

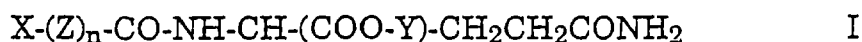
- 1 -

MALODOUR PREVENTING AGENTS

The invention relates to agents preventing (the formation of) human malodour. In particular, the invention relates to the use of several classes of compounds which can act as such agents in cosmetic products, such as deodorants and antiperspirants. These compounds are normally odourless or nearly so, but upon contacting the skin as for example, in skin care compositions or in personal care compositions, they prevent malodour.

The present invention now provides compounds which show a low level of odour, or are even odourless, prior to application to the skin, and which prevent, suppress (the formation of) or attenuate malodour after application to the skin, in particular to the skin in the axilla.

The compounds under consideration are compounds of the formula



wherein

X = alkyl, cycloalkyl, alkenyl, cycloalkenyl, aryl

whereby each radical may also contain elements such as N, O, S, P, CO, and each of these radicals may be substituted by groups, such as cycloalkyl, cycloalkenyl, aryl, hydroxy or acyloxy, e.g. alkanoyloxy, the radicals may further contain groups such as COOH, COOR¹, CN, CONHR²

Y = H or X

Z = O or S

R¹ is alkyl, alkenyl, cycloalkyl

R² is alkyl or substituted alkyl, e.g. -CH(COOY)CH₂CH₂CONH₂

n = 0, 1

and, where,

n = 0

X may also be NH₂, NHR¹, NR₂¹

and alkali, earth alkali, aluminium or, optionally substituted, ammonium salts of compounds, wherein Y = H,

with the proviso that the compound of formula I is not N-acetylglutamin.

Examples for the radicals X are:



G00002



166166

- 2 -

Methyl,
ethyl,
propyl,
isopropyl,
5 tert.butyl,
sec.butyl,
isobutyl,
n-butyl,
pentyl,
10 hexyl,
heptyl,
octyl,
2-octyl,
nonyl,
15 2-nonyl,
decyl,
2-decyl,
undecyl,
2-undecyl,
20 dodecyl,
tridecyl,
tetradecyl,
pentadecyl,
hexadecyl,
25 heptadecyl,
octadecyl,
cyclopentyl,
cyclohexyl,
2-cyclohexylethyl,
30 2,6-dimethylheptyl,
geranyl,
neryl,
citronellyl,
9-decenyl,
35 2,6-dimethyl-5-heptenyl,
2,6-dimethyl-1,5-heptadienyl,
8,11-heptadecadienyl,
8-heptadecenyl,
cyclopentenyl,

- 3 -

cyclohexenyl,
phenyl,
p-methoxyphenyl,
benzyl,
5 2-phenylethyl,
1-phenylethyl,
2-(p-methoxyphenyl)-ethenyl,
3-(p-methylphenyl)-2-propyl,
3-(p-isopropylphenyl)-2-propyl,
10 3-(p-tert.butylphenyl)-2-propyl,
2,5,8-trioxanonyl,
acetonyl,
aminomethyl,
hydroxymethyl,
15 1-hydroxyethyl,
dimethylaminomethyl,
1-phenyl-1-aminoethyl,
carboxymethyl,
2-carboxyethyl,
20 3-carboxypropyl,
4-carboxybutyl,
5-carboxypentyl,
6-carboxyhexyl,
7-carboxyheptyl,
25 8-carboxyoctyl,
9-carboxynonyl,
10-carboxy-2,5,8-trioxanonyl,
7-carboxamido-5-carboxy-4-aza-3-oxo-heptyl,
8-carboxamido-6-carboxy-5-aza-4-oxo-octyl,
30 9-carboxamido-7-carboxy-6-aza-5-oxo-nonyl,
10-carboxamido-8-carboxy-7-aza-6-oxo-decyl,
11-carboxamido-9-carboxy-8-aza-7-oxo-undecyl,
14-carboxamido-12-carboxy-11-aza-10-oxo-tetradecyl,
2-pentyl-cyclopropyl,
35 menthyl,
terpineyl, etc.

The following known N-acylglutamines I are of particular importance:

- 4 -

N-formylglutamin
 N-decanoylglutamin
 N-undecanoylglutamin
 N-dodecanoylglutamin
 5 N-tetradecanoylglutamin
 N-hexydecanoylglutamin
 N-octadecanoylglutamin
 N-phenylacetylglutamin
 N-benzoylglutamin
 10 N-carbonyloxymethylglutamin
 N-carbonyloxyethylglutamin
 N-tert.butoxycarbonylglutamin
 N-carbonyloxybenzylglutamin
 N-formylglutamin-benzylester
 15 N-acetylglutamin-methylester
 N-benzoylglutamin-methylester
 N-carbonyloxybenzylglutamin-benzylester
 N-acetylglutamin-aluminium-salt
 N-carbamoylglutamin.

20 The following novel N-acylglutamines are also of particular importance:

N-2-methylheptanoylglutamin
 N-10-undecenoylglutamin
 N-3,7-dimethyl-6-octenoylglutamin
 25 N-3,7-dimethyl-2,6-octadienoylglutamin
 N-cinnamoylglutamin
 N-3,6,9-trioxadecanoylglutamin
 N-2-pentyl-cyclopropanoylglutamin
 4-carbamoyl-2-(3-(3-carbamoyl-1-carboxypropylcarbamoyl)-propanoyl-
 30 amino)-butyric acid
 4-carbamoyl-2-(4-(3-carbamoyl-1-carboxypropylcarbamoyl)-butanoyl-
 amino)-butyric acid
 4-carbamoyl-2-(5-(3-carbamoyl-1-carboxypropylcarbamoyl)-pentanoyl-
 amino)-butyric acid
 35 4-carbamoyl-2-(6-(3-carbamoyl-1-carboxypropylcarbamoyl)-hexanoyl-
 amino)-butyric acid

- 5 -

- 4-carbamoyl-2-(7-(3-carbamoyl-1-carboxypropylcarbamoyl)-heptanoyl-amino)-butyric acid
- 3-(3-carbamoyl-1-carboxypropylcarbamoyl)-propanoic acid
- 4-(3-carbamoyl-1-carboxypropylcarbamoyl)-butanoic acid
- 5 5-(3-carbamoyl-1-carboxypropylcarbamoyl)-pentanoic acid
- 6-(3-carbamoyl-1-carboxypropylcarbamoyl)-hexanoic acid
- 7-(3-carbamoyl-1-carboxypropylcarbamoyl)-heptanoic acid
- 4-carbamoyl-2-[2-(2-(2-[(3-carbamoyl-1-carboxypropylcarbamoyl)-methoxy]-ethoxy)-ethoxy)-acetylaminol]-butyric acid
- 10 N-acetylglutamin-benzylester
- N-acetylglutamin-dodecylester
- N-acetylglutamin-tetradecylester
- N-acetylglutamin-2-phenylethylester
- N-acetylglutamin-geranylester
- 15 N-acetylglutamin-citronellylester
- N-dodecanoylglutamin-2-phenylethylester
- N-benzoylglutamin-phenylethylester
- N-benzoylglutamin-benzylester
- N-carbonyloxybenzylglutamin-geranylester
- 20 N-carbonyloxy-2-phenylethyl-glutamin-2-phenylethylester
- N-acetylglutamin-sodium salt
- N-acetylglutamin-potassium salt
- N-dodecanoylglutamin-sodium salt
- N-dodecanoylglutamin-potassium salt
- 25 N-dodecanoylglutamin-ammonium salt.

From this compilation it can be gathered, that a wide variety of compounds come into consideration. It can, for example, be seen that alkyl extends from C₁ to C₃₀ alkyl and alkenyl from C₂ to C₃₀ alkenyl, and one or more unsaturations may be present, and the respective chains may be linear or branched. Cycloalkyl and cycloalkenyl may extend from C₃ to C₁₂. Alkanoyloxy is preferably C₁₂₋₂₀-alkanoyloxy.

The aromatic rings encompass in particular, optionally substituted one or more benzene rings naphthalene.

35

The heterocycles encompass in particular, optionally substituted

pyridine
pyrrole
pyrrolidine
pyrimidine
5 furane
thiophene
tetrahydrofuran
quinoline
furanose
10 pyranose.

The compounds I - or any mixture of such compounds - may preferably be used to prevent, suppress or attenuate undesirable odours, in particular human malodour, e.g. axillary malodour which is the result of bacterial
15 degradation of primarily odourless substances present in apocrine sweat. This form of sweat is produced by the apocrine glands present in the skin of the underarm. Bacteria from the underarm region degrade some of the compounds present in the apocrine sweat resulting in the release of volatile compounds responsible for the characteristic axilla sweat malodour.

20 The compounds I may preferably be used in consumer products, i.e. cosmetic products destined for application to human skin such as underarm deodorants or antiperspirants or other deodorants contacting the body, or in lotions, baby powders, baby lotions, ointments, foot products, body wipes, colognes, after-shave lotions, shaving creams, etc.

25 The compounds I are virtually odourless under normal temperature and atmospheric conditions, i.e. about 10-50 degrees Celsius and about 20 to 100% relative humidity.

The compounds I are not limited to any particular stereoisomers, all possible stereoisomers as well as racemates are thus included within the
30 scope of formula I.

The compounds I permit the development of methods useful in consumer products destined for attenuating or preventing human malodour. These compounds may be used individually in an amount effective to enhance this goal.

- 7 -

The amount required to produce the desired, overall effect varies depending upon the particular compounds I chosen, the product in which it will be used, and the particular effect desired.

For example, depending upon the selection and concentration of the
5 compound chosen, when added I either singly or as a mixture e.g. to a deodorant composition at levels ranging from about 0.1 (or lower) to about 10% (or even higher) by weight, or most preferred about 0.25 to about 4% by weight formed composition serves to attenuate or to prevent the underarm odour, depending upon the selection and use levels of the compounds I.

10 The compounds I can accordingly be used in the manufacture of compositions used in the preparation of cosmetic products e.g. deodorants and antiperspirants, and as is evident from the above compilation, a broad range of known odorants or odorant mixtures can be used. In the manufacture of such compositions the known odorants or odorant mixtures
15 set forth above can be used according to methods known to the perfumer, such as e.g. from W.A. Poucher, Perfumes, Cosmetics, Soaps, 2, 7th Edition, Chapman and Hall, London 1974.

To sum up, the present invention relates to:

1. A composition for application to human skin, containing a malodour
20 preventing or malodour attenuating effective amount of at least one compound of the formula I in a cosmetically acceptable carrier.

2. A cosmetic product e.g. a personal body deodorant or antiperspirant article, containing at least one compound I.

3. A method of suppressing human body malodour by means of
25 compounds of the formula I, which comprises the application to human skin of a cosmetic product as defined above.

4. The use of a composition as defined above in a cosmetic product e.g. a personal body deodorant or antiperspirant composition.

The compounds I can be prepared by using standard methods known to
30 the skilled chemist. These standard methods can be found in the chemical literature.

N-acyl-glutamins or their esters can be prepared according to standard methods as described for example in Houben-Weyl, Methoden der Organi-

schen Chemie, Synthese von Peptiden, Volume 15/1 p 46-305 (1974) by reaction of glutamin or glutamin esters with activated derivatives of carbonic or carboxylic acids. Activated derivatives are for example acid- or carbonic acid-halides, -anhydrides or activated esters such as N-hydroxy-
5 benzotriazinesters to name just one example. The base which may in some cases be indicated can be organic (Z. Grzonka, Synthesis 661 [1974]) or inorganic (O. Keller, Org. Synth. Coll. Vol. VII, 74 [1974] or P. Karrer, Helv. Chim. Acta 9, 301 [1926]). Depending on each individual case, the reactions are conveniently run in organic aprotic solvents, in organic protic solvents
10 or in mixtures of organic solvents with water or even in water. The temperature is usually in the range of -40° to 150°C, preferably -20° to 120°C.

N-Acylglutaminesters can also be prepared from N-acylglutamin by esterification methods, preferably those used in peptide chemistry. An example is the reaction of an appropriate halide with acylglutamin in the
15 presence of a base. This base is preferably diazabicycloundecene (DBU) as, e.g. described by N. Ono, Bull. Chem. Soc. Jap. 51, 2401 (1978). In this case, the solvent is preferably aprotic, examples are hydrocarbons, ethers, esters or N-disubstituted amides, etc. The reaction temperature is preferably between 0° and 100°C.

20 Convenient methods are outlined in the Examples.

Example 1

N-BOC-glutamin-benzylester

147 g N-BOC-glutamin (t-butyloxycarbonyl-glutamin), 77 g benzylchloride and 4 g benzylbromide were refluxed in 600 ml tetrahydrofuran for
25 2.5 hours in the presence of a 5% excess of diazabicycloundecene. After the removal of the solvent, the residue was taken up in water-ethylacetate and washed with citric acid, sodium bicarbonate and water. Evaporating of the solvent and recrystallization from ethylacetate-hexane gave 120 g white crystals.
30 NMR (DMSO-d₆) among others: 7.36 (s,5H), 5.12 (dxd,2H), 3.989 (m,1H), 2.15 (t,2H), 1.38 (s,9H).

N-Lauroyl-glutamin (N-dodecanoyl-glutamin)

9.22 g lauroylchloride dissolved in 46 ml dioxane were slowly added to 6.72 g glutamine and 13.94 g triethylamin in 92 ml water and 92 ml dioxane,

- 9 -

the temperature being 0°C. After stirring at room temperature for 1 hour, the dioxane was evaporated and the remaining solution was acidified to pH 1 with HCl. The crystals were filtered off and recrystallized from acetone and then from methanol: 9.9 g white needles.

- 5 NMR (DMSO-d₆) among others: 8.05 (d,1H), 7.3 (s,1H), 6.78 (s,1H), 4.13 (m,1H), 2.03-2.18 (m,4H).

The following compounds were prepared according to the same procedure:

- 10 N-decanoyl-glutamin
N-tetradecanoyl-glutamin
N-hexadecanoyl-glutamin
N-octadecanoyl-glutamin
N-10-undecenoyl-glutamin
2-methylheptanoyl-glutamin.

15 Example 2

N-tert.butyloxycarbonylglutamin

- 150 g di-tert.butyldicarbonate in 300 ml dioxane were added slowly at 0°C to 100 g L-glutamin in 500 ml water and 207.5 g triethylamin. After stirring overnight, the organic solvents were removed and the residue was
20 brought to pH 1 with conc. HCl. The aqueous phase was extracted several times with ethylacetate and the combined organic phases were then washed with water and brine before being evaporated. 147 g BOC-glutamine were obtained as a colourless glass.

- N-benzyloxycarbonylglutamin was prepared according to the same
25 procedure but using dibenzyl-dicarbonate as the reagent.

Example 3

- The following sets forth examples for the use of the Compounds I in various products. The methods of forming the following compositions are well known to those skilled in the art. All formulations may contain
30 additional ingredients known to those skilled in the art, e.g. colourants, opacifiers, buffers, antioxidants, vitamins, emulsifiers, UV absorbers, silicones and the like. All products can also be buffered to the desired pH. All values are % w/w.

- 10 -

Deo-colognes (four exemplary compositions):

	Compound (I)	0.5	1.5	2.5	6.0
	Fragrance	0.5	1.5	2.5	6.0
	Triclosan (Ciba-Geigy)	1.0	-	0.75	1.0
5	Ethanol	100	100	100	100

Deo-Sticks:

Antiperspirant stick

	Ethylene Glycol Monostearate	7.0
	Shea butter	3.0
10	Neobee 1053 (PVO International)	12.0
	Generol 122 (Henkel)	5.0
	Kesscowax B (Akzo)	17.0
	Dimethicone Dow Corning 345	35.0
	Aluminium Sesquichlorhydrate	20.0
15	Compound (I)	0.5
	Fragrance	0.5

Antiperspirant stick

	Steary Alcohol	17.0
	Castor Wax	3.0
20	Talc	5.0
	Aluminum Zirconium Tetrachlorhydrate	20.0
	Compound (I)	1.0
	Fragrance	1.0
	Dimethicone Dow 245	to 100.0

25 Clear Deodorant Stick

	Witconol APM	43.0
	Propylene Glycol	20.0
	Alcohol 39C	20.0
	Water	7.0
30	Monamid 150ADD	5.0
	Millithix 925	2.0
	Ottasept Extra	0.5
	Compound (I)	0.75
	Fragrance	0.75

- 11 -

	Deodorant Stick	
	Propylene Glycol	69.0
	Water	21.8
	Triclosan	0.2
5	Sodium Stearate	8.0
	Compound (I)	0.5
	Fragrance	0.5
	Alcohol free Deodorant Stick	
	Propylene Glycol-3 Myristyl Ether	
10	(Witconol APM)	36.0
	Propylene Glycol	36.0
	Water	19.0
	Triclosan	0.25
	Sodium Stearate	7.75
15	Compound (I)	0.5
	Fragrance	0.5
	Antiperspirant Aerosol	
	Absolute Ethanol	15.0
	Zirconium Aluminum tetrachlorhydrate	5.0
20	Bentone 38	1.5
	Compound (I)	0.75
	Fragrance	0.75
	S-31 Hydrocarbon propellant	to 100
	Antiperspirant Pump	
25	Water	57.5
	Aluminum Sesquichlorhydrate	20.0
	Triton X-102 (Union Carbide)	2.0
	Dimethyl Isosorbide (ICI)	20.0
	Compound (I)	0.25
30	Fragrance	0.25
	Roll-On	
	Dimethicone DC 354 (Dow Corning)	69.0
	Bentone 38	10.0
	Rezal 36 GP (Reheis Chem.Co.)	20.0
35	Compound (I)	0.5
	Fragrance	0.5

- 12 -

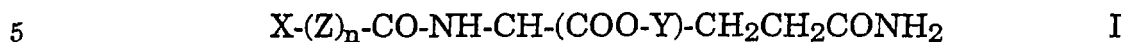
In the above, the following components were used:

	Triclosan	5-chloro-2-(2,4-dichlorophenoxy) phenol
	Neobee 1053	glycerol tricaprato/caprylate
	Generol 122	soya sterol
5	Kesscowax B	cetyl alcohol and glycol polymer
	Witconol APM	polypropylene glycol-3 myristyl ether
	Monamid 150ADD	cocoamide diethanolamine
	Millithix 925	dibenzylidene sorbitol
	Ottasept Extra	quaternium 18 hectorite
10	Bentone 38	quaternium 18 hectorite
	Triton X-102	octoxynol-13
(	Dimethicone DC 354	mixture of fully methylated linear siloxane polymers end-blocked with trimethylsiloxy units
15	Rezal 36 GP	aluminium zirconium tetrachlorohydraxglycine

- 13 -

Claims

1. A composition for application to human skin, containing an amount effective to prevent, suppress or attenuate human malodour of at least one compound of the formula



wherein

X = alkyl, cycloalkyl, alkenyl, cycloalkenyl, aryl
 each radical may also contain elements such as N, O, S, P, CO,
 whereby each of these radicals may be substituted by groups, such
 10 as cycloalkyl, cycloalkenyl, aryl, hydroxy or acyloxy, the radicals
 may further contain groups such as COOH, COOR¹, CN, CONHR²

Y = H or X

Z = O or S

R¹ is alkyl, alkenyl, cycloalkyl

15 R² is alkyl or substituted alkyl

n = 0, 1

and, where,

n = 0

X may also be NH₂, NHR¹, NR₂¹

20 and alkali, earth alkali, aluminium or, optionally substituted, ammonium
 salts of compounds, wherein Y = H

in a cosmetically acceptable carrier,

with the proviso that the compound of formula I is not N-acetylglutamin.

25 2. A composition according to Claim 1, wherein the compound of
 formula I is selected from the consisting of

N-formylglutamin
 N-decanoylglutamin
 N-undecanoylglutamin
 30 N-dodecanoylglutamin
 N-tetradecanoylglutamin
 N-hexydecanoylglutamin
 N-octadecanoylglutamin
 N-phenylacetylglutamin
 N-benzoylglutamin

N-carbonyloxymethylglutamin
 N-carbonyloxyethylglutamin
 N-tert.butoxycarbonylglutamin
 N-carbonyloxybenzylglutamin
 5 N-formylglutamin-benzylester
 N-acetylglutamin-methylester
 N-benzoylglutamin-methylester
 N-carbonyloxybenzylglutamin-benzylester
 N-acetylglutamin-aluminium-salt
 10 N-2-methylheptanoylglutamin
 N-10-undecenoylglutamin
 N-3,7-dimethyl-6-octenoylglutamin
 N-3,7-dimethyl-2,6-octadienoylglutamin
 N-cinnamoylglutamin
 15 N-3,6,9-trioxadecanoylglutamin
 N-2-pentyl-cyclopropanoylglutamin
 N-benzyloxy-carbonylglutamin
 N-tert.butylloxycarbonylglutamin-benzyl ester
 4-carbamoyl-2-(3-(3-carbamoyl-1-carboxypropylcarbamoyl)-propanoyl-
 20 amino)-butyric acid
 4-carbamoyl-2-(4-(3-carbamoyl-1-carboxypropylcarbamoyl)-butanoyl-
 amino)-butyric acid
 4-carbamoyl-2-(5-(3-carbamoyl-1-carboxypropylcarbamoyl)-pentanoyl-
 amino)-butyric acid
 25 4-carbamoyl-2-(6-(3-carbamoyl-1-carboxypropylcarbamoyl)-hexanoyl-
 amino)-butyric acid
 4-carbamoyl-2-(7-(3-carbamoyl-1-carboxypropylcarbamoyl)-heptanoyl-
 amino)-butyric acid
 3-(3-carbamoyl-1-carboxypropylcarbamoyl)-propanoic acid
 30 4-(3-carbamoyl-1-carboxypropylcarbamoyl)-butanoic acid
 5-(3-carbamoyl-1-carboxypropylcarbamoyl)-pentanoic acid
 6-(3-carbamoyl-1-carboxypropylcarbamoyl)-hexanoic acid
 7-(3-carbamoyl-1-carboxypropylcarbamoyl)-heptanoic acid
 4-carbamoyl-2-[2-(2-(2-[(3-carbamoyl-1-carboxypropylcarbamoyl)-
 35 methoxy]-ethoxy)-ethoxy)-acetyl-amino]-butyric acid
 N-acetylglutamin-benzylester
 N-acetylglutamin-dodecylester
 N-acetylglutamin-tetradecylester
 N-acetylglutamin-2-phenylethylester

- 15 -

N-acetylglutamin-geranylester
 N-acetylglutamin-citronellylester
 N-dodecanoylglutamin-2-phenylethylester
 N-benzoylglutamin-phenylethylester
 5 N-benzoylglutamin-benzylester
 N-carbonyloxybenzylglutamin-geranylester
 N-carbonyloxy-2-phenylethyl-glutamin-2-phenylethylester
 N-acetylglutamin-sodium and -potassium salt
 N-dodecanoylglutamin-sodium, -potassium and -ammonium salt
 10 N-carbamoylglutamin.

3. A cosmetic product e.g. a personal body deodorant or antiperspirant article, containing at least one compound I as defined in Claim 1.

4. A compound of formula I as defined in Claim 1 and selected from the group consisting of

15 N-2-methylheptanoylglutamin
 N-10-undecenoylglutamin
 N-3,7-dimethyl-6-octenoylglutamin
 N-3,7-dimethyl-2,6-octadienoylglutamin
 N-cinnamoylglutamin
 20 N-3,6,9-trioxadecanoylglutamin
 N-2-pentyl-cyclopropanoylglutamin
 4-carbamoyl-2-(3-(3-carbamoyl-1-carboxypropylcarbamoyl)-propanoyl-
 amino)-butyric acid
 4-carbamoyl-2-(4-(3-carbamoyl-1-carboxypropylcarbamoyl)-butanoyl-
 25 amino)-butyric acid
 4-carbamoyl-2-(5-(3-carbamoyl-1-carboxypropylcarbamoyl)-pentanoyl-
 amino)-butyric acid
 4-carbamoyl-2-(6-(3-carbamoyl-1-carboxypropylcarbamoyl)-hexanoyl-
 amino)-butyric acid
 30 4-carbamoyl-2-(7-(3-carbamoyl-1-carboxypropylcarbamoyl)-heptanoyl-
 amino)-butyric acid
 3-(3-carbamoyl-1-carboxypropylcarbamoyl)-propanoic acid
 4-(3-carbamoyl-1-carboxypropylcarbamoyl)-butanoic acid
 5-(3-carbamoyl-1-carboxypropylcarbamoyl)-pentanoic acid
 35 6-(3-carbamoyl-1-carboxypropylcarbamoyl)-hexanoic acid
 7-(3-carbamoyl-1-carboxypropylcarbamoyl)-heptanoic acid
 4-carbamoyl-2-[2-(2-(2-[(3-carbamoyl-1-carboxypropylcarbamoyl)-

methoxy]-ethoxy)-ethoxy)-acetylaminol-butyrlic acid

N-acetylglutamin-benzylester

N-acetylglutamin-dodecylester

N-acetylglutamin-tetradecylester

5 N-acetylglutamin-2-phenylethylester

N-acetylglutamin-geranylester

N-acetylglutamin-citronellylester

N-dodecanoylglutamin-2-phenylethylester

N-benzoylglutamin-phenylethylester

10 N-benzoylglutamin-benzylester

N-carbonyloxybenzylglutamin-geranylester

N-carbonyloxy-2-phenylethyl-glutamin-2-phenylethylester

N-acetylglutamin-sodium and -potassium salt

N-dodecanoylglutamin-sodium, -potassium and -ammonium salt.

15 5. A method of preventing, suppressing or attenuating human body malodour by means of compounds of the formula I as defined in Claim 1, which comprises the application to human skin of a cosmetic product as defined in Claim 3.

20 6. The use of a compound I as defined in Claim 1 in a composition for application to human skin, e.g. in a personal body deodorant or anti-perspirant composition.
