

**2008 North American Pharmaceuticals & Biotechnology Emerging
Healthcare Innovation Award****Lifeblood Medical**

Frost & Sullivan is pleased to present the 2008 North American Pharmaceuticals & Biotechnology Emerging Markets Healthcare Innovation Award to Lifeblood Medical. This Award is in recognition of the company's unique solution technology, which offers a myriad of advantages and led to the development of Lifor®, a breakthrough product for organ preservation solution. In addition to human organ preservation, Lifeblood Medical's technology has potential for a wide number of applications and presents a unique opportunity for the company to impact multiple emerging healthcare markets.

Challenges in Organ Preservation

The market for organ preservation and transportation is experiencing strong growth in the U.S. with several thousand people in the donor waiting list and increasing number of transplant procedures performed every year. However, there is an increasing mismatch between the number of donors and number of transplants performed with demand outstripping supply resulting in increased application and usage of organ preservation solutions.

The preservation of organs is an area with multiple challenges and unmet needs. Current preservation solutions restrict the time organs remain viable between harvesting and re-implantation. In addition to time, temperature constraints, cost effectiveness, increasing demand, and the need to protect against ischemia reperfusion injury are all characteristics which showcase the need for product and technology improvements in the area of organ preservation solutions.

For new products, the ability to provide improvements in these points could provide a drastic change in the organ transplantation area as a whole, and subsequently the lives of patients. In addition, technology innovation in this area could introduce new dynamics in how and where organs are available and expand the options and resources available to the medical community.

Lifor®: Innovation in Solution Technology

Lifeblood Medical's solution technology is the backbone of Lifeblood Medical's organ transplant product. The company's product, Lifor® is a synthetic preservation

medium containing cellular nutrients, and a non-animal protein oxygen and nanoparticle carrier. This has the ability to carry oxygen and nutrients to cells and tissues, which enables them to sustain metabolic processes and keep the cells alive, which is a critical factor in organ transplantation.

Lifor® has the ability not only to lengthen the preservation time of recovered organs, but creates an in vivo-like physiologic state for organs separated from a normal blood supply and ensures that the cells and tissues are properly nourished through its proprietary oxygen and nutrient carrying properties. In comparison to existing organ preservation solutions, which can preserve liver and kidney for 12 hours at hypothermic (below 20° C. and typically at about 4° C.) temperatures, Lifor offers a three-fold increase of up to 36 hours at room and body temperature, which is truly a path breaking innovation in a market that serves a critical life-saving need.

Unlike other competing products, Lifor® is animal protein and animal serum free. Presently, almost all of the commonly used cell culture and preservation media use animal sera such as fetal bovine serum (FBS), which can destroy the cell culturing or preservation process upon contamination. Through Lifor®, the possibility to increase both availability and viability of organs such as heart, liver, or kidney could make a positive impact in a variety of patient groups.

Innovative Technology – Numerous Potential Applications

The company's technology is highly innovative and provides Lifeblood Medical the opportunity to expand its applications beyond just organ transplantation. In addition to the potential market growth within organ transplantation, Lifeblood Medical's solution has the potential to expand the market by creating new niches.

Lifeblood Medical doesn't use dimethyl sulfoxide (DMSO) in its product, a commonly used chemical in cryopreservation, which enables the freezing of cells and tissues without crystallization. DMSO is considered to be toxic to cells, and Lifeblood has been able to achieve better results through its solution, which is DMSO free and does not require DMSO to be added prior to freezing.

In addition to Lifor®, Lifeblood Medical's technology has also produced LiforCell, a serum-free cell culture medium. Some of the other potential applications that provide Lifeblood Medical the opportunity to expand its position in the marketplace and accelerate its future growth include:

- **Stem Cells**

Stem cell research is a rapidly growing and increasingly important market globally that requires a non-toxic medium. The company's solution technology has potential applications in this market, and this has been further established by the recent deal signed between Lifeblood Medical and a company that is doing research on preservation and extraction of stem cells from teeth pulp. Other applications include collection and preservation of stem cells from placenta and cryopreservation of cord blood.

- **Flu Vaccines**

Flu vaccines represent one of the largest markets for vaccines globally. Flu vaccines have traditionally been manufactured from either eggs or cells. However, increasing global demand is likely to drive the growth of both pandemic and seasonal flu vaccines manufactured from cells due to faster production, lower risk of contamination, and less complicated procedures. Lifeblood Medical's technology has a potential application in the cell-based production of flu vaccines due to the non-use of animal products in its solution, which would prevent any potential contamination and also provide a flexible platform to expand production.

- **Cancer Research**

There is a strong shift towards patient specific research based on genetic, environment and other factors, especially from the emerging biotechnology segment. Tumor tissue preservation is a key challenge for these companies, and Lifeblood Medical's solution enables that. By being able to preserve tumor tissues and cells in room temperature and cryopreservation, companies can easily pursue a tumor and patient specific approach towards cancer treatment, which could have significant positive implications to the overall treatment paradigm.

- **Limb Preservation**

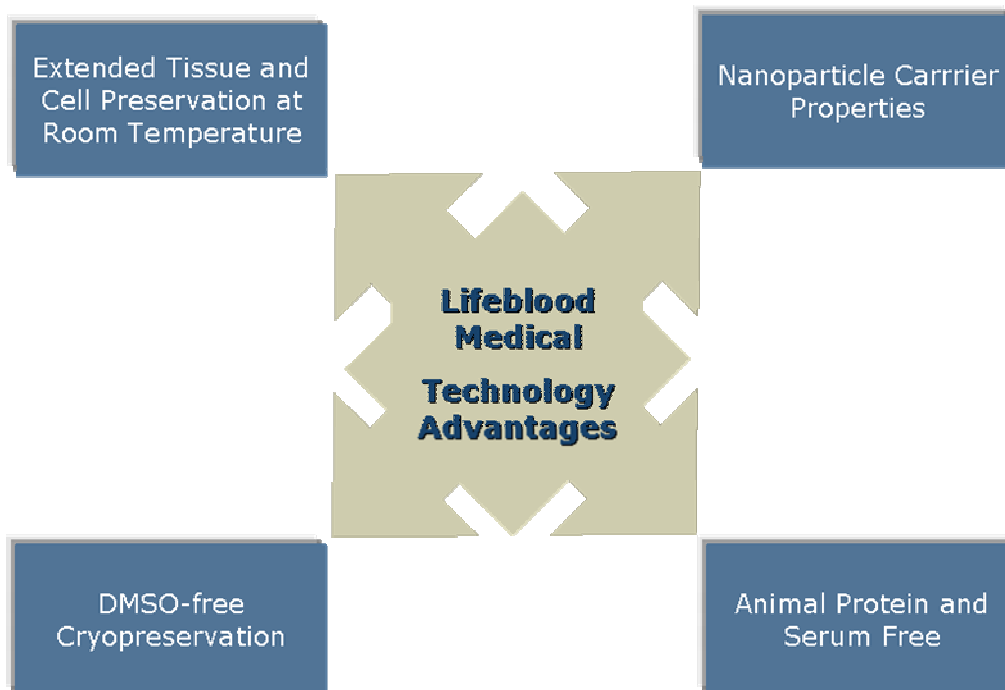
There is also potential application for Lifeblood Medical's technology in limb preservation. This could benefit trauma medicine in both the civilian setting and for the military on the battlefield. A key challenge in trauma medicine is the lack of a solution to preserve cells and tissues and prevent them from dying due to the lack of oxygen. The US Navy is currently investigating Lifeblood Medical's solution technology in this setting.

- **Other Applications**

In addition to the above, Lifeblood Medical's technology has other applications in tissue banking, cryopreservation of sperm cells for in vitro fertilisation and as a blood substitute. These are also rapidly growing markets and have tremendous growth potential for Lifeblood Medical.

The company's technology could also be designed to carry medicine for therapeutic use, which could further have some major implications in drug delivery. This is further testimony to the path breaking and innovative nature of the technology developed by Lifeblood Medical.

Chart 1.1 highlights some of the advantages of Lifeblood Medical's technology



Conclusion

Through the development of the company's unique solution technology, Lifeblood Medical has created a platform for innovation. With Lifor, Lifeblood Medical has developed a product with capabilities and characteristics that positively differentiate

it from the other organ transplant products both in the market and in visible development. By positioning focus in a high profile and underserved area of organ transplant through a highly innovative and flexible technology, Lifeblood Medical is at the forefront of product innovation in organ transplant and preservation. In addition, the company's solution technology presents a variety of underserved areas of healthcare with a technology that could drive innovation and improve medicine. Therefore, in recognition of the company's contributions, Frost & Sullivan is pleased to present Lifeblood Medical with the 2008 North American Pharmaceuticals & Biotechnology Emerging Markets Healthcare Innovation Award.

Award Description

Frost & Sullivan's Award for Healthcare Innovation is presented to the company that has introduced truly innovative products, practices, or ideas to the specified industry or segment. The company's innovative contribution(s) to healthcare make it possible to envision a new level of care in the diagnosis, treatment, and management of disease, leading to better outcomes and quality-of-life for patients. In addition, the company's innovative efforts may also lead to improvements in the tools that clinicians, diagnosticians, researchers, and healthcare administrators have at their disposal to improve quality and efficiency in provision of healthcare services. In the development of its innovative contributions to healthcare, the company has drawn from a substantial body of expertise in the clinical and scientific communities, leading to products, practices, or research and development initiatives that respond directly to the needs and insights expressed by thought leaders in the respective clinical specialties and/or industry segments.

Research Methodology

To choose the recipient of this Award, the analyst team tracks emerging and existing markets and evaluates the contributions of industry participants. This is accomplished through ongoing interviews with major market participants and/or industry thought leaders as well as secondary research. In order to select the Award recipient, analysts quantify several market factors for each market participant according to predetermined criteria that help to define innovation in healthcare. The analysts also consider the pace of technology innovation, and the potential relevance or significance of the innovation(s) to the overall industry. The ultimate Award recipient is chosen after a thorough evaluation of this research.

Measurement Criteria

In addition to the methodology described below, there are specific criteria used in determining the final ranking of competitors in this industry. The recipient of this Award has excelled based on one or more of the following criteria:

- Potential for Long-term improvement to Healthcare
- Breakthrough approach / degree of differentiation innovation compared to other market participants
- Product innovation in terms of unique or revolutionary technology
- Penetration rate of new markets
- Significance of innovation in the industry
- Time to market
- Leading proactive initiatives to improve value to customers
- Advancement of the industry through research
- Implementation of a new or unique pricing strategy
- Implementation of a new or unique marketing strategy
- Creating new venues, such as online services, for an established product

About Best Practices

Frost & Sullivan Best Practices Awards recognize companies in a variety of regional and global markets for demonstrating outstanding achievement and superior performance in areas such as leadership, technological innovation, customer service, and strategic product development. Industry analysts compare market participants and measure performance through in-depth interviews, analysis, and extensive secondary research in order to identify best practices in the industry.

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