

Aloe vera extract as a burn treater

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ABSTRACT

The aloe vera plant belongs to the Liliaceae family, has considerable potential as a raw material for natural medicine. Aloe vera contains various active substances that can cure various diseases, one of which is for healing burns. This study aims to determine the stability of aloe vera extract cream (Aloe vera) and find out the effect of the fastest healing of burns on infunded mice is extraction by boiling, at a temperature of 45-70°C for 10 minutes which is used to extract active substances that dissolve in water. from vegetable ingredients, by blending aloe vera meat and heating it. Then make several variations for making cream with variations of 10%, 15% with and without Virgin Coconut Oil (VCO). Based on the results of the research test, the results of the examination of the phytochemical identification of aloe vera extract positively contained tannins, phenols and saponins. At the pH of the aloe vera extract cream, the results of examining the pH of the cream obtained a pH ranging from 5-6, so it is safe to use on human skin because the skin's pH ranges from 4.2-6.5. Aloe vera extract and VCO which are formulated in the form of a stable cream within 8 weeks of storage. The results of the burn test from aloe vera extract showed an effect as a medicine for burns where a healing process was seen which was marked by a faster reduction of wounds in mice wounds with a diameter of +1 cm. In this study the FIB formula healed wounds faster at 8 days than the FOB formula within 9 days, the F1A formula took 12 days and the FOA healed on day 14. The FIB formula indicates the fastest time in healing burns with a time of 8 days.

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INTRODUCTION

The progress of modern science, which is increasingly rapid and sophisticated today, cannot rule out natural medicine. This is evident from the many enthusiasts of natural medicine. In addition, there is still a lack of validation and information regarding various types of plants used as natural medicines for certain treatments (Dalimartha, 2000).

The aloe vera plant belongs to the Liliaceae family, has considerable potential as a raw material for natural medicine. Opportunities for medicinal plants are currently getting bigger, so

that people tend to switch to natural ingredients. Natural materials have the opportunity to become a major trading commodity. The aloe vera plant originating from Africa has more than 300 species. Commercial species of the genus Aloe include Aloe barbadensis, Aloe perryi and Aloe ferox. The species Aloe barbadensis or often called Aloe vera has the highest potential as a pharmaceutical raw material (Suryowidodo, 1988).

Virgin coconut oil (VCO) is oil derived from fresh old coconut (*Cocos nucifera*) which is obtained at low temperatures (<60°C) which is formed after coconut milk is left for several days to produce pure oil. VCO has a series of benefits and efficacy for both medical and cosmetic. One of the contents of VCO is unsaturated chain fatty acids which can block free radicals and maintain the immune system. This makes VCO useful for preventing and treating various health problems. VCO also has a natural oil texture, free from pesticides and other contaminants, its composition makes it easier for absorption and gives a soft and smooth texture to the skin (Setiaji, 2005).

Based on the explanation above, we want to examine the formula for making aloe vera extract cream with Virgin Coconut Oil (VCO) for healing burns. The cream was chosen because this preparation has the advantages of being easily applied to the skin, easily washed off after being applied, the cream can be used on skin with wet wounds, and evenly distributed.

RESEARCH METHOD

Location and Time of Research

This research was conducted at the Laboratory of Physical Chemistry, Department of Chemistry, Semarang State University for the manufacture of aloe vera extract. The research was conducted from January to February 2013.

Population And Sample

The population in this study is aloe vera. The sample is partly taken from the population, so the sample in this study is aloe vera obtained from Purwosari Village, Kota District, Kudus Regency.

Testing the Effects of Aloe Vera Cream Extract

Testing the effect of the cream was tested on 4 mice. In this study, mice were burned by attaching a solder with a length of +1 cm. The burnt skin was applied to the cream formula 3 times a day for each formula, then observations were made every day to see the effects that occurred. The parameter observed was the loss of wound.

RESULTS AND DISCUSSIONS

Extraction Results From Aloe Vera With Infundation Method

In this study the aloe vera sample used was the *Aloe barbadensis* type which is the best type of aloe vera used for treatment because it contains more active compounds such as tannins, saponins, phenols, etc. This aloe vera plant comes from Purwosari Village, Kota District, Kudus Regency. Aloe vera samples were obtained by cutting the base 5cm and then cutting it into small pieces and peeling the skin. The sample was then washed with running water until the sap disappeared, then weighed as much as 500 g after that the sample was in a blender.

The aloe vera that has been blended is then filtered and heated at 70°C for 10 minutes. Then obtained the extract as much as 200 ml.

Phytochemical Identification Test Results

Results of the phytochemical identification test of aloe vera extraction using the infundation method to qualitatively determine the content of certain active compounds such as phenols, tannins, saponins, and sterols. The results of the phytochemical identification test showed that the extract using the infundation method contained three active compounds, namely phenol, tannins, and saponins.

Result of Making Burn Cream

The result of making burn cream is obtained aloe vera extract cream using the infundation method, where this cream uses a vanishing cream base, containing 10% and 15% aloe vera extract in 100 g of cream. Based on visual observation the cream is white.

Examination of the leaching power of the cream on FOA and FIA 1 gram can be washed well with 14 ml of distilled water while on the formula FOB and FIB 1 g can be washed with 17 ml of distilled water. This washability is related to the type of m/a cream which will be washed off more easily than the a/m type.

Results of Testing the Effects of Burn Cream on Mice

The results of testing the effect of second degree burn cream on mice were characterized by skin damage in the epidermis. Changes in the average diameter of burns were measured until the wound was declared healed for each treatment

The results showed that among the four aloe vera extract creams, the FIB and FOB extract creams which contained VCO in the cream were the best for burns. FIB cream changed the diameter of the burn to 0 on day 8, while FOB extract cream healed burns on day 9, FIA extract cream healed on day 12 and FOA extract cream healed on day 14. Theoretically, these results prove that the four extract creams accelerate the healing of second degree burns within 10-14 days.

To see which treatment groups had the same or different effects and the smallest effect to the largest effect between one another, Duncan's test was carried out. In this Duncan test, for all treatments from the first day to the 14th day. The Duncan test on the second day showed no difference. Namely, there is no significant difference between FIB cream and FOB, FIA and FOA cream. This means that each cream has not shown a real effect on healing burns. The Duncan test on the third and fourth days showed a change in FIB and FOB creams, whereas the FIA and FOA creams did not show any different effects.

CONCLUSION

In the study, several conclusions were obtained, including: The formula used for making cream is stearic acid, trictanolamine, adeps lanae, liquid paraffin, VCO, nipagin, nipasol, and distilled water. Aloe vera extract cream which is formulated in the form of a stable cream within eight weeks of storage. The results of the burn test from aloe vera extract showed that the FIB formula with VCO could heal faster, namely 8 days, the FOB formula with VCO could heal wounds in nine days, while the FIA formula without VCO could heal wounds in 12 days and the FOA formula without VCO wound healing occurs within 14 days. The results of the phytochemical identification examination of aloe vera extract were positive for tannins, phenols and saponins. At the pH of the aloe vera extract cream, the results of examining the pH of the cream obtained a pH ranging from 5-

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