Research Project Proposal
Academic year 2021-2022

Project Nº 56_ASIGNADO

Title: Development of a genetic test for early detection and prevention of Molar-Incisive Hypomineralization (MIH)

Department/ Laboratory Laboratory where the project will be carried out:
Coordinated between the Department of Biochemistry and Genetics (School of Sciences, UN) and HYSSOGENIX (company, Zizur)

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Summary:

Molar-incisor hypomineralization (MIH) is a structural enamel defect in the first molars and permanent incisors, which is increasingly common in 2 out of 10 children up to 11 years of age. If these injuries are not detected early, the affected teeth end up requiring restorative treatments, which lead to painful experiences and fear in children, as well as being very costly for families. In this project we propose to develop and validate a new molecular method for rapid detection by PCR in saliva of a selection of genetic variants associated with MIH. For this, nucleic acids (RNA / DNA) will be extracted from saliva samples of MIH patients and healthy children during their regular check-ups in dental clinics collaborating with the project. The collaboration between Hyssogenix and the University of Navarra will make it possible to carry out massive sequencing of these samples, in the search for a selection of MIH-associated biomarkers that could be detected by quantitative real-time PCR (qRT-PCR) and integrated into a predictive algorithm. The validation of this more compact MIH risk panel would allow its translation to pediatric dentistry clinics, with the hope of contributing to the early identification of MIH susceptibility and thus help pediatric dentistry professionals to personalize their prevention, monitoring and treatment recommendations.

yes	
no	X

Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?