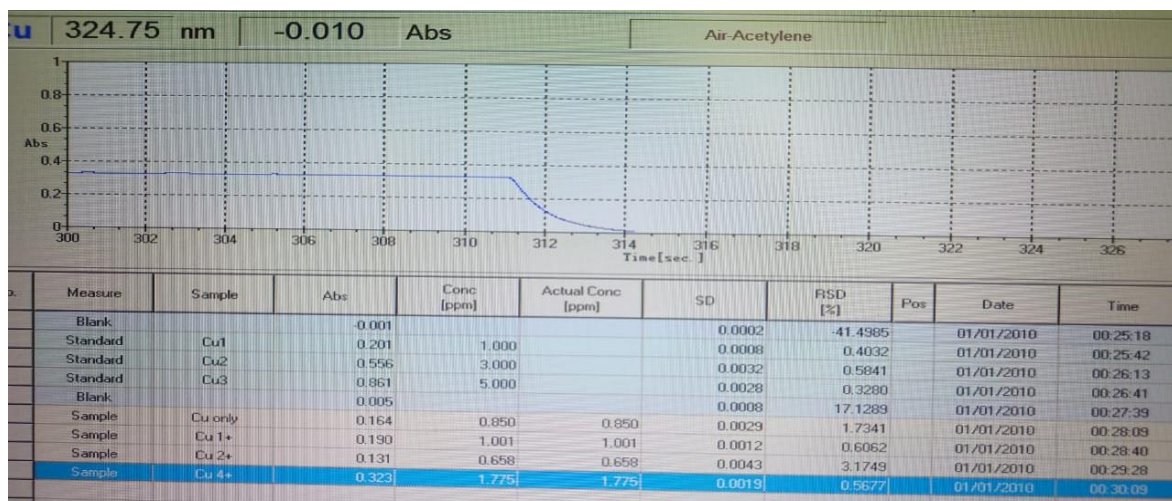
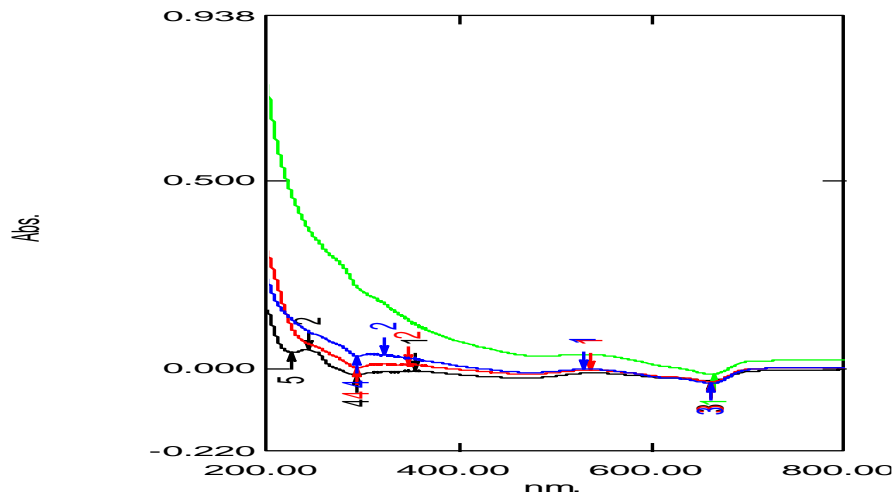
Tables, Graphs of the analysis of the Copper-Beal Water and Structure of Ciprofloxacin:

From this graph of Mass Spectroscopy, we can estimate that the copper level in this drink (with various combinations of Beal leaves) is 1.73 . Hence, we can conclude that this drink is not copper-toxic.

From the Graph of UV spectrograph, we can conclude the reaction is +more effective when one Beal leaf was soaked in 100 ml of distilled water.

Sample name	λ max nm	Absorbance/OD
A. Copper water only	242	0.051
B. Copper water + 1 <i>Aegle marmelos</i>	346	0.014
C. Copper water + 2 <i>Aegle marmelos</i>	322	0.038
D. Copper water + 4 <i>Aegle marmelos</i>	-	-

The graph above is of UV Spectrometry.





Result and Discussion:

Along with One adult female Cancer patient, this Copper-Beal water was consumed by 4 adults (3 female and 1 male) while they were consuming medicines for common ailments. Their reviews suggested that this Copper-Beal water nullifies the side-effects of Allopathic medicines and accelerates the speed of recovery. This water also gives anti- inflammatory, soothing effect to the body.

As discussed above; it showed good and instant effects for the Adult be a Cancer patient.

Ciprofloxacin is one of the promising therapeutic drug for Cancer treatment according to work of Mohammad Hassan Houshdar Tehrani et dult al (2019, Design, Synthesis and Biological Evaluation of Ciprofloxacin QC. Peptide Conjugates as Anticancer Agent)

Mass survey and experiment is required to prove the working and efficiency of this drink

The product which we have created and studied where no side effect was observed

We are planning to get necessary permission and license and standard protocol to create viable pharmaceutical formulation for commonest common people.

Conclusion:

We have prepared Copper-Beal water from Beal Leaves (*Aegle marmelos*) which can be used an anti-cancer therapeutic drug.

This water has ciprofloxacin as its main component and also contain certain anti-cancer agents like Skimmianine, Aegeline, Lupeol and Citronellal.

This solution is derived from natural sources hence it has no negative aftereffects. Moreover, this solution nullifies hi the side effects of chemotherapy. Knowledge of this solution was obtained from precious

Ayurvedic scriptures. Further research is essential to ensure that this Copper-Beal water enters the commercial market.

Acknowledgment:

Special Thanks to Co-ordinator of National Conference 2024, Principal and Management of my Institute.

References:

- Mst. Shamima Parvin et al. (2022)- *Interactions of Isoquinoline Alkaloids with Transition Metals from and Copper. Molecule*
- Steven Wallis et al. (1996) -*Copper(II) complexes of the fluoroquinolone antimicrobial ciprofloxacin. Synthesis, X-ray structural characterization, and potentiometric study, Journal of Inorganic Biochemistry (Volume 62, Issue 1. April 1996, Pp 1-16)*
- Vikas Yadav & Puneet Talwar (2019)(*Biomedicine & Pharmacotherapy Volume 111, March 2019, Page 934-046*) *Repositioning of fluoroquinolones from antibiotic to anti-cancer agents: An underestimated truth.*
- Shloka no. 13, *Bhavaprakasa Nighantu, Guduchyadi Varga*
- Vivek Akhouri et al. (October 2022) - *Therapeutic effect of Aegle marmelos fruit extract against DMBA induced breast cancer in rats.*
- Neelam Pathak et al. (May 2014) – *Phytochemical Evaluation, Antimicrobial Activity, and Determination of Bioactive Components from Leaves of Aegle marmelos*
- Veeramuthu Duraipandiyar et al. (October 2014) - *In-vitro antimicrobial, antibiofilm, cytotoxic, antifeedant and larvicidal properties of novel quinone isolated from Aegle marmelos (Linn.) Correa*

Cite This Article: Shetiya M. P. & Bhagat S. S. (2024). *Unearthing the Prodigy of Agele Marmelos C. : Study on Copper-Complexes of Ciprofloxacin.* In *Electronic International Interdisciplinary Research Journal*: Vol. XIII (Number III, pp. 50–52). DOI. <https://doi.org/10.5281/zenodo.11127215>