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[Summary]

[Technical Problem]

[0007]

It is an object of the present disclosure to provide a hair treating liquid and a method for hair shaping treatment for suppressing a damage caused by treatment in hair shaping treatment such as hair straightening treatment or permanent waving treatment.

[Solution to Problem]

[0008]

The present disclosure provides a method for hair shaping treatment, including at least the steps of: applying a first agent containing a reducing agent to hair, and leaving the hair for a predetermined period of time; washing off the first agent applied to the hair; applying a second agent containing an oxidizing agent to the hair, and leaving the hair for a predetermined period of time; and washing off the second agent, wherein the hair shaping treatment method further includes the step of: applying a hair treating liquid containing gold nanoparticles to the hair. With such a hair shaping treatment method, it is possible to significantly reduce the frequency of generation of brittle hair or split hair. Furthermore, the hair to which the hair

treating liquid containing gold nanoparticles has been applied exhibits excellent shaping properties and combability.

[0008a]

In one aspect, there is provided a method for hair shaping treatment, comprising at least the steps of:

applying a first agent containing a reducing agent to hair, and leaving the hair for a predetermined period of time;

washing off the first agent applied to the hair;

applying a second agent containing an oxidizing agent to the hair, and leaving the hair for a predetermined period of time; and

washing off the second agent, wherein

the hair shaping treatment method further comprises the step of:

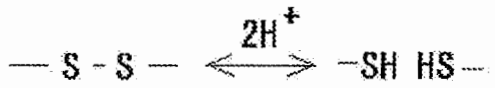
applying a gold nanocolloid liquid containing gold nanoparticles to the hair.

[0009]

In hair shaping treatment such as hair straightening treatment or permanent waving treatment, the disulfide bonds (-S-S-) of the keratin are reduced to thiol groups (-SH) by the reducing agent contained in the first agent. The reduction of the disulfide bonds eliminates the cross-linked structure of the keratin. Then, the hair is shaped in a state in which the cross-linked structure of the keratin has been eliminated, and the shaped hair is treated with the second

agent, thus oxidizing the thiol groups (-SH) of the keratin to reform the disulfide bonds (-S-S-). This reaction is a reversible redox reaction as represented by the following formula:

[Chem. 1]



[0010]

The present inventors have found that the above-described method can significantly reduce the frequency of generation of brittle hair or split hair. Then, the inventors presume that the mechanism is as follows. By applying the first agent to hair to reduce the disulfide bonds, thiol groups having higher nucleophilicity are produced. Because of

waving treatment method, it is possible to significantly reduce the frequency of generation of brittle hair or split hair. Furthermore, the hair maintains its resilience when the rod is removed from the hair wound around the rod. Accordingly, it is possible to achieve permanent waving treatment capable of properly retaining ridge-like waviness.

[0021]

It is also preferable to further include, as with digital perming, the step of: heating the rod to 50°C or higher, with the hair being wound around the rod, from the viewpoint that the damage caused to the hair can be reduced.

[0022]

The present disclosure also provides a hair treating liquid for hair shaping treatment that is applied to hair in hair shaping treatment that is permanent waving treatment or hair straightening treatment, the hair treating liquid including gold nanoparticles. Such a hair treating liquid is preferable in that the damage sustained by hair can be reduced during or after hair shaping such as hair straightening treatment or permanent waving treatment.

[0022a]

In another aspect, there is provided a hair treating liquid for hair shaping treatment that is applied to hair in hair shaping treatment that is hair straightening treatment or permanent waving treatment,

the hair treating liquid is gold nanocolloid liquid comprising gold nanoparticles.

[Advantageous Effects of Invention]

[0023]

According to the present disclosure, it is possible to reduce the damage inflicted on hair that may cause the generation of brittle hair or split hair in performing hair

[CLAIMS]

[Claim 1] A method for hair shaping treatment, comprising at least the steps of:

applying a first agent containing a reducing agent to hair, and leaving the hair for a predetermined period of time;

washing off the first agent applied to the hair;

applying a second agent containing an oxidizing agent to the hair, and leaving the hair for a predetermined period of time; and

washing off the second agent, wherein

the hair shaping treatment method further comprises the step of:

applying a gold nanocolloid liquid containing gold nanoparticles to the hair.

[Claim 2] The method for hair shaping treatment according to claim 1, wherein

the gold nanocolloid liquid is applied by spraying to the hair.

[Claim 3] The method for hair shaping treatment according to claim 1 or 2, wherein

the gold nanoparticles in the gold nanocolloid liquid have a concentration of 0.0001 mass% or more.

[Claim 4] The method for hair shaping treatment according to any one of claims 1 to 3, wherein

the step of applying the gold nanocolloid liquid to the hair is provided prior to application of the second agent.

[Claim 5] The method for hair shaping treatment according to any one of claims 1 to 4, wherein

the first agent has a pH of 5 to 8.

[Claim 6] The method for hair shaping treatment according to any one of claims 1 to 5, wherein

the method for hair shaping treatment is a method for hair straightening treatment, and

further comprises the step of:

straightening the hair from which the first agent has been washed off into straight hair, while heating the hair.

[Claim 7] The method for hair shaping treatment according to claim 6, further comprising the step of:

drying the hair from which the first agent has been washed off, and combing the hair while applying by spraying the gold nanocolloid liquid to the hair.

[Claim 8] The method for hair shaping treatment according to claim 6 or 7, wherein

the heating is performed with a hair iron set at 110 to 180°C.

[Claim 9] The method for hair shaping treatment according to any one of claims 1 to 6, wherein

the method for hair shaping treatment is a method for permanent waving treatment, and

further comprises the step of: shaping the hair by winding the hair around rods.

[Claim 10] The method for hair shaping treatment according to claim 9, further comprising the step of:

heating the rods to 50°C or higher, with the hair being wound around the rods.

[Claim 11] A hair treating liquid for hair shaping treatment that is applied to hair in hair shaping treatment that is hair straightening treatment or permanent waving treatment,

the hair treating liquid is gold nanocolloid liquid comprising gold nanoparticles.

[Claim 12] The hair treating liquid for hair shaping treatment according to claim 11, wherein

the gold nanocolloid liquid comprises 0.0001 mass% or more of gold nanoparticles.

[Claim 13] The hair treating liquid for hair shaping treatment according to claim 11 or 12,

further comprising platinum nanoparticles.