Imazalil NOVAptamer Data Sheet

CAI2C-T2

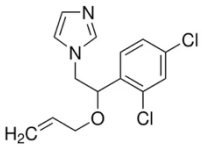
NOVAptamer to Imazalil

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 CAI2C-T2

Chemistry: DNA
Size: 36 nt
Molecular weight: 11519 g/mol
Molar extinction coefficient: 358700 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 full-length version of anti-IMA aptamer, 82 nt long, is available (see CAI3C).

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: 400 µM

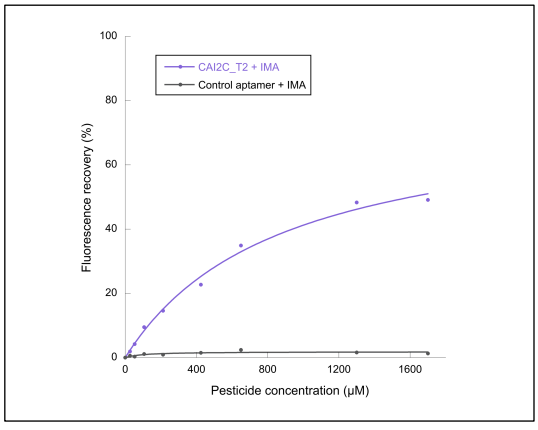


Figure 1. *Dose-response fluorescence recovery in a molecular beacon assay following fungicide addition.*

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

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