

ANT2F

NOVAptamer to Paromomycin

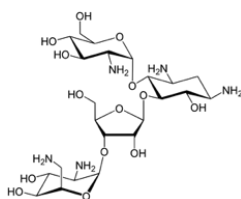
Target Information

Paromomycin

Paromomycin is an aminoglycoside antibiotic primarily used to treat bacterial infections and intestinal amebiasis. It works by binding to the bacterial 30S ribosomal subunit, disrupting protein synthesis and causing bacterial cell death.

Molecular formula: $C_{23}H_{45}N_5O_{14}$

Molecular weight: 615.6 g/mol



NOVAptamer ANT2F

Chemistry: DNA

Size: 79 nt

Molecular weight: 24287.0 g/mol

Molar extinction coefficient: $744400 \text{ Lmol}^{-1}\text{cm}^{-1}$

Binding buffer: 20 mM HEPES, 20 mM CH_3COONa , 140 mM CH_3COOK , 3 mM $(\text{CH}_3\text{COO})_2\text{Mg}$, 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: streptomycin, kanamycin, neomycin, gentamycin

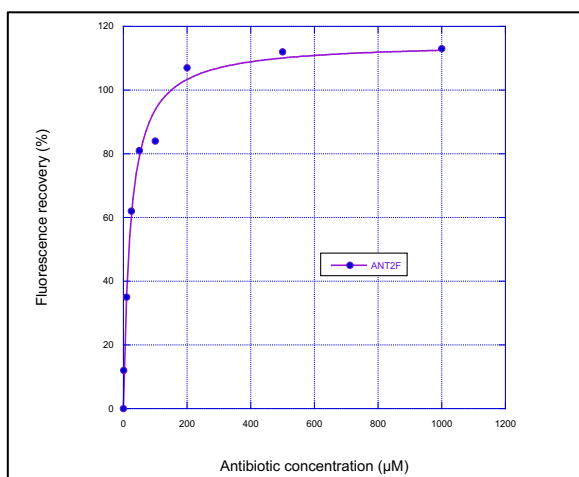


Figure 1. Dose-response fluorescence recovery in the bimolecular beacon assay upon Paromomycin addition.

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: NH₂, 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

For more information or inquiries, please contact:

NOVAPTECH
2 avenue Favard, 33170 Gradignan, France
<https://novaptech.com> ♦ contact@novaptech.com ♦ +33 (0) 5 47 74 26 85