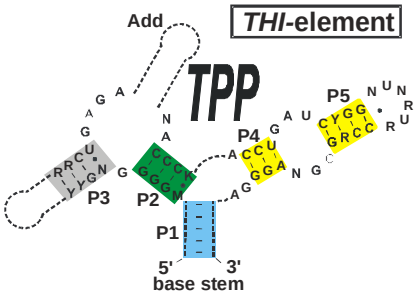
DESCRIPTION OF ADDITIONAL DATA FILES

Supplementary Fig. 1. (A) The thiamin-specific regulatory *THI* elements in δ-proteobacteria. *THI*-elements are in bold with conserved sequence regions in red and conserved helices marked by background gray, yellow, green and blue colors. Regulatory hairpins (terminators) are marked by background magenta with poly-T regions in blue. Start codons and ribosome-binding sites are in blue and underlined.

DD_THIS
CAGCTAGGGGTGCCCGTACGGGCTGAGATTGAAACAGGTGTTTCTGACCCTTGGAACCTGATGCGGGTAACCGCCGTAGGGAAGCTGGCAGACATATCATACATATGC**AGCCGGC**CTGA**GCC**
GGCTTTTTTTGTATGTATGACCAGGGCGCGTATGCGCCAGT**GCTGGGGGGGCCTTGTCAGGCTGAGATTGAAGCGCAAAGCTTCTGACCCCTTGAACCTGATGCAGTTAACACTGCCGAAGG**
GAAGCCATGATATTTTCATTGCGGAAATGCT**GCGGCTTGTC**TTTCG**GGCAGGCCGC**TTTTTTTATGTCCGATGTATGAAAGACAGCAGCGCGCCGCCCGCCGGAAGATTCCGGCGTTGCCGG
ACGCTGCGGCCTGTCGGGTGCAGAAC**AAAAGG**CGGAACA**ATG**AACATCA
DV_THIS
TCAGCTAGGGGAGCCTTCGGGCTGAGAGTGGGCACGTCCCAGACCCTGTGAACCTGACGCAGTTCACACTGCCGTAGGGAAGCTGAGCGCCGGACAACGTCCGTTC**GCCCATCC**TCTGC**GGA**
TGGGCTTTTTTGTTTTTCGAGTATCAGCGGTCGCCGTCGCGACCGGA**GCTAGGGGAGCCTTCGGGCTGAGAGTGGGTTCGTCCCAGACCCTGTGAACCTGACGCAGTTAGCACTGCCGTAGG**
GAAGCCGCGCACCGGACATGCGTCCGT**ACGCCCATCC**TCTGC**GGATGGGCG**TTCTGTTTTTCCGGCGCCCGCCGCATCGCCTTTGCGCCCTGCCTGCGACTATGGCGGCAGGGCAGGCGGGG
CGGTCGGCCTTGGCAGGCGTCAGCAGACAACCCGGCAGAAG**GAGAGA**CGGCG**ATG**ACGATAG
DA_THIF
GCCCTGGGGGAGTTTATTACTGAGA**GTCCTGTTGCGGGACGA**CCCTTAG**AACCTGATCCGGGTTATACCGGCGTAGGGAAGCGGC**ACTTTATACGGGATTTCTCCCGTCG**AAGGTCGC**TTTC
GCGACCTTTTTCTATTTTGGATCCAAGAGCACTTTCCGCTCACCAATGTGTC**ATG**ATTATCG
DA_THIE
ATGGCTGCTGGGGAGTGATTCACTGAGAGCTCTGTTAGATTGGAGCGACCCTTGGAACCTGATCCGGATTATACCGGCGTAGGGAAGCGACCTGACAACACCGT**ATG**GTGTTCG **direct sequestration of the ribosome-binding site (regulation of translation)**
GM_THIE
TTGACTTAACGGGAAAATTCGGTTAGCTTTGTCTACACAAAAGCAGC**CTGCTGGGGCGAGTTCTTCGAGAACTGAGACGGGCACCGCCCGAACCCTTAC**CACCTGATCCGG**GTAATGCCGGCG**
TAGGGAAGCGGCCAGAGACCTCGTTTACCTCGTTGAGTTCTGGG**ACCGTGAC**CATC**GTCACGGTTTTTTT**GTTT**GGGAGA**TCACC**ATG**GGCAGCA
GM_THIS
CGCTAGGGGAGTTTCGACTGAGAGTCCGACGCGCTGCTACGGACAACCCTTTGAACCTGATCCGGATAATGCCGGCGTAGGGAAGCGTTCCACCATGGTCTATTCCACGACCACG**GGCCGC**T
TCT**GCGCC**TTTTTT**GTTTACGCGACCAGATGCCGGTTTCGACGAACCGGCACCCATACTC**GGAGA**ACACA**ATG**GAAATCA
GS_THIE
CTGCTGGGGGAGTTCTTGGGAACTGAGACGGGCAACGCCCGAACCCTTTGAACCTGATCCGGTTTATACCGGCGTAGGGAAGCGGCCAGAAACAATCATCCGTACGTCTTTTCTGGAA**CCGC**
GACTTTGCC**GTCGCGG**TTTTTTTTT**G**AGGAGA**TTTCCTTTC**ATG**GCCTCT
GS_THIS
CGCTAGGGGAGTTTCGGCTGAGAGCCCGTCTGTGATGCCGTTCGGACCGCGCCCGGATAACAGGGAATAACGCGGCACGGAGCGGCAGGGCGACCCTTCGAACCTGATCCGGGTAATACCGG
CGTAGGGAAGCGATAGAACATGGATCACCACAACCCATG**GGCCGC**TTCT**GCGGCC**TTTTTT**G**TTTACACAACCCCACCGTATCCCGACA**GGAGG**CCCC**ATG**AAC
DP_THIM
TTTTTGCAGGCGTGGCTTTAGGGCCTGAGAAGATACCCATTGAACCTGACCTGGCTAAAACCAGGGTAGGGAA**TTGCAGAAA**TGTCCTCATTTTCATTTCTTCGCTCTATC**TGCTCGC**CCTC
CCCC**TGTTA**TTCT**AGC**GAAA**GCTTTAACA**TTTATCC**GCTGAGTA**ATG**TTATGTCGA

(B) Conserved structure of the *THI* element.



Supplementary Fig. 2. (A) The vitamin B12-specific regulatory RNA elements in δ-proteobacteria. *B12*-elements are in bold with conserved sequence regions in red and conserved helices marked by background sea green, gray, yellow, green, cyan and blue colors. Regulatory hairpins (terminators or sequestors) are marked by background magenta with poly-T regions in blue. Start codons and ribosome-binding sites are in blue and underlined.

GM_CobU
TCAGGTGCTTTGCCTCATGGCAGAAGGTAAAAGGGAAAAGGGTGCGACTCCCTTGCTGTCCCGCAACTGTGAACGGTGATGAAAGCCGCAACGATGCCACTGATCTGGTTTCCATGATGAA
ACCCCGGGAAGGCGCGGCGAGTAAAGTGATCCGTGAGCCAGGAAACCTGCCTGACGTCAGCTTCACAGGACCTCCGTGGAAGAGGCTCCGAGGCCCGGCGTTCGGCTTTTCACCGGTTTTTG
GACCCCGCTTCCCTTCAGGAGGCGGGGTTTTTCATTTATG **terminator/sequestor**

GS_CobU
GTTCAGGTGCTTCCACTCCCACGGTGGAAGGTAAAAGGGAAAAGGGTGAGAATCCCTTGCTGTCCCGCAACTGTGAACGGTGATGAAAGCCGCAGCGATGCCACTGGAGAGTCCTTGTTGATGTG
AAGGCGTGAAATACGCCTTCTTCCGGGAAGGCGCGGCG
AGTAAAGTGATCCGTGAGCCAGGAAACCTGCCCGAACGCATGAGCAGCGGCCTCCGAGGAAGAGGTGCCGAAGCCATCGTCAATTCATCCACGGTATTCGAGCCCCGCCCCTTGTCAGGAGG
CGGGGTTTTTCATTCATG **terminator/ sequestor**

GS_CbiM
CCTTCCGCCGTAAGGGAAACCGGTGCAATACCGGTGCTGCCCGCAACTGTGAGGGGGGACCGATGCCGCAGTGATGCCACTGTCCGAAGGGACGGGAAGGCGCGGCAGGCGGGATGATCCCC
CGAGCCAGGAGACCTGCCTGGAAGG
CGACAACACACTCCGACCGAGGGGAAGGGAGGTTGTATGGGGAGCAGAGCATATCCACTGCGGCTATGAGGTCGTTCCGGCACGCGAGGGCAAGAACGGCGACGGATCATAACTTCATAGGG
AGCACGCAATGAAACGAA **sequestor?**

DD_CbiK
ATTCAGGTGCCCTGCGGGGCTTGATAGGGAATCCCGTTAAAGTCGGGAGCGGACCCGCCGCCGTAAGTCCACGATACGCCGCATCCACACCGTGCCACTGGAAAAATTCCCGGGAAGGCCG
GATGCCGCGGGACAAGCCGGAAGACCTGCCTGAGTGTACAGGATGACTTTTTGGGCACGGGGCTTTGCCGCAAAAAGTCCGTCACGGTGACCGGAGCGCCCTTCCTGCCCATGCAGGAGGC
AGCGCTCTTTATTTTTACCGTGACTATATCAATGCCCCAGATTCTCTGGAGGTTTCCTTCATGAAACTGC **terminator**

DV_CbiK
ACGAGTCAGGTGCCCTGAGCGGCTTGATAGGGAATCCCGTGTGAATCGGGAGCGGACCCGCCGCCGTAAGCCCATAAAAGACCTTCTCCCCCGTGTGCCACTGGACGACCGTCCGGGAAGGC
CGGAGCAGGTCGGGTGAGCCGGAAGACCTGCCTGACACGTCCGATGCCATGCCCGGCGACAACGGGGCTTTTGTCCGACCGGGCCCACGGTGGCGACCCGACACATGCCGCGCCCGGCGCGC
AGCCCTGTGGTCATCCGTCCTGCCGTCCACGCCAATTGCCCGCCAACCTCCCTGGAGGTTGCCATGTCTCGCC **sequestor**

DV_NrdDG
CTCCGGTTTCGGGAATCCGGTGCGAGTCCGGAGCGGTCCCGCCGCTGTCATCCCTGCGCCTCGGGCGCCACGCCACAGCCATGAAGCCACTGCCCCCTGCGGGCGGGAAGGCGGTTGTGAGT
GGGGAGAGCCAGAATACCGGGCCGGAGCAGTCTCGATCCCTCGTTGCACGCGGATGTACCGGGGGTTCAGCCATTCACCATTCGCGGTGCGGGTGGCGACGTTTCCGACGTCGACCCGTGCC
TCCGCACGCAGTGCCGCCCGTTGCCATGACGGGGTCCGCCGGTCTTGTGCGTGCCCGGAGCCAAGCATCCTATGCCCAAGAAGATT **sequestor**

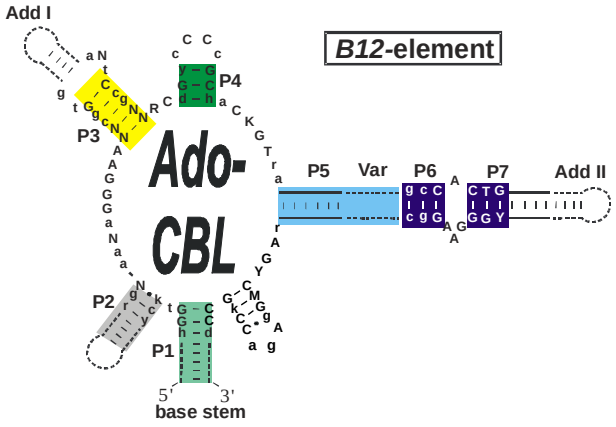
DA_NrdDG
GGATCACGGTGCCCAACGGGAGCTTAAATGTCTCGTGAGGCTTGATAGGGAAGAGGGGTGCAACTCCCCCGCGGACCCGCCGCTGTAAACGTGGACAACAGGCTCCATGCCACTGGTTTCGA
CCGGGAAGGCGCCTGAAGGATGAAGCGTAAGCCAGAAGACCTGCCTGATCCCAACACTCAATGATTCCTCGTGGTAAAGGGAGAGTGACGCATGCATCCGGATTTTAAATACGCGAAGTCCG
CAGGGAGCTTTGGCCCCTGCGGACTTTTTTGTGTTTCCGGTGCAGACTGTCTCCTGTGCCGCGGTTTAACCTGATGAAGGAGCAGTCGATGCCAGAGAC **terminator**

DA_BtuBCDF
GTCCACCGGTGCCGCCAGGGTGAAAAGGGAAGAGGGGTGCAAATCCCCCGCGGACCCGCCACTGTAAGCGAAGACGAAGGGTTGACAGACCACTGCCGCCTGGCCGGGAAGGTAACCCCG
AGGATGATTCGCGAGCCAGGAGACCTGCCGACATGGACACACCACATTGACCTCCCCGGGAAACAGGGAGAGTGGAGATTAGCGGCGCTTCAAATACGGGAAGCCCGCGCACCTATTTAGGG
CTGCGCGGGCTTTTTTGCGTTGAAGCGGTCCCCTTTTCGCCATTTTCGTTCGGGGCAAAAAGGAGAAATTCGATGAAGAAACA **terminator**

DA_BtuB2
GTTTCAGGTGCTTGTTGCAAGCACAATAGGGAATTCCGTGAAATTCGGGAGTGGGCCCGCCGCTGTAACCAGGGACGATCAACACATTTGGCCACTGACTTAGAGTCGGGAAGGCGTGTTGA
GACGGAAGATCTGGAAGCCAGAAGACCTGCCTGAAACGCAATGGTTGCAACTTTCGTGGCGAAAGTTGAAGCAATAAAGTATCACGGGAGATATGGGATAACCCCGGATCGATGTTTTGTAT
CGGTTCGGGGTTTTTTGCGCTCCGGACACAAACCTGTAGGAGGCTTGTATGAAGAAGA **terminator**

DA_BtuB3
ATTTCAGATGCTCTCACGAGCTTAATAGGGAACCCTGTGTAATTCAGGGACGGGCCCGCCCCTGTAACCGAGGACGAAAGCCGCTTGATGTCACTCCCGAAATTCGGTGGGAAGACGTGGCC
GGTAGGATGATCCGGAAGTCAGAAGACCTGCCTGAAATTTGGTAATGCGCGCTCCTAAGGCAGGGAGACGTATTGAATGTCTTGTGGATAGAAAAGGGATATCCCAGGTCGATGTGTATTCG
GTCTGGGATTTTTTACGCCCGGACCCCAGGAAGATTTTGGGAGGAGCGTACCCCATGAAAACAAT **terminator**
DP_CbiK
TGTTTCAGGTGCTTTGCCTGTGGTAAAAGGTTTAGCTTAATAGGGAATCCTGTGGAATTCAGGAACGGGCCCGCCCCTGTAACTGGGGACAACTTCTGCATTATGTCACTGAACGTTTGTTT
GGGAAGGCGCAGAAGAAGGATGATCCAGAAGTCAGAAGACCTGCCTGCAACAAGTTTTGGTATGCTTCGTGGACAGGAGTGATGCCAGAGGATACGAGGAAAGTTAGGGACTTCCCCGGTCG
ATTTTCGTCCGGAGGGCTCTGTTCTCCCGGACTTTTAGTTGCATCTGTTGGCTGTGTTTGCTGCATCC **sequestor**

(B) Conserved structure of the *B12*-element.



Supplementary Fig. 3. (A) The SAM-specific regulatory RNA elements (S-boxes) in δ-proteobacteria. S-boxes are in bold with conserved sequence regions in red and conserved helices marked by background green, yellow, blue and gray colors. Regulatory hairpins (terminators) are marked by background magenta with poly-T regions in blue. Start codons and ribosome-binding sites are in blue and underlined.

GS_metX
CCTTCTTATCAAGAGTGGTGGAGGGAAAGGCCCTGTGAAACCACAGCAACCGGTCCGGTAGCGGACGCCAGGTGCTAAATCCTGCCCGAAAGGGAGCGATGAGAGGGAGCTTGTGACCACCGACGCGTACA
GGCCCCTTCCCGTTTCCCGGGAGGGGGCCTTTCATTTTCGCCGCCGCGCGCACGCGCCCGTGGGGAATCATG
GS_METI
CTTATCAAGAGCGACCGAGGGACAGGCCCGGTGACGTCGCGGCAACCTCCCCATGGGGGGAAGGTGCCAATTCCTGCGAGACCGACAGGTTTCGGGAGATAAGGAAGAGCGTGACACCTCACGGTGAATCG
AATCCTCTTCCGCACCCCGGAAGGGGATTTTTCATTGTGGAGGAAACCATG
GM_METI
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AAAATCCTCTTCCGCACCCCGGAAGGGGATTTTTTCATTCAGGAGGCAAAACCACCATG
GM_METX
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GGCGCTTGACGATAGCCACAACTGTCAACAAAGCCCCTTCTCGCCACCGCGGGAAGGGGCTTTTGTTTCCGAACCATTTATTCAGGATTGACGCATG
DA_METX1
CCGTGTTATCACGAGTGGTGGAGGGAATGGCCCTTTGAAACCACAGCAACCGGTCCTGACGTTCAGGATGACAGGTGCTAATTCCACCCCCGCAAGGGGACAGATGAGACGGCGTCTTTGGATACTTGATC
CACCACAGGACGTTTCTTCCTGTTCCACGTATCCACAAGGCCCCATTCTCTCTGGATGGGGCCTTTTTGCGTGGAGAGAAATTTG
DA_METX2
CGTCTTTATCGCGAGTGGTGGAGGGAAAGGCCCTGTGAAGCCACAGCAACCGATCCGCAGATGCGGATGCCAGGTGCTAATTCCTGCCCTGTAACAGGGACAGATGAGGACGGAGCCCGAAAGATACGCGC
TTATCTTTTCCCGTATCGTCAAGGCCCCTCCTGTCACCCTGGGAAGGGGCCTTTTTACGTCAAAGGGTGTCGCGCGTTG
DA_METI
CGTCTTTATCACGAGTGGTGGAGGGACAGGCCCGACGAAGCCACAGCAACCGATCCGCAGGTGCGGATGCCAGGTGCTAAATCCTGCCTGCCGTATGCCATCGCGGATGCGGTCGGAAAGATGAGGACGGT
GCTTCCCGGTTATCCGTCCCTTTGACTGTGCCGGCGAAGCCCCTTCTCATCCCCGAGAGAAGGGGCTTTTTCTATGCCGCCCACAGACCTTGACGAGGGATGACCCATG

(B) Conserved structure of S-box.