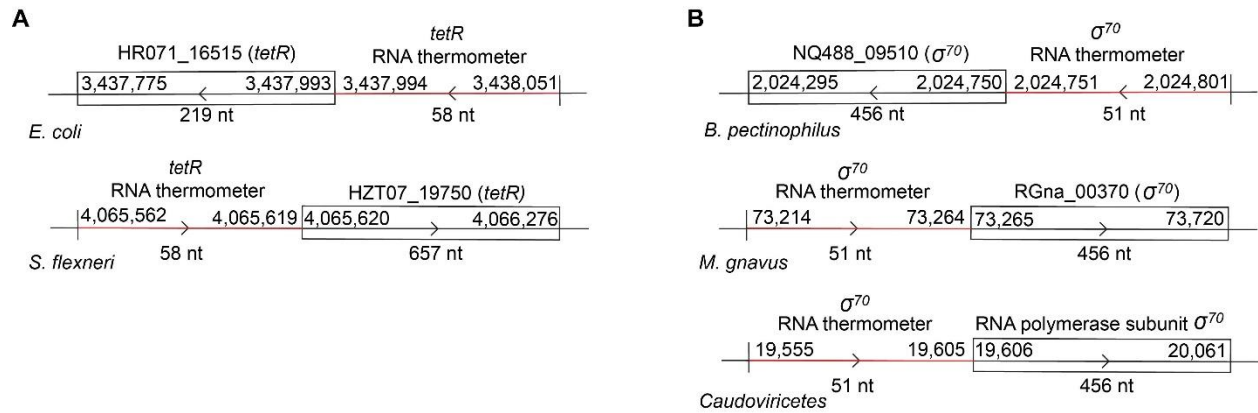
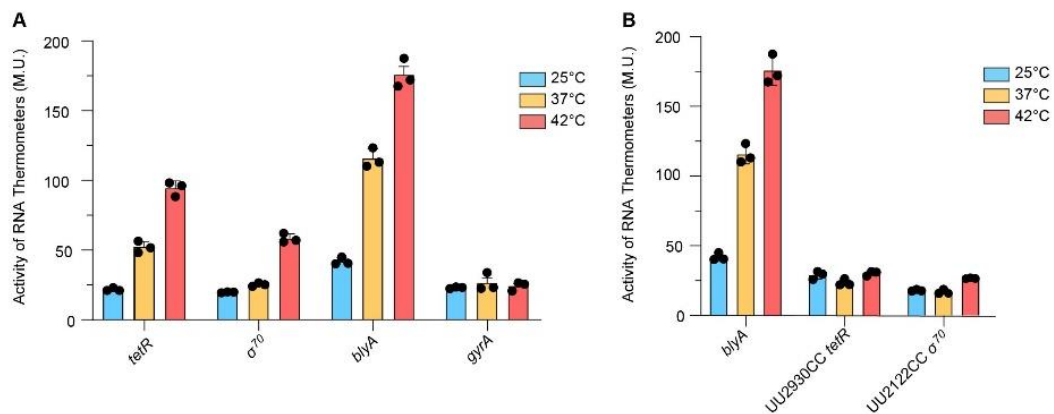




Supplemental Figure 1. (A) Genomic loci of the RNA thermometer upstream of a *tetR* family transcriptional regulator gene. The 58 nucleotides sequence of the RNA thermometer upstream of the *tetR* family transcriptional regulator gene is identical in *E. coli* and *S. flexneri*. (B) Genomic loci of the RNA thermometer upstream of the RNA polymerase subunit σ^{70} gene. The 51 nucleotides sequence of the RNA thermometer upstream of the σ^{70} RNA polymerase subunit gene is identical in *B. pectinophilus*, *M. gnavus*, and *Caudoviricetes*.



Supplemental Figure 2. Activities of all thermometers (A) and their mutated versions (B) expressed in Miller Units. All 5'-UTR-*bgaB* fusions were incubated at 25, 37, and 42 °C in triplicates, with the absorbances measured and Miller Units calculated. The *tetR* and σ^{70} thermometers were compared to the *blyA* fourU thermometer positive control, and DNA gyrase (*gyrA*) negative control.

Table S1. Accession numbers

Bacteria	Gene	Accession Number
<i>Escherichia coli</i> strain EcPF7	<i>HR071_16515 (tetR)</i>	CP054232.1
<i>Shigella flexneri</i> strain STLIN_4	<i>HZT07_19750 (tetR)</i>	CP058786.1
<i>Mediterraneibacter gnavus</i> ATCC 29149	<i>RGna_00370 (σ^{70})</i>	CP027002.1
<i>Bacteroides pectinophilus</i> strain ATCC 43243	<i>NQ488_09510 (σ^{70})</i>	CP102260.1
<i>Caudoviricetes</i> sp. Isolate ctoMw15	<i>RNA polymerase subunit (σ^{70})</i>	BK026533.1

Table S2. Sequences of the synthesized oligonucleotides

Oligonucleotide	Sequence for β -galactosidase assay
<i>tetR</i> ^a	5'-GAAGCTCTCGCGCAAATCACTTATTCTTTTGCCTTAATAAAATGTA GGAGATGGGTC <u>ATG</u>
σ^{70} ^a	5'- AAACATTGTTTTTCCGGTCTTTTTTGTGTGCCGGAAGGAGAGTG GAAAGG <u>ATG</u>
<i>tetR</i> UU2930CC ^a	5'- GAAGCTCTCGCGCAAATCACTTATTCTCCTGCGTTAATAAAATGT AGGAGATGGGTC <u>ATG</u>
σ^{70} UU2122CC ^a	5'-AAACATTGTTTTTCCGGTCTCCTTTTGTGTGCCGGAAGGAGAGTG GAAAGG <u>ATG</u>

^a underlined ATG is the start codon for *bgaB*