Circular RNA Technology: Gaining Traction in the RNA Therapeutics Landscape

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Until just two years ago, many experts remained skeptical about the future of mRNA medicine despite its vast potential. The hesitation stemmed from technical challenges that seemed insurmountable. However, the successful approval and global rollout of COVID-19 mRNA vaccines swiftly dispelled those doubts. These products are now on track to become some of the best-selling drug products globally.

With this success, investor attention has zeroed in on the RNA medicine space, sparking debates on which RNA technologies will emerge as game-changers. One of the most promising among them is circular RNA (also referred to as oRNA or eRNA).
Let's take a look at Orna Therapeutics, a pioneering startup in this field, featured in a 2022 review.

Founded in 2019 and based in Cambridge, Boston, Orna raised Series A funding in spring 2020. The company is developing RNA therapeutics based on circular RNA (oRNA) technology, which restructures traditional linear mRNA into a closed-loop format.

This structural change provides several advantages:

- Increased stability: Linear mRNA is more prone to enzymatic degradation at its ends. Circular RNA, with no free ends, avoids this, making it more stable in the body—a crucial benefit for therapeutic applications where sustained activity is required.
- Lower production cost and greater scalability: Unlike linear mRNA, circular RNA doesn't require capping or a poly-A tail, nor does it need specially modified nucleotides to suppress immune responses.
- Compact 3D structure: This could enhance drug delivery performance, offering advantages over traditional linear mRNA.

Orna is particularly focused on applying this technology to CAR-T cell therapy, a fast-growing area of immunotherapy. Conventional CAR-T therapy requires a complex and costly process of extracting a patient's T-cells, genetically modifying them, and reinfusing them—a process that can cost over $500,000 in the U.S.

Orna believes that its oRNA technology can streamline this process by enabling in vivo programming of T-cells, thereby cutting both cost and time significantly.

Other players in the circular RNA space include Laronde (founded in 2017, also referred to as eRNA) and Levatio Therapeutics, recently launched in the U.S. by Korea's ST Pharm. All three companies secured significant funding in 2021 and are aggressively advancing their technologies.

While these companies are still in early stages, focusing on well-known targets and proving the viability of circular RNA, the ease of adjusting RNA sequences for different applications compared to traditional protein-based drugs could lead to a transformative impact on the bio industry.

The CEO's Role: Implementing Inbound Strategies That Make a Company "Discoverable"

The CEOs play the roles of the primary ambassadors to put their company's inventions in front of industry experts and peers. They attend industry events and publish interviews in specialty publications covering biotechnologies.

Beyond industry recognition and peer show-off, the CEOs, supported by media or PR relations experts, are busy promoting their startups into the Innovations coverage beyond drug and pharma professional sources.

Breakthrough science is one of many success factors. Both Laronde and ORNA display savvy beyond scientific discoveries. They are pushing the boundaries and shooting for global recognition. Their leaders are investing significant efforts into public and media relations, making their company and innovation visible well beyond the industry niche.

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Their innovations are global in impact; however, these Cambridge, MA-based companies are actively involved in the local community by participating in local events, giving interviews to local radio stations and press, taking part in local job fairs, and increasing relevance to their community.

The job of the CEOs now includes spreading the word and creating a massive digital footprint by interviewing for radio programs, podcasts, and newspapers with global coverage. [Here are the examples of all media investments by Laronde and ORNA as of December 2021.

These promotional actions are not an accident: both companies are backed by major investors. All investors understand, encourage, help with, and, sometimes, enforce that the startup they invest in doesn't solely focus on the lab work and clinical aspects of the breakthrough discoveries.

Local and global visibility is now obtained through the proactive and purposeful amplification of the invention, including applications for awards. As a result, the company's value grows with more awareness and digital impressions, benefiting the investors and the CEOs.

- Content by the BDMT Global Team

If you are interested in potential partnerships and long-term relationships with the companies mentioned in this article or others in the U.S. and/or S. Korea, contact Suzy at sim@bdmtglobal.com.

Suzy Im BDMT Global TRANSFORM AND DRIVE DEMAND

As the head of BDMT Global in Boston, Im focuses on accelerating the innovative transformation of global companies. She is a Professor of Marketing and a member of the Advisory Board at Emerson College. Im is also co-founder of Sponsors of the Future, a non-profit organization that leads corporate social responsibility, promoting neurodiversity and inclusion. As a well-known business developer and marketing strategist in the global field for over 20 years, Im merged the two critical global business functions of Business Development (BD) and Marketing Transformation (MT) for the first time. She was recognized for her innovative business model and contribution and received five consecutive awards in the U.S. including the North American Business Awards and TITAN Business Award 2022 in Biotechnology.