

# Ratiometric RNA aptamer/fluorophore complex for RNA synthesis detection

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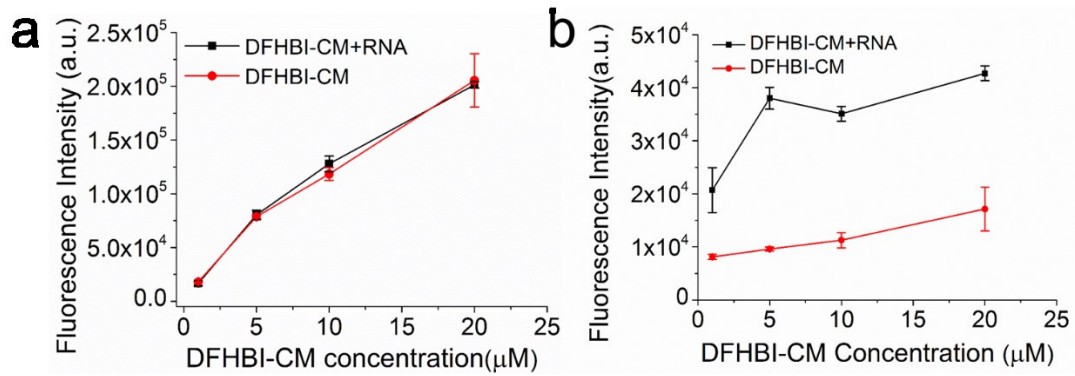
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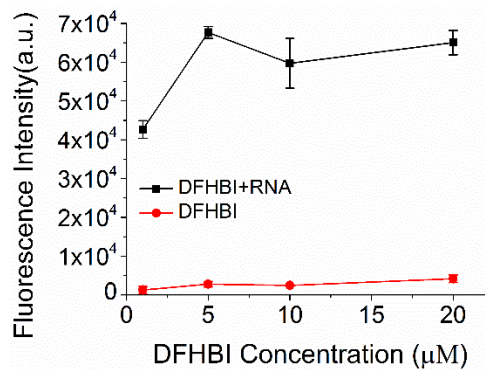
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**Figure S1.** Effect of DFHBI-CM concentration on fluorescence under the excitation of 337 nm (a) and 447 nm (b). The emission wavelength is 420 nm and 502 nm, respectively. Purified RNA concentration is 500 nM. The spectra were measured in HEPES buffer [40 mM HEPES (pH 7.5), 19 mM  $\text{MgCl}_2$ , 100 mM KCl] at room temperature.



**Figure S2.** Effect of DFHBI concentration on fluorescence under the excitation of 447 nm. The emission wavelength is 502 nm. Purified RNA concentration is 500 nM. The spectra were measured in HEPES buffer [40 mM HEPES (pH 7.5), 19 mM  $\text{MgCl}_2$ , 100 mM KCl] at room temperature.

**Table S1** DNA sequence of transcription template

Name	Sequences (5'-3')
T7-HHR-Spanich2	<p><u>TAATACGACTCACTATA</u><u>GGGAGACAGCCTACGAGCCTGAGCCTCCA</u>  <u>GTCACCGGATGTGCTTTCGGTCTGATGAGTCCGTGAGGACGAAA</u>  <u>CTGGTGCAGTCTTAAGCGTAGAGG</u><u>GCCCGGATAGCTCAGTCGGTA</u>  <u>GAGCAGCGCCGGATGTA</u><u>ACTGAATGAAATGGTGAAGGACGGGT</u>  <u>CCAGTAGGCTGCTTCGGCAGCCTACTTGTTGAGTAGAGTGTGAGC</u>  <u>TCCGTA</u><u>ACTAGTTACATCCGGCCGCGGGTCCAGGGTTC</u><u>AAGTCCC</u>  <u>TGTT</u><u>CGGGCGCCA</u></p>

Red: T7 promotor; Blue: 32mer ROI; Black: HHR; Greed: Spanich2.

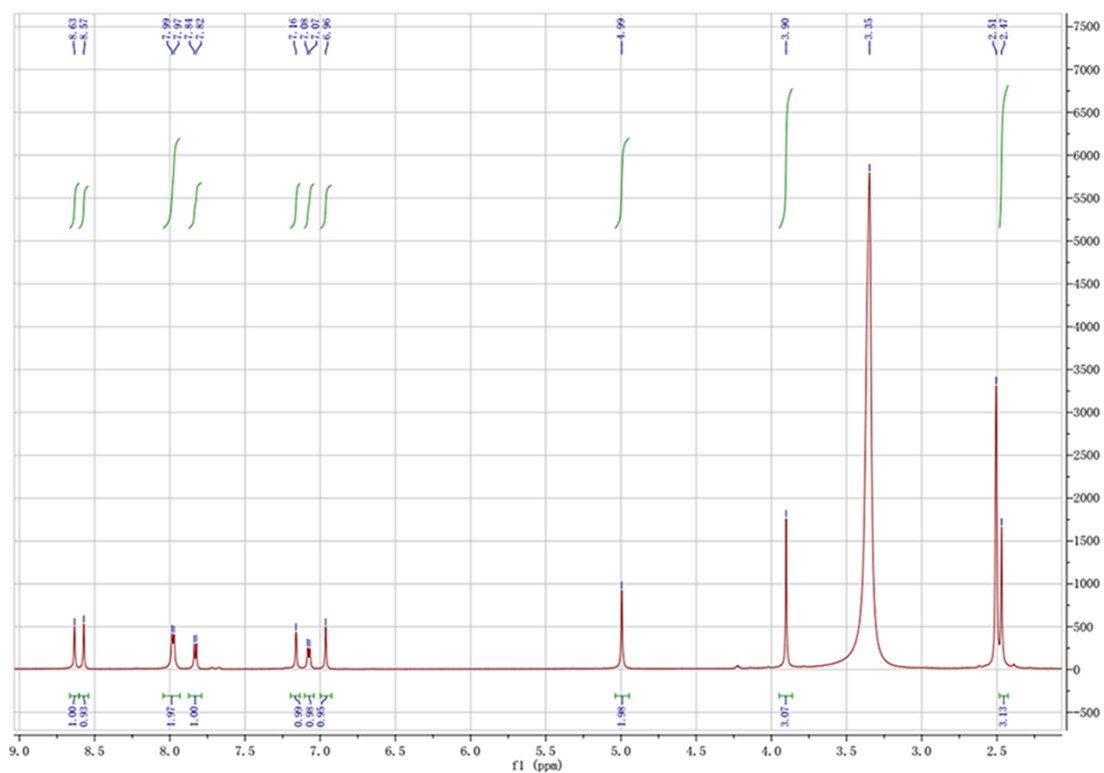


Figure S3.  $^1\text{H}$  NMR spectrum of DFHBI-CM (600 MHz,  $\text{DMSO-d}_6$ ).

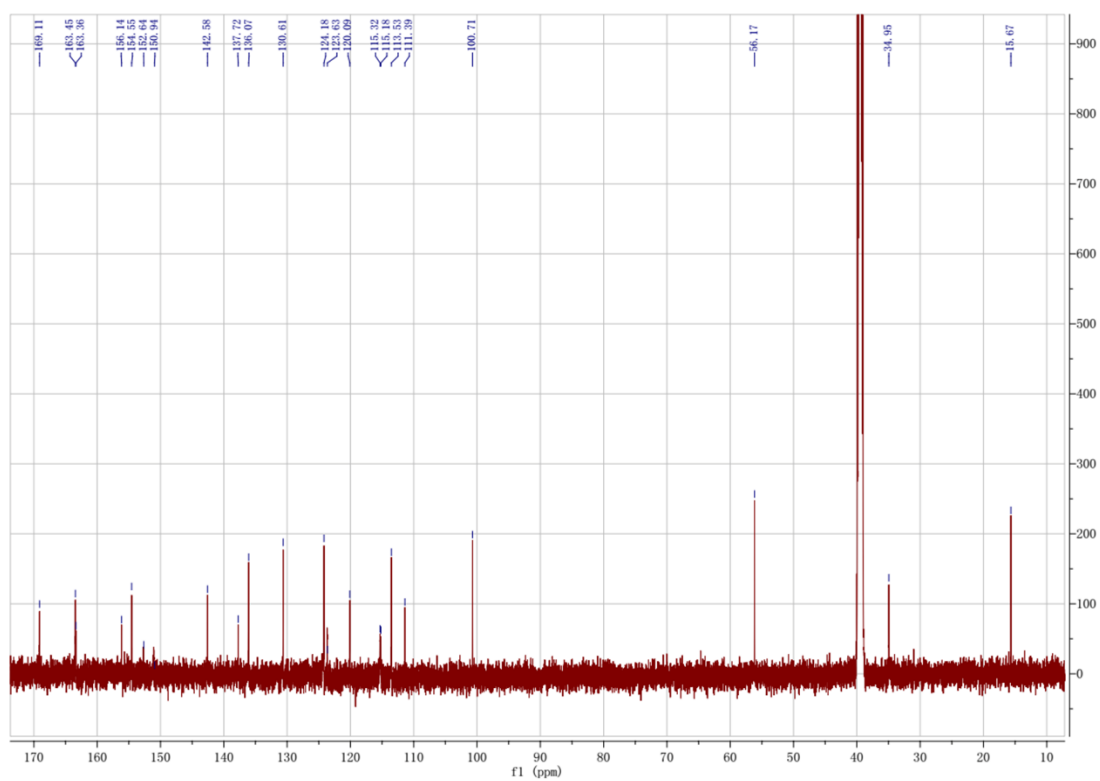
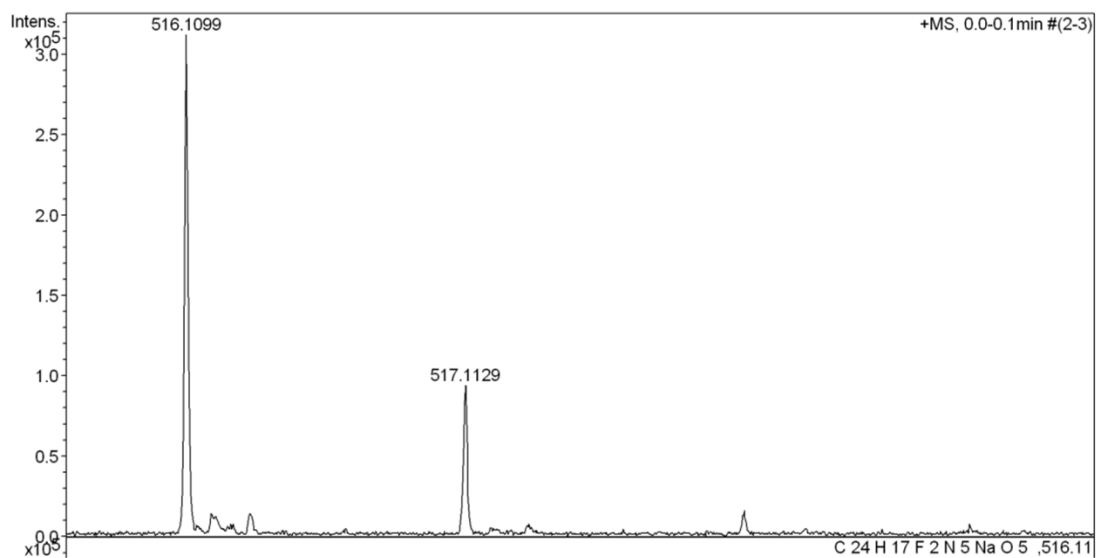


Figure S4.  $^{13}\text{C}$  NMR spectrum of DFHBI-CM (600 MHz,  $\text{DMSO-d}_6$ ).



**Figure S5.** ESI-HRMS of DFHBI-CM.