Additional File 6. Distribution of Specific Functional Categories regulated by each RNA family across 24 analyzed taxonomic groups.

RNA motif	SFC*	Total # of SFC per	Lactobacillaceae	Streptococcaceae	Bacillales	Staphylococcus	Clostridiaceae	Bacteroidaceae	Chlorobiales	Corynebacteriaceae	Mycobacteriaceae	Cyanobacteria	Chloroflexi	Deinococcus-Therm	Thermotogales	Desulfovibrionales	Caulobacterales	Rhodobacterales	Rhizobiales	Burkholderia	Ralstonia	Enterobacteriales	Pasteurellales	Vibrionales	Pseudomonadacea	Shewanella
Genome count:		**255**	**15**	**15**	**11**	**7**	**20**	**11**	**11**	**8**	**9**	**14**	**5**	**5**	**11**	**10**	**4**	**15**	**15**	**8**	**6**	**12**	**9**	**10**	**8**	**16**
Cobalamin	B12 biosynthesis	**1027**	0	0	57	0	197	19	72	0	2	13	57	52	53	20	12	47	47	93	25	63	0	11	93	94
	B12 & precursor transporters	**589**	0	0	20	0	51	86	56	9	13	10	17	18	30	26	11	50	40	25	18	12	0	16	29	52
	Cobalt transporters	**183**	0	0	8	0	51	4	12	4	10	6	11	4	8	0	0	16	16	8	1	11	0	0	8	5
	Isozymes of B12-dependent enzymes	**136**	0	0	12	0	1	32	13	2	6	3	3	6	0	15	2	13	28	0	0	0	0	0	0	0
	Miscellaneous	**484**	1	0	10	0	92	98	45	2	13	11	21	16	23	6	3	44	28	14	1	13	0	12	26	5
	TOTAL	**2419**	1	0	107	0	392	239	198	17	44	43	109	96	114	67	28	170	159	140	45	99	0	39	156	156
TPP	Thiamine biosynthesis	**1145**	35	24	85	60	105	76	16	53	44	14	14	30	27	47	4	70	61	39	28	89	24	85	9	106
	Thiamine & precursor transporters	**553**	53	32	46	22	41	14	0	18	9	0	22	10	11	9	0	59	33	0	0	41	32	51	2	48
	Miscellaneous	**98**	12	6	12	4	9	5	0	9	0	0	7	4	9	1	0	3	6	2	2	0	3	0	3	1
	TOTAL	**1796**	100	62	143	86	155	95	16	80	53	14	43	44	47	57	4	132	100	41	30	130	59	136	14	155
FMN	Riboflavin biosynthesis	**332**	20	16	41	28	57	0	2	0	0	0	10	15	32	10	1	6	10	9	6	12	18	8	16	15
	Riboflavin transporters	**78**	14	15	9	7	20	0	0	3	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**22**	0	11	0	0	3	0	0	0	0	0	0	0	5	0	0	1	2	0	0	0	0	0	0	0
	TOTAL	**432**	34	42	50	35	80	0	2	3	0	0	20	15	37	10	1	7	12	9	6	12	18	8	16	15
Lysine	Lysine biosynthesis	**272**	52	2	11	54	40	0	0	0	0	0	0	0	69	0	0	0	0	0	0	5	2	9	0	28
	Lysine transporters	**104**	22	2	12	7	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	13	0	20
	Miscellaneous	**5**	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**381**	74	4	23	63	62	0	0	0	0	0	0	0	70	0	0	0	0	0	0	5	10	22	0	48
SAM	Methionine biosynthesis	**157**	0	0	54	8	38	0	24	0	0	0	17	16	0	0	0	0	0	0	0	0	0	0	0	0
	Methionine & SAM recycling	**98**	2	0	51	12	22	0	0	0	0	2	9	0	0	0	0	0	0	0	0	0	0	0	0	0
	Cysteine biosynthesis	**51**	0	0	40	0	7	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
	Methionine transporters	**140**	0	0	57	36	39	0	0	0	0	0	0	5	3	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**93**	0	0	40	10	25	0	0	1	0	0	13	0	0	4	0	0	0	0	0	0	0	0	0	0
	TOTAL	**539**	2	0	242	66	131	0	24	1	0	2	43	21	3	4	0	0	0	0	0	0	0	0	0	0
Glycine	Glycine metabolism	**271**	0	0	27	22	49	0	0	6	13	0	12	0	0	2	16	37	46	23	18	0	0	0	0	0
	Serine metabolism	**16**	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	6	6	0	0	0	0	0
	Glycine transporters	**60**	0	12	3	0	10	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	9	10	0	14
	Miscellaneous	**68**	0	0	0	0	22	0	0	0	0	0	3	0	0	2	4	8	11	9	6	1	1	0	1	0
	TOTAL	**415**	0	12	30	22	83	0	0	6	15	0	15	0	0	6	20	45	57	38	30	1	10	10	1	14
Purine	Purine metabolism	**267**	9	11	149	21	51	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	5	0	5
	Purine & precursor transporters	**84**	16	13	28	7	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
	Miscellaneous	**6**	0	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**357**	25	24	181	28	70	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	6	0	7
SAH	Methionine biosynthesis	**26**	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	8	6	0	0	0	6	0
	Methionine & SAM recycling	**21**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	6	0	0	0	7	0
	Miscellaneous	**21**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	12	0	0	0	1	0
	TOTAL	**68**	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	24	24	0	0	0	14	0
SAM-IV	Methionine biosynthesis	**16**	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**15**	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**31**	0	0	0	0	0	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAM-Alpha	Methionine biosynthesis	**46**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	30	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**46**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	30	0	0	0	0	0	0	0
SAM-Chlorobi	Methionine & SAM recycling	**22**	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**22**	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAM-SAH	Methionine & SAM recycling	**13**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**13**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0
SMK-box	Methionine & SAM recycling	**13**	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**13**	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
preQ1	Queuosine biosynthesis	**108**	0	0	42	21	17	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	24	0	0	0
	Queuosine & precursor transporters	**40**	9	2	4	6	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**22**	4	2	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**170**	13	4	46	27	52	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	24	0	0	0
preQ1-II	Queuosine & precursor transporters	**17**	3	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**17**	3	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
THF	Folate biosynthesis	**1**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Folate transporters	**23**	8	4	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**24**	8	5	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MOCO	Molybdenum cofactor biosynthesis	**237**	0	0	0	0	24	0	1	0	0	0	0	0	6	0	1	1	0	0	0	53	36	44	0	71
	Molybdenum & tungsten transporters	**58**	0	0	0	0	4	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	48
	Miscellaneous	**12**	0	0	0	0	5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	2	0	0
	TOTAL	**307**	0	0	0	0	33	0	1	0	0	0	0	3	11	0	1	1	0	0	0	53	39	46	0	119
glmS	Aminosugar biosynthesis	**44**	1	0	11	7	17	0	0	0	0	0	5	3	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**44**	1	0	11	7	17	0	0	0	0	0	5	3	0	0	0	0	0	0	0	0	0	0	0	0
Mg sensor	Magnesium transporters	**5**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**5**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
GEMM	Polysaccharide degradation	**14**	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	4	0	7
	Miscellaneous	**121**	0	0	20	0	63	0	0	0	0	6	0	0	0	6	0	0	0	0	1	1	0	11	0	13
	TOTAL	**135**	0	0	20	0	63	0	0	0	0	6	0	3	0	6	0	0	0	0	1	1	0	15	0	20
PyrR	Pyrimidine metabolism	**602**	117	120	107	52	113	0	0	36	43	0	8	6	0	0	0	0	0	0	0	0	0	0	0	0
	Pyrimidine transporters	**7**	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**20**	0	2	2	5	0	0	0	0	7	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**629**	122	122	109	57	115	0	0	36	50	0	10	8	0	0	0	0	0	0	0	0	0	0	0	0
sucA	Citric acid cycle	**42**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	18	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**42**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	18	0	0	0	0	0
serC	Serine metabolism	**63**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	27	28	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**63**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	27	28	0	0	0	0	0	0	0
speF	Ornithine degradation	**12**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**12**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0
ydaO-yuaA	Potassium transporters	**21**	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**61**	0	0	14	0	19	0	0	5	9	13	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	TOTAL	**82**	0	0	35	0	19	0	0	5	9	13	0	0	0	1	0	0	0	0	0	0	0	0	0	0
ykkC-yxkD	Urea and agmatine utilization	**122**	0	0	0	0	0	0	0	0	0	26	0	0	0	0	0	4	40	21	7	5	0	0	19	0
	Multidrug resistance transporter	**25**	2	0	16	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**26**	1	0	3	0	11	0	0	0	3	3	0	0	0	0	0	4	0	0	1	0	0	0	0	0
	TOTAL	**173**	3	0	19	2	16	0	0	0	3	29	0	0	0	0	0	8	40	21	8	5	0	0	19	0
mini-ykkC	Urea and agmatine utilization	**28**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	2	2	1	0	0	3	0
	Multidrug resistance transporter	**51**	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4	3	7	8	1	9	0	4	6	7
	Miscellaneous	**7**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
	TOTAL	**86**	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4	10	27	10	3	10	0	4	9	7
ykoK	Magnesium transporters	**37**	6	5	8	0	11	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	1	0	0
	Miscellaneous	**29**	9	1	2	0	3	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**66**	15	6	10	0	14	0	0	1	14	0	0	0	0	0	0	0	0	0	0	5	0	1	0	0
L10 leader	Ribosome biogenesis	**214**	30	30	22	14	37	0	0	6	2	21	10	8	22	0	0	0	0	0	0	0	6	6	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**214**	30	30	22	14	37	0	0	6	2	21	10	8	22	0	0	0	0	0	0	0	6	6	0	0
L13 leader	Ribosome biogenesis	**86**	26	30	16	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**86**	26	30	16	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L19 leader	Ribosome biogenesis	**61**	14	13	10	7	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**61**	14	13	10	7	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L20 leader	Ribosome biogenesis	**223**	45	45	27	21	55	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**223**	45	45	27	21	55	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0
L21 leader	Ribosome biogenesis	**138**	30	27	22	11	30	0	0	0	0	2	0	0	16	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**59**	9	11	11	6	15	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**197**	39	38	33	17	45	0	0	0	0	2	0	0	23	0	0	0	0	0	0	0	0	0	0	0
S15 leader	Ribosome biogenesis	**98**	9	15	0	0	3	0	0	7	0	0	0	0	0	0	0	9	0	0	0	12	10	9	8	16

	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**98**	9	15	0	0	3	0	0	7	0	0	0	0	0	0	0	9	0	0	0	12	10	9	8	16
Combined ribosom	**Ribosome biogenesis**	**820**	**154**	**160**	**97**	**67**	**142**	**0**	**0**	**13**	**2**	**23**	**10**	**8**	**68**	**0**	**0**	**9**	**0**	**0**	**0**	**12**	**16**	**15**	**8**	**16**
	Miscellaneous	**59**	**9**	**11**	**11**	**6**	**15**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL	**879**	**163**	**171**	**108**	**73**	**157**	**0**	**0**	**13**	**2**	**23**	**10**	**8**	**75**	**0**	**0**	**9**	**0**	**0**	**0**	**12**	**16**	**15**	**8**	**16**
Leu leader	Leucine biosynthesis	**163**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	14	37	0	64
	Miscellaneous	**2**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
	TOTAL	**165**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	15	37	0	64
His leader	Histidine biosynthesis	**334**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	37	80	0	126
	Histidine transporters	**6**	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0
	Miscellaneous	**9**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0
	TOTAL	**349**	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	92	48	80	0	126
Thr leader	Threonine biosynthesis	**131**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	19	30	0	48
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**131**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	19	30	0	48
Trp leader	Tryptophan biosynthesis	**250**	0	0	0	0	0	0	0	13	0	0	0	0	2	0	0	0	10	0	0	67	0	62	0	96
	Miscellaneous	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**250**	0	0	0	0	0	0	0	13	0	0	0	0	2	0	0	0	10	0	0	67	0	62	0	96
Combined amino a	**Amino acid biosynthesis**	**878**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**10**	**0**	**0**	**240**	**70**	**209**	**0**	**334**
	Miscellaneous	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**12**	**0**	**0**	**0**
	TOTAL	**895**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**10**	**0**	**0**	**242**	**82**	**209**	**0**	**334**
T-box	Amino acyl-tRNA synthetases	**970**	222	158	181	94	267	0	0	8	7	0	23	10	0	0	0	0	0	0	0	0	0	0	0	0
	Amino acid biosynthesis	**636**	114	116	144	74	184	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
	Amino acid transporters	**207**	104	32	15	0	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Miscellaneous	**192**	44	93	13	6	21	0	0	0	0	0	13	2	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	**2005**	484	399	353	174	528	0	0	8	7	0	40	12	0	0	0	0	0	0	0	0	0	0	0	0

*SFC number for individual riboswitch family is listed in each row, with averaged proportion listed in the last column; 'per genome' value is listed in the bottom half for each riboswitch class.