

Accepted Manuscript

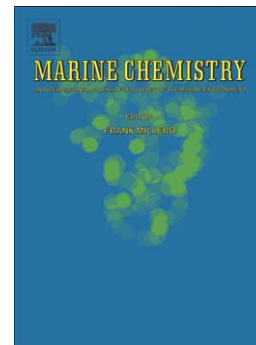
Environmental Metabolomics: Analytical Strategies

Melissa C. Kido Soule, Krista Longnecker, Winifred M. Johnson, Elizabeth B. Kujawinski

PII: S0304-4203(15)30015-3
DOI: doi: [10.1016/j.marchem.2015.06.029](https://doi.org/10.1016/j.marchem.2015.06.029)
Reference: MARCHE 3283

To appear in: *Marine Chemistry*

Received date: 21 January 2015
Revised date: 29 June 2015
Accepted date: 29 June 2015



Please cite this article as: Kido Soule, Melissa C., Longnecker, Krista, Johnson, Winifred M., Kujawinski, Elizabeth B., Environmental Metabolomics: Analytical Strategies, *Marine Chemistry* (2015), doi: [10.1016/j.marchem.2015.06.029](https://doi.org/10.1016/j.marchem.2015.06.029)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Environmental Metabolomics: Analytical Strategies

Authors: Melissa C. Kido Soule^{a‡}, Krista Longnecker^{a¶}, Winifred M. Johnson^{b¥},
Elizabeth B. Kujawinski^{a†}

^a Woods Hole Oceanographic Institution, Marine Chemistry and Geochemistry, Woods Hole, MA 02543, U.S.A.

^b MIT/WHOI Joint Program in Oceanography/Applied Ocean Sciences and Engineering, Woods Hole Oceanographic Institution, Marine Chemistry and Geochemistry, Woods Hole, MA 02543, U.S.A.

‡msoule@whoi.edu; ¶klongnecker@whoi.edu; ¥wjohnson@whoi.edu;
†ekujawinski@whoi.edu

Running title: Analytical strategies for marine metabolomics

For submission to: *Marine Chemistry*

‡ Corresponding author. Mailing address: WHOI MS#4, Woods Hole, MA 02543.
Phone: (508) 289-2879. Fax: (508) 457-2164. E-mail: msoule@whoi.edu

Keywords: targeted and untargeted metabolomics, LC-MS, dissolved organic matter

ABSTRACT

Microbial metabolism plays a primary role in shaping the marine carbon cycle through processes of carbon fixation and remineralization. Many metabolic intermediates pass through the reservoir of marine dissolved organic matter (DOM), as compounds move among microbes as part of complex ecological networks of interactions. Environmental metabolomics can be used to identify and quantify these compounds, and thus will provide insight into the chemical underpinnings of microbial networks at the foundation of global biogeochemical cycles. Here we present methods for metabolite profiling (untargeted metabolomics) and for relative quantification (targeted metabolomics) of intracellular and extracellular metabolites from marine microbes. We describe our approach to method development with regard to metabolite extraction and instrumental analysis, culminating in the methods currently in use in our laboratory.

Download English Version:

<https://daneshyari.com/en/article/10565656>

Download Persian Version:

<https://daneshyari.com/article/10565656>

[Daneshyari.com](https://daneshyari.com)