



TO COMPARE ABSORBANCE CAPACITY OF CALENDULA LOTION UNDER UV-VISIBLE SPECTROPHOTOMETER

Homeopathic

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ABSTRACT

In this experimentation we are going to prepare the external application as a calendula lotion sample in the proportionate ration of (1:9) where 1 part is taken as medicine and remaining 9 parts is taken as a vehicle aqueous base and prepared under the UV-visible spectrophotometer to measure their absorbance capacity. This spectrophotometer plays an important role in measurement of quantitative assay in any sample medium. Here we are analysing the absorbance of calendula officinalis mother tincture in mixing with the distilled water in during preparation of external application of aqueous base lotion.

KEYWORDS

Uv- Visible, Absorbance, Quantitative Analysis.

INTRODUCTION

UV-visible spectrophotometer is a device which is used for the quantitative analysis of the medicine on the basis of absorbance value of sampling medium. There is use of Ultraviolet light to detect the aromatic compounds and some impurities present in the sampling medium which are depending upon the concentration of medium and path length.

This device work under the principle of Beer –Lambert law under which the concentration of medium is directly proportional to the absorbance value and path length of medium is directly proportional to the absorbance value.

Absorbance is a measure of the quantity of light absorbed by a sample. It is also known as optical density, extinction, or decadic absorbance. ...

If all light passes through a sample, none was absorbed, so the absorbance would be zero and the transmission would be 100%.

As per endothermic reaction electrons absorbed energy from heat and transfer from lower molecular orbit to the higher molecular orbit, transfer in between two respective molecular structure in sample medium to make a bond and formed a new compound.

1. Endothermic reaction - It is said to be positive reaction where energy is getting absorbed in the given solution .it make a bond between the two respective molecules.
2. Exothermic reaction- It is said to be negative energy where amount of energy is getting released from the given solution. It breaks the bond in between the two respective molecules

Electrons are generally accelerated by the photons, which are generally carrier of the light energy. Electrons are generally considered as those charged particles which get travel in their circular orbit, shell and carry the heat energy.

There are generally three categories of the electrons;

1. Sigma- These are the electrons which required the large amount of energy, light intensity to transfer from the lower molecular orbit to the higher molecular orbit.
2. Pia electrons- These are the electrons which easily gets excited from the amount of light energy and transfer from the lower molecular orbit to the higher molecular orbit.
3. Non- bonding electrons- These are the electrons which are not transfer from lower molecular orbit to the higher molecular, these are not involving in a bond formation between the two respective molecules.

There are mainly two states of electrons. Such as;

1. Ground States.
2. Exciting States

In ground state electrons are present on the lower molecular orbit, shell without any heat, energy absorption. In this section we will discuss the energy level of the electron of a hydrogen atom, and how it changes as the electron undergoes transition. According to Bohr's theory, electrons of an atom revolve around the nucleus on certain orbits, or electron shells. Each orbit has its specific energy level, which is expressed as a negative value. This is because the electrons on the orbit are "captured" by the nucleus via electrostatic forces, and impedes the freedom of the electron.

METHODOLOGY

In this step first we are going to prepare an external application calendula lotion. For the preparation of lotion we followed up HPI guidelines according to which, we taken up a proportionate ratio of (1:9) where 1 ml (V/V) of the calendula mother tincture which is procure from the GMP approved pharmaceutical, and 9 ml of distilled water (V/V) as a vehicle base to prepare our calendula lotion

MAIN SAMPLE GRAPH.

In this step we pass the Prepared part of calendula lotion is passing under the UV- visible spectrophotometer in compare with the baseline sample of (1:10) proportion of ethanol in distilled water.

BRIEF OF PROCEDURE –

In measurement we are preparing our calendula lotion sampling according to (HPI) in (1:9) proportion ratio of mother tincture and distilled water. (1 mg of calendula officinalis Q : 9 ml distilled water). Now we taken a 3- 4ml sampling at certain temperature and collected in a quartz or glass tube and passes with UV- light in spectrophotometer. So, there is graphical presentation in detector where concentration is taken on X-axis and absorbance value is taken on Y-axis and calculated their absorbance value. On other hand we also prepared an baseline sample with ethyl alcohol mixing in a distilled water in (1:10) in corresponding to the main sample prepared

SAMPLES PREPARED-

1. *Calendula officinalis* lotion.
2. Ethyl alcohol mixed with distilled water.

SITE OF STUDY-

IRSHA (Interactive research school for health affairs)

TYPES OF GRAPH TAKEN-

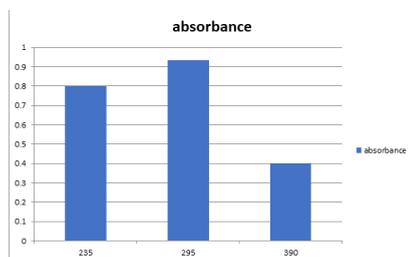
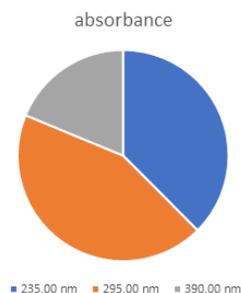
1. Main sample graph.

RESULT

After passing Calendula lotion under the application of UV-visible spectrophotometer the absorbance capacity is measured as given under Table. No.1.

Table. no.1. absorbance value of calendula lotion

S.NO.	sample	Wavelength	Absorbance	Graph
1.	Calendula lotion	235.00 nm	0.800	Peak
295.00 nm		0.932	Peak	
390.00 nm		0.400	Peak	

Figure. no. 1. Absorbance value of calendula lotion at various wave lengths;**Figure2; Absorbance value of calendula lotion at various wave lengths;****DISCUSSION**

UV- visible spectrophotometer is one of the best applications to measure the absorbance capacity of our medicine in a baseline sample after preparation at certain wavelength. So, it used as a standardization of our medicine in any application. We are preparing an external application under the guidelines of HPI calendula lotion in which 1 part is medicine and remaining 9 part is taken as vehicle, which is a base of our external application, for any preparation the absorbance capacity of mixing medicine in a base sample plays an important role either it molecules of medicine is completely mixing in a base sample or partially mixing. Therefore, the effectiveness of that particular prepared external application depends upon absorbance of medicinal part in base sample. So, we use UV- visible spectrophotometer as a standardization of prepared part of calendula lotion

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