



# International Journal of Advanced Community Medicine

E-ISSN: 2616-3594

P-ISSN: 2616-3586

IJACM 2018; 1(3): 20-22

Received: 14-07-2018

Accepted: 18-08-2018

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## Studies of methanolic extract of leaves of *psidium* guajava as an anti-solar agent

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### Abstract

**Objective:** The present study aimed at the phytochemical examination and anti-solar activity of *Psidium Guajava* (leaf) methanol extract has more Flavonoid content based on this chemical substance photo protective activity was evaluated using UV visible spectrophotometry, where the method is diffused transmittance and the range of UV-visible about 200-400nm.

**Methods:** The pulverized dried *Psidium Guajava* leaves were extracted with distilled water using soxhlet apparatus. Methanolic extract were filtered & evaporated to dryness. The photo protective activity was evaluated by using UV visible spectrophotometry, where the method it is diffused transmittance and the range of UV-visible about 200-400nm.

**Results:** The UV scanning absorption spectra of the extract showed very strong absorption at 0.279 A with  $\lambda$  max at 268 nm.

**Conclusion:** The extract has an ability to absorb in the entire UV range.

**Keywords:** UV rays, *Psidium Guajava*, methanolic extract, and anti-solar agent

### Introduction

In recent year herbs have been used in the medicines to treat different skin disease. When skin surface absorb ultraviolet radiations free radicals or reactive oxygen species are produced having adverse effect such as sunburns, wrinkles, lower immunity against infection premature aging and cancer hence protective and preventions are required from ultra violet radiation. Ultra violet radiation (UVR) exposure to skin causes skin disorder such as squamous cell aging immune depression of skin and photodermatose. The UV radiations are categories in the three categories as such UV-C(200-280nm), UV-B(280-320nm), UV-A(320-400nm) from above three categories of UV radiation, UV-C radiation can cause severe biological damage to skin as compared to UV-B and UV-A radiation. But UV-C radiations are filtered by the ozone layer, so UV-B and UV-A radiation is currently the reason for causing skin cancer, so as to avoid this sunscreen agents are used which act as a protective agents against harmful UV radiations [1, 2, 3].

Medicinal plant have used in primary health care over many centuries before the advent of modern medicine *Psidium Guajava L* belongs to Myrtaceae family is popularly known as 'poor man's apple of tropics, has a long history of traditional use for a wide range of ailments. [Dwivedi, 2017] It is a lower evergreen tree or shrub 6 to 25feet high, with wide-spreading braches and square, downy twinges. It is a cover by roads and in waste places in Hawaii. Guava is tropical plant and semitropical plant. The extract of root, bark and leaves of guava are used as folk medicine to treat gastroenteritis, vomiting, diarrhea, dysentery, wounds, ulcer, toothache and number of other conditions. Leaves contain phenolic compounds isoflavonoids, Gallic acid, catechin, epicatechin, rutin, naringenin, karepferol having hepatoprotective, antioxidant, and anti-inflammatory, antispasmodic, anticancer, antimicrobial, analgesic action. The present study aimed to carry out the anti-solar activity of *Psidium Guajava* Linn leaves prepared by Mthanolic extract [4].



Fig 1: Whole Plant of *Psidium Guajava*

**Material**

The leave *Psidium Guajava L* was collected from satara, Maharashtra, washed properly and shade dried. The dried leaves powdered and used for the extraction purpose. The specimens were identified by in the department of botany Y.C. college satara.

**Extraction Method**

The pulverized dried leaves *Psidium Guajava* were extracted with distilled water using Soxhlet Apparatus. Water extract were filtered & evaporated to dryness [4, 6, 7].

**Photochemical Examination**

The general flavonoid identification tests were performed on the extract. Test 1: To dry extract, add 5ml of 95% ethanol,

few drop of concentrated hydrochloric acid and 0.5 g of magnesium turning. The finally pink color observed. (Shinoda test)

Test 2: To a small quantity of extract, add lead acetate solution, it shows yellow colored precipitate is formed [8, 9, 10, 11].

**Anti-solar activity**

**Preparation of sample** [12, 13, 14, 15, 16]

The sample preparations were carried out by 10 mg % w/v concentration dissolving into the 100 ml of distilled water (10 mg/100ml). Evaluation of anti-solar activity the UV absorption spectrum for extract was obtained in range of 200-400 nm using Double beam UV-Vis Spectrophotometer Model Shimadzu-1700.

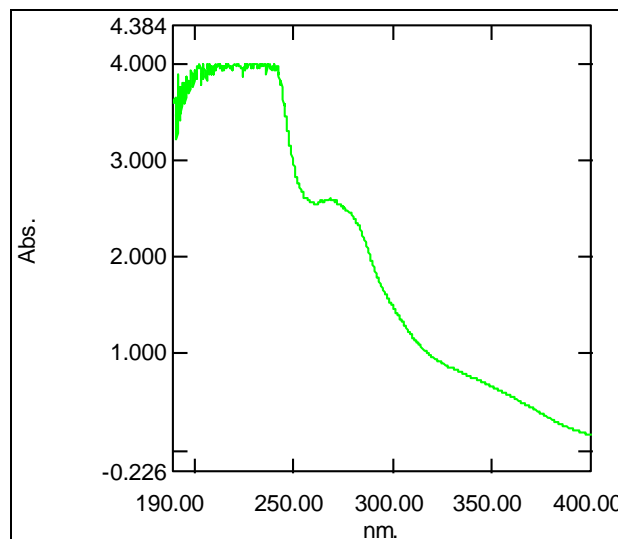


Fig 2: Following figure indicate computerized display reading of absorption spectra of the extract which is directly taken from spectrophotometer.

**Results**

The UV scanning absorption spectra of the extract showed very strong absorption at 0.279 A with  $\lambda$  max at 268 -nm. The graph extract also showed a plateau in range of 300-400 nm with moderate absorbance of ~0.3-0.1

**Discussion**

Quantitative investigation showed the presence of

flavonoids in the extract. Flavonoids are well known for their pharmacological activities. It absorbs light and helps to protect photosensitive substances in leaves. Absorption of UV radiation is the main characteristics feature of the flavonoids. The results showed strong to moderate absorption of UV radiation and this ability is due to the presence of flavanoids.

## Conclusion

The Methanolic extract of leaves have ability to absorb UV radiation. The proved anti-solar activity of the plant shows its importance and prophylactic utility in anti-solar formulation. This will be a better cheaper and safe alternative to harmful chemical sunscreens that used nowadays in the industry.

## Acknowledgement

I solicit my deep sense of appreciation and love to my wonderful Father and Mother considers my self-privilege to have seen an entity of almighty in them. I consider myself as luckiest person being my sister Rupali always there besides me during my ups and downs in my life and also thank to my teacher who will guide me for writing this research article. I am immensely thankful to G. I. P. E. R Limb, Satara for their providing all facilities required for my work.

**Conflict of interest:** None

## References

1. Barbalho S, Flavia M, Machado F, Goulart A. *Psidium guajava* (guava): a plant of multipurpose medicinal application. Medicinal & aromatic plants. 2012; 1(4):1-6.
2. Dwivedi N, Patel A, Dwivedi N, Tripathi L. physicochemical and phytochemical studies of *Psidium guajava* L. IJRAP. 2017; 8(1):102-107.
3. Gharge V, Gore M, Ahire P, Ghorpade P, Yadav A. study of ethanolic extract of leaves of murrayakoenigi as an anti-solar. IJPSR. 2017; 5(04):1-6.
4. Gore M, Gharge V, Ahire P, Ghorpade P, Yadav A. study of methanolic extract of leaves of tridaxprocumbens as an anti-solar. EJPMR. 2017; 4(9):1-10.
5. Gupta P. UV absorbing properties of some plant derived extract. RJCES. 2013; 1(2):34-36.
6. Gharge Ms VG, Shelar PA. Pharmacognostic Standardization, Phytochemical Evaluation and Antimicrobial Activity of Leaf Extracts of Tridax Procumbens. International Journal of Universal Pharmacy and Bio Sciences. 2016; 5(6):133-145.
7. Gharge Varsha G, Shelar Pourmima A. the Pharmacognostical, Phytochemical and Antimicrobial Studies of Leaves Cassia Auriculata Linn. Research Journal of Pharmacognosy and Phytochemistry. (RJPP). 2017; 9(2):1-8.
8. Gore Meghana, Gharge Varsha, Ahire Pallavi, Ghorpade Pranita, Bhandwalkar Omkar, Dr. Yadav Adhikrao. Study of Methanolic Extract of Leaves of Tridax Procumbens as an Anti-Solar. European Journal of Pharmaceutical and Medical Research. 2017; 4(9):1-3.
9. Gharge Varsha Gajanan. Study of Methanolic Extract of Leaves Nyctanthes Arbotristis as an Anti-Solar. World Journal of Pharmaceutical Research. 2017; 6(13):893-898.
10. Gore Meghana, Gharge Varsha. Study of Methanolic Extract of Black Tea as an Anti-Solar. International Research Journal of Pharmacy. 2017; 8(11):72-73.
11. Gharge VG, Ghadge DM, Shelar PA, Yadav AV. Importance of Pharmacognostic study of medicinal plants *Calotropis gigantea* (Linn.): A review. Int J Pharmacognosy. 2017; 4(11):363-71.
12. Gharge Varsha Gajanan. Study of Methanolic Leaves Extract of *Curcuma longa* as an Anti-solar. Current Research in Pharmaceutical Sciences, 2017; 07(03):87-90.
13. More B, Sakharwade S, Tembhurne S, Sakarkar D. evaluation of sunscreen activity of cream containing leaves extract of butamonasperma for topical application. IJRCS. 2013; 3(1):1-6.
14. Panthari P, Kharkwal H. formulation and *in vitro* evaluation of sun protection factor of myricanagi ethyl acetate extract sunscreen cream. IJAPR. 2013; 4(10):2401-2406.
15. Samir M, Amin EI, Maher A, Ailio M, Saad A. antimicrobial and antioxidant activities of *Psidium guajava* leaves growing in Egypt. Scholers res lib. 2016; 8(12):27-33.
16. Shelar PA, Ms. Gharge VG. The Pharmacognostical, Phytochemical and Antimicrobial Studies of Leaves Extracts of Urena Lobata Linn, Current Research in Pharmaceutical Sciences. 2017; 07(02):40-49.