

Table S2 List of the archaeal species used for evaluation of physiological and metabolic potential by MAPLE system

Species	Species ID	Class	Order
[<i>Euryarchaeota</i> : 53 species]			
<i>Methanocaldococcus jannaschii</i>	mja	<i>Methanococci</i>	<i>Methanococcales</i>
<i>Methanotorris igneus</i>	mig	<i>Methanococci</i>	<i>Methanococcales</i>
<i>Methanococcus vannielii</i>	mvn	<i>Methanococci</i>	<i>Methanococcales</i>
<i>Methanothermococcus okinawensis</i>	mok	<i>Methanococci</i>	<i>Methanococcales</i>
<i>Methanosarcina barkeri</i>	mba	<i>Methanomicrobia</i>	<i>Methanosarcinales</i>
<i>Methanococcoides burtonii</i>	mbu	<i>Methanomicrobia</i>	<i>Methanosarcinales</i>
<i>Methanohalophilus mahii</i>	mmh	<i>Methanomicrobia</i>	<i>Methanosarcinales</i>
<i>Methanohalobium evestigatum</i>	mev	<i>Methanomicrobia</i>	<i>Methanosarcinales</i>
<i>Methanosalsum zhilinae</i>	mzh	<i>Methanomicrobia</i>	<i>Methanosarcinales</i>
<i>Methanolobus psychrophilus</i>	mpy	<i>Methanomicrobia</i>	<i>Methanosarcinales</i>
<i>Methanomethylovorans hollandica</i>	mhz	<i>Methanomicrobia</i>	<i>Methanosarcinales</i>
<i>Methanosaeta concilii</i>	mcj	<i>Methanomicrobia</i>	<i>Methanosarcinales</i>
<i>Methanospirillum hungatei</i>	mhu	<i>Methanomicrobia</i>	<i>Methanomicrobiales</i>
<i>Methanocorpusculum labreanum</i>	mlla	<i>Methanomicrobia</i>	<i>Methanomicrobiales</i>
<i>Methanoculleus bourgensis</i>	mbg	<i>Methanomicrobia</i>	<i>Methanomicrobiales</i>
<i>Methanoplanus petrolearius</i>	mpi	<i>Methanomicrobia</i>	<i>Methanomicrobiales</i>
<i>Methanoregula boonei</i>	mbn	<i>Methanomicrobia</i>	<i>Methanomicrobiales</i>
Candidatus <i>Methanosphaerula palustris</i>	mpl	<i>Methanomicrobia</i>	<i>Methanomicrobiales</i>
<i>Methanocella paludicola</i>	mpd	<i>Methanomicrobia</i>	<i>Methanocellales</i>
<i>Methanomassiliicoccus</i> sp. Mx1-Issoire	mer	<i>Methanomicrobia</i>	Unclassified
<i>Methanothermobacter thermautotrophicus</i>	mth	<i>Methanobacteria</i>	<i>Methanobacteriales</i>
<i>Methanosphaera stadtmanae</i>	mst	<i>Methanobacteria</i>	<i>Methanobacteriales</i>
<i>Methanobrevibacter ruminantium</i>	mru	<i>Methanobacteria</i>	<i>Methanobacteriales</i>
<i>Methanobacterium lacus</i>	mel	<i>Methanobacteria</i>	<i>Methanobacteriales</i>
<i>Methanothermus fervidus</i>	mfv	<i>Methanobacteria</i>	<i>Methanobacteriales</i>
<i>Methanopyrus kandleri</i>	mka	<i>Methanopyri</i>	<i>Methanopyrales</i>
Candidatus <i>Methanomethylophilus alvus</i>	max	Unclassified	Unclassified
<i>Archaeoglobus fulgidus</i> DSM 4304	afu	<i>Archaeoglobi</i>	<i>Archaeoglobales</i>
<i>Ferroglobus placidus</i>	fpl	<i>Archaeoglobi</i>	<i>Archaeoglobales</i>
<i>Halobacterium salinarum</i>	hsl	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Haloarcula marismortui</i>	hma	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Haloquadratum walsbyi</i> DSM 16790	hwa	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Natronomonas pharaonis</i>	nph	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Halorubrum lacusprofundi</i>	hla	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Halorhabdus utahensis</i>	hut	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Halomicrobium mukohataei</i>	hmu	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Haloterrigena turkmenica</i>	htu	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Natrialba magadii</i>	nmg	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Haloferax volcanii</i>	hvo	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Halalkalicoccus jeotgali</i>	hje	<i>Halobacteria</i>	<i>Halobacteriales</i>

<i>Halogeometricum borinquense</i>	hbo	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Halopiger xanaduensis</i>	hxa	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Natrinema pellirubrum</i>	npe	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Natronobacterium gregoryi</i>	nge	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Halovivax ruber</i>	hru	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Natronococcus occultus</i>	nou	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Salinarchaeum</i> sp. Harcht-Bsk1	sali	<i>Halobacteria</i>	<i>Halobacteriales</i>
<i>Thermoplasma acidophilum</i>	tac	<i>Thermoplasmata</i>	<i>Thermoplasmatales</i>
<i>Picrophilus torridus</i>	pto	<i>Thermoplasmata</i>	<i>Thermoplasmatales</i>
<i>Ferroplasma acidarmanus</i>	fac	<i>Thermoplasmata</i>	<i>Thermoplasmatales</i>
<i>Pyrococcus furiosus</i> DSM 3638	pfu	<i>Thermococci</i>	<i>Thermococcales</i>
<i>Thermococcus kodakarensis</i>	tko	<i>Thermococci</i>	<i>Thermococcales</i>
<i>Aciduliprofundum boonei</i>	abi	Unclassified	Unclassified
[Crenarchaeota: 20 species]			
<i>Aeropyrum pernix</i>	ape	<i>Thermoprotei</i>	<i>Desulfurococcales</i>
<i>Staphylothermus marinus</i>	smr	<i>Thermoprotei</i>	<i>Desulfurococcales</i>
<i>Ignicoccus hospitalis</i>	iho	<i>Thermoprotei</i>	<i>Desulfurococcales</i>
<i>Desulfurococcus mucosus</i>	dmu	<i>Thermoprotei</i>	<i>Desulfurococcales</i>
<i>Thermosphaera aggregans</i>	tag	<i>Thermoprotei</i>	<i>Desulfurococcales</i>
<i>Ignisphaera aggregans</i>	iag	<i>Thermoprotei</i>	<i>Desulfurococcales</i>
<i>Thermogladius cellulolyticus</i>	thg	<i>Thermoprotei</i>	<i>Desulfurococcales</i>
<i>Hyperthermus butylicus</i>	hbu	<i>Thermoprotei</i>	<i>Desulfurococcales</i>
<i>Pyrolobus fumarii</i>	pfm	<i>Thermoprotei</i>	<i>Desulfurococcales</i>
<i>Sulfolobus acidocaldarius</i> DSM 639	sai	<i>Thermoprotei</i>	<i>Sulfolobales</i>
<i>Metallosphaera sedula</i>	mse	<i>Thermoprotei</i>	<i>Sulfolobales</i>
<i>Acidianus hospitalis</i>	aho	<i>Thermoprotei</i>	<i>Sulfolobales</i>
<i>Pyrobaculum islandicum</i>	pis	<i>Thermoprotei</i>	<i>Thermoproteales</i>
<i>Caldivirga maquilingensis</i>	cma	<i>Thermoprotei</i>	<i>Thermoproteales</i>
<i>Thermoproteus tenax</i>	ttn	<i>Thermoprotei</i>	<i>Thermoproteales</i>
<i>Vulcanisaeta distributa</i>	vdi	<i>Thermoprotei</i>	<i>Thermoproteales</i>
<i>Thermofilum pendens</i>	tpe	<i>Thermoprotei</i>	<i>Thermoproteales</i>
<i>Acidilobus saccharovorans</i>	asc	<i>Thermoprotei</i>	<i>Acidilobales</i>
<i>Caldisphaera lagunensis</i>	clg	<i>Thermoprotei</i>	<i>Acidilobales</i>
<i>Fervidicoccus fontis</i>	ffo	<i>Thermoprotei</i>	<i>Fervidicoccales</i>
[Thaumarchaeota: 3 species]			
<i>Nitrosopumilus maritimus</i>	nmr	Unclassified	<i>Nitrosopumilales</i>
<i>Cenarchaeum symbiosum</i>	csy	Unclassified	<i>Cenarchaeales</i>
<i>Candidatus "Nitrososphaera gargensis"</i>	nga	Unclassified	<i>Nitrososphaerales</i>
[Aigarchaeota: 1 species]			
<i>Candidatus "Caldiarchaeum subterraneum"</i>	csu	Unclassified	Unclassified
[Nanoarchaeota: 1 species]			
<i>Nanoarchaeum equitans</i>	neq	Unclassified	Unclassified
[Korarchaeota: 1 species]			
<i>Candidatus "Korarchaeum cryptofilum"</i>	kcr	Unclassified	Unclassified