

Protein function	Gene	Number of riboswitches in metagenomes (grouped by taxonomy)		
		Sargasso Sea	Minnesota Soil	Whale Falls
Methionine synthase I (cobalamin-dependent), methyltransferase domain (COG0646)	<i>metH</i>	Bacteroidetes/ Chlorobi 2	-	Bacteroidetes/ Chlorobi 1
Homoserine trans-succinylase (COG1897)	<i>metA</i>	Cyanobacteria 1	-	-
Homoserine dehydrogenase (COG0460)	<i>hom</i>	-	Bacteria 2	-
Homoserine acetyltransferase (COG2021)	<i>met2</i>	-	-	Bacteroidetes/ Chlorobi 1
Threonine synthase (COG0498)	<i>thrC</i>	-	Actinobacteria 1	-
O-acetylhomoserine sulphydrylase (COG2873)	<i>met17</i>	-	Bacteria 1	-
5-methylthioribose-1-phosphate iso- merase homologous to predicted translation initiation factor 2B sub- unit, eIF-2B alpha/beta/delta family (COG0182)	<i>gcn3</i>	-	Bacteria 1	-
Unknown function (no similar proteins)		-	-	1

Additional file 1: S-boxes (SAM-riboswitches) and their regulated functions identified in three metagenomes. New functions are set in boldface.