



OncoHost Recognized for

2021

Technology Innovation Leadership

European AI-based
Precision Oncology Industry
Excellence in Best Practices

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. OncoHost excels in many of the criteria in the AI-based precision oncology space.

AWARD CRITERIA	
<i>Technology Leverage</i>	<i>Business Impact</i>
Commitment to Innovation	Financial Performance
Commitment to Creativity	Customer Acquisition
Stage Gate Efficiency	Operational Efficiency
Commercialization Success	Growth Potential
Application Diversity	Human Capital

Challenges in Predicting Cancer Treatment Response and High Resistance to Treatment

The American Cancer Society estimated there were 1.8 million newly diagnosed cancer cases and 606,520

“Precision medicine often reveals cancer patients’ genetic information but fails to predict the interaction between their bodies and the treatment.”

- Ashish Kaul, Senior Analyst, TechVision

cancer deaths in the United States in 2020.¹ According to the World Health Organization (WHO), cancer is the leading cause of death worldwide, resulting in 10 million deaths in 2020.² Cancer remains an area with high unmet needs due to the lack of precise and personalized management techniques.

Although chemotherapy, immunotherapy, radiation, and targeted drugs offer excellent results in patients, they do not guarantee success in all cancer patients. Cancer treatment still follows the conventional one-size-fits-all approach, increasing patients’ health complications. Oncologists are often unable to predict the treatment response and resistance in their patients early enough, and, hence, find themselves at a loss when choosing the most suitable treatment. Selecting incorrect treatment causes wastes of valuable time, suffering from unnecessary adverse events, and unsustainable cost of care. Furthermore, we know

¹ American Cancer Society: Cancer Facts & Figures 2020, <https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2020.html>

² World Health Organization (WHO) – Cancer, <https://www.who.int/news-room/fact-sheets/detail/cancer>

today that the body response to anti-cancer treatment may facilitate tumor growth and progression.

Based on patient genetics, precision medicine is a transformational innovation in cancer treatment. However, genetics only reveals a small part of the necessary information and fails to explain the interactivity between patients’ bodies and the treatment.

Frost & Sullivan identifies the market need for an innovative solution that can help oncologists understand the complex interactions between patient physiology and the treatment to predict which treatment can succeed and change current cancer management practices.

Demonstrates Strong Commitment to Innovation and Creativity

Founded in 2017, Israel-based OncoHost is a clinical-stage company developing innovative technologies to study the host response to treatment, eliminating the treatment resistance challenge in oncology. OncoHost understands that immunotherapy is not a one-size-fits-all treatment and devotes itself to developing next-generation precision oncology solutions that enable oncologists to provide personalized treatment to cancer patients.

PROphet (Figure 1) results from OncoHost’s commitment to innovation and creativity to solve current

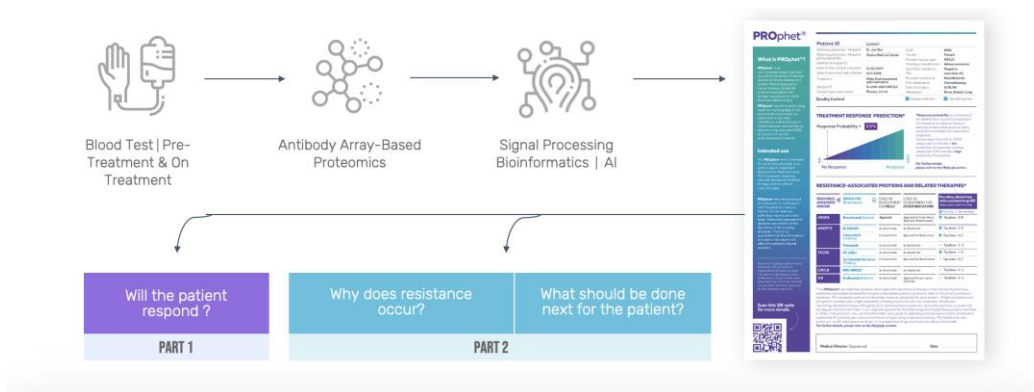
“The cutting-edge technology that OncoHost developed targets a significant unmet need of predicting cancer patients’ treatment response. The technology will enhance oncologists’ ability to plan effective personalized treatment for patients.”

- Ashish Kaul, Senior Analyst, TechVision

unmet needs in the market. It is a first-of-its-kind platform that leverages artificial intelligence (AI) and proteomic analysis to predict patient response to treatment, supporting clinicians to create a robust combination of treatment strategies to conquer treatment resistance. Utilizing OncoHost’s proprietary bioinformatics, signal processing, and machine learning-based

algorithms, the platform scans 7,000 proteins in the patient’s plasma to identify proteomic patterns that indicate the expected patient outcome, a feat that none of its competitors can perform. The platform can also predict potential drug targets for intervention. PROphet supports oncologists in making informed clinical decisions to select the best treatment options and segment patient samples for clinical trial participation.

Figure 1: PROphet



Source: OncoHost

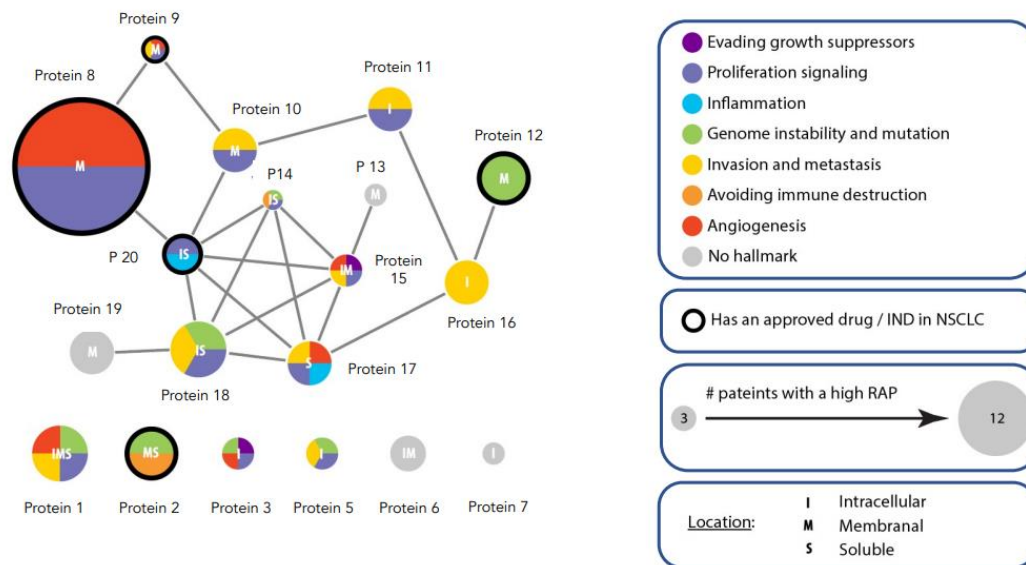
Cancer treatments often trigger physiological reactions in cancer patients, including systemic and local effects. These effects include increased cytokine, enzyme, and growth factor levels in the blood, along with the movement and tumor homing of immune cell types. The PROphet platform analyzes this response in the clinical setting to identify patient response and indicate the best treatment option. It allows oncologists to study the overall treatment reaction instead of depending solely on patient genetic data, which OncoHost’s competitors offer.

Develops Outstanding Technology Targeting Multiple Cancer Indications

PROphet’s ability to make early treatment response predictions and identify drug targets enables clinicians to design a personalized treatment plan and advances novel therapeutics development, respectively. Non-small cell lung cancer (NSCLC) and malignant melanoma are the two lead indications for OncoHost. The platform is currently undergoing a multicenter clinical trial (NCT04056247) in the United States, United Kingdom (UK), and Israel to predict responsiveness in cancer patients based on host response evaluation with anticancer treatments. OncoHost collaborated with the UK National Health Service (NHS) to initiate eight clinical trial sites to predict treatment response in patients with advanced stages of melanoma or NSCLC treated with immunotherapy.

The PROphet platform identifies differentially expressed proteins and aligns them in a biological context to present an actionable and comprehensive disease map (Figure 2).

Figure 2: Resistance Proteins—Comprehensive Disease Map



Source: OncoHost

The PROphet platform can identify biological processes and proteins responsible for host response and predict the patients most likely to respond to a particular treatment, making it instrumental in phase II and III clinical trials. It can also support innovative combination treatments by identifying protein factors responsible for tumor-promoting biological processes in patients undergoing treatment. Agents capable of inhibiting these protein factors are candidate drugs that oncologists can combine with standard

therapies, improving clinical outcomes. OncoHost continues to explore the application of its next-generation platform, PROphet, in various other indications such as head and neck, ovarian, and urogenital cancers as its long-term goals.

Frost & Sullivan applauds OncoHost's unwavering focus on meeting the market's urgent needs, the lack of personalized and effective treatments for cancer patients.

Leverages Trust to Spur Strong Financial Performance

Investors trust and appreciate OncoHost's ability to predict patients' responsiveness to cancer therapies. The company has raised \$16 million in funding since its inception in 2017. In 2021, OncoHost raised \$8 million in Series B funding from Israel-based OurCrowd. The company plans to utilize this funding to finance ongoing clinical trials and prepare for PROphet's market launch by Q4 2021. It received another \$8 million as a grant from the BIRD Foundation (Israel). OncoHost plans to raise another round of funding to accelerate innovations targeting patient response prediction and profiling to enhance clinical treatment decisions. Frost & Sullivan commends its ability to quickly gain investors' trust in its revolutionary and scientifically backed solution.

Focuses on Customer Acquisition to Achieve Exceptional Growth

OncoHost partners with medical research institutes, pharmaceutical companies, and health insurance providers as part of its customer acquisition strategy. It enables pharmaceutical companies to enrich the clinical trial design, increase the clinical trial success rate, discover drug targets, and identify novel drug combinations for cancer treatment. The innovative platform's ability to offer oncologists precision medicine to solve the critical unmet market need of identifying patient response to treatment will ensure their long-term relationship with the company.

According to OncoHost, the global precision oncology market was \$59 billion in 2020 and is forecast to reach \$99.72 billion by 2027 at a 9.9% CAGR. Out of this, the total addressable market for PROphet in its initial indications, NSCLC and malignant melanoma, is \$560 million and \$360 million, respectively, with a \$3,000 price tag per test. OncoHost's scalable and flexible business model involves commercializing and marketing PROphet as a laboratory-developed test (LDT) direct to the consumer, which does not require FDA approval. It plans to simultaneously develop companion diagnostic (CDx) indications to receive FDA approval and market PROphet to oncologists and payers. Frost & Sullivan acknowledges OncoHost's business acumen and long-term strategy to achieve sustainable growth in the future.

PROphet, the AI-powered technology that OncoHost developed, is set to play a vital role in improving cancer treatment success and reducing unnecessary side effects. The unidirectional approach toward treatment will significantly impact densely populated regions such as Asia, with a high number of cancer patients and fewer therapeutics options. Additionally, the platform's potential in identifying potential drug targets will affect drug development processes and help biopharmaceutical companies make faster and more effective novel treatments for different cancer diseases.

Conclusion

Oncologists are often uncertain when projecting patient responses to specific cancer treatments or deciding the best treatment option. This may lead to them selecting incorrect treatments that cause tumor expansion rather than shrinking. OncoHost aimed to address this unmet need by developing PROphet. This revolutionary solution combines proteomic analysis with AI to support oncologists in identifying patient responses to treatment and overcoming treatment resistance. With its strong overall performance, outstanding commitment to innovation, and high-value solutions, OncoHost earns Frost & Sullivan's 2021 Technology Innovation Leadership Award.

What You Need to Know about the Technology Innovation Leadership Recognition

Frost & Sullivan's Technology Innovation Award recognizes the company that has introduced the best underlying technology for achieving remarkable product and customer success while driving future business value.

Best Practices Award Analysis

For the Technology Innovation Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Technology Leverage

Commitment to Innovation: Continuous emerging technology adoption and creation enables new product development and enhances product performance

Commitment to Creativity: Company leverages technology advancements to push the limits of form and function in the pursuit of white space innovation

Stage Gate Efficiency: Technology adoption enhances the stage gate process for launching new products and solutions

Commercialization Success: Company displays a proven track record of taking new technologies to market with a high success rate

Application Diversity: Company develops and/or integrates technology that serves multiple applications and multiple environments

Business Impact

Financial Performance: Strong overall financial performance is achieved in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Commitment to quality and to customers characterize the company culture, which in turn enhances employee morale and retention

