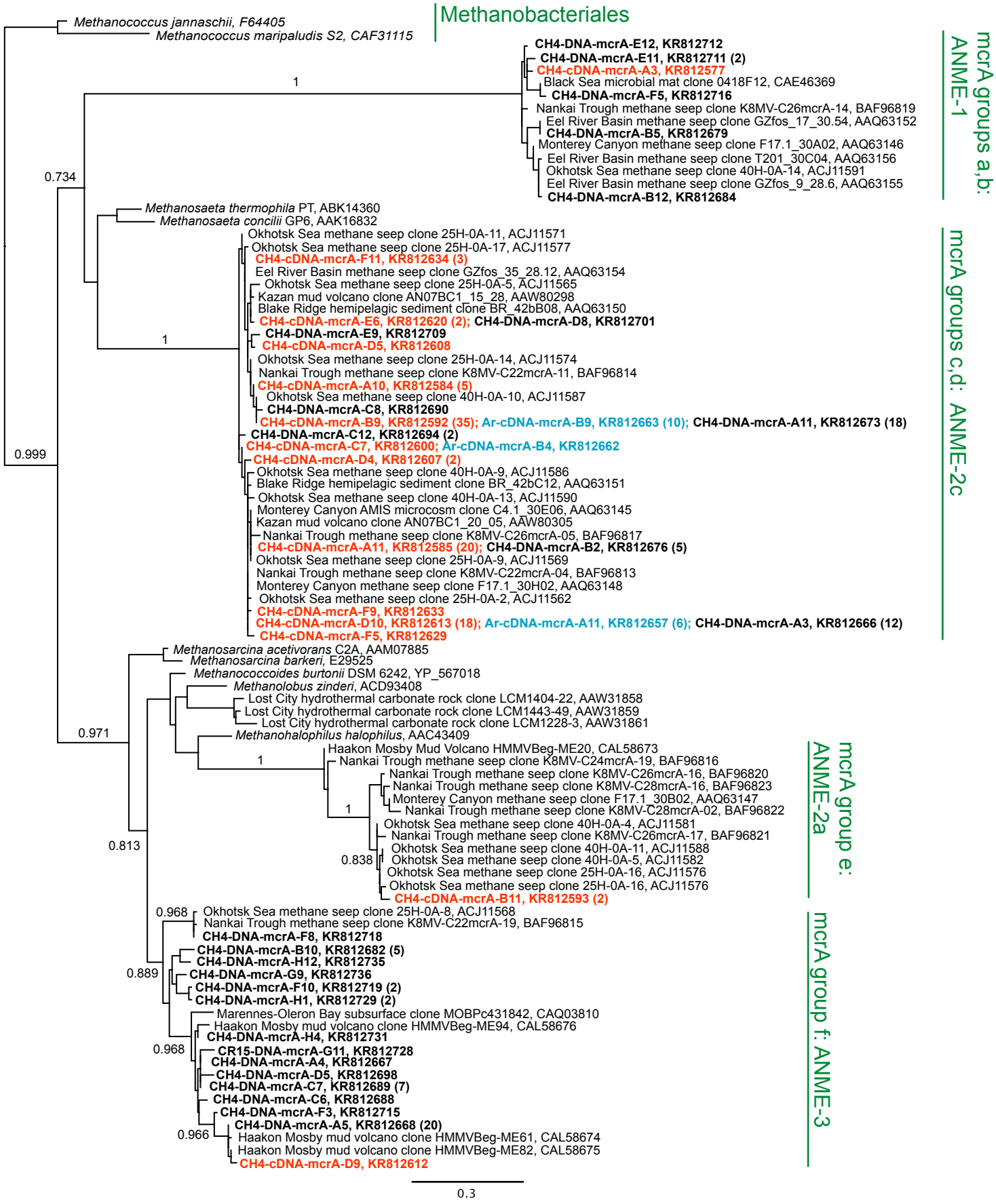
SI Figure 2.


Methanobacteriales
Methanococcus jannaschii, F64405
Methanococcus maripaludis S2, CAF31115
CH4-DNA-mcrA-E12, KR812712
CH4-DNA-mcrA-E11, KR812711 (2)
CH4-cDNA-mcrA-A3, KR812577
Black Sea microbial mat clone 0418F12, CAE46369
CH4-DNA-mcrA-F5, KR812716
Nankai Trough methane seep clone K8MV-C26mcrA-14, BAF96819
Eel River Basin methane seep clone GZfos_17_30.54, AAQ63152
CH4-DNA-mcrA-B5, KR812679
Monterey Canyon methane seep clone F17.1_30A02, AAQ63146
Eel River Basin methane seep clone T201_30C04, AAQ63156
Okhotsk Sea methane seep clone 40H-0A-14, ACJ11591
Eel River Basin methane seep clone GZfos_9_28.6, AAQ63155
CH4-DNA-mcrA-B12, KR812684
mcrA groups a,b: ANME-1
Methanosaeta thermophila PT, ABK14360
Methanosaeta concilii GP6, AAK16832
Okhotsk Sea methane seep clone 25H-0A-11, ACJ11571
Okhotsk Sea methane seep clone 25H-0A-17, ACJ11577
CH4-cDNA-mcrA-F11, KR812634 (3)
Eel River Basin methane seep clone GZfos_35_28.12, AAQ63154
Okhotsk Sea methane seep clone 25H-0A-5, ACJ11565
Kazan mud volcano clone AN07BC1_15_28, AAW80298
Blake Ridge hemipelagic sediment clone BR_42bB08, AAQ63150
CH4-cDNA-mcrA-E6, KR812620 (2); CH4-DNA-mcrA-D8, KR812701
CH4-DNA-mcrA-E9, KR812709
CH4-cDNA-mcrA-D5, KR812608
Okhotsk Sea methane seep clone 25H-0A-14, ACJ11574
Nankai Trough methane seep clone K8MV-C22mcrA-11, BAF96814
CH4-cDNA-mcrA-A10, KR812584 (5)
Okhotsk Sea methane seep clone 40H-0A-10, ACJ11587
CH4-DNA-mcrA-C8, KR812690
CH4-cDNA-mcrA-B9, KR812592 (35); Ar-cDNA-mcrA-B9, KR812663 (10); CH4-DNA-mcrA-A11, KR812673 (18)
CH4-DNA-mcrA-C12, KR812694 (2)
CH4-cDNA-mcrA-C7, KR812600; Ar-cDNA-mcrA-B4, KR812662
CH4-cDNA-mcrA-D4, KR812607 (2)
Okhotsk Sea methane seep clone 40H-0A-9, ACJ11586
Blake Ridge hemipelagic sediment clone BR_42bC12, AAQ63151
Okhotsk Sea methane seep clone 40H-0A-13, ACJ11590
Monterey Canyon AMIS microcosm clone C4.1_30E06, AAQ63145
Kazan mud volcano clone AN07BC1_20_05, AAW80305
Nankai Trough methane seep clone K8MV-C26mcrA-05, BAF96817
CH4-cDNA-mcrA-A11, KR812585 (20); CH4-DNA-mcrA-B2, KR812676 (5)
Okhotsk Sea methane seep clone 25H-0A-9, ACJ11569
Nankai Trough methane seep clone K8MV-C22mcrA-04, BAF96813
Monterey Canyon methane seep clone F17.1_30H02, AAQ63148
Okhotsk Sea methane seep clone 25H-0A-2, ACJ11562
CH4-cDNA-mcrA-F9, KR812633
CH4-cDNA-mcrA-D10, KR812613 (18); Ar-cDNA-mcrA-A11, KR812657 (6); CH4-DNA-mcrA-A3, KR812666 (12)
CH4-cDNA-mcrA-F5, KR812629
mcrA groups c,d: ANME-2c
Methanosarcina acetivorans C2A, AAM07885
Methanosarcina barkeri, E29525
Methanococcoides burtonii DSM 6242, YP_567018
Methanolobus zinderi, ACD93408
Lost City hydrothermal carbonate rock clone LCM1404-22, AAW31858
Lost City hydrothermal carbonate rock clone LCM1443-49, AAW31859
Lost City hydrothermal carbonate rock clone LCM1228-3, AAW31861
Methanohalophilus halophilus, AAC43409
Haakon Mosby Mud Volcano HMMVBeg-ME20, CAL58673
Nankai Trough methane seep clone K8MV-C24mcrA-19, BAF96816
Nankai Trough methane seep clone K8MV-C26mcrA-16, BAF96820
Nankai Trough methane seep clone K8MV-C28mcrA-16, BAF96823
Monterey Canyon methane seep clone F17.1_30B02, AAQ63147
Nankai Trough methane seep clone K8MV-C28mcrA-02, BAF96822
Okhotsk Sea methane seep clone 40H-0A-4, ACJ11581
Nankai Trough methane seep clone K8MV-C26mcrA-17, BAF96821
Okhotsk Sea methane seep clone 40H-0A-11, ACJ11588
Okhotsk Sea methane seep clone 40H-0A-5, ACJ11582
Okhotsk Sea methane seep clone 25H-0A-16, ACJ11576
Okhotsk Sea methane seep clone 25H-0A-16, ACJ11576
CH4-cDNA-mcrA-B11, KR812593 (2)
mcrA group e: ANME-2a
Okhotsk Sea methane seep clone 25H-0A-8, ACJ11568
Nankai Trough methane seep clone K8MV-C22mcrA-19, BAF96815
CH4-DNA-mcrA-F8, KR812718
CH4-DNA-mcrA-B10, KR812682 (5)
CH4-DNA-mcrA-H12, KR812735
CH4-DNA-mcrA-G9, KR812736
CH4-DNA-mcrA-F10, KR812719 (2)
CH4-DNA-mcrA-H1, KR812729 (2)
Marennes-Oleron Bay subsurface clone MOBPc431842, CAQ03810
Haakon Mosby mud volcano clone HMMVBeg-ME94, CAL58676
CH4-DNA-mcrA-H4, KR812731
CR15-DNA-mcrA-G11, KR812728
CH4-DNA-mcrA-A4, KR812667
CH4-DNA-mcrA-D5, KR812698
CH4-DNA-mcrA-C7, KR812689 (7)
CH4-DNA-mcrA-C6, KR812688
CH4-DNA-mcrA-F3, KR812715
CH4-DNA-mcrA-A5, KR812668 (20)
Haakon Mosby mud volcano clone HMMVBeg-ME61, CAL58674
Haakon Mosby mud volcano clone HMMVBeg-ME82, CAL58675
CH4-cDNA-mcrA-D9, KR812612
mcrA group f: ANME-3
1
0.734
1
0.999
0.971
1
1
0.813
0.838
0.968
0.889
0.968
0.966
0.3