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PHYTO-CHEMICAL INVESTIGATION AND ANTIBACTERIAL ACTIVITY STUDY OF METHANOLIC EXTRACT OF CUCUMIS DIPSACEUS FRUITS

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ABSTRACT

The major aim of this work is the research of the phyto-chemical screening and antibacterial activity test carried out on *Cucumis dipsaceus* fruits. From this perspective, phytochemical screening based on tests of colouration and precipitation were undertaken by methanol as a solvents. The tests carried out on fruits show presence of tannin, alkaloids, saponin, flavinoids, resins, steroids. However, absence of reducing sugar, carbohydrates and phenol observed. Antibacterial activity test carried out on three bacteria such as *E-coli* (-ve) *Bacillus subtilis* (+ve) *Staphylococcus aureus* (+ve). Maximum inhibition zone shown in *Bacillus subtilis* (+ve) and minimum in *E-coli* (-ve).

KEYWORDS : phyto-chemical screening, *Cucumis dipsaceus*, Antibacterial activity.

INTRODUCTION

Current research on natural molecules and products primarily focuses on plants, they can be sourced, and selected more easily based on their ethno-medicinal use [1]. Plant derived medicines have been part of traditional health care system in most parts of the world for thousands of years and nowadays there is increasing interest in plants as sources of agents to fight microbial diseases [2]. The beneficial medicinal effects of plant materials typically result from the combinations of secondary products present in the plant. Plants produce

secondary metabolites as defenses against animals, parasites, bacteria, and viruses, and so rely on these chemical and other deterrents for their survival. These secondary metabolites constitute the medicinal value of a drug plant, which produces a definite physiological action on human body [3]. The present study was assessed to evaluate the Studies of phytochemical composition and antibacterial potential of *Cucumis dipsaceus*.methanolic fruits extract.

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MATERIALS AND METHOD:

Fresh plant samples were collected from local area in mysore city,karnataka. The plants were brought to the laboratory after proper identification.

**Phytochemical Screening Test:**

Phytochemical screening is done for analyzing secondary metabolites, which are responsible for curing ailment. The phytochemical screening of the plant extract was carried out by following methods used by[4-7] to detect the presence or absence of certain bioactive compounds.

Preliminary Phytochemical analysis of screened methanolic fruits extracts of Cucumis dipsaceus

Compound	Observation
tannin	+Ve
alkaloids	+Ve
saponin	+Ve
Reducing sugar	-Ve
flavinoids	+Ve
carbohydrates	-Ve
phenol	-Ve
resin	+ve
steriods	+ve

Antibacterial activity:

Fruits extracts of Cucumis dipsaceus. which was prepared with different solvents like methanol

were used to test their antibacterial activity. Studies carried using bacteria such as E-coli (-ve), Bacillus subtilis (+ve), Staphylococcus aureus (+ve)[8-13].

BACTERIA	Control ANPICILLIN (mm)	ZONE OF INHIBITION (mm)
E-coli (-ve)	13±0.94	7±0.42
Bacillus subtilis (+ve)	15±0.23	9±0.14
Staphylococcus aureus (+ve)	16±0.74	10±0.65

RESULT AND DISCUSSION:

The result of the phytochemical screening is presented in table -1.this reveal moderate concentration of tannin,alkaloids, saponin,flaviniods,resins,steroids,some of which chemical compound have been associated with antimicrobial activities and thus have curative properties against pathogens[14]. And also of these secondary metabolites have capacity to fight

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microorganisms and can be used for medicinal purposes [15-16].the result of antibacterial activity is shown in table-2.zone inhibition for E-coli bacteria between 53 to 54%, for Bacillus subtilis between 60 to 66% and for Staphylococcus aureus between 61 to 63%.

CONCLUSION:

It revealed that crude methanolic extract of fruit extract possess significant antibacterial activity.

The potential of the extract of fruits as antimicrobial activity may be due to the presences of phytoconstituents like tannin,alkaloids, steroids etc and might be responsible for its activity and justify its use as a folk remedy.

REFERENCES

1. Verpoorte R., Choi, Y.H. and Kim, H, K. 2005. Ethnopharmacology and system biology: a perfect holistic match. *J. Ethnopharmacol.* 100: 53-56.
2. Natarajan D., Britto S.J., Srinivasan K., Nagamurugan N., Mohanasundari C., and Perumal G. 2005. Antibacterial activity of *Euphorbia fusiformis*- a rare medicinal herb. *J. Ethnopharmacol.* 102:123-126.
3. Sharma A., Mann A.S., Gajbhiye V. and M.D.Kharya. 2007. Phytochemical profile of *Boswellia serrata*: an overview. *Pharmacognosy Reviews.* 1(1): 137-142.
4. Amarasingham R.D., Bisset N.A., Millard A.H. and Woods M.C 1964. A Phyto -Chemical Survey of Mallaya Part III. Alkaloids and Saponins: *Economic Bot.* 3:270 – 277.
5. Das A.K., and Bhattacharjee A.K.1970. A Systematic approach to phytochemical screening. *Trop. Sci.* XII.54 – 58.
6. Gibbs R.D. 1974. Chemotaxonomy of flowering plant I – IV, Motral and London, MC Gill queens University Press.
7. Santaram and Harborne, J.B.1984. *Phytochemical Method* a Chaman and Hall, London.
8. Cushnie T. T. P. and Lamb A. J. 2005. Antimicrobial Activity of Flavonoids. *International Journal of Antimicrobial Agents.* 26: 343-356.
9. Doss A, Mubarack H M and Dhanabalan R. 2009. Antibacterial Activity of Tannins From the Leaves of *Solanum trilobatum* Linn.", *Indian Journal of Science and Technology*, Vol. 2, No. 2, pp. 41-43.
10. Ahameethunisa A R and Hopper W.2010. Antibacterial Activity of *Artemisia nilagirica* Leaf Extracts Against Clinical And Phytopathogenic Bacteria", *BMC Complementary and Alternative Medicine*, Vol. 10, pp. 1-6.
11. Reddy P.S., Jamil K., Madhusudhan P. 2001. Antibacterial activity of isolates from Piper longum and Taxus baccata. *Pharmaceuticalbiol.* 39: 236-238.
12. Erdogru O T. 2002. Antibacterial activities of some plant extract used in folk medicine. *Pharmaceutical biol* 40:269-273.
13. Nair R., Kalariya T., Chanda S ., 2005. Antibacterial activity of some selected indian medicinal flora. *Turk j biol* 29: 41-47.
14. Nweze E I., Okafor J I., Njoku O 2004. Antimicrobial activities of methanolic extract of terma guineensis (Schumm and Thorn) and Morinda Lucida benth used in Nigerian herbal medicinal practice. *J.Biol.Res. Biotechnol.*2(1): 39-46.
15. Anon S. 1994. *Ethnobotany and the search for new drugs.* John Wiley and Sons, England.
16. Muthu C., Ayyanar, M., Raja N., and Ignacimuthu, S. 2006. Medicinal plants used by the traditional healers in Kancheepuram District of Tamil Nadu, India. *Journal of Ethnobiology and Ethnomedicine.* 2: 43-45.
