DESCRIPTION

Title of Invention: ADHESIVE PATCH

Technical Field

[0001] The present invention relates to a patch.

Background Art

[0002] Warm-type anti-inflammatory analgesic patches comprising warming stimulants are known. The warm-type anti-inflammatory analgesic patches are often used to treat or alleviate symptoms such as stiffness in the shoulders, lumbago, and muscular pain by improving the blood flow of application regions. A red pepper extraction component (capsaicins) and nonylic acid vanillylamide are used as a warming stimulant (for example, Patent Literature 1).

Citation List

Patent Literature

[0003] Patent Literature 1: Japanese Unexamined Patent Publication No. 2008-179564

Summary of Invention

Technical Problem

[0004] The present inventors have found that patches comprising nonylic acid vanillylamide may emit an unpleasant smell when used for a long period of time. An object of the present invention is to provide a patch which is unlikely to emit an unpleasant smell even when used for a long period of time.

Solution to Problem

[0005] The present inventors have found that the emission of an unpleasant smell due to nonylic acid vanillylamide can be suppressed

when powdered phellodendron bark is blended in an adhesive agent layer, and completed the present invention. The present invention provides a patch comprising: a backing; and an adhesive agent layer laminated on the backing, wherein the adhesive agent layer comprises 0.01% by mass to 0.026% by mass of nonylic acid vanillylamide and 0.85% by mass to 3% by mass of powdered phellodendron bark based on a total mass of the adhesive agent layer, and a mass ratio of nonylic acid vanillylamide to powdered phellodendron bark is 1:42.5 to 1:170, and preferably 1:42.5 to 1:150. The above-mentioned adhesive agent layer may comprise an anti-inflammatory analgesic. The above adhesive agent layer may comprise one or more adhesive bases selected from a rubber adhesive base, an acrylic adhesive base and a silicone adhesive base, and may comprise a styrene-isoprene-styrene block copolymer, polyisobutylene, and a terpene resin.

Advantageous Effects of Invention

[0006] The present invention can provide a patch which is unlikely to emit an unpleasant smell even when used for a long period of time.

Description of Embodiments

[0007] A patch according to the present embodiment comprises a backing and an adhesive agent layer laminated on the backing.

[0008] The backing is a layer that supports the adhesive agent layer physically. The material of the backing is not limited as long as it is commonly used for patches, and examples thereof include polyolefins such as polyethylene, polypropylene and polybutadiene; polyesters such as polyethylene terephthalate, polybutylene terephthalate and polyethylene naphthalate; and synthetic resins such as an ethylene-vinyl

acetate copolymer, a vinyl acetate-vinyl chloride copolymer, polyvinyl chloride, polyamide, nylon, a cellulose derivative and polyurethane. The properties and form of the backing may be a film, a sheet, a sheet-shaped porous body, a sheet-shaped foam, woven fabric, knitted fabric, nonwoven fabric, or a laminate of these. Nonwoven fabric is preferable from the viewpoint of skin-sticking properties due to being excellent in stretchability.

[0009] The adhesive agent layer comprises nonylic acid vanillylamide and powdered phellodendron bark. The content of nonylic acid vanillylamide is 0.01% by mass to 0.026% by mass, and it is preferable that it be 0.02% by mass to 0.024% by mass based on the total mass of the adhesive agent layer. The content of powdered phellodendron bark is 0.85% by mass to 3% by mass based on the total mass of the adhesive agent layer. The mass ratio of nonylic acid vanillylamide to powdered phellodendron bark is 1:42.5 to 1:170, and it is preferable that it be 1:42.5 to 1:150. By adjusting the content of nonylic acid vanillylamide in the above-mentioned range, a moderate warming stimulation can be given to the skin while suppressing an itch. By adjusting the content of powdered phellodendron bark in the above-mentioned range and adjusting the mass ratio of nonylic acid vanillylamide to powdered phellodendron bark in the above-mentioned range, the emission of an unpleasant smell due to nonylic acid vanillylamide can be suppressed. It is preferable that the content of nonylic acid vanillylamide be 0.018% by mass to 0.026% by mass from the viewpoint of suppressing an itch on the skin. It is preferable that the content of powdered phellodendron bark be 1.7% by mass to 3% by

mass based on the total mass of the adhesive agent layer from the viewpoint of further reducing skin reaction. It is more preferable that the mass ratio of nonylic acid vanillylamide to powdered phellodendron bark be 1:70.9 to 1:150 or 1:85.1 to 1:150 from the same viewpoint. Phellodendron bark is the bark of *Phellodendron amurense* Ruprecht or *Phellodendron chinense* Schneider (*Rutaceae*) from which periderm is removed, and powdered phellodendron bark is a powder into which phellodendron bark is pulverized. The present inventors speculate that the mechanism of the effect of suppressing the emission of an unpleasant smell by powdered phellodendron bark is as follows. The perspiration of an application region is promoted by nonylic acid vanillylamide contained in a patch. Sweat tends to collect between the skin and the patch, and bacteria such as resident skin bacteria proliferate due to the sweat, resulting in the emission of an unpleasant smell. Powdered phellodendron bark suppresses the emission of an unpleasant smell by suppressing the proliferation of bacteria or by adsorbing, inactivating or masking a smell component.

[0010] The adhesive agent layer may also comprise an adhesive base, a drug and other components (a tackifying resin, a plasticizer, a filler, a stabilizer, a transdermal absorption enhancer of a drug, an odorant, a colorant, a component that alleviates skin irritation due to a drug, and the like) in addition to nonylic acid vanillylamide and powdered phellodendron bark. It is preferable that the adhesive agent layer be nonaqueous (for example, the water content that is 5% or less based on the total mass of the adhesive agent layer) from the viewpoint of sticking properties and a moderate warming stimulation.

[0011] The adhesive base is not limited as long as it is commonly used for patches, and examples thereof include a rubber adhesive base, an acrylic adhesive base and a silicone adhesive base.

[0012] The rubber adhesive base may be a polymer mainly comprising natural or synthetic rubber, and is, for example, polyisoprene, polyisobutylene, polybutadiene, a styrene-isoprene-styrene block copolymer (SIS block copolymer), a styrene-butadiene-styrene block copolymer, styrene-butadiene rubber or styrene-isoprene rubber.

[0013] Examples of the acrylic adhesive base include polymers of an alkyl (meth)acrylate and copolymers of an alkyl (meth)acrylate and a comonomer. Herein, an alkyl (meth)acrylate means an alkyl acrylate and an alkyl methacrylate. Examples of the alkyl (meth)acrylate include butyl (meth)acrylate, isobutyl (meth)acrylate, hexyl (meth)acrylate, octyl (meth)acrylate, 2-ethylhexyl (meth)acrylate and decyl (meth)acrylate. The alkyl (meth)acrylates may be used alone or in combination of two or more. Examples of the comonomer include hydroxyalkyl (meth)acrylates, ethylene, propylene, styrene, vinyl acetate, N-vinyl pyrrolidone and (meth)acrylamide. Comonomers may be used alone or in combination of two or more. Specific examples of the acrylic adhesive base include one consisting of a copolymer comprising at least two selected from butyl acrylate, 2-ethylhexyl acrylate, vinyl acetate, methacrylic acid, hydroxyethyl acrylate, glycidyl methacrylate, methoxy ethyl acrylate and acrylic acid, and more specific examples thereof include DURO-TAK 87-2097, 87-2194, 87-2196, 87-2287, 87-2516 and 87-2852 (trade name, Henkel); and Nissetu KP-77 and AS-370 (trade name, NIPPON CARBIDE INDUSTRIES

CO.,INC.).

[0014] Examples of the silicone adhesive base include organopolysiloxanes such as dimethylpolysiloxane and a condensation reaction product of dimethylpolysiloxane and a silicate resin. Specific examples of the silicone adhesive base include BIO-PSA X7-4201, BIO-PSA Q7-4501, 360Medical fluid 1000CS, and MDX4-4210 of Dow Corning Corp.

[0015] The drug is not limited as long as it is absorbed transdermally and has a therapeutic effect on a subject, and examples thereof include anti-inflammatory analgesics such as acetaminophen, phenacetin, mefenamic acid, diclofenac sodium, flufenamic acid, aspirin, sodium salicylate, methyl salicylate, glycol salicylate, aminopyrine, alclofenac, ibuprofen, naproxen, flurbiprofen, ketoprofen, amfenac sodium, mepirizole, indomethacin, piroxicam, loxoprofen, tiaprofen, acemetacine, felbinac, sulindac, etodolac, tolmetin, ampiroxicam, azapropazone, valdecoxib, and rofecoxib.

[0016] Examples of the tackifying resin include terpene resins, terpene phenol resins, rosin ester resins, hydrogenated rosin ester resins, alicyclic saturated hydrocarbon resins and petroleum resins. It is preferable that the tackifying resin be a terpene resin from the viewpoint of producing a warming stimulation early. The terpene resin may be hydrogenated or unhydrogenated, but it is preferable that it be a hydrogenated terpene resin. Examples of the terpene resins include α-pinene resins, β-pinene resins, aromatic modified terpene resins and terpene phenol resins.

[0017] Examples of the plasticizer include paraffine oils (liquid paraffin

and the like), squalane, squalene, vegetable oils (olive oil, camellia oil, castor oil, tall oil, peanut oil, spearmint oil, eucalyptus oil, jojoba oil, camphor white oil, sunflower seed oil, orange oil and the like), oils and fats (dibutyl phthalate, dioctyl phthalate and the like), and liquid rubbers (liquid polybutene, liquid polyisoprene rubber and the like).

[0018] Examples of the filler include powders of metallic compounds (aluminum oxide, aluminum hydroxide, zinc oxide, titanium oxide, calcium carbonate and the like), ceramics (talc, clay, kaolin, silica, hydroxyapatite, synthetic aluminum silicate, magnesium aluminometasilicate and the like) or organic compounds (cellulose powder, stearate and the like); or staples of resins comprising these.

[0019] Examples of the component that alleviates a skin irritation due to a drug include water-absorbing compounds such as starch acrylate; functional resins; surface active compounds; and cooling components (menthol, 3-L-menthoxypropane-1,2-diol); and antipruritic components (crotamiton, antihistaminic agent (diphenhydramine, chlorpheniramine, promethazine and the like) and the like).

[0020] The adhesive agent layer may comprise, for example, piperine, sanshool, shogaol (ginger-ol), gingerol, allyl isothiocyanate (pungent components such as mustard and Japanese horseradish), camphor, thymol, eugenol, carvacrol, cinnamaldehyde or benzyl nicotinate as a warming component that is blended in partial replacement of nonylic acid vanillylamide, namely, a compound that acts on the TRP (Transient Receptor Potential) channel temperature receptor family.

[0021] The adhesive agent layer may comprise an inorganic or organic component (for example, an acid such as citrate or a base such as

sodium hydroxide), a salt such as sodium chloride, an amine (triethanolamine, triethylamine or the like), or a chelating agent (ascorbic acid, ethylenediaminetetraacetic acid or the like) for pH adjustment besides the above components.

[0022] The adhesive agent layer may comprise a release liner on the surface that is on the side opposite to the backing and in contact with the skin. The release liner is a liner that is removed when the patch is used, and is not limited as long as it is commonly used for patches. Examples of the material of the release liner include polyesters (polyethylene terephthalate (PET) and the like), polyolefins (polypropylene, polyethylene and the like) and cellulose compounds (paper and the like). The release liner may be in the form of a sheet consisting of a laminate of materials mentioned above. The surface of the release liner is preferably mold-release-treated with silicone or a fluorinated polyolefin and the like.

[0023] A patch according to the present embodiment can be manufactured, for example, by the following method.

1) The components of an adhesive agent layer are weighed, heated and added to solvents if needed, mixed and homogenized.

2) The obtained adhesive composition is applied to the mold release surface of a release liner to a certain thickness, followed by a removal of a solvent component by drying if needed to form an adhesive agent layer.

3) A backing is laminated on the adhesive agent layer.

4) The laminate is cut into a predetermined shape (for example, a rectangle with the short side of which is 3 cm to 14 cm and the long side

of which is 7 cm to 20 cm or a circle with a diameter of 1 cm to 5 cm).

Examples

[0024] Test Example 1: Evaluation of warming stimulation

Components were weighed according to the compositions of Table 1, followed by mixing while melting by heating to obtain adhesive compositions. The adhesive compositions were applied to release liners consisting of a PET film subjected to mold release treatment to a thickness of about 320 μm. Backings consisting of PET nonwoven fabric were laminated on the layers of the adhesive compositions. These laminates were cut into circles of 2.5 cm in diameter to obtain the patches of Comparative Examples 1 to 2 and Examples 1 to 16. In Table 1, nonylic acid VA means nonylic acid vanillylamide, and SIS means a styrene-isoprene-styrene block copolymer. The other components are a filler and the like.

[0025] [Table 1]

	Comparative Example	Example								Comparative Example
	1	1	2	3	4	5	6	7	8	2
Nonylic acid VA	0.008	0.01	0.012	0.0136	0.018	0.02	0.022	0.024	0.026	0.03
Powdered phellodendron bark	1.702	1.702	1.702	1.702	1.702	1.702	1.702	1.702	1.702	1.702
Glycol salicylate	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
L-Menthol	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
SIS	25	25	25	25	25	25	25	25	25	25
Polyisobutylene	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
Terpene resin	22	22	22	22	22	22	22	22	22	22
Liquid paraffin	ca. 26.8	ca. 26.8	ca. 26.8	ca. 26.8	ca. 26.8	ca. 26.8	ca. 26.8	ca. 26.8	ca. 26.8	ca. 26.8
Antioxidant	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Others	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7
Total	100	100	100	100	100	100	100	100	100	100
Nonylic acid VA : powdered phellodendron bark	1:213	1:170	1:142	1:125	1:94.6	1:85.1	1:77.4	1:70.9	1:65.5	1:56.7

	Example							
	9	10	11	12	13	14	15	16
Nonylic acid VA	0.01	0.01	0.0136	0.0136	0.02	0.02	0.026	0.026
Powdered phellodendron bark	1.702	1.702	1.702	1.702	1.702	1.702	1.702	1.702
Glycol salicylate	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
L-Menthol	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
SIS	18	30	15	35	20	33	20	30
Polyisobutylene	11.5	-	11.5	5.5	10	-	11.5	11.5
Terpene resin	22	22	22	22	22	22	22	22
Liquid paraffin	ca. 33.8	ca. 33.3	ca. 36.8	ca. 22.8	ca. 33.3	ca. 30.3	ca. 31.8	ca. 21.8
Antioxidant	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Others	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7
Total	100	100	100	100	100	100	100	100
Nonylic acid VA : powdered phellodendron bark	1:170	1:170	1:125	1:125	1:85.1	1:85.1	1:65.5	1:65.5

[0026] The intensity of the warming stimulation of the patches were evaluated by sensory tests (n = 60 to 105). Specifically, one patch was applied on the shoulder of each subject, the intensities of the warming stimulation were scored according to the following standard 1 hour after application, and the average value thereof was calculated.

Warming stimulation is too strong … 100

Warming stimulation is strong … 80

Warming stimulation of moderate intensity … 60

Warming stimulation is weak … 40

Warming stimulation is too weak … 20

There is no warming stimulation … 0

[0027] The intensity of the itching of the patches were evaluated by sensory tests (n= 60 to 105). Specifically, one patch was applied on the shoulder of each subject, the intensities of the itching were scored according to the following standard 4 hours after application, and the average value thereof was calculated.

Very strong itching is felt and intolerable … 100

Very strong itching is felt, and reaches the tolerance limit … 80

Strong itching is felt … 60

Itching is felt clearly … 40

Itching is felt … 20

A little itching is felt, but is not very disturbing … 15

Slight itching is felt, but is hardly disturbing … 10

Very slight itching is felt, but is not disturbing at all … 5

Itching is not felt … 0

[0028] The test results of the patches of Comparative Example 1 and Examples 1 to 8 were made into Tables 2 and 3.

[0029] [Table 2]

Example	Nonylic acid VA content (% by mass)	Intensity of warming stimulation
1	0.0100	63
2	0.0120	63
3	0.0136	61
4	0.0180	67
5	0.0200	63
6	0.0220	67
7	0.0240	70
8	0.0260	72

[0030] [Table 3]

	Nonylic acid VA content (% by mass)	Intensity of itching
Comparative Example 1	0.0080	21
Example 1	0.0100	19
Example 2	0.0120	18
Example 3	0.0136	15
Example 4	0.0180	12
Example 5	0.0200	11
Example 7	0.0240	5
Example 8	0.0260	3

[0031] As is clear from the results shown in Table 2, the intensity of the warming stimulation was moderate when the content of nonylic acid vanillylamide was 0.01% by mass or more. Although results are not shown in the table, when the content of nonylic acid vanillylamide was 0.03% by mass or more, the warming stimulation of the patches were too strong, resulting in the smart of the skin, and the patches were uncomfortable.

[0032] As is clear from the results shown in Table 3, unexpectedly, it was found that as the content of nonylic acid vanillylamide increases, the itching on the skin due to the patches tends to become weaker, and

only so weak itching is caused as to be hardly disturbing when the content of nonylic acid vanillylamide is 0.01% by mass or more.

[0033] Although the patches of Examples 9 to 16 were obtained by changing the content of SIS in the patches of Examples 1, 3, 5 and 8, the test results of the intensity of the warming stimulation and the itching were of similar evaluation to those of the patches of Examples 1, 3, 5 and 8. From this, it was suggested that the intensity of the warming stimulation and the itching were hardly influenced by the composition of the adhesive base.

[0034] Test Example 2: Evaluation of effect of suppressing unpleasant smell and skin reaction

Components were weighed according to the compositions of Table 4, followed by mixing while melting by heating to obtain adhesive compositions. The adhesive compositions were applied to release liners consisting of a PET film subjected to mold release treatment to a thickness of about 320 μm. Backings consisting of PET nonwoven fabric were laminated on the layers of the adhesive compositions. These laminates were cut into circles of 2.5 cm in diameter to obtain the patches of Comparative Examples 3 to 6 and Examples 17 to 21. DURO-TAK 87-2097 was used as an acrylic adhesive base, and BIO-PSA X7-4201 was used as a silicone adhesive base.

[0035] [Table 4]

	Comparative Example				Example				
	3	4	5	6	17	18	19	20	21
Nonylic acid VA	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02
Powdered phellodendron bark	0	0.5	1.702	1.702	0.85	1.702	3	1.702	1.702
Glycol salicylate	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
L-Menthol	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
SIS	25	25	20	30	25	25	25	-	-
Polyisobutylene	11.5	11.5	11.5	11.5	11.5	11.5	11.5	-	-
Terpene resin	22	22	22	22	22	22	22	-	-
Liquid paraffin	ca. 28.5	ca. 28.0	ca. 31.8	ca. 21.8	ca. 27.6	ca. 26.8	ca. 25.5	-	-
Antioxidant	1.6	1.6	1.6	1.6	1.6	1.6	1.6	-	-
Acrylic adhesive base	-	-	-	-	-	-	-	ca. 86.9	-
Silicone adhesive base	-	-	-	-	-	-	-	-	ca. 86.9
Others	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7	ca. 3.7
Total	100	100	100	100	100	100	100	100	100
Nonylic acid VA : powdered phellodendron bark	-	1:25	1:56.7	1:56.7	1:42.5	1:85.1	1:150	1:85.1	1:85.1

[0036] The intensity of the unpleasant smell of the above-mentioned patches and the patches of Test Example 1 were evaluated by sensory tests (n = 6). One patch was applied on the forearm or the upper arm of each subject and was removed 8 hours later. The smells of the skin emitted from the application regions were scored according to the following standard, and the average value thereof was calculated.

Unpleasant smell is felt … 2

Unpleasant smell is felt a little … 1

Unpleasant smell is not felt … 0

[0037] The intensity of the skin reaction of the above patches and the patches of Test Example 1 were evaluated by sensory tests (n = 6). One patch was applied on the forearm or the upper arm of each subject and was removed 8 hours later. The intensities of the skin reactions

(edema and redness) in the application regions were scored according to the following standard, and the average value thereof was calculated.

An edema developed … 3

Defined redness … 2

Slight redness … 1

No redness … 0

[0038] The test results (intensity of the unpleasant smell) of the patches of Comparative Examples 3 to 4 and Examples 17 to 19 were made into Table 5.

[0039] [Table 5]

	Content (% by mass)		Ratio	Intensity of unpleasant smell
	Nonylic acid VA	Powdered phellodendron bark		
Comparative Example 3	0.0200	0	-	1.3
Comparative Example 4	0.0200	0.5	1:25	1
Example 17	0.0200	0.85	1:42.5	0
Example 18	0.0200	1.702	1:85.1	0
Example 19	0.0200	3	1:150	0

[0040] As is clear from the results shown in Table 5, the unpleasant smell became weaker as the content of powdered phellodendron bark became higher. Especially when the content of powdered phellodendron bark was 0.85% by mass or more and the ratio of nonylic acid vanillylamide : powdered phellodendron bark was 1:42.5 or more, the emission of an unpleasant smell was suppressed completely. Although the result is not shown in the table, the emission of an unpleasant smell was suppressed even in the case of a patch, wherein the content of nonylic acid vanillylamide was 0.01% by mass, and the

content of powdered phellodendron bark was 0.85% by mass (the ratio of the content of nonylic acid vanillylamide to the content of powdered phellodendron bark was 1:85).

[0041] The test results (the intensity of the unpleasant smell) of the patches of Examples 5, 7 and 20 to 21 and Comparative Example 2 were made into Table 6.

[0042] [Table 6]

	Content (% by mass)		Ratio	Intensity of unpleasant smell
	Nonylic acid VA	Powdered phellodendron bark		
Example 5	0.0200	1.702	1:85.1	0
Example 7	0.0240	1.702	1:70.9	0
Example 20	0.0200	1.702	1:85.1	0
Example 21	0.0200	1.702	1:85.1	0
Comparative Example 2	0.0300	1.702	1:56.7	0

[0043] As is clear from the results shown in Table 6, the emission of an unpleasant smell was suppressed in all the patches. As seen from the results of Examples 20 to 21, the emission of an unpleasant smell was suppressed even in the cases of the patches in which an acrylic adhesive base or a silicone adhesive base was used as an adhesive base. Although the patches of Examples 13 to 14 and Comparative Examples 5 to 6 were obtained by changing the contents of SIS in the patches of Example 5 and Comparative Example 2, the test results of the intensity of the unpleasant smell were of similar evaluation to those of the patches of Example 5 and Comparative Example 2. It was suggested from this that the effect of suppressing the emission of an unpleasant smell was hardly influenced by the composition of adhesive bases.

[0044] The test results (skin reactions) of the patches of Examples 5, 7, 17 and 18 and Comparative Examples 2 to 4 were made into Table 7.

[0045] [Table 7]

	Content (% by mass)		Ratio	Skin reaction
	Nonylic acid VA	Powdered phellodendron bark		
Example 5	0.0200	1.702	1:85.1	0
Example 7	0.0240	1.702	1:70.9	0
Example 17	0.0200	0.85	1:42.5	0.17
Example 18	0.0200	1.702	1:85.1	0
Comparative Example 2	0.0300	1.702	1:56.7	0
Comparative Example 3	0.0200	0	-	0.5
Comparative Example 4	0.0200	0.5	1:25	0.17

[0046] As is clear from the results shown in Table 7, the skin reaction decreased as the content of powdered phellodendron bark became higher.

CLAIMS

1. A patch comprising:

a backing; and

an adhesive agent layer laminated on the backing,

wherein the adhesive agent layer comprises 0.01% by mass to 0.026% by mass of nonylic acid vanillylamide and 0.85% by mass to 3% by mass of powdered phellodendron bark based on a total mass of the adhesive agent layer, and a mass ratio of nonylic acid vanillylamide to powdered phellodendron bark is 1:42.5 to 1:170.

2. The patch according to claim 1, wherein the mass ratio of nonylic acid vanillylamide to powdered phellodendron bark is 1:42.5 to 1:150.

3. The patch according to claim 1 or 2, wherein the adhesive agent layer comprises an anti-inflammatory analgesic.

4. The patch according to any one of claims 1 to 3, wherein the adhesive agent layer comprises one or more adhesive bases selected from a rubber adhesive base, an acrylic adhesive base, and a silicone adhesive base.

5. The patch according to any one of claims 1 to 3, wherein the adhesive agent layer comprises a styrene-isoprene-styrene block copolymer, polyisobutylene, and a terpene resin.