

## Supplementary Material

**Supplementary Table S1:** Details about the collection sites, variations in the experimental set-up and number of specimens analyzed per species. References: (1) Bird et al. 2020, *Front. microbiol.*, (2): LeKieffre et al. 2018, *Sci. Reports*; (3): Jauffrais et al. 2018, *Env- Microbiol.* Last column indicates the number of specimens showing  $^{15}\text{N}$ - or  $^{34}\text{S}$ -labeling out of the total number of specimens analyzed.

Species	Collection site Water depth (m) Coordinates	Collection date (m/d/y)	Date of the experiment (m/d/y)	Experimental set-up Incubation		Number of specimens labeled / Number of specimens analyzed		
				Temperature	Light / Dark	$^{15}\text{NH}_4$	$^{15}\text{NO}_3$	$^{34}\text{SO}_4$
<i>Ammonia</i> sp. T6	<b>Intertidal mudflat</b> Fiskebäckskil harbor, Gullmar Fjord, Sweden 58°14'25"N 11°27'40"E	5/9/2016	5/10/2016	10°C	Light	3/3 (1)	-	3/3
<i>Elphidium williamsoni</i>						5/5	-	5/5
<i>Haynesina germanica</i>	<b>Intertidal mudflat</b> Bourgneuf Bay, France 47°00'59.4"N, 2°01'29.8"W	4/9/2015	4/9/2015	20°C	Light	15/15 (2)	0/2	-
<i>Bulimina marginata</i>	<b>Gullmar Fjord, Sweden</b> Station GF51-1: 51 m 58°17'11.6"N 11°30'54.6"E	9/5/2018	9/5/2018	10°C	Dark	3/3	0/3	3/3
<i>Cassidulina laevigata</i>						3/3	0/2	-
<i>Nonionella</i> sp. T1						1/1	0/3	-
<i>Nonionella turgida</i>						3/3	0/3	-
<i>Nonionellina labradorica</i>						5/5 (3)	0/3	5/5 (3)
<i>Globobulimina pacifica</i>	<b>Silled basin</b> Santa Barbara Basin, USA 568 m 34°19'290"N 120°03'441"W	2/16/2017	3/15/2017	10°C	Dark	3/3	0/3	2/6
<i>Nonionella stella</i>						-	0/3	3/3
<i>Stainforthia fusiformis</i>						1/1	0/1	1/2
<i>Globobulimina</i> sp.	<b>Methane emission site</b> Storfjordrenna, Svalbard <i>N. lab.</i> : 382 m 76°6'23.7"N 15°58'1.7"E <i>Globo</i> : 380 m 76°6'24.7"N 15°58'0.4"E	25/10/2018	25/10/2018	2°C	Dark	2/2	-	0/2
<i>Nonionellina labradorica</i>						2/2	-	1/2

