

Grant Application Guidance

Broader and deeper protein content for optimized discovery potential – capable of 11,000 protein measurements



Introduction

Typically, research is funded through grants or budgets. This financial support plays a crucial role in advancing research. Consequently, projects often require clear explanations and justification. This resource aims to provide guidance for those seeking funding for projects that utilize the SomaScan Assay[®], either from SomaLogic's CLIA-certified, CAP-accredited laboratory or any of our Authorized Sites around the world.

Platform Overview

The SomaScan Assay is a proteomic platform based on modified aptamers. Aptamers are short, synthetic sequences of DNA that exhibit a natural affinity to proteins. These aptamers are modified to provide exquisite specificity to specific protein targets. Known as "Slow Off-rate Modified Aptamers" or SOMAmer® Reagents, they offer 11,000 total protein measurements of circulating proteins from a single sample.

SOMAmer Reagents are selected via the SELEX process based on their strong binding affinity to a protein target. The reproducibility and stability of the SomaScan Assay are regularly tested to maintain consistency over time and from assay to assay. Specificity testing includes:

• In silico selection, procurement (when available), and direct SOMAmer Reagent binding experiments in buffer with "relevant relative" proteins.

- "Pulldown" assays followed by mass spectrometry-based and SDS gel-based analysis of the protein(s) bound by the SOMAmer Reagent from biological matrices (5% of the menu).
- Binding affinity testing against closely related proteins to determine the level of cross-reactivity for over 1/3 of the menu. Any binding to another protein is reported in the annotated menu.
- Cis-pQTL analysis to confirm specificity, with over 2,000 protein targets confirmed.
- Correlation with antibody-based detection methods such as ELISA to confirm specificity.
- Individual SOMAmer Reagents are available for further investigation.

With the ability to analyze half the genetically encoded human proteome, this pioneering platform surpasses all other technologies. This unparalleled coverage unlocks a new depth of molecular insights, empowering researchers to make informed decisions, drive better outcomes, and ultimately revolutionize healthcare.

Want to learn more about how the assay works? Download the <u>SomaScan Assay V5.0 Technical Note</u>

Want to view the SomaScan Menu? Visit <u>https://menu.somalogic.com/</u>

Platform Versatility

The SomaScan Assay is compatible with numerous sample types and can provide insights into virtually any field of study or application.

Sample Type	Field of Study		Applications
 Plasma Serum CSF Urine Cell & Tissue 	 Cardiovascular Disease COVID-19 Neurodegenerative Disease Diabetes Kidney Disease Rare Diseases Osteoarthritis COPD Asthma Hypertrophic Cardiomyopathy Ankylosing Spondylosis 	 Muscular Dystrophy Aging Multiple Organ Dysfunction/Trauma Down Syndrome Pregnancy Complications Malnutrition Childhood Mortality Micronutrient Deficiency Immune-related Adverse Events Exercise/Diet Infectious Disease 	 Biomarker Discovery Mechanism of Action Genome-wide Association Studies Proteogenomic Mapping Therapeutic Development Disease Staging Diagnostic Development Patient Stratification Biosimilar Evaluation

Technology Overview & Workflow

The SomaScan Assay empowers users to measure thousands of proteins from at least 85 individual samples in a single experiment. As a researcher, you can partner with your preferred SomaScan Service Lab, leveraging their resources and technology to expedite your research. Applicable sample matrices include Plasma, Serum, Cerebral Spinal Fluid (CSF), Urine, and Cell & Tissue Kits (consult your service provider for guidance on supported sample types). With convenient access to the technology within your own network, there's no need to ship your samples, preserving sample integrity and saving valuable research time.

Globally, all Authorized Sites have invested in the technology to run the SomaScan Assay locally, enabling you to conduct proteomic research of any scale conveniently and rapidly. Each Authorized Site is authorized and undergoes QC/ QA checks on all runs to ensure data meets SomaLogic's high standards. The equipment at each Authorized Site, including the Tecan Fluent and SomaLogic LabThread Thermal Magnetic Shakers, is utilized for the semi-automated portion of the assay. During this phase, SOMAmer Reagents are incubated with the sample of interest to capture any of the 11,000 measurable proteins. SOMAmer (Slow Off-rate Modified Aptamer) Reagents specific to a target bind and capture any native protein present in the sample with an available binding site. Subsequent steps involve washing away unbound material, recapturing SOMAmer Reagents bound to protein, and generating a SOMAmer eluate. This

eluate contains concentrations of SOMAmer Reagents, serving as a surrogate for the original protein concentration in the sample.

The eluate is then transferred to specialized Agilent Microarray slides containing subarrays with specific oligonucleotide sequences complementary to each unique SOMAmer Reagent, facilitating hybridization. After this step, the slides are washed and imaged via fluorescence. The

fluorescence intensity of each subarray is proportional to the concentration of protein in the original sample. A comprehensive overview of the SomaScan technology is available in the seminal openaccess paper, and a summary from the paper is provided below.

Read the seminal paper on the SomaScan Assay:

https://www.ncbi.nlm. nih.gov/pmc/articles/ PMC3000457/



Workflow

The SomaScan Assay enables you to process and analyze data following the workflow outlined below.



Funding Agencies

Selecting the most suitable Funding Agency is paramount to securing your funds and can be more challenging than it seems. Grant applications may face rejection if the incorrect research funding body is targeted. Therefore, it is essential to meticulously evaluate options and research which agency aligns best with your project. Explore the following Funding Agency resources to assist you in making an informed choice.

How to Apply for NIH Grants:

How to Apply - Application Guide | grants.nih.gov

How to get funding for lab research & links: How to Get Funding for Lab Research in 2022 | Excedr

Supporting Data

Publications serve as invaluable resources when seeking grant funding. With over 800 peer-reviewed publications available, you can enhance your grant application with evidence of market validation. These publications underscore that SomaLogic is a proven platform leveraging proteins to unveil biological and disease information across numerous specialties, including Cardiovascular, Kidney, Aging, Respiratory, Neurobiology, and more. Since 2010, nearly half a million samples have been analyzed. Explore how the world's leading life science and pharmaceutical research organizations are revolutionizing their discovery and validation pipelines with our groundbreaking proteomic technologies by visiting the following link: <u>SomaLogic Publications</u>





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