R2K Data Compliance Plan
Costantino Vetriani, Richard Lutz
OCE-0327353
Collaborative research: Integrated studies of biological community structure at deep-sea hydrothermal vents

Specific analyses on datasets

In 2003, we (R. Lutz, G. Luther, C. Vetriani, and T. Shank) proposed an integrated research program to identify first order biological-geochemical interactions in the context of previously observed patterns of faunal succession at deep-sea hydrothermal vents through time-series studies at the East Pacific Rise near 9° 50’N that combined molecular genetic characterization of microbial communities and metazoan colonists with in-situ measurements of H2, H2S, O2, H2O2, pH and temperature. Initial results from the microbial component of this integrative project have been published (Vetriani et al., 2004, Vetriani et al., 2005, Hugler et al., 2007, Voordeckers et al., 2008, Lutz et al., 2008, Crespo-Medina et al., 2009, Crespo-Medina et al., in press). Following the 2005-06 eruptive event on the EPR, we redesigned our experimental strategy by deploying artificial colonization substrates to monitor the colonization process. Chemical data were collected along with microbial and faunal samples and are currently being processed. The final integrative analyses are the subject of a currently pending proposal (submitted to R2K in April 2009).

Our PI group has submitted Level 1 and Level 2 metadata to the Ridge 2000 Data Management Office (DMO), and derived dataset relative to the microbial component of this project that will be linked to the DMO are listed in the Table at the end of this document. Sites where specific microorganisms were isolated will be shown on the Marine Geoscience Data System (MGDS).

References Relevant to the PIs work above


**Anticipated products**


**Additional Results Associated with this Program**


<table>
<thead>
<tr>
<th>Data Set</th>
<th>Metadata</th>
<th>Specific Analyses</th>
<th>Storage</th>
<th>Status/Delivery Date</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microbial culture collection including &gt; 400 pure cultures from deep-sea environments (&gt;200 from the EPR)</td>
<td>From Alvin dives during 4 cruises: 2004 (AT11-10), 2005 (AT11-26), 2006 (AT15-06), 2007 (AT15-15)</td>
<td>Isolation of microorganisms</td>
<td>Maintained as frozen stocks in the Deep-Sea Microbiology Lab</td>
<td>List of microorganisms in the culture collection ready to be deposited in DMO (May 2009). Active cultures available upon request to Costa Vetriani.</td>
<td>Vetriani et al., 2004; Crespo-Medina et al., in press; Perez-Rodriguez et al., submitted</td>
</tr>
<tr>
<td>Genome sequences from two vent organisms</td>
<td>From AT05-03, AT03-50</td>
<td>DNA sequencing with funding from the G. &amp; B. Moore Foundation and the Department of Energy</td>
<td>One genome sequence publicly available from GenBank (DSM 16658, accession # ABCJ00000000) One genome currently scheduled for sequencing (DSM 15068)</td>
<td>One genome sequence available via link to GenBank. One genome will be made available when ready (expected by early 2010)</td>
<td>Vetriani et al., 2004; Voordeckers et al., 2005; Crespo-Medina et al., in press</td>
</tr>
<tr>
<td>Pure cultures</td>
<td>From AT05-03, AT03-50, AT11-10</td>
<td>Characterization and description of new microbial species</td>
<td>Deposited in the Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH and in the Japanese Culture Collection. Available publicly</td>
<td>Available via link to the DSMZ and JCM (DSM 15068, JCM 12110; DSM 16658, JCM 12641; DSM 21483, JCM 15514 (available July 2009)</td>
<td>Vetriani et al., 2004; Voordeckers et al., 2005; Crespo-Medina et al., in press</td>
</tr>
<tr>
<td>Microbial colonization experiments</td>
<td>From Alvin dives during 4 cruises: 2004 (AT11-10), 2005 (AT11-26), 2006 (AT15-06), 2007 (AT15-15)</td>
<td>Taxonomic and molecular identification</td>
<td>Frozen, preserved in 95% ethanol</td>
<td>10/2011 for final integrated data</td>
<td></td>
</tr>
<tr>
<td>Gene sequences and nucleic acids from microorganisms</td>
<td>From Alvin dives during 4 cruises: 2004 (AT11-10), 2005 (AT11-26), 2006 (AT15-06), 2007 (AT15-15)</td>
<td>Phylogenetic analyses</td>
<td>Sequences in GenBank; nucleic acids frozen</td>
<td>Publicly available via link to GenBank; Nucleic acids available upon request to Costa Vetriani.</td>
<td></td>
</tr>
</tbody>
</table>

**Sample requests**

Samples can be obtained by contacting Costantino Vetriani (732-932-6555 x373, vetriani@marine.rutgers.edu) or Richard Lutz (732-932-6555 x200, rlutz@marine.rutgers.edu). Links: GenBank: [http://www.ncbi.nlm.nih.gov/Genbank/](http://www.ncbi.nlm.nih.gov/Genbank/) ; DSMZ: [http://www2.dsmz.de/index.htm](http://www2.dsmz.de/index.htm); JCM: [http://www.jcm.riken.go.jp/](http://www.jcm.riken.go.jp/); Deep-Sea Microbiology Lab [http://www2.dsmz.de/index.htm](http://www2.dsmz.de/index.htm)