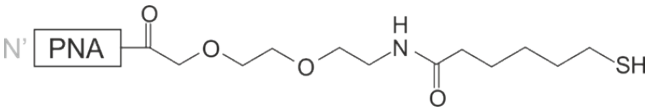
Electronic Supplementary Material (ESI) for Analytical Methods.

SUPPORTING INFORMATION

Reliable microspotting methodology for high hybridization efficiency peptide-nucleic acid layers on gold SPR imaging chips

L.Simon[a], G. Lautner[a,#] and R. E. Gyurcsányi[a]*

[a] MTA-BME "Lendület" Chemical Nanosensors Research Group, Department of Inorganic and Analytical Chemistry
Budapest University of Technology and Economics, Szent Gellért tér 4, H-1111 Budapest, Hungary
[b] Department of Inorganic and Analytical Chemistry
Budapest University of Technology and Economics, Szent Gellért tér 4, H-1111 Budapest, Hungary



Scheme S1. The chemical structure of the thiol modified C-terminal end of the peptide nucleic acid strands used in the study. The thiol group is linked to the PNA strand by the manufacturer through a $(CH_2)_6$ spacer and an ethyleneglycol linker (AEEA- 2-(2-Aminoethoxy)ethoxy]acetic acid).

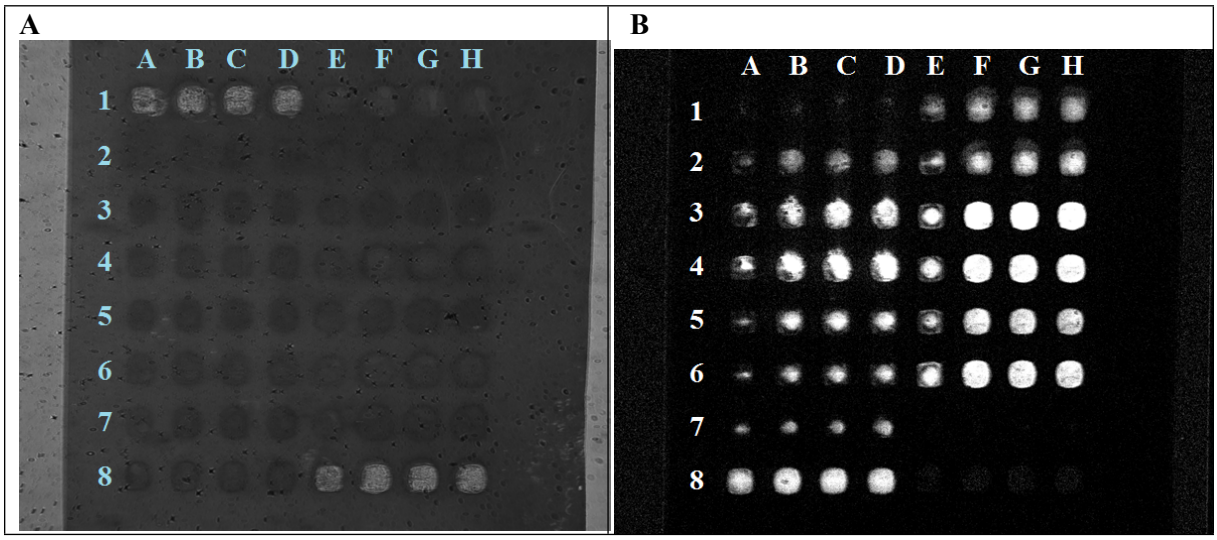


Figure S1. Typical SPR image (A) and differential SPR image of PNA spots immobilized in different experimental conditions

Table S1. Typical 8x8 layout of the SPR chips used in this study. With the latex particles used as position markers for easier assignment of the measured spots.

	A	B	C	D	E	F	G	H
1	LATEX				5 µM phPNA 18mer in SSC			
2	1.25 µM phPNA 18mer in SSC				5 µM phPNA 12mer in SSC			
3	5 µM ssPNA 18mer in SSC				5 µM phPNA 18mer in PBS			
4	5 µM ssPNA 12mer in SSC				5 µM phPNA 12mer in PBS			
5	5 µM ssPNA 18mer in PBS				5 µM phPNA 18mer in BBS			

6	5 μM ssPNA 12mer in PBS	5 μM phPNA 12mer in BBS
7	5 μM ssPNA 18mer in BBS	5 μM nonspecific phPNA 18mer in PBS
8	5 μM ssPNA 12mer in BBS	LATEX

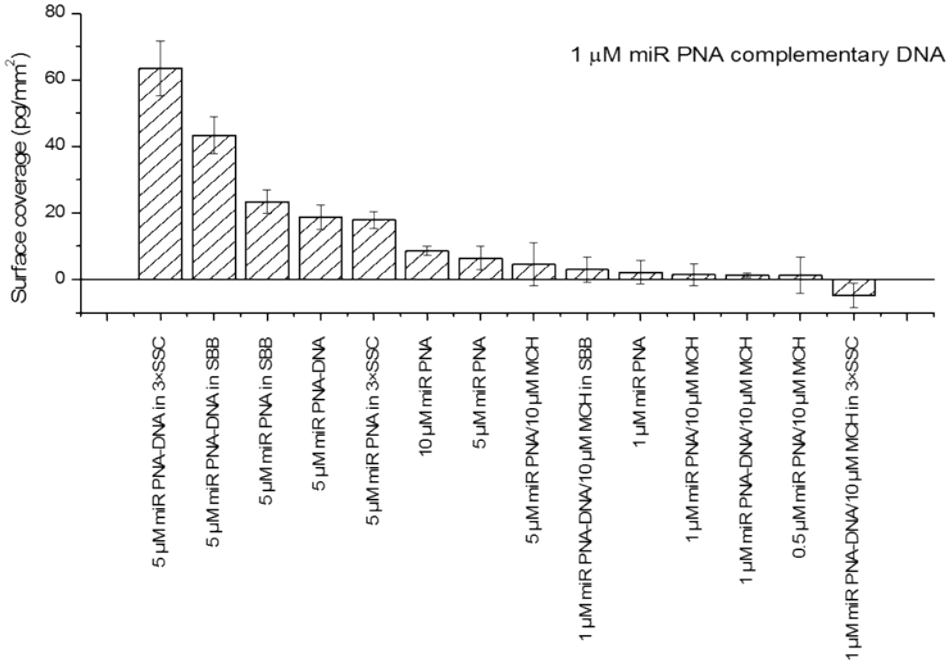


Figure S2. Typical pre-screening results obtained by SPR imaging from microspotted PNA chips. The change of surface coverage upon injection of 1 μM miRNA208a is shown for PNA spots microspotted with solid pins from various concentration and composition PNA solutions as shown in the figure. The difference in the worst and best conditions is ca. 100 fold.

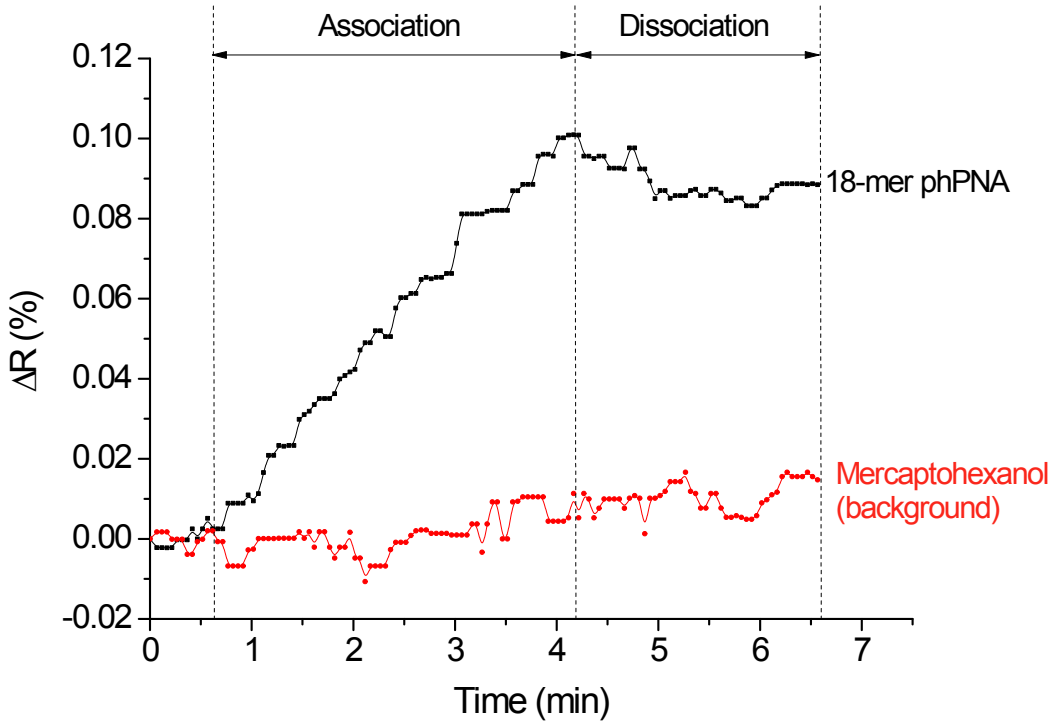


Figure S3. Unprocessed SPR signals upon injection of 140 fmol miRNA 208a on the 18-mer phPNA (5μM, PBS) spot and the relevant mercaptohexanol blocked background