

Pioneering Proteomics

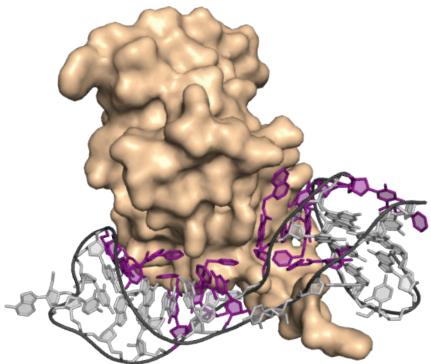
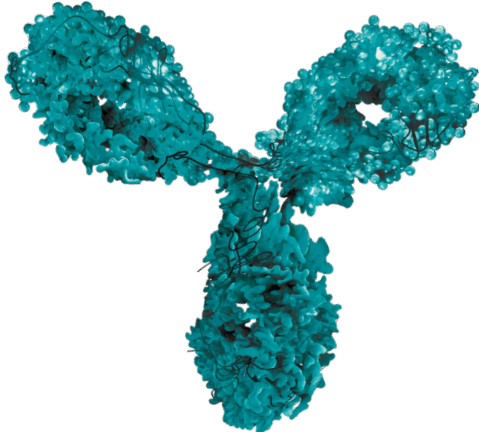
A person wearing a white hard hat and a dark jacket is holding a glowing, multi-colored test tube. The background is dark with vibrant, abstract shapes in shades of blue, green, and yellow, resembling protein structures or molecular models. The overall lighting is dramatic, with the test tube being the primary light source.

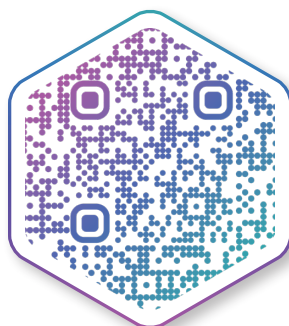
What are SOMAmer[®] Reagents?

Protein affinity reagents are utilized in the SomaScan[®] Assay to detect 7,000 proteins in a 55 μ L 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 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 Å ²)	Highly specific (binding site dimensions of 1100–1200 Å ²)



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Aptamer vs Antibody Comparison Sheet

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