

Protein function	Gene	Number of riboswitches in metagenomes (grouped by taxonomy)		
		Sargasso Sea	Minnesota Soil	Whale Falls
Outer membrane cobalamin receptor protein (COG4206)	<i>btuB</i>	4 α-Proteobacteria	1 Bacteroidetes/ Chlorobi	3 Bacteroidetes/ Chlorobi
		3 β-Proteobacteria	1 α-Proteobacteria	1 α-Proteobacteria
		9 γ-Proteobacteria	1 γ-Proteobacteria	1 γ-Proteobacteria
Putative GTPases (G3E family) (COG0523)	<i>cobW</i>	2 α-Proteobacteria	-	-
Hydrogenase/urease accessory protein (COG2370)	<i>hupE</i>	2 α-Proteobacteria	-	-
ABC-type Fe3+-siderophore transport system, per- mease component (COG0609)	<i>btuC</i>	-	-	1 Bacteria
ABC-type Fe3+-hydroxamate transport system, periplasmic component (COG0614)	<i>fecB</i>	-	2 Bacteria	1 α-Proteobacteria
Adenosyl cobinamide kinase/adenosyl cobinamide phosphate guanylyltransferase (COG2087)	<i>cobU</i>	-	-	1 α-Proteobacteria
Methionine synthase II (cobalamin-independent) (COG0620)	<i>metE</i>	-	-	1 Bacteroidetes/ Chlorobi
Fatty-acid desaturase (COG1398)	<i>ole1</i>	-	1 γ-Proteobacteria	-
Unknown function		3 No ORF	3	-
		6 No similar proteins	5	4
		3 End of DNA fragment	-	-

Additional file 3: B₁₂-elements and their regulated functions identified in three metagenomes. New functions are set in boldface.