Whole organism mRNA sequencing - RNAseq data from mRNA from McMurdo Station Hofmann Antarctica at McMurdo Station starting 2015 (OA pH, Temperature, Calcium Inverts project)

Website: https://www.bco-dmo.org/dataset/639502
Version: 03 March 2016
Version Date: 2016-03-03

Project
» Linking natural variability and anthropogenic changes in pH and temperature to performance in calcifying Antarctic marine invertebrates (OA pH, Temp, Calc Inverts)

Contributors	Affiliation	Role
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Dataset Description

Accession number: SRR2463656.
Species name: /Limacina helicina antarctica/
Description of the types of sequences: *Whole organism mRNA sequencing
Locations where species were collected: 77.5649°S, 166.18712°E
Sequencing and analysis methods: mRNA sequencing on an Illumina NextSeq500 using the mid-output mode with 300 cycles and 150 bp paired-end reads.

Methods & Sampling

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Parameters

Parameter	Description	Units
Accession_Number	Accession Number	text
Species_Name	Species Name	text
Description	Accession Description	text
Site	Site of Collection	text
Latitude	Latitude (South is negative)	decimal degrees
Longitude	Longitude (West is negative)	decimal degrees
Sequencing_and_Analysis_Methods	Accession Sequencing and Analysis Methods	text
link	Link to Accession in Genbank	text

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Deployments

Hofmann_Antarctica_McMurdoStation

Website	https://www.bco-dmo.org/deployment/639600
Platform	McMurdo Station
Start Date	2015-06-01
End Date	2015-06-01

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Project Information

Linking natural variability and anthropogenic changes in pH and temperature to performance in calcifying Antarctic marine invertebrates (OA pH, Temp, Calc Inverts)

Coverage: McMurdo Sound, Antarctica

Abstract: The research supported in this project will examine the effects of environmental change on a key Antarctic marine invertebrate, a pelagic mollusk, the pteropod, Limacina helicina antarctica. There are two main activities in this project: (1) to deploy oceanographic equipment, in this case, autonomously recording pH sensors called SeaFETs and other devices that record temperature and salinity, and (2) to use these environmental data in the laboratory at McMurdo Station to study the response of the marine invertebrates to future changes in water quality that is expected in the next few decades. Notably, changes in oceanic pH (aka ocean acidification) and ocean warming are projected to be particularly threatening to calcifying marine organisms in cold-water, high latitude seas, making tolerance data on these organisms a critical research need in Antarctic marine ecosystems.

These Antarctic shelled-animals are especially vulnerable to dissolution stress from ocean acidification because they currently inhabit seawater that is barely at the saturation level to support biogenic calcification. Indeed, these polar animals are considered to be the 'first responders' to chemical changes in the surface oceans. Thus, this project will lead to information about the adaptive capacity of L. helcina antarctica. From an ecological perspective this is important because this animal is a critical part of the Antarctic food chain in coastal waters and changes in its abundance will impact other species. Finally, the research conducted in this project will serve as a training and educational opportunity for undergraduate and graduate students as well as postdoctoral scholars.

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Funding

Funding Source	Award
NSF Antarctic Sciences (NSF ANT)	PLR-0944201
NSF Antarctic Sciences (NSF ANT)	PLR-1246202

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