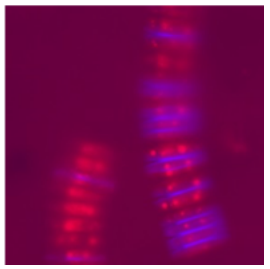
Oct 15, 2019

Quantifying Biogenic Silica (bSi) Deposition Rates Adapted Method & Fluorescence Reading (PDMPO) via Fluorometer



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Manuscript citation:
Brittany N. Zepernick1, Matthew A. Saxton2, Steven W. Wilhelm1 University of Tennessee Knoxville1, Miami University2 Adapted from: (Saxton et al, 2012), (LeBlanc and Hutchins 2005) Original Methods Leblanc, K., & Hutchins, D. A. (2005). New applications of a biogenic silica deposition fluorophore in the study of oceanic diatoms. Limnology and Oceanography: Methods, 3(10), 462-476. Saxton, M. A., D'souza, N. A., Bourbonniere, R. A., McKay, R. M. L., & Wilhelm, S. W. (2012). Seasonal Si: C ratios in Lake Erie diatoms—evidence of an active winter diatom community. Journal of Great Lakes Research, 38(2), 206-211.

Protocol status: Working
We use this protocol and it's working

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Keywords: quantifying biogenic silica, rate of silica deposition, silica deposition, rate of frustule synthesis, frustule biosynthesi, fluorescent dye, fluorescence reading, silica, frustule synthesis, deposited with silica, fluorometer this method, environmental sample

Abstract

This method can be used to assess and quantify the rate of silica deposition (bSi) over time in diatoms to determine their rate of frustule synthesis. This protocol has been adapted for the processing of both cultures as well as environmental samples when inoculated with PDMPO [2-(4-pyridyl)-5-((4-(2dimethylaminoethylaminocarbamoyl)methoxy)phenyl)oxazole], which is a fluorescent dye that is co-deposited with silica during frustule biosynthesis in a 3230:1 Si:PDMPO (mol:mol) ratio.

Materials

MATERIALS

LysoSensor™ Yellow/Blue DND-160 - Special Packaging **Fisher Scientific Catalog #**L7545

Utilize a TD-700 Laboratory Fluorometer linked to a computer monitor with the downloaded Turner software to obtain fluorescence readings of the samples

Troubleshooting

Safety warnings

See SDS (Safety Data Sheet) for hazards and safety warnings.

Files

SEARCH

Protocol

NAME

Quantifying Biogenic Silica (bSi) Deposition Rates Adapted Method

VERSION 1

CREATED BY

Ashley A Humphrey
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OPEN →

Protocol

NAME

Reading Sample Fluorescence (PDMPO) via Fluorometer

VERSION 1

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