Reversible circularization of an anthracene-modified DNA conjugate through bimolecular triplex formation and its analytical application

Pelin Arslan* [a], Akinori Jyo[a] and Toshihiro Ihara* [a,b]

[a] Department of Applied Chemistry and Biochemistry, Graduate School of Science and Technology, Kumamoto University, 2-39-1 Kurokami, Kumamoto 860-8555, Japan. E-mail: toshi@chem.kumamoto-u.ac.jp; Fax: +81-96-342-3873; Tel: +81-96-342-3873
[b] PRESTO, Japan Science and Technology Agency, San-bancho Building, 3-5 Sanbancho, Chiyoda-ku, Tokyo 332-0012, Japan.

The melting curve of the bimolecular triplex of the circular photoproduct, **ant^ant18c**, with **fm7** is shown in **Figure S1**. Thermal stability was higher than that of the linear conjugate, **5-3ant$_2$18**.

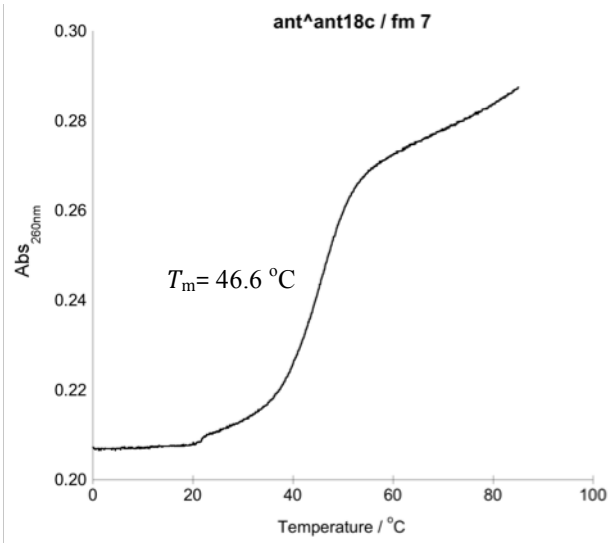

Figure S1 Melting curve of the **ant^ant18c/fm7**.

The melting curves of the control tandem duplexes are shown in **Figure S2** and **S3** for the longer (**5ant15/fm30/3ant15** and **5ant15/mm30/3ant15**) and shorter duplexes (**5ant7/fm22/3ant15** and **5ant7/mm22/3ant15**), respectively. While the both conjugates in the longer duplex, **5ant15/fm30/3ant15**, melted almost simultaneously to give apparently monophasic melting, one-base substitution on **mm30** destabilized the duplex of **5ant15** in **5ant15/mm30/3ant15** to change the curve to biphasic. For the shorter duplexes, while **5ant7/fm22/3ant15** showed a biphasic melting due to the difference in the length of both conjugates, the melting at lower temperature disappeared (decreased to lower than 0 °C) from the melting curve of **5ant7/mm22/3ant15**.

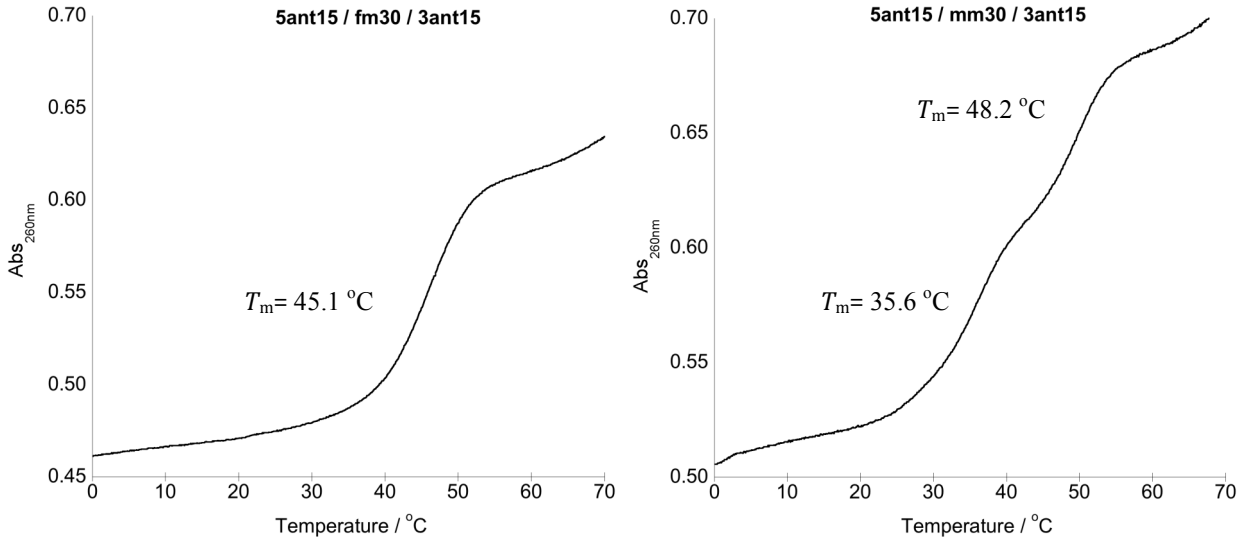

Figure S2 Melting curves of the **5ant15/fm30/3ant15** (left) and **5ant15/mm30/3ant15** (right), respectively.

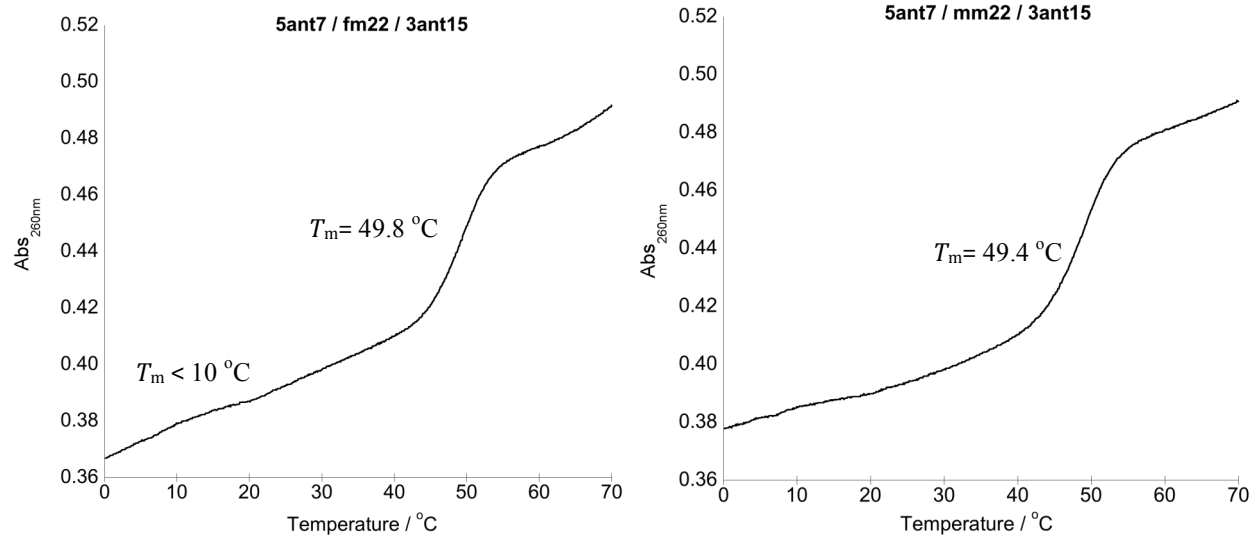

Figure S3 Melting curves of the **5ant7/fm22/3ant15** (left) and **5ant7/mm22/3ant15** (right), respectively.