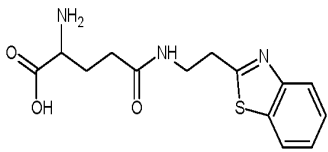
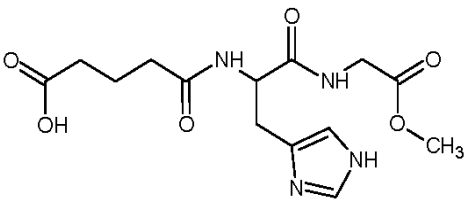
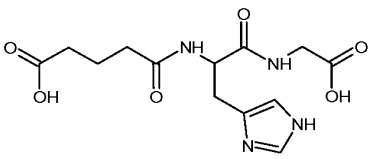
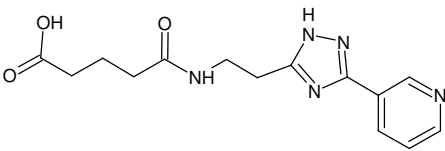
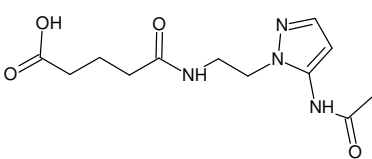
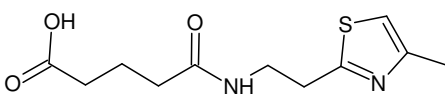
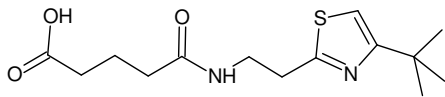
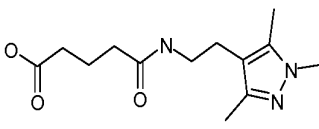
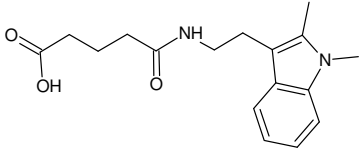
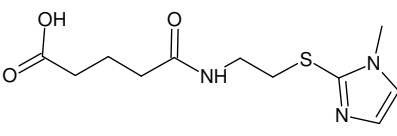


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202	 <chem>OC(=O)CCCCC(=O)NCCc1c[nH]n1-c2ccccc2</chem>
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210	 <chem>OC(=O)CCCCC(=O)NCCc1ccoc1</chem>
336	 <chem>COC(=O)CCCCC(=O)NCCc1c[nH]n1</chem>
337	 <chem>OC(=O)CCCCC(=O)NCCc1c[nH]n(c1=O)N</chem>
338	 <chem>OC(=O)CCCCC(=O)NCCc1c[nH]n(c1=O)N</chem>

inflammatory changes in the lungs were evaluated by a 5-point scale, wherein:

1 means inflammatory infiltrate that occupies 0-20% of the area of a studied histological preparation;

5 2 means inflammatory infiltrate that occupies 21-40% of the area of a studied histological preparation;

3 means inflammatory infiltrate that occupies 41-60% of the area of a studied histological preparation;

10 4 means inflammatory infiltrate that occupies 61-80% of the area of a studied histological preparation; and

5 means inflammatory infiltrate that occupies 81-100% of the area of a studied histological preparation;

The number of rats in a group varies from 7 to 10 animals.

15 The histological analysis of the lungs showed that a single inhalation of Sephadex causes in rats a pronounced flow of inflammatory infiltration cells, preferably lymphocytes, to the bronchioles area (peribronchitis) (Table 14).

20 Intragastric administration of the compounds to the rats reduced the peribronchitis symptoms. All the studied compounds of general formula I (without any limitation to the recited compounds) exhibited activity within the tested doses.

Table 14

Histological analysis of a lung in the rat model of peribronchitis

Group	Dose of compound (mg/kg)	Peribronchitis (scores)
Intact	–	1.57±0.2
Control	–	3.14±0.26
2	1.8	2.14±0.34
	18	2.37±0.3
6	1.8	2.14±0.14
	18	2.37±0.37
34	1.8	2.21±0.36
	18	2.17±0.3
115	1.8	2.27±0.37

	18	2.43±0.2
118	1.8	2.4±0.31
	18	2.1±0.22
141	1.8	2.25±0.31
	18	1.71±0.29
197	1.8	2±0
	18	1.86±0.26
Intact	–	1.86±0.34
Control	–	3±0.31
198	1.8	2.44±0.34
	18	2.44±0.29
251	1.8	2.44±0.29
	18	2.0±0.31
275	1.8	2.08±0.15
	18	2±0.29

Example 12

Dosage forms of the compounds according to the invention

The compounds according to the invention can be administered orally, intranasally, intramuscularly, or intravenously in a unit dosage form comprising non-toxic pharmaceutically acceptable carriers.

The compounds can be administered to a patient in daily doses of from 0.1 to 10 mg/kg of body weight, preferably in doses of from 0.5 to 5 mg/kg, one or more times a day.

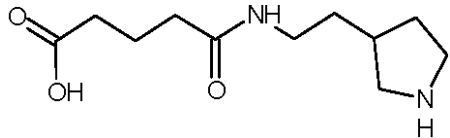
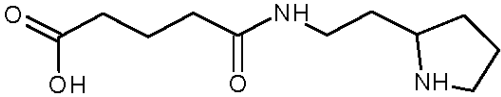
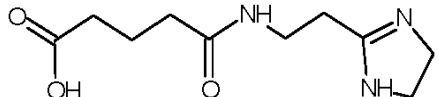
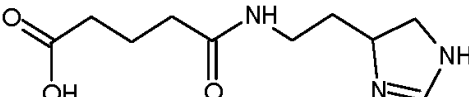
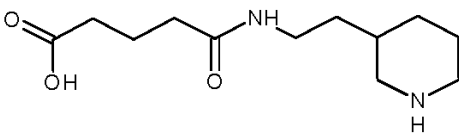
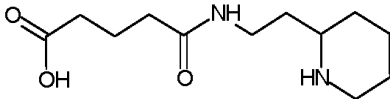
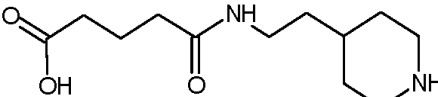
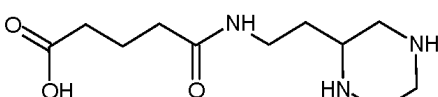
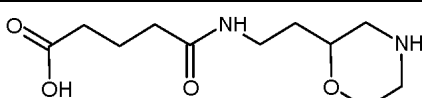
However, it should be noted that a particular dose for a particular patient depends on many factors, such as patient's age, body weight, gender, general health condition, dietary pattern, and the schedule and route of drug administration, the excretion rate of the drug from the body, and the disease severity in the patient under treatment.

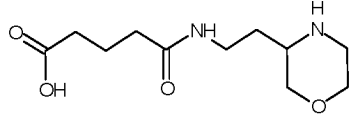
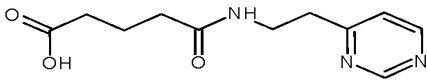
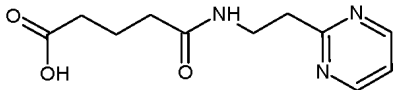
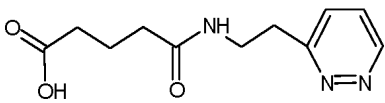
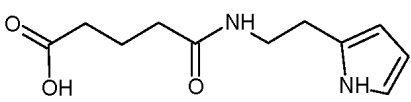
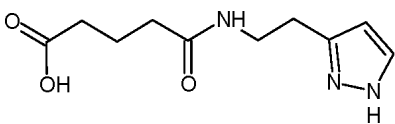
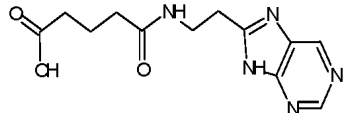
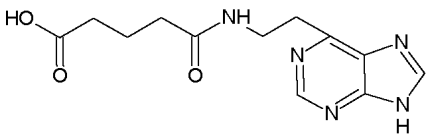
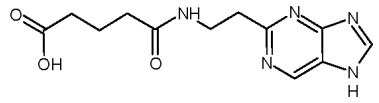
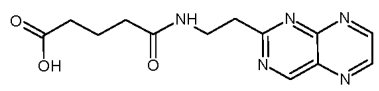
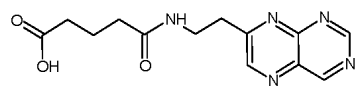
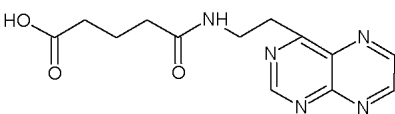
Pharmaceutical compositions comprise the compounds according to the invention in an amount effective for achieving a positive result and can be administered in standard dosage forms (for example, in solid, semi-solid, or liquid forms) that

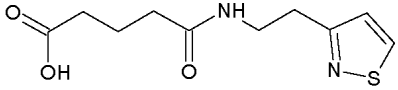
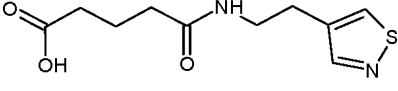
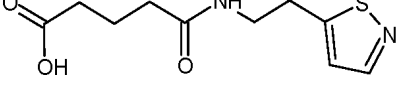
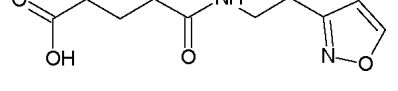
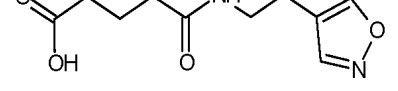
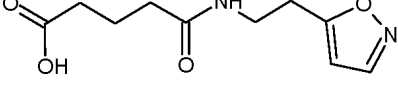
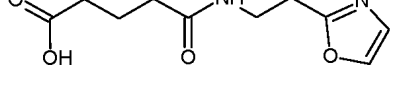
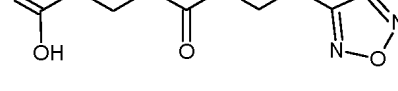
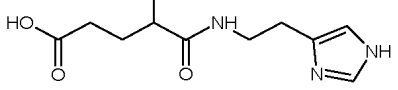
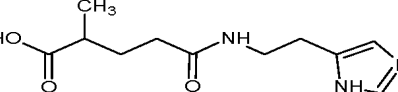
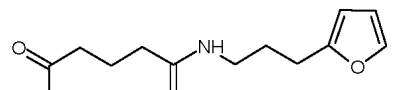
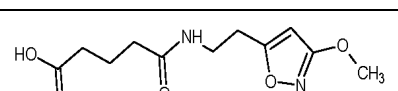
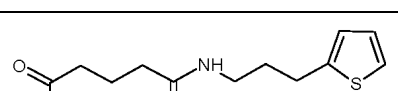
CLAIMS

1. A compound or a pharmaceutically acceptable salt thereof, wherein the compound is

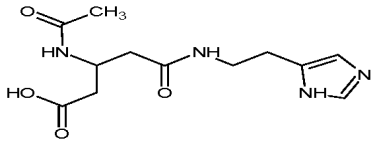
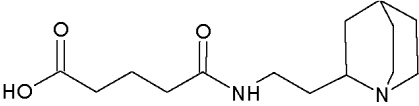
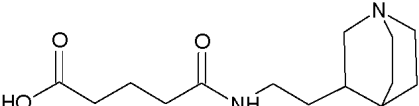
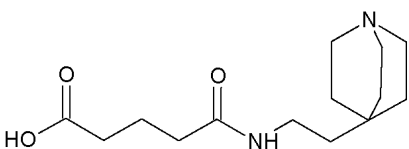
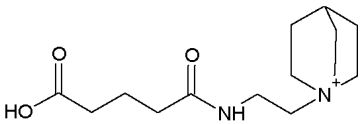
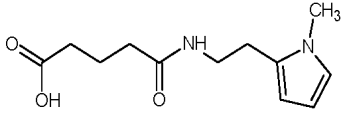
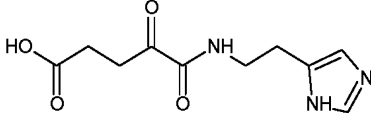
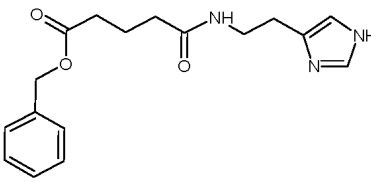
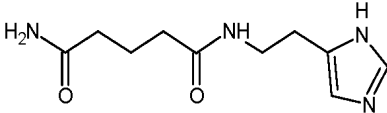
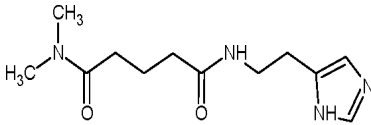
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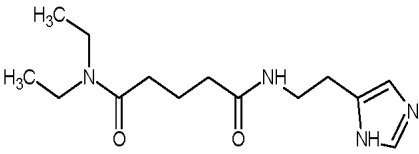
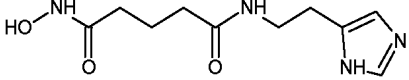
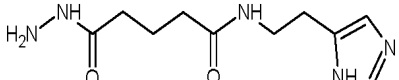
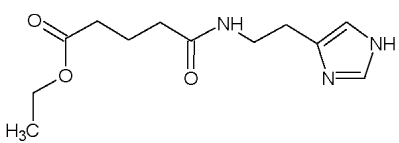
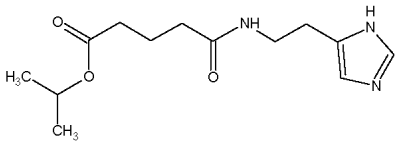
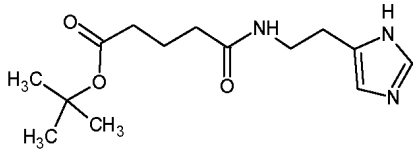
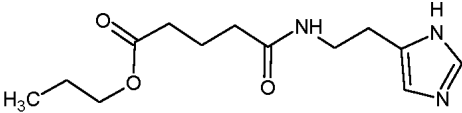
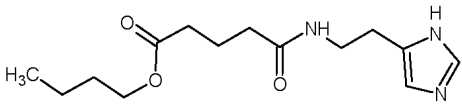
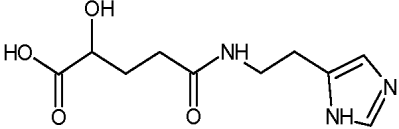
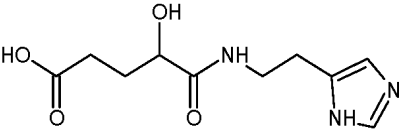
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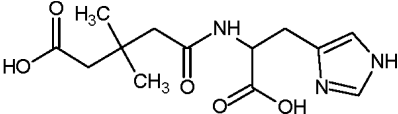
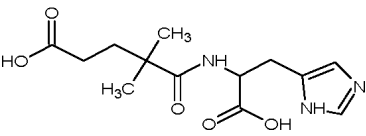
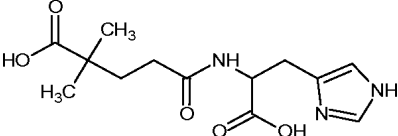
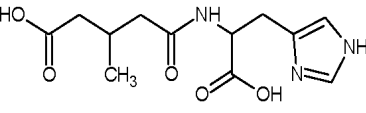
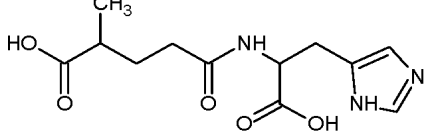
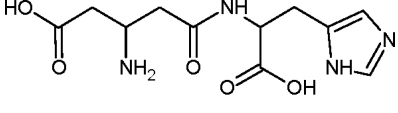
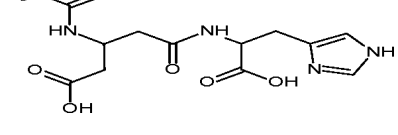
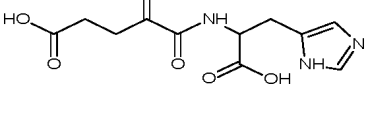
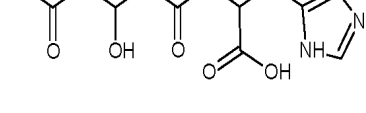
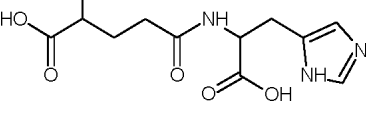
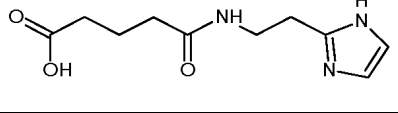
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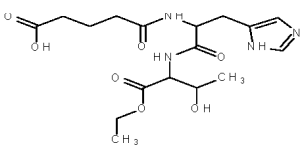
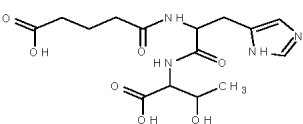
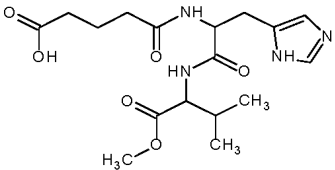
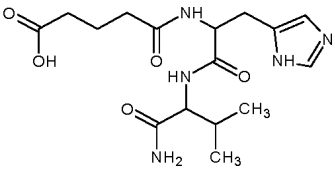
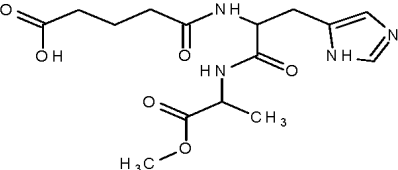
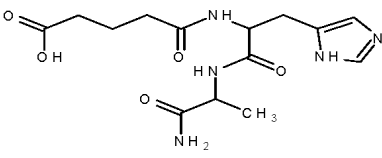
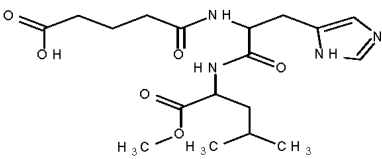
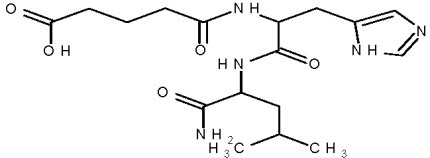
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35	<p>Chemical structure of 6-(pyridin-2-yl)hexanamide: A hexanamide chain with a carboxylic acid group at one end and a pyridine ring at the other, connected by a three-carbon linker.</p>
36	<p>Chemical structure of 6-(3-chloropyridin-2-yl)hexanamide: A hexanamide chain with a carboxylic acid group at one end and a 3-chloropyridine ring at the other, connected by a three-carbon linker.</p>
37	<p>Chemical structure of 6-(5-chloro-1,2,4-oxadiazol-3-yl)hexanamide: A hexanamide chain with a carboxylic acid group at one end and a 5-chloro-1,2,4-oxadiazole ring at the other, connected by a three-carbon linker.</p>
38	<p>Chemical structure of 6-(4-methoxy-1,2,4-oxadiazol-3-yl)hexanamide: A hexanamide chain with a carboxylic acid group at one end and a 4-methoxy-1,2,4-oxadiazole ring at the other, connected by a three-carbon linker.</p>
39	<p>Chemical structure of 6-(5-chloro-1,2,4-oxadiazol-3-yl)hexanamide: A hexanamide chain with a carboxylic acid group at one end and a 5-chloro-1,2,4-oxadiazole ring at the other, connected by a three-carbon linker.</p>
40	<p>Chemical structure of 6-(1H-indol-3-yl)hexanamide: A hexanamide chain with a carboxylic acid group at one end and an indole ring at the other, connected by a three-carbon linker.</p>
41	<p>Chemical structure of 6-(pyridin-4-yl)hexanamide: A hexanamide chain with a carboxylic acid group at one end and a pyridine ring at the other, connected by a three-carbon linker.</p>
42	<p>Chemical structure of 6-(4-methoxy-2-pyridinyl)hexanamide: A hexanamide chain with a carboxylic acid group at one end and a 4-methoxy-2-pyridine ring at the other, connected by a three-carbon linker.</p>
44	<p>Chemical structure of 6-(1H-imidazol-2-yl)hexanamide: A hexanamide chain with a carboxylic acid group at one end and an imidazole ring at the other, connected by a three-carbon linker.</p>
45	<p>Chemical structure of 6-(1H-imidazol-2-yl)hexanamide: A hexanamide chain with a carboxylic acid group at one end and an imidazole ring at the other, connected by a three-carbon linker.</p>
46	<p>Chemical structure of 6-(1H-imidazol-2-yl)hexanamide: A hexanamide chain with a carboxylic acid group at one end and an imidazole ring at the other, connected by a three-carbon linker.</p>

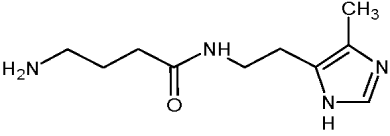
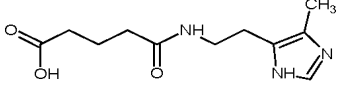
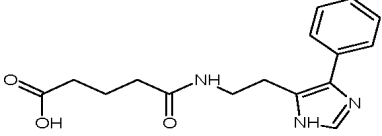
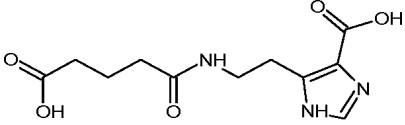
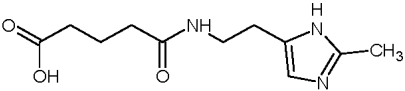
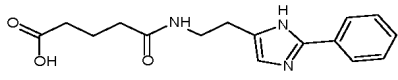
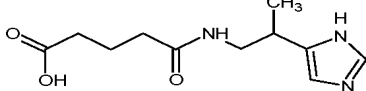
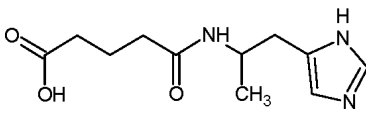
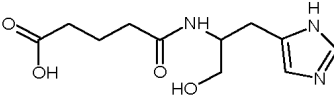
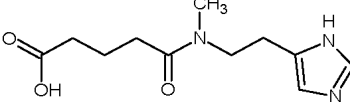
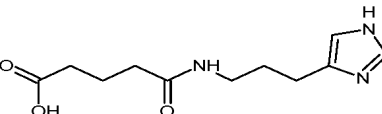
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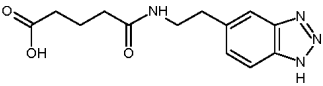
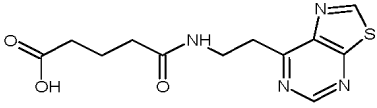
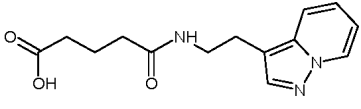
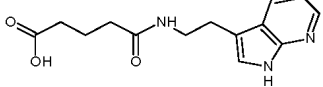
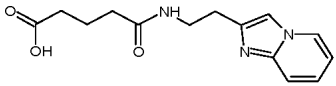
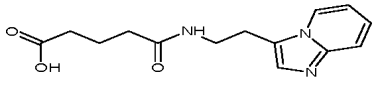
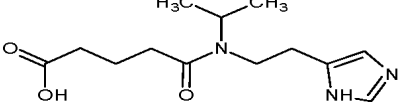
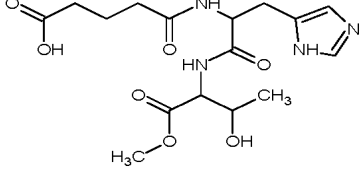
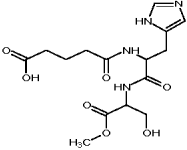
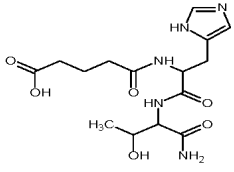
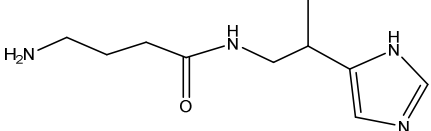
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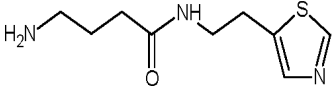
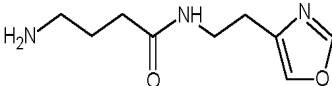
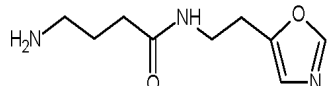
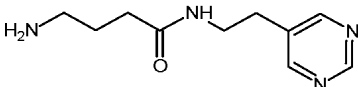
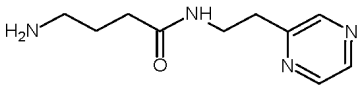
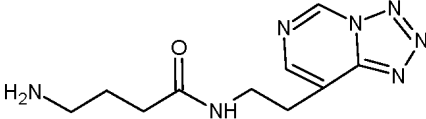
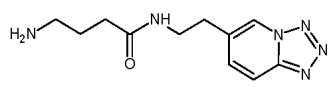
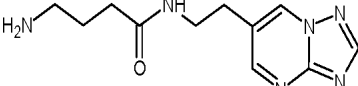
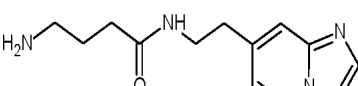
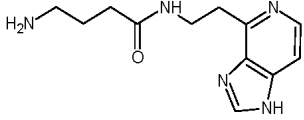
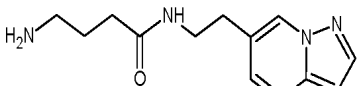
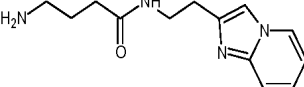
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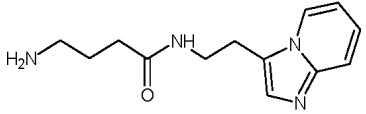
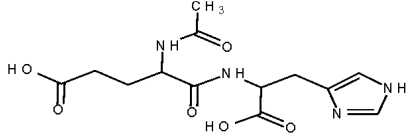
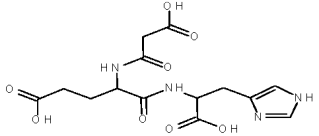
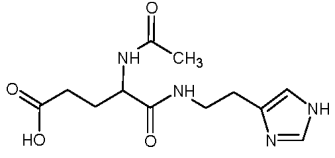
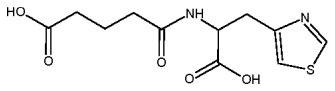
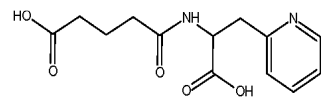
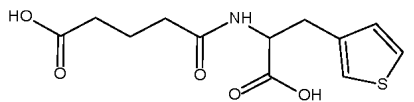
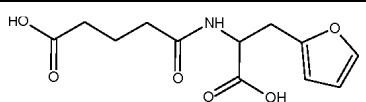
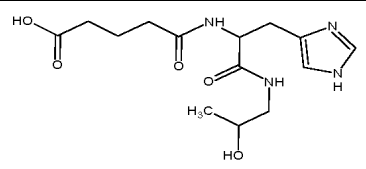
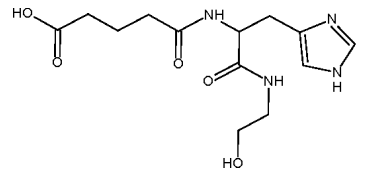
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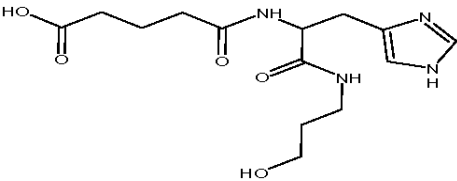
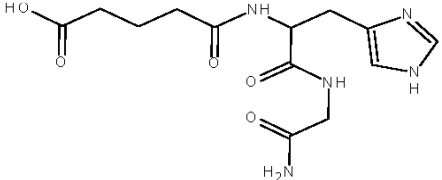
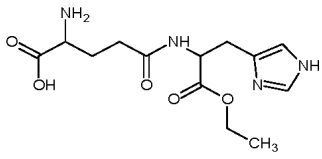
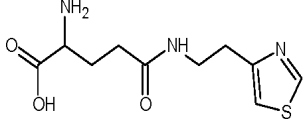
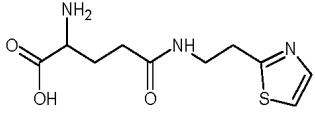
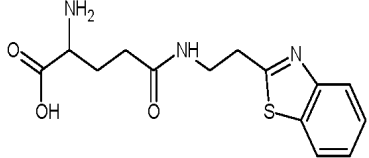
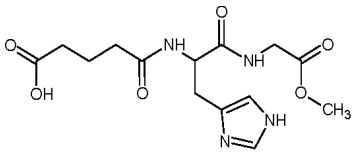
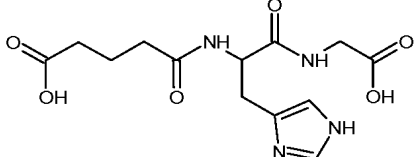
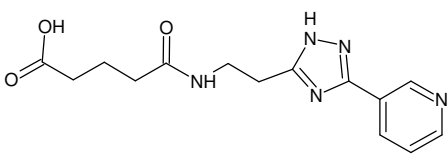
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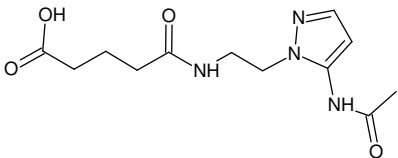
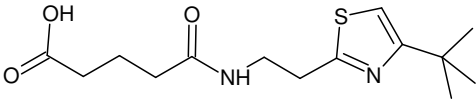
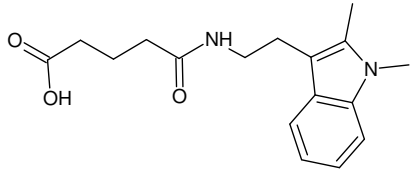
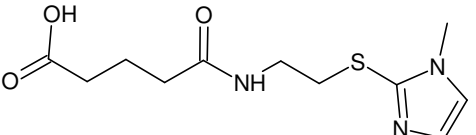
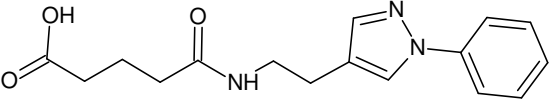
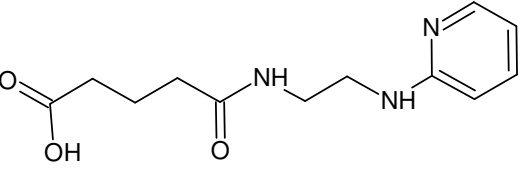
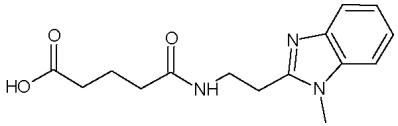
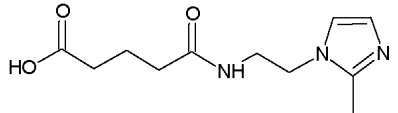
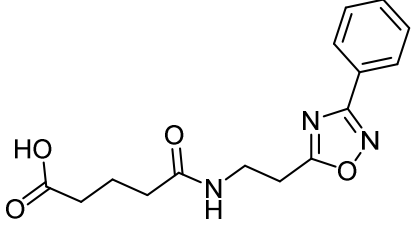
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2. Use of a compound or a pharmaceutically acceptable salt thereof according to claim 1 in the manufacture of a medicament for preventing or treating asthma exacerbation, chronic obstructive pulmonary disease, mucoviscidosis, conjunctivitis, gastroenteritis, hepatitis, or myocarditis.

3. Use of a compound or a pharmaceutically acceptable salt thereof according to claim 1 in the manufacture of a medicament for preventing or treating complications of an infectious disease caused by an RNA-containing virus belonging to the Metapneumovirus, Pneumovirus, or Respirovirus genus, and/or by a DNA-containing virus belonging to the Adenoviridae family.

4. The use of claim 3, wherein the complication is pharyngitis, nasopharyngitis, tonsillitis, laryngitis, laryngotracheitis, laryngotracheobronchitis, bronchitis, bronchiolitis, pneumonia, or airway obstructive syndrome.

5. Use of a compound or a pharmaceutically acceptable salt thereof according to claim 1 in the manufacture of a medicament for preventing and treating rhinorrhea, laryngitis, laryngotracheitis, laryngotracheobronchitis, or airway obstructive syndrome.

6. The use of any one of claims 2-5, wherein the medicament is to be administered in a solid dosage form.

7. The use of any one of claims 2-5, wherein the effective amount of the compound or a pharmaceutically acceptable salt thereof in the medicament is 0.1 to 10 mg/kg of body weight.

8. The use of any one of claims 2-5, wherein the effective amount of the compound or a pharmaceutically acceptable salt thereof in the medicament is a single dose of the compound or a pharmaceutically acceptable salt thereof which is 2 to 300 mg.

9. The use of any one of claims 2-5, wherein the medicament is to be administered for 3 to 14 days.

10. A pharmaceutical composition for use in the prevention or treatment of a disease caused by an RNA-containing virus belonging to the Metapneumovirus, Pneumovirus, or Respirovirus genus, and/or by a DNA-containing virus belonging to the Adenoviridae family, comprising an effective amount of a compound or a pharmaceutically acceptable salt thereof according to claim 1 and pharmaceutically acceptable carriers and excipients.

11. The composition for use of claim 10, wherein the virus belonging to the Pneumovirus genus is respiratory syncytial virus, the virus belonging to the Metapneumovirus genus is human metapneumovirus, and the virus belonging to the Respirovirus genus is parainfluenza virus.

12. The composition for use of claim 10, wherein the Adenoviridae family includes the Mastadenovirus genus to which human adenovirus belongs.

13. A pharmaceutical composition for use in the prevention or treatment of asthma exacerbation, chronic obstructive pulmonary disease, mucoviscidosis, conjunctivitis, gastroenteritis, hepatitis, myocarditis, the composition comprising an effective amount of a compound or a pharmaceutically acceptable salt thereof according to claim 1 and pharmaceutically acceptable carriers and excipients.

14. A pharmaceutical composition for use in the prevention or treatment of complications of an infectious disease caused by an RNA-containing virus belonging to the Metapneumovirus genus, Pneumovirus, or Respirovirus genus, and/or by a DNA-containing virus belonging to the Adenoviridae family, the composition comprising an effective amount of a compound or a pharmaceutically acceptable salt thereof according to claim 1 and pharmaceutically acceptable carriers and excipients.

15. The pharmaceutical composition for use of claim 14, wherein the complication is pharyngitis, nasopharyngitis, tonsillitis, laryngitis, laryngotracheitis, laryngotracheobronchitis, bronchitis, bronchiolitis, pneumonia, or airway obstructive syndrome.

16. A pharmaceutical composition for use in the prevention or treatment of rhinorrhea, laryngitis, laryngotracheitis, laryngotracheobronchitis, or airway obstructive syndrome, the composition comprising an effective amount of a compound or a pharmaceutically acceptable salt thereof according to claim 1 and pharmaceutically acceptable carriers and excipients.

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17. A kit for use in the prevention or treatment of a disease caused by an RNA-containing virus belonging to the Metapneumovirus, Pneumovirus, or Respirovirus genus, and/or by a DNA-containing virus belonging to the Adenoviridae family, comprising the composition according to claims 10 to 13 and instructions for use thereof.

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18. The kit for use of claim 17, wherein the virus belonging to the Pneumovirus genus is respiratory syncytial virus, the virus belonging to the Metapneumovirus genus is human metapneumovirus, and the virus belonging to the Respirovirus genus is parainfluenza virus.

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19. The kit for use of claim 17, wherein the Adenoviridae family includes the Mastadenovirus genus to which human adenovirus belongs.

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20. A kit for use in the prevention or treatment of asthma exacerbation, chronic obstructive pulmonary disease, mucoviscidosis, conjunctivitis, gastroenteritis, hepatitis,

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myocarditis, comprising the composition according to claim 13 and instructions for use thereof.

21. A kit for use in the prevention or treatment of
5 complications of an infectious disease caused by an RNA-containing virus belonging to the Metapneumovirus, Pneumovirus, or Respirovirus genus, and/or by a DNA-containing virus belonging to the Adenoviridae family, comprising the composition according to claims 14 to 15 and instructions for use thereof.

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22. The kit for use of claim 21, wherein the complication is pharyngitis, nasopharyngitis, tonsillitis, laryngitis, laryngotracheitis, laryngotracheobronchitis, bronchitis, bronchiolitis, pneumonia, or airway obstructive syndrome.

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23. A kit for use in the prevention and treatment of rhinorrhea, laryngitis, laryngotracheitis, laryngotracheobronchitis, or airway obstructive syndrome, comprising the composition according to claim 16 and
20 instructions for use thereof.

24. Use of a compound or a pharmaceutically acceptable salt thereof according to claim 1 in the manufacture of a medicament for the treatment of a disease caused by an RNA-
25 containing virus belonging to the Metapneumovirus, Pneumovirus, or Respirovirus genus, and/or by a DNA-containing virus belonging to the Adenoviridae family.

25. The use of claim 24, wherein the virus belonging to
30 the Pneumovirus genus is respiratory syncytial virus, the virus belonging to the Metapneumovirus genus is human metapneumovirus, and the virus belonging to the Respirovirus genus is parainfluenza virus.

26. The use of claim 24, wherein the Adenoviridae family includes the Mastadenovirus genus to which human adenovirus belongs.

5 27. A method for preparing a compound, which is a dicarboxylic acid monoamide, or a pharmaceutically acceptable salt thereof according to claim 1, selected from compounds 1-29, 32-42, 46, 47, 49-53, 79-81, 84, 108-112, 114-116, 118, 120, 122-126, 128-140, 171-172, 174-177, 181-184, 189-192, 195, 196,
10 198, 200-208, 210 and 337-341, the method comprising reacting an appropriate anhydride with an amine in a suitable organic solvent optionally in the presence of an organic base.

28. A method for preparing a compound, which is a C₁-C₆
15 alkylamide, or a pharmaceutically acceptable salt thereof according to claim 1, selected from compounds 117 and 141, the method comprising reacting an appropriate amine comprising a C₁-C₆ alkyl substituent at the amino group, with glutaric anhydride in an organic solvent.

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29. A method for preparing a compound, which is a dicarboxylic acid amide comprising a C₁-C₆ alkyl-substituted carboxyl group in a glutaryl moiety, or a pharmaceutically acceptable salt thereof according to claim 1, selected from
25 compounds 61, 62, 64 and 65, the method comprising:

(a) reacting an appropriate anhydride with an amine in a suitable organic solvent, optionally in a suitable organic solvent, and under boiling;

(b) suspending of the resulting amide in a C₁-C₆ alcohol,
30 and adding dropwise trimethylchlorosilane at room temperature.

30. A method for preparing a compound, which is a dicarboxylic acid amide comprising a C₁-C₆ alkyl-substituted carboxyl group in a glutaryl moiety, or a pharmaceutically
35 acceptable salt thereof according to claim 1, selected from compounds 55 and 63, the method comprising:

(a) synthesizing a mono C₁-C₆ ester of glutaric acid from glutaric anhydride and an appropriate C₁-C₆ alcohol by the method of activated N-oxysuccinimide esters in an anhydrous organic solvent; and

5 (b) reacting the resulting C₁-C₆ ester of glutaric acid with an appropriate amine in the presence of a condensing agent, preferably 1,1'-carbonyldiimidazole, in an organic solvent.

31. A method for preparing a compound, which is a
10 dicarboxylic acid amide comprising mono- or dimethyl substituents in a glutaryl moiety, or a pharmaceutically acceptable salt thereof according to claim 1, selected from compounds 30-31, 44-45, 73-75 and 77-78, the method comprising:

(a) opening a mono- or dimethyl substituted glutaric
15 anhydride upon stirring thereof in methanol at room temperature for 24 hours;

(b) reacting the mono- or dimethyl substituted monomethyl ester of glutaric acid with an appropriate amine in an organic solvent, preferably in N,N-dimethylformamide, in the presence of
20 a condensing agent, preferably 1,1'-carbonyldiimidazole.

32. A method for preparing a compound, which is a dicarboxylic acid amide comprising a hydroxyl group, as a substituent, in the α -position of a glutaryl moiety, or a
25 pharmaceutically acceptable salt thereof according to claim 1, selected from compounds 66, 67, 82 and 83, the method comprising:

(a) preparing 5-oxotetrahydrofuran-2-carbonyl chloride from 5-oxotetrahydrofuran-2-carboxylic acid by reacting with oxalyl
30 chloride in an organic solvent under cooling;

(b) reacting 5-oxotetrahydrofuran-2-carbonyl chloride with an appropriate amine in an organic solvent in the presence of potash, followed by hydrolysis of lactone in the presence of alkali to obtain a target amide.

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33. A method for preparing a compound, which is a glutaryl derivative of a dipeptide, or a pharmaceutically acceptable salt thereof according to claim 1, selected from compounds 87-96, 148-150, 193 and 194, the method comprising:

- 5 (a) synthesizing a dipeptide from (di-Boc)-protected histidine and an appropriate amino acid by the method of activated p-nitrophenyl esters in N,N-dimethylformamide;
- (b) removing Boc-protection by the treatment of the protected dipeptide with trifluoroacetic acid; and
- 10 (c) adding glutaric anhydride to the trifluoroacetic derivative of the dipeptide in N,N-dimethylformamide in the presence of 2 equivalents of N-methylmorpholine.

34. A method for preparing a compound, which is a derivative of γ -aminobutyric acid and an appropriate amine, or a pharmaceutically acceptable salt thereof according to claim 1, selected from compounds 100-104, 106-107, 153, 156-158 and 160-169, the method comprising:

- (a) preparing imidazolide of N-Boc- γ -aminobutyric acid by reacting N-Boc- γ -aminobutyric acid with 1,1'-carbonyldiimidazole in an anhydrous organic solvent; and
- 20 (b) reacting the imidazolide of N-Boc- γ -aminobutyric acid with an appropriate amine under heating in an anhydrous organic solvent.

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35. A method for preparing a compound, which is a derivative of glutamic acid at the γ -carboxyl group and an appropriate amine, or a pharmaceutically acceptable salt thereof according to claim 1, selected from compounds 171 and 173, by the method of activated N-oxysuccinimide esters, the method comprising reacting N-oxysuccinimide ester of an appropriate acid with an appropriate amine in an anhydrous organic solvent at room temperature.

36. A method for preparing a compound, which is a derivative of N-acetylglutamic acid at the α -carboxyl group and

an appropriate amine, or a pharmaceutically acceptable salt thereof according to claim 1 which is compound 99, the method comprising reacting of a condensing agent, preferably N,N,N',N'-tetramethyl-O-(benzotriazol-1-yl)uronium tetrafluoroborate, in
5 the presence of an organic base in an organic solvent.