



RNA Aptamer Pair against Dengue Virus Non-Structural Protein 1

SKU# APT-063: DNA Aptamer against Dengue Virus Non-Structural Protein 1

Background

Dengue virus is a member of the virus family *Flaviviridae*. It is spread by daytime-active *Aedes* mosquitoes, such as *A. aegypti* and *A. albopictus*. Dengue virus shares a genus with the Zika, yellow fever, Japanese encephalitis, and West Nile viruses. Dengue virus is enveloped and icosahedral and has a non-segmented, single-stranded, 10 kilobase, positive-sense RNA genome. The virus encodes three structural proteins (capsid, membrane and envelope glycoprotein). From these proteins, the envelope glycoprotein, or E protein, has an important role been associated with receptor binding, hemagglutination of erythrocytes, production of neutralizing antibodies and immune response.

In clinical setting, early diagnosis of Dengue infection would be more effective to control epidemic and for timely treatment. A preferred option is to use serological methods for detecting Zika viral antigens (e.g., non-structure proteins). There are seven non-structural proteins (NS1, NS2A, NS2B, NS3, NS4A, NS4B and NS5), but only NS1 is continuously secreted in blood by the infected host cell, mainly in the first days of infection after the onset. NS1 is a glycoprotein with approximately 46–50 kDa, highly conserved among different serotypes.

Fusion BioLabs provides validated RNA aptamers against non-structure protein (NS-1) of Dengue virus serotype 2. They could be used as direct ELASA alone or paired to capture RNA aptamer and detection RNA aptamer for Sandwich ELASA.

Aptamer type: RNA aptamer

Aptamer length & Affinity KD

| | Aptamer Length | Affinity KD |
|-------------------|----------------|-------------|
| Capture Aptamer | 61 bp | 37.57 nM |
| Detection Aptamer | 41 bp | 41.40 nM |

Kit contents

The following components are included in the Kit.

| | Component | Quantity |
|------------|---------------------------------------|----------|
| APT-063-10 | Single strand DNA, lyophilized powder | 10 nmol |
| APT-063-30 | Single strand DNA, lyophilized powder | 30 nmol |

- Store at -80°; reagents are guaranteed stable for 12 months when properly stored.