

Supplementary Materials

Aptamers Against the β -Conglutin Allergen: Insights into the Behaviour of the Shortest Multimeric (Intra)Molecular DNA G-Quadruplex

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Table S1. Sequences used in this work.

| Name | Sequence (5' - 3') | Length | Modifications |
|-----------------------|-----------------------------|--------|-------------------|
| 11-mer | ggtgtgggggtgg | 11 | |
| TT-11-mer | tt-ggtgggggtgg | 13 | |
| 11-mer-TT | ggtgtgggggtgg-tt | 13 | |
| TT-11-mer-TT | tt-ggtgggggtgg-tt | 15 | |
| Cy5-11-mer | ggtgtgggggtgg | 11 | 5' Cy5 |
| Cy5-TT-11-mer | tt-ggtgggggtgg | 13 | 5' Cy5 |
| Cy5-11-mer-TT | ggtgtgggggtgg-tt | 13 | 5' Cy5 |
| Cy5-TT-11-mer-TT | tt-ggtgggggtgg-tt | 15 | 5' Cy5 |
| Biotin-TEG-T15-11-mer | ttttttttttttttt-ggtgggggtgg | 26 | 5' Biotin-TEG-T15 |
| TBA | ggttgggtgtgggtgg | 15 | |

Table S2. UV melting temperatures of 11-mer and TT derivatives when used at 100 μM each.

| Sequence | Tm (°C) |
|--------------|---------|
| 11-mer | 76 |
| TT-11-mer | 61 |
| 11-mer-TT | 75 |
| TT-11-mer-TT | 62 |

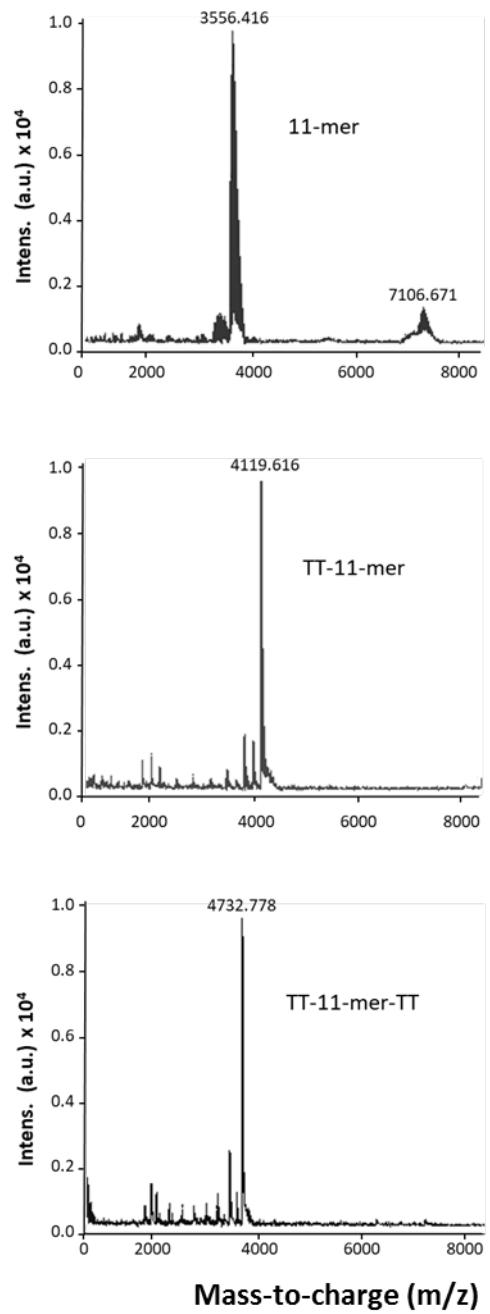


Figure S1. MALDI-TOF analysis of the 11-mer and TT derivatives.

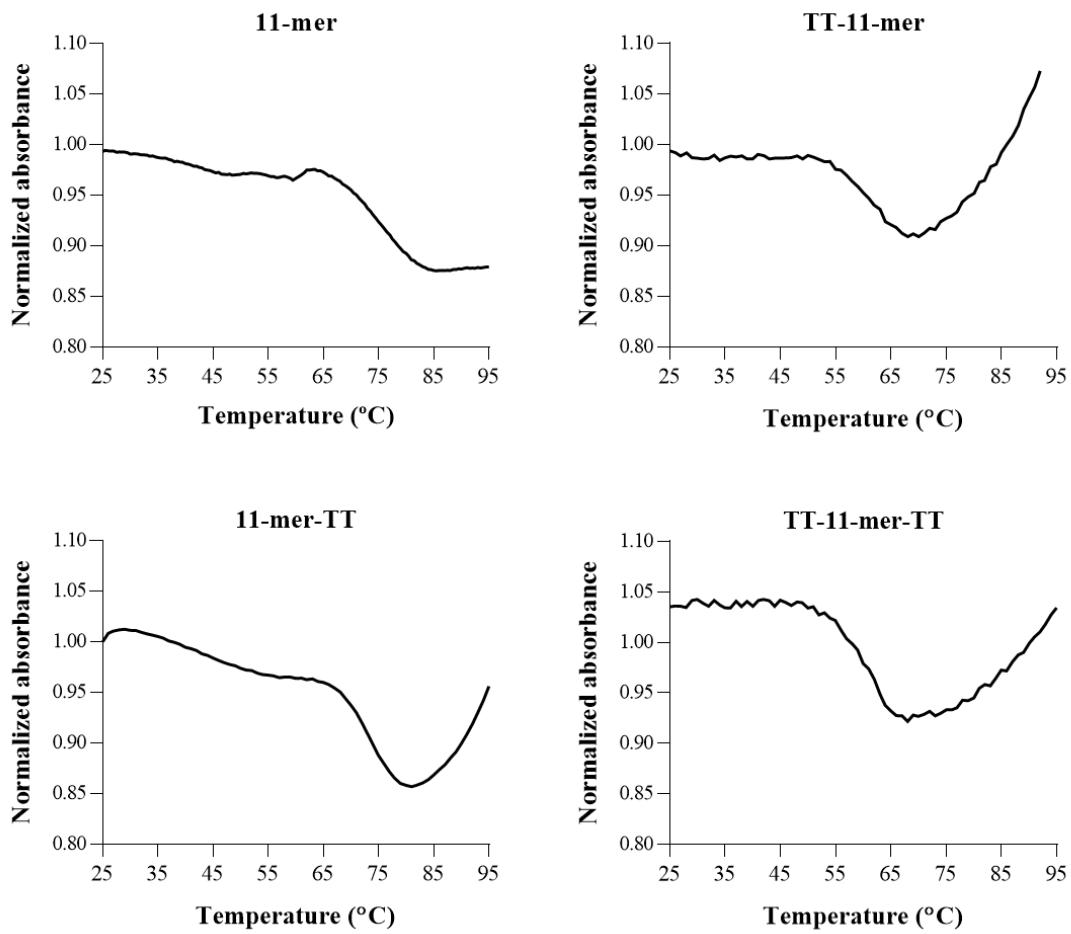


Figure S2. UV melting curves of the 11-mer and TT derivatives when used at 100 μM each.

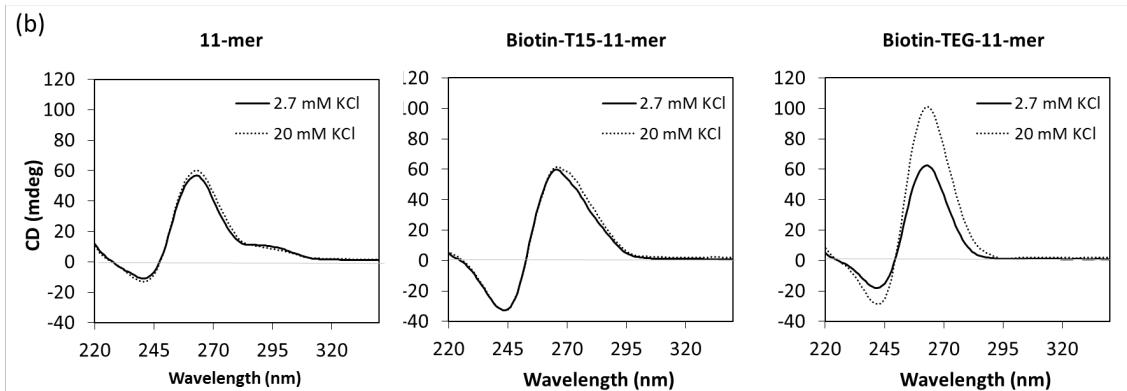
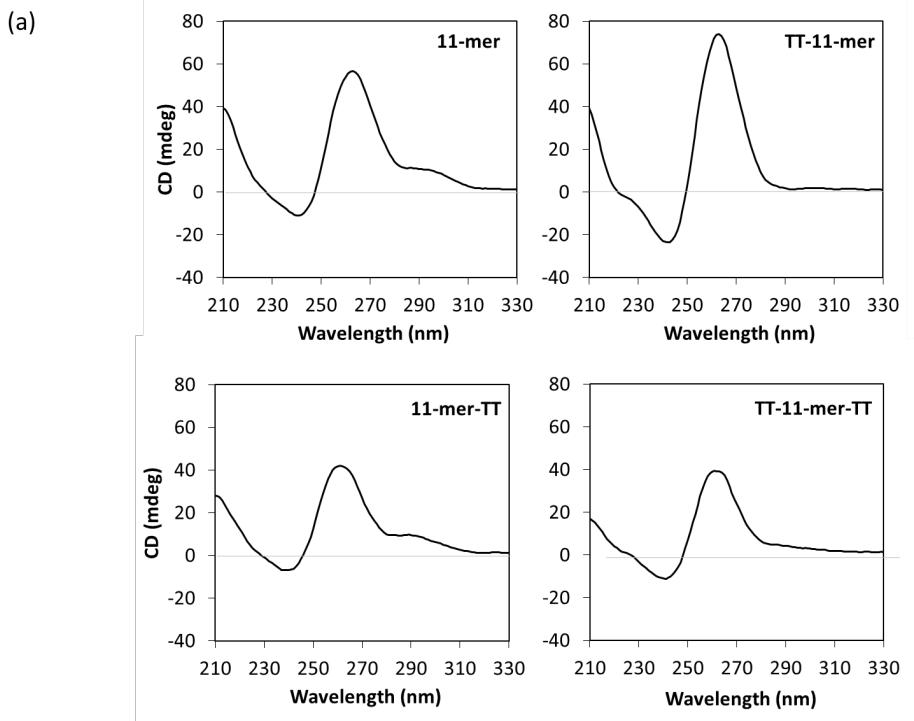


Figure S3. CD spectra of the 11-mer and derivative sequences. (a) 11-mer and TT derivatives (10 μ M each) were analysed in PBS with 1.5 mM $MgCl_2$ and 2.7 mM KCl at 25 °C. (b) 11-mer and biotinylated derivatives (10 μ M each) were analysed at different concentrations of KCl, 2.7 mM and 20 mM, in PBS with 1.5 mM $MgCl_2$ at 25°C.

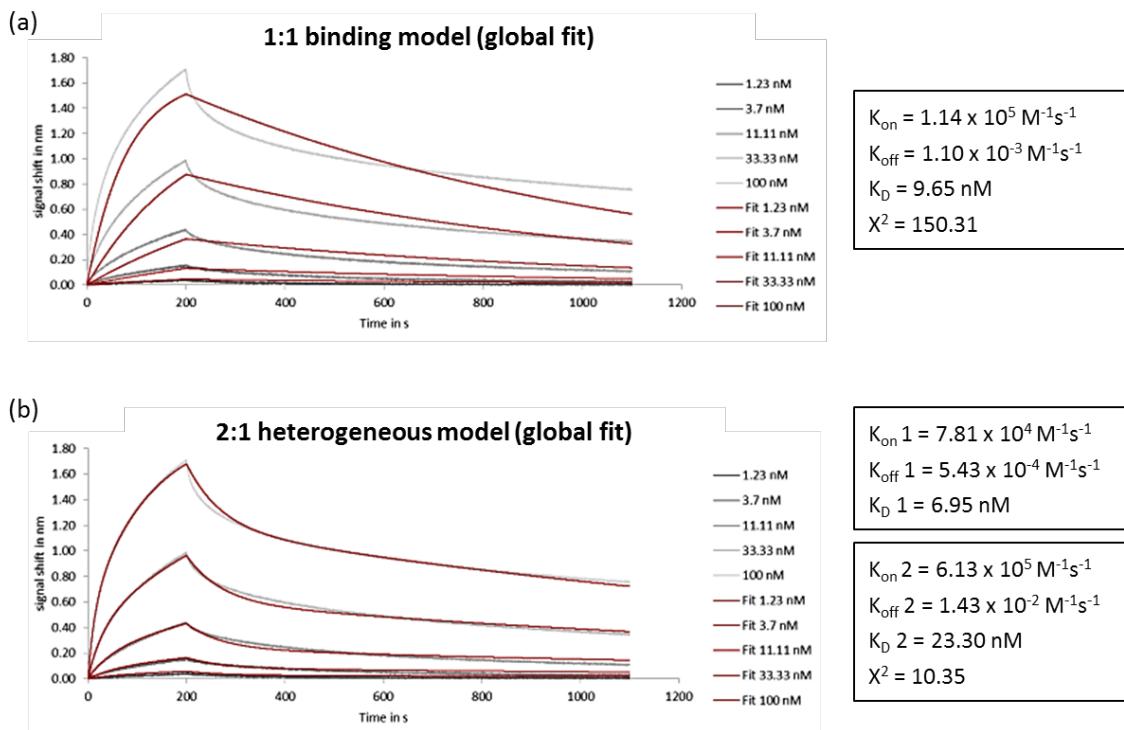


Figure S4. BLI binding studies for the 11-mer aptamer with β -conglutin. Fitting of the curves was performed using (a) a 1:1 binding model and (b) a 2:1 heterogeneous model.

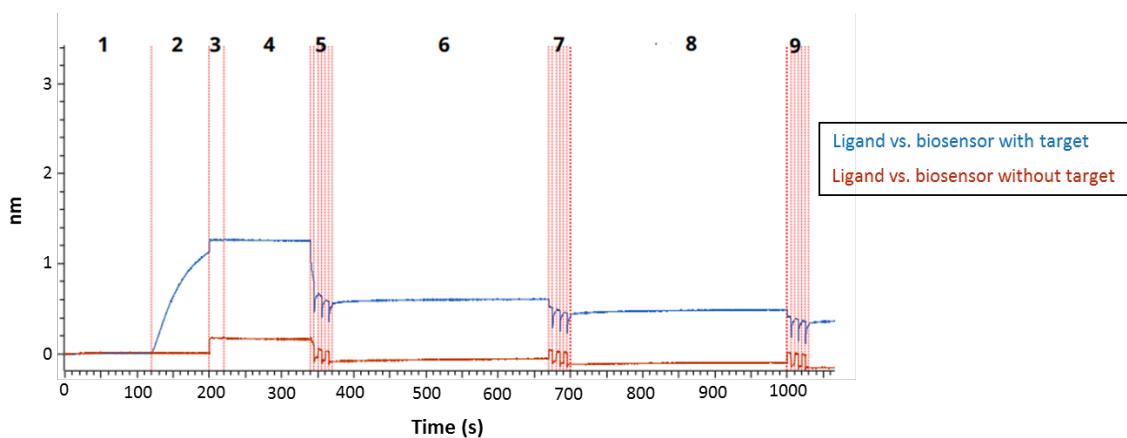


Figure S5. Target immobilization for BLI binding studies. (1) Initial baseline prior to target immobilization; (2) loading of the biotinylated target; (3) blocking of the streptavidin biosensor with biocytin; (4, 6 and 8) equilibration; (5, 7 and 9) regeneration.

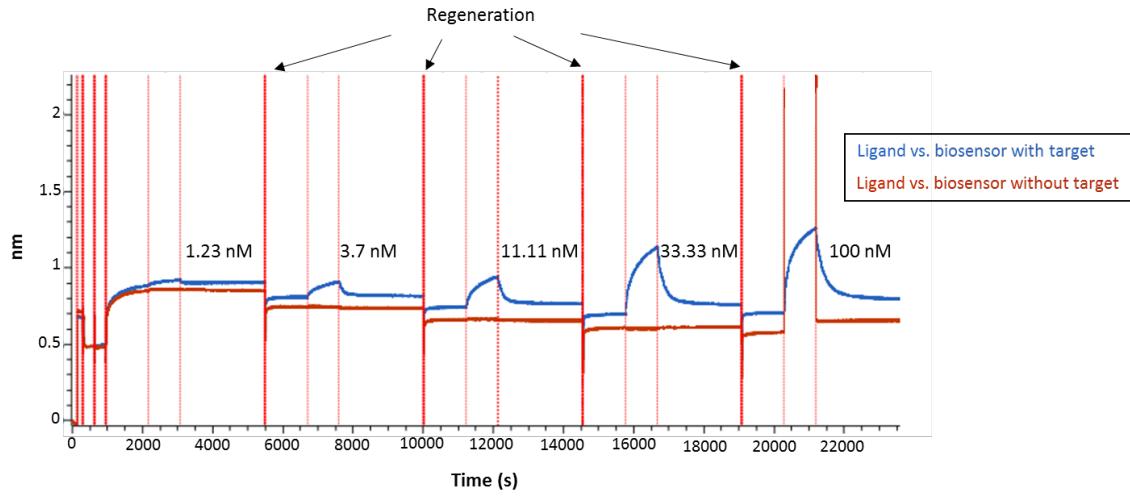


Figure S6. BLI sensograms obtained for the 11-mer aptamer after the addition of different concentrations of β -conglutinin.