

Pioneering Proteomics

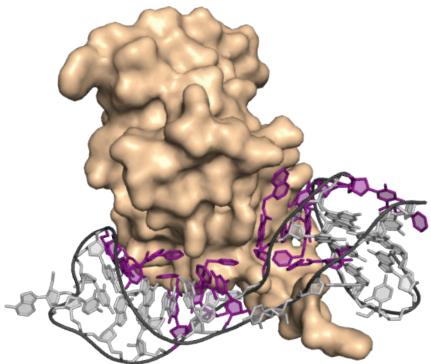
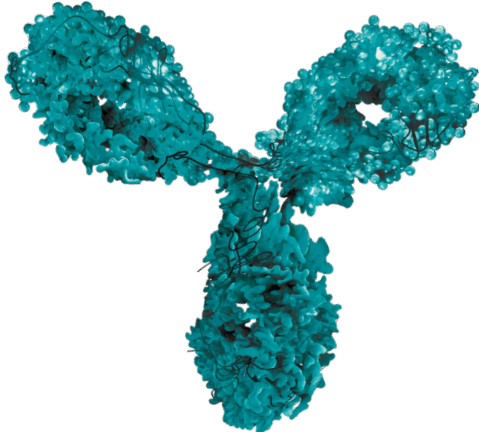
A man with a beard, wearing a white hard hat and a dark jacket, is holding a glowing test tube. The background is dark with vibrant, colorful, abstract shapes resembling protein structures or DNA strands in shades of blue, green, and yellow.

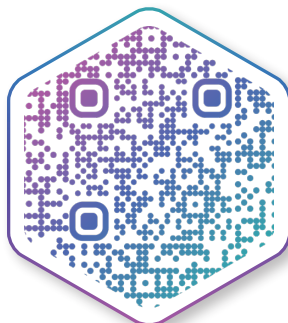
What are SOMAmer[®] Reagents?

Protein affinity reagents are utilized in the SomaScan[®] Assay to profile 11,000 protein measurements 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

<p>SOMAmer Reagents in the SomaScan Assay</p> 	<p>Antibodies</p> 
<p>Short single-stranded DNA sequence with modified nucleotides (~ 20 kDa)</p>	<p>Large, multichain protein (~ 150 kDa)</p>
<p>Chemically synthesized, providing consistent structure</p>	<p>Produced by biological systems, introducing a degree of natural variability in structure</p>
<p>Selected for specific performance characteristics from a synthetically generated library of 10^{15} DNA aptamers</p>	<p>Selection is random based on immune response</p>
<p>Universal polyanionic competitor used in assay to eliminate non-specific binding</p>	<p>No universal competitor to eliminate non-specific binding</p>
<p>Highly specific (binding site dimensions of 1100–1200 Å²)</p>	<p>Highly specific (binding site dimensions of 1100–1200 Å²)</p>



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Aptamer vs Antibody Comparison Sheet

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