

Table S2: Genes encoding proteins involved in Life in the presence of oxygen, Anaerobic lifestyle and energy generation found in the reference genome of *Candidatus Cloacamonas acidaminovorans* [Pelletier et al. (2008)] and presence or absence of these within the *Cloacimonetes* genome bin.

Gene name	Encoded protein	<i>Cloacimonetes</i> bin
Life in the presence of oxygen		
<i>dfx</i>	Superoxide reductase (EC: 1.15.1.2)	Present
<i>rbr</i>	Ruberythrin (EC: 1.11.1.1)	Present
<i>rub</i>	Rubredoxin	Present
<i>ahpC</i>	Peroxiredoxin (EC: 1.11.1.15)	Present
<i>trx</i>	(thiol reductase) Thioredoxin	Present
<i>trxB</i>	Thioredoxin reductase (EC: 1.8.1.9)	Present
<i>fprA</i>	Rubredoxin-oxygen oxidoreductase (EC: 1.15.1.2)	Present
Cloam0913 ¹	Class II ribonucleotide reductase (putative)	Present
Anaerobic lifestyle		
<i>nrdD</i>	Class III ribonucleotide reductase (EC: 1.17.4.2)	Present
<i>nrdG</i>	Class III ribonucleotide reductase-activating enzyme (EC: 1.97.1.-)	Present
<i>por</i>	Pyruvate ferredoxin oxidoreductase (EC: 1.2.7.1)	Present
<i>korC</i>	2-Ketoglutarate ferredoxin oxidoreductase γ -subunit (EC: 1.2.7.3)	Present
<i>korB</i>	2-Ketoglutarate ferredoxin oxidoreductase β -subunit (EC: 1.2.7.3)	Present
<i>korA</i>	2-Ketoglutarate ferredoxin oxidoreductase α -subunit (EC: 1.2.7.3)	Present
<i>korD</i>	2-Ketoglutarate ferredoxin oxidoreductase δ -subunit (EC: 1.2.7.3)	Present
<i>aorB</i>	Aldehyde ferredoxin oxidoreductase, tungsten containing (EC: 1.2.7.5)	Present
<i>aorA</i>	Aldehyde ferredoxin oxidoreductase, tungsten containing (EC: 1.2.99.6)	Present
<i>vorD</i>	Branched-chain ketoacid ferredoxin oxidoreductase δ -subunit (EC: 1.2.99.5)	Present

<i>vorC</i>	Branched-chain ketoacid ferredoxin oxidoreductase γ -subunit (EC: 1.2.99.5)	Present
<i>vorB</i>	Branched-chain ketoacid ferredoxin oxidoreductase β -subunit (EC: 1.2.99.5)	Present
<i>vorA</i>	Branched-chain ketoacid ferredoxin oxidoreductase α -subunit (EC: 1.2.99.5)	Present
<i>iorB</i>	Indolepyruvate ferredoxin oxidoreductase (EC: 1.2.7.8)	Present
<i>iorA</i>	Indolepyruvate ferredoxin oxidoreductase (EC: 1.2.7.8)	Present
Energy		
<i>hymC</i>	Fe-only hydrogenase α -subunit (EC: 1.12.7.2)	Present
<i>hymB</i>	Fe-only hydrogenase β -subunit (EC: 1.12.7.2)	Present
<i>hymA</i>	Fe-only hydrogenase γ -subunit (EC: 1.12.7.2)	Present
<i>hydEF</i>	Fe-only hydrogenase, assembly protein	Present
<i>hydG</i>	Fe-only hydrogenase, assembly protein	Present
Cloam1768 ¹	Methylmalonyl-CoA-decarboxylase (putative) α -subunit (EC: 4.1.1.41)	Present
Cloam1770 ¹	Methylmalonyl-CoA-decarboxylase (putative) γ -subunit (EC: 4.1.1.41)	Present
Cloam1771 ¹	Methylmalonyl-CoA-decarboxylase (putative) β -subunit (EC: 4.1.1.41)	Present
Cloam1052 ¹	ATP synthase, subunit A1 (EC: 3.6.3.15)	Present
Cloam1053 ¹	ATP synthase, subunit B1 (EC: 3.6.3.15)	Present
Cloam1054 ¹	ATP synthase, subunit D	Present
Cloam1055 ¹	ATP synthase, subunit I, putative (EC: 3.6.3.14)	Present
Cloam1056 ¹	ATP synthase, subunit K, putative	Present
<i>hppA</i>	Pyrophosphate-energised proton pump (EC: 3.6.1.1)	Present

¹ Name of genetic determinant in *Candidatus* Cloacamonas acidaminovorans genome, no other name given.