Streptomycin NOVAptamer Data Sheet

ANT6A

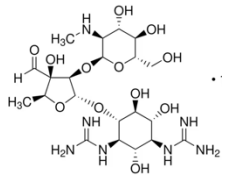
NOVAptamer to Streptomycin

Target Information

Streptomycin

Streptomycin is an aminoglycoside antibiotic used to treat bacterial infections, particularly those caused by Gram-negative bacteria. It works by binding to the bacterial 30S ribosomal subunit, disrupting protein synthesis and causing bacterial cell death. It is primarily used as part of the multi-drug treatment of pulmonary tuberculosis.

Molecular formula: $C_{21}H_{39}N_7O_{12}$
Molecular weight: 581.5 g/mol



NOVAptamer ANT6A

Chemistry: DNA
Size: 79 nt
Molecular weight: 24546.9 g/mol
Molar extinction coefficient: 765800 $Lmol^{-1}cm^{-1}$
Binding buffer: 20 mM HEPES, 20 mM CH_3COONa, 140 mM CH_3COOK, 3 mM $(CH_3COO)_2Mg$, pH 7.4

Folding an aptamer into its tertiary structure is essential for optimal target binding. To achieve this, resuspend the aptamer in assay buffer, heat to 95°C (~2 minutes), then allow to cool to room temperature (~5 minutes) before use.

Affinity Determination

Affinity Determination Method: Fluorescence
Apparent K_D in the binding buffer: 23 µM
Specificity:

- does not cross react with kanamycin, neomycin, gentamycin.

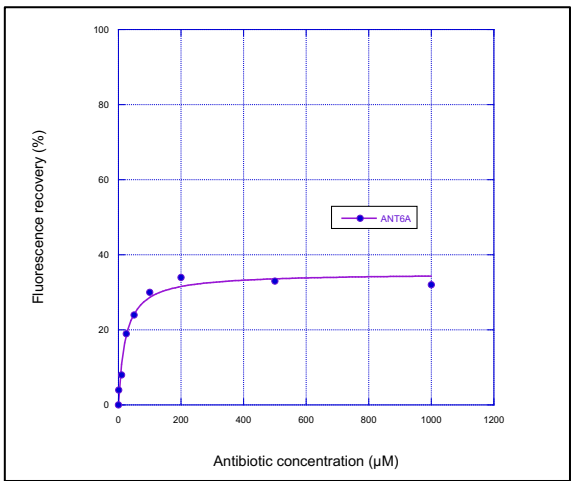


Figure 1. *Dose-response fluorescence recovery in the bimolecular beacon assay upon Streptomycin addition.*

Key advantages offered by aptamers over other affinity reagents, notably antibodies

✓	High affinity and selectivity
✓	Thermostable, long shelf life
✓	Animal- and cell-free selection
✓	Chemical synthesis
✓	Batch to batch reproducibility

Custom synthesis

- **Available at different scales** – upon request, up to 100 nanomoles
- **Various purification modes** – adapted to specific experimental requests
- **Extensive conjugation options for diverse applications**:
- Grafting: NH_2, SH, biotin, etc.
- Sensing: fluorescent dyes, nanoparticles, redox groups
- Cross-linking: click chemistry reagents
- **Molecular beacons** - possible hybridization with a complementary oligonucleotide to form a bimolecular beacon, enabling quantitative detection

Applications (For Research Use Only)

- Biosensing
- Fluorescence-based detection in water or dairy products

Contact information

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