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3,733,402

AMNIOTIC LIQUID FOR CONDITIONING THE HAIR

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2 Claims 10

ABSTRACT OF THE DISCLOSURE

A hair conditioning composition comprising a lyophilized sterile amniotic liquid free of natural amniotic solids that has been taken from bovines that have been pregnant for more than 60 days and less than 90 days.

This application is a continuation-in-part of U.S. application Ser. No. 475,876, filed July 29, 1965, now abandoned.

SUMMARY OF THE INVENTION

Premature falling hair is known to be a widespread phenomenon which results from causes which are not yet well understood, but among which heredity is considered to be important.

However, heredity does not appear to be the only factor at work, and it is almost certain that some other factors such as reducing the amount of oil on the scalp may reduce the rate of hair loss, while still other factors have the opposite effect and increase rate of hair loss.

The present invention relates to a product which has a reducing effect on sebaceous secretion.

The object of the present invention is to provide a lyophilized sterile amniotic liquid obtained from amniotic liquid withdrawn from a bovine such as a cow at a stage of gestation less than 90 days and more than 60 days and that has had the natural solids separated from the amniotic liquid. This is the critical gestation period. The preferred age of the amniotic liquid is about 75 days.

If the amniotic liquid is taken after the 90 days upper limit, the lyophilized sterile product will irritate skin and harm the scalp and hair. For example amniotic liquid taken from a cow within 120-150 days after the start of gestation irritates the skin.

If the amniotic liquid is taken before the 60 days lower limit the lyophilized sterile product will have no effect. For example, amniotic liquid taken from a cow within 35-45 days after the start of gestation had no more effect on the hair and scalp than plain water.

In contrast, the use of sterile amniotic liquid within the critical 60-90 days period will not irritate the skin, the scalp or the hair.

To obtain the product according to the invention the following steps must be carried out. First the amniotic liquid is withdrawn from the bovine within the critical period under sterile conditions and then the solid particles in the amniotic liquid are removed by filtration through a cotton cloth or by centrifugation during 15 minutes at a relatively high speed, for example, 10,000 r.p.m. The resulting amniotic liquid is then lyophilized.

In one embodiment of the invention the amniotic liquid free from solid particles is sterilized by filtering it under pressure and then lyophilized.

The lyophilizate obtained in a powder form is then dissolved in sterile water and used at a concentration ranging from 1 to 10% by weight. In the two above mentioned methods a dialysis may be carried out during 1 to 4 hours just before the lyophilization or after the lyophilization

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in this later case by dissolving the lyophilizate in sterile water.

When the dialysis is carried out just after the lyophilization a new lyophilization is needed to obtain the product. It is possible to add to the liquid submitted to the lyophilization a quantity of methionine, e.g., 10 mg. of methionine per cc. of solution.

Optionally the lyophilization step may be carried out on a conventional inactive support, such as glyocoll.

The lyophilizate obtained according to one of the above mentioned methods may be incorporated in a cosmetic composition such as a hydro-alcoholic lotion or cream at a concentration of 1 to 10% by weight of lyophilizate.

Weekly applications of a 15 cc. to 20 cc. to the scalp, or twice a week application during 4 to 8 weeks generally improve the condition of the hair, depending on the individual and the condition of the scalp at the start of the treatment. Fifteen to twenty cc. of a solution of the amniotic liquid at a concentration of 20 mg. of amniotic liquid per cc. is usually required for each application to dampen the entire scalp area. In general the solution is applied to the hair in the same manner as an ordinary hair tonic.

Tests which have been carried out show that the compositions according to the invention have utility in improving the condition of the hair.

Generally, it is preferable to use an amniotic liquid associated with a female foetus. However, when an amniotic liquid associated with a male foetus is used it must be mixed with an amniotic liquid associated with a female foetus in a proportion of less than one volume of amniotic liquid associated with a male foetus for each two volumes of the amniotic liquid associated with a female foetus.

The product according to the invention, when topically applied, is perfectly harmless to the skin, hair and scalp. Moreover, the tests for aggravated and chronic toxicity which have been carried out on laboratory animal (rats, mice and rabbits), have shown no evidence of internal toxicity or local irritation when applied externally.

Specifically, no death occurred after an intra-peritoneal injection of 30 cm.³ per kilogram of the animal's weight, after subcutaneous injection of 30 cm.³ per kilogram, or after ingestion when not recently fed of 50 cm.³ per kilogram of a solution according to the invention comprising 20 mg. of amniotic liquid per cm.³.

Tests have also been carried out to determine whether the product according to the invention has any hormonal effect.

The Astwood test applied to the uterus of a rat which had not attained puberty showed that the product according to the invention had no estrogenic action.

Several illustrative methods of carrying out the invention will now be described.

EXAMPLE 1

Immediately after killing a cow the amniotic liquid accompanying a foetus about 80 days old is withdrawn in a sterile manner. The solid particles are removed by filtration through a cotton cloth.

20 grams of glyocoll are added to each liter of this amniotic liquid and the resulting mixtures lyophilized under conventional conditions designed to avoid contamination (use of ultra-violet rays).

The lyophilizate thus obtained is redissolved in 200 cc. of sterile water. The solution is then dialyzed in water for four to five hours at a temperature of 4° C. A suitable dialyzer comprises cellulosic tubing known as Nojax Visking-Viscora, which has been washed in water three times before use. The dialysis water is changed every

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hour to measure the chloride concentration and after the chlorides are no longer present the dialysis is stopped.

20 grams per liter of glycocoll and 10 grams per liter of methionine are added to the contents of the dialyzer and the mixture is then lyophilized, all of these operations being carried out under sterile conditions.

The lyophilizate thus obtained is dissolved in sterile water to obtain a solution having a concentration of 2%.

A repeated treatment of once a week during 6 weeks produces a distinct improvement of the hair.

EXAMPLE 2

After having withdrawn the amniotic liquid from a cow between the 70th and 90th day of pregnancy, the solid particles are removed by centrifuging at 10,000 r.p.m. To this liquid is added 5 grams per liter of methionine and 10 grams per liter of glycocoll.

The solution thus obtained is then lyophilized in a conventional manner. The lyophilizate in powder form is then dissolved in distilled sterile water to obtain a solution having a concentration of 3% to which perfume may be added.

Twenty cc. of this lotion, applied once a week during 5 weeks to the scalp, substantially improved the qualities of fine, brittle hair.

EXAMPLE 3

The amniotic liquid from a cow 60 to 90 days pregnant is withdrawn in a sterile manner, the solids were removed by filtration and 20 grams of glycocoll per liter is added thereto.

The resulting solution is lyophilized and the lyophilizate distributed into a conventional cosmetic cream at the rate of 4% of lyophilizate by weight.

This cream, when applied once a week to the hair, improves the strength and silkiness of the hair.

EXAMPLE 4

The amniotic liquid withdrawn from a cow about 75 days pregnant is first subjected to filtration to remove the solid particles and then submitted to dialysis in water under the conditions described in Example 1, except that the dialysis is carried out for only three hours.

The solid free liquid thus obtained may be advantageously incorporated in proportions of from 2.5 to 7.5% in lotions.

EXAMPLE 5

After dialysis of the amniotic liquid, as in Example 4, 5 to 10 grams per liter of methionine and 20 grams per liter of glycocoll were added to the amniotic liquid and the mixture was lyophilized.

The lotions obtained after redissolution of the lyophilizate may be effectively used.

EXAMPLE 6

One liter of amniotic liquid of a cow at a stage of gestation between 60 and 90 days is withdrawn under sterile conditions (use of ultra-violet rays).

The amniotic liquid is then filtered through a cloth and then frozen during 4 hours at a temperature of -29°C . After that the frozen amniotic liquid is lyophilized in an apparatus working with a vapour catch at -60°C . under vacuum. After 30 minutes the pressure reaches 5×10^3 mm. of Hg and the temperature is -25°C . Those con-

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ditions are maintained for 8 hours and thereafter the pressure is increased to 4×10^{-1} mm. of Hg and the temperature is brought to 0°C . within 3 to 4 hours.

Then the temperature is raised from 0°C . to $+20^{\circ}\text{C}$. within 4 hours. The total of lyophilization is about 20 hours.

The amount of lyophilizate obtained is about 10 g. (dry powder).

By dissolving one gram in 100 cc. of distilled water a 1% solution is obtained and used once a week during six to seven weeks (15 cc. each time).

This repeated treatment produces a notable improvement in the state of the hair.

It will of course be appreciated that these embodiments of the invention have been given purely by way of example and that they may be modified as to detail without thereby departing from the basic principles thereof. Any method of making the sterile solid free amniotic liquid of this invention can be used and the product will have the same hair conditioning properties.

In particular, the composition according to the invention need not be an aqueous solution, but may take other forms, notably that of a cream, gel, etc.

The lyophilized sterile amniotic liquid in powder form may be stocked in small ampules and mixed with distilled sterile water just before using to obtain a solution having 1 to 10% of lyophilizate by weight.

What is claimed is:—

1. A composition to improve the condition of the hair and scalp comprising in sterile or distilled water from 1 to 10% by weight of lyophilized sterile amniotic liquid; said liquid obtained by withdrawing amniotic liquid from a bovine which has been pregnant for more than 60 days and less than 90 days, removing the solid particles from said withdrawn amniotic liquid by filtration or centrifugation, adding 5 to 10 g. of methionine or 10 to 20 g. of glycocoll or mixtures thereof per liter of amniotic liquid, and then lyophilizing said liquid.

2. A process to improve the condition of and reduce the amount of oil on the hair and scalp which comprises applying thereto about 15 to 20 cc. of a composition comprising sterile or distilled water and lyophilized sterile amniotic liquid; said amniotic liquid obtained by withdrawing amniotic liquid from a bovine which has been pregnant for more than 60 days and less than 90 days, removing the solid particles from said withdrawn amniotic liquid by filtration or centrifugation and then lyophilizing said liquid.

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U.S. Cl. X.R.

424—105, 319

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

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Inventor(s) Gregoire Kalopissis and Georges Manoussos

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In The Heading, please insert --

Claims priority, applications France August 18, 1964, No. 985,458 and June 28, 1965, No. 22,503--

Signed and sealed this 24th day of December 1974.

(SEAL)
Attest:

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