



ISSN (E): 2277-7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.23  
TPI 2023; 12(2): 2315-2318  
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[www.thepharmajournal.com](http://www.thepharmajournal.com)

Received: 25-12-2022

Accepted: 28-01-2023

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## To Compare lotion prepared by mixed and simplex variety of standard *Allium cepa* and *Allium sativa* mother tincture at definite drug and vehicle ratio along with UV- visible spectrophotometer and FTIR

**Zinal Rana, Dr. Monimala Pramanick, Dr. Suraj Singh Bhadoria, Dr. Mayank Roy, Dr. Partha Sarathi Mandal, Dr. GS Chakraborty, Dr. Poorav Desai and Tejas Kumar Bhatt**

#### Abstract

**Background:** Through this research work prepared formulation of Lotion by Standard *Allium cepa* and *Allium sativa* mother tincture in a definite drug and vehicle ratio with quality control by UV- visible spectrophotometer and FTIR

**Methodology:** Formulation prepared with Standard *Allium cepa*- Q and Standard *Allium sativa*- Q along with distilled water, which categorized into three different groups; such as; Standard group, Main sample group and Control group. These samples was analyzed under UV- Visible spectrophotometer and FTIR.

**Results:** after analysis done by UV- Visible spectrophotometer the absorbance value of *Allium cepa* lotion is 0.477 at 360 nm, absorbance value of *Allium sativa* lotion is 0.999 at 276 nm, Mixed variety of *Allium cepa* and *allium sativa* lotion is 0.990 at 279 nm, Standard *Allium cepa* Q is 0.974 at 419 nm and Standard *Allium sativa* Q is 0.964 at 379 nm. Whereas in FTIR the maximum transmission of *Allium cepa* lotion at 3342.71  $\text{cm}^{-1}$ , *Allium sativa* lotion is at 536.35  $\text{cm}^{-1}$ , Mixed variety of *Allium cepa* and *Allium sativa* lotion is at 3326.78  $\text{cm}^{-1}$ , Standard *Allium cepa*- Q is at 3365.20  $\text{cm}^{-1}$  and Standard *Allium sativa* Q is at 1044.51  $\text{cm}^{-1}$ .

**Keywords:** Lotion, *Allium cepa* Q, *Allium sativa* Q, UV, FTIR

#### Introduction

Creams and moisturizers require a complicated exhibit of rheological and warm testing to characterize them and control the quality for the end client fulfillment. When applied to the skin of the human body, they need to spread effectively on the skin without feeling oily or tacky. To be effective, they ought to leave a slim and uniform coating of the key fixings, which can enter rapidly into the skin. During the rack stockpiling in the retail locations, the elements of the items should not separate or get comfortable the compartment; generally the item would feel uneven or grainy when applied to the skin. When the product is poured or pressed from the bundling compartment, it ought not to be excessively hard or excessively runny (like water). The item must be formed spot on to meet the shopper fulfillment Since 1960's rheological estimations has been turning out to be progressively essential to be capable to portray the "consistency" of semisolid gels, balms and creams, ("purported complex or on the other hand underlying liquids"), in a significant design [1-5]. Rheological estimations are currently required in different drug and beauty care products industries [6], including yet not restricted to the (a) quality control; (b) capacity solidness under different climate and transportation conditions; (c) correlation with tactile appraisal and purchaser assessment; (d) impacts of plan on consistency; (e) forecast of stream conduct under manufacturing or creation climate conditions (e.g., siphoning, blending, processing and bundling).

#### *Allium cepa*

Onion (*Allium cepa* L.) has been esteemed as a food and a therapeutic plant since antiquated times. It is generally developed, second just to tomato, and is a vegetable bulb crop known to most societies and consumed around the world (FAO, 2012). It is a brief span green harvest (Brewster, 1990) developed at low scopes. It is normally known as "Sovereign of the kitchen," because of its exceptionally esteemed flavor, smell, and interesting taste, and the restorative

properties of its flavor compounds (Selvaraj, 1976; Griffiths *et al.*, 2002). Onion is utilized over time, for instance in curries, in the type of flavors, in servings of mixed greens, as a sauce, or cooked with different vegetables, for example, bubbled or heated. It is additionally utilized in various types of handled food, for example pickles, powder, glue, and drops, and it is known for its restorative qualities.

### **Allium sativa**

Garlic, *Allium sativum* L. is an individual from the Alliaceae family, has been generally perceived as a significant flavor and a famous solution for different sicknesses and physiological issues. The name garlic might have begun from the Celtic word 'all' importance sharp. Developed basically all through the world, garlic shows up to have begun in focal Asia and afterward spread to China, the Close to East, and the Mediterranean locale prior to moving west to Focal and Southern Europe, Northern Africa (Egypt) and Mexico (1). Garlic has been utilized for thousands of years for therapeutic purposes. Sanskrit records show its therapeutic use around a long time back, and it has been utilized for somewhere around 3,000 years in Chinese medication. The Egyptians, Babylonians, Greeks, and Romans involved garlic for recuperating purposes. In 1858, Pasteur noticed garlic's antibacterial movement, and it was utilized as a germ-free to forestall gangrene during The Second Great War and The Second Great War. Garlic's current head therapeutic purposes are to forestall and treat cardiovascular infection by bringing down circulatory strain and cholesterol, as an antimicrobial, and as a preventive specialist for disease. The dynamic constituents are a few complex sulfur containing intensifies that are quickly consumed, changed and processed. Pooled information from various randomized preliminaries propose that garlic brings down all out cholesterol fixations by around 10% and well adjusts HDL/LDL proportions. Randomized preliminaries moreover support garlic's viability as a gentle antihypertensive, which brings down circulatory strain by 5-7%. Garlic likewise represses platelet collection and improves fibrinolytic action, lessening clumps on harmed endothelium. *In vitro* information propose antibacterial impacts, yet these poor person been assessed in controlled preliminaries in people (2)

Through this research work formulating the simplex and mixed variety of *Allium cepa* and *Allium sativa* mother tincture in lotion.

## **Materials & Methodology**

### **Type of study**

Analytical study

### **Duration of Study**

1 week

### **Site of study**

CR4D Department

### **Tool**

UV- Visible spectrophotometer, FTIR (Fourier transform Infrared Spectroscopy)

**Medicinal product:** *Allium cepa* Q, *Allium sativa* Q

**Vehicle:** Distilled water

**Equipments:** Beaker, Glass rod, conical flask, hard glass bottles

## **Preparation**

Through this formulation was prepared by Standard *Allium cepa*- Q and *Allium sativa*- Q in drug and vehicle ratio with simplex and complex variety. The samples was divided into three main groups such as Standard group, Main sample group and Control group. While passing into UV- Visible spectrophotometer 3-4 ml of sample from each group under UV- Chamber to determine absorbance value. On other hand analysis of each sample were done by FTIR (Fourier transform Infrared spectroscopy).

### **Standard group**

*Allium cepa*- Q

*Allium sativa*- Q

### **Main sample Group**

*Allium cepa* lotion

*Allium sativa* lotion

*Allium cepa* + *Allium sativa* lotion

### **Control: Lotion**

## **Measurements**

### **A. Preparation of *Allium cepa* Lotion**

*Allium cepa*- Q 2 ml

Distilled water- 18 ml

### **B. Preparation of *Allium sativa* lotion**

*Allium sativum*- Q 2 ml

Distilled water- 18 ml

### **C. Preparation of Mixed variety of *Allium cepa* and *Allium sativa* Lotion**

Allium cepa- Q 1 ml

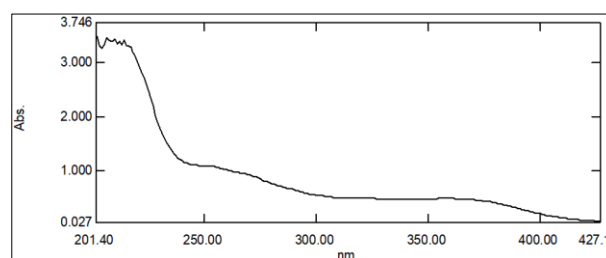
Allium sativa- Q 1ml

Distilled water- 18 ml

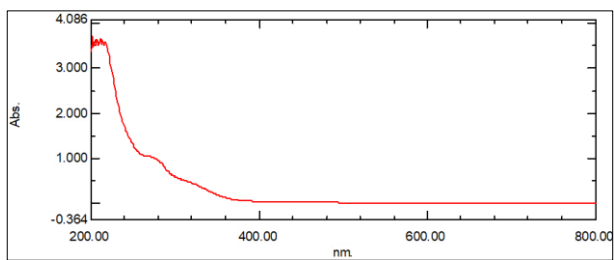
## **Observation & Results**

After analysis done by UV- Visible spectrophotometer the absorbance value of *Allium cepa* lotion is 0.477 at 360 nm, absorbance value of *Allium sativa* lotion is 0.999 at 276 nm, Mixed variety of *Allium cepa* and *allium sativa* lotion is 0.990 at 279 nm, Standard *Allium cepa* Q is 0.974 at 419 nm and Standard *Allium sativa* Q is 0.964 at 379 nm. Whereas in FTIR the maximum transmission of *Allium cepa* lotion at  $3342.71\text{ cm}^{-1}$ , *Allium sativa* is at  $536.35\text{ cm}^{-1}$ , Mixed variety of *Allium cepa* and *Allium sativa* lotion is at  $3326.78\text{ cm}^{-1}$ , Standard *Allium cepa*- Q is at  $3365.20\text{ cm}^{-1}$  and Standard *Allium sativa* Q is at  $1044.51\text{ cm}^{-1}$ .

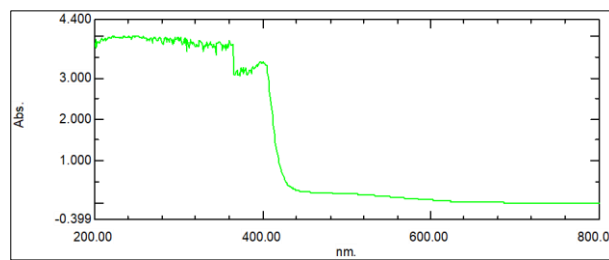
## **UV- Visible spectrophotometer**



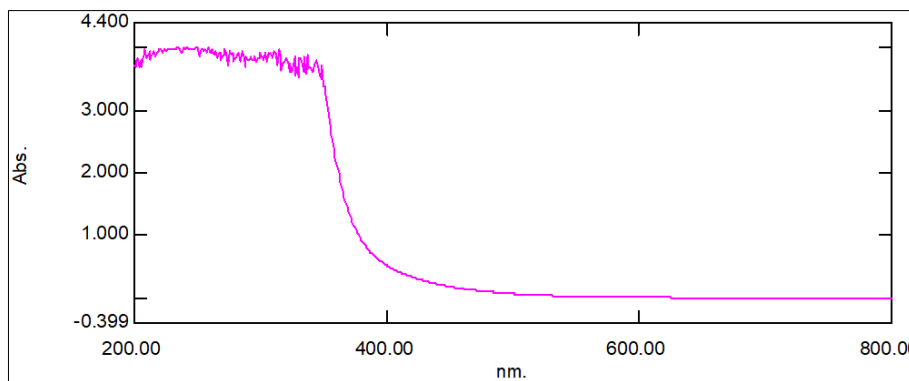
**Fig 1:** Absorbance value of *Allium cepa* lotion



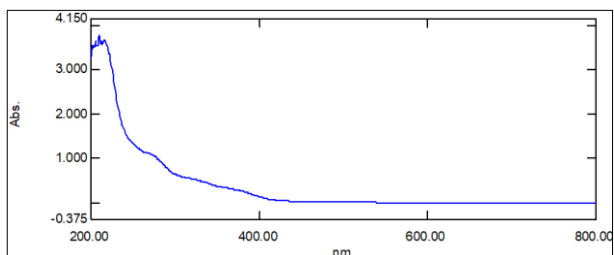
**Fig 2:** Absorbance value of *Allium sativa* lotion



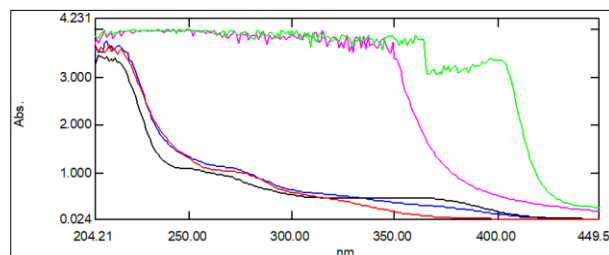
**Fig 3:** Absorbance value of *Allium cepa* Q



**Fig 4:** Absorbance value of *Allium sativa* Q

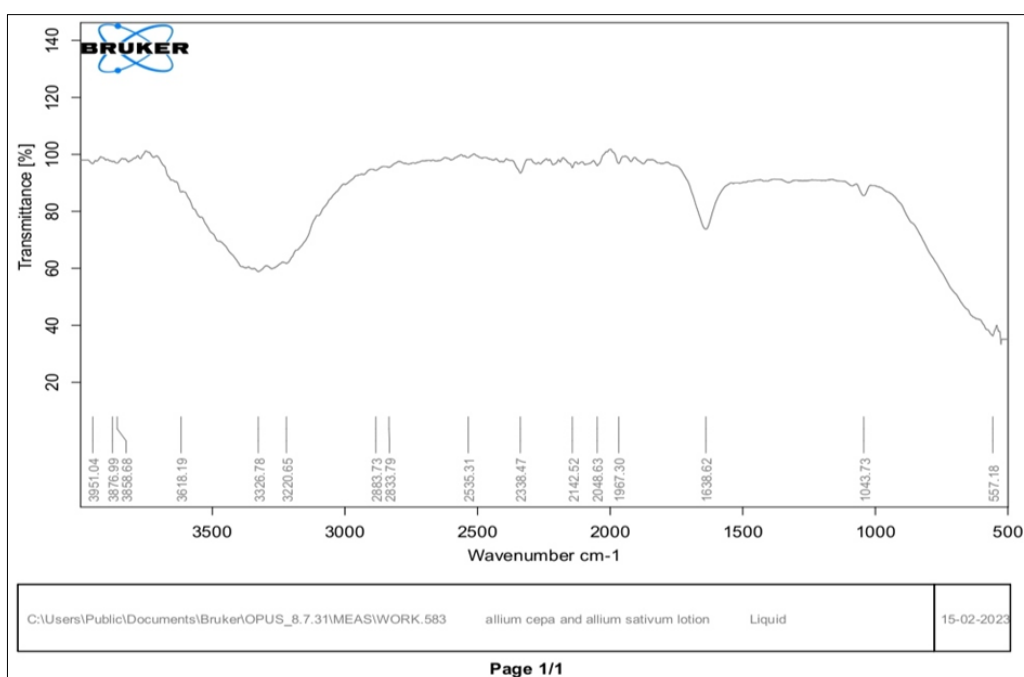


**Fig 5:** Absorbance value of *Allium sativa* lotion + *Allium cepa* lotion

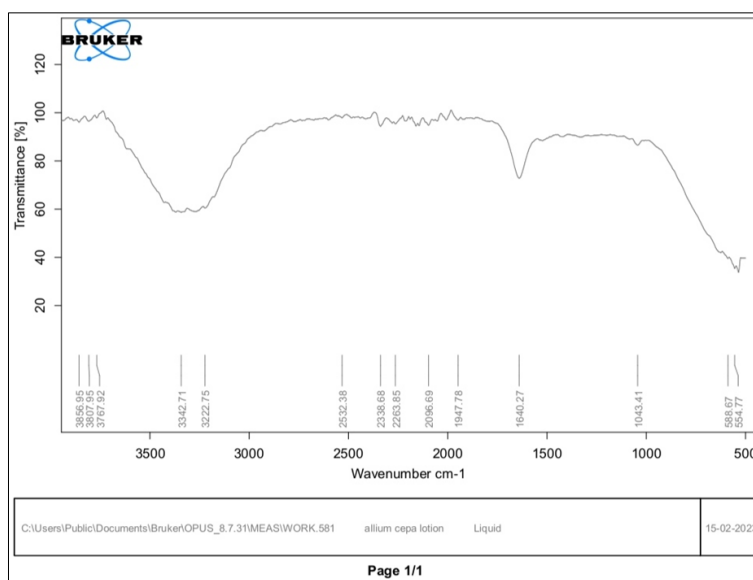


**Fig 6:** Compare absorbance of *Allium cepa*- Q, *Allium sativa*- Q, *Allium cepa* lotion, *Allium sativa* lotion, mixed variety of *Allium cepa* and *Allium sativa* lotion

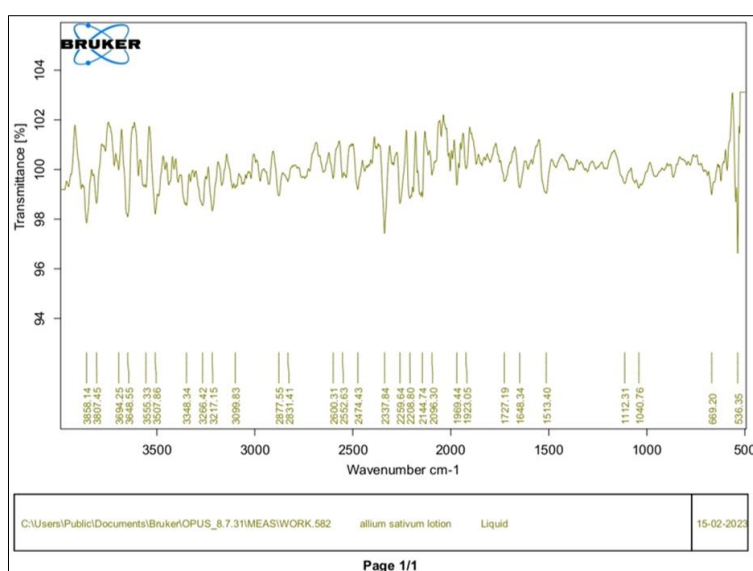
**FTIR (Fourier Transform Infrared spectroscopy)**



**Fig 7:** Maximum Transmission of Mixed Variety of *Allium cepa* and *Allium sativum* lotion



**Fig 8:** Maximum Transmission of *Allium cepa* lotion



**Fig 9:** Maximum Transmission of *Allium sativum* lotion

## Conclusion

Through this research, work it was concluded that Formulation prepared by Standard *Allium cepa* and *Allium sativa* mother tincture in distilled water separately gives better result as mixed variety of formulation prepared by Standard *Allium cepa* and *Allium sativa* mother tincture in definite drug and vehicle ratio.

## Acknowledgement

Authors would like to thanks Dr. Poorav Desai Dean & Principal of Jawaharlal Nehru Homoeopathic Medical College and Faculty of CR4D Department to support this research work.

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