

Table S1. Metabolic characteristics of vent *Epsilonproteobacteria* used as reference strains in this study

Reference Organism <sup>a</sup>	Isolation Site <sup>b</sup>	Optimum Temperature (°C)	End Product of Nitrate Respiration	Electron donors	Electron acceptors	References
<i>Sulfurovum lithotrophicum</i>	MOT, Iheya, sediments	28-30	N <sub>2</sub>	S <sub>2</sub> O <sub>3</sub> <sup>2-</sup> , S <sup>0</sup>	NO <sub>3</sub> <sup>-</sup> , O <sub>2</sub>	Inagaki <i>et al</i> , 2004
<i>Sulfurimonas paralvinellae</i>	MOT, Iheya, <i>Paralvinella</i> sp.	30	N <sub>2</sub>	H <sub>2</sub> , S <sub>2</sub> O <sub>3</sub> <sup>2-</sup> , S <sup>0</sup>	NO <sub>3</sub> <sup>-</sup> , O <sub>2</sub>	Takai <i>et al</i> , 2006
<i>Thioreductor micantisoli</i>	MOT, Iheya, sediments	32	NH <sub>4</sub> <sup>+</sup>	H <sub>2</sub>	NO <sub>3</sub> <sup>-</sup> , S <sup>0</sup>	Nakagawa <i>et al</i> , 2005a
<i>Nitratifractor salsuginis</i>	MOT, Iheya, chimney	37	N <sub>2</sub>	H <sub>2</sub>	NO <sub>3</sub> <sup>-</sup> , O <sub>2</sub>	Nakagawa <i>et al</i> , 2005b
<i>Nitratiruptor tergarcus</i>	MOT, Iheya, chimney	55	N <sub>2</sub>	H <sub>2</sub>	NO <sub>3</sub> <sup>-</sup> , S <sup>0</sup> , O <sub>2</sub>	Nakagawa <i>et al</i> , 2005b
<i>Nautilia</i> spp. MT3, MT4, MT5	EPR, 9°N, chimney	45-50	NH <sub>4</sub> <sup>+</sup>	H <sub>2</sub>	NO <sub>3</sub> <sup>-</sup>	Voordeckers <i>et al</i> , 2008
<i>Nautilia nitratireducens</i>	EPR, 9°N, chimney	55	NH <sub>4</sub> <sup>+</sup>	H <sub>2</sub> , formate, acetate	NO <sub>3</sub> <sup>-</sup> , S <sup>0</sup> , S <sub>2</sub> O <sub>3</sub> <sup>2-</sup> , SeO <sub>4</sub> <sup>2-</sup>	Perez-Rodriguez <i>et al</i> , 2010
<i>Hydrogenimonas thermophila</i>	CIR, Kairei Field, colonizer	55	NH <sub>4</sub> <sup>+</sup>	H <sub>2</sub>	NO <sub>3</sub> <sup>-</sup> , S <sup>0</sup> , O <sub>2</sub>	Takai <i>et al</i> , 2004
<i>Caminibacter profundus</i>	MAR, Rainbow, vent cap	55	NH <sub>4</sub> <sup>+</sup>	H <sub>2</sub>	NO <sub>3</sub> <sup>-</sup> , S <sup>0</sup> , O <sub>2</sub>	Miroshnichenko <i>et al</i> , 2004
<i>Caminibacter mediatlanticus</i>	MAR, Rainbow, chimney	55	NH <sub>4</sub> <sup>+</sup>	H <sub>2</sub>	NO <sub>3</sub> <sup>-</sup> , S <sup>0</sup>	Voordeckers <i>et al</i> , 2005
<i>Caminibacter</i> sp. TB-1	MAR, Rainbow, chimney	50	NH <sub>4</sub> <sup>+</sup>	H <sub>2</sub>	NO <sub>3</sub> <sup>-</sup> , S <sup>0</sup>	Voordeckers <i>et al</i> , 2005
<i>Caminibacter hydrogeniphilus</i>	EPR, 13°N, <i>A. pompeyana</i>	60	NH <sub>4</sub> <sup>+</sup>	H <sub>2</sub>	NO <sub>3</sub> <sup>-</sup> , S <sup>0</sup>	Alain <i>et al</i> , 2002

<sup>a</sup> All organisms are chemolithoautotrophs.

<sup>b</sup> MOT: Mid-Okinawa Trough; EPR: East Pacific Rise; CIR: Central Indian Ridge; MAR: Mid-Atlantic Ridge.