

Preclinical studies confirm that the CPC component of some mouthwashes reduces the infectious capacity of SARS-CoV-2

- IrsiCaixa research staff, in collaboration with DENTAID Research Center, demonstrates that cetylpyridinium chloride (CPC), a chemical component contained in some mouthwashes, is capable of reducing the infectivity of SARS-CoV-2 by 1000 times in studies conducted with cells in the laboratory.
- The results are from preclinical studies, and the next step is to start an efficacy trial in humans, which will be led by the Fight AIDS and Infectious Diseases Foundation (FLS).
- Until now, knowing which component of mouthwashes could reduce the infectivity of SARS-CoV-2 had not been determined. Therefore, demonstrating that CPC has an antiviral effect suggests that mouthwashes with this component can be a potential tool to prevent the transmission of the virus.

Barcelona, 22nd December 2020.- Mouthwashes have come into the spotlight for the scientific community due to their antiseptic capacity, as they could be a useful tool to restrain the transmission of SARS-CoV-2. Now, research staff from the PISTA group of [IrsiCaixa](#), a centre jointly run by "la Caixa" Foundation and the Department of Health of the Generalitat de Catalunya, in collaboration with scientists from [DENTAID Research Center](#), have discovered that **cetylpyridinium chloride (CPC)**, a chemical component contained in some mouthwashes, has an antiviral effect; specifically, it is able to **reduce the infectious capacity of SARS-CoV-2 by up to 1000 times in an experiment carried out on cells grown in the laboratory**. For the moment, the antiviral effect has been shown in these preclinical studies, so the next step will be to do so in an efficacy trial in humans, which will be led by the Fight AIDS and Infectious Diseases Foundation (FLS). Demonstrating the antiviral effect of CPC in humans will be key to helping reduce the transmission of SARS-CoV-2 in any geographical area, as mouthwashes are inexpensive and easy to distribute and store.

"The results we have obtained are promising. For a mouthwash with CPC to be able to so greatly reduce the infectious capacity of SARS-CoV-2 is very good news, because we would be able to curb the rapid transmission of the virus between people, which is what is currently most worrying", celebrates [Bonaventura Clotet](#), Director of IrsiCaixa.

Destabilising the virus

The membrane is an essential element for viruses when it comes to recognising cells and infecting them. In it are essential molecules, such as the spike protein (protein S) in the case of SARS-CoV-2. In this preclinical study, it has been shown that the membrane becomes destabilised when in contact with CPC, so that protein S ceases to be functional and SARS-CoV-2 is unable to infect.

To demonstrate that the virus is not infectious under these conditions, the research staff has put viruses isolated from COVID-19 patients in contact with the CPC-containing mouthwash for two minutes. They have thereby been able to observe that the **infectivity of SARS-CoV-2 after having been in contact with the mouthwash is reduced by up to 1000 times in cell cultures**. "We have verified that CPC is truly the component that has an antiviral role because, when carrying out the same experiment with mouthwash not containing CPC, [we observe that] the virus continues to have a great capacity to infect and destroy cells", affirms [Nuria Izquierdo-Useros](#), the study coordinator and principle investigator at IrsiCaixa.

"Considering that, in our experiment, we used a greater amount of virus than that found in the oral cavity of infected people and a smaller amount of mouthwash than people normally use, these results are very encouraging", states the investigator.

A useful tool to slow down transmission

Currently, the primary goal worldwide is to put an end to the COVID-19 pandemic. "The oral cavity plays a crucial role in the transmission of SARS-CoV-2. Viruses are present in saliva and, although there is still a long way to go, the mouthwashes we are working on could be a potential tool to prevent transmission", claims Joan Gispert, Director of R&D&i at DENTAID.

The efficacy trials to be carried out soon, with the support of FLS, are aimed at confirming the initial results obtained in a pilot study conducted in Colombia and will focus on studying the levels of infectious viruses in people with COVID-19 before and after the application of mouthwash. "We want to confirm that the antiviral effect that we see in the laboratory can be extrapolated to humans and study how long that effect lasts. Although the use of this mouthwash does not prevent infection by SARS-CoV-2, it could prevent the spread of the virus ", remarks Izquierdo-Useros. "This measure would be easy, effective and applicable on a global scale," she concludes.

About DENTAID

DENTAID is an oral health specialist company and a leader of this category in the pharmacy. It researches and develops cutting-edge oral solutions for the prevention and treatment of diseases of the oral cavity. The company runs the DENTAID Research Center, a facility considered to be a global benchmark in oral health research. DENTAID markets a wide range of products formulated with cetylpyridinium chloride (CPC): VITIS CPC protect, VITIS gingival, VITIS orthodontic, PHB gingival, PHB total, Perio-Aid 0.12% treatment, Perio-Aid 0.05% maintenance, amongst others, which adapt to everyone's different oral needs. www.dentaid.com

About IrsiCaixa

IrsiCaixa AIDS Research Institute was established in 1995 as a private, non-profit foundation thanks to the support of "la Caixa" Foundation and the Department of Health of the Generalitat de Catalunya. 25 years later, IrsiCaixa is an international reference institute, a leader in research for the eradication of HIV/AIDS and related diseases. The research it conducts also faces other challenges of modern biomedicine, such as the study of the microbiome, cancer and emerging infectious diseases.