

Supplementary Information

Community structure of planktonic methane-oxidizing bacteria in a subtropical reservoir characterized by dominance of phylotype closely related to nitrite reducer

Hisaya Kojima¹, Riho Tokizawa¹, Kouhei Kogure¹, Yuki Kobayashi², Masayuki Itoh³, Fuh-Kwo Shiah², Noboru Okuda⁴, and Manabu Fukui¹

1. The Institute of Low Temperature Science, Hokkaido University, Sapporo, Japan
2. Research Center for Environmental Changes, Academia Sinica, Taipei, Taiwan
3. Center for Southeast Asian Studies, Kyoto University, Kyoto, Japan
4. Center for Ecological Research, Kyoto University, Otsu, Japan

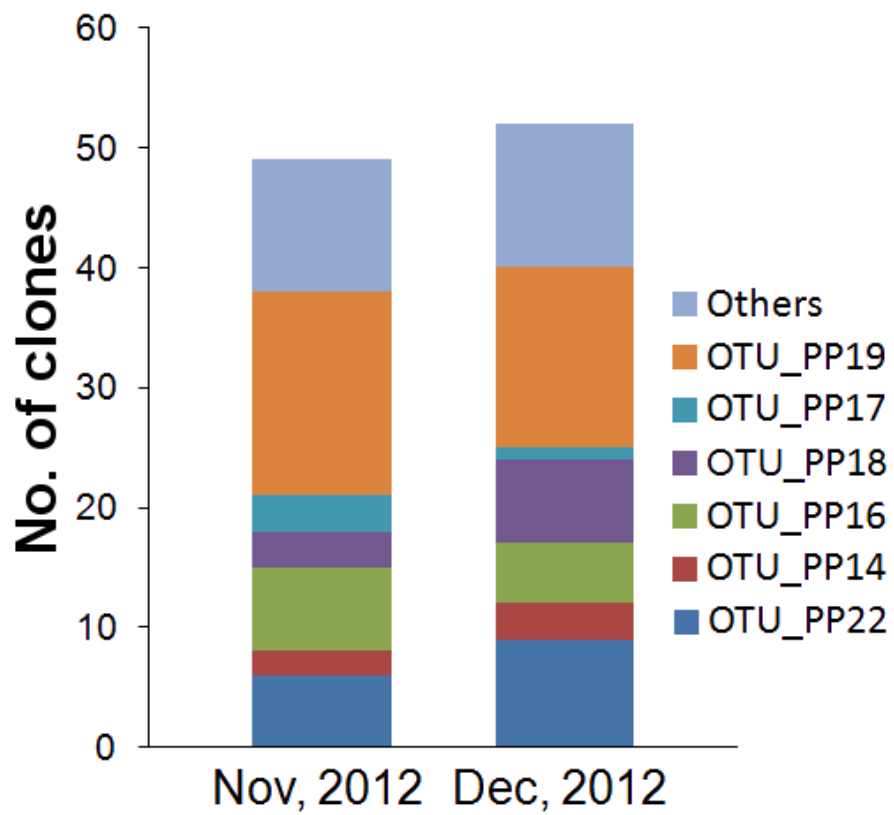


Figure S1. The compositions of the proteobacterial *pmoA* clone libraries. OTUs detected in both libraries are indicated with a number.

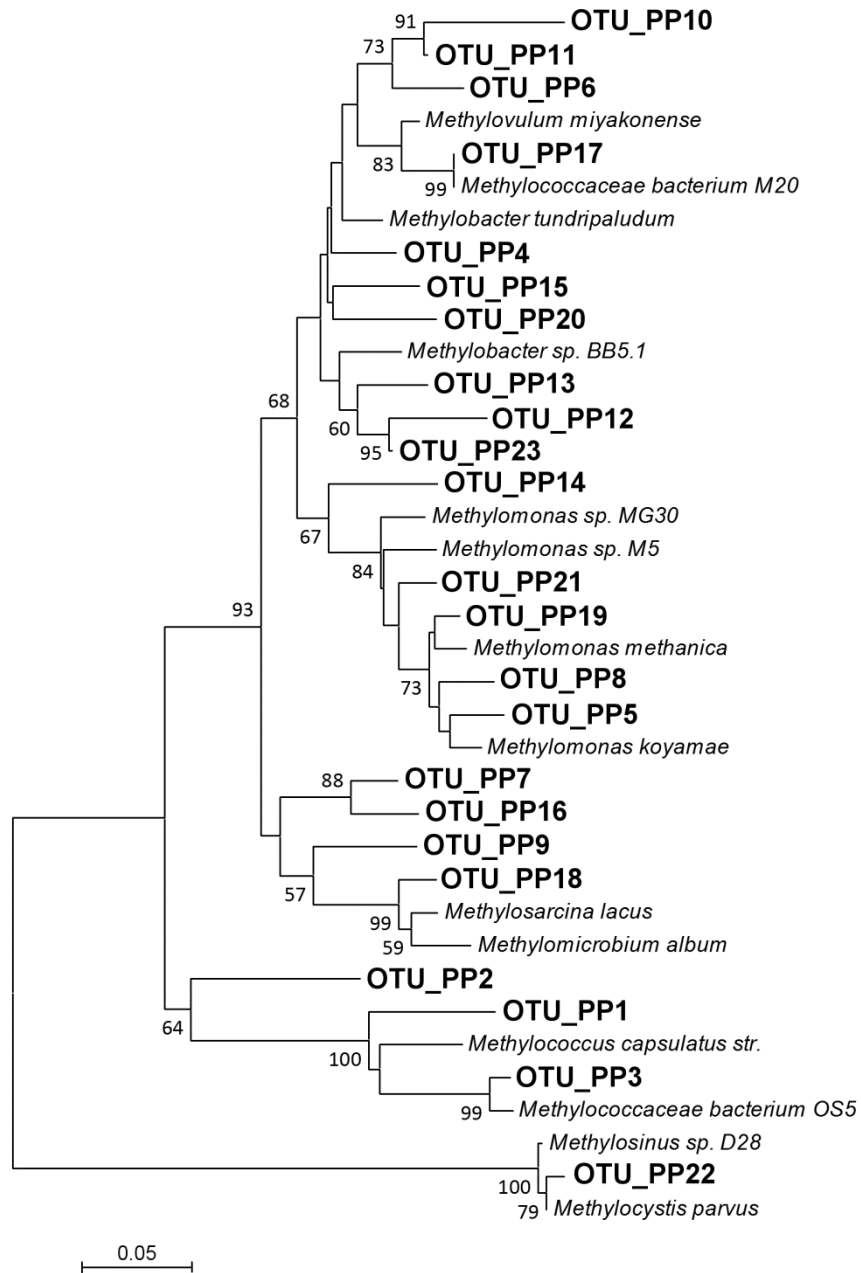


Figure S2. Phylogenetic relationships of the OTUs of proteobacterial *pmoA* clones obtained in this study. Numbers on nodes are percentage values of 1000 bootstrap resampling (values larger than 50 are shown).

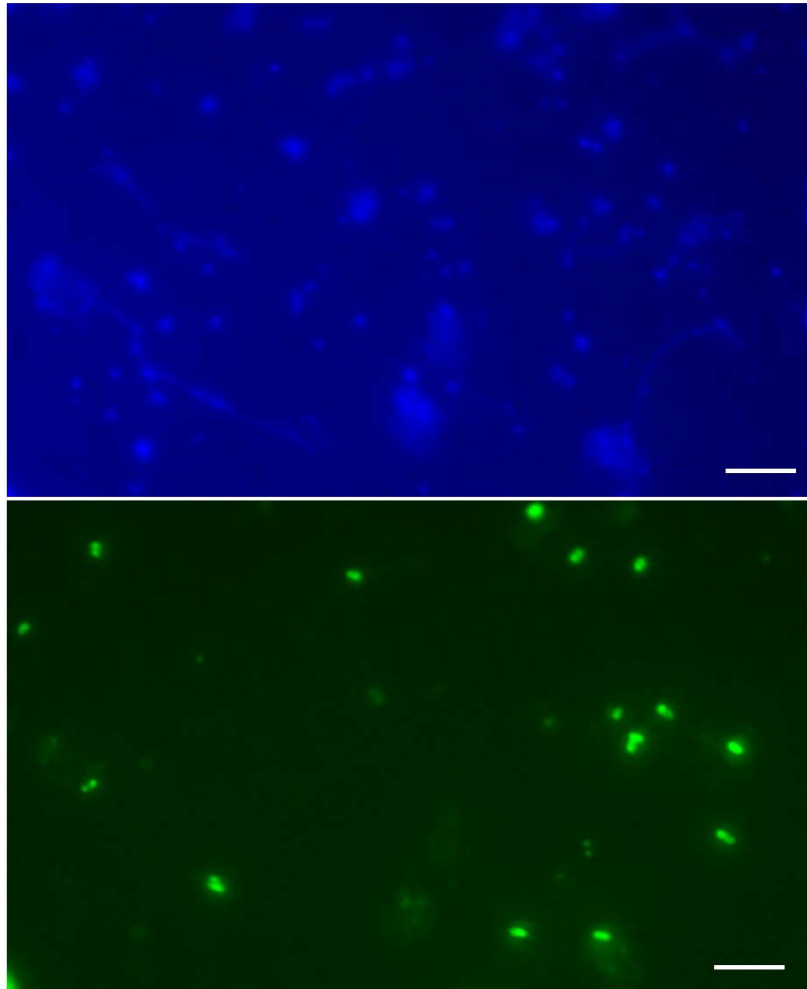


Figure S3. Cells of NC10 bacteria visualized by CARD-FISH. CARD-FISH-positive cells are shown in lower panel, and DAPI staining of the same field is shown in upper panel. Bars indicate 5 μm .

Table S1. Phylum-level composition of the 16S rRNA gene libraries. Class-level composition is shown for Proteobacteria. Clone numbers in each library are presented.

	Nov, 2012		Dec, 2012		Jul, 2013	Dec, 2013	
	10 m	90 m	10 m	90 m	90 m	10 m	90 m
<i>Alphaproteobacteria</i>	5	6	6	7	3	6	1
<i>Betaproteobacteria</i>	3	12	1	8	9	8	9
<i>Gammaproteobacteria</i>	3	5	4	6	7	2	3
<i>Deltaproteobacteria</i>	2	3	1	1			3
<i>Epsilonproteobacteria</i>					1		
Unclassified <i>Proteobacteria</i>	1						
<i>Actinobacteria</i>	3		1		2		1
<i>Cyanobacteria/Chloroplast</i>	5	1	10			10	
<i>Verrucomicrobia</i>	1	1	2	5	4	6	3
<i>Bacteroidetes</i>	7	10	8	7	4	12	7
<i>Acidobacteria</i>	1	2	3	1			
<i>Nitrospira</i>	2	3			1	4	
<i>Chlorobi</i>	1	2		4			
<i>Chloroflexi</i>				2		1	
<i>Armatimonadetes</i>				1	2		1
<i>Firmicutes</i>	1	1			3		1
<i>Planctomycetes</i>	3	1				1	
OD1							1
<i>Gemmatimonadetes</i>					1		
Unclassified Bacteria	4	20	1	11	11	3	14

Table S2. Distribution of the OTUs of 16S rRNA gene corresponding to MOB species. Clone numbers in each library are shown.

Library	Type I								Type II	NC10
	OTU_G1	OTU_G2	OTU_G3	OTU_G4	OTU_G5	OTU_G6	OTU_G7	OTU_G8	OTU_A1	OTU_N1
2012Nov10m	0	0	0	0	0	0	0	0	1	0
2012Nov90m	2	0	1	0	0	0	0	0	2	12
2012Dec10m	0	0	0	0	0	1	0	1	0	0
2012Dec90m	3	0	0	0	1	0	0	0	5	9
2013Jul90m	4	0	0	1	1	0	1	0	1	5
2013Dec10m	0	0	0	0	0	0	0	0	4	0
2013Dec90m	1	1	0	0	0	0	0	0	1	10