Technology Offer

Oral delivery systems with curcumin and omega-3 fatty acid for the treatment of periodontal

Fields of use

Dentistry and oral health. Materials.

Current state of technology Prototype

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Background

The standard treatment for periodontitis and the associated excessive inflammation is the removal of tartar and biofilm with additional therapies (e.g. antibiotics) and, if necessary, surgery. Despite the effectiveness of these therapies, they do not work in the long term in 20-25% of patients. Curcumin has already been used in the form of nanofibers to treat periodontal disease and has also been used in other pharmaceutical forms for administration into the buccal pocket. Omega-3 fatty acid has been shown to help with periodontal disease when administered orally.

Description of the solution

The invention provides a delivery system suitable for oral administration that co-adheres curcumin and one or more omega-3 fatty acids, such as alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA) or docosahexaenoic acid (DHA). The delivery system may be a semi-solid delivery system, such as gels, or a mucoadhesive delivery system, such as polymeric nanofibers or films.

The invention is intended for the treatment, symptom relief and prevention of periodontal disease or excessive inflammation in the oral cavity. The main feature of the invention is the synergistic effect of curcumin and linolenic acid in reducing the excessive inflammatory response of the immune system. The carrier materials may also contribute to the successful treatment of periodontal disease through their antimicrobial activity or mucoadhesive properties.

Main advantage

- The synergistic effect of the combination of curcumin and linolenic acid reduces the excessive inflammation in periodontal disease, leading to better therapeutic results.

- The antimicrobial effect of chitosan, a component of the nanofibres, helps fight oral pathogens and supports the overall efficacy of the treatment.

- The mucoadhesiveness of the oral delivery systems allows the active ingredients to remain at the site of action, thereby increasing their efficacy.





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