## **Supporting Information**

## High-throughout identifying telomere-binding ligands based on photo-induced electron transfer

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Figure S1 The structure of G-quadruplex-binding ligands used in the assay.



Figure S2. Fluorescence emission spectra of F-RDNA in the absence and presence of the different concentration of emodin. The concentration of emodin is 1, 2, 3  $\mu$ M, respectively.



Figure S3. The effect of incubation time on the fluorescence intensity of F-hpDNA.



Figure S4. The effect of incubation time on the fluorescence intensity of F-hpDNA/Emodin.



Figure S5. Bright-field image of CEM cells cultivated with 25  $\mu$ M chrysin/daidzein/chrysophanol/quercetin/emodin/AED/matrine/control at 0 h and 36 h.



Figure S6. Bright-field image, fluorescence microscopy image and overlap image of Hela cells cultivated in the absence and presence of 50  $\mu$ M drugs after 36 h.



Figure S7. Bright-field image, fluorescence microscopy image and overlap image of CEM cells cultivated with 25  $\mu$ M emodin/AED/matrine/control after 36 h.