

CLUSTAL

Methanopyrus_sp._8_510_KC18341.1/1-477
Methanomassilicoccus_luminis1_456_strain_B10_HQ896500.1/1-455
Methanopyrus_kandleri_1_414_AY414042.1/1-414
Methanosarcina_mazei_MH004454.1_RCompl_1_433/1-433
Methanosarcina_horonobensis_256_737_AB288266.1/1-466
Methanosarcina_subterranea_259_740_AB288268.1/1-466
Methanolobus_oregonensis_1_490_U22242.1/1-474
Methanolobus_zinderi_256_745_EU715818.1_RCompl/1-474
Methanolobus_taylorii_1_490_U22243.1/1-474
Methanolobus_profundi_687_1168_AB703629.1/1-466
Methanolobus_vulcani_1_490_U22245.1/1-474
Methanocella_conradii_1_465_JN081865.1/1-450
Methanocella_sp._279_692_KJ441441.1/1-398
Methanocella_paludicola_240_681_AB300467.1/1-426
Methanomicrobium_mobile_1_438_AF414044.1/1-438
Methanoculleus_marisnigri_RCompl_1_436_MH004450.1/1-436
Methanoculleus_palmolei_259_743_AB300784.1/1-469
Methanoculleus_bourgenis_259_743_AB300787.1/1-469
Methanoculleus_chikugoensis_259_743_AB300779.1/1-469
Methanogenium_organophilum_1_501_DQ229160.1/1-487
Methanogenium_boonei_15_520_DQ229161.1/1-490
Methanogenium_cariaci_1_433_DQ229157.1/1-420
Methanobacterium_sp._1_452_JQ917190.1/1-452
Methanobrevibacter_smithii_1_423_GU385700.1/1-423
Methanobrevibacter_oralis_1_414_LK054628.1/1-414
Methanobrevibacter_ruminantium/1-470
Methanobrevibacter_sp._D5_mcrA_plasmid_365_874_KF214818.1/1-488
Methanobrevibacter_gottschalkii_1_471_EU919431.1/1-471
Methanobrevibacter_boviskoreani_1_424_KC865050.1/1-424
Methanobrevibacter_woesei_1_467_EU919432.1/1-467
Methanobrevibacter_wolinii_1_395_KC865051.1/1-395
Methanobrevibacter_arboriphilus_1_414_AF414035.1/1-414
Methanobacterium_movs_673_1133_HM802934.1/1-445
Methanobacterium_thermaggregans_1_440_AY289750.1/1-440
Methanothermobacter_wolfelii_259_719_AB300780.1/1-445
Methanothermobacter_tenebrarum_259_723_AB523786.1/1-449
Methanothermobacter_crinale_18_503_HQ283274.1/1-470
Methanobacterium_aggregans_690_1116_KP006500.1/1-411
Methanobacterium_aarhusense_650_1124_AY386125.1/1-459
Methanobacterium_bryantii_259_719_AY313806.1/1-445
Methanococcus_voltae_5430_5930_X07793.1/1-485
Methanothermococcus_thermolithot_1_414_AF414048.1/1-414
Methanococcus_maripaludis_684_1144_AB703637.1/1-445
Methanococcus_vannielii_4514_5014_M16893.1/1-485
Methanococcus_aeolicus_1_464_AY354034.1/1-464
Methanosphaera_sp._1_464_FJ982887.1/1-464
Methanosphaera_stadtmanae_1_414_AF414047.1/1-414

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Methanosarcina_suterranea_259_740_AB288268.1/1-466

GGTGGAGT - CGGATT - CACACAGTATGCTACAGCGGCTTACACCGAGCATCTCTGGAGG
GGTGGTGT - AGGATT - CACACAGTATGCTACAGCGGCTTACACCGAGCATCTCTGGAGG
-----TACACTGTACAACATCTCTGGAGC-----
-----TGCATACACAGCATCTCTGGGCA-----
GGTGGTGT - CGGGTT - CACACAGTATGCAACAGCTGCATACACTGATGACATCTCTGACA
GGTGGTGT - CGGGTT - CACACAGTATGCAACAGCTGCATACACTGATGACATCTCTGACA
GGTGGTGT - AGGTTT - CACACAGTACGCTACACGAGGTTTACCGAACCAACATCTCTGATG
GGTGGTGT - AGGTTT - CACCCAGTAGCGCAACAGCAGCATACTGTAAACAACATCTCTGATG
GGTGGTGT - CGGCTT - CACCCAGTAGCGCAACAGCAGCATACTGTAAACAACATCTCTGATG
GGTGGTGT - AGGTTT - CACCCAGTAGCGCAACAGCAGCATACTGTAAACAACATCTCTGACG
GGTGGTGT - GGGCTT - CACCGAGTAGCGCAACCGCGCATACACCGATGACATCTCTGGATG
GGTGGTGT - CGGCTT - CACCGAGTAGCGCAACCGCGCTTACACCGATGACATCTCTGGATG
GGTGGTGT - CGGCTT - CACCGAGTAGCGCAACCGCGCTTACACCGATGATCTCTGGATG
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GGCGGTGT - CGGCTT - CACCGAGTAGCGCATCTGAGCTTACCGGACAACATCTCTGATG
GGCGGTGT - CGGATT - CACCCAGTAGCGCAACCGCGCTTACACCGACAACATCTCTGATG
GGCGGTGT - CGGATT - CACCCAGTAGCGCAACCGCGCTTACACCGACAACATCTCTGACG
GGTGGTGT - CGG - TT - CACCCAGTAGTCTACTGCGAGCATACACCGATGACATCTCTGATG
GGTGGTGT - CGG - TT - CACCGAGTAGCGCAACAGCAGCATACACCGTACAACATCTCTGATG
GGTGGTGT - CGG - TT - CACCCAGTAGTCAACCGGAGCATACACCGAT - ACATCTCTGATG
-----TT - CACCCAGTAGTCAACCGCGAGCTTACACTGACGATATCTTGAGCG-----
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-----GCATATCTGATAATGTATTAGATG-----
GGTGGTGT - AGGATT - TACTCAATATGCTACCGCAGCATACACCGTACAGTATTATTAGACG
GGTGGTGT - AGGATT - CACACAATATGCTACTGCGAGCATACACTGATAATGTATTAGACG
GGTGGTGT - AGGATT - CACACAGTATGCAACAGCTGCATACACAGATAATGTATTAGATG
-----CTTCTTGATG-----
GGTGGTGT - AGGATT - CACACAGTATGCTACAGCAGCATATACTGATAATGTCTTGATG

-----TACACTGACAATATTCTGGAGC-----
GGTGGTGT - AGGATT - CACTCAATACGGCAACCGCTGCTTACACTGACAACATCTCTGATG
GGTGGTGT - AGGATT - CACCCAGTAGCGCAACAGCAGCTTACCGGACAACATCTCTGACG
GGTGGTGT - TGGATT - CACCCAGTAGCGCAACAGCAGCTTACAGACAACATCTCTGATG
GGTGGTGT - AGGATT - CACACAATATGCTAACAGCAGCATACACAGACAACATCTTAGACG
GGTGGTGT - AGGATT - CACACAATATGCTACAGCAGCATACACAGACAACATCTTAGACG
GGTGGTGT - TGGATT - CACACAGTAGCGCAACAGCTGCTTACACTGACAACATCTCTGACG
GGTGGTGT - AGGATT - CACACAATATGCTACCGCAGCATACACCGACATCTCTGAGG
GGTGGTGT - AGGATT - CACTCAGTAGCTACAGCAGCATACACTGATAATATTCTTGATG
GGTGGTGT - AGGATT - CACACAATATGCTACAGCATCATACAGATGACATCTTAGATG
-----TACACCGACAGCATCTTAGACG-----
GGTGGTGT - AGGATT - CACTCAATACGCTACCGCATATACACCGACAGTATCTTAGATG
GGTGGGT - AGGTTT - CACTCAATACTGCTACAGCAGCATACACCGAGTATCTTAGACG
GGTGGTGT - CGGATT - CACACAGTATGCAACAGCAGCATACACTGATGACATCTTAGATG
GGTGGTGT - CGGATT - CACACAATACGCAAGCGTAGCATACACAGTAAATCTTAGACG
-----TACACAGTAAATATTAGATG-----

ACTACGCTCTACACATCTATCGACCTCATCAAGATGAGT --AC----- --GG-
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 ACAACACGTTCTATGACGTTGACTACATCAACGACAAGT --ACAACGGTGTGCAAA-
 ACAACGCTGTACTACGACGTTGACTACATCAACGACAAGT --ACAACGGTGTGCAAA-
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 ACAACCTCTACTACAACTGTTGACTACATCAACGACAAGT --ACGATGGTGCAGCAAA-
 ACTTCACCTTACTACGGCTATGACTATGCCAAGGGGCAAGT --AC----- --AA-
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 ACTTTACTTACTATGGTAAAGAATACGTGAGAAGACAAAT --TT----- --GG-
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 ACTTTCACCTTACTATGGTAAAGATACGTGGAAGACAAAT --TC----- --GG-
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 ACTTCATTTACTATGGTAAAGACTACGTGAGAAGGTAAT --AT----- --GG-

-----CGGCTTCTGC-GGTGT-----
-----CGGGCTCTGC-AAGAG-----
-----AATCGCC-GAGGC-----
-----CCTCGGAAGTGC-----
-----CGTAGGCAAGGAC-----
-----CATCGGCAAGGAC-----

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[illegible]

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CGACGGAAGTCAACCTGTATGGTATCGAGCAGTACGAGAAGTACCCGACCACTCCGAGG

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GCTCCCTCGGAATCTGCAACCGCAACGCTGGTCTGTCCGGTGTGGTACCTCTCATGTATGAC
---CAATTGCAACAGGTAAACGGAAACGCCGGTCTGTCCGGATGGTATCTCTCAATGTACC
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---CTCTGGCAACAGGAAACGGAAACGCTGGTCTGTCCGAGTGGTACCTCTGTATGTACT
---CCTGCGCAACAGGAAACGGAAACGCTGGTCTCTCCGAGTGGTACCTCTGTATGTATG
---CTCTTGCAACAGGAAACGGAAACGCTGGTCTTTCCGGATGGTACCTCTGTATGTACC
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CCGCACTCGCAACCGGCAACTCAACGCGGCTCTCAACCGGATGGTATCTCTCATGTCTCC
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Methanoculleus_chikugoensis_259_743_AB300779.1/1-469
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Methanogenium_boonei_15_520_DQ229161.1/1-490
Methanogenium_cariaci_1_433_DQ229157.1/1-420
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