

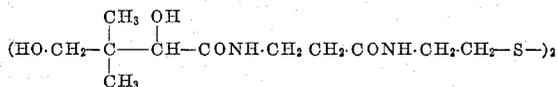
1

3,285,818

**HAIR AND SKIN COMPOSITIONS CONTAINING PANTETHINE**

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 3 Claims. (Cl. 167-87)

This invention relates to novel cosmetic preparations containing pantethine which preparations favorably influence the properties of human skin and hair and furnish the same with what is necessary for the normal metabolism thereof. Pantethine, an effective material in the cosmetic preparations, is represented by the following formula:



Pantethine is non-crystalline, almost colorless and odorless, and stable against light, heat, and moisture and is soluble in water, alcohol, and glycerol. It is also observed that pantethine applied directly to human skin by itself or in a form of a cosmetic is quickly absorbed into the human body. Pantothenic acid is, as is well known, a vitamin useful for human beings and is a component of coenzyme A which plays a part in the metabolism of a living body.

It has been also well known that a lack of pantothenic acid in a human body causes various disturbances, and, moreover, there are many reports describing the effectiveness of pantothenic acid in nourishing and beautifying the skin and hair. Accordingly, it has been widely employed recently as a skin nourishing cream and a hair tonic as well as a medicine. Homologs of pantothenic acid, such as panthenol or its esters or ethers, are used in cosmetics for the same purposes. It has been known that pantethine, an effective component of the cosmetic preparations, is a compound which is more effective than pantothenic acid as a component of coenzyme A, and it can be utilized for a biochemical formation of coenzyme A more quickly than pantothenic acid. Pantethine is utilized in vivo more effectively than panthenol and its derivatives which are utilized after changing to pantothenic acid in vivo.

Furthermore, pantothenic acid is unstable as a free acid, and its calcium salt and sodium salt are so hygroscopic that they gradually lose their activity in a hydrous state, and, particularly on heating, they are considerably decomposed. In contrast, pantethine is stable as an aqueous solution, and slightly decomposed on heating. As described above, pantethine is an excellent material as a component of a cosmetic from the physical, chemical and biochemical viewpoints.

In view of the above described highly desirable characteristics of pantethine as a component of a cosmetic preparation, it is a general object of the present invention to provide various cosmetic preparations containing pantethine as an effective component and simple methods for preparing the same.

It is a specific object to provide a hair tonic, a cold cream, and a vanishing cream each containing pantethine as an effective component.

The foregoing objects have been achieved by the present invention, the specific nature and details of which will be more clearly apparent by reference to the following detailed description concluding with illustrative examples of preparation according to the invention.

In general, the cosmetic preparation according to this invention is prepared by adding pantethine by itself, its

2

aqueous solution, or its solution in an organic solvent such as alcohol or polyhydric alcohol such as glycerol or propylene glycol to the base of the cosmetic preparation, if necessary, further adding thereto an emulsifier, an antioxidant, an antiseptic, and a perfume, and then dissolving, blending, and dispersing the ingredients. Changes such as decomposition are not observed during the above process steps.

As a base, a hydrous alcohol is used for the manufacture of a hair tonic, and an oily or waxy material such as Vaseline, liquid paraffin, vegetable oil, lanolin, or stearyl alcohol is used for the manufacture of a cold cream and a vanishing cream. A base further includes the following emulsifiers.

As an emulsifier, non-ionic surface-active agents of less than HLB 9 or metallic soap are used for the manufacture of a cold cream, and non-ionic surface-active agents of more than HLB 10 or water soluble anionic surface-active agents are used for the manufacture of a vanishing cream.

For the manufacture of a cold cream, the emulsifier is dissolved beforehand in the base, and pantethine by itself or its solution is added thereto and agitated to blend. For the manufacture of a vanishing cream, the emulsifier is dissolved in an aqueous solution of pantethine, and the resulting solution is added to the base and agitated to be blended.

The amount of pantethine contained in the cosmetic preparations according to this invention can be varied in a wide range, but preferably it is between 5-30%.

In order to indicate more fully the nature and details of the invention, the following examples of typical procedure are set forth, it being understood that these examples are presented as illustrative only, and that they are not intended to limit the scope of the invention.

*Example 1*

6 parts of pantethine are dissolved in 30 parts of water, and 0.15 part of salicylic acid, one part of a perfume, and 50 parts of alcohol are added to the resulting solution, whereby a hair tonic is produced.

*Example 2*

5 parts of pantethine are dissolved in 50 parts of water, and 0.2 part of salicylic acid, a small quantity of a perfume, and 50 parts of alcohol are added to the resulting solution, whereby a hair tonic is produced.

*Example 3*

20 parts of Vaseline, 20 parts of liquid paraffin, 10 parts of olive oil, 8 parts of ceresine, 4 parts of dehydrated lanolin and 3 parts of sorbitan monopalmitate are mixed, and to the resulting mixture, a small quantity of an antioxidant and an antiseptic are added and dissolved at 60° C. Then, to the resulting solution, a solution prepared by dissolving 2 parts of pantethine in 20 parts of water and kept at 60° C. is added, and the mixture so produced is mixed, emulsified, and cooled to 50° C. A perfume is added to the resulting emulsion, whereby a cold cream is produced.

*Example 4*

One part of a perfume and a small quantity of an antioxidant are added to 100 parts of olive oil; to the resulting mixture, a solution prepared by dissolving 5 parts of pantethine in 30 parts of glycerol is added; and, to the resulting mixture, 7 parts of glyceryl monostearate are added and mixed, whereby a hair tonic is produced.

*Example 5*

25 parts of stearyl alcohol, and 25 parts of white Vaseline are mixed and dissolved at 75° C. to form a mixture.

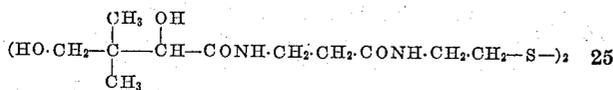
3

Then 5 parts of pantethine, 12 parts of propylene glycol, and 33 parts of distilled water containing an oil-in-water type emulsifier, such as 5 parts of polyoxyethylene-40-monostearate, a small quantity of an antioxidant, and an antiseptic, are heated to 75° C. and added to the above mixture, and the resulting mixture is stirred until it solidifies. When this solidified mixture has been cooled to a temperature lower than 45° C., a perfume is added thereto and blended therewith, whereby a vanishing cream is obtained.

It should be understood, of course, that the foregoing disclosure in part relates to only particular embodiments and related details of the invention and that it is intended to cover all changes and modifications of these examples and details of the invention herein chosen for the purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention as set forth in the appended claims.

What is claimed is:

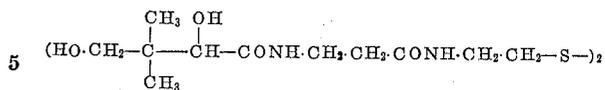
1. A hair tonic comprising an aqueous alcoholic solution of 5 to 30% of pantethine represented by the formula



said solution containing an antiseptic and a perfume as additives.

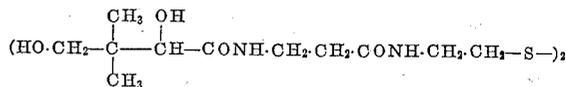
4

2. A cold cream comprising an aqueous emulsion of 5 to 30% of pantethine represented by the formula



in oily or waxy substances and water, said emulsion containing an antioxidant, an antiseptic, and a perfume as additives.

3. A vanishing cream comprising an aqueous emulsion of 5 to 30% of pantethine represented by the formula



in oily or waxy substances and water, said emulsion containing an antioxidant and an antiseptic as additives.

#### References Cited by the Examiner

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