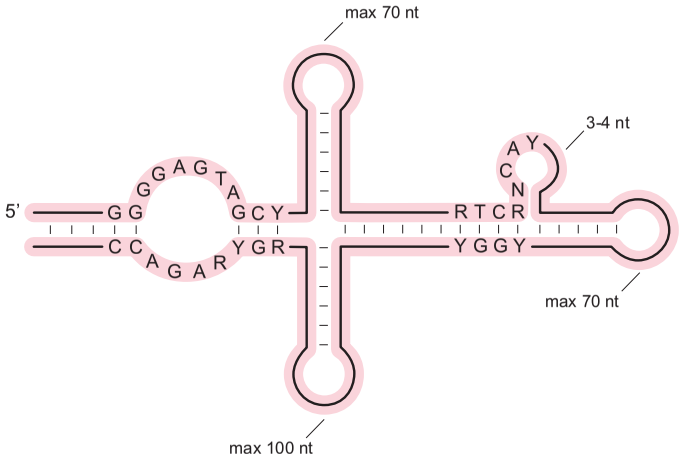
A



B

Accession	Metagenome	Start position	End position	Regulated function (COG)
CH025042	Sargasso	236	349	COG1971
CH027617	Sargasso	2221	2108	COG1971
AAFX01006168	Soil	410	534	COG0861
AAFX01013281	Soil	659	513	COG0861
AAFX01019015	Soil	466	328	COG2119
AAFX01069316	Soil	219	336	COG0861
AAFX01111584	Soil	309	172	No ORF
AAFX01128094	Soil	605	483	COG0861
AAFY01005645	Whale1	334	216	COG2119
AAFY01017336	Whale1	236	105	No ORF
AAFY01027355	Whale1	461	596	No ORF

C

```
Structure
CH025042        CCCCTCGGTTGGGGAGTAGCCTGTTTCCGTTTC-----------GAATGGAAAAGTTTG-TATCAACATAATTGGTC----
CH027617        CCCCTCGGTTGGGGAGTAGCCTGTTTCCGTTTC-----------GAATGGAAAAGTTTG-TATCAACATAATTGGTC----
AAFX01006168    ACATAGTGTTGGGGAGTAGCCCACCGGCGCCGGTTCG--ATGGCCGCCGTCGGTGCGACCGGTCGTCAAGACGGTGCCCT-
AAFX01013281    GAATCGAGAAGGGGAGTAGCCCACCGACCAT---------------CAGGTCGGCGGCCGAATCGTCAAGACTGCGGGCTC
AAFX01019015    TTCCTCCTCCGGGGAGTAGCCCCTCCGCGGCCGGCGTTGCCGGCATGGCGGGGGACGCGC--GTCAACACGCTTGGCC----
AAFX01069316    TAGTAGGGAAGGGGAGTAGCCACGCGGGGTC---------------CACCCGCGCGGCCG-AATCGTCAAGACTGCGCG---
AAFX01111584    GAGCGTCAAAGGGGAGTAGCTACGGGGGAGCGGCAG--------GACGCCCCCGCGGCAAGGCCGTCATCACGGGATTCCG
AAFX01128094    TCTCCCCGGTGGGGAGTAGCCACCCAGGATCTC---------------TCCTGGGTCGAAGGGCCGTCAAGACGGAGGTGA-
AAFY01005645    CCCGTCATCTGGGGAGTAGCCAGCCGCCGAA-----------------AGGCGGGCTTCCGTGTCAACATACTCGGCTGA--
AAFY01017336    CTTCTCTTCAGGGGAGTAGCTTCCGCGCTTGGTA---------TTCAGGGGCGGACGGT-GGTCAACATACTTGGGGC---
AAFY01027355    CGCTGTCTTAGGGGAGTAGTCTCTCCGGAAGCCT---------GTCTTCCATTGGCGAA-CGTCAACATAATTGATC----

Structure
CH025042        ----------ACATTACCATGGTA-CAAACACCTC----------------------TTGGTTGGCGAGACCATCGATAAGT
CH027617        ----------ACATTACCATGGTA-CAAACACCTC----------------------TTGGTTGGCGAGACCATCGATAAGT
AAFX01006168    ----------AGGGCACCGGGCCGGCTGCAGCA-----------------------ATCGGGGCGAGACCACCGCGCGNC
AAFX01013281    GCGGCAACGCCACCCCGCACGGTCCGGTCGGGATGCCGTGGGCCCCGTGGCCCACATGTCAGGGCGAGACCTTCGTTCCGC
AAFX01019015    ----------GGCAGGCCATGGC--GCGCGAGGCAGCCATCGC-----ACGATGGAAGGCCGGGCAAGACCGAAGGCAGGC
AAFX01069316    ---------GACGCGCGCACGGTT-CGGTCGGGTTCCC----------------GAGGAACAGGCGAGACCTTCGCACGAG
AAFX01111584    GATT--CTTTCCGCGTCCCCGGCCTTATCGACAACCAT--------------GGCGGTTGTAAGCGAGACCTTTGCCTGGC
AAFX01128094    ----------ACCGCCTCCGGGCCTTCCGAATCGGCGC--------------AGTGGCCGAAGGCGAGACCACCACGACAC
AAFY01005645    ------------GAGGCCGTGGTGCGGAAGGAGCGGTCA-------------CCACCGTTCGGGCGAGACCAATGACATTG
AAFY01017336    ---------ACATTCCCCATGGCC-ATCGTGTTTCATTGGTT-------TACCGGTGAAATTAGCAAGACCTGAGGCAGAC
AAFY01027355    ----------CGCAGATCATGGCG-TTCGCAAACCTCAGTCGCCT-GGCGCGACACGGGTTTGACGAGACCTATGACATAC
```

Additional file 15: (A) YYBP/YKOY riboswitch pattern. (B) List of identified YYBP/YKOY riboswitches. (C) Alignment of YYBP/YKOY riboswitch sequences.