Electronic Supplementary Information for

RNA G-Quadruplex Formation in Defined Sequence in Living Cells Detected by Bimolecular Fluorescence Complementation

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Figure S1

Figure S1. Plasmids used to produce (A) target RNA or (B) probe proteins (right). (A) The plasmid produces RNA containing a REX aptamer $REX(A)$ and a G-quadruplex $GQ$. (B) The plasmid expresses two proteins: an $G_N$-$REX(A)$ that binds to aptamer $REX(A)$ and an $RHAU(Q)-G_C$ that binds to G-quadruplex.
Figure S2

Figure S2. CD spectra of RNA oligonucleotides of \textit{TERC(Q)}, \textit{G4T(Q)}, and \textit{PITX(Q)}. 
Figure S3. Expression and purification of probe fusion proteins. Lanes 1-4 and 5-8 show protein in whole cell lysate of BL21 (DE3) *E. coli* without and with induction by IPTG, in lysate supernatant and in elute of His-affinity column, respectively. G\text{N}-\text{REX}(A) and RHAU(Q)-G\text{C} has a molecule weight of 23.0 and 18.2 kDa, respectively.
Figure S4

**Figure S4.** BiFC fluorescence in *E. coli* cells before and after induction of RNA expression detected by flow cytometry. Cells transformed with the RNA- (A) and probe protein-expressing (Fig. S1B) plasmids were supplied with IPTG together with (B, top panels) or without (B, bottom panels) ATc to induce the expression of probe proteins and target RNA $\text{REX(A)-TERC(Q)}$ or $\text{REX(A)-TERC(Qm)}$, respectively at 0 hr. Distribution of eGFP fluorescence was collected by flow cytometry and processed as in Fig. 4. Forward scattering intensity showed little difference between cells of each panel as in the other figures.
Figure S5. Protein-RNA interaction in Li⁺ solution evaluated by electrophoretic mobility shift assay (EMSA). (A) $REX(A)$-$TERC(Q)$, (B) $REX(A)$-$G4T(Q)$ and their G-quadruplex mutants, $REX(A)$-$TERC(Qm)$, $REX(A)$-$G4T(Qm)$ were processed in the same way as in Fig. 2, except that $K^+$ was replaced by $Li^+$. 
**Figure S6.** Plasmid DNA sequence of corresponding RNAs, G-quadruplexes and their mutants. Scheme at the top illustrates the structure of the RNAs.
**Figure S7.** Plasmid DNA sequence of corresponding RNAs, G-quadruplexes and their mutants. Schemes at the top illustrate the structures of the RNAs in which the aptamer and G-quadruplex/mutant were separated by a longer spacer that can fold into a double-stranded stem (lowercase in sequence).