dye component and leaving the hair for a predetermined period of time, a second step of rinsing the hair on which the base color dye liquid has been applied, and a third step of, after the second step, applying an aqueous solution of tea catechin onto the hair and leaving the hair for a predetermined period of time. However, this technique is mainly used to fix the dye onto the hair that has been subjected to gray hair dyeing, and such a technique cannot be used for cosmetic hair dyeing for dyeing black hair to a bright color.

[Citation List]

[Patent Literatures]

[0008]

[Patent Literature 1] Japanese Laid-Open Patent Publication No. 2005-213212

[Patent Literature 2] Japanese Patent No. 4993396

[Summary]

[Technical Problem]

[0009]

Basic dyes are considered to be safer than oxidation dyes. However, basic dyes are disadvantageous in that they penetrate poorly into the deep portion of the hair due to their higher molecular weight, and that they are deposited onto the keratin protein by ionic bonding with a weak bonding force, resulting in poor color retention of the dyed hair. Therefore, basic

dyes have not been applied to a use intended to achieve color retention for a period exceeding a month, such as the use as the so-called permanent hair dyeing agent.

[0010]

It is an object of the present disclosure to provide a two-agent type hair coloring agent with which it is possible to achieve cosmetic hair dyeing that provides long-term color retention, even in the case of using a basic dye as a base color.

[Solution to Problem]

[0011]

In one aspect, there is provided a two-agent type hair coloring agent prepared by mixing a first agent and a second agent, wherein the first agent contains a dye component containing a basic dye as a main component, and an alkaline agent, the second agent contains a hydrogen peroxide solution as a main component thereof, and at least one of the first agent and the second agent further contains metal nanoparticles.

[0012]

Such a hair coloring agent can improve the color retention of the dye without containing an oxidation dye, even in the case of performing cosmetic hair dyeing for dyeing black hair in a bright color, or more specifically, in the case of performing hair dyeing by causing a basic dye to penetrate

into the hair while appropriately bleaching the melanin pigment in the hair with hydrogen peroxide.

[0013]

Although the mechanism behind the improved color retention of the basic dye has not been clarified at this moment, it seems that due to the action of the electric charge on the surface of colloidal particles in the aqueous solution containing hydrogen peroxide, metal nanoparticles such as gold nanoparticles or platinum nanoparticles promoted penetration of the basic dye into the hair and further promoted generation of the cation of the basic dye, thereby facilitating ionic bonding of the cation of the basic dye to the anion of the keratin protein. That is, it is believed that blending the metal nanoparticles results in activation of the cation of the basic dye and the cation has become more easily adsorbed onto the anion of the keratin of the hair, thereby improving the hair dyeing property. As a result, it seems that, for example, about 5 to 30% of all pigments including the melanin pigment was successfully replaced by the dye in the hair. With a hair coloring agent according to the present disclosure, it is possible to achieve cosmetic hair dyeing that provides colors without lowering brightness excessively, such as Levels 8 to 10 defined on Hair Coloring Level Scale sold by JAPAN HAIR COLOR ASSOCIATION (JHCA).

[0014]

It is preferable that the hair coloring agent contains the

hydrogen peroxide solution in an amount corresponding to a proportion such that 30 to 70 mass% of a 4.5 mass% hydrogen peroxide solution is blended, since the hair coloring agent can be particularly preferably used for cosmetic hair dyeing for dyeing dark hair in a bright color while increasing the brightness of the hair by causing the basic dye to penetrate into the hair while adequately decomposing the melanin pigment in the hair with hydrogen peroxide.

[0015]

It is also preferable that the dye component further contains an HC dye since this increases the degree of freedom of toning. At this time, when the total content of the basic dye and the HC dye in the prepared hair coloring agent is 0.1 to 10 mass%, it is possible to achieve cosmetic hair dyeing without lowering brightness excessively.

[0016]

In another aspect, there is provided a hair dyeing method comprising: a first step of applying any of the above-described hair coloring agents onto hair and leaving the hair for a predetermined time; a second step of rinsing the hair on which the hair coloring agent is applied; and a third step of, after the second step, applying an aqueous solution of tea powder onto the hair and leaving the hair for a predetermined period of time. With such a method, it is possible to further suppress the color loss in hair described above.

[Advantageous Effects of Disclosure]

[0017]

The hair coloring agent according to the present disclosure makes it possible to perform hair dyeing that achieves color retention for a long period of time by using a basic dye as a base color, without containing any oxidation dye. In particular, the hair coloring agent of the present disclosure makes it possible to perform the so-called cosmetic hair dyeing for dyeing dark hair in a bright color by causing the basic dye to penetrate into the hair, while increasing the brightness of the hair by bleaching the hair by appropriately decomposing the melanin pigment in the hair with the hydrogen peroxide in the hydrogen peroxide solution.

[Description of Embodiment]

[0018]

Hereinafter, an embodiment of the hair coloring agent according to the present invention will be described in detail.

The hair coloring agent of the present invention is a two-agent type hair coloring agent prepared by mixing a first agent and a second agent, wherein the first agent contains a dye component containing a basic dye as a main component, and an alkaline agent, the second agent contains a hydrogen peroxide solution as a main component, at least one of the first agent and the second agent further contains metal