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DEVELOPMENT OF THE COMPOSITION AND TECHNOLOGY OF A NEW LUBRICATION MEDICINE USED IN THE TREATMENT OF VITILIGO

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ANNOTATION

Vitiligo is one of the current topics in medicine today. The origin of this disease and the lack of a clear treatment method cause many problems in the treatment process. Not all medications used to treat this disease work well. Our main goal is to create an effective drug from the extract of medicinal plant products used in the treatment of vitiligo. We hope that the drug prepared from the extract and excipients obtained will definitely give the results we expected.

Keywords: Psoralea, extraction, lanolin, ultraviolet light, viscosity, pharmaceutical psoralen, vitamins, trace elements.

RELEVANCE OF THE TOPIC

Vitiligo (Latin vitiligo - a disease of the skin) - the loss of normal pigment in some parts of the skin. The causes of vitiligo, popularly known as leprosy, are not yet fully understood in advanced medicine. That is why it is difficult to treat. This disease does not choose age, sex or race. 1-4% of the world's population suffers from vitiligo. However, there has been a recent increase in the number of cases among young people. Many of the medications developed to date cause skin allergies, and the effectiveness of oral medications may be lower than that of ointments. The development of drugs with low side effects and high efficacy is one of the most important and urgent issues facing modern pharmaceuticals.

Purpose of the Topic: The main purpose of our topic is to isolate the active substance from plant products, which is effective in vitiligo, by analyzing it, adding vitamins, trace elements and excipients to it and preparing a type of ointment from it.

Experimental Part: Psoralen production technology: The raw material for the production of psoralen was Psoralcadrupacea Bge, a fruit of the Fabaceae family.

Extraction of Coumarins from Raw Materials: The crushed white fruits were placed in a stainless steel mixing extractor with a rotation speed of 60 rpm and a certain amount was extracted using 40% ethyl alcohol. Extraction was performed at room temperature. In time, the alcohol extract was filtered through an inert gas in a druk filter and dropped into a collector. The water-alcohol extract went to the next stage. The shrot was washed with water and the water-alcohol mixture was regenerated.

Technical Psoralen Extraction: A set of alcoholic extracts was evaporated using hot steam in a vacuum evaporator at a pressure of 100-150 mm Hg. The residual cube was placed in a glass reaction boiler and left at room temperature for 1 day. The psoralen fell to the bottom of the pot. The liquid was decontaminated and the sediment was removed. Some of the sediment was washed with water, compacted, and air-dried.

Obtaining Pharmaceutical Psoralen: The dried technical furocoumarins were poured into a mortar and then thoroughly mixed with Al2O3 in 2 parts. The index was eluated using benzene. The benzene eluate was filtered using a Büchner funnel with a paper filter and evaporated at 50–600 C in a rotary apparatus at a column pressure of 50–100 mm Hg. The remaining cube was placed in a wide-necked NSH-45 flask and left at room temperature for 1 day. The psoralen precipitated. The sediment was filtered off. In the first stage, a qualitative analysis of the substances contained in it was carried out by taking a part of the extract obtained. The following qualitative reactions were performed to determine the presence of coumarins.

1. Lactone reaction. Two test tubes were taken and 2 ml of alcohol extract was added to them, 0.5 ml of 10% sodium hydroxide solution was added to one of the test tubes, and both test tubes were heated to boiling in a water bath and then cooled. Both tubes were filled with 4 ml of distilled water. The solution in a solution of alkali and water formed a clear yellow color. Hence, this reaction confirms that it contains a lactone group. A few drops of a dilute solution of hydrochloric acid were added to this solution. The clear yellow solution lost its color and formed a precipitate or turbidity. The amount of coumarins in the extract was determined by spectrophotometric and photocolorimetric methods.

Determination of Coumarins in the Product: The amount of coumarins in the product was determined by various methods (weight, photocolorimetric, spectrophotometry, etc.) The amount of coumarins in pure form was weighed on an analytical balance and the percentage of coumarins in the extract was calculated. Its percentage is given in the table below.

Table-1

Number of experiments performed	1	2	3	4	5	6	7	8	9	10
% Content of furocoumarins	0.15	0.65	0.25	0.9	0.88	0.76	1.0	0.98	0.95	0.87

The extractives in the dry extract were identified and placed in the table below.

Table-2

Number of experiments performed	1	2	3	4	5
% Of extractive modes	1.3	1.6	1.2	1.4	1.9

Moisture Detection. Moisture in the raw material was determined based on the requirement of XI DF. To determine the moisture content, 5.0 g (to the nearest 0.01 g) was placed in a dry, weighed box and dried at 100–105 ° C. The box was then quickly placed in a desiccator, the lid closed, and allowed to cool for 30 minutes.

Table-3

Number of experiments performed	1	2	3	4	5
% Content of moisture in the extract	1.8	1.6	1.95	0.98	0.99

The alcohol content of the extract was measured using a pycnometer. The results are shown in Table 3.

Table - 4

Number of experiments performed	1	2	3	4	5	6	7	8	9	10
Alcohol strength%	38.9	38.5	39	39.6	35.5	35.9	36.8	40	39.8	39.5

Grease preparation technology: The basis for the composition and technology of grease depends on the effectiveness, safety, compatibility with the drug, the biological effectiveness of drugs and excipients, rheological, physicochemical properties, microbiological stability and shelf life of greases. selected.

We have chosen Vaseline and lanolin excipients as the basis for the preparation of the new compound grease. Vaseline oil or liquid paraffin (Oleum Vaselinum). The fraction that remains after the extraction of kerosene during oil refining. It is a oily, colorless liquid, odorless and tasteless, insoluble in water. Used in the suspension of insoluble drugs in the preparation of ointments. Lanolin is widely used in local pharmaceuticals and cosmetics.

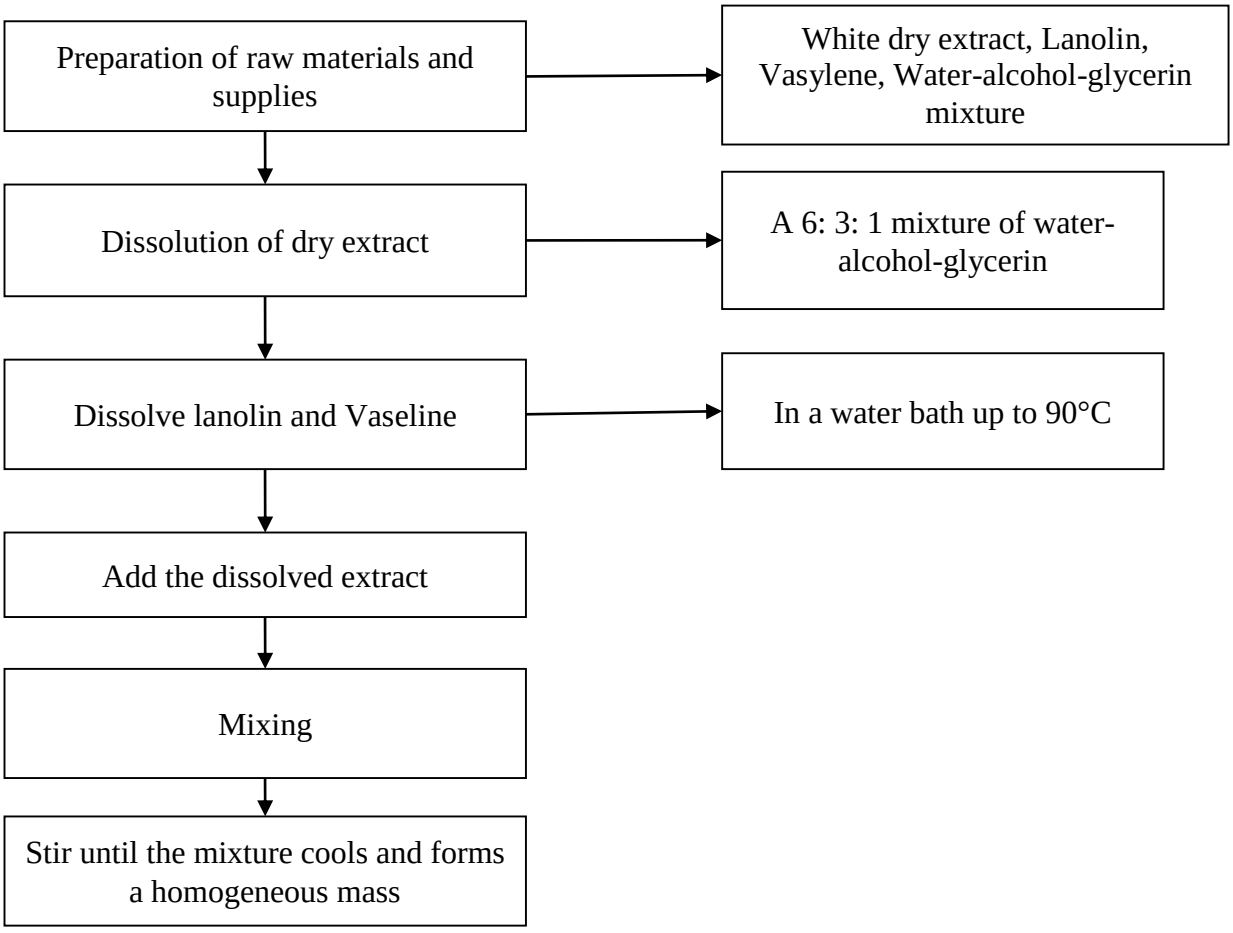
Lanolin can be used as a hydrophobic agent and in the preparation of creams and ointments. When mixed with appropriate vegetable oils or mild paraffin, it produces emollient creams that penetrate the skin and therefore facilitate the absorption of the drug. Selection of ingredients for a new ointment: The main active ingredient in the extract extracted from the apricot plant, coumarins, is insoluble in water and bases. For this reason, it is advisable to dissolve this dry extract in a 6: 3: 1 mixture of water-alcohol-glycerin and then add it to the base.

Selected content:

White dry extract -	1 g
Lanolin -	3 g
Vaseline -	6 g
Water: alcohol: glycerin mixture -	2 ml
Total mass -	10 g

Preparation: Take 1 g of dry extract of eggplant, add 2 ml of the prepared mixture, mixed with alcohol, water, glycerin in a ratio of 3: 6: 1. The extract was dissolved. Place the mortar in a water bath, first add 3 g of lanolin, then add 6 g of vaseline and dissolve at 60-70 ° C, stirring well. The melted extract was poured over it and mixed. Stirring was continued until the mixture cooled to form a uniform colored mass.

Scheme of technological processes for the preparation of ointments from the dry extract of the white plant



The following quality parameters of the newly obtained grease were studied

APPEARANCE

White grease with a specific odor, uniform consistency. Foreign additions. Foreign impurities in the grease were detected chromatographically. The sum of the additions was found to be 9%.

RESULTS OBTAINED

In determining the authenticity, the isolated substance gave a microsublimation reaction.The new ointment is white in color, has a distinctive odor, and when its quality was studied, it was determined that it actually contains coumarin by specific reactions. It was found to contain 8.2% of foreign impurities, a particle size of 65 µm, a pH of 7.5, and a heavy metal content of 0.0018%. These results were assessed as satisfactory.

METHODS AND TECHNIQUES USED

Extraction methods were used to extract biologically active substances from raw materials. Photocalorometric, spectrophotometric methods were used to determine the amount of furocoumarins. Chromatography, diasoreaction, lactone reaction, microsublimation were used to determine the authenticity. A viscometric method was used to determine the viscosity. The appearance and odor of the ointment were studied organoleptically. Experimental and comparative methods were widely used in the experiment.

CONCLUSION

In our research on the development of a new form of ointment used in the treatment of vitiligo, we have sufficiently read the causes of the disease and its treatment, the literature on the drugs used, and identified the main active ingredient in selected plant products. we checked its content using special methods. The quality of the new ointment prepared by adding excipients to the main active biologically active substance and enriching it with vitamins and trace elements showed satisfactory results in the study of quality indicators.

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