Claims

1. Peptide having antimicrobial activity, which peptide is a fragment of HD-5, wherein the peptide consists of the sequence of:
ATCYCRTGR (SEQ ID No. 1),
RGTRCYCTA (SEQ ID No. 2),
Ac–atcycrtGr–NH_2 (SEQ ID No. 5),
LYRLCCR (SEQ ID No. 41),
ATCYCRTGRCATR (SEQ ID No. 34),
ATCYCRTGRCATRESLSGVCEISGRLYR (SEQ ID No. 12),
TGRCATRESLSGVCEISGRLYRLCCR (SEQ ID No. 14),
CATRESLSGVCEISGRLYRLCCR (SEQ ID No. 19),
ESLSGVCEISGRLYRLCCR (SEQ ID No. 25), or
CATRESLSGVCEISGRLY (SEQ ID No. 28).

2. The peptide of claim 1, wherein the peptide consists of the sequence of
ATCYCRTGR (SEQ ID No. 1),
RGTRCYCTA (SEQ ID No. 2),
Ac–atcycrtGr–NH_2 (SEQ ID No. 5),
LYRLCCR (SEQ ID No. 41),
ATCYCRTGRCATR (SEQ ID No. 34),
ATCYCRTGRCATRESLSGVCEISGRLYR (SEQ ID No. 12), or
TGRCATRESLSGVCEISGRLYRLCCR (SEQ ID No. 14).

3. The peptide of claim 1, wherein the peptide consists of the sequence of
ATCYCRTGR (SEQ ID No. 1),
RGTRCYCTA (SEQ ID No. 2),
Ac–atcycrtGr–NH_2 (SEQ ID No. 5), or
LYRLCCR (SEQ ID No. 41).

4. The peptide of claim 1, wherein the peptide consists of the sequence of
ATCYCRTGR (SEQ ID No. 1),
RGTRCYCTA (SEQ ID No. 2), or
Ac–atcycrtGr–NH_2 (SEQ ID No. 5).

5. The peptide of claim 1, wherein the peptide consists of the sequence of ATCYCRTGR (SEQ ID No. 1), or RGTRCYCTA (SEQ ID No. 2), preferably ATCYCRTGR (SEQ ID No. 1).

6. The peptide of any of the preceding claims, wherein the peptide is a homodimer linked through a cysteine-bridge, preferably wherein said homodimer is a dimer of HD-5 $_{1-9}$.(SEQ ID No. 1) .

7. The peptide of any of the preceding claims, comprising an N-terminal modification, preferably selected from acetyl-, formyl-, pyroglutamyl-, fatty acids-, urea-, carbamate-, and alkylamine.

8. The peptide of any of the preceding claims, comprising a the C-terminal modification, preferably selected from one of the group consisting of: -Amide, -Acid, -N-alkyl-Amide, -Aldehyde, -Ester, -p-Nitroanilide, and -7-Amino-4-Methylcoumarin.

9. The peptide of any of the preceding claims, wherein the peptide consists of or comprises D-and/or L-amino acids.

10. Peptide having antimicrobial activity, which peptide is a fragment of HNP-4, consisting of the sequence of: VCSCRLVFCRR (SEQ ID No. 3), SEQ ID No. 3, RRCFVLRCSCV (SEQ ID No. 4), or Ac–vcscrlvfcrr–NH_2 (SEQ ID NO. 6).

11. The peptide of any of the preceding claims, wherein the peptide comprises N- and/or C-terminal modifications, preferably wherein said modification is an N-terminal acetyl modification and/or a C-terminal amide modification.

12. A method of manufacturing the peptides as defined in any of the preceding claims, the method comprising subjecting reduced HD5 or HNP-4 to protease activity followed by purification.

13. The method of claim 12, wherein the protease is trypsin or chymotrypsin.

14. The method of claim 12 or 13, further comprising dimerization of the peptide through generation of an intramolecular disulfide.

15. The method of any of claims 12 to 13, further comprising modification of the N- or –C terminal.

16. Use of a peptide as defined in any of claims 1 to 11 for the manufacture of a composition for use in modulation of the microbiome or the use in the treatment and/or prophylaxis of intestinal, lung, skin, mouth, eye, ear, vaginal or CNS conditions or other diseases associated with a dysbiotic condition.

17. The use of claim 16, wherein the disease is selected from inflammatory bowel disease, in particular Crohn's disease, ulcerative colitis, coeliac disease, necrotizing enterocolitis, irritable bowel syndrome, tourist diarrhea, gastro intestinal cancers, and intestinal graft versus host disease, but also metabolic diseases like diabetes and pre-diabetes, obesity, NAFLD, NASH, dyslipidemia; diseases of the lung, in particular asthma and COPD; diseases of the skin, in particular atopic dermatitis, rosacea, seborrheic dermatitis, eczema, carbuncles, staph infection, candidiasis, cellulitis, impetigo, acne, pilonidal cyst, cutaneous lymphomas, Athletes food, ringworm and molluscum; diseases of the mouth, in particular periodontitis and caries; diseases of the eye, in particular Dry eye, Sjögrens Disease, conjunctivitis, blepharitis, hordeola, chalazia, periorbital cellulitis, dacryocystitis, endolphalmitis, uveitis, iritis; diseases of the ear, in particular mastoiditis, vestibular neuronitis, bullous myringitis, granular myringitis, otitis externa, otitis media; diseases of the vagina, in particular bacterial vaginosis, Trichomonas vaginitis, candida, non-infectious vaginitis, inflammatory vaginitis, sepsis and psychiatric diseases, in particular, schizophrenia, Parkinsonism, bipolar disorder, depression or autism.

18. The use of any of claims 16 to 17, wherein the peptide is to be administered in combination with lysozyme for the prevention or treatment of Parkinson's disease.

19. The use of any of claims 16 to 18, wherein the peptide is used as an antimicrobial agent, in particular against multi drug resistant bacteria induced

infections.

20. The use of any of claims 16-19, wherein the peptide is to be administered orally, parentally or topically.

5