



## APTAMER INFORMATION

### Dengue Type 2 NS1 aptamer\_3 C07 (Oligo #534)

#### 1a. Description:

- ***Identifiers:*** 3 C07 (Oligo # 534)
- ***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. 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:

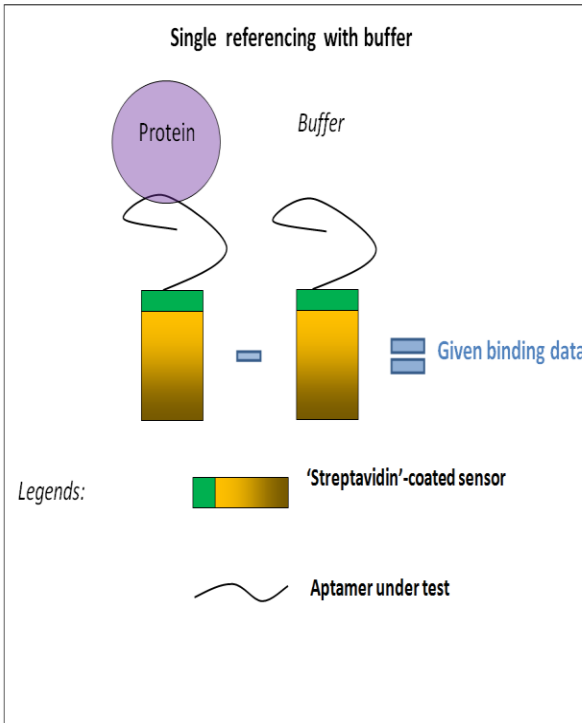
- ***Immobilized Ligand:*** Biotinylated Dengue2 aptamer\_3C07 (Oligo # 534)
- ***Analyte:*** Dengue Type 2 NS1 protein
- ***Buffer used for validation:*** 1X PBS pH 7.4

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

We validate the binding data by single reference method.

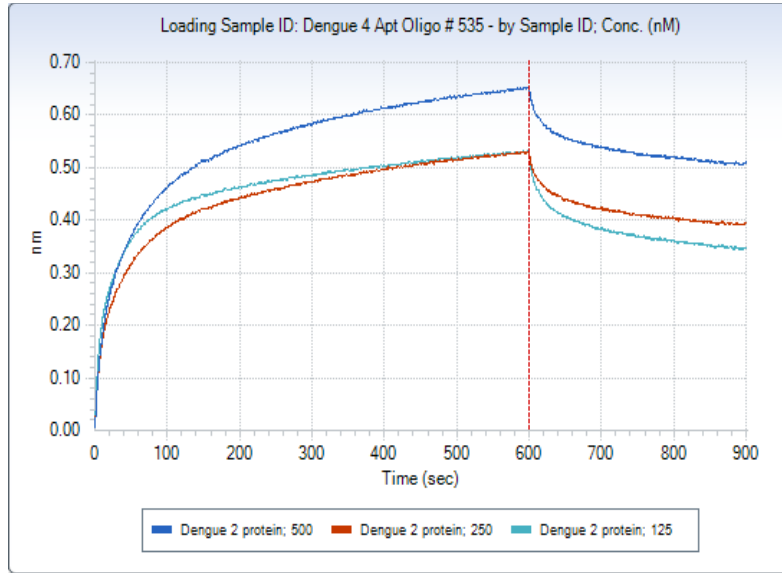
- ***Single reference data:*** All curves are referenced to a sensor dipped in buffer alone (no protein) (see Figures 1, 2 and Table 1).





**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 3C07 (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  $K_d = 21$  nM**

Immobilized Aptamer	Analyte	Conc. (nM)	Response	$K_d$ (M)	Full $R^2$	Full $\chi^2$
Dengue aptamer #534	Dengue Type 2 NS1 protein	500	0.64	3.44E-08	0.940441	0.54772
Dengue aptamer #534	Dengue Type 2 NS1 protein	250	0.6204	1.89E-08	0.925491	0.586552
Dengue aptamer #534	Dengue Type 2 NS1 protein	125	0.6842	9.84E-09	0.911872	0.94407