

CLAIMS

1. A composition comprising self-assembling peptides 11 amino acids in length and comprising a sequence of SEQ ID NO: 1, wherein X1 is glutamic acid and wherein the self-assembling peptides have at least 72% sequence identity to a peptide consisting of SEQ ID NO: 6, wherein the self-assembling peptides are capable of self-assembly at a pH below 7.5 and at least physiologic ionic strength,

for use in the treatment of periodontitis or peri-implantitis in a subject.
2. The composition for use according to claim 1 for use in the treatment of periodontitis.
3. The composition for use according to claim 1 for use in the treatment of peri-implantitis.
4. The composition for use according to any of the preceding claims, wherein the self-assembling peptides comprise the sequence of at least one of any of SEQ ID NO: 6, 11, 15, or 17, wherein the self-assembling peptides comprise an Ac-N-terminus and an NH₂-C-Terminus.
5. The composition for use according to any of the preceding claims, wherein the self-assembling peptides comprise the sequence of SEQ ID NO: 6.
6. The composition for use according to any one of the preceding claims, wherein the treatment comprises
 - a) cleaning and/or debridement of at least one tooth affected by the disease, and
 - b) insertion of the composition into a pocket adjacent to said tooth caused by gum and/or bone recession caused by the oral disease.
7. The composition for use according to claim 6, wherein the treatment comprises covering the composition by a layer capable of reducing the invasion of bacteria from the oral cavity into the pocket.
8. The composition for use according to claim 7, wherein said layer is preferably formed by a hydrogel comprising self-assembling peptides, wherein said hydrogel has a higher density and gel rigidity than a hydrogel formed after insertion of the composition into the pocket in step b).

9. The composition for use according to any of the preceding claims, wherein the pH of the composition is above the pH wherein the peptide starts to undergo self-assembly, preferably, 0.1 to 0.5 pH units above said pH.
10. The composition for use according to any of claims 1-8, wherein the composition is a hydrogel comprising self-assembling peptides in assembled form and a liquid, wherein the liquid is selected from the group comprising a buffer and the subject's blood and a mixture thereof.
11. The composition for use according to any one of the preceding claims, wherein the composition comprises an antimicrobial, antibiotic, anti-inflammatory or antiseptic agent, wherein the agent is selected from the group comprising taurolidine, chlorhexidine, doxycycline, tetracycline, azithromycin and minocycline,

wherein, preferably, the composition reduces the invasion of bacteria from the oral cavity into the pocket for at least 3 days, preferably, at least 7 days.
12. The composition for use according to any of claims 1-8, or 11, wherein the composition is an aerogel composition.
13. A kit for use in the treatment of periodontitis or peri-implantitis in a subject, wherein the kit comprises
 - (i) a first composition, which is the composition of any of claims 1-11, wherein the composition further comprises an antibiotic agent if it is for use in the treatment of peri-implantitis, and
 - (ii) a second composition comprising self-assembling peptides, wherein the self-assembling peptides of the second composition are able to form a hydrogel having a higher density and higher gel rigidity than those of the first composition, wherein the self-assembling peptides of the second composition are preferably a mixture of two complimentary peptides capable of forming a hydrogel together, and wherein the second composition is for use in forming a layer capable of reducing the invasion of cells and/or bacteria from the oral cavity in the pocket.