

Supplementary Information for

Parameters governing the community structure and element turnover in Kermadec volcanic ash and hydrothermal fluids as monitored by inorganic electron donor consumption, autotrophic CO₂ fixation and 16S tags of the transcriptome in incubation experiments

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Supplementary Tables

Supplementary Table 1: Predicted versus observed compositions of diffuse vents.

Chemical compounds	Brothers		Haungaroa	
	predicted	observed	predicted	observed
H ₂ (aq) μM	0.26	0.126	0.49	0.008
CH ₄ (aq) μM	0.09	0.092	0.19	0.02
HCO ₃ ⁻ mM	2.3	2.87	5.1	2.4
H ₂ S(aq) μM	47	15	44	<1
Fe ²⁺ μM	529	179	9.5	<1

Supplementary Table 2: Number of merged bacterial and archaeal reads sequenced from the environment and the different incubation experiments.

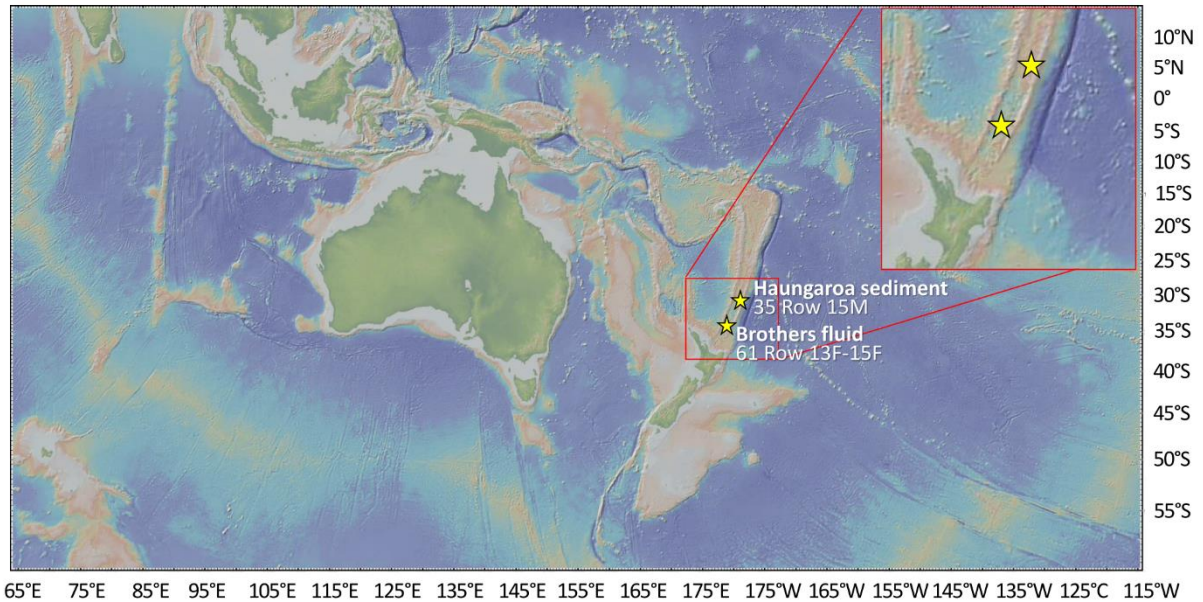
sample	bacterial merged reads	archaeal merged reads
Haungaroa sediment		
A (environment)	382577	235570
B (+ hydrogen)	190764	-
C (+ iron(II))	231175	-
D (+ sulfide)	466356	21921
E (unamended)	743770	144835
Brothers fluid		
A (environment)	436731	625078
B (+ hydrogen)	234579	2012
C (+ iron(II))	354834	-
D (+ sulfide)	64621	-
E (unamended)	103048	-

Supplementary Table 3: Shannon diversity index.

sample	Bacteria	Archaea
Haungaroa sediment		
A (environment)	5.3	8.9
B (+ hydrogen)	6.1	-
C (+ iron(II))	5.5	-
D (+ sulfide)	6.4	3.2
E (unamended)	6.4	7.5
Brothers fluid		
A (environment)	5.7	4.3
B (+ hydrogen)	3.0	-
C (+ iron(II))	3.1	-
D (+ sulfide)	5.0	-
E (unamended)	4.4	-

Supplementary Figures

Supplementary Figure 1: Map of sampled Haungaroa sediment and Brothers hydrothermal fluid located at the Kermadec arc, New Zealand. The sampling sites are depicted by yellow stars. The map was created using GeoMapApp software version 3.6.8 (www.geomapapp.org).



Supplementary Figure 2: (A) Overview of the Haungaroa sediment sampling area and (B) illustration of sampling equipment used at the Haungaroa' volcano to sample sediment with a shovel. Both pictures show that the prevalent sediment is covered by a white microbial mat. Pictures are protected by copyright of the MARUM (Center of Marine Environmental Sciences, Research Faculty University of Bremen).

