

Table S6. Central metabolism genes identified in Marine Group I (MGI) Thaumarchaeota single amplified genomes (SAGs). Genes in red were also not identified in *Nitrosopumilus maritimus*.

Enzyme/Pathway	AAA001-A19	AAA007-N19	AAA007-O23	AAA288-I14	AAA288-J14
3-Hydroxypropionate/4-Hydroxybutyrate Cycle					
Acetyl-CoA carboxylase (6.4.1.2/6.3.4.14)	•		•		•
Malonyl-CoA reductase (1.2.1.75)					
Malonate semialdehyde reductase (1.1.1.298)					
3-Hydroxypropionyl-CoA synthetase (6.2.1.36)					
3-Hydroxypropionyl-CoA dehydratase (4.2.1.116)					
Acryloyl-CoA reductase (1.3.1.84)					
Propionyl-CoA carboxylase (6.4.1.3)	•		•		•
Methylmalonyl-CoA epimerase (5.1.99.1)	•	•	•	•	
Methylmalonyl-CoA mutase (5.4.99.2)	•	•	•	•	
Succinyl-CoA reductase (1.2.1.76)					
Succinate semialdehyde reductase (1.1.1.-)	•	•	•	•	
4-Hydroxybutyryl-CoA synthetase (6.2.1.-)	•	•	•	•	•
4-Hydroxybutyryl-CoA dehydratase (42.1.120/5.3.3.3)	•	•	•	•	•
Crotonyl-CoA hydratase (4.2.1.-)		•	•	•	•
3-Hydroxybutyryl-CoA dehydratase (42.1.55/1.1.1.35)	•	•	•	•	•
Acetoacetyl-CoA β -ketothiolase (2.3.1.9)	•	•	•	•	•
Citric Acid Cycle (TCA)					
citrate synthase (2.3.3.1)		•	•	•	
citrate lyase (beta subunit)/citryl-CoA lyase (4.1.3.6)	•		•	•	
aconitate hydratase (4.2.1.3)			•	•	
isocitrate dehydrogenase (1.1.1.42)		•	•		
oxoglutarate ferredoxin oxidoreductase (1.2.7.3)		•	•	•	
succinyl CoA-synthetase (6.2.1.5)	•	•	•	•	
succinate dehydrogenase (1.3.99.1)		•	•	•	•
fumarate hydratase (4.2.1.2)	•	•	•		•
malate dehydrogenase (1.1.1.37)		•		•	•
Glycolysis/Embden–Meyerhof–Parnas (EMP)					
glucokinase (2.7.1.2)					
glucose-6-phosphate isomerase/aldose 1-epimerase (5.3.1.9 / 5.1.3.3)		•	•		
6-phosphofructokinase (2.7.1.11)					
fructose 1,6-bisphosphate aldolase (4.1.2.13)	•		•	•	•
triosephosphate isomerase (5.3.1.1)	•	•		•	
glyceraldehyde-3-phosphate dehydrogenase (1.2.1.12)				•	
phosphoglycerate kinase (2.7.2.3)		•			
phosphoglycerate mutase (5.4.2.1)		•		•	•
enolase (4.2.1.11)		•			•
pyruvate kinase (2.7.1.40)					
Pentose Phosphate Pathway					
glucose-6-phosphate dehydrogenase (1.1.1.49)					
6-phosphogluconolactonase (3.1.1.31)					
6-phosphogluconate dehydrogenase (1.1.1.44)					
ribulose-phosphate 3-epimerase (5.1.3.1)					
ribose-5-phosphate isomerase (5.3.1.6)	•	•	•	•	•
transketolase (2.2.1.1)	•	•	•	•	•
transaldolase (2.2.1.2)		•	•	•	•