

## APTAMER INFORMATION

### Dengue Type 2 NS1 aptamer #11 C10 (Oligo #535)

#### 1a. Description:

- Identifiers: 11 C10 (Oligo # 535)
- Number of DNA nucleotides: 32 bases (without 3'-6T), 38 bases (with 3'-6T)
- Molecular weight (includes 3'-6T and biotin): 12,116 g/mol
- Target for selection: **Dengue2 NS1 protein**

Aptamer was selected from a randomized 32-mer library against Dengue Type 2 NS1 protein protein. Proprietary methods were then used to select the aptamer.

#### Aptamer folding instruction before use:

Once the aptamer is in its working concentration, it needs to be heated to 85-90 °C for 2 minutes, and then cooled to room temperature before use.

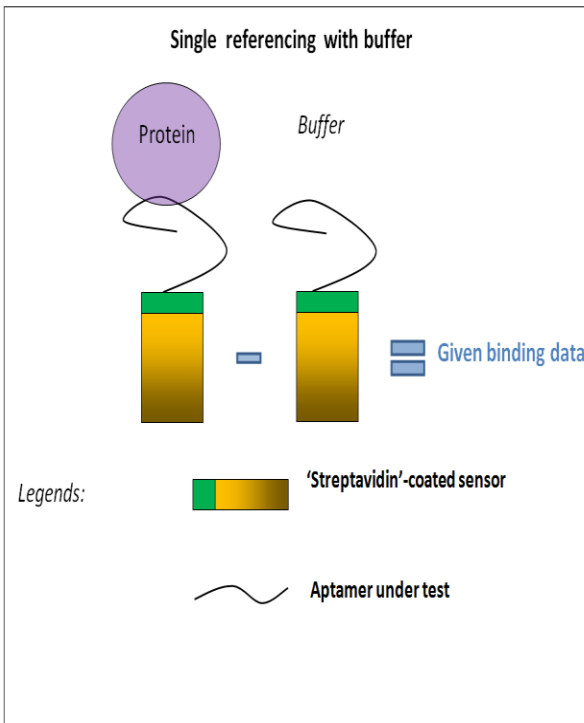
#### 1b. Validation data with Dengue2 NS1 protein by BLI (Bio-Layer Interferometry) method:

- Immobilized Ligand: Biotinylated Dengue2 aptamer\_11 C10 (Oligo # 535)
- Analyte: Dengue Type 2 NS1 protein
- Buffer used for validation: 1X PBS pH 7.4

#### 1c. Kinetics Screening Assay using Streptavidin Biosensors:

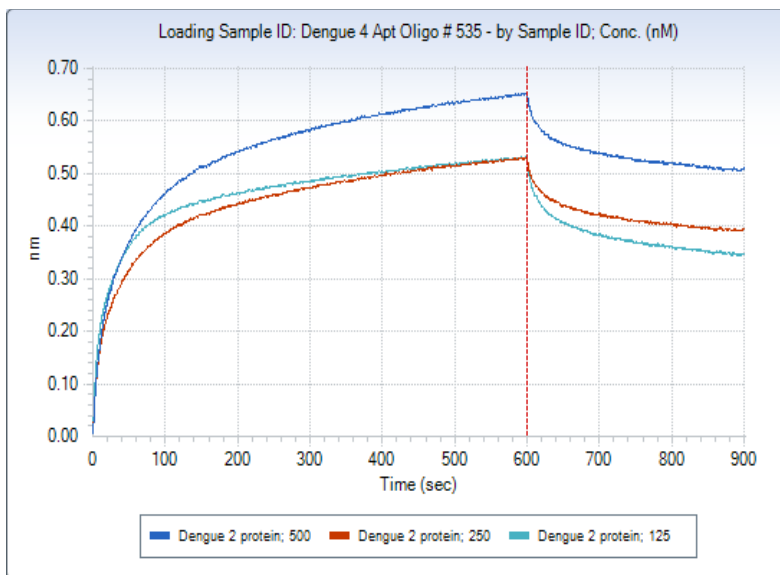
We validate the binding data by single reference method.

- Single reference data: All curves are referenced to a sensor dipped in buffer alone (no protein) (see Figures 1, 2 and Table 1).



**Figure 1.** Diagram showing aptamer: protein binding validation scheme.

### 1d. Single reference data:



**Figure 2.** Association and dissociation graph of 1:1 fitting model of Dengue aptamer 11 C10 (biotinylated) to Dengue Type 2 NS1 protein concentrations 500, 250 and 125 nM, by single reference method.

**Table 1.**  $K_d$ ,  $R^2$  and  $\chi^2$  values by Local fitting for single reference method. **Avg  $K_d = 14.9$  nM**

Immobilized Aptamer	Analyte	Conc. (nM)	Response	$K_d$ (M)	Full $R^2$	Full $\chi^2$
Dengue aptamer #535	Dengue Type 2 NS1 protein	500	0.6502	2.45E-08	0.899528	0.779485
Dengue aptamer #535	Dengue Type 2 NS1 protein	250	0.5288	1.32E-08	0.866325	0.629987
Dengue aptamer #535	Dengue Type 2 NS1 protein	125	0.5293	7.14E-09	0.852706	0.739296