Pioneering Proteomics

What are SOMAmer[®] Reagents?

Protein affinity reagents are utilized in the SomaScan[®] Assay to profile 11,000 protein measurements in a 55 µL serum or plasma sample.

Protein detection and identification has traditionally been performed using antibodies as affinity based reagents. The SomaScan platform utilizes single stranded DNA aptamers called SOMAmer (Slow Off-rate Modified Aptamer) reagents that are modified to enhance specificity and sensitivity for high-plex, high-throughput protein detection.



Comparison of SOMAmer Reagents to Antibodies for affinity based protein assays

SOMAmer Reagents in the SomaScan Assay	Antibodies
Short single-stranded DNA sequence with modified nucleotides (~ 20 kDa)	Large, multichain protein (~ 150 kDa)
Chemically synthesized, providing consistent structure	Produced by biological systems, introducing a degree of natural variability in structure
Selected for specific performance characteristics from a synthetically generated of library of 10 ¹⁵ DNA aptamers	Selection is random based on immune response
Universal polyanionic competitor used in assay to eliminate non-specific binding	No universal competitor to eliminate non-specific binding
Highly specific (binding site dimensions of 1100–1200 Ų)	Highly specific (binding site dimensions of 1100–1200 Ų)





SL00000855 Rev 2: 2024-09 Aptamer vs Antibody Comparison Sheet

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