Imazalil NOVAptamer Data Sheet

CAI3C

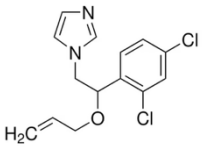
NOVAptamer to Imazalil

Target Information

Imazalil

Imazalil (IMA) is an imidazole fungicide widely used post-harvest to prevent mold and fungal growth on citrus fruits and other crops. It acts by inhibiting ergosterol biosynthesis, a critical component of fungal cell membranes. Due to its persistence and its potential endocrine-disrupting effects, monitoring IMA residues is essential to ensure compliance with food safety regulations.

Molecular formula: $C_{14}H_{14}Cl_2N_2O$
Molecular weight: 297.2 g/mol



NOVAptamer CAI3C

Chemistry: DNA
Size: 82 nt
Molecular weight: 25384 g/mol
Molar extinction coefficient: 787700 l.mol-1.cm-1
Binding buffer: 20 mM HEPES, 20 mM CH_3COONa, 140 mM CH_3COOK, 3 mM $(CH_3COO)_2Mg$, pH 7.4

A truncated version of anti-IMA aptamer, 36 nt long, is available (see CAI2C-T2).

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: 21 µM
Specificity:

- cross reacts with: TBZ (with the similar affinity)

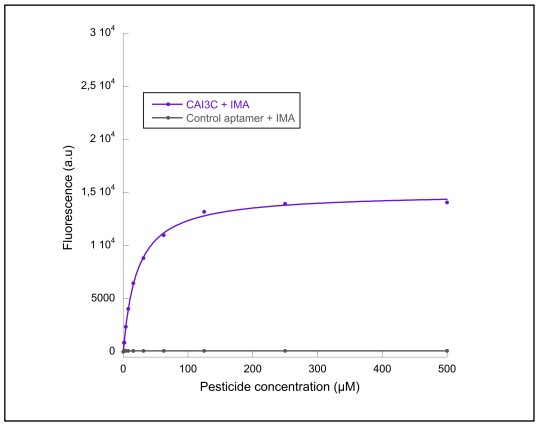


Figure 1. *Dose-response fluorescence recovery in a molecular beacon assay following fungicide addition.*

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
- Environmental monitoring (e.g., water/soil contamination)
- Food safety and agricultural monitoring (e.g., fungicide residue testing)

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