

ALAMAR BIOSCIENCES RECEIVES THE 2023 ENTREPRENEURIAL COMPANY OF THE YEAR AWARD

*Identified as best in class in the North American
proteomic platforms industry*



Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each Award category before determining the final Award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Alamar Biosciences excels in many of the criteria in the proteomic platforms space.

AWARD CRITERIA	
<i>Entrepreneurial Innovation</i>	<i>Customer Impact</i>
Market Disruption	Price/Performance Value
Competitive Differentiation	Customer Purchase Experience
Market Gaps	Customer Ownership Experience
Leadership Focus	Customer Service Experience
Passionate Persistence	Brand Equity

Alamar Biosciences: Revolutionizing Early Disease Detection Through Precision Proteomics

Founded in 2018 and headquartered in Fremont, California, Alamar Biosciences (Alamar) powers precision proteomics to revolutionize early disease detection. Alamar’s primary goal is to enable early disease detection, significantly impacting healthcare and diagnostics. The company aims to revolutionize disease identification and understanding through cutting-edge technology and expertise in proteomics.

A steadfast commitment to innovation marks the company’s journey in transforming proteomics. It has a history of developing groundbreaking technologies drawing from its team's collective expertise. A pioneer in precision proteomics, Alamar’s innovative, multiplexed technology platform NULISA™ achieves exceptional sensitivity in detecting protein biomarkers. The company addresses three crucial elements for assay sensitivity: single-molecule detection, background suppression, and antibody binder specificity.

While many in the field concentrate on enhancing the signal, Frost & Sullivan points out that Alamar's unique approach primarily focuses on background suppression. NULISA™’s remarkable single-molecule detection sensitivity hinges on reducing assay background by a substantial 10,000-fold. The technology enables the simultaneous analysis of hundreds to thousands of protein targets within a single sample – all while maintaining an extremely high detection sensitivity level.¹

¹NULISA: a proteomic liquid biopsy platform with attomolar sensitivity and high multiplexing, XJ Ma et al. Nature Communications. Nov 2023 [Precision Proteomics: A Change in Perspective \(genengnews.com\)](https://www.genengnews.com/precision-proteomics-a-change-in-perspective/), accessed November 2023

Proximity Ligation–based Multiplexed Protein Detection

Alamar’s dual selection proximal ligation technology purifies the immune complex and effectively eliminates background interference, resulting in exceptional sensitivity. Its proprietary technology, Attobody™, an engineered antibody with incredibly high target affinity, further facilitates detection at the single-digit picomolar range. By conjugating commercially available or proprietary antibody detection molecule with a nucleic acid, the platform allows for polymerase chain reaction (PCR) and next-generation sequencing (NGS) as read-out methods. Frost & Sullivan notes that the affinity-enrichment technology and the NULISA™ system provide unparalleled sensitivity, particularly vital for early disease detection applications where high sensitivity is imperative as mainly seeking low-abundance biomarkers.

Regarding protein biomarkers and proteomic analyses, the company’s initial focus lies in areas demanding ultra-high sensitivity and multiplexing capabilities for detection; for instance, disease panels containing cytokines/chemokines, pivotal in various conditions due to their involvement in inflammation. These

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- Natalia Casanovas
Best Practices Research Analyst

biomarkers exist in plasma at exceedingly low abundance levels, making their detection challenging. Alamar’s second area of focus is neurology, mainly targeting biomarkers like phospho-tau and amyloid-beta peptides, which are significant in neurological diseases such as Alzheimer's. Similarly, these biomarkers exist in the blood at very low levels, posing a challenge for reliable detection through conventional proteomics technologies.

Remarkably, the company offers researchers access to its proteomics technology via its Technology Access program, where customers can send Alamar their samples for analyses. It also plans to introduce an Early Access program for its instrument, the

ARGO™ HT System, and initial NULISA panels and assays, facilitating broader access within the scientific community.

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Passion-Driven Innovations in Disease Detection

Alamar’s journey encapsulates a relentless pursuit fueled by passion and persistence, driving innovation in the precision proteomics field for early disease detection. Yuling Luo, Alamar’s Founder, Chairman, and Chief Executive Officer, was personally motivated to improve the early detection of cancers and other diseases due to existing technologies’ limitations. In light of personally witnessing the challenges and suffering the consequences of late cancer diagnosis in family members, Yuling's vision is to revolutionize

early disease detection.

Recognizing DNA-based liquid biopsy technologies' limitations in achieving high sensitivity, Yuling envisioned leveraging proteins due to their abundance and specificity in disease diagnosis. This vision prompted the creation of a technology capable of high-sensitivity protein analysis in a multiplex setting. The aim was to enable early disease detection, potentially saving lives.

The entrepreneurial spirit - the belief in tackling critical challenges, taking risks, and persistent hard work - underscores Alamar's ethos, aligning with the philosophy that determination and effort can overcome significant obstacles, ultimately contributing to a positive impact on the world. Alamar's journey is not just a story of technological innovation but a narrative of personal dedication, perseverance, and unwavering commitment to advance healthcare for a better, disease-free future.

Innovations in Proteomics with Significant Market Impact

Alamar's revolutionary proteomics platform, NULISA™, enables early disease detection, particularly with Neurodegenerative such as Alzheimer's where high sensitivity biomarker detection from blood is critical. Recently, the company forged a strategic partnership with Abcam, a renowned innovator in life sciences research tools, to advance the understanding of the human proteome. Its core objective is to allow for

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the simultaneous measurement of hundreds to thousands of targets, even those present in minute amounts, for early detection. Partnering with Abcam grants Alamar access to a vast portfolio of recombinant monoclonal antibody pairs, significantly accelerating the availability of its proteomic discovery tools to researchers.

Yuling Luo envisions the company's technology shaping the future of the proteomics space, anticipating substantial market growth. This projection aligns with the burgeoning expansion observed in the genomics market. Alamar aims to propel the proteomics market from \$30 billion to over \$100 billion and beyond in the upcoming years, signifying an ambitious stride forward in the field.²

Frost & Sullivan notes that the company's impact transcends market growth. Its technology measures crucial biomarkers for conditions such as Alzheimer's, Parkinson's, multiple sclerosis, and amyotrophic lateral sclerosis simultaneously, a feat unmatched by other solutions available in the market. This comprehensive approach has generated substantial enthusiasm from major pharmaceutical companies and leading academic centers. Alamar has engaged in over 50 projects with leading pharmaceutical companies, biotech firms, and academia through its Technology Access program. These collaborations span broad applications - including research into

² Alamar's Interview with Frost & Sullivan, October 2023

neurodegenerative diseases, immune-related diseases, oncology, and infectious diseases.

The company's commitment to addressing unmet needs and providing highly accurate, sensitive, and multiplexed solutions positions it as a significant contributor to the market's growth.

Roadmap to Transforming Proteomics

Alamar recently installed the ARGO™ System at Stanford University, with a forthcoming full commercial launch slated for early 2024, signaling a transformative period for the organization. The company's impact extends to healthcare and medical research advancement yet offers a promising pathway for early disease detection beyond proteomics.

Alamar's technology, designed for high precision and accuracy, is well-positioned for the upcoming 'omics' convergence. Proteogenomics (proteomics, genomics, and transcriptomics) links genetic information to the actual proteins made, offering critical insights into health and disease. NULISA™ boasts high-throughput, fully-automated workflows, and ultra-sensitive precision technology, pivotal in conducting robust proteogenomics analyses.

Proteogenomics uncovers discrepancies between genes and produced proteins, aiding in understanding diseases like cancer. Combining DNA analysis with protein identification, revealing new protein details, and helping precision medicine by identifying treatment targets and diagnostic tools, proteogenomics can transform healthcare through a more comprehensive understanding of diseases at a molecular level. Hence, Alamar's NULISA™ evolving platform and its affinity between genomics and proteomics will play a crucial role in this industry's development.

The company is on the brink of significant commercial expansion, heralding a leap forward in proteomics. It stands on six fundamental cultural pillars, particularly highlighting a customer-first approach, a culture of innovation, and collaborative teamwork. These fundamental driving forces further shape Alamar's ethos, with innovation and customer-centric development addressing customer needs. Frost & Sullivan analysts conclude that the company is poised to lead in the space with a solid cultural foundation, pioneering technology, and customer-driven solutions.

Conclusion

Alamar Biosciences (Alamar) aims to revolutionize early disease detection. With a steadfast commitment to pioneering technologies and customer-centric solutions, Alamar is driving a transformation in early disease identification through precision proteomics. Its revolutionary proteomics platform, NULISA™, boasts high-throughput, fully-automated workflows, and ultra-sensitive precision technology, pivotal in conducting robust analyses.

Cultural pillars of customer-first initiatives, innovation, and teamwork fuel the company's journey. This dedication propels its technological advancements and aligns with its mission to meet customer needs. Alamar is positioned to lead in proteomics and nascent proteogenomics as it foresees significant growth. Rooted in innovation and an unwavering commitment to customer satisfaction, Frost & Sullivan applauds the way that the company redefines disease detection and healthcare.

Alamar's narrative of passion-driven innovation signifies a promising, healthier future for all. With its strong overall performance, Alamar Biosciences earns the 2023 Frost & Sullivan Entrepreneurial Company of the Year Award in the proteomic platforms industry.

What You Need to Know about the Entrepreneurial Company of the Year Recognition

Frost & Sullivan's Entrepreneurial Company of the Year Award recognizes the best up-and-coming, potentially disruptive market participant.

Best Practices Award Analysis

For the Entrepreneurial Company of the Year Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Entrepreneurial Innovation

Market Disruption: Innovative new solutions have a genuine potential to disrupt the market, render current solutions obsolete, and shake up competition

Competitive Differentiation: Strong competitive market differentiators created through a deep understanding of current and emerging competition

Market Gaps: Solution satisfies the needs and opportunities that exist between customers' desired outcomes and their current market solutions

Leadership Focus: Company focuses on building a leadership position in core markets and on creating stiff barriers to entry for new competitors

Passionate Persistence: Tenacity enables the pursuit and achievement of seemingly insurmountable industry obstacles

Customer Impact

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

Customer Service Experience: Customer service is accessible, fast, stress-free, and high quality

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty

