

Table S1. The full sequences and oligos nucleotides for tested riboswitches.

Type of Riboswitch		Sequences
SAM - III	WT	>w9_NLGO1000001.1/2396830-2396746/1-85_86 AGUCGUUGCAAGUCCCCGAUAGGCUCUGGaAAAAAGGCCAGAGAUUCCUUGUAACCGAAUaAAA AUUAGGGGGAaUaUUUAUAUG F1 :TTCTAATACGACTCACTATAGGAGTCGTTGCAAGTTCCCGATAGGCT R2 :ACAAGGAATCTCTGGCCTTTTCCAGAGCCTATCGGGAACCTTGCAAC F3 :AGGCCAGAGATTCTTGTAAACGAATAAAAAATTAGGGGAATATTATAATG R4 :CATTATAAATATTCCCCCTAATTTTATTTCGGT
	mu1	>m9_1_NLGO1000001.1/2396830-2396746/1-85_86 AGUCGUUGCAAGUCCCCGAUAGGCUGAGGaAAAAAGGCCAGAGAUUCCUUGUAACCGAAUaAAA AUUAGGGGGAaUaUUUAUAUG F1:TTCTAATACGACTCACTATAGGAGTCGTTGCAAGTTCCCGATAGGCT R2' :ACAAGGAATCTCTGGCCTTTTCCCTCAGCCTATCGGGAACCTTGCAAC F3 :AGGCCAGAGATTCTTGTAAACGAATAAAAAATTAGGGGAATATTATAATG R4 :CATTATAAATATTCCCCCTAATTTTATTTCGGT
	mu2	>m9_2_NLGO1000001.1/2396830-2396746/1-85_86 AGUCGUUGCAAGUCCCCGAUAGGCUGAGGaAAAAAGGCCUCAGAUUCCUUGUAACCGAAUaAAA AUUAGGGGGAaUaUUUAUAUG F1:TTCTAATACGACTCACTATAGGAGTCGTTGCAAGTTCCCGATAGGCT R2'':ACAAGGAATCTGAGGCCTTTTCCCTCAGCCTATCGGGAACCTTGCAAC F3'':AGGCCTCAGATTCTTGTAAACGAATAAAAAATTAGGGGAATATTATAATG R4:CATTATAAATATTCCCCCTAATTTTATTTCGGT
PreQ1- I	WT	>w13_JOTN01000003.1/232023-232068/1-46_46 UAUUUCGUGGUUCGAAACCAUCCACGuAAAAAAACUAAGGAGAU F1 : TTCTAATACGACTCACTATAGGTATTTTCG R2 : ATCTCCTTAGTTTTTTTACGTGGGATGGTTTCGAACACGAAATACCTATAGTGAGTCG
	mu1	>m13_1_JOTN01000003.1/232023-232068/1-46_46 UAUUUCGAGCUUCGAAACCAUCCACGuAAAAAAACUAAGGAGAU F1' : TTCTAATACGACTCACTATAGGTATTTTCGACGTTCGAAACCAT R2'':ATCTCCTTAGTTTTTTTACGTGGGATGGTTTCGAACGTCGAAATACCTATAGTGAGTCG
	mu2	>m13_2_JOTN01000003.1/232023-232068/1-46_46 UAUUUCGAGCUUCGAAACCAUCCGUCGuAAAAAAACUAAGGAGAU F1' : TTCTAATACGACTCACTATAGGTATTTTCGACGTTCGAAACCAT R2'':ATCTCCTTAGTTTTTTTACGACGGATGGTTTCGAACGTCGAAATACCTATAGTGAGTCG
PreQ1- III	WT	>w3_CYYL01000008.1/39071-39174/1-104_104 GAGCAACUAGGAUUUUAGGCUCGCCGUGCGgACUCGAAAcCGCGCCGGGCUAAACCCACAGG AGCUGGCGGUUCCUGUGCGGUCAAAAUCAAACCGCUGGAG F1 : TTCTAATACGACTCACTATAGGAGCAACTT R2 : GGGGAGCCT AAAAATCCTAAGTTGCTCCTATAGTGAGTCGTA F3 : TAGGATTTTAGGCT CCCCCTGCGG ACTCGAAACCGCGCCGGGCTAAACCCACAGGAG R4 : CTCCAGCGGTTTGATTTTGACCGCACAGGAACCGCCAGCTCCTGTGGGTTTAGCCCG
	mu1	>m3_1_CYYL01000008.1/39071-39174/1-104_104 GAGCAACUAGGAUUUUAGGCUCGCCCUCCGgACUCGAAAcCGCGCCGGGCUAAACCCACAGG AGCUGGCGGUUCCUGUGCGGUCAAAAUCAAACCGCUGGAG F1 : TTCTAATACGACTCACTATAGGAGCAACTT R2 : GGGGAGCCT AAAAATCCTAAGTTGCTCCTATAGTGAGTCGTA F3' :TAGGATTTTAGGCT CCCCCTCCGG ACTCGAAACCGCGCCGGGCTAAACCCACAGGAG R4 :CTCCAGCGGTTTGATTTTGACCGCACAGGAACCGCCAGCTCCTGTGGGTTTAGCCCG
	mu2	>m3_2_CYYL01000008.1/39071-39174/1-104_104 GAGCAACUAGGAUUUUAGGCUCGCCCUCCGgACUCGAAAcCGGGGCGGGCUAAACCCACAGG AGCUGGCGGUUCCUGUGCGGUCAAAAUCAAACCGCUGGAG F1 : TTCTAATACGACTCACTATAGGAGCAACTT R2: GGGGAGCCTAAAAATCCTAAGTTGCTCCTATAGTGAGTCGTA F3'':TAGGATTTTAGGCTCCCCCTCCGACTCGAAACCGGGGCGGGCTAAACCCACAGGAG R4 :CTCCAGCGGTTTGATTTTGACCGCACAGGAACCGCCAGCTCCTGTGGGTTTAGCCCG
Guanidine-I_seq1	WT	>w39_MESG01000013.1/36506-36607/1-102_108 ACACAGGUGCACUAGGGUUCGAUACGCGUGGCGUGGUGUCUGGUCCGAGAGUGUGCcGGCC UCAUCGCAGGCUCACGGAGGGACAAAAGCCCGGAGAA F1 : TTCTAATACGACTCACTATAGGACACAGGTGCACTAGGGTT R2 : CGGCACACTCTCGGACCAGACACCACGCCACGCGTGATCGGAACCTAGTGACCTGT F3 : CCGAGAGTGTGCCGGCCTCATCGCAGGCTCCACGGAGGGACAA R4 : TTCTCCCGGGCTTTTGTCCCTCCGTGGAGCCTGCGATG
	mu1	>m39_1_MESG01000013.1/36506-36607/1-102_108 ACACAGGUGCACUAGGGUUCGUUACGCGUGGCGUGGUGUCUGGUCCGAGAGUGUGCcGGCC UCAUCGCAGGCUCACGGAGGGACAAAAGCCCGGAGAA F1: TTCTAATACGACTCACTATAGGACACAGGTGCACTAGGGTT R2'': CGGCACACTCTCGGACCAGACACCACGCCACGCGTGAAGGGAACCTAGTGACCTGT F3'': CCGAGAGTGTGCCGGCCTCATCGCAGGCTCCACGGAGGGACAA F3: CCGAGAGTGTGCCGGCCTCATCGCAGGCTCCACGGAGGGACAA

		R4: TTCTCCCGGGCTTTTGTCCCTCCGTGGAGCCTGCGATG
	mu2	>m39_2_MESG01000013.1/36506-36607/1-102_108 ACACAGGUGCACUAGGGUUCUUACACGCGUGGCGUGGAGUGUGUCCGAGAGUGUGCcGGCC UCAUCGCAGGCUCCACGGAGGGACAAAAGCCCGGGAGAA F1: TTCTAATACGACTCACTATAGGACACAGGTGCACTAGGGTT R2'':CGGCACACTCTCGGACCACACTCCACGCCACGCGTGAAGGGAACCCTAGTGCACCTGT F3: CCGAGAGTGTGCCGGCCTCATCGCAGGCTCCACGGAGGGACAA R4: TTCTCCCGGGCTTTTGTCCCTCCGTGGAGCCTGCGATG
Guanidine-I_seq2	WT	>w86_CP001510.1/4179541-4179432/1-110_112 UGAGUUGAUCGCUAGGGUUCAGCAUCUCUUUGAUGUGUUCGGUCCGAGAGCGGUUGCCGCGG CgggagACAUCCGCCCGGAUGCACGCGCGGAUAAAAGCCCGGGAGAC F1: TTCTAATACGACTCACTATAGGTGAGTTGATCGCTAGGGTTCCA R2:GCGGCAACCGCTCTCGGACCGAACACATCAAAGAGATGCTGGAACCCTAGCGATCAACT F3: AGCGGTTGCCGCGCGGGAGACATCCGCCCGGATGCACGGCGGGATAAA (49pb) R4: GTCTCCCGGGCTTTTATCCCGCCGTGC
	mu1	>m86_1_CP001510.1/4179541-4179432/1-110_112 UGAGUUGAUCGCUAGGGUUCUUAUCUCUUUGAUGUGUUCGGUCCGAGAGCGGUUGCCGCGG CgggagACAUCCGCCCGGAUGCACGCGCGGAUAAAAGCCCGGGAGAC F1': TTCTAATACGACTCACTATAGGTGAGTTGATCGCTAGGGTTCCTTCA R2':CGCCGCGGCAACCGCTCTCGGACCGAACACATCAAAGAGATGAAGGAACCCTAGCGAT F3 : AGCGGTTGCCGCGCGGGAGACATCCGCCCGGATGCACGGCGGGATAAA R4 : GTCTCCCGGGCTTTTATCCCGCCGTGC
	mu2	>m86_2_CP001510.1/4179541-4179432/1-110_112 UGAGUUGAUCGCUAGGGUUCUUAUCUCUUUGAUGGGUACGGUCCGAGAGCGGUUGCCGCGG CgggagACAUCCGCCCGGAUGCACGCGCGGAUAAAAGCCCGGGAGAC F1':TTCTAATACGACTCACTATAGGTGAGTTGATCGCTAGGGTTCCTTCA R2'':CGCCGCGGCAACCGCTCTCGGACCGTACCCATCAAAGAGATGAAGGAACCCTAGCGAT F3:AGCGGTTGCCGCGCGGGAGACATCCGCCCGGATGCACGGCGGGATAAA R4: GTCTCCCGGGCTTTTATCCCGCCGTGC
Guanidine- III	WT	>w56_LT629971.1/5789783-5789851/1-69_69 UGAU CGCCUGUGGUUCCGGCgAUCCGGACGAGGCGCACCGUACCCGGCCAGCGACAAGACGGuU GCGAU F1: TTCTAATACGACTCACTATAGGTGATCGCCTGTGGTTCCGGCGATCCGGAC R2:ATCGCAACCGTCTTGTGCTGGCCGGGTACGGTGCCTCGTCCGGATCGCCGGAA
	mu1	>m56_1_LT629971.1/5789783-5789851/1-69_69 UGAU CGCCUGUGGUUCCGGCgAUCCGGACGAGGCGCUCGGUACCCGGCCAGCGACAAGACGGuU GCGAU F1: TTCTAATACGACTCACTATAGGTGATCGCCTGTGGTTCCGGCGATCCGGAC R2':ATCGCAACCGTCTTGTGCTGGCCGGGTACCGAGCGCCTCGTCCGGATCGCCGGAA
	mu2	>m56_2_LT629971.1/5789783-5789851/1-69_69 UGAU CGCCUGUGGUUCCGGCgAUCCGGACGAGGCGCUCGGUACCCGGCCAGCGACAAGACCGuA GCGAU F1: TTCTAATACGACTCACTATAGGTGATCGCCTGTGGTTCCGGCGATCCGGAC R2'':ATCGCTACGGTCTTGTGCTGGCCGGGTACCGAGCGCCTCGTCCGGATCGCCGGAAC