ORAL STREPTOCOCCI WITH BACTERICIDAL ACTIVITY

PROTECTION

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BACKGROUND

Oral health is major health problem and dental diseases are considered among the most common (Oral Health Atlas, 2015 – FDI). The prevalence of oral diseases varies depending on the geographic region they occur. They are based on various individual, social, availability and accessibility factors, and performance of health services.

Stretococcus mutans is considered a significant contributor for dental plaque formation and seems to be the main factor behind tooth decay. Between 60-90% of children suffer from tooth decay, and this is a health problem with high economic costs associated. Severe periodontal diseases, which can lead to less of teeth, affect 15-20% of middle-aged adults (35-44 years of age), and about 30% of the world population aged between 65 and 74 have no natural teeth. It has a close association to general health.

Apart from physico-chemical (oral hygiene) and surgical means available, there are other methods to prevent and treat caries and periodontal disease. In this context, oral microbiota can be a source of microorganisms that can be exploited in order to prevent caries and periodontal disease. In addition, the emergence of bacterial resistance to antibiotics has led to the concept of probiotic therapy for application in oral health.

ACHIEVEMENTS AND RESULTS

A new species of Streptococcus has been isolated from healthy mouths patients, **Stretococcus downii**, which has demonstrated significant bactericidal activity.

Stretococcus downii, or bioactive compounds derived of the strain, within the probiotics and/or prebiotics composition or as part of different pharmaceutical compositions could be used in the treatment of infections in the oral cavity, such as caries and periodontal disease. Work is currently underway to optimise the bacteriocin culture to promote the production of the protein responsible for inhibitory activity in monoculture.

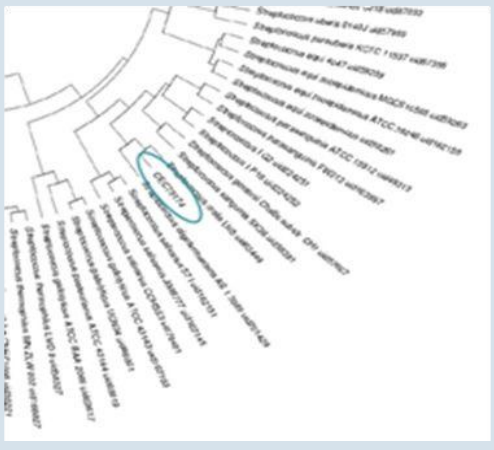
PURPOSES AND ADVANTAGES

Providing the discovery of a new microorganism through the deposit of it in the *Colección Española de Cultivos Tipo*, as well as, showing potential in applications with **probiotic** and/or **antimicrobial purposes**, provide this technology a key differentiation from competition. The main advantages are:

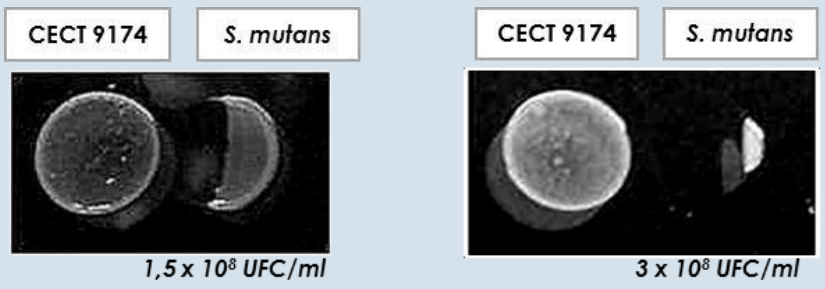
- New species from the genetic point of view
- Potential effects on periodontopathogens
- Presence of one or more molecules with bacterial activity
- Isolations come from caries-free mouths, related to the presence of protective bacterial population
- Existence of a "suicidal" strain, minimal impact in the alteration of the flora of a given individual.

COLLABORATION OFFER

This offer can be materialized in a "Partnership Agreement" in order to co-develop this technology or in a "License Agreement" if you wish to use this technology directly. If this offer is of your interest or you need more information about, please contact us.



Topology based on the Average Nucleotide Identity (ANI) for locating the CECT 9174 strain under study.



Inhibition of CECT 9174 against *Streptococcus mutans*

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