Trastuzumab NOVAptamer Data Sheet

ZUM3B

NOVAptamer to Trastuzumab

Target Information

Trastuzumab

Trastuzumab is a monoclonal antibody that specifically targets the human epidermal growth factor receptor 2 (HER2), a transmembrane receptor overexpressed in certain cancers such as breast and gastric carcinoma. By binding to the extracellular domain of HER2, trastuzumab blocks the signalling pathways that drive cell proliferation and survival. It is widely used as a targeted therapy in HER2-positive cancers.

NOVAptamer ZUM3B

Chemistry: DNA
Size: 76 nt
Molecular weight: 23384.2 g/mol
Molar extinction coefficient: 705800 $Lmol^{-1}cm^{-1}$
Binding buffer: PBS, 3 mM $(CH3COO)_2Mg$, 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: Surface Plasmon Resonance (SPR)
K_D in the binding buffer: 38 nM
Binding properties were confirmed independently using biolayer interferometry (BLI).

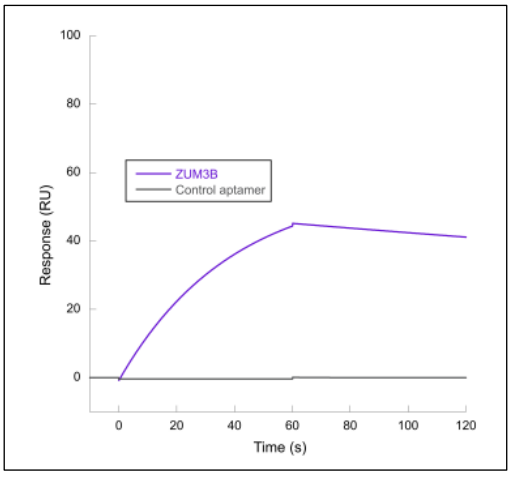

Figure 1. *Fitted SPR sensorgram showing the binding of ZUM3B and the control aptamer to the trastuzumab immobilized on the CM5 sensor chip in a single-concentration analysis (300 nM). The assay was performed in the binding buffer at 24°C.*

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

✓	High affinity and selectivity
✓	Thermostable, long shelf life
✓	Animal- and cell-free discovery
✓	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 uses
- **Extensive conjugation options for diverse applications**:
  - Grafting: NH_2, SH, biotin, etc.
  - Sensing: fluorescent dyes, redox groups
  - Cross-linking: other functional groups for click chemistry
- **Molecular beacons** - possible hybridization with a complementary oligonucleotide to form a bimolecular beacon, enabling quantitative detection

Applications (For Research Use Only)

- Biosensing
- Analysis and quality control – enabling quantification of antibody-drug conjugates
- Purification – separation of antibody from other components in the manufacturing process

More information

For more information or inquiries, please contact:

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