

Element	Process	Gene	Gene Product	Primers	References
Arsenic	Arsenic resistance and transformation	<i>arrA</i>	Respiratory arsenate reductase catalytic subunit	arrA-CVF1 arrA-CVR1	Mirza et al., 2016 "
Carbon	Methanotrophy-methane consumption	<i>pmoA</i>	Particulate methane monooxygenase	A189 mb661	Holmes et al., 1995 Costello and Lidstrom 1999
	Methanogenesis-methane production	<i>mcrA</i>	Methyl coenzyme-M reductase	MCRf MCRr	Springer et al., 1995 "
Nitrogen	Nitrate reduction-conversion of nitrate to nitrite	<i>narG</i>	Nitrate reductase	narG1960f narG2650r	Philippot et al., 2002 "
	Denitrification - nitrite reduction to N ₂	<i>nirK</i>	Nitrite reductase	nirKC1F nirKC1R	Wei et al., 2015 "
	Dissimilatory nitrate reduction to ammonium - nitrite reduction to NH ₃	<i>nrfA</i>	Nitrite reductase	nrfAF2aw nrfA-R1	Welsh et al., 2014 Mohan et al., 2004
Phosphorus	Mineralization of organic phosphorus	<i>phoD phoX</i>	Alkaline phosphatase	phoD XFmix	Ragot et al., 2015
				phoD XRmix	Ragot et al., 2017 "
Sulfur	Sulfate reduction and Sulfur oxidation	<i>dsrB</i>	Dissimilatory type sulfite reductase subunit beta	DSR1728Fmix modified DSR4Rmix modified	Pelikan et al., 2015 Muller et al., 2015
Taxonomy	Eukaryotic community structure	18S	18S ribosomal RNA	S-*-Univ-1391-a-S-16 EukBr	Earth microbiome project 18S "
	Bacterial and Archaeal community structure	16S	16S ribosomal RNA	S-D-Bact-0515-b-S-19 S-D-Bact-0806-b-A-20	Parada et al., 2016 Aprill et al., 2015