Supplemental Materials for

FRET Study of a Trifluorophore-labeled DNAzyme

Juewen Liu and Yi Lu*

Department of Chemistry

University of Illinois at Urbana-Champaign

601 South Goodwin Avenue

Urbana, Illinois 61801, USA

1. Quenching of FAM fluorescence by protonation.

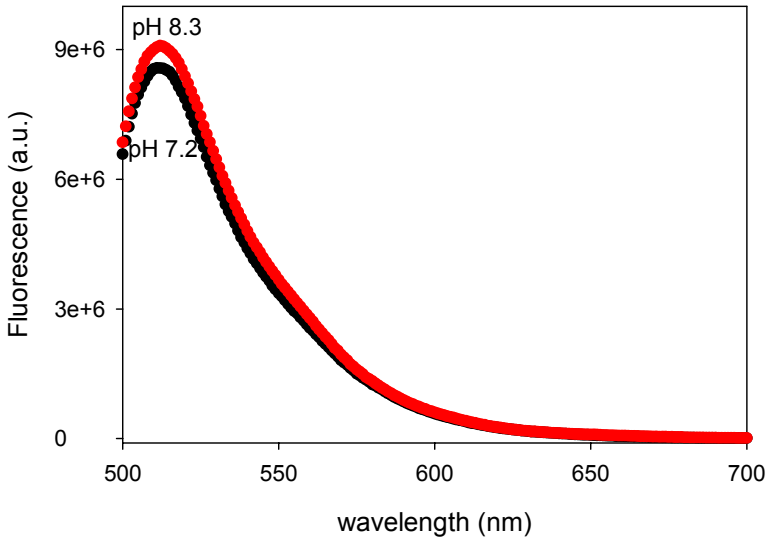

Figure S1. The fluorescence of a 5′-FAM singly-labeled double-stranded DNA at pH 7.2 and pH 8.3 were compared. The buffer was exactly the same as that used in the trifluorophore FRET experiment (50 mM Tris-acetate, 25 mM NaCl). By quantifying the areas under the two curves, relative quantum yield can be acquired. The fluorescence intensity at pH 7.2 was 93.4% of that at pH 8.2.

2. Quenching of FAM by Zn^{2+}.

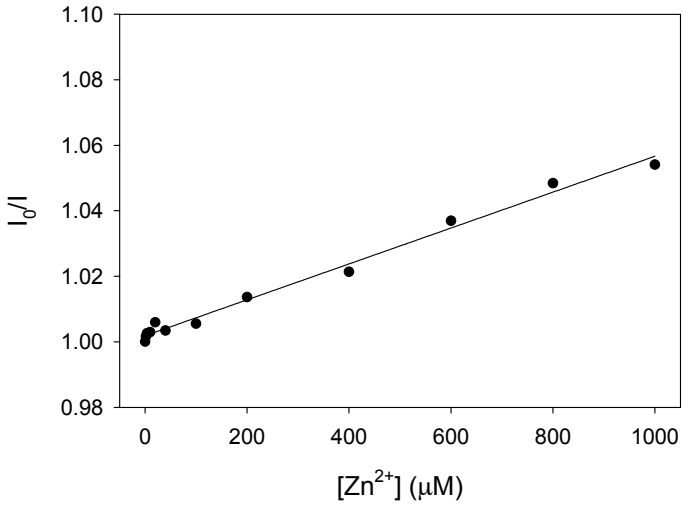

Figure S2. Stern-Volmer plot of a 5´-FAM singly-labeled double-stranded DNA in 50 mM Tris-acetate buffer, pH 7.2, 25 mM NaCl. From the plot, the percentage of quenching in the presence of 1 mM Zn^{2+} is about 5%. The data can fitted linearly (R^2=0.99).

3. Quench of TMR by Zn^{2+}.

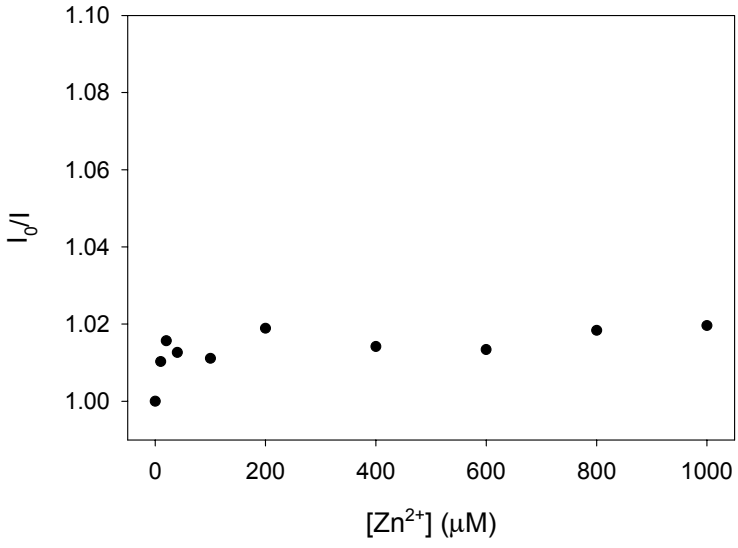

Figure S3. Stern-Volmer plot of a 5´-FAM singly-labeled double-stranded DNA in 50 mM Tris-acetate buffer, pH 7.2, 25 mM NaCl. From the plot, the percentage of quenching in the presence of 1 mM Zn^{2+} is less than 2%. The data cannot be fit linearly (R^2=0.36).