Supporting Information

Redirection of miRNA-Argonaute Complexes to Specific Target Sites by Synthetic Adaptor Molecules

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Supplementary Material

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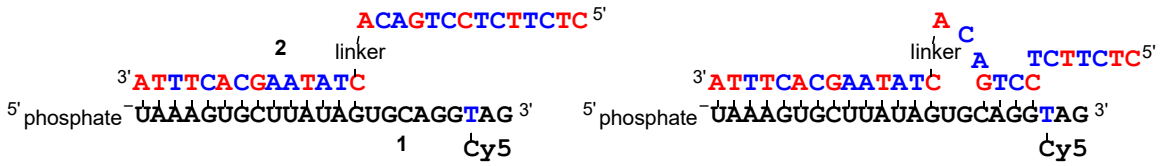

Figure S1. In Figure 2 the duplex of RNA **1** and adaptor **2** (lane 4) shows almost identical electrophoretic mobility as the duplex of adaptor **2** and capture oligo **3** (lane 5) in spite of the fact that RNA **1** is longer as oligo **3**. A tentative explanation may be a partial interaction of the 5′ end of the adaptor with the RNA as shown on the right. Backfolding may increase the mobility when compared to the open duplex shown on the left.

Thermal denaturation of oligonucleotide duplexes:

The oligonucleotides (1 µM of each strand) were preincubated in 1 mL of buffer (100 mM KCl, 2 mM $MgCl_2$, 50 mM Tris*HCl pH 8) overnight at 37 °C. Melting points were measured with a UV-VIS spectrometer (Evolution 300, Thermo Scientific) using a 1 mL cuvette (Hellma Analytics) with a path length of 1 cm. The cell holder was controlled thermoelectrically, while the temperature of the solution was measured independently. The heating and cooling rates were of 1 °C/min. The change of UV absorption at 260 nm was measured in a range from 20 °C to 90 °C in three to five cycles. The resulting curves were fitted individually by OriginLabs using a sigmoidal fit. The final melting points were determined by averaging.

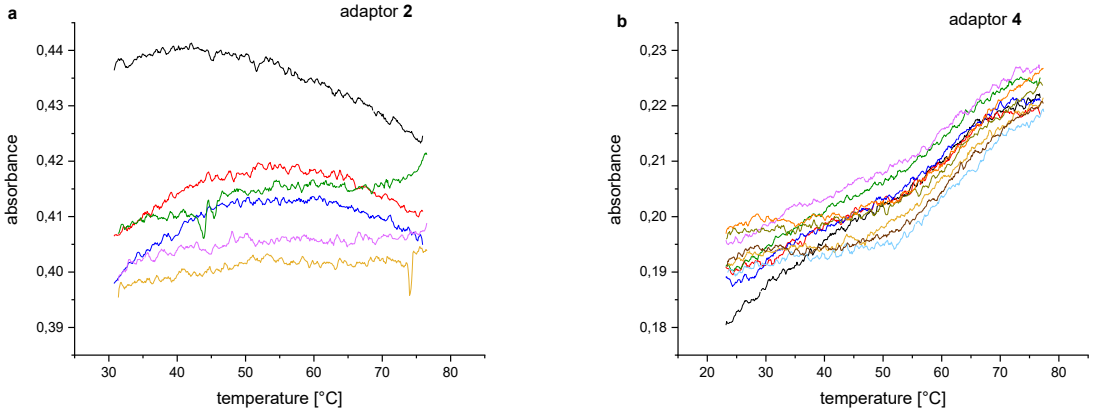

Figure S2. Thermal denaturation curves of the adaptor molecules **2** (**a**) and **4** (**b**). Adaptor **2** was measured in three cycles between 31 °C and 77 °C while adaptor **4** was measured in 5 cycles between 23 °C and 77 °C. As expected, adaptor **2** does not show any melting behavior. In contrast, adaptor **4** shows a T_m around 62 °C, consistent with self-complementarity (see Figure 4b). There is also a weakly pronounced second T_m around 32 °C which can be observed in the heating cycles.

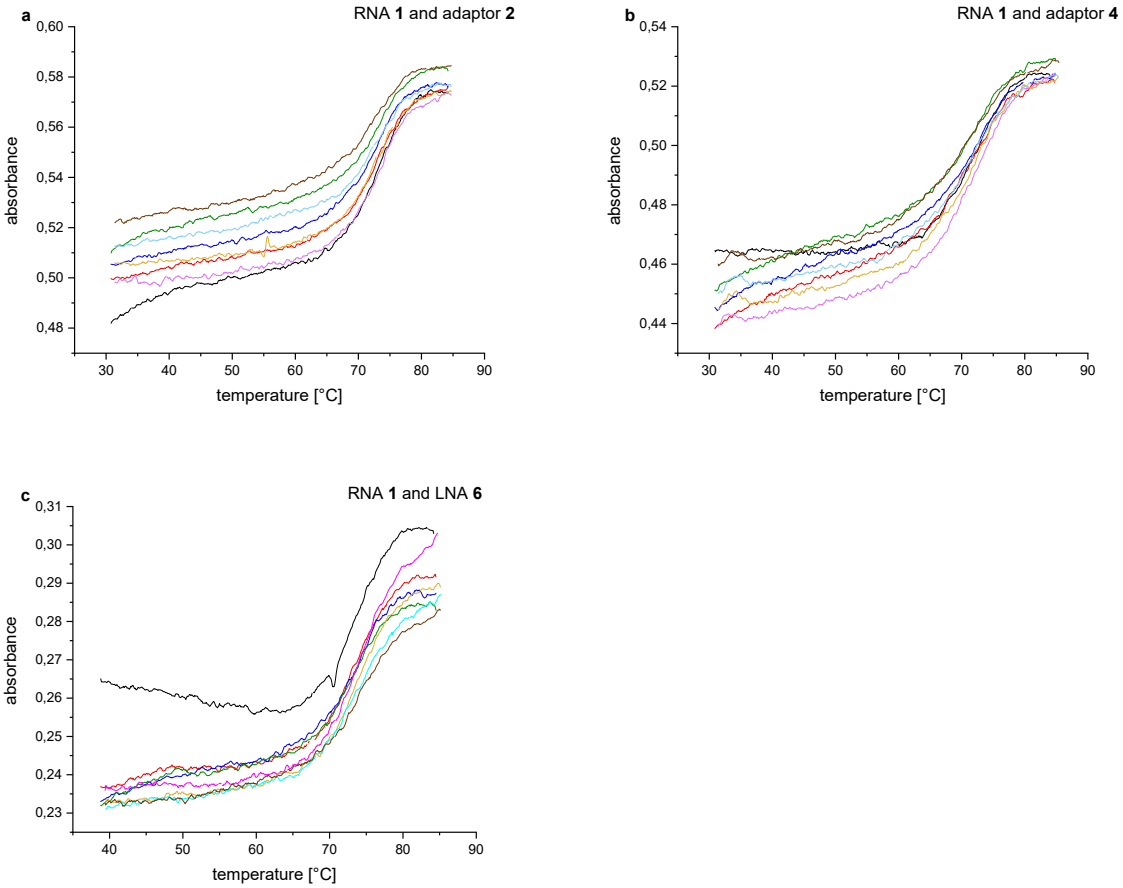

Figure S3. Melting curves of RNA **1** with adaptor **2** (**a**), adaptor **4** (**b**) or LNA **6** (**c**). The samples were measured in four cycles between 30 °C or 40 °C and 85 °C.

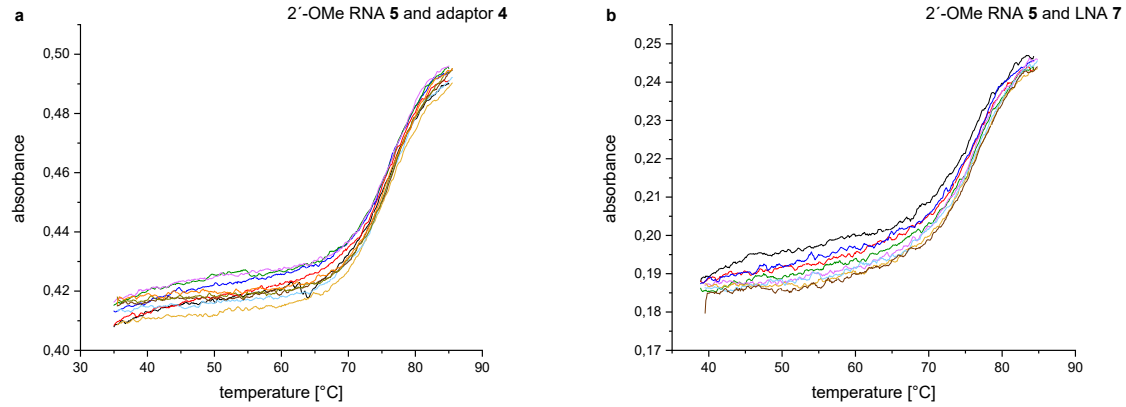

Figure S4. Melting curve of 2′-OMe-RNA **5** with adaptor **4** (**a**) or LNA **7** (**b**). The absorption at 260 nm was measured between 35 °C and 85 °C in five cycles.

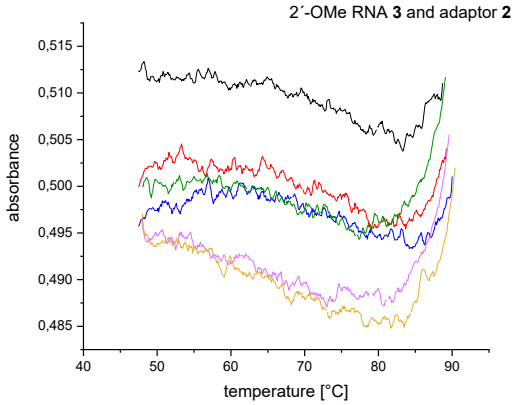

Figure S5. Melting curve of 2′-OMe-RNA **3** and adaptor **2**. The absorption at 260 nm was measured between 48 °C and 90 °C. The steep increase of absorbance around 90 °C indicates a T_m beyond 90 °C, outside the temperature range of the experiment.

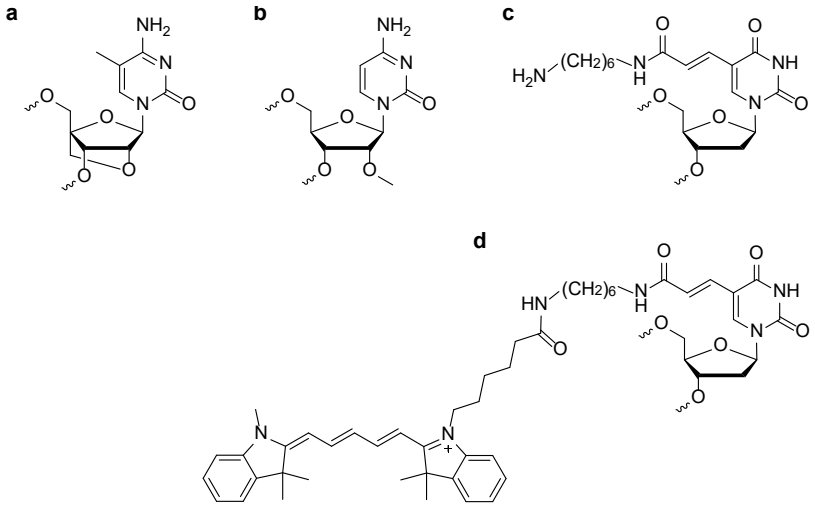

Figure S6. Structures of modified nucleosides. **a**: LNA C. It is important to note, that it contains a 5-methylcytosine. **b**: The corresponding 2´-OMe nucleoside. **c**: The modified dT with the free amino linker. **d**: The building block linked to Cy5.