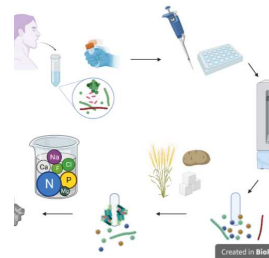


🌐 Build your own calculus

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Protocol status: Working

We use this collection and it's working

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Keywords: dental calculus, oral biofilm model, starch, alpha-amylase, calcifying oral biofilm model, biofilm growth protocol with starch treatment, using dental calculus, biofilm growth protocol, artificial saliva, starch treatment, extraction of starch granule, starch granule, amylase activity assay, dietary pattern, such as various protein, assay, extraction, mineralising solution, other dietary component, dietary patterns in past population, purpose of these protocol, own calculus this collection

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Abstract

This collection contains protocols for growing a calcifying oral biofilm model. Protocols include artificial saliva, a mineralising solution (CPMU), an alpha-amylase activity assay, and a biofilm growth protocol with starch treatments.

The purpose of these protocols is to explore fundamental aspects of using dental calculus to infer dietary patterns in past populations. The main protocol contains starch treatments to look at the incorporation and extraction of starch granules from dental calculus, but can also be used to look at other dietary components, such as various proteins, other plant extracts, and whatever else may have been consumed in the past.

Protocols are modified protocols from Sissons et al. (1991) and Extercate et al. (2010)

Image Attribution

Image created by Bjørn Peare Bartholdy using BioRender.com

Guidelines

The protocols should be conducted in a sterile environment to avoid contamination of the biofilm with external contaminants.

If starch is used for treatments, it is important to work in a starch-free lab and include control samples in each plate to test for external contamination and cross-contamination between wells.

Files

Q SEARCH

Protocol

NAME

Artificial saliva

VERSION 1

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Protocol

NAME

CPMU

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Protocol



NAME

Biofilm growth with starch treatment

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NAME

Amylase activity

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NAME

Artificial saliva

VERSION 2

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Protocol

NAME

CPMU

VERSION 2

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Protocol references

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Sissons, C. H., Cutress, T. W., Hoffman, M. P., & Wakefield, J. S. J. (1991). A Multi-station Dental Plaque Microcosm (Artificial Mouth) for the Study of Plaque Growth, Metabolism, pH, and Mineralization: Journal of Dental Research. <https://doi.org/10.1177/00220345910700110301>