Supporting Information

Development of a New Method for Synthesis of Tandem Hairpin Pyrrole–Imidazole Polyamide Probes Targeting Human Telomeres

Yusuke Kawamoto^a, Toshikazu Bando^{*,a}, Fukumi Kamada^b, Yue Li^a, Kaori Hashiya^a, Kazuhiro Maeshima^{*,b,c}, and Hiroshi Sugiyama^{*,a,d,e}

^aDepartment of Chemistry, Graduate School of Science, Kyoto University, Sakyo, Kyoto 606-8502, Japan

^bBiological Macromolecules Laboratory, Structural Biology Center, National Institute of Genetics, Mishima, Shizuoka 411-8540, Japan

^cDepartment of Genetics, School of Life Science, Graduate University for Advanced Studies (Sokendai), Mishima, Shizuoka 411-8540, Japan

^dInstitute for Integrated Cell-Material Science (WPI-iCeMS), Kyoto University, Sakyo, Kyoto 606-8501, Japan

^eCore Research for Evolutional Science and Technology (CREST), Japan Science and Technology Corporation (JST), Sanbancho, Chiyoda-ku, Tokyo 102-0075, Japan

(a)

(b)

Figure S1. ESI-TOF MS spectra of the compound **10** (a) and **11** (b).

Figure S2. ESI-TOF MS spectra of the conjugate 1-4 (a: 1, b: 2, c: 3, d: 4).

Figure S3. UV melting profiles at 260 nm for ODN-1/2 (a), TH59-ODN-1/2 complex (b), Deamino TH59-ODN-1/2 (c). The pointed lines in Figure S3-6 are at T_m .

Figure S4. UV melting profiles at 260 nm for ODN-3/4 (a), TH59-ODN-3/4 complex (b), Deamino TH59-ODN-3/4 (c).

Figure S5. UV melting profiles at 260 nm for ODN-5/6 (a), TH59-ODN-5/6 complex (b), Deamino TH59-ODN-5/6 (c).

Figure S6. UV melting profiles at 260 nm for ODN-7/8 (a), TH59-ODN-7/8 complex (b), Deamino TH59-ODN-7/8 (c).

Figure S7. Effect of washing on telomere staining by TH59TR. **(A)** Spreads of HeLa1.3 cells were stained with TH59TR with (right) or without (left) a washing process. The preparation of cell spreads and TH59TR staining were performed as described in the “Materials and Methods”. Note that the telomeric signals were detected without the washing process, but the process helped reduce the background or nonspecific PI polyamide binding. **(B)** Enlarged images of the regions marked in Panel A.